City of Flagstaff

Future of Water

Water Rate Study Presentation
May 2024

FLAGSTAFF
WATER SERVICES
We are Water

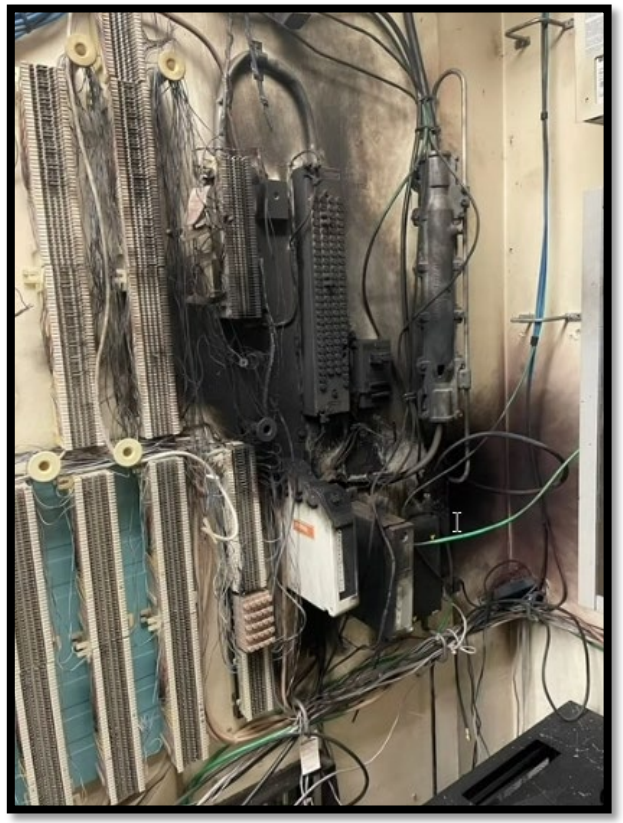
Introduction to Water Services

- 4 Treatment Plants – 2 Drinking Water and 2 Water Reclamation Plants
- 8 Large and 6 Small Drinking Water Storage Tank
- 2 – Reclaimed Treated Effluent Storage Tank
- 30 – Drinking Water Wells and Pump Houses
- Over 447 miles of Water Distribution lines
- Over 290 miles of Sewer Collection lines
- Over 3,432 Fire Hydrants
- 5 Standpipes – 3 Drinking Water and 2 Reclaimed Treated Effluent
- Regulatory Compliance
- Water Sustainability and Conservation
- 97 – Staff members

Operations & Maintenance

What’s included in Operations & Maintenance

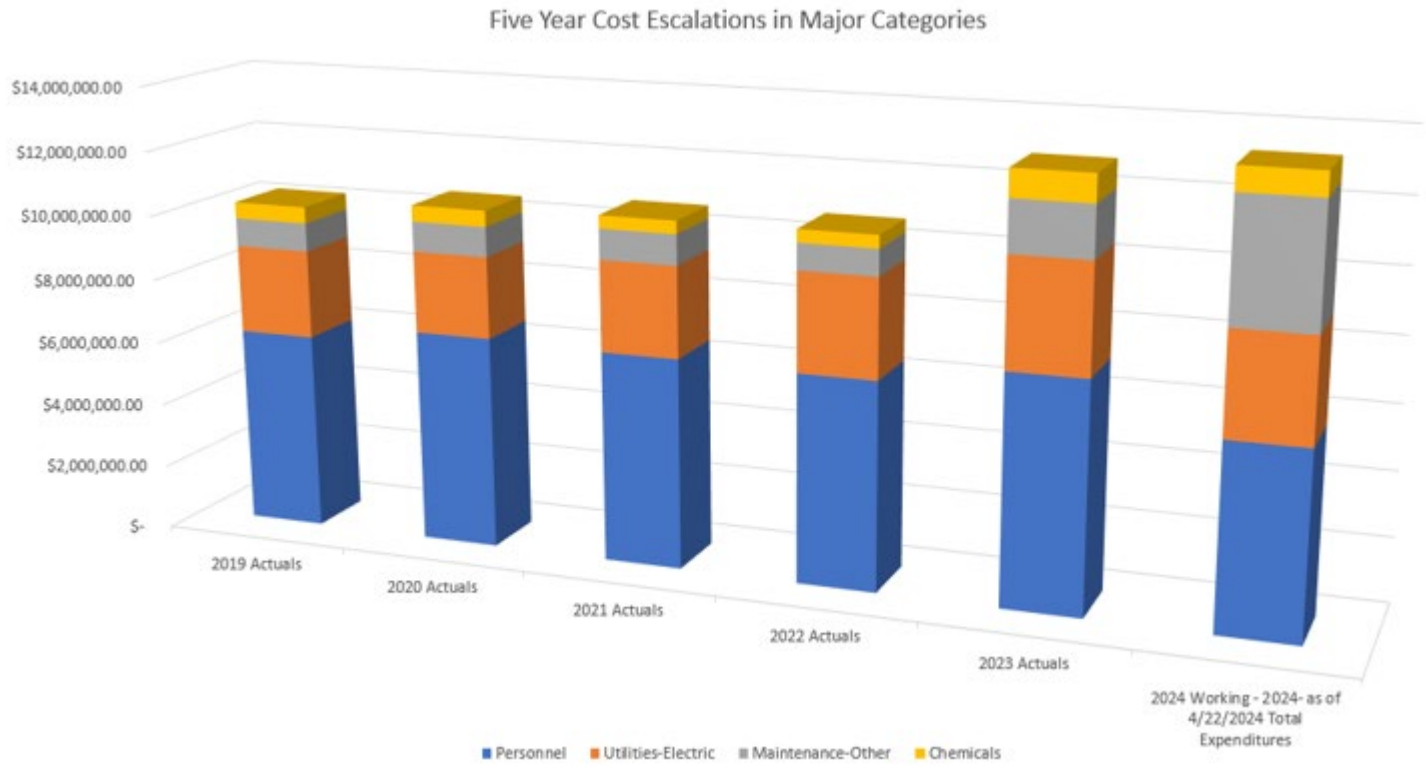
- Process Treatment Equipment
- Buildings and materials
- Parts & labor
- Gas, oil and chemicals
- Service vehicles and machinery
- Personnel



Operations & Maintenance

General Increases in Costs

- Electrical Costs
- Treatment Chemical Costs
- Costs of Parts
- Personnel



Operations & Maintenance

Insufficient Funding Impacts

- Defer repair and replacement of aging infrastructure
- Challenge to maintain technology and facilities
- Lack resiliency and robustness
- Limited personnel resources

Operations & Maintenance

Benefits of Funding

- Sustainable use and development of water resources
- Effective water institutions and administrative systems
- Assure water quality and wastewater management
- Invest in repairing and replacing aging infrastructure
- Retain qualified staff to maintain resources

Operations & Maintenance: Water Distribution Lines

Flagstaff averages 6 main breaks per 100 miles of pipe (25 annually)

2023 Clay Avenue

Operations & Maintenance: Sewer Collection Lines

- 290 miles of sewer line
- 8,000 Manholes
- 6 Sanitary Sewer Overflows

Capital Improvements

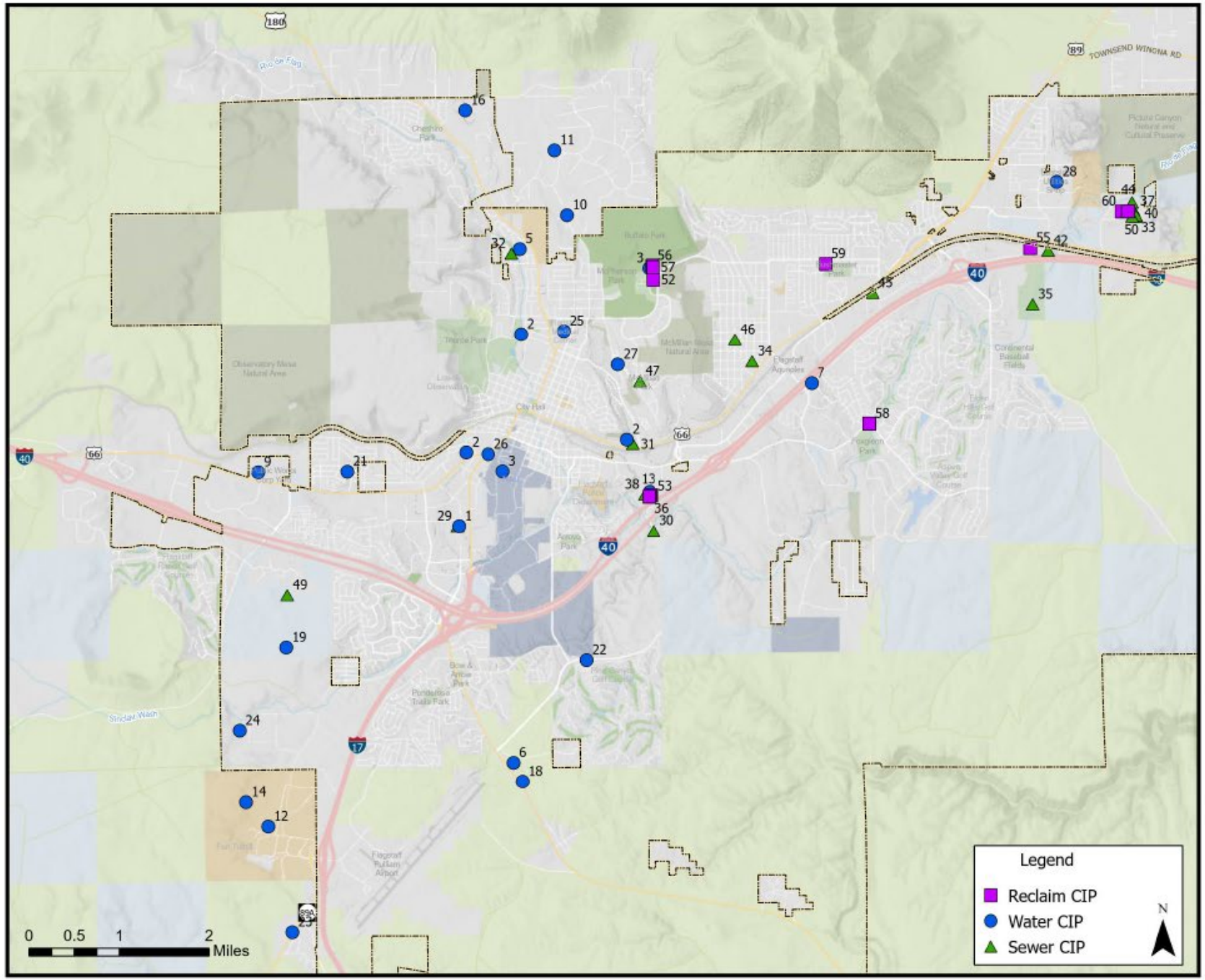
What do improvements accomplish?

- Address capacity to meet community growth and development
- Fulfill master planning efforts for the future of Flagstaff
- Develop water supply
- Maintain water supply and wastewater collections
- Integrate asset management into Utility infrastructure
- Advance wastewater treatment

Capital Improvement Plan (CIP)

What is a CIP

- Plan includes approved, informed, and unfunded projects
- Plan is conservative
- Dependency on external funding sources
- No capacity for citywide initiatives



1. Beulah/University Waterline Relocation
2. Rio de Flag Flood Control Project- Waterline
3. Water Vault/PRV Replacement Program
4. New Well and Pumphouse
5. Coconino Estates- Bundle #4
6. Lake Mary Sedimentation Basin (Flocculation)
7. Soliere Waterline 12" Upsizing
8. Lake Mary Land Acquisition
9. McAllister-Well Design/Construction
10. Switzer Canyon Transmission Line Phase 4
11. Switzer Canyon Transmission Line Phase 5
12. Fort Tuthill Waterline Loop-Phase 2
13. First Ave TREX Waterline Replacement
14. Fort Tuthill Well
15. Inner Basin Waterline
16. Inner Basin Line- Schultz to Reservoir Plant
17. Inner Basin Spring Box and Collection Rehab
18. Lake Mary Raw Water Pipeline Rehab
19. Zone B Storage
20. Lake Mary Dam Repairs
21. Railroad Springs #3 Storage Tank
22. JW Powell Waterline Oversizing
23. Pine Del Waterline Upsizing
24. Woody Mountain Wellfield Powerline Burial
25. Fort Valley Shopping Center
26. ADOT Cast Iron
27. Turquoise WL Replacement
28. East Side Shop New Building for Equipment Storage
29. Beulah/University Sewer Exit
30. Rio de Flag Water Reclamation Facility Two Bar Screens
31. Rio de Flag Sewer Relocations
32. Coconino Estates-Bundle#4
33. Wildcat Dewatering Facility
34. First Ave Rte. 66 Sewer Replacement
35. Country Club Interceptor to WCH
36. Rio de Flag Water Reclamation Facility Solids Treatment
37. Wildcat New Elect./Fiber Upgrade
38. Rio de Flag Fiber Upgrade
39. Wildcat Roof Replacement
40. Wildcat UV Disinfection
41. Rio de Flag Water Reclamation Facility Main Motor Control Centers
42. BNSF Sewer Relocations
43. Facility Master Plan Update
44. Headworks Rehab
45. East Industrial Sewer Improvements
46. Sunnyside Trunk Upsizing
47. Ponderosa Pkwy- McMillan Mesa
48. East Railhead Upsizing
49. University Heights Oversizing
50. Wildcat Solar Drying Facility
51. Rio de Flag Water Reclamation Facility Roof Replacement
52. 8" Bottleneck- Replacement
53. Rio de Flag Water Reclamation Facility Water PRV Relocation 16"
54. Rio de Flag Water Reclamation Facility Pump Value Actuators
55. BNSF Reclaim Relocations
56. Buffalo Park Tank #1 Painting
57. Buffalo Park Chlorine Bldg Upgrade
58. Reclaim Loop-Fox Glenn to Country Club
59. Bushmaster Park Booster Communications & Flow Meters
60. WCH Reclaim Booster Building Equipment Upgrade
61. Rio de Flag Water Reclamation Facility Storage Tank
62. WCH Storage Tank

FLAGSTAFF WATER SERVICES

CIP Funding

Fund		Approved CIP[1]	Approved + Informed CIP[2]	Approved + Informed + Unfunded CIP[3]
Water	*Annual Average*	$13.1	$19.7	$20.8
	Total CIP Funding FY24 – FY33	$130.7	$196.9	$207.9
Wastewater	*Annual Average*	$8.7	$10.0	$12.5
	Total CIP Funding FY24 – FY33	$86.7	$99.5	$124.6
Reclaimed	*Annual Average*	$0.5	$3.3	$6.9
	Total CIP Funding FY24 – FY33	$5.2	$32.8	$68.6

[1] Conforms to anticipated revenues projected by Utility (partial CIP list).

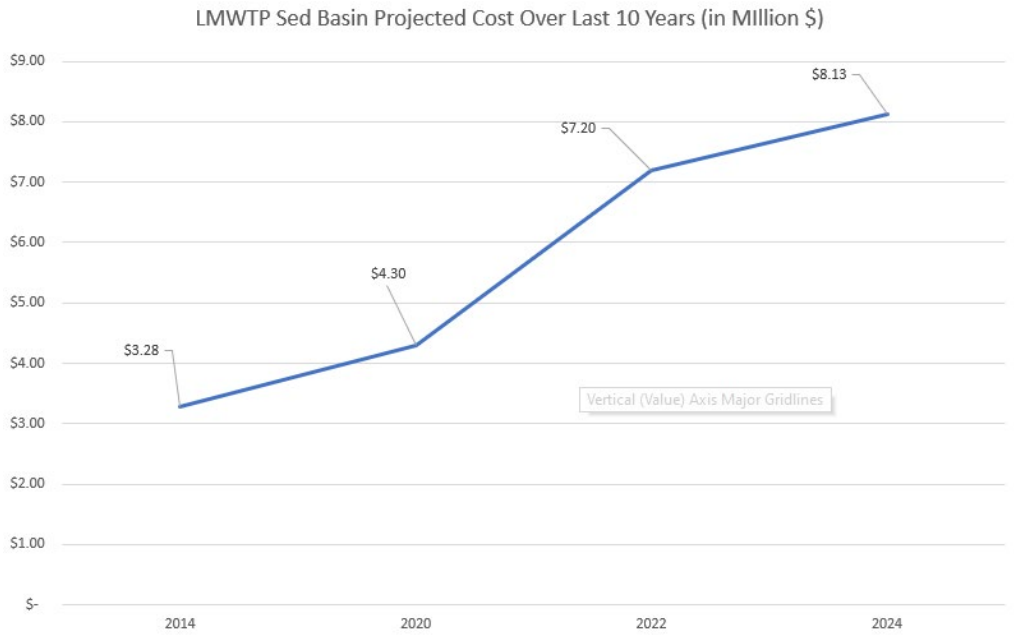
[2] From complete CIP list informed by Master Plan recommended projects (e.g., Water Infrastructure Master Plan, Sewer Master Plan).

[3] Needed projects without an identified funding source.

CIP Funding

Impacts of Insufficient Funding

- Value engineer and/or strip components of project
- Consistently reprioritizing projects based on available funding
  - Reduces funding for other projects
  - More projects become underfunded
- Move project(s) to unfunded list
  - Project placed on hold
  - Project is removed from the 5-year plan
  - Postponing projects tends to cost two to three times more



Rate Study Background

- Rates and fees provide funding for operations, maintenance, and capital improvements
- Objectives of the Study
  - Build a financial model
  - Establish a Cost-of-Service
  - Review Rate Structure
  - Adjust rates and fees
- Last rate study was completed in 2015
- Last rate increase went into effect in 2020
- Began discussions with City Council in September 2023
- Public Hearing are scheduled for June 18, and July 2, 2024
- Rate changes effective September 1, 2024

Rate Study Priorities

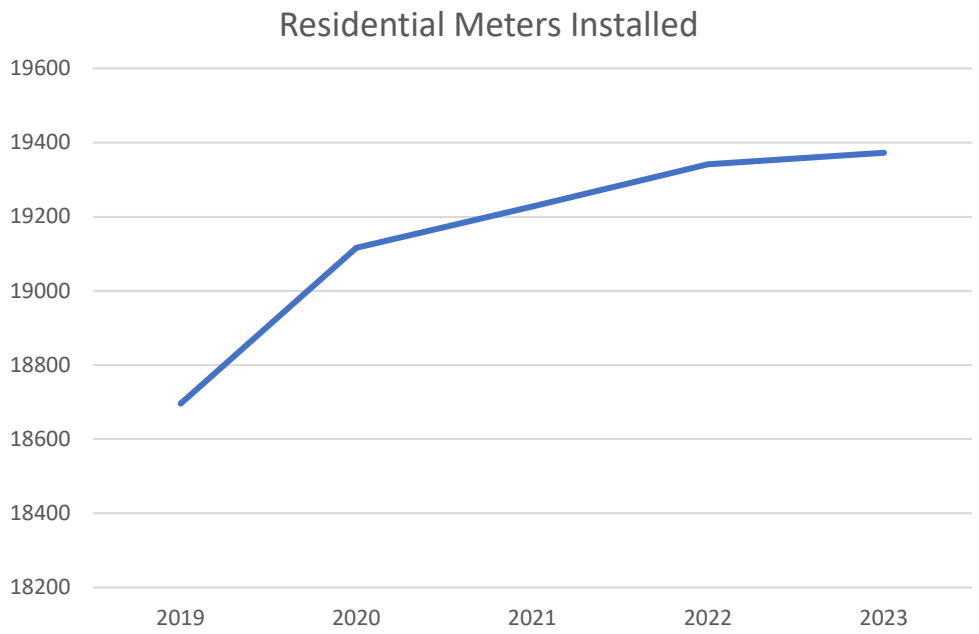
Create sufficient resources through rates to support:

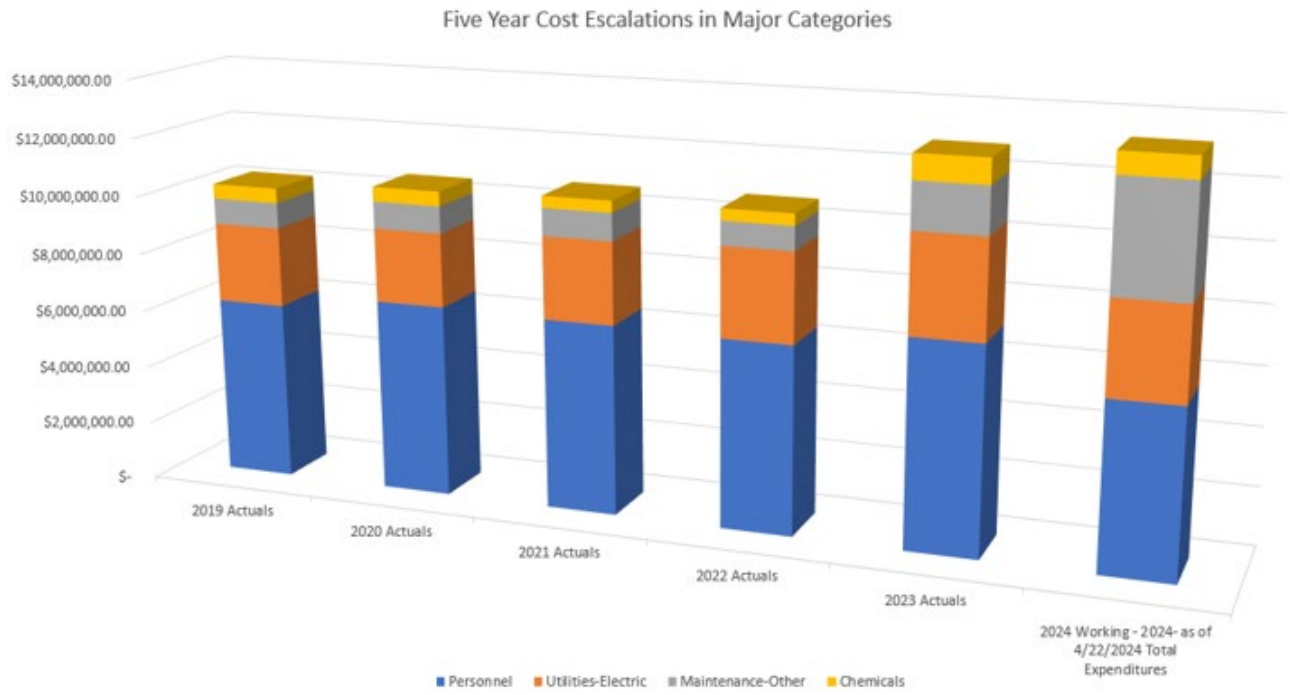
- **Provide High-Quality Water**: Bring clean, safe and reliable water supply by balancing variable supply and customer demand
- **Develop Reliable Sources of Water**: Invest ongoing to maintain three independent water supplies and careful use of natural resources
- **Address Aging Water Infrastructure:** Reduce increased maintenance costs, ongoing service problems, breakage, and water loss
- **Use of Reclaimed Water:** Offsets demand for potable water up to 20%
- **Fulfill Regulatory Requirements:** Produce potable water and reclaimed water within State and Federal guidelines

Rate Study Model Assumptions

Assumption	Details
Growth in Accounts	1.00% annually
Reserve Targets	90 days O&M
Debt Service Coverage	Target: 1.25x Minimum: 1.20x
Debt Service Policy	Annual payment less than or equal to 20% of operating revenues for Water, Wastewater, Reclaimed Water, and Stormwater enterprise funds
Base Operating Budget	"Balanced" O&M budget adjusted to reflect average spending rate, carry-forwards, one-time requests, and operating capital
Cost Escalation Factors	Default inflation factor at 3.5% Chemical, Utilities, Equipment Maintenance at 6.00%
CIP Escalation	Full CIP adjusted for 4% annual cost escalation beginning in FY 2025
Funding Sources	Rate revenues, fund balances, debt, grant funding, and capacity fees
Grant Funding	$21.9M in Water; $3.2M in Reclaimed Water
Major Projects	Water – Water Supply Security Projects Wastewater – Wildcat Hill Wastewater Treatment Plant Design & Expansion

Rate Study Model Assumptions

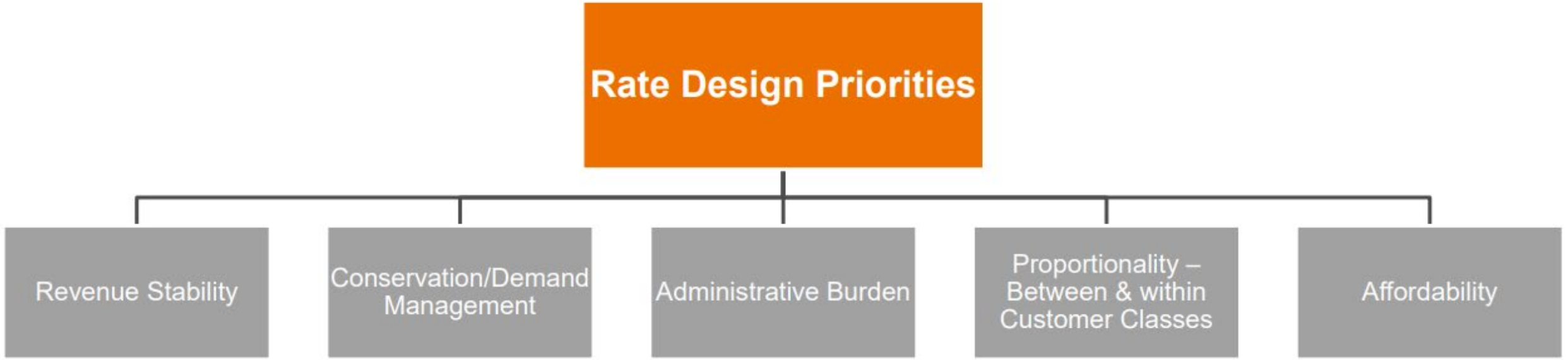




Water Service has seen an average 3.5% growth in meter installations over the last five years. Financial model assume a 1% growth over the planning period.

Financial Model assumes 3.5% cost escalator, and a 6% for Chemicals, Electrical, and Maintenance (CEM). CEM has seen a 29% cost escalation in these expenses.

Rate Design Priorities



Rate Calculator Demonstration

https://cleanwaterflagstaff.com/rate-calculator

Below are standard fees and charges for a Single-Family Residential Municipal Services Bill.

The 2024 Rate Study is evaluating the base meter charge, tiered water charges, and sewer charge for adjustments required to meet the cost of service. See the "Understanding Your Municipal Services Bill" factsheet for an explanation of all items listed.

Current Activity	Usage	Rate	Amount
Base Meter Charge			16.64
Tier 1 Residential Water	3,500	$3.44	12.04
Tier 2 Residential Water	1,050	$4.45	4.67
Energy Surcharge	4,550	$1.24	5.64
Water Protection Fee	4,550	$0.53	2.41
Sewer Charge	2,090	$5.35	11.18
Stormwater Fee			12.57
Solid Waste Charge			25.45
Recycling Fee			5.09
Environmental Management Program Fee			2.48
State and Local Taxes			3.73
Total			$101.90

SAMPLE

Water

Enter information from your Municipal Services Statement in the orange highlighted spaces below, or you can estimate your water use and meter size from the list below. Most residents have a 3/4" meter size.

Enter Monthly Usage in Gallons (for residential, add up usage over the different tiers, or use the value from "Energy Surcharge" similar to how shown in this example):	-
Enter Monthly Base Meter Charge from your bill:	$16.64
Enter your customer class:	Institutional
New Proposed Customer Class (if applicable)	Commercial/Schools

Current Activity	Usage
Base Meter Charge	
Tier 1 Residential Water	3,500
Tier 2 Residential Water	1,050
Energy Surcharge	4,550

Amount	Existing	Proposed
Water Base Charge	$ 16.64	$ 14.33
Water Volume Charge	$ -	$ -
Total Water Charge	$ 16.64	$ 14.33

Rate Calculator – Residential Example

- Residential customer who usage is 4,577 gallon
- Current monthly bill - $51.30 (Water $33.47, Sewer $17.83)
- Year 1 bill - $63.48 (Water $34.76, Sewer $28.72)
- Year 2 bill - $75.88 (Water $39.98, Sewer $35.90)
- Year 3 bill - $87.26 (Water $45.97, Sewer $41.29)
- Year 4 bill - $98.29 (Water $52.87, Sewer $45.42)
- Year 5 bill - $108.49 (Water $60.80, Sewer $47.69)

Rate Calculator – Commercial Example

- Commercial customer who usage is 51,750
- Currently monthly bill - $553.29 (Water $259.35, Sewer $293.94)
- Year 1 bill - $559.33 – (Water $318.65, Sewer $240.68)
- Year 2 bill - $667.30 – (Water $366.45, Sewer $300.85)
- Year 3 bill - $767.39 – (Water $421.42, Sewer $345.97)
- Year 4 bill - $865.20 – (Water $484.63, Sewer $380.57)
- Year 5 bill - $956.53 – (Water $557.33, Sewer $399.60)

Rate Study Council Direction

Minimizing the Impact to the Rate Payer:

- ✓Utilized Actual Flow Data versus Design Flow Data to minimize Capacity Fee increase
- ✓Added Solids Loading component to the Capacity Fee calculation to minimize impact to new developments and align costs to those producing higher solids
- ✓Reduced revenue recovered from Water Base Fee from 29% to 25% to empower water users to have more control over their bill
- ✓Assumed a 90% execution rate of operating budget
- ✓Adjusted Residential Tier Rates to reduce bills for water smart customers in both Tier 1 and Tier 2
- ✓Consolidated Customer Classes to make the structure simpler and reduced rate increases in some cases
- ✓Adjusted Other Miscellaneous Fees so those receiving services pay those costs and it is not passed on to the rate payer

Rate Scenarios

- Growth
- Cost Escalation
- Percentage of Debt
- CIP Execution