Water and Wastewater Rates and Tap Fees

CITY OF IDAHO SPRINGS CITY COUNCIL

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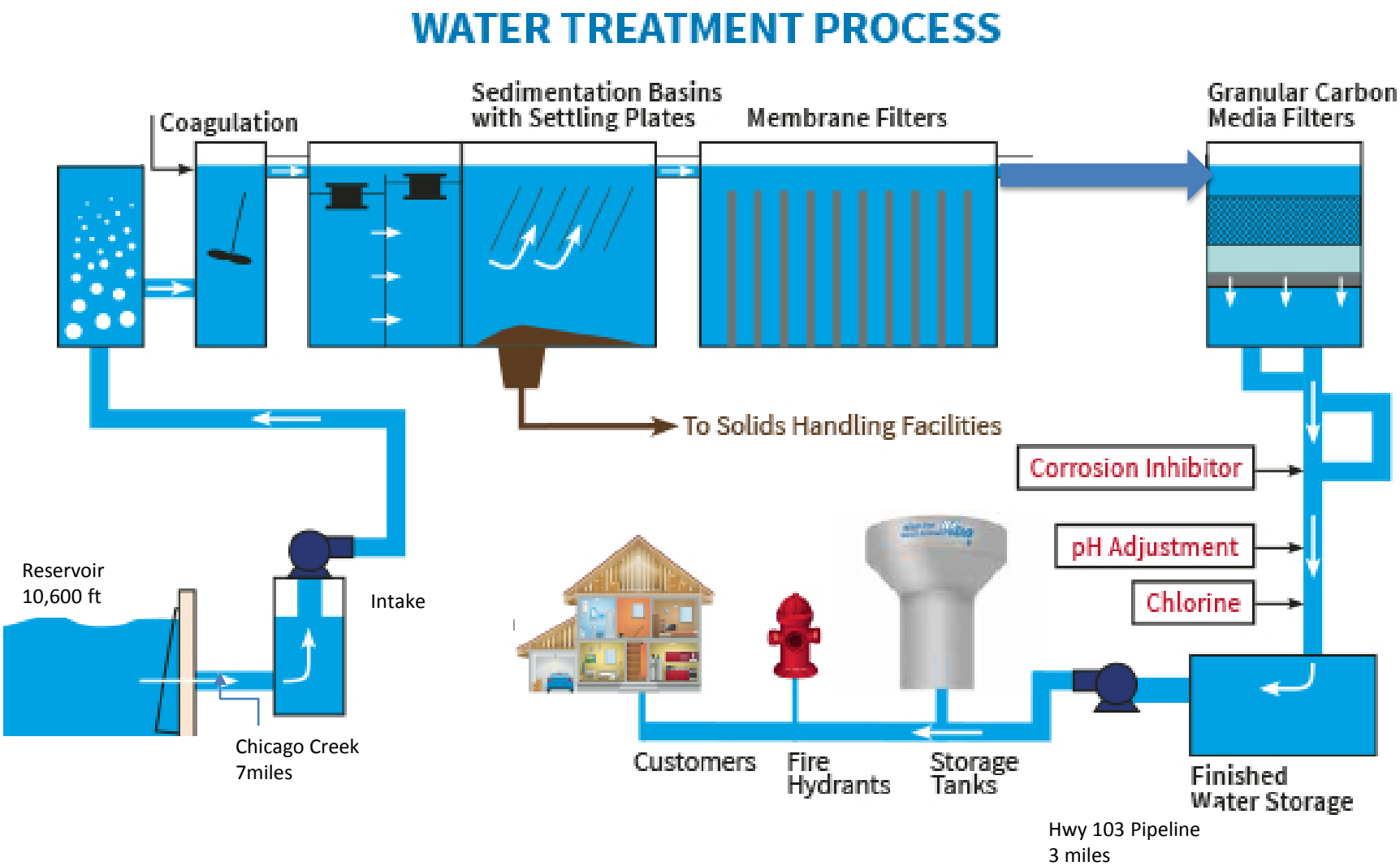
RAFTELIS
FINANCIAL CONSULTANTS, INC.

CONSULTING ENGINEERS

Study Outcomes

1. Capital improvement plans for water and wastewater utilities
2. Recommended updates to water and wastewater tap fees
3. Multi-year financial plans for water and wastewater utilities
   A. Cash and debt fund capital projects
   B. Continue to pursue grant opportunities
4. Rate revenue adjustment for separate water and wastewater utilities applied across the board to existing rates
   A. Outcome of annual rates for each utility reflecting current structure effective March 1, 2017
   B. Continue to refine capital plan and O&M requirements, pursue debt and grant funding for 2017

Water System Overview



Idaho Springs Water System

- Distribution System
  - Consists of over 20 miles of pipe installed from 1899 to current
    - PVC, Cast and Iron Pipe, Some lead service lines
  - Frequent breaks and leaks
- Water Treatment
  - Installed in 2001 as one of first membrane plants in State
  - Upgraded in 2007 and again in 2014

Water System Pictures

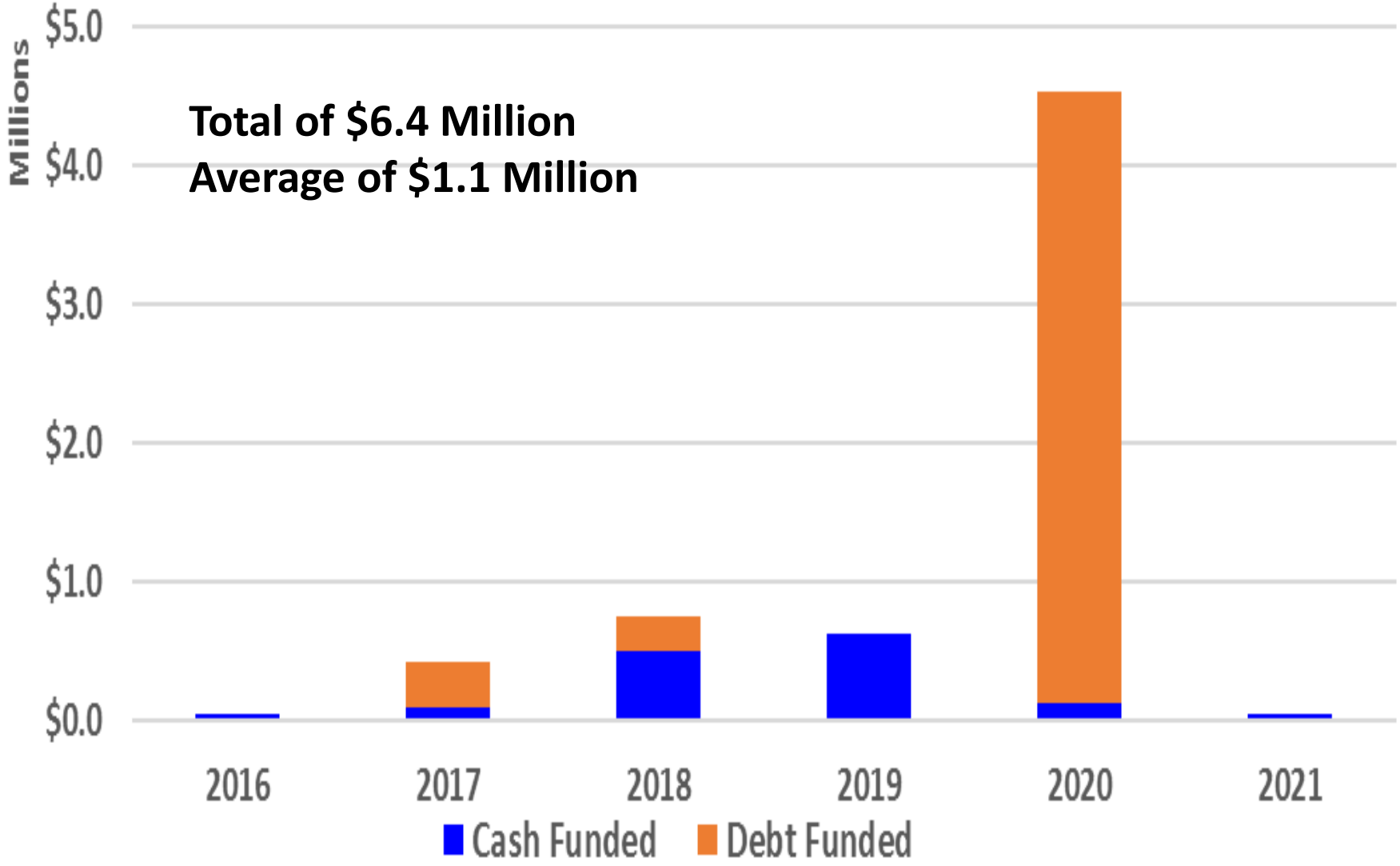
Water Treatment Improvements

- Polishing Filters - $1,000,000
  - DBPs, Taste and Odor
- Membrane Plant Expansion- $250,000
  - Redundancy not Capacity
- Pre-Treatment - $350,000
  - Sedimentation

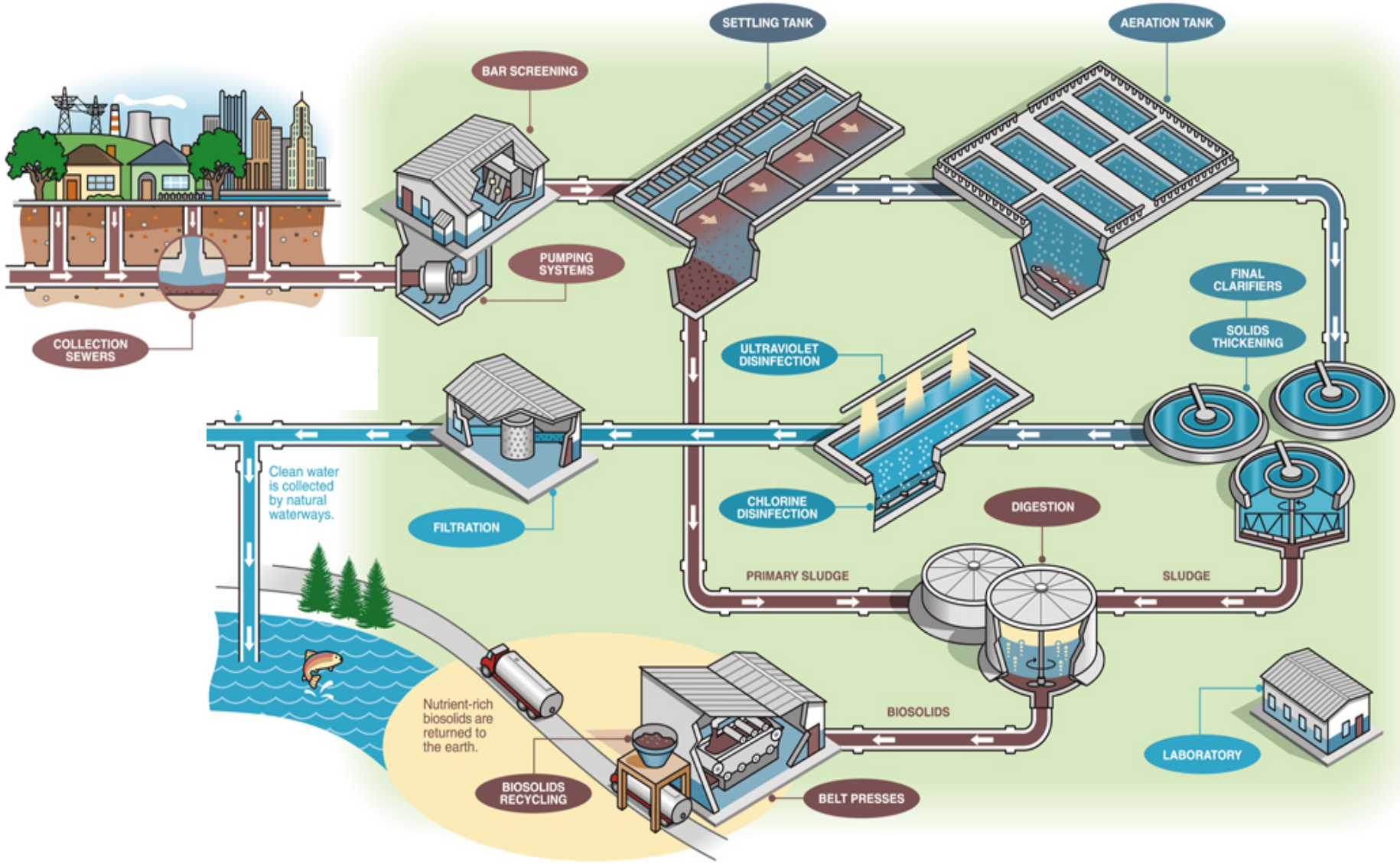
Water Distribution Improvements

- Replace aging water mains and services
  - East Colorado
  - Miner Street
  - Soda Creek
  - Highway 103

Water Fund Capital Projects 2016 through 2021



Wastewater System Overview

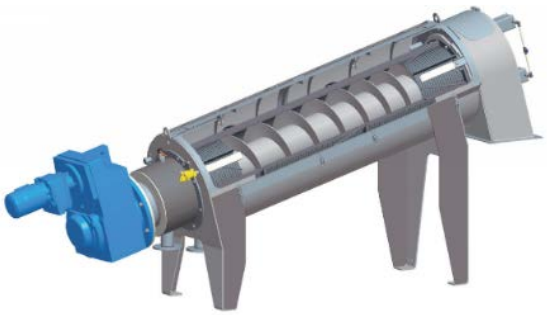


Idaho Springs Wastewater System

- Collection System
  - Consists of over 15 miles of pipe installed from 1920's to current
    - Vitrified Clay and history of plastic, Stacked Brick and Rock Manholes in Clear Creek, Running through old steam lines
  - Infiltration and Inflow of groundwater and Clear Creek that has to be treated at WWTF
- Wastewater Treatment
  - Installed in 1980's as first Sequencing Batch Reactor
  - Upgrade completed in 2010 (equipment only)
  - Currently capacity 0.6 MGD

Wastewater System Pictures

Wastewater Treatment Improvements



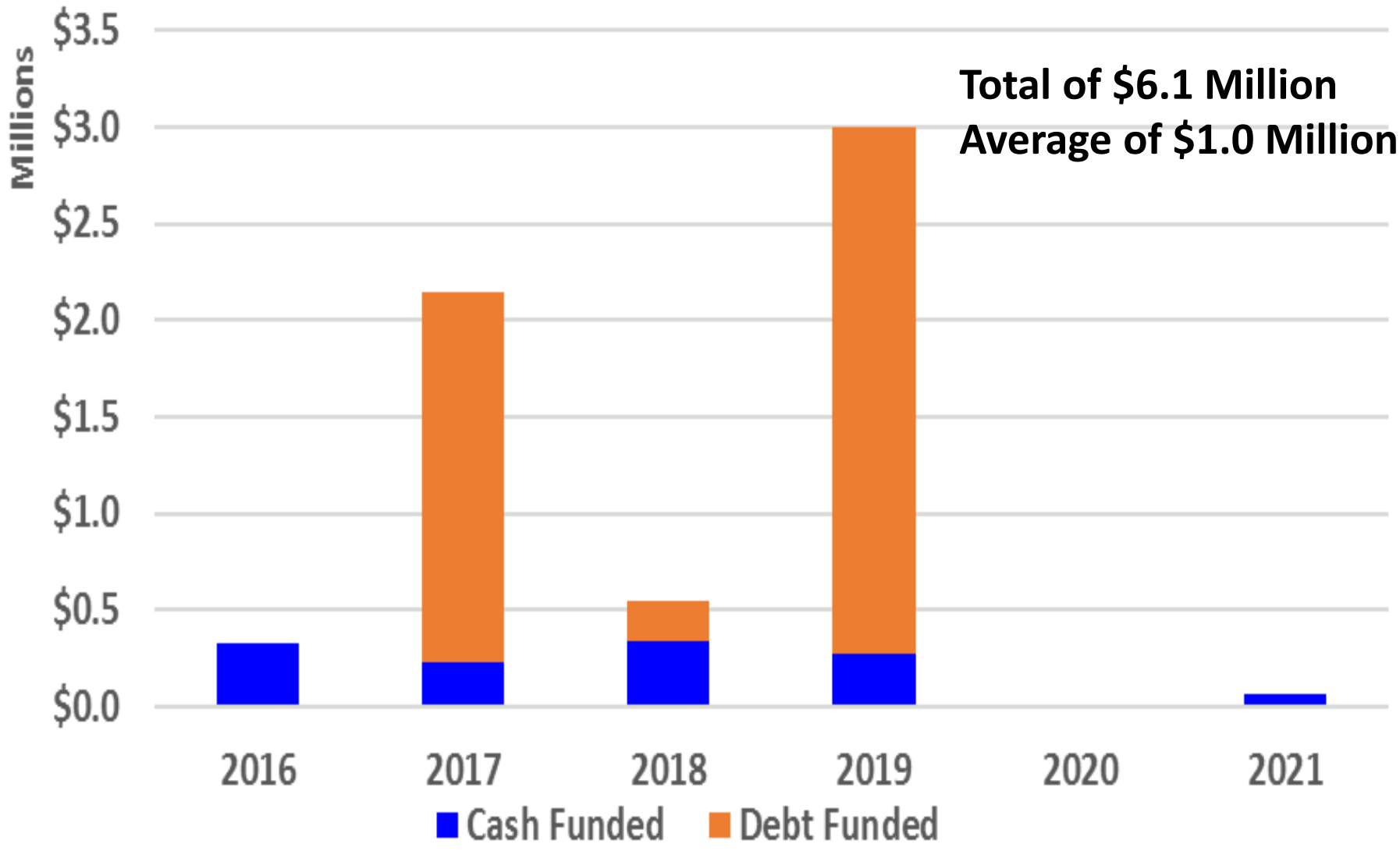
- Solids Dewatering – $1,500,000
  - Sludge hauling costs increase $0.045/gallon to $0.10/gallon
  - Budget increase - $70,000 to $160,000 per year
  - Project reduces hauling to less than $50,000 per year

- WWTP Expansion - $2,700,000
  - Current plant capacity – 0.6 MGD
  - Existing flows – 0.49, 0.63, 0.49 MGD in past 3 years
  - CDPHE requires planning at 80% and construction at 95%

Wastewater Collection Improvements

- Infiltration and Inflow (I&I)
  - Infiltration through old pipes and manholes
  - Replacing significant portions of system since 2003
- Soda Creek Road
  - Replace existing aging infrastructure
  - Reduce I&I
- Miner Street
  - Replace sewer prior to road improvements
  - Most has already been replaced

Wastewater Fund Capital Projects 2016 through 2021

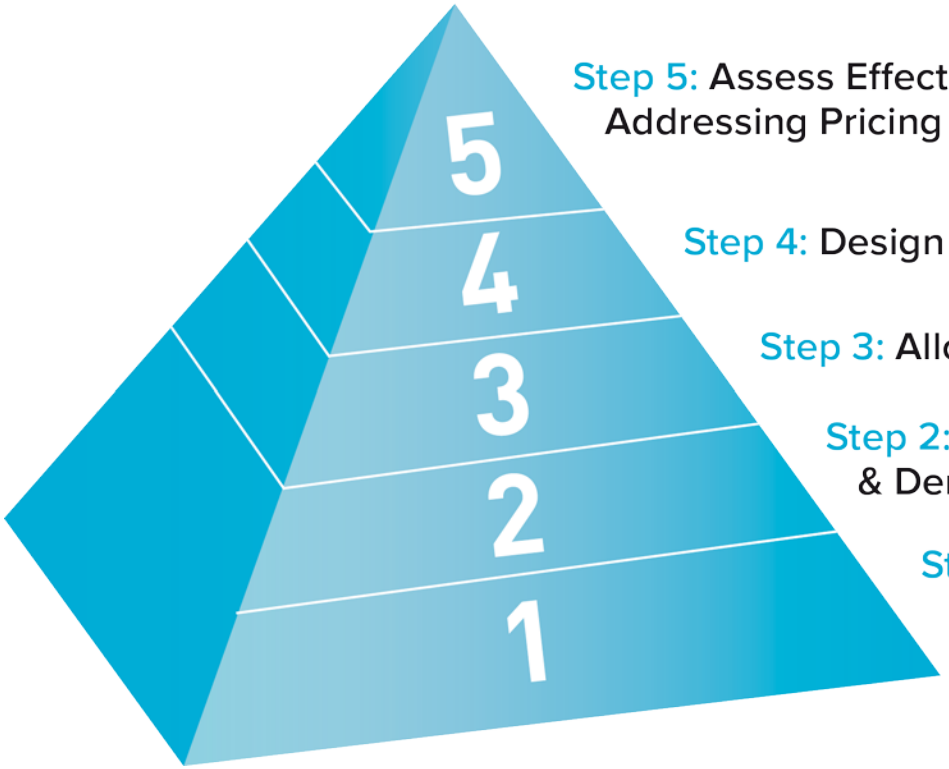


5-Year Enterprise Capital Improvement Plan (CIP)

2017 Project	Cost	2018 Project	Cost	2019 Project	Cost
Soda Creek Rd. Water Line	$200,000	Miner St. Sewer Line	$80,000	WTP Sedimentation tank imps.	$350,000
Soda Creek Rd. Sewer Line	$ 150,000	Miner St. Water Line	$70,000	WTP rehab backwash bldg.	$45,000
Soda Creek Rd. Storm Drainage	$ 150,000	2" water line to ball field	$175,000	WTP Carbon Filters Engineering	$85,000
WTP engineering for 3rd skid	$25,000	WTP 3rd skid construction	$235,000	WWTP Expansion Construction	$2,500,000
WTP replace raw water pumps	$40,000	WWTP Expansion design eng.	$200,000	WWTP Replace Gate	$30,000
WTP Green Tank roof repair	$25,000	Reservoir drains	$65,000	W/WW Equipment (50/50)	$35,000
WWTP Dewatering Construction	$1,500,000	Infiltration/Inflow Mitigation	$200,000	Reservoir Inlet parshall	$75,000
WWTP Expansion Planning	$25,000	WTP access road repairs	$125,000	Infiltration/Inflow Mitigation	$200,000
Upgrade bulk water station	$18,000				
Infiltration/Inflow Mitigation	$200,000				
PROJECT TOTAL	**$2,333,000**	**PROJECT TOTAL**	**$1,150,000**	**PROJECT TOTAL**	**$3,320,000**

2020 Project	Cost	2021 Project	Cost
Chicago Creek Rd. Water Line	$3,000,000	WTP Clarifier Rehab en	$25,000
WTP Carbon Filters Construct.	$915,000	WWTP Replace siding	$40,000
WTP Rockslide mitigation	$85,000	W/WW Equipment (50/	$35,000
WTP Clearwell Pump	$25,000		
PROJECT TOTAL	**$4,025,000**	**PROJECT TOTAL**	**$100,000**

Two-Phased Rate Study Process



Step 5: Assess Effectiveness in Addressing Pricing Objectives

Step 4: Design Rate Structure

Step 3: Allocate Costs

PHASE 2: 2017 STUDY

Step 2: Identify Revenue Requirements & Demand Projections

Step 1: Identify Financial & Pricing Objectives

PHASE 1: 2016 STUDY

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Any opinion, information, or recommendation included in this presentation, related to the size, timing, and terms of a future debt issue may be relied upon only for its intended purpose. This information is not intended as a recommendation to undertake a specific course of action related to the issuance of debt, or to indicate that a particular set of assumptions for the size, timing and terms of issuing debt will be available at the time debt is actually issued.

TAP FEES

What Are Tap Fee?

- Tap Fees are one-time charges paid to fund the infrastructure needed to serve new development
  - Tap Fees go by many different names – Impact Fees, System Development Charges, System Development Fee, Plant Investment Fees, etc.
- Commonly charged throughout Colorado
  - Goal that growth funds the cost of expanding infrastructure to serve them
  - Mitigates the need to increase user charges and rates

Current Tap Fees

Meter Size	EQR Ratio	Water	Sewer
¾-inch	1.0	$5,000	$5,000
1-inch	1.7	8,500	8,500
1 ½-inch	3.3	16,500	16,500
2-inch	5.3	26,500	26,500
3-inch	10.0	50,000	50,000
4-inch	16.7	83,500	83,500
6-inch	33.3	166,500	166,500
10-inch	76.7	383,500	383,500

Proposed Water Tap Fees

Meter Size	EQR Ratio	Current	Proposed	Change
¾-inch	1.0	$5,000	$6,845	$1,845
1-inch	1.7	8,500	11,636	3,136
1 ½-inch	3.3	16,500	22,587	6,087
2-inch	5.3	26,500	36,277	9,777
3-inch	10.0	50,000	68,447	18,447
4-inch	16.7	83,500	114,306	30,806
6-inch	33.3	166,500	227,928	61,428
8-inch	76.7	383,500	524,987	141,487

Proposed Wastewater Tap Fees

Meter Size	EQR Ratio	Current	Proposed	Change
¾-inch	1.0	$5,000	$12,053	$7,053
1-inch	1.7	8,500	20,490	11,990
1 ½-inch	3.3	16,500	39,775	23,275
2-inch	5.3	26,500	63,880	37,380
3-inch	10.0	50,000	120,529	70,529
4-inch	16.7	83,500	201,284	117,784
6-inch	33.3	166,500	401,362	234,862
8-inch	76.7	383,500	924,458	540,958

RATES

Current Rate Structure

Description	Water	Sewer (1)
Bi-Monthly Base Charge (2) (3)	$50.00	$38.00
Volume Charge per 1,000 gallons (4)		
0 – 25,000 gallons	$3.25	
25,001 – 50,000 gallons	3.75	
Over 50,000 gallons	4.25	
Normal Strength Residential, Commercial (1) (5)		$4.00
Commercial – High Strength (1) (5)		13.00

(1) Actual water use during Nov – Apr. May through Oct. water use based on lessor of actual water use or average of Nov – Apr period use.

(2) Water base per equivalent residential unit (EQR). Multi-family is 1.0 EQR for the 1st dwelling unit and 0.9 EQRs for each additional dwelling unit. Commercial EQRs increase based on meter size. Mixed use EQRs reflect the make up of the multi-family and/or non-residential uses served by the single meter. Outside City rates not subject to a contract are 2.00 times inside city rates.

(3) Sewer base for commercial low strength is $48.00 and high strength of $58.00 bi-monthly. Low strength defined as less than 180 milligrams per liter for BOD and TSS.

(4) Uniform rate of $3.25 assessed to residential customers. 3-tiered rate structure applies to commercial customers.

(5) Same rate applies to normal strength as well as Chicago Creek Sanitation District sewer discharges.

Prudent Utility Financial Planning

- Revenue sufficient to maintain the financial stability of the water and wastewater enterprises and:
  - Fund annual O&M expenses, debt service payments and capital improvements and other requirements
  - Exceed annual debt service coverage ratio targets with adequate revenues
  - Exceed annual operating and capital reserve targets with adequate reserves

Financial Performance Requirement - Annual Debt Service Coverage

- Debt service coverage ratio:

$$\frac{(\text{Revenues - O\&M expenses})}{\text{Annual debt service}}$$

- Legal **requirement is 110% of annual debt service**
  - Loan covenants of existing loans
- Financial planning **target is 150% of annual debt service**
  - May be adopted by the City or used as an informal planning criteria for rate setting
  - Provides flexibility when revenues are below projected and/or O&M expenses exceed budget

Required and Adopted City Reserve Policies

- Outstanding utility debt requires cash reserves
  - Operating Reserve required minimum of **90 days (25%)** of O&M expenses
  - Rate Stabilization Fund Reserve may be established
- Adopted City policies for water and wastewater utility funds
  - Target of **72 days (20%)** of O&M expenses PLUS
  - Budgeted contingency PLUS
    - $75,000 for water and $50,000 for wastewater
  - Next year's debt service
- Rate Stabilization Fund Reserve has been funded and may be used to meet debt service coverage

Growth, Inflation and Capital Funding Assumptions

- O&M and capital projects increase 3% per year for inflation
- Growth of 2 water tap and 1 wastewater tap annually
  - Excludes any significant customer being added to the system
  - If significant users are added, may reduce future rate increases with more users sharing O&M costs
- Debt issued using 20 year repayment term, 3.5% interest rate, 2% issuance costs and debt service reserve of 1 annual debt service payment as part of the loan

Increased O&M Expenses

- Increased O&M expenses for water and wastewater
  - Price inflation (electricity, chemicals, supplies)
  - Personnel costs and additional staff
  - Contract office equipment
- Wastewater
  - Sludge removal costs up $100,000

Net Revenues Available for Capital

	Water		Wastewater	
Description	**2016**	**2017**	**2016**	**2017**
Revenue before Increase	$842,150	$806,954	$707,000	$733,867
O&M Expenses	(437,397)	(457,244)	(467,108)	(625,682)
Debt Service	(275,872)	(268,210)	(136,365)	(93,866)
Transfer from RSF	65,000	0	0	0
Subtotal Net Revenues	193,881	81,500	103,527	21,764
Revenue from Increase	0	87,991	0	85,702
Net Revenues Available for Capital and Reserves	**$193,881**	**$169,441**	**$103,527**	**$107,466**

Capital Funding Options To Fund Capital Plans

- Cash fund **ALL** capital – not practical as gap "too big"
- Cash and debt fund capital projects – **recommended plan**
  - Some projects are better to cash fund like line replacements and routine capital maintenance
- Cash, debt fund capital while pursuing grant – **preferred plan**
  - Pursue but not prudent to assume they will be provided
- Release portion of the Rate Stabilization Fund Reserve into the water fund in 2017

Study Recommendations

- Adopt proposed tap fees and rates effective March 1, 2017
  - Increase cash available for debt service and increased replacement capital requirements
  - Fund increased O&M requirements
  - Smaller more periodic increases in advance of future requirements (e.g., water capital)
- Continue to refine capital plan to mitigate size of projects and/or defer when prudent
- Pursue debt and grants to mitigate overall size of the increases

Proposed Water Rates March 1, 2017

Description	Current	3/1/17	Increase - $	Increase - %
Bi-Monthly Base Charge (1) (2)	$50.00	$57.50	$7.50	15%
Volume Charge per 1,000 gallons (2)				
0 – 25,000 gallons	$3.25	$3.74	$0.49	15%
25,001 – 50,000 gallons	3.75	4.31	0.56	15%
Over 50,000 gallons	4.25	4.89	0.64	15%

(1) Water base per equivalent residential unit (EQR). Multi-family is 1.0 EQR for the 1st dwelling unit and 0.9 EQRs for each additional dwelling unit. Commercial EQRs increase based on meter size. Mixed use EQRs reflect the make up of the multi-family and/or non-residential uses served by the single meter. Outside City rates not subject to a contract are 2.00 times inside city rates.

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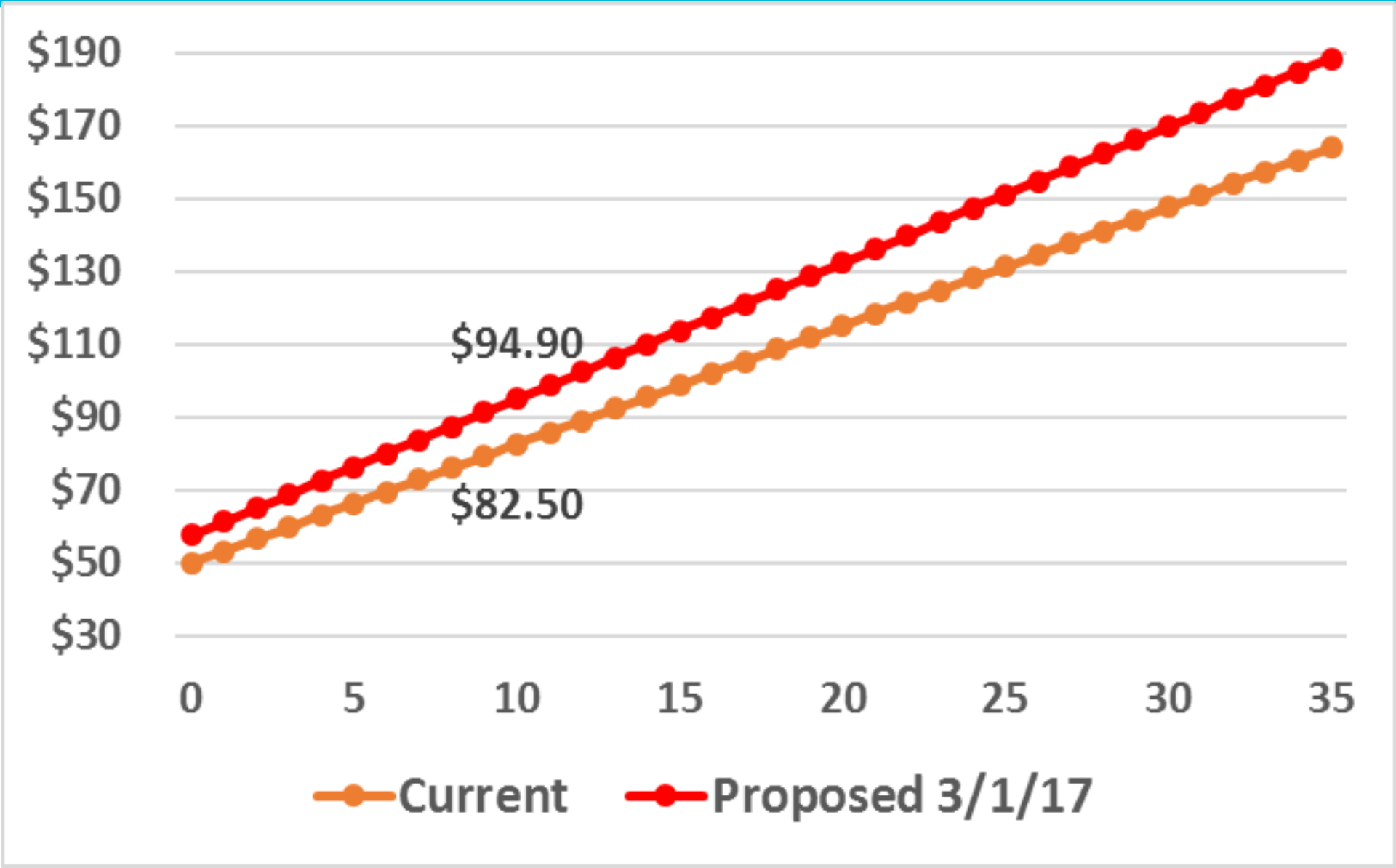
Proposed Wastewater Rates March 1, 2017

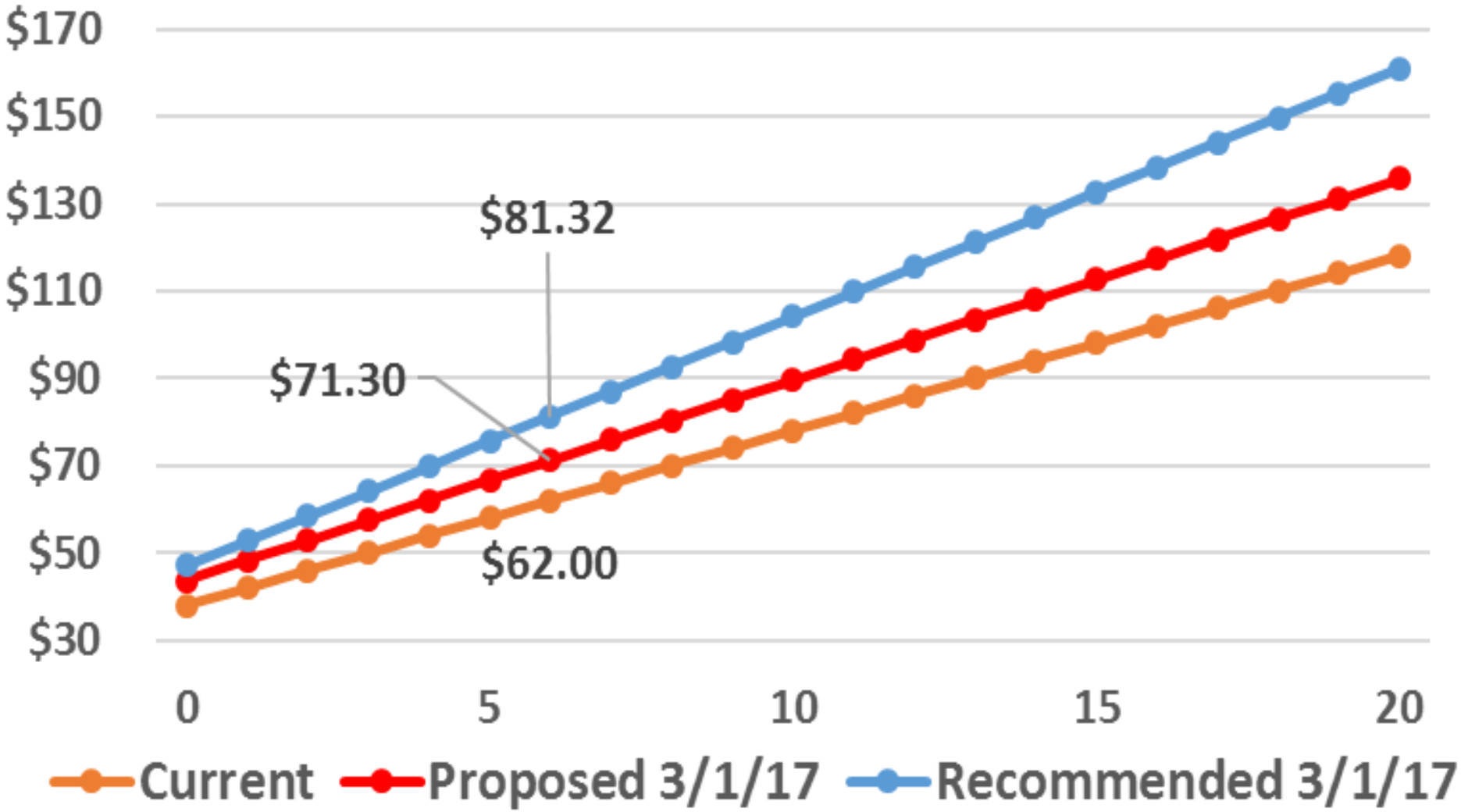
Description	Current	3/1/17	Increase - $	Increase - %
Bi-Monthly Base Charge (1) (2)	$38.00	$43.70	$5.70	15%
Volume Charge per 1,000 gallons (1)				
Normal Strength Residential / Commercial (1) (3)	$4.00	$4.60	$0.60	15%
Commercial – High Strength (1) (3)	13.00	14.95	1.95	15%

(1) Actual water use during Nov – Apr. May through Oct. water use based on lessor of actual water use or average of Nov – Apr period use.
(2) Sewer base for commercial low strength is $48.00 and high strength of $58.00 bi-monthly. Low strength defined as less than 180 milligrams per liter for BOD and TSS.
(3) Same rate applies to normal strength as well as Chicago Creek Sanitation District sewer discharges.

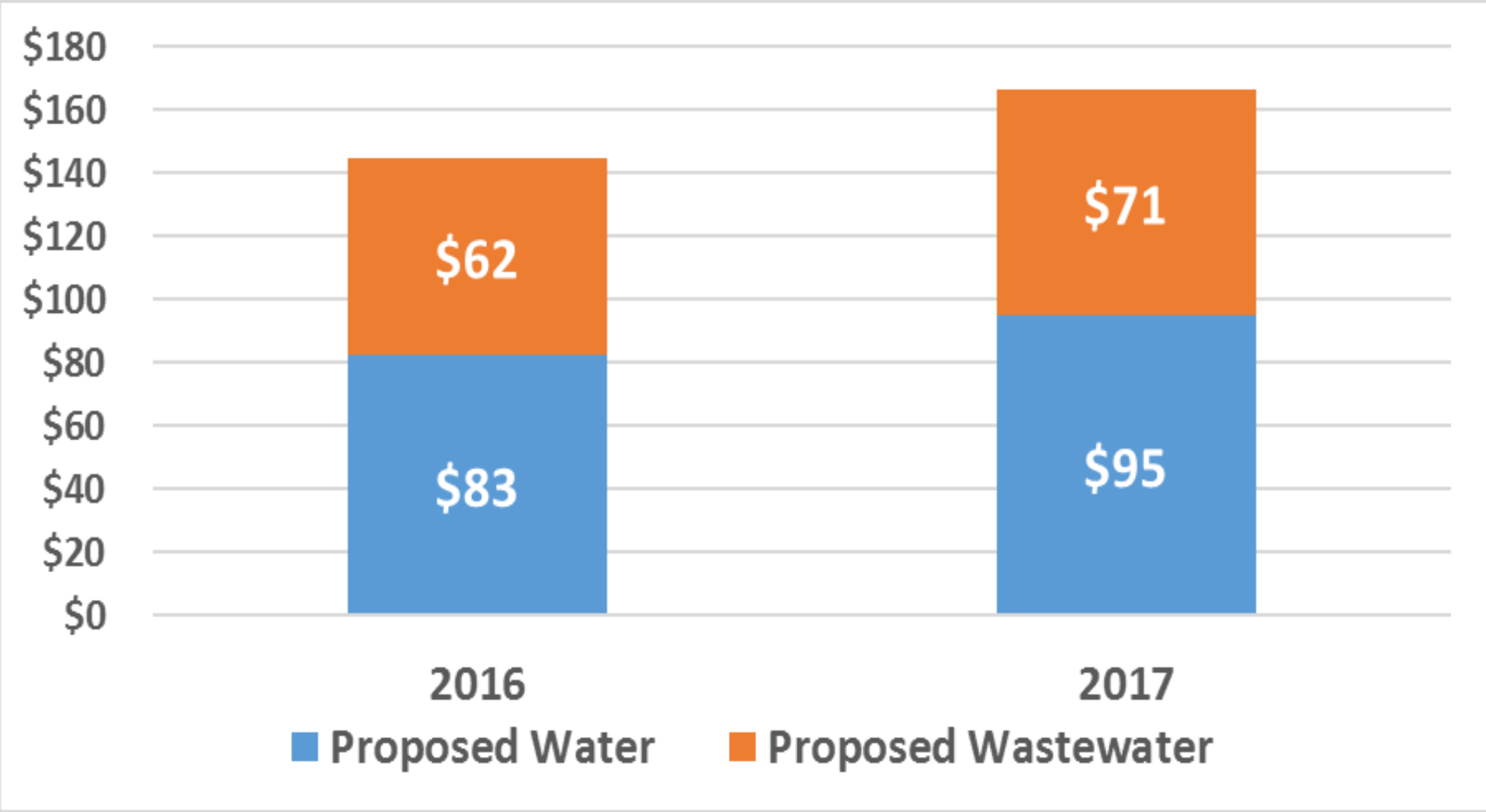
Bi-Monthly Water Bill – 0 to 35,000 Gallons



Bi-Monthly Sewer Bill – 0 to 20,000 Gallons



Typical Bi-Monthly Water and Wastewater Bill (1)



(1) One single-family residential customer using 10,000 gallons of water and 6,000 gallons of wastewater bi-monthly.

2017 Steps

- Implement proposed tap fees and rates effective March 1, 2017
- Pursue I/I mitigation efforts to reduce need to treat storm flows at WWTP
- Refine WWTP O&M in light of new facilities to minimize cost increases
- Continue to refine capital plan to mitigate size of projects and/or defer when prudent
- Pursue debt and grants to mitigate overall size of the increases
- Evaluate customer class cost of service and rate structure prior to rate adjustments for 2018

Q&A

ADDITIONAL SLIDES

Tap Fee Calculation – Proposed Fees

- Value of existing assets as of 12/31/15
  - Replacement cost of assets to index assets to today's cost
  - Excludes estimate for small water distribution mains and collection system
- Capacity to serve current and future EQRs
  - Peak day water treatment capacity and peak day demand
  - Sewer capacity and peak day sewer discharges
- Results in fee per ¾-inch water meter
  - Fees by meter size increased using same schedule

Tap Fee Calculation Approaches

Buy-in

- Backward-looking
- Available capacity to serve new development
- Unit cost of capacity for new development

Incremental

- Forward-looking
- Future facilities that add capacity for new development
- Unit cost of capacity for new development

Hybrid

- Backward and forward-looking
- Current and future facilities
- Unit cost of capacity for new development

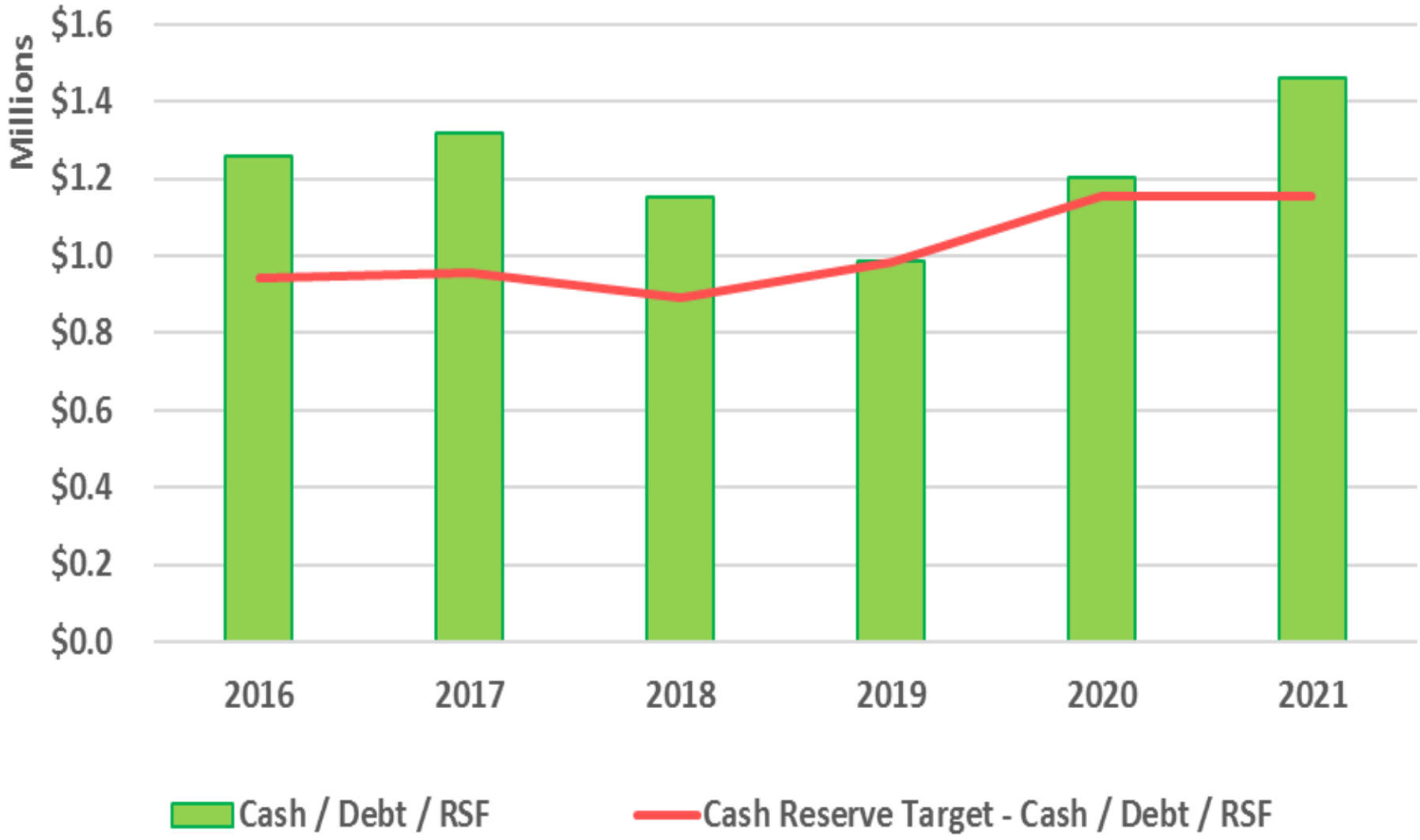
Financial Plan Represents Big Picture

- Identifies amount recovered through user charges
- Financial policies, objectives and constraints defined early
- Multi-year costs and requirements
  - Operation and maintenance (O&M) expenses, debt service, capital requirements, other uses and fund balance
  - Capital funding sources
- Additional factors
  - Customer growth
  - Service demands (customers, usage and development density)
  - Inflation and incremental operational costs
  - Financial performance requirements and reserves

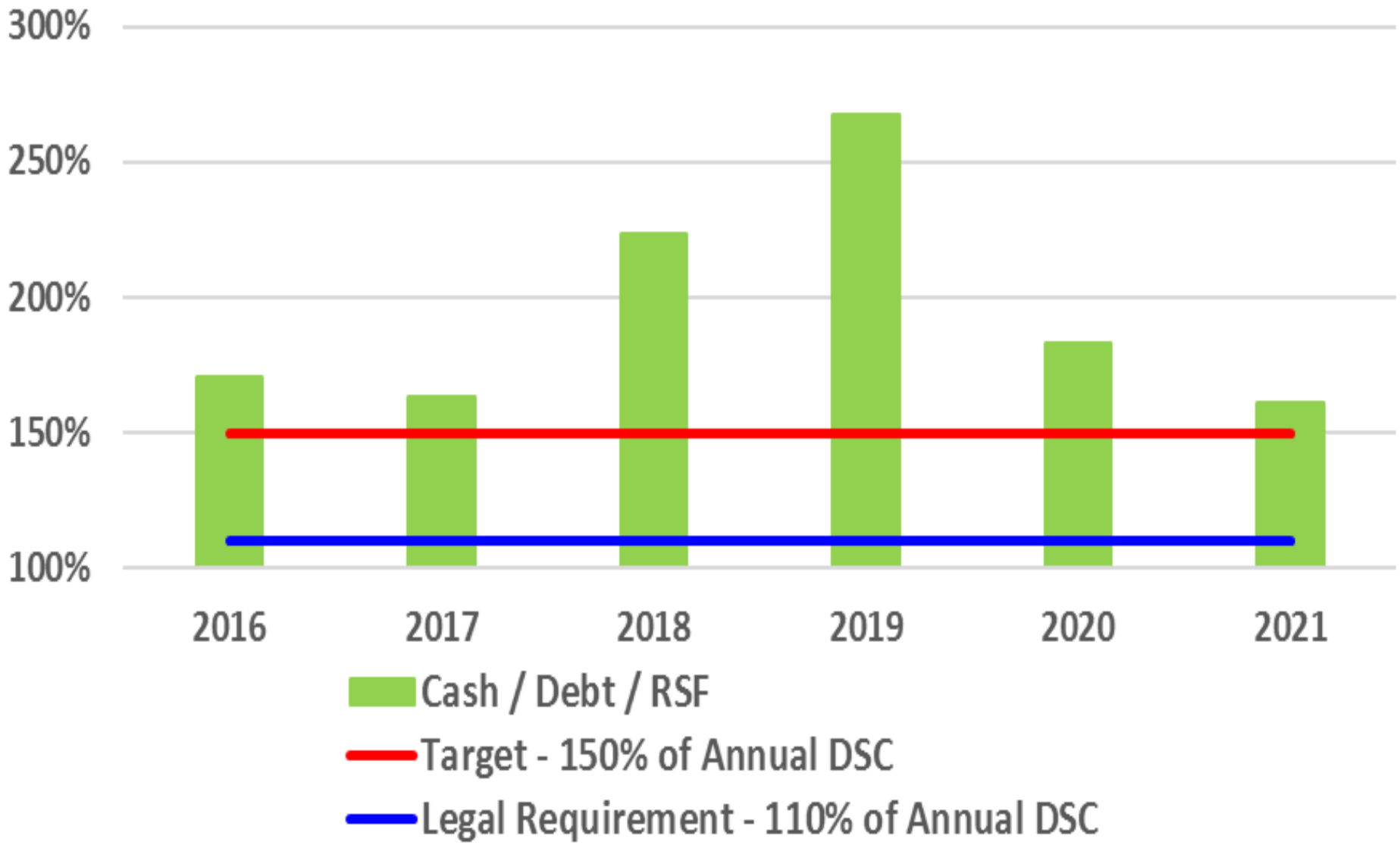
Rate Stabilization Fund Reserve

- Separate reserve documented as part of outstanding loans
- Provides a mechanism for the City to fund this reserve in years where water and sewer volume sales are above average (e.g., "dry year")
  - Transfers **TO are** ex**cluded** from the current year debt service coverage test
  - Transfers **FROM is included** in the current year debt service coverage test
- Very sophisticated and useful tool
- Used in 2015 to achieve **legal** debt service coverage
- Amount set aside is $577,621 at the end of 2015
  - Also includes $110,000 related to the operating reserve (25% of O&M)
- $377,000 could be used to reduce cash requirements
  - Increases risk if debt service coverage is not met by revenues
  - Recommend "releasing" $377,000 leaving $200,000 available

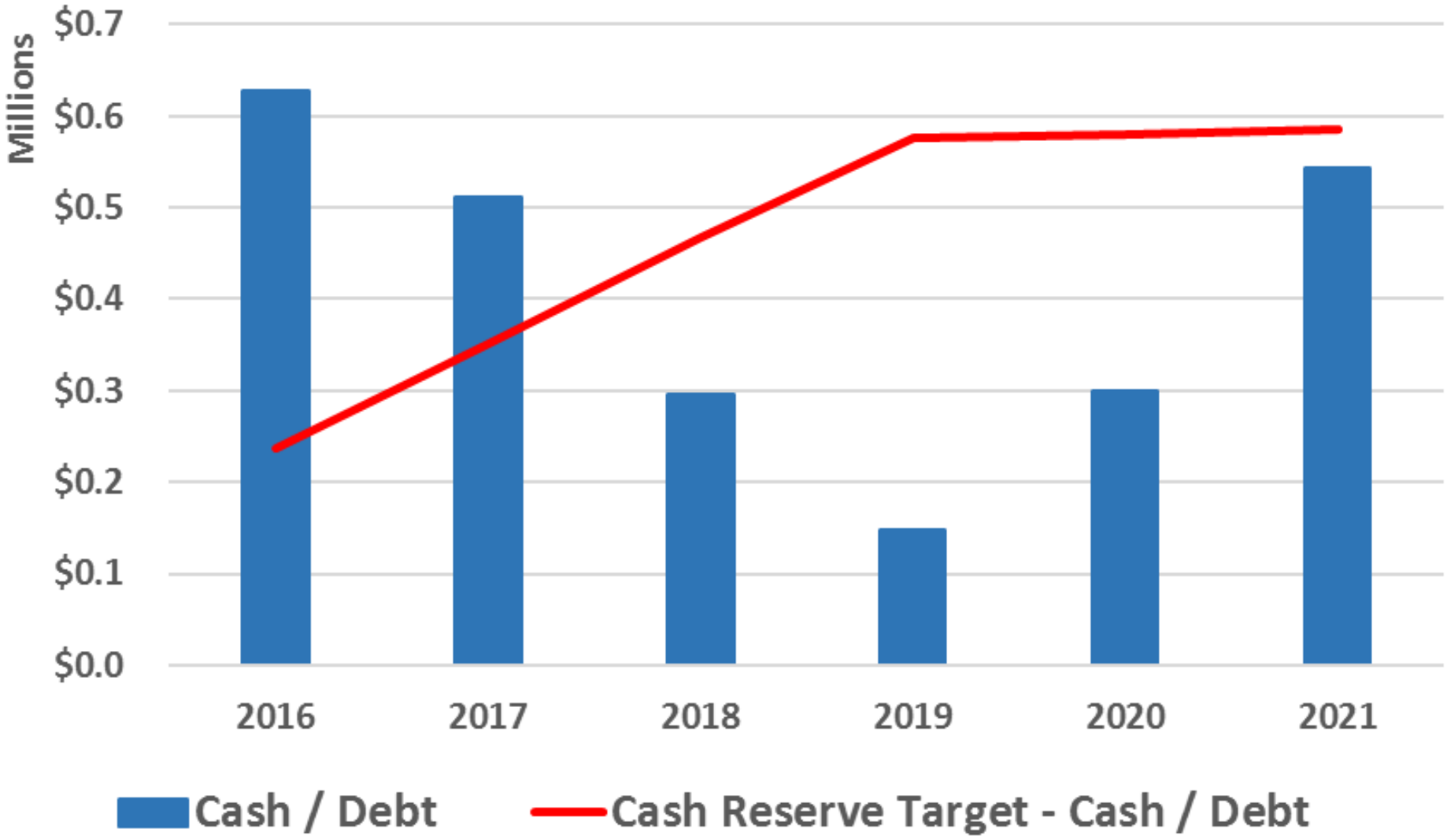
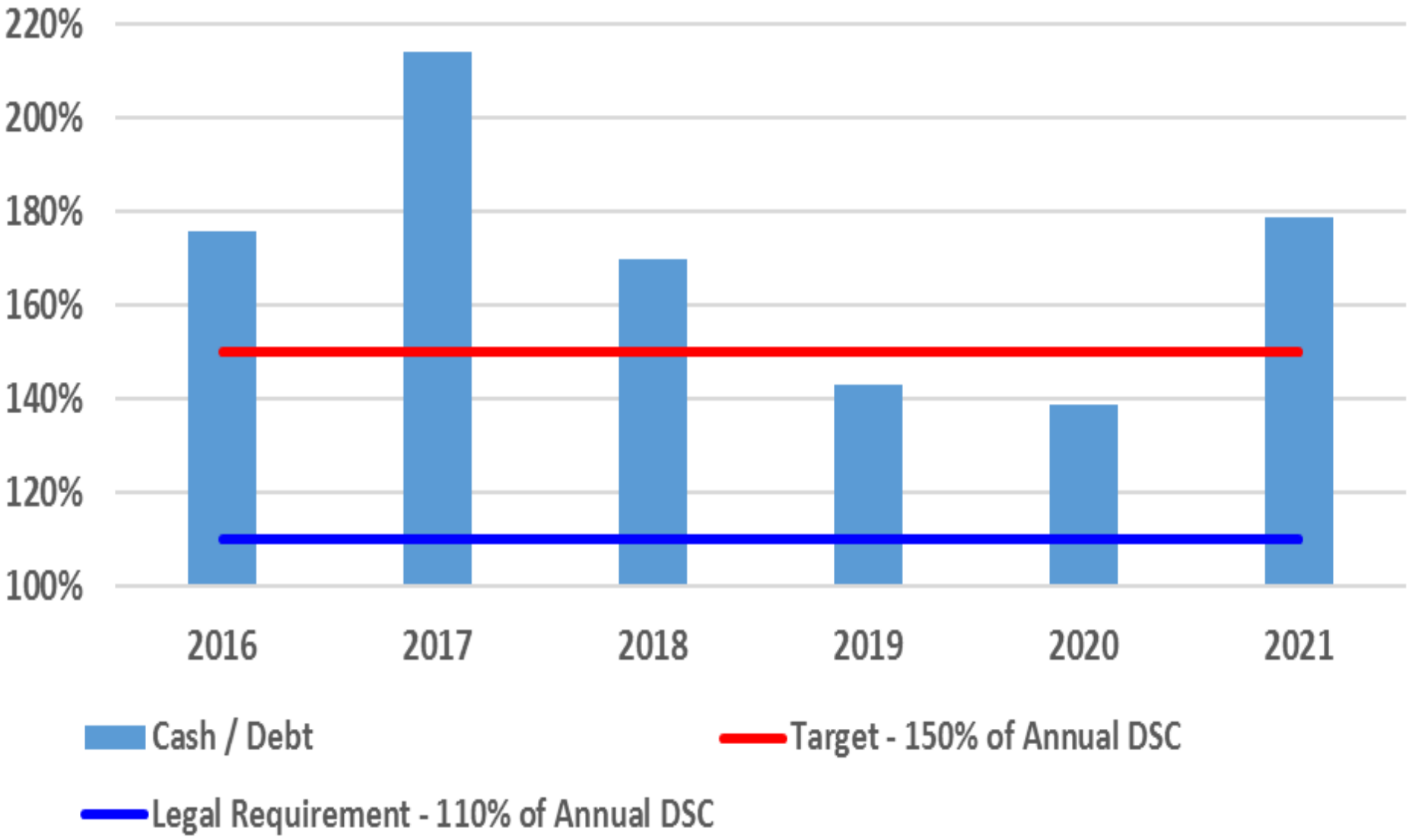
Total Water Fund Cash and Reserves



Water Fund Results – DSC Ratio



Total Wastewater Fund Cash and Reserves



Wastewater Fund Results – DSC Ratio