Utility Rate Study Development Fundamentals: A Spotlight on Future Capital Funding Strategies

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What is a rate study?

Why are rate studies important?

Setting the framework with financial policies

Building the revenue requirement

Communication with elected officials

Public outreach and involvement

Example #1: Benefits of securing low interest funding

Example #2: Proactive monitoring to plan for changes in need

What is a Rate Study? Why Is It Important?

Your Utility Is An Enterprise

- Revenues need to cover utility costs
- Quantifies policies, priorities and initiatives
- Tells the “true” cost of providing utility service

Public Accountability

- Communicates impact of financial decisions
- Provides a routine “check up” for the utilities
- Brings the findings to a public audience

Common Components of a Rate Study

- **Revenue Requirement**

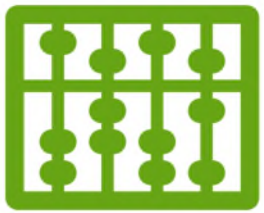
  What revenue adjustments are needed to cover each utility's costs?

- **Cost of Service Analysis**

  Do the utility's rates recover costs equitably from customers?

- **Rate Design**

  How can rates customer pay complement the utility's objectives?

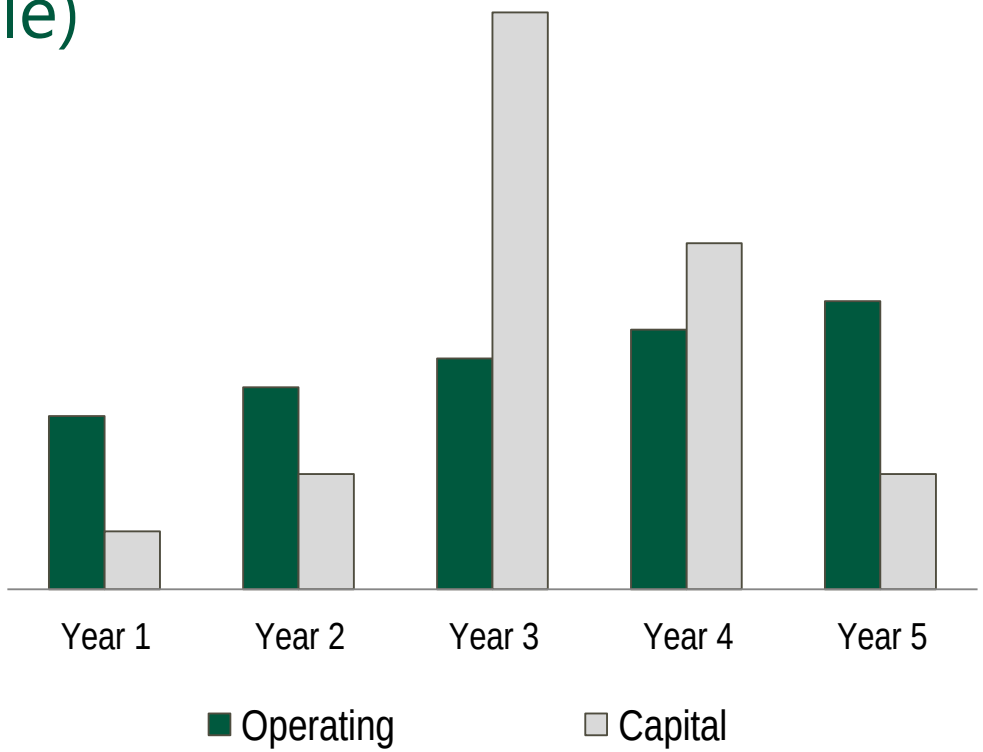


Introduction to Utility Rate Making

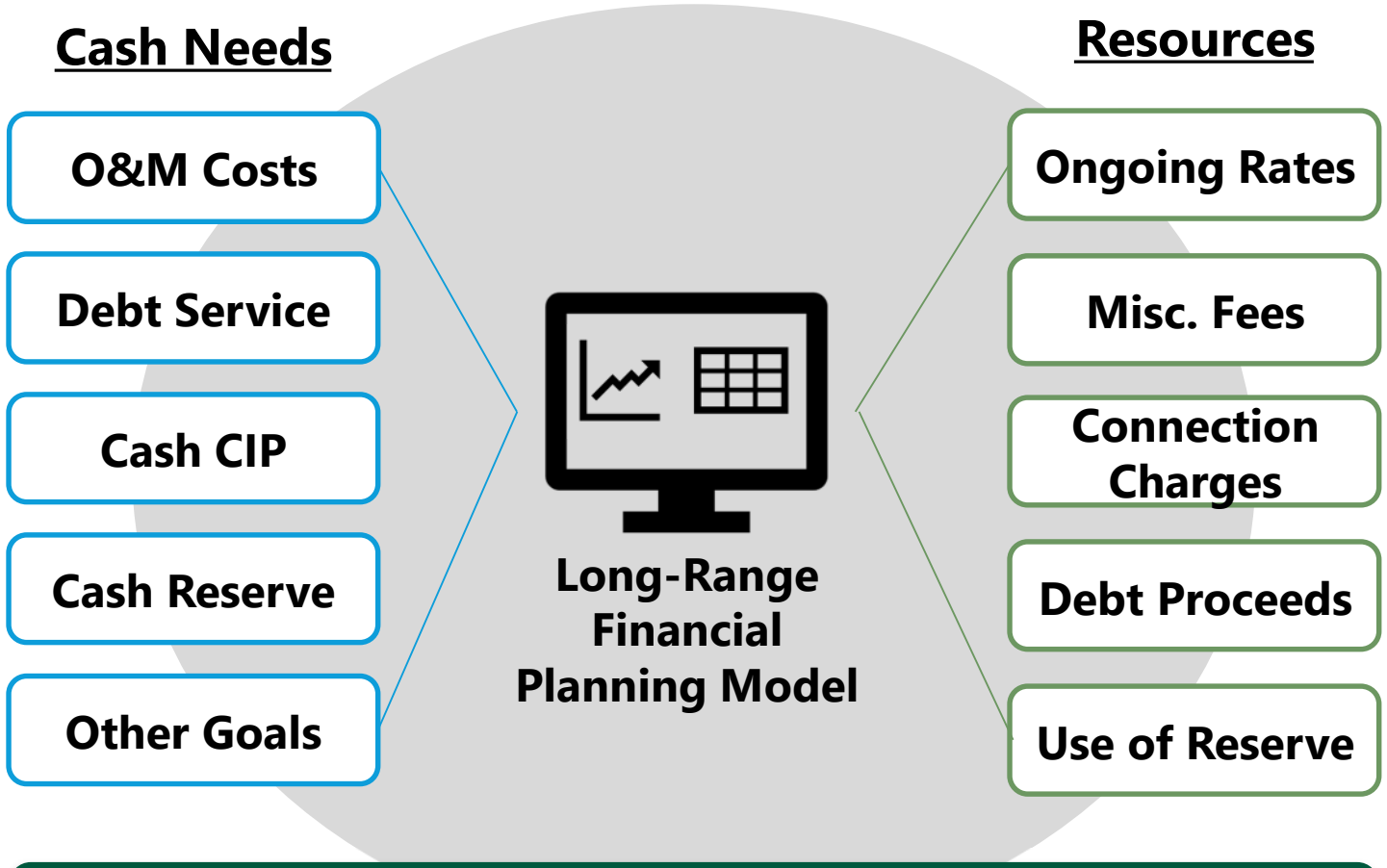
- Utility rates are set to recover the cost of providing services

- Operating costs (ongoing and predictable)
  - » Employee salaries and benefits
  - » Routine inspections and maintenance
  - » Professional services
  - » Utilities
  - » Taxes

- Capital costs (periodic ever changing)
  - » Infrastructure replacement
  - » Facility expansions and upgrades



Rate Studies Bring Together All Components



Provides a long-term rate and financing plan to support the operations and capital needs of the utility

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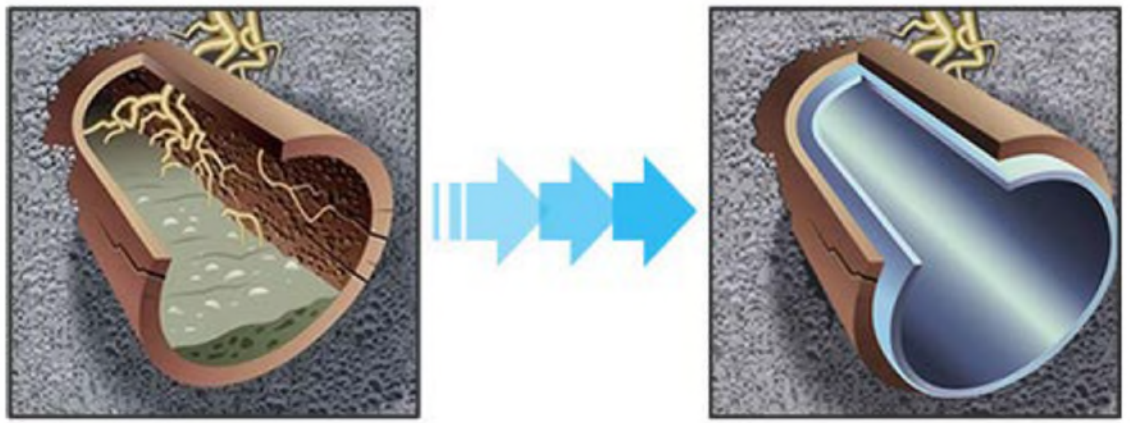
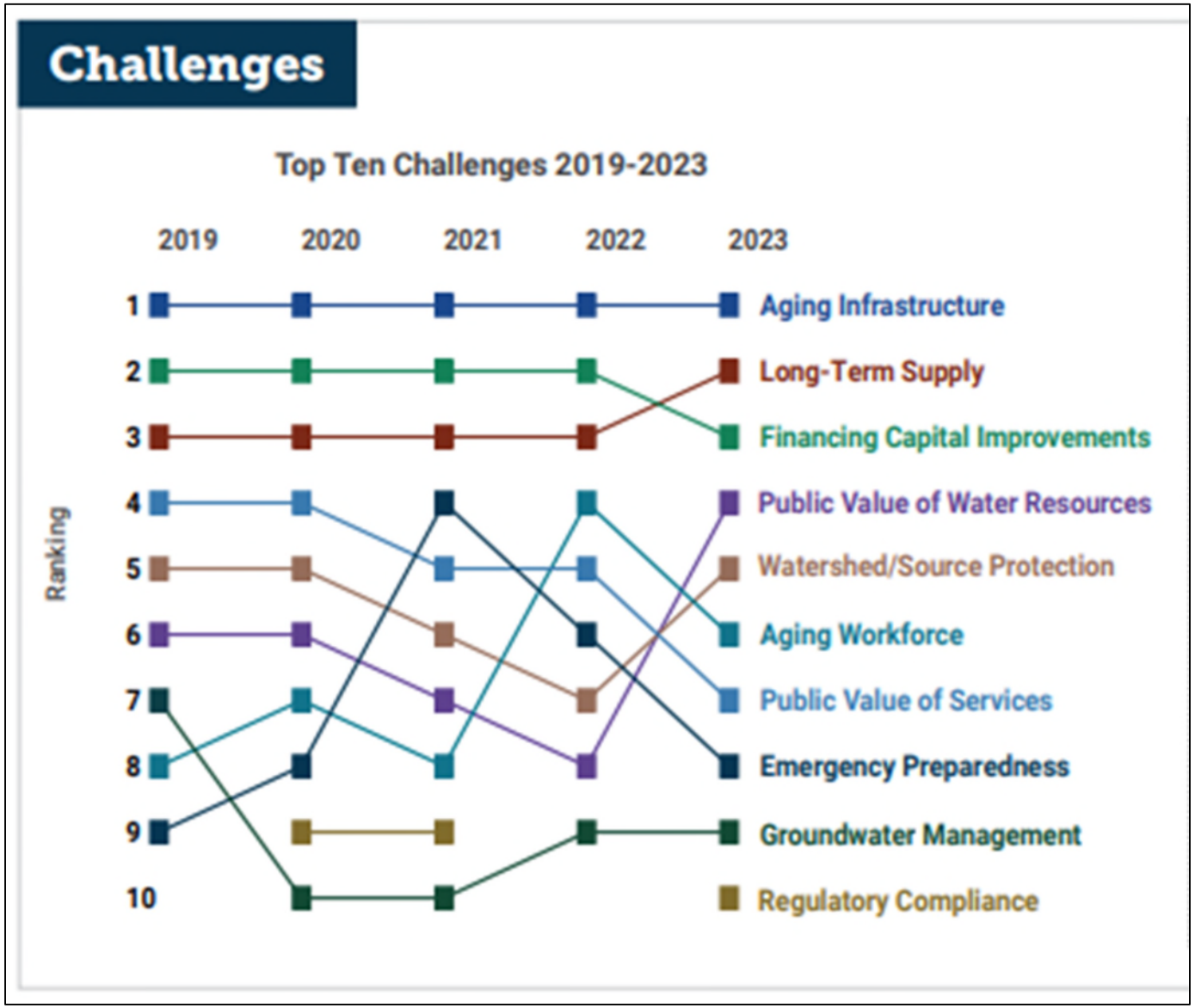
Utilities Are Capital Intensive

- Utilities must build, maintain, and replace infrastructure

- Long lived assets require long-term management
  - » Operational management: Condition assessments & maintenance
  - » Financial management: Saving money for repair and replacement



Repair and Replacement is Top of Mind



- American Water Works Association (AWWA) 2023 State of the Water Industry Report
- **Aging infrastructure** and **financing capital improvements** consistently rank in the ***top 3*** of challenges facing water utilities
- Similar trends in other utility sectors

Increasing Need for Replacement Funding Planning

- Costs are increasing
  - » Increasing maintenance cost as assets age
  - » Replacement cost exceed original cost

- Strain on existing revenue sources
  - » Operating costs increasing
  - » Additional regulatory burdens
  - » Little to no revenue “left over” after paying for O&M, debt service
  - » Reserves being drawn down for operating deficit

Proactive Capital Funding Plan Needed

- Rate Funded Capital Policy – what is it?
  - » An annual cash contribution from current rate revenue
  - » Pays for same-year repair & replacement projects; or
  - » Saved for future capital projects

- Policy Targets – how much do we need?
  - » Original or replacement cost annual depreciation
  - » Average annual repair & replacement projects
  - » Asset management plan

Build 'Rate Funded Capital' into annual revenue needs

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Financial Policies

- Help weather financial risk and disruptions
- Make consistent financial and rate decisions
- Can help stabilize rates over time
- Implement immediately or phase in?

Example Financial Policies

Policy	Purpose	Policy Target
Operating Reserve	Accommodate variations in revenue & expenses	Water = 90 days O&M Sewer = 45-90 days O&M Storm = 30 days O&M
Capital Reserve	Emergency repairs, unanticipated capital, & project cost overruns	1-2% of capital assets; or Critical asset reserve; or Set dollar amount indexed annually
Rate Funded Capital ★	Annual rate funded capital mechanism	Annual depreciation; Average R&R capital spending
Debt Service Coverage	Compliance with existing debt covenants; Maintain credit worthiness for future debt needs	Target 2.0 or higher; Minimum 1.25
Utility Management	Routinely check in on the financial performance of the utility	Revisit fiscal policies Track actual performance vs forecast Adopt multi-year plans if possible

Operating Reserve Example

- Target typically equals a “number of days”
- For example: 30, 45, 60, 90, or 120 days
- Higher target for utilities with more volatile revenues or lower frequency of billing

$$\frac{\text{Total Annual Operating Expenses}}{\text{365 Days Per Year}} = \text{\$ per day} \times \begin{cases} \text{30 days} \\ \text{45 days} \\ \text{60 days} \\ \text{90 days} \\ \text{120 days} \end{cases} = \text{Total Operating Reserve Target}$$

Capital Reserve Examples

- Percentage of in-service assets
  - 1-2% is a starting point but not extensive to cover large system failures
  - Grew as capital projects were completed
  - Harder to track with more utilities moving to a cash basis

- Cost tied to critical asset cost
  - Goal is an amount that could replace a major repair
  - Typically a higher target, requires some build up of funds

- Set dollar amount, inflated annually
  - Idea is to mimic the growing nature of a percentage of assets
  - Allows for a more knowledgeable number as a starting basis

Rate Funded Capital Introduction

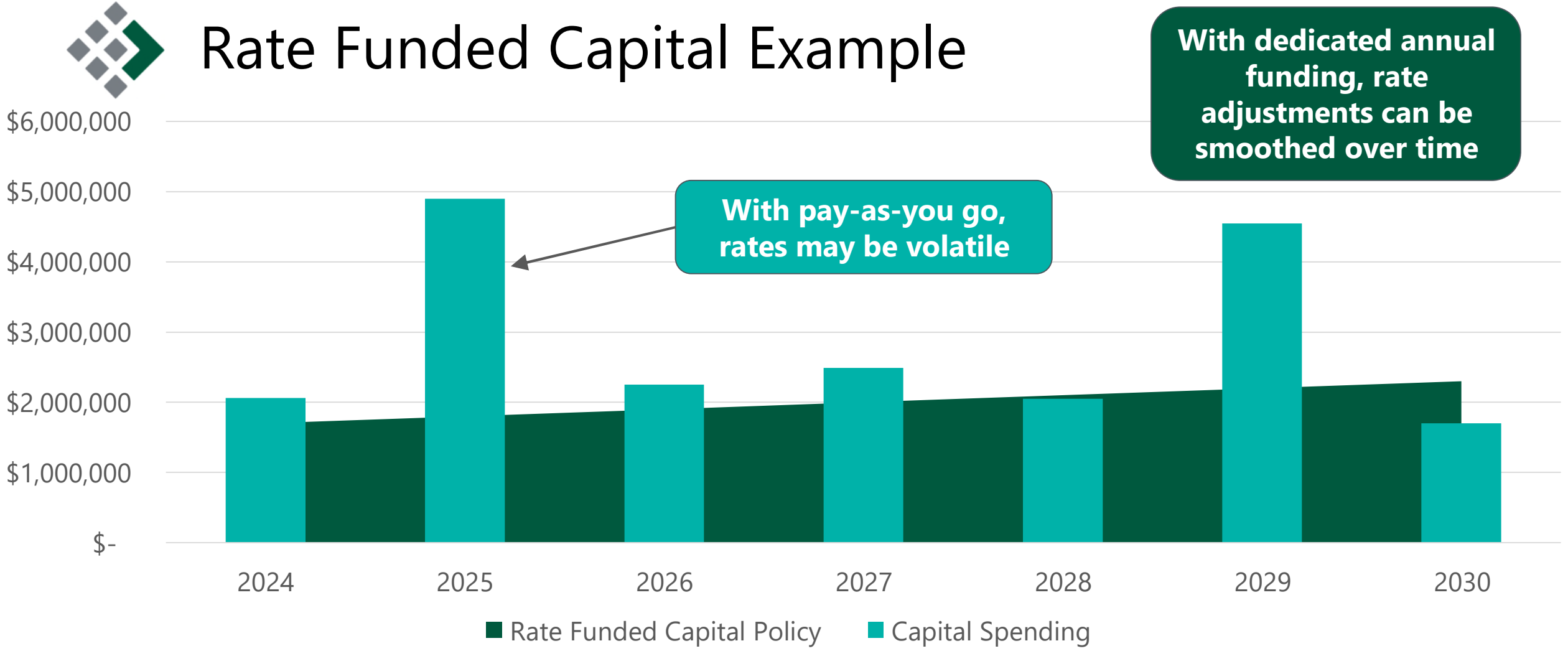
Purpose

- Annual cash contribution from rate revenue
- System integrity through reinvestment
- Charge customers in relation to facility useful lives; maintain rate stability

Example targets

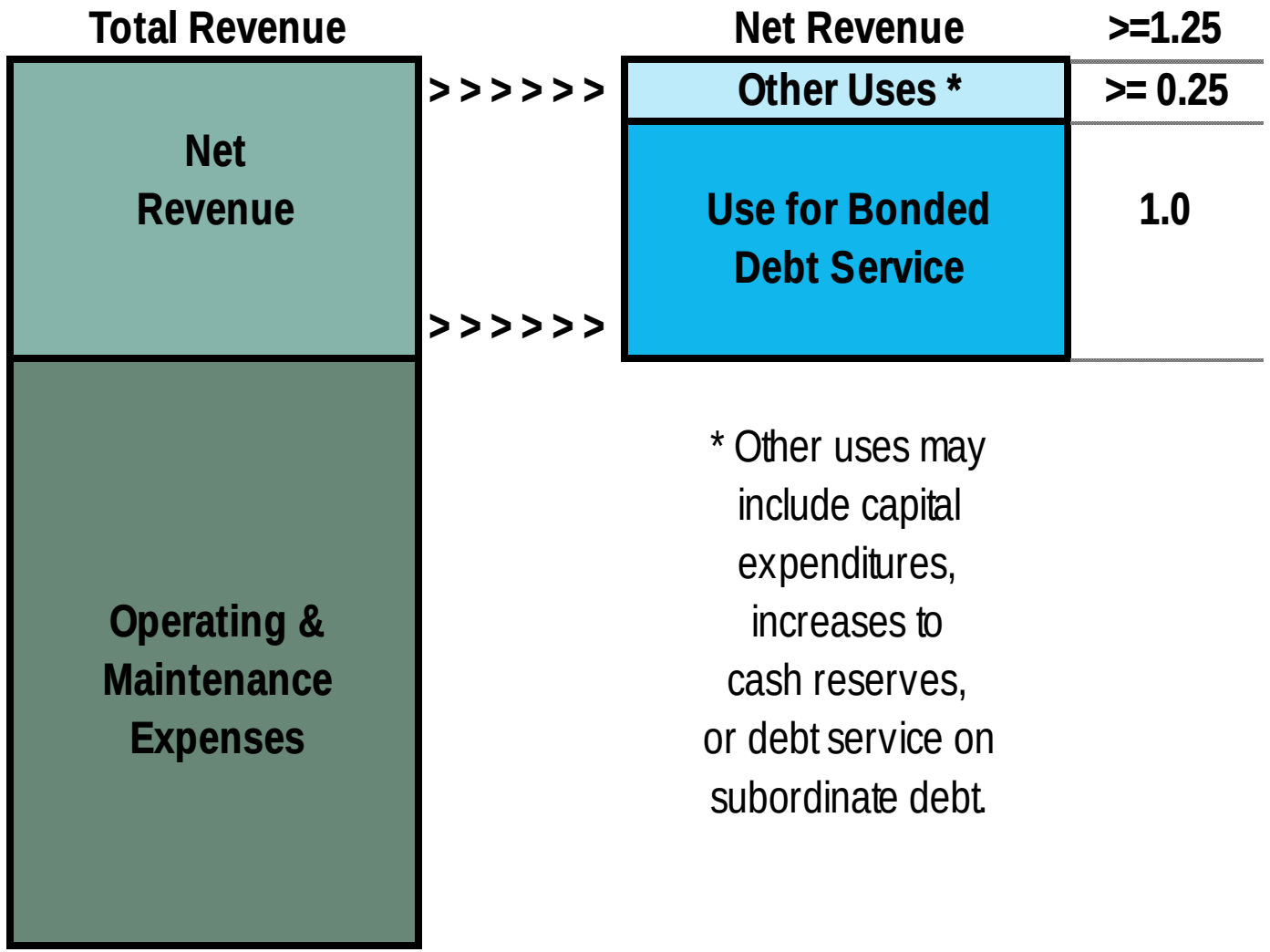
- Original cost depreciation (minimum)
- Consider replacement cost depreciation
- Annual repair & replacement capital

Rate Funded Capital Example



- Builds in a predictable amount of funding for a varying annual capital need

Debt Service Coverage Example



* Other uses may include capital expenditures, increases to cash reserves, or debt service on subordinate debt.

Debt Service Coverage Considerations

Revenue bonds	• Coverage typically a requirement
State loans	• Coverage not typically a requirement • Usually still tested for internal metrics
Exceed Minimum	• Exceeding minimum is good signal • May result in more favorable debt terms
Stand Alone Utilities	• Good practice to consider each utility stand-alone unit even if 'cross-pledged'

Utility Management Questions

- Do our adopted fiscal policies still make sense?

- When setting rates, how can we get the most out of the process?
  - » Do the decision makers feel comfortable adopting the entire rate plan?
  - » Is it more digestible to review annually with the budget cycle?

- How are we performing against the forecast?
  - » Is it time for a rates refresh?

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General Approach for Rate Setting

- What are the current operating obligations to the utility?
  - How can we best forecast these into future years?
  - Are there any changes that we should be mindful of?

- How should the utility approach funding capital needs?
  - Are there any secured funding sources?
  - How do we strike a balance between rate increases and debt issuances?

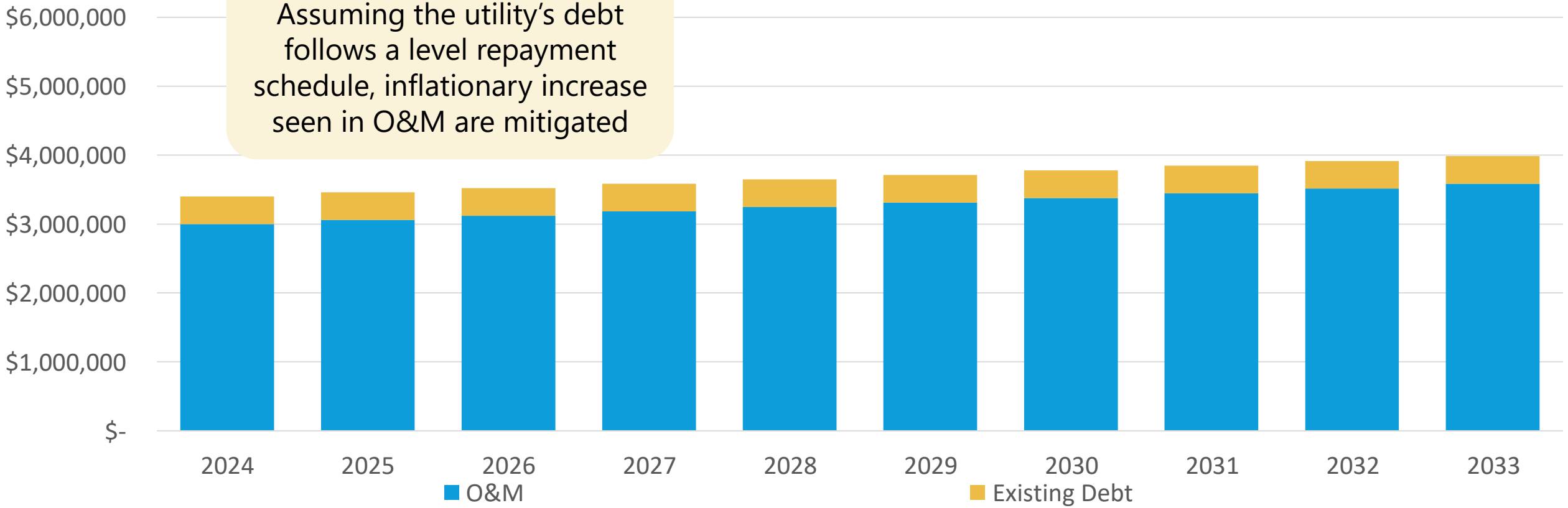
- After evaluating both components, what is the overall rate plan?

Step 1: Forecast Operating Costs

- Utility's most recent budget generally serves as a general foundation
- Items to consider:
  - » Are there any one-time items within the current budget
  - » What inflation factors do we use comfortable using to forecast the future
  - » Are we looking to add any operating costs over the period?

Step 2: Add Existing Debt Obligations

Assuming the utility's debt follows a level repayment schedule, inflationary increase seen in O&M are mitigated

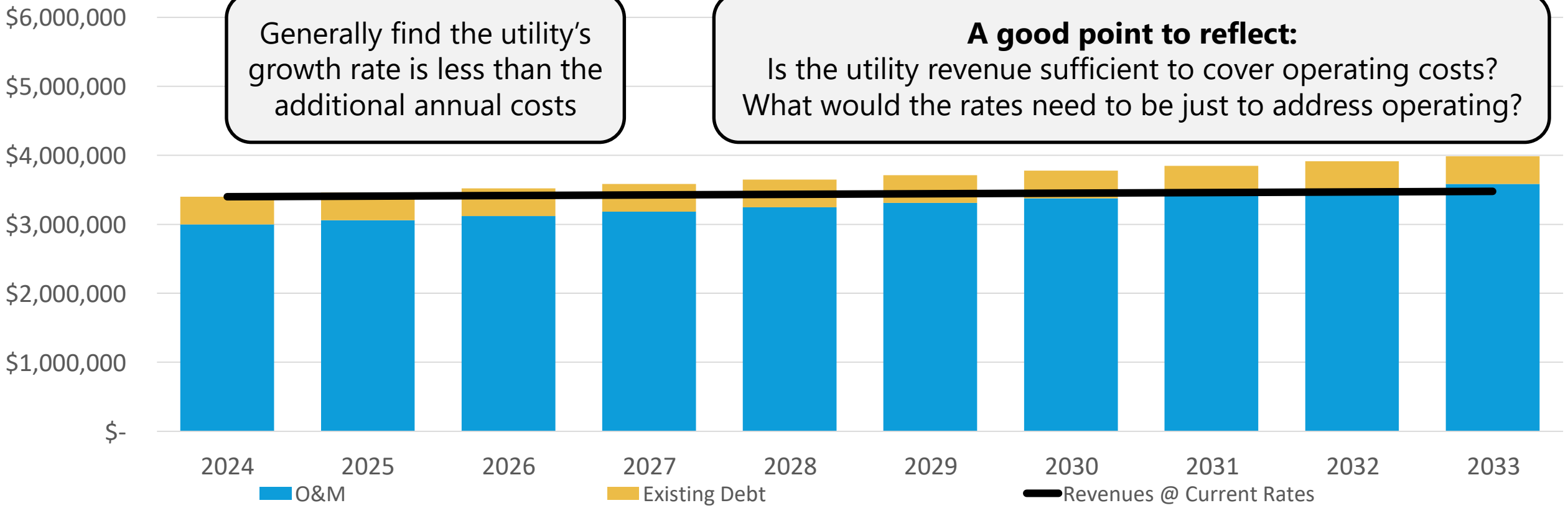


- How does the utility's current debt obligations change over the forecast
- Items to consider:
  - What types of loans does the utility have? Are there coverage requirements?
  - If a loan is completely repaid, how does that help the forecast?

Step 3: Compare Against Revenues at Current Rates

Generally find the utility's growth rate is less than the additional annual costs

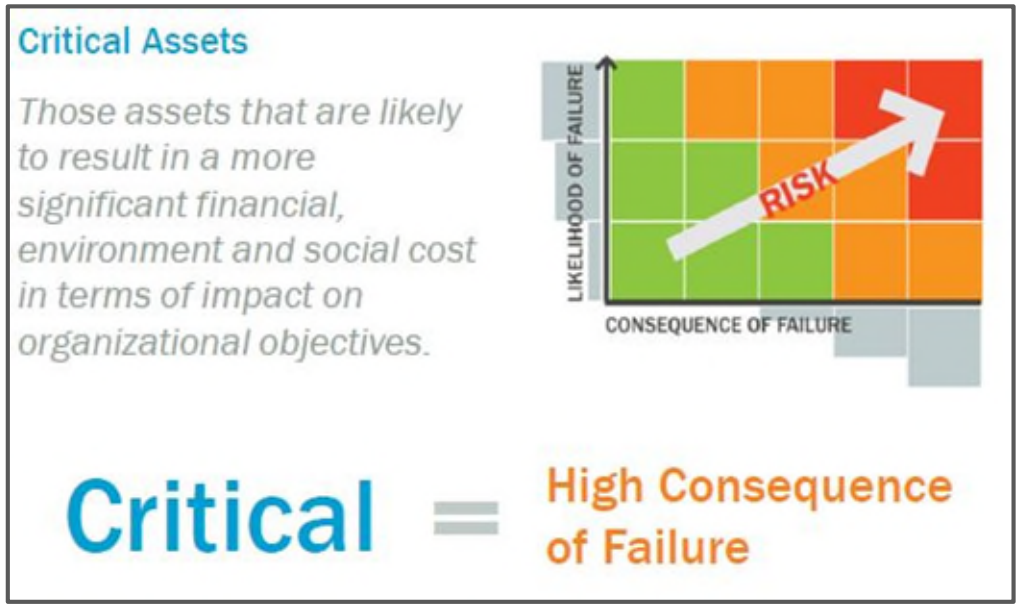
A good point to reflect:
Is the utility revenue sufficient to cover operating costs? What would the rates need to be just to address operating?



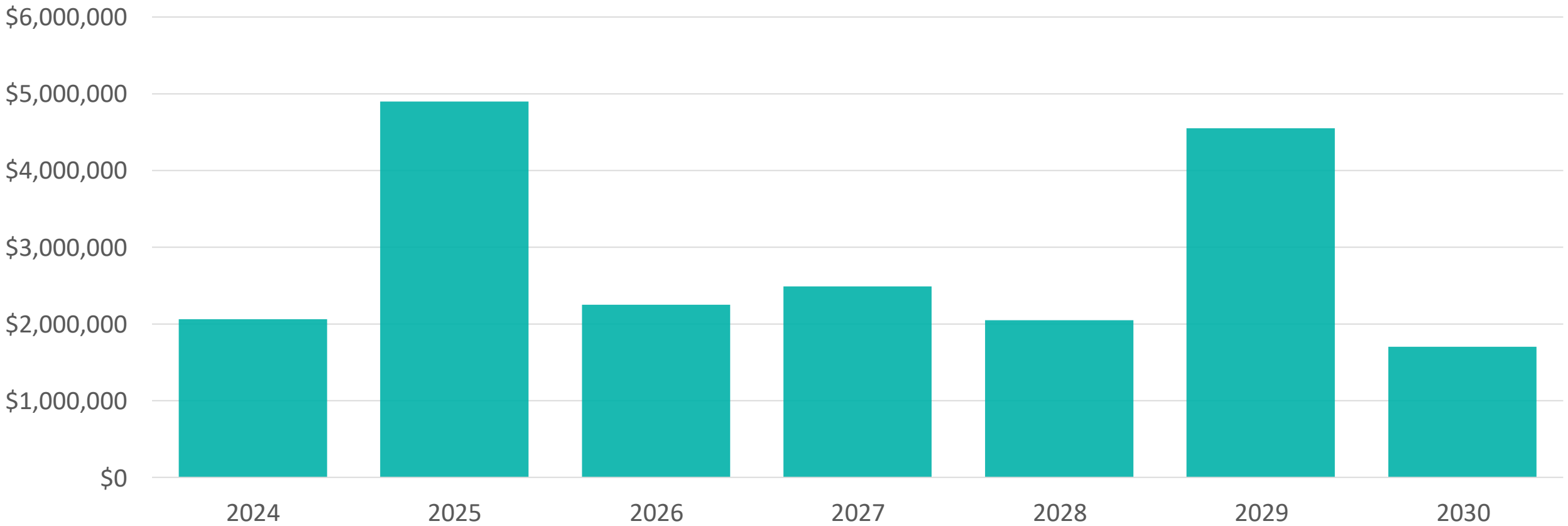
- How does the utility perform against just the current operating forecast?
- Items to consider:
  - » What level of new customer growth could be relied on for the forecast?
  - » Are there any new large customers connecting to the utility?
  - » Are there any large customers leaving the service area?

Step 4: Forecasting Capital Costs

- Does the utility have a capital planning document?
  - » Have the utility needs changed?
- Capital program should identify
  - » Timing: Year(s) of construction?
  - » Cost: Are estimates already escalated?
- Tackle high-priority capital projects first



Step 4: Forecasting Capital Costs

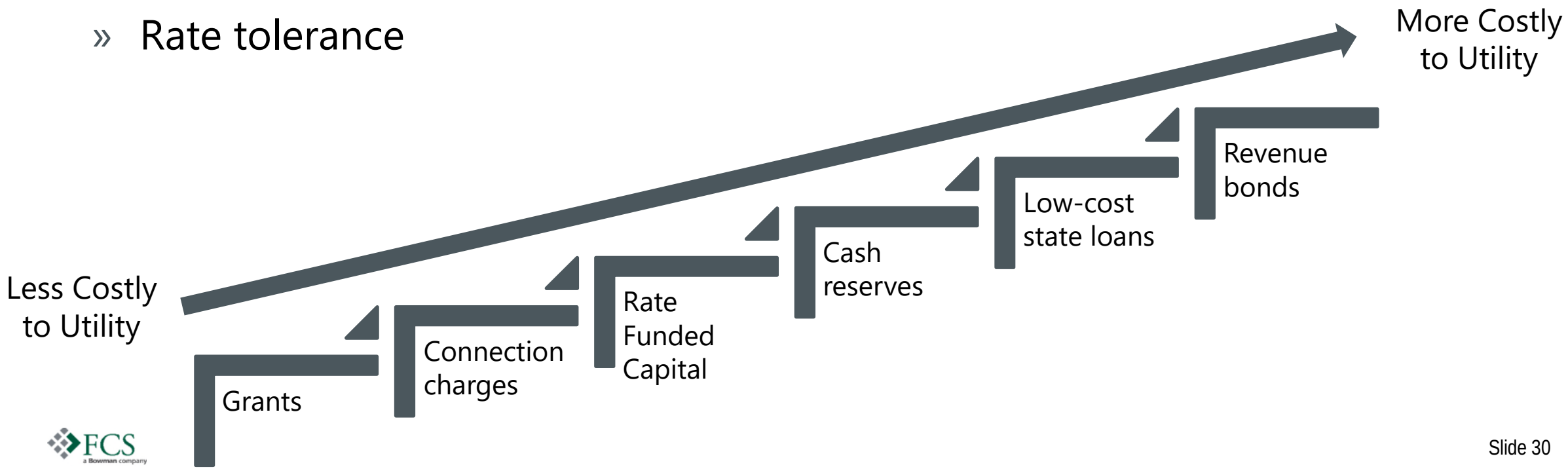


- How does the annual capital funding plan look year to year?
- Are there immediate projects that need to be done?
- Are there projects that we should start planning for now?

Step 5: Develop a Capital Funding Strategy

- Often the most flexible component of a rate study

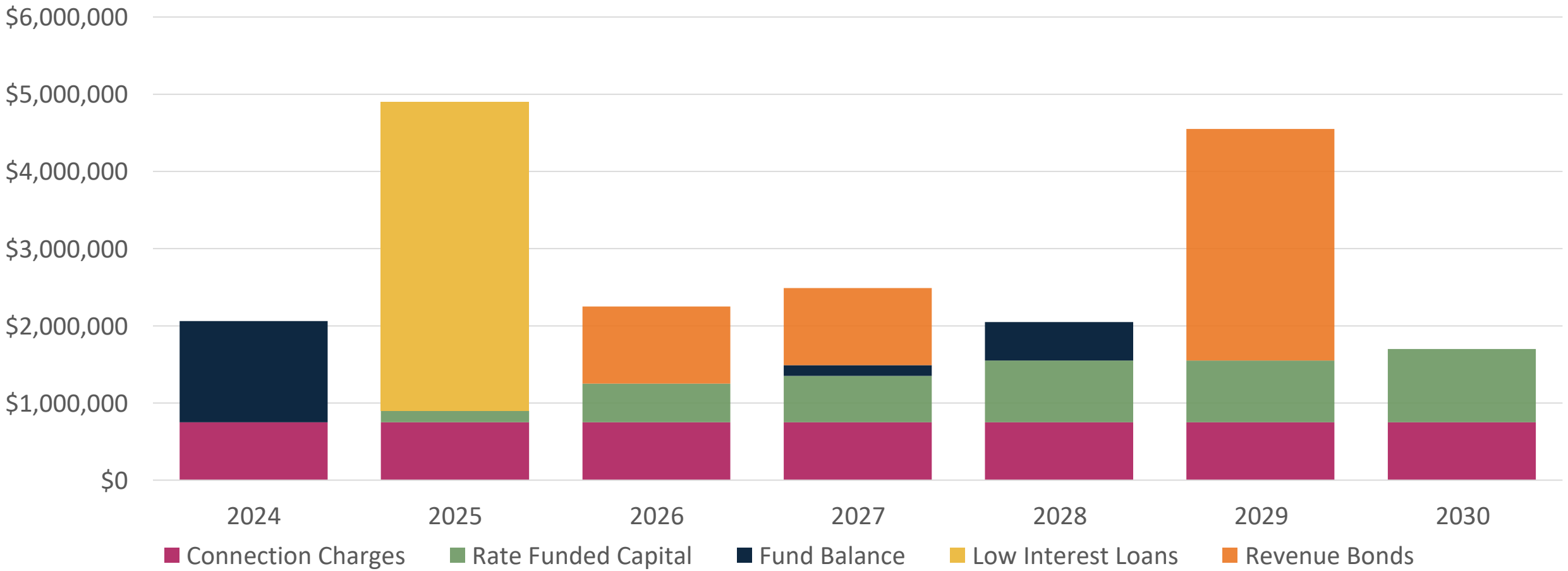
- Contained by two bounds
  - » Ability to repay debt
  - » Rate tolerance



Step 5: Develop a Capital Funding Strategy

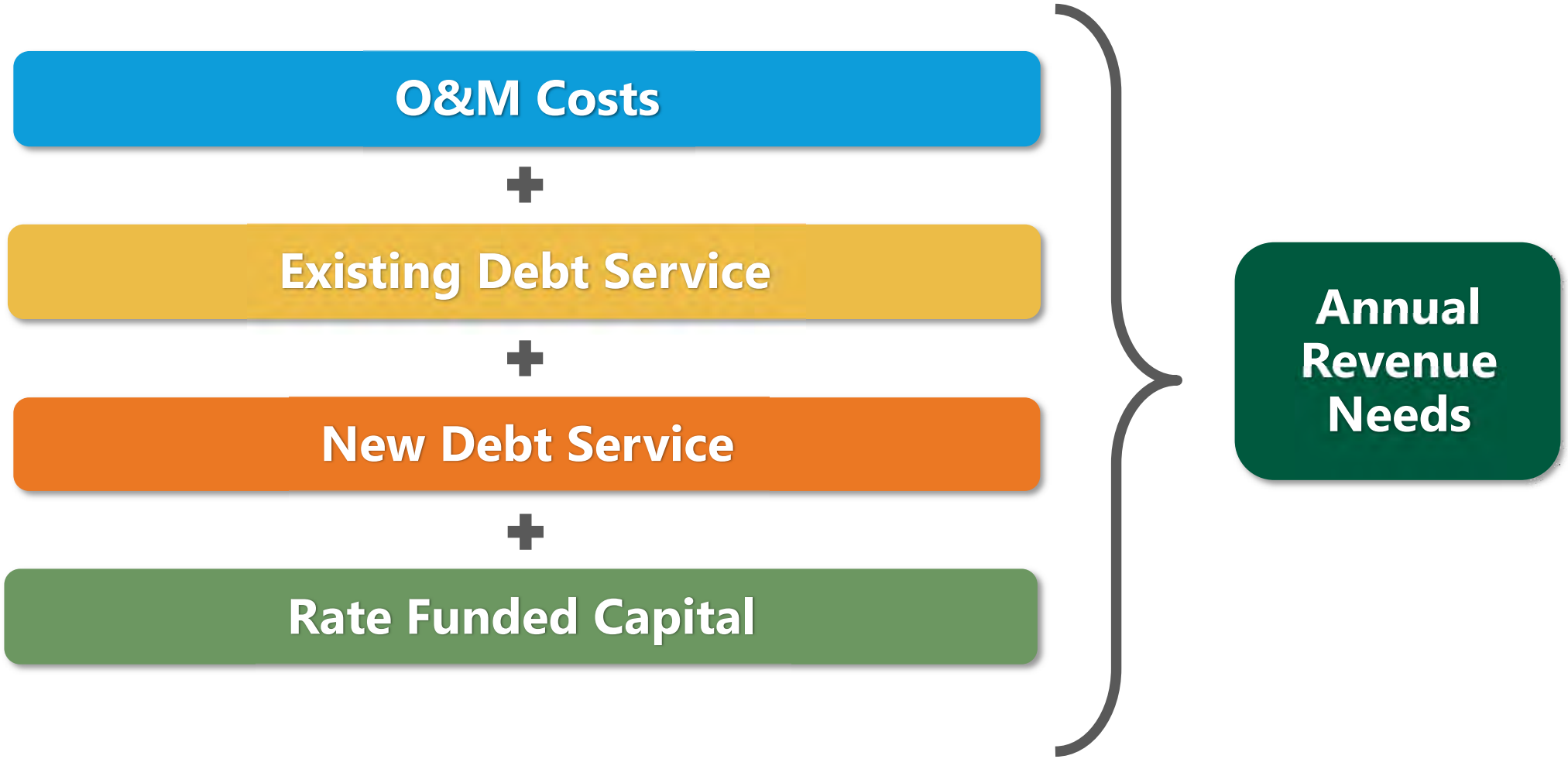
Debt Financing	• Lowest near-term rates • Spreads cost between existing / future customers
Hybrid	• Cash fund repair and replacement projects • Debt fund large expansion projects
Cash (pay-as-you-go)	• Higher near-term rates • Existing customers pay 100% of costs

Step 5: Develop a Capital Funding Strategy

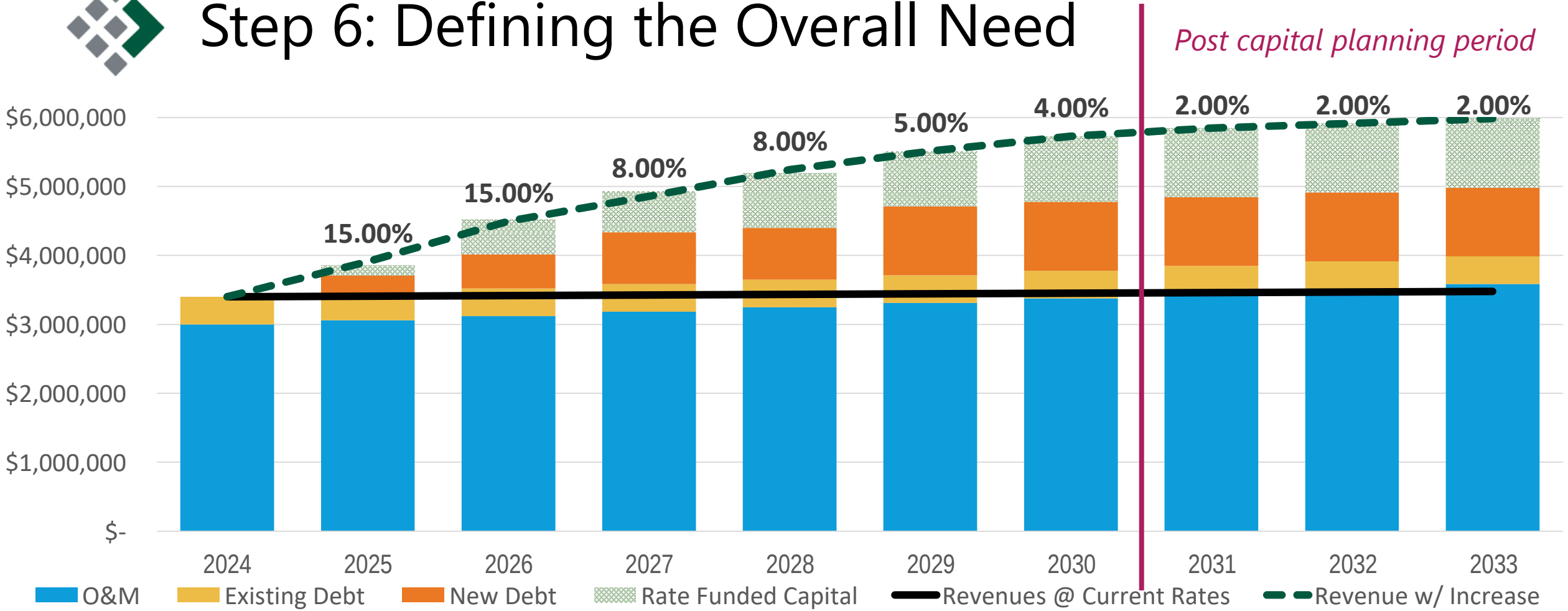


- How can we use the capital funding available to address our needs
- If we are looking at loans, are there specific project to target for low interest loans?
- If we do have to assume revenue bonds, can we combine issuances?

Step 6: Defining the Overall Need



Step 6: Defining the Overall Need



- Example of overall achievement through the hypothetical plan:
  - » $20m in capital projects executed within 7 years
  - » Move from no rate funded capital to $1m annually by 2030
  - » Provide guidance for decisions makes through end of capital plan (2030)

Indexed Rates

- If last rate study's forecast is 'expired' consider increasing rates with a general cost inflation factor

- Benefit: rates do not get too far behind cost curve

> Effective January 1st of each year, beginning on January 1, 20xx, the water rates listed in xxMC xx.xx.xxx shall be adjusted by the annual change in the most recent Seattle-Bellevue-Tacoma Consumer Price Index (Urban Consumers) published by the U.S. Department of Labor

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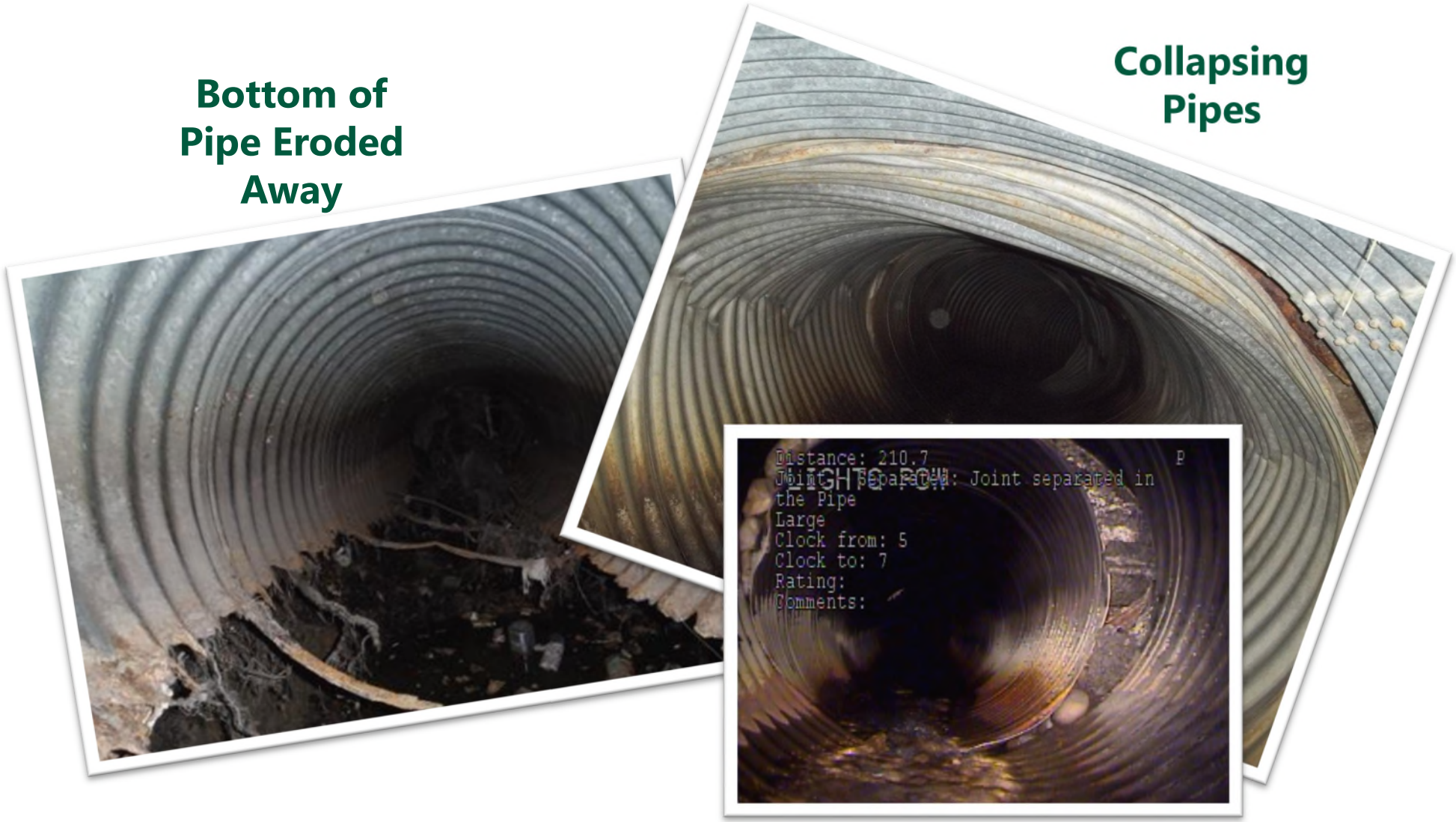
Illustrate Existing Issues



Illustrate Existing Issues

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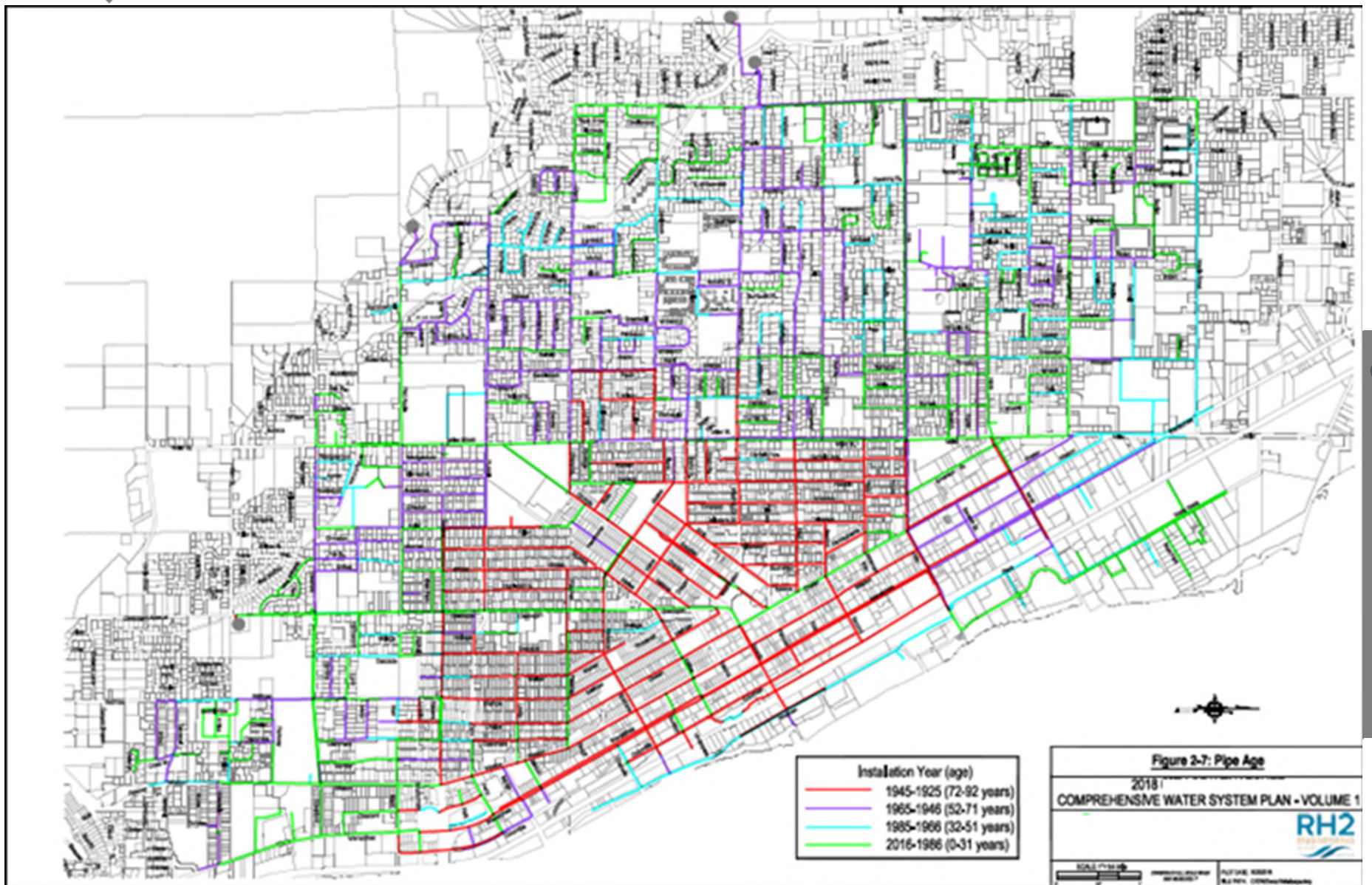
Highlight Successes

- Correcting known issues to help protect water quality

Highlight Successes

- Water Tank Improvement Project

Highlight Typically Unseen Assets



- Age of Pipe
  - 80-100 years
  - 60-80 years
  - 40-60 years
  - Less than 40 years

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New Releases / Website Interaction

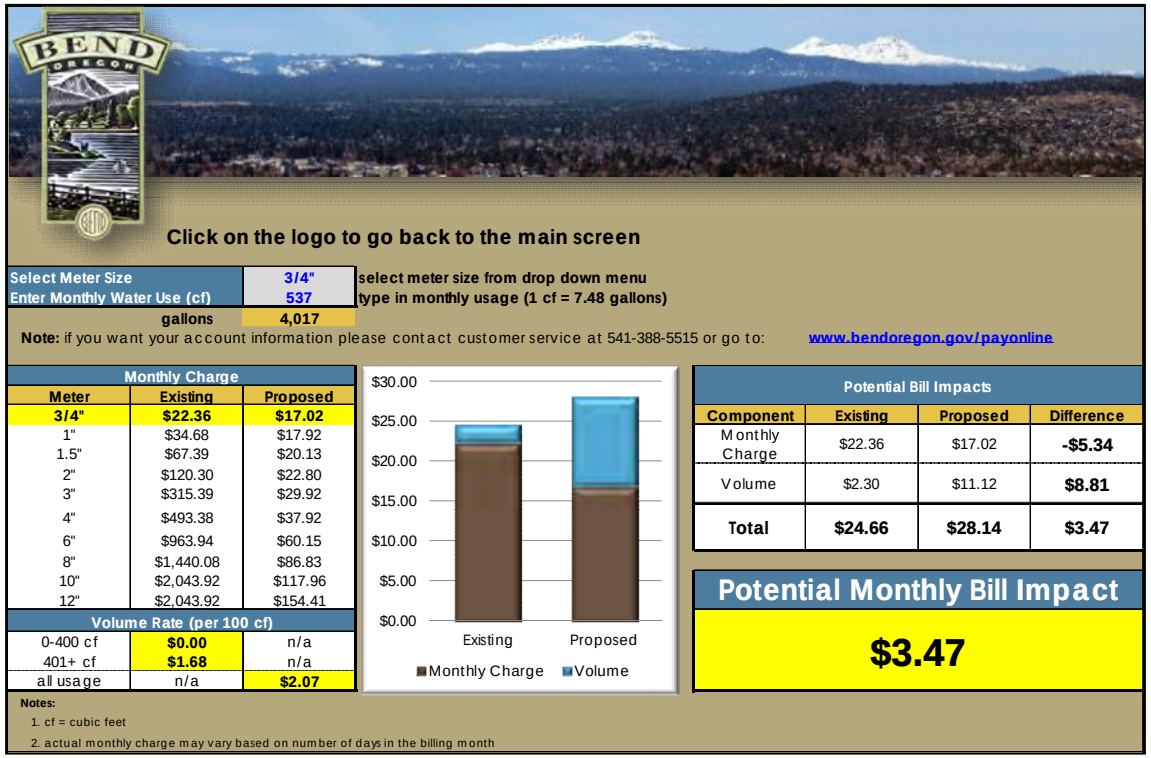
NEWS RELEASE

LAKEWOOD WATER DISTRICT ANNOUNCES 50-YEAR

PIPE REPLACEMENT AND REHABILITATION PLAN

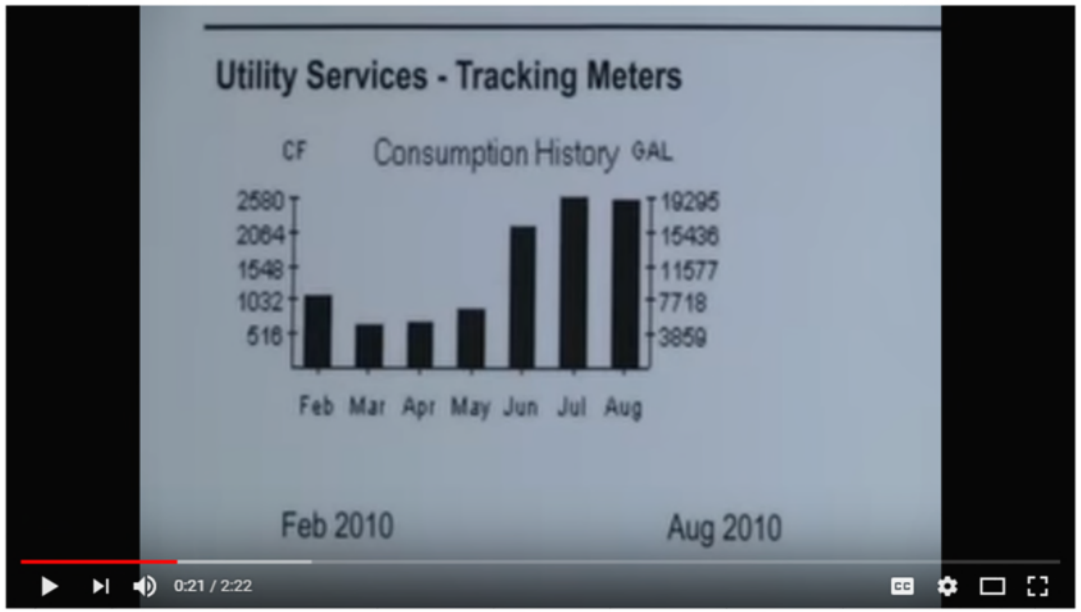
Supporting their customer-focused approach of "Our Water…Our Community…Our Future" Lakewood Water District has announced plans to replace 180 miles of aging asbestos cement water pipes over the next fifty years. These pipes are currently 50-70 years old and nearing the end of their useful life.

The District's R & R (Replacement and Rehabilitation) Program will ensure that Lakewood Water District customers continue to receive high quality water service at one of the lowest rates in the region.



Educational Videos / Increased Access to Information

Understanding Your Utility Bill



How to Read Your Water Bill

Easily Digestible Newsletters

City of Ferndale Utility Newsletter

This newsletter provides an update on current events for the City's water, sewer, and stormwater services.

Did you know:

4,800: The number of homes and businesses served by City of Ferndale water, sewer, and stormwater utilities.

365 / 24 hours a day: Delivery of utility services does not stop and requires a large network of pipes, water reservoirs, pressure reducing valves, and pump stations. This network must operate year-round to ensure water is available on demand and to safely convey wastewater away from your homes for treatment.

1907: Year the first documented city utility infrastructure was installed. The majority of the City's utility infrastructure was constructed in the 1950's and 70's to accommodate the population boom triggered by the arrival of the nearby refineries. Much of this infrastructure is still in use today.

As the City's utility system ages, failures such as water line breaks, intrusion from tree roots, and general operating failures are expected to occur with greater frequency.

131 miles: This is the combined length of water and sewer pipe in the City. Ferndale employs a team of 22 maintenance workers that monitor, maintain, and repair this system. Our dedicated crews inspect and maintain a portion of this piping network each day, so when you see them, please give them a wave and let them know how much you appreciate their dedication to keeping the City's utilities humming along.

$0: This is the amount of tax revenue used to fund the city's utilities. Under State law, utilities must be fully self-sufficient and does not rely on, or use, any general city tax revenue to fund its operations. ***The City's utilities are funded from utility rates.***

Your utility bill payments go toward supporting this hidden but vital part of the City's basic public service. Drinking water is critical to human health and safety and to the City's overall economic prosperity.

Below are some facts about each of Ferndale's utilities.

WATER UTILITY:

Miles of water main: 73
Pump stations: 4
Water reservoirs: 2
Pressure Zones: 6
Pressure Reducing Valves: 23
Number of operational wells: 2 (3 as of 2020)
Volume of water treated annually: 410 million gallons
Average daily consumption: 1.1 million gallons per day
Average monthly consumption by typical 4-person household: 42,288 gallons
Number of water main breaks last year: 5

SEWER UTILITY:

Miles of sewer main: 58
Pump stations: 18
Volume of sewage treated annually: 643 million gallons
Annual daily volume of wastewater treated: 1.72 million gallons per day

STORMWATER UTILITY:

Miles of storm pipe: 70
Pump station: 1
Number of culverts: 453
Number of city storm retention ponds: 23
Miles of open ditches to maintain: 50

The following highlights and provides answers to common questions.

Why is the City conducting a utility rate study?

This study determines the adjustments in rates needed to pay for forecasted changes in expenses. Industry best practice is to prepare an updated study once every 3 years to assure rates and utility expenses remain aligned.

The study will focus on (among many other areas):

- Sufficiency of revenues to pay for operating and capital expenses
- Financial reserves for long-term financial stability and sustainability
- Predictability and rate affordability
- Equity in the sharing of costs between customer classes

Are my bills going to increase?

While the City anticipates that rates will need to increase to fund upcoming capital improvements, we strive to keep them as low as possible.

What is the City doing to ensure utility costs are as low as it can be?

City utilities are a basic public service, much like police and fire. It is fundamental to human health, welfare and community development.

To that end, we ensure that utilities are operated responsibly and that the infrastructure to deliver these services is well maintained and operating properly.

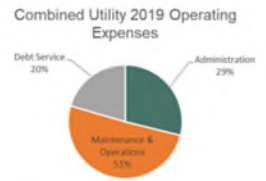
Photo: Well Pump House

What are our major utility projects and how will they be paid for?

Major projects on the horizon include expanding the City's wastewater treatment plant and the City's water treatment facilities. Both facilities have reached their operational limits.

Recent engineering evaluations have determined that the City's aquifers are being reduced at a rate faster than anticipated. The City has already taken steps to construct a new well tapping a separate aquifer to ensure there is no shortage of water on the horizon. We will continue to look at ways to protect the City's aquifer and ensure it is sustainable in the long-term.

Where does our utility money go?



How do we ensure growth pays for growth in the utilities?

The City assesses a connection charge on new customers who connect to the utility system. As a portion of the upcoming rate study, the City will review the charges imposed on new customers who connect to the system.

How do our monthly utility bills compare to neighboring jurisdictions?

Note: *Bills are monthly, assuming 11 ccf of bimonthly water usage, 11 ccf of bimonthly sewer usage*

How is our water treated to ensure it is safe for cooking and drinking?

The City's wells produce groundwater that meets and exceeds the standards of all State and Federal regulations. Because the groundwater is hard (an annoyance and aesthetic issue for the public) it is delivered directly to the City's water treatment plant where it is treated via greensand filtration and reverse osmosis before being delivered to the public. The City is constantly monitoring the water to make sure your water is always safe for drinking and cooking.

Why did we move to well water rather than draw water from the river?

Prior to December of 2011, the City purchased its water supply from the Public Utility District No. 1 of Whatcom County (PUD). The PUD pumped water directly out of the Nooksack River and provided primary treatment to remove river sediment. For several reasons, the City concluded that shifting its source of water supply to groundwater was the best financial decision. The City then proceeded to develop its own groundwater sources, the Shop Well and Douglas Well.

For more information about your utility bill, please call 360-384-4269.

Photo: Reservoir 1

Photo: Reverse Osmosis Unit

Pictures can work for the public as well

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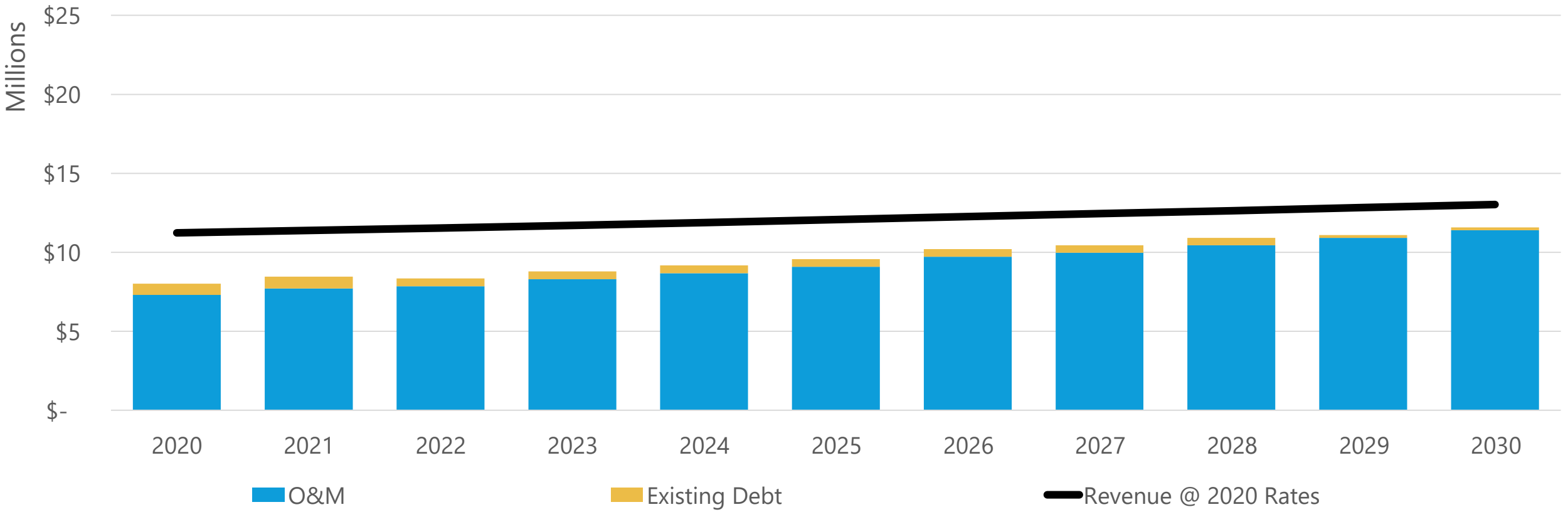
Example #1 Quick Facts

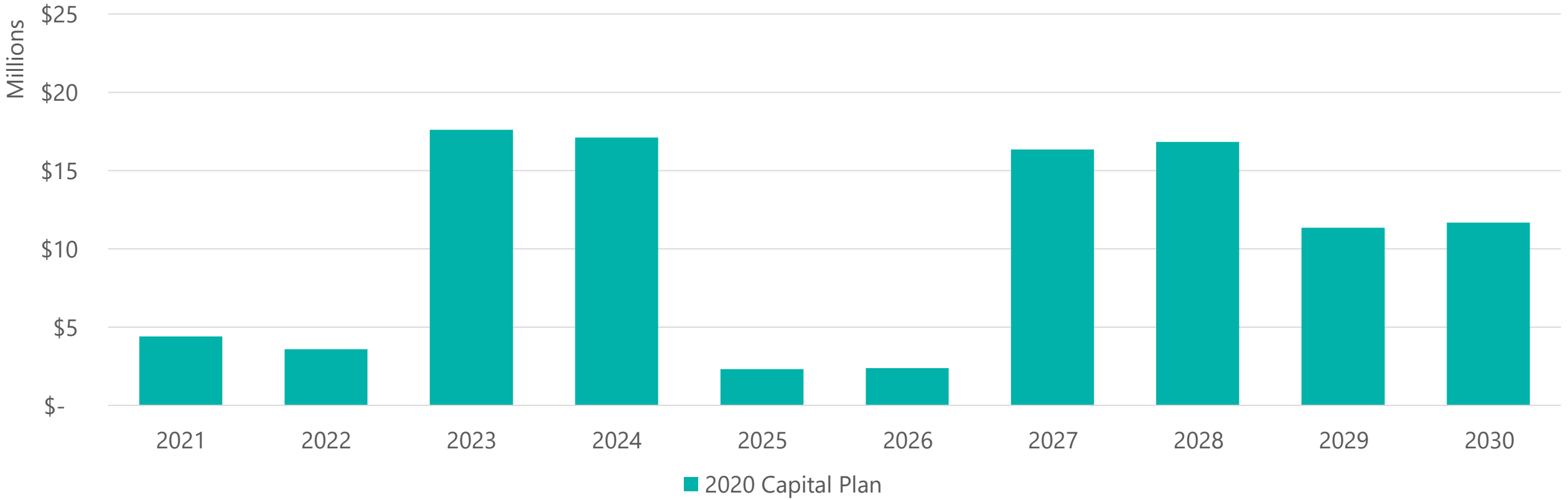
- Sewer utility within WA
- Navigating through large treatment plant upgrades
- Evaluates rates every two years with new biennium budget
  - 6-year time frame presented to Council
  - 20-year capital plan considered during each update for rate setting
- **Unique Component:** City has worked extensively to reduce the overall impact to customers through funding alternatives

Example #1: 2020 Operating Cost Forecast



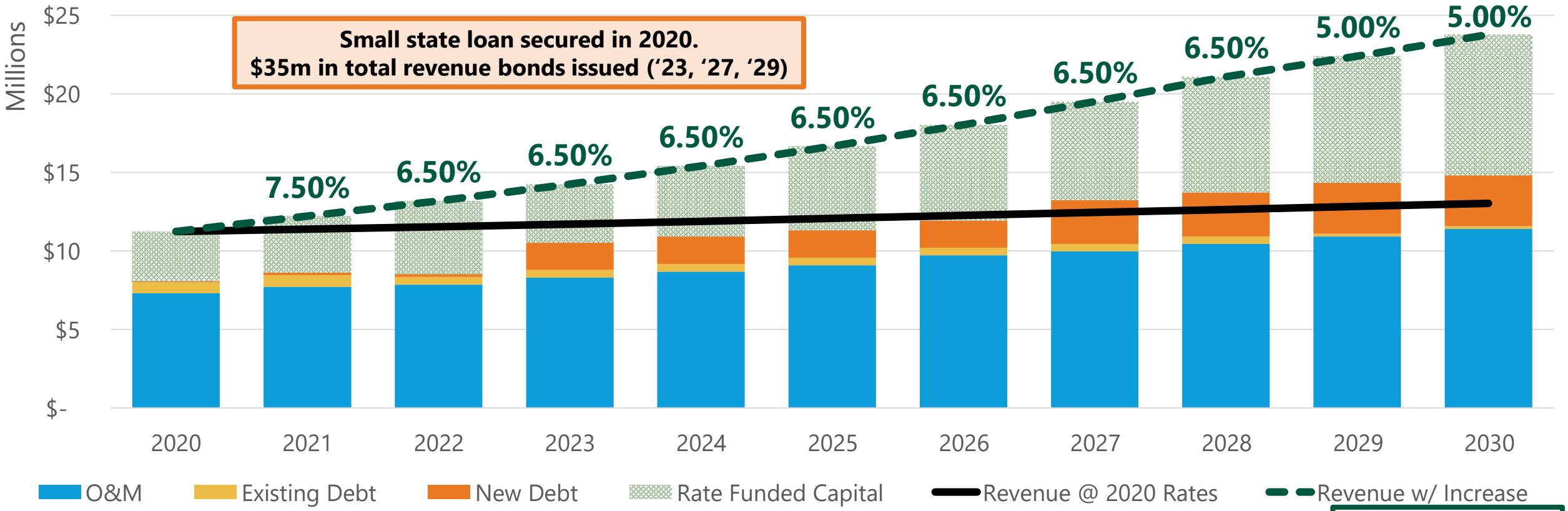
- Additional operating costs identified starting in 2023
- Existing debt reduced over the forecast period
- Current rates could support current operating obligations + some capital funding
  - » $3m annually for capital erodes to $1m by the end of 2030

Example #1: 2020 Capital Plan



- Over $100 million in identified capital over the next decade ($10m/yr)
  - » Driven by treatment plant upgrades in 2023-2024
  - » Follow up additional upgrades forecasted in 2027-2030

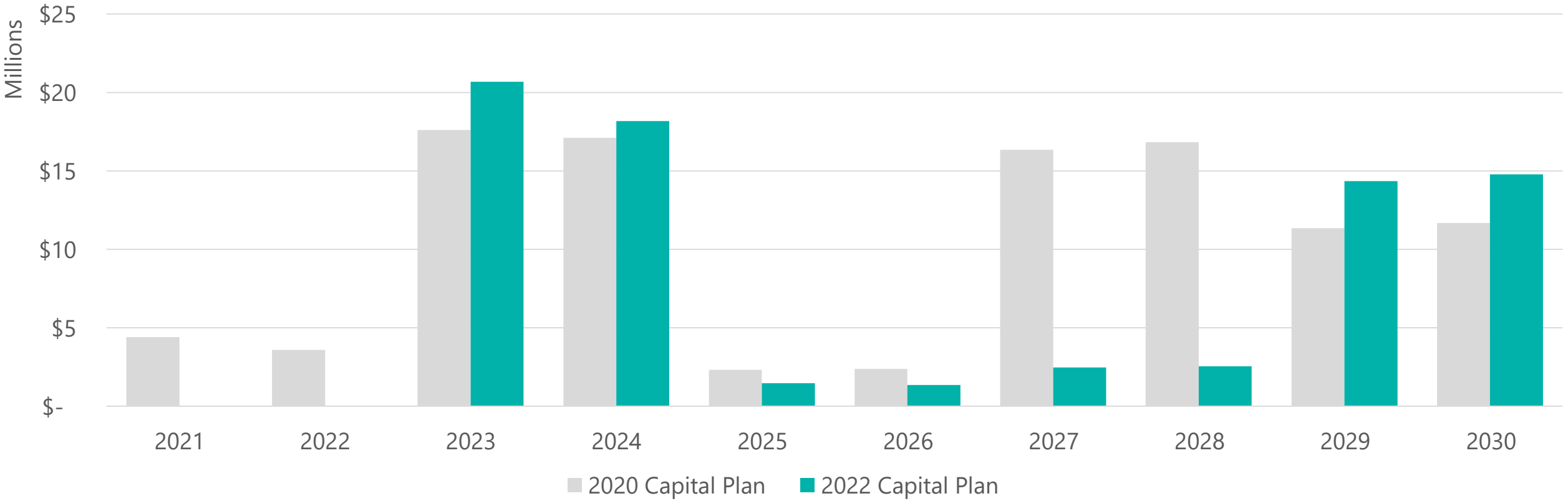
Example #1: 2020 Revenue Requirement Forecast



- Rate plan developed to balance rate increase with debt
  - » 65% cash funded vs 35% debt funded capital
- Achieved City's goal of depreciation funding system reinvestment by 2026

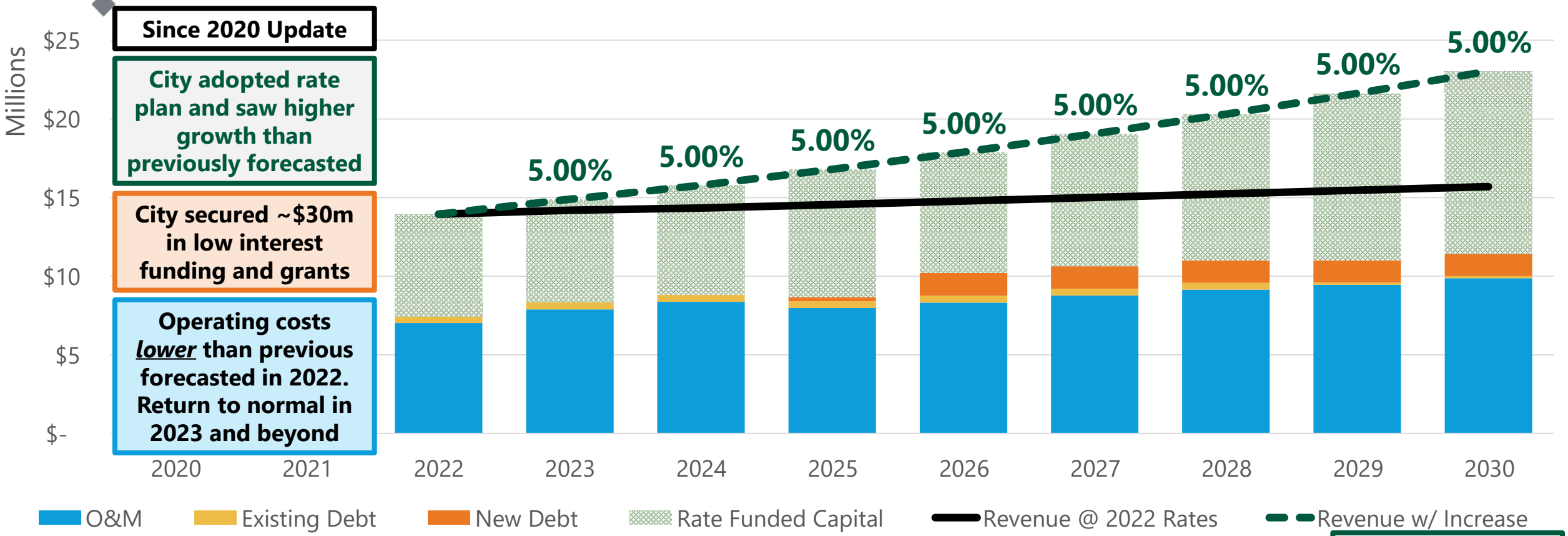
2020-2030 Rate Increase 84%

Example #1: 2022 Capital Plan



- $76 million identified through 2030 ($9.5m/yr)
  - » 2023-2024 treatment plant needs increased in cost
  - » Updated treatment processes shifted timing of future capital needs
    - – Still accounted for in overall 20-year outlook

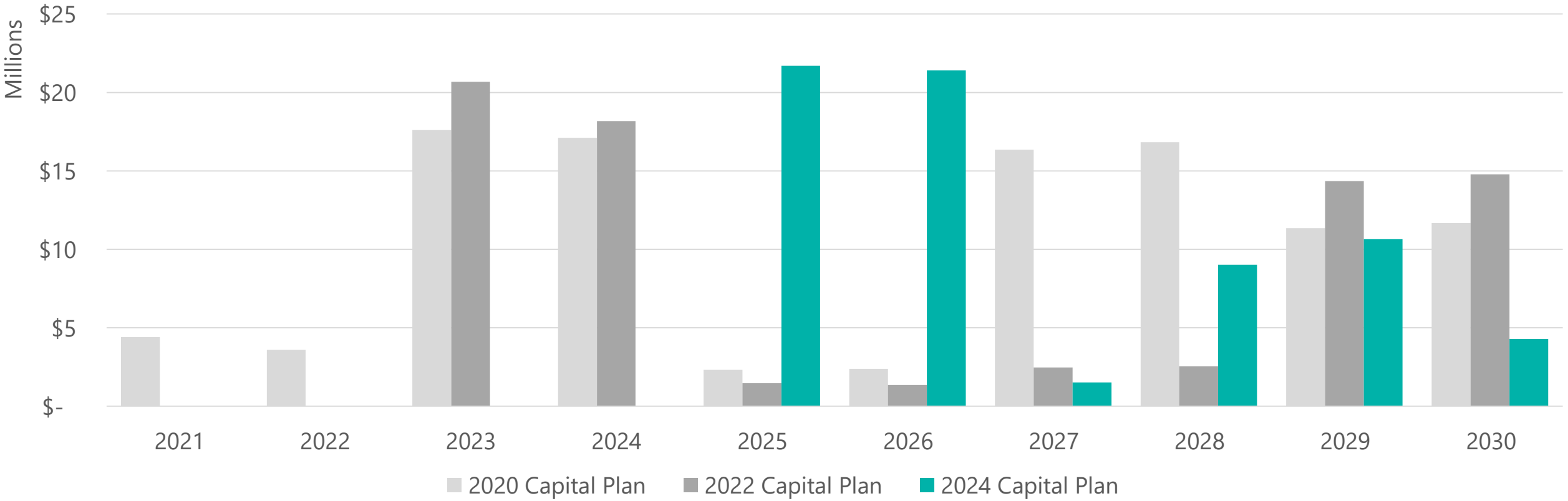
Example #1: 2022 Revenue Requirement Forecast



- Rate plan rebalanced to reflect changes to forecast
  - 2030 debt obligation now less than half of previous plan
    - $1.4m in 2030 vs previous $3.1m in 2030 assumed
  - Cautiously optimistic about growth seen since last update

2020-2030 Rate Increase 69%

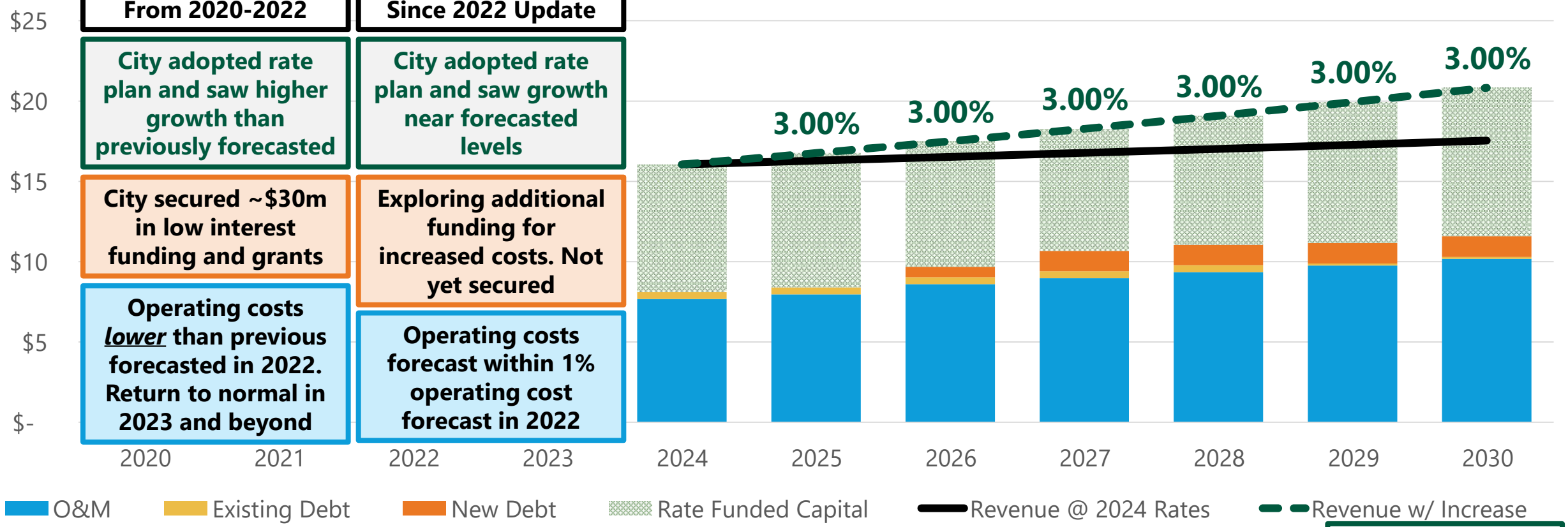
Example #1: 2024 Capital Plan



- $68 million identified through 2030 ($11.3m/yr)
  - » Main treatment plant upgrades delayed to 2025-2026 at a higher cost
  - » Updated treatment processes shifted timing of future capital needs
    - – Still accounted for in overall 20-year outlook

Example #1: 2024 Revenue Requirement Forecast

From 2020-2022	Since 2022 Update
City adopted rate plan and saw higher growth than previously forecasted	City adopted rate plan and saw growth near forecasted levels
City secured ~$30m in low interest funding and grants	Exploring additional funding for increased costs. Not yet secured
Operating costs ***lower*** than previous forecasted in 2022. Return to normal in 2023 and beyond	Operating costs forecast within 1% operating cost forecast in 2022



2020-2030 Rate Increase 51%

- Rate plan rebalanced to reflect changes to forecast
  - » Operating and debt obligations in alignment with previous plan
  - » Rate adjustments lowered as rate funded capital approaches annual capital spending
    - City exceeding policy of depreciation level rate funded capital in all years

Example #1: Key Takeaways

- Ability to recognize lower rates for customers
  - Sample bill in 2020: $55
  - 2030 bill based on 2020 study: $101
  - 2030 bill based on 2022 study: $93
  - 2030 bill based on 2024 study: $83

- Key drivers of ability to adjust the rate plan downward:
  - Low interest loan and grants secured for updated treatment
  - Finding a treatment alternative
  - Growth above anticipated levels

What is a rate study?

Why are rate studies important?

Setting the framework with financial policies

Building the revenue requirement

Communication with elected officials

Public outreach and involvement

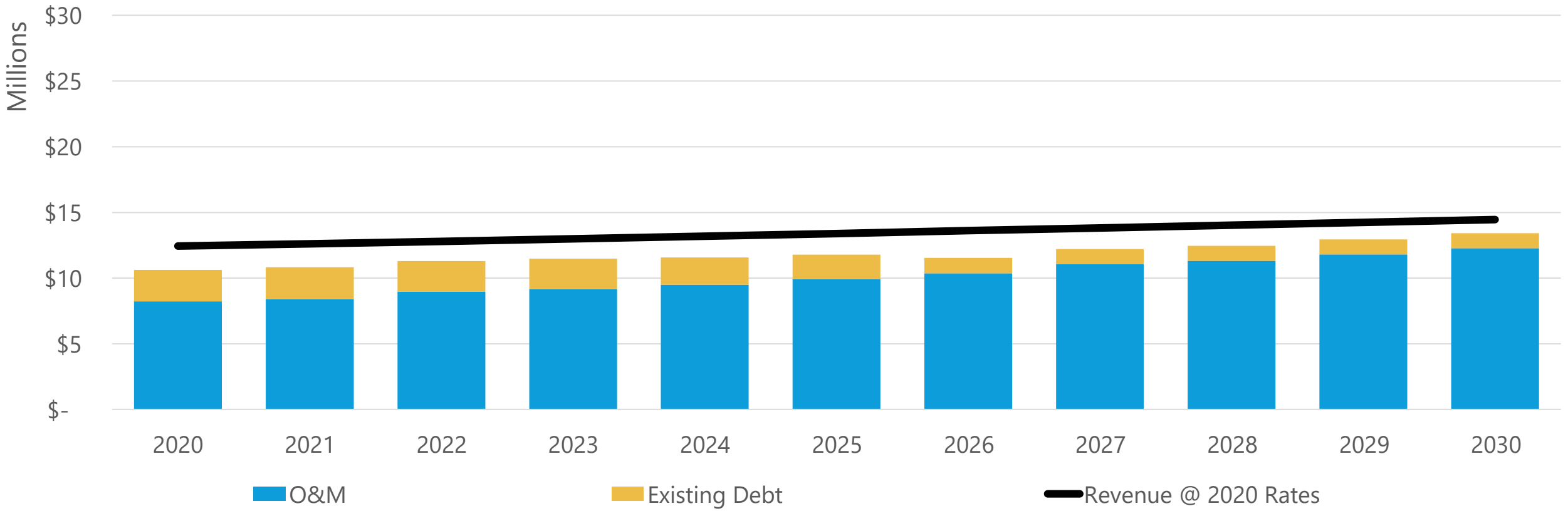
Example #1: Benefits of securing low interest funding

Example #2: Proactive monitoring to plan for changes in need

Example #2 Quick Facts

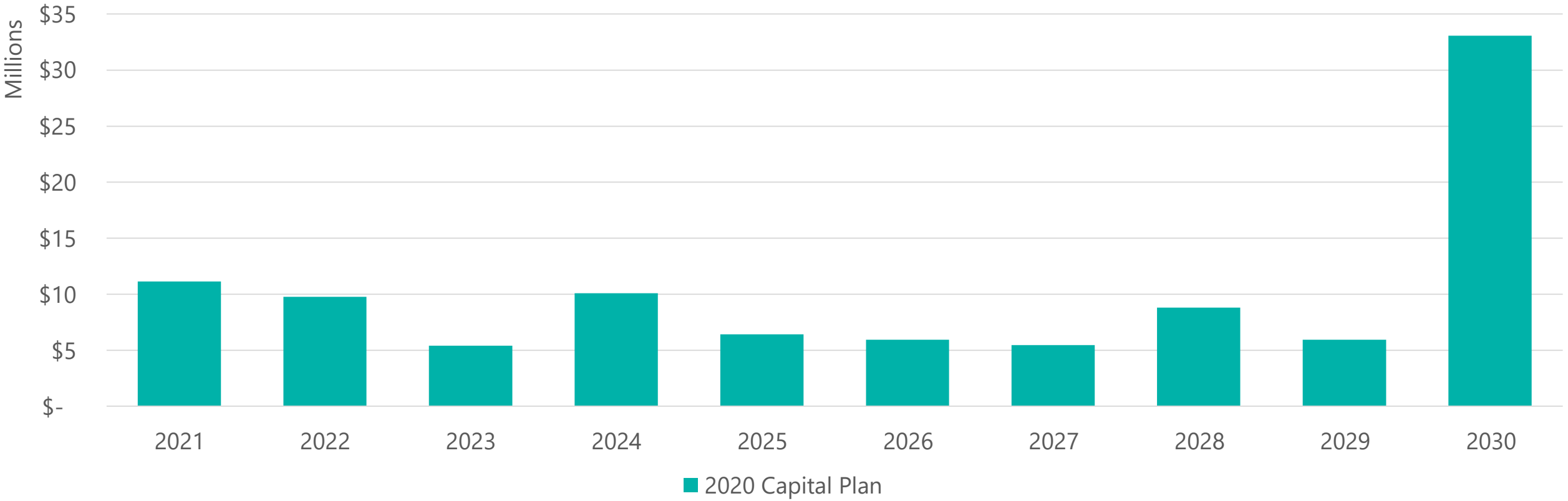
- Water utility within WA
- Facing capital needs that far exceed operating cash flow
- Evaluates rates every two years with new biennium budget
  - 6-year time frame presented to Council
  - 20-year capital plan considered during each update for rate setting
- **Unique Component:** Capital needs and timing continue to change. Looking for predictability in a rate plan

Example #2: 2020 Operating Cost Forecast



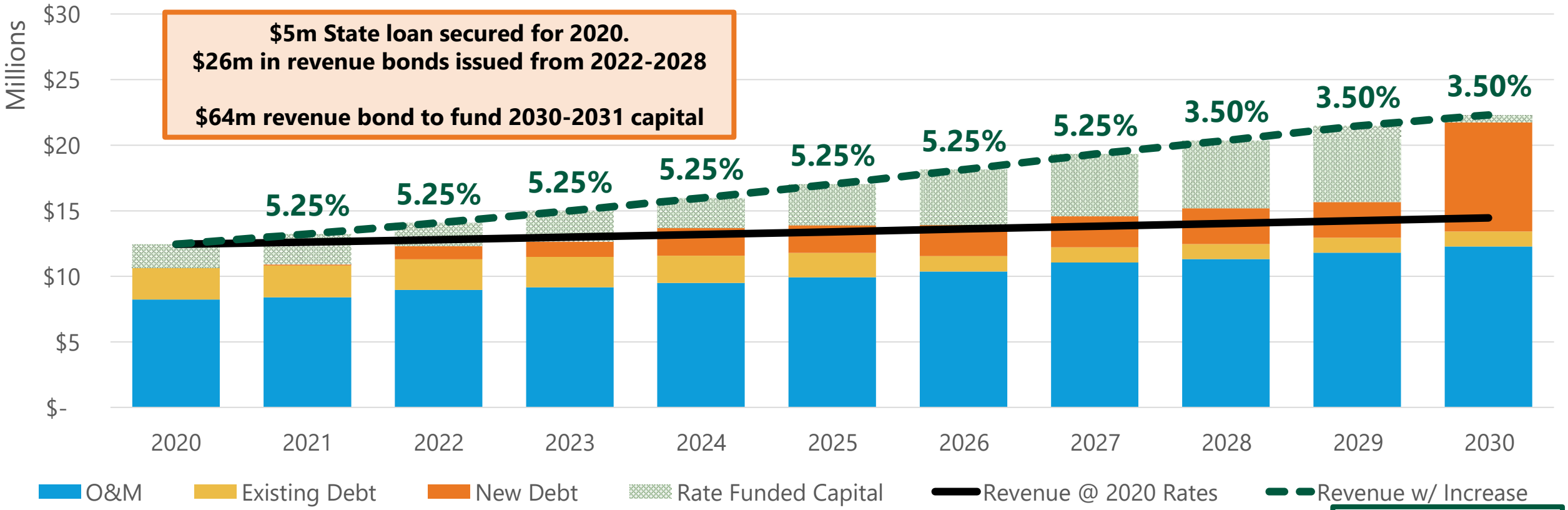
- Additional operating costs identified starting in 2022
- Existing debt reduced after 2025
- Current rates could support current operating obligations
  - » $1.8m annually for capital erodes to $1m by the end of 2030

Example #2: 2020 Capital Plan



- Over $100 million in identified capital over the next decade ($10m/yr)
  - » $33m for the first half of water treatment upgrades in 2030
  - » 2021-2029 annual average of $7.5m

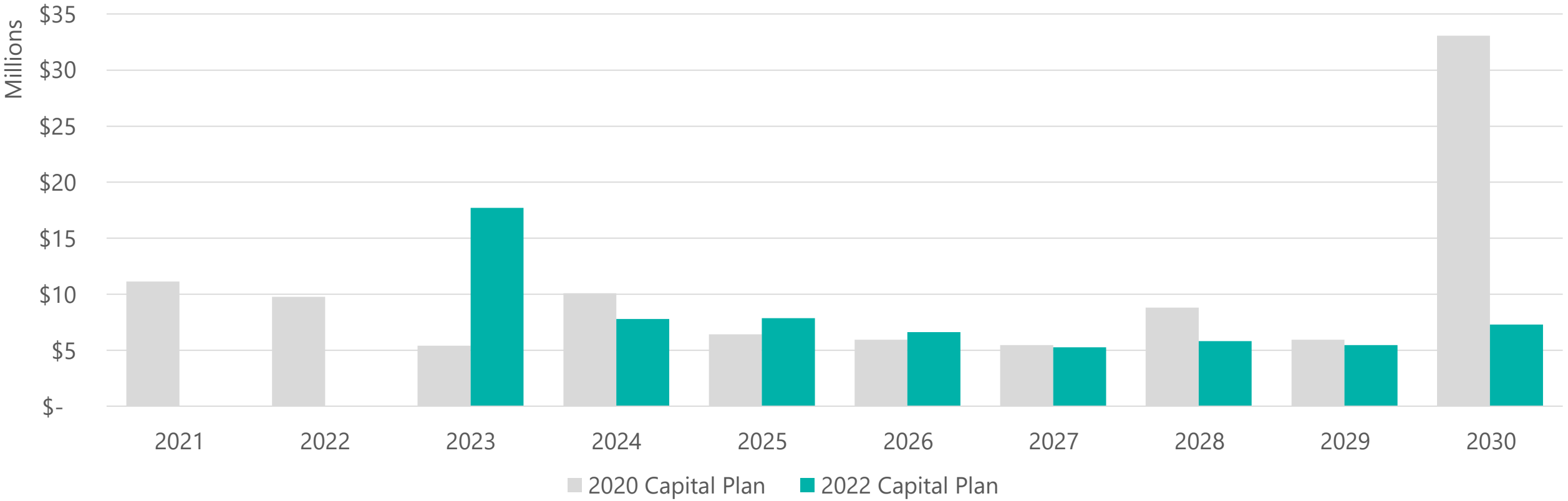
Example #2: 2020 Revenue Requirement Forecast



- Rate plan developed to be able to fund treatment upgrades in 2030
  - » Primary focus – achieve depreciation level rate funded capital by 2026/2027
  - » Secondary test – could rates get to near inflationary levels before large borrowing
- Developed discussion around using rate funded capital as a metric to track

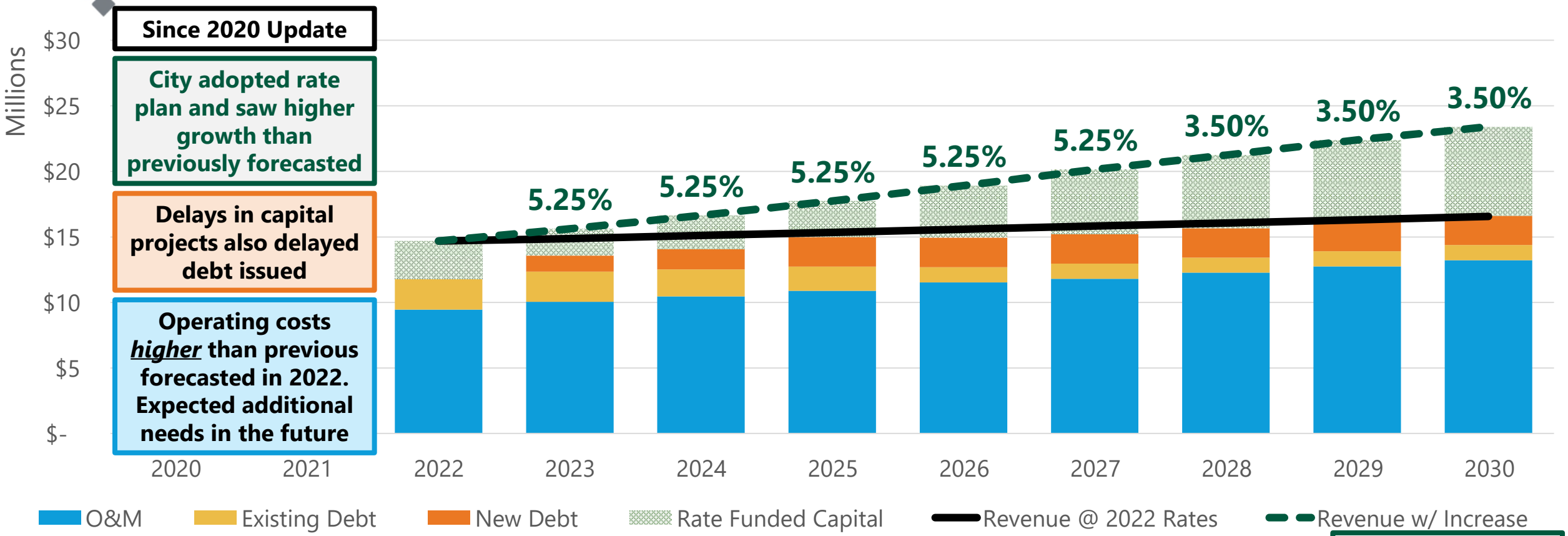
2020-2030 Rate Increase 59%

Example #2: 2022 Capital Plan



- $64 million identified through 2030 ($8.0m/yr)
  - » Water treatment upgrades related to supply now not expected until the 2040s
  - » 2023 capital spending identified to catch up on deferred projects

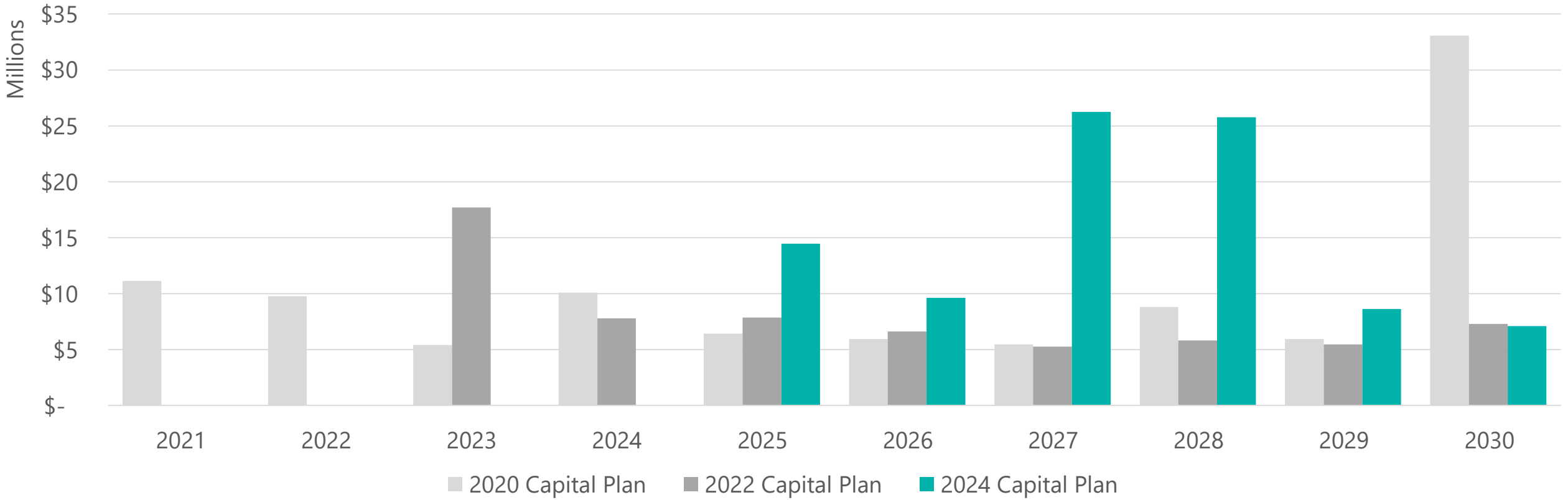
Example #2: 2022 Revenue Requirement Forecast



- Rate plan maintained in the 2022 update
  - » Achievement of rate funded capital target delayed until 2027
    - – Utility forecasted to continue achievement through 2030

2020-2030 Rate Increase 59%

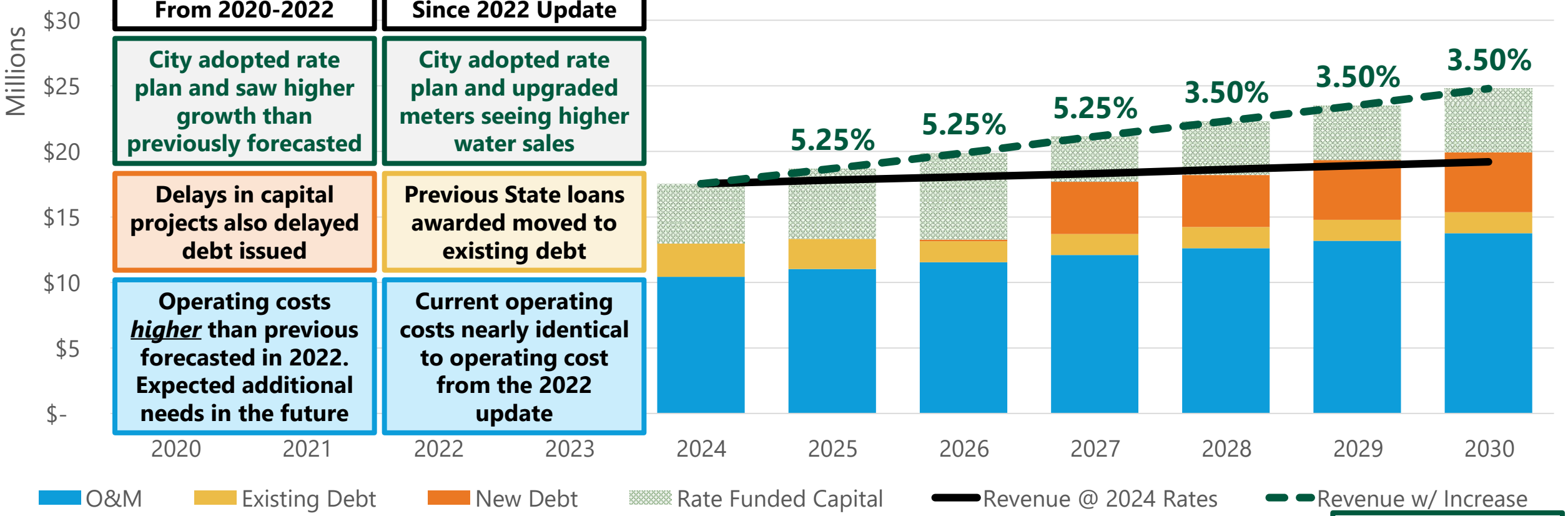
Example #2: 2024 Capital Plan



- $92 million identified through 2030 ($15.3m/yr)
  - » Updated capital plan included PFAS treatment for the first time
    - – Added $40m in new costs

Example #2: 2024 Revenue Requirement Forecast

From 2020-2022	Since 2022 Update
City adopted rate plan and saw higher growth than previously forecasted	City adopted rate plan and upgraded meters seeing higher water sales
Delays in capital projects also delayed debt issued	Previous State loans awarded moved to existing debt
Operating costs ***higher*** than previous forecasted in 2022. Expected additional needs in the future	Current operating costs nearly identical to operating cost from the 2022 update



2020-2030 Rate Increase 59%

- Rate plan maintained in the 2024 update
  - » Forecast funding PFAS through revenue bonds, wait until more is known
  - » Rate funded capital target decreases to 70-80% achievement if PFAS is all revenue bond funded

Example #2: Key Takeaways

- Ability to maintain the rate plan originally forecasted in 2020
- Using rate funded capital as a moving target for financial stability
- Proactively increasing rates to provide flexibility in capital needs
- Forward looking forecast to start looking for low interest funding when new projects come up

Thank you!
Questions?

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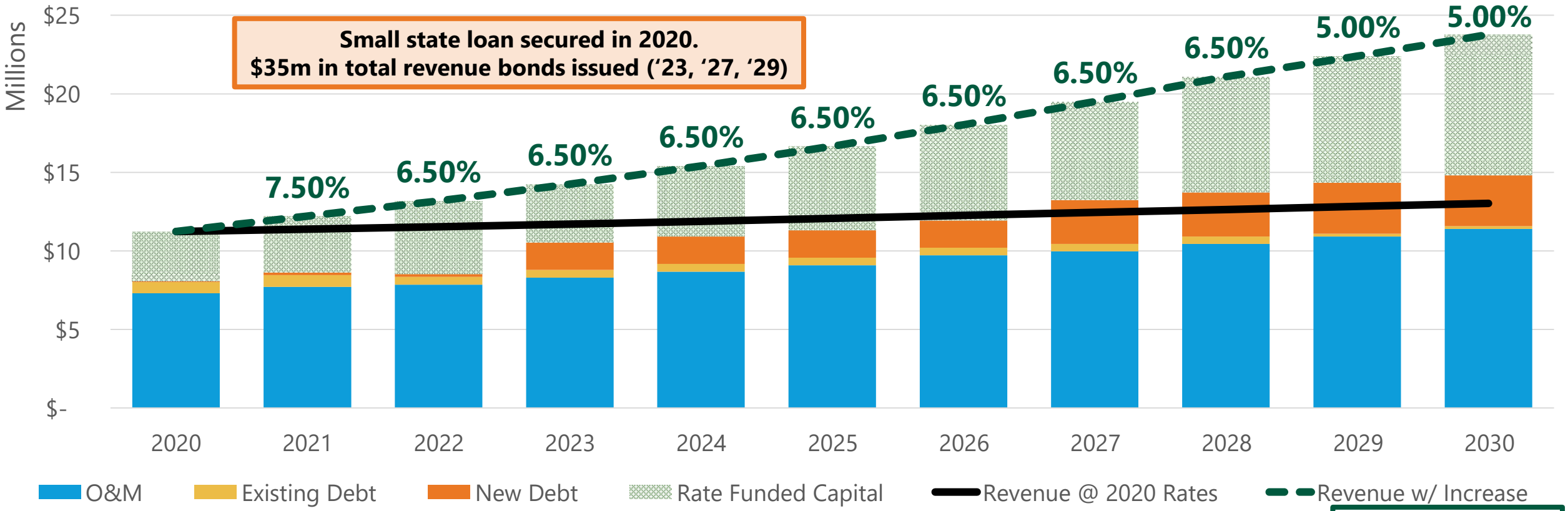
a Bowman company

Example #1: 2020 Revenue Requirement Forecast



- Rate plan developed to balance rate increase with debt
  - » 65% cash funded vs 35% debt funded capital
- Achieved City's goal of depreciation funding system reinvestment by 2026

2020-2030 Rate Increase 84%

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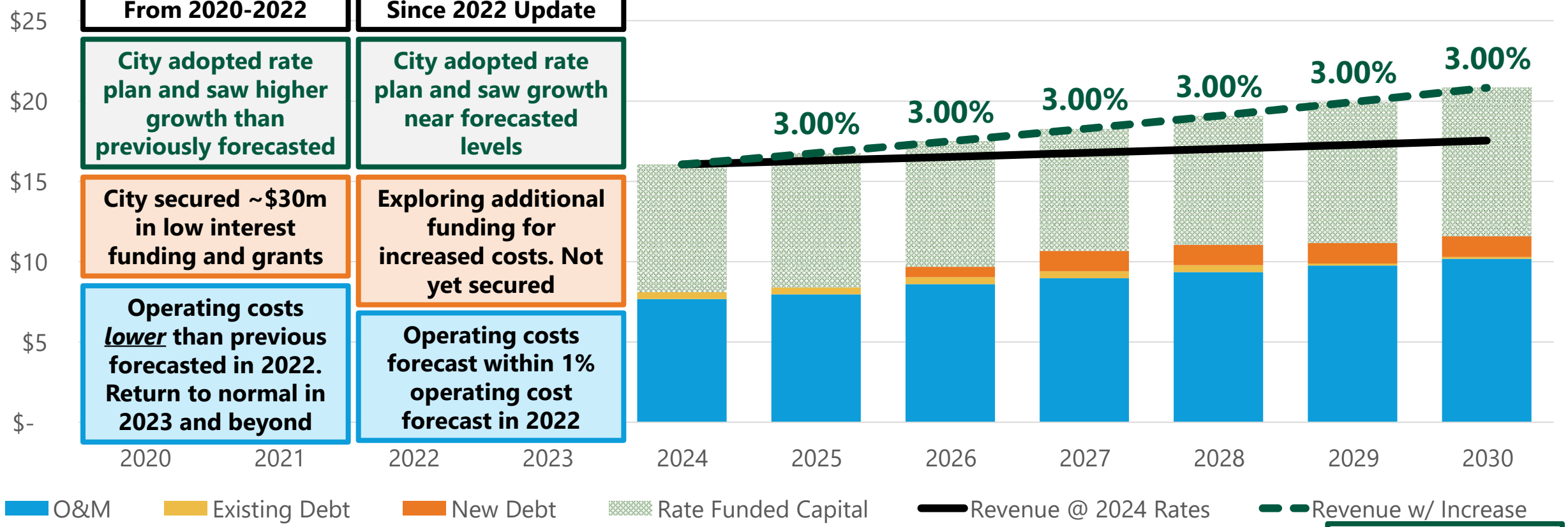

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