



City of Arvada City Council Agenda

APRIL 8, 2024
WORKSHOPS

Councilmembers:

Lauren Simpson, Mayor
Randy Moorman, Mayor Pro-Tem
Shawna Ambrose, District 2
Sharon Davis, At large
Lisa Feret, At large
Bob Fifer, District 4
John Marriott, District 3

Staff Members Usually Present:

Lorie Gillis, City Manager
Linda Haley, Deputy City Manager
Don Wick, Deputy City Manager
Rachel Morris, City Attorney
Jacqueline Rhoades, Director of Public Works
Sharon Israel, Director of Utilities
Jessica Garner, Director of Community & Econ. Dev.
Bryan Archer, Director of Finance
Gabriella Bommer, Director of Human Resources
Rachael Kuroiwa, Director of Communications & Engagement
Kristen Rush, City Clerk

Info: 720-898-7550

CITY COUNCIL CHAMBERS **6:00 PM**

1. Call to Order/Roll Call of Councilmembers
2. Workshops
 - A. Utilities Project Planning and Financial Strategies
 - B. Waste Hauling Program Overview
 - C. Staff Updates
3. Adjournment



REPORT TO CITY COUNCIL

AGENDA ITEM
2.A.

TO: THE HONORABLE CITY COUNCIL

DATE: April 8, 2024

SUBJECT: Utilities Project Planning and Financial Strategies

Report in Brief

The City team will provide an overview of how the utility enterprise projects (water, wastewater and stormwater) are planned and prioritized. The team will also provide an overview of how the enterprise funds receive funding.

Prepared by:

Christine Gray, Utilities Business Manager

Reviewed by:

Approved by:

Sharon Israel, Director of Utilities	3/22/2024
Bryan Archer, Director of Finance	3/22/2024
Jessica Morales, Assistant City Attorney	3/25/2024
Kelsy Sargent, Assistant City Attorney	3/25/2024
Tammy Hedlund, Legal Specialist	3/25/2024
Don Wick, Deputy City Manager	3/25/2024
Rachel Morris, City Attorney	3/25/2024
Lorie Gillis, City Manager	3/27/2024

Enclosure, exhibits & attachments required to support the report

Utilities Project Planning and Financial Strategies

City Council Workshop
April 8, 2024

Tonight's Agenda

- City of Arvada Utilities Infrastructure Overview
- Project Planning Process Overview
- Utility Financial Strategies overview
- Next Steps

City of Arvada Utilities Infrastructure Overview

The City's water and wastewater systems date to the early 20th century with current components installed starting in the 1950s with significant investment between the 60s and 80s. Much of this infrastructure is reaching the end of its useful life.

By the numbers:

- ~40,000+ households, 120,000+ residents, ~40 square miles
- ~100 full time employees
 - Operations & Treatment, Customer Billing, Water Resources, Wastewater, Stormwater, Engineering
- Water supply ~75% Denver Water (Gross Reservoir), 25% Clear Creek
- ~6.4 billion gallons of treated water per year
 - Ralston Water Treatment Plant (WTP) treatment capacity is 36 Million Gallon per Day (MGD)
 - Arvada WTP treatment capacity is 16 MGD
- 11 water storage tanks and 7 pump stations
- 630+ miles of distribution pipes
- 38,000 water meters & 6,000 hydrants
- 400 miles of sewer line maintained by Arvada
- Over 10,000 maintenance holes and 2 lift stations
- 221 miles of storm drains

Alignment with City Council's Strategic Goals

- Water, sewer and stormwater services are considered “anchor institutions”
- These services are foundational to the success of City Council's strategic goals:
 - Helping Residents with Affordability Concerns
 - Supporting Access to Housing
 - Preserving/Improving Quality of Life
 - Supporting a Vibrant Local Economy
 - Maintaining City Assets

Utility Funds Are Different Than the General Fund

Water, Sewer/Wastewater, Stormwater, Trash/Recycling and Golf are **ENTERPRISE** Funds (not General Funds):

- Article X, Section 20 of the Colorado Constitution (aka, Taxpayer's Bill of Rights or TABOR).
- Government-owned business that receives revenue in return for providing a good or service.
- Revenue Requirements (rates, fees, system development charges) are voted on by City Council.
- The Enterprise can issue its own revenue bonds (City Council approval)
- Enterprises are required to comply with TABOR with respect to revenues (can receive up to/no more than 10% of annual revenues from state/local government sources)

Utilities Project Planning, 2019 to today

City Council directed for all major utility areas:

- Water treatment, water distribution, wastewater collections, stormwater, water supply

All areas showed significant need:

- Water Treatment - replace a facility, major rehabilitation at a facility
- Water Distribution - need for piping and storage
- Wastewater Collections - extensive interceptor deficiencies
- Stormwater - Extensive areas of missing/undersized infrastructure
- Water Supply is wrapping up in 2024

Master Planning Strategic Result Timelines

← Ongoing Aging Infrastructure and Capacity Needs →



Providing An Acceptable Level of Service (LOS) for Our Customers

- LOS is updated regularly
- LOS is a decision/discussion point across the Utility and with City Council
- LOS is also communicated with our customers



MEMORANDUM

INFRASTRUCTURE WORK SYSTEM

DATE: August 3, 2023
TO: Sharon Israel, Jacqueline Rhoades
FROM: Utilities Engineering Team
SUBJECT: Updated Level of Service Goals for Water, Wastewater, and Storm Water Utilities

Summary

City Utilities staff, in conjunction with Utilities Engineering staff, have defined and set goals for each utility area. These are summarized in Table 1 at the end of this memo. These goals will provide direction for:

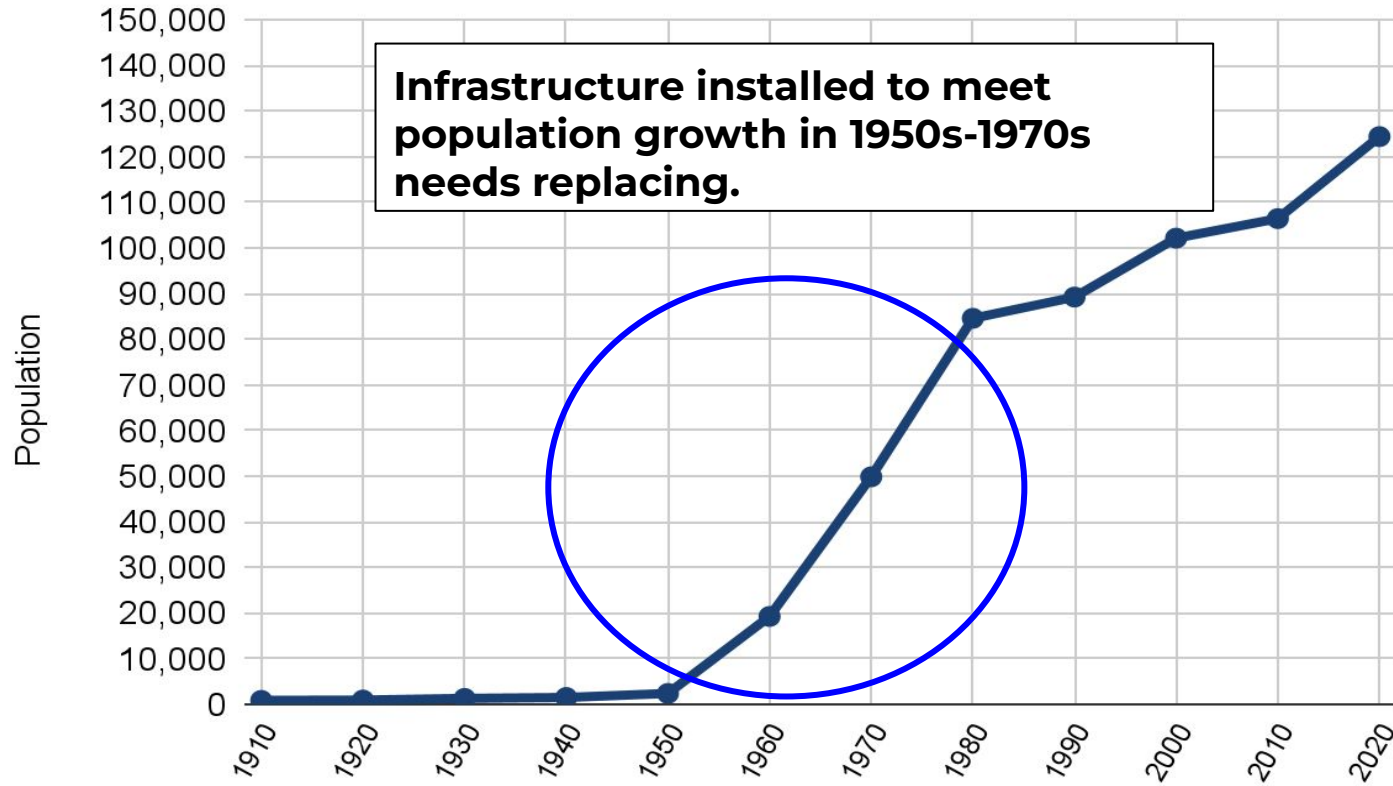
Funding Sources

Each year, the City team prioritizes projects in our system to keep delivering the level of service residents have come to expect. Some projects build capacity for new users and other projects replace and rehabilitate the existing system.

vements are needed

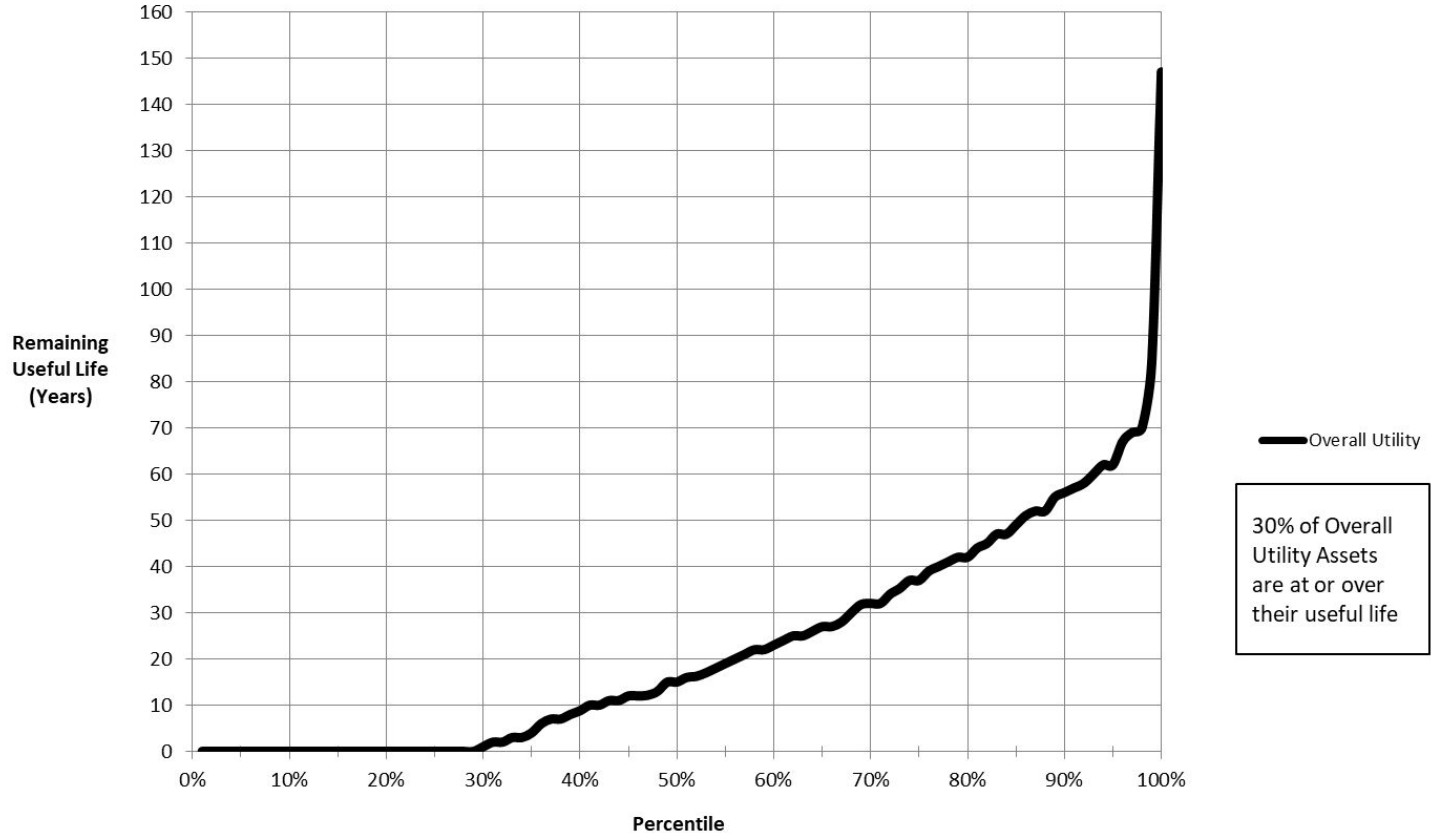
the accepted level of risk and provide this
level of service to our customers.

Managing Significant Aging Infrastructure Needs to Maintain Customer Level of Service



**A significant
portion of
the system is
at or near
useful life**

Reinvestment
is funded
from rates and
fees



**2023 Frequency Distribution Curves of
Remaining Useful Life for Overall City
Utility Assets**

CITY OF ARVADA
Long-Term CIP R&R Planning

*Total Number of

The City's Stormwater, Water and Sewer Systems' Total Replacement Value ~ \$4,500,000,000

<u>System</u>	<u>Value</u>
Water Infrastructure	\$2.4 billion*
Wastewater	\$1.2 billion
Stormwater	\$840 million
<i>* Does not include the City's water rights portfolio</i>	

Recent Water/Sewer/Stormwater System Challenges: OCT 2023 - FEB 2024

Water System Challenges:

- Valves/Actuators and Piping
- Chemical Feed systems
- Filtration and Effluent systems
- Pretreatment processes
- Raw water operation infrastructure failures
- Controls, Communications & Supervisory Control and Data Acquisition (SCADA)

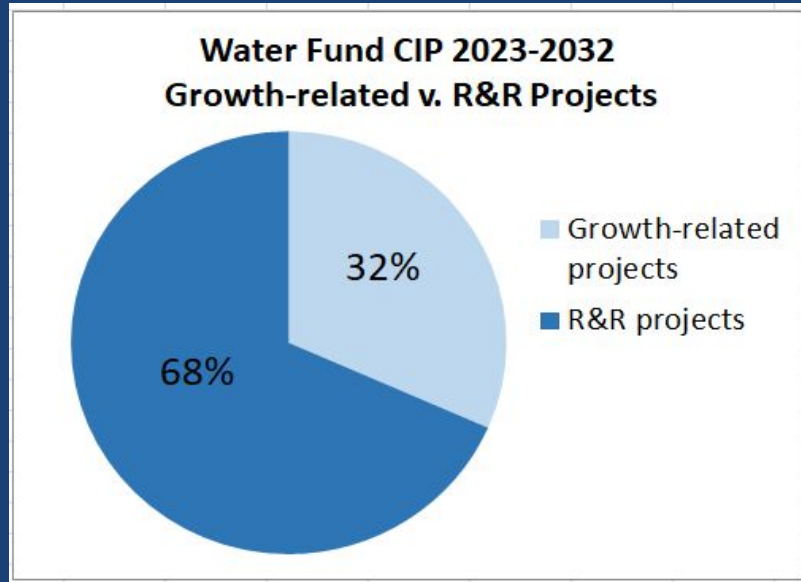
Sewer System Challenges:

- Major pressure and capacity projects: required to meet LOS for development
- Sewer backups due to undiscovered root intrusions

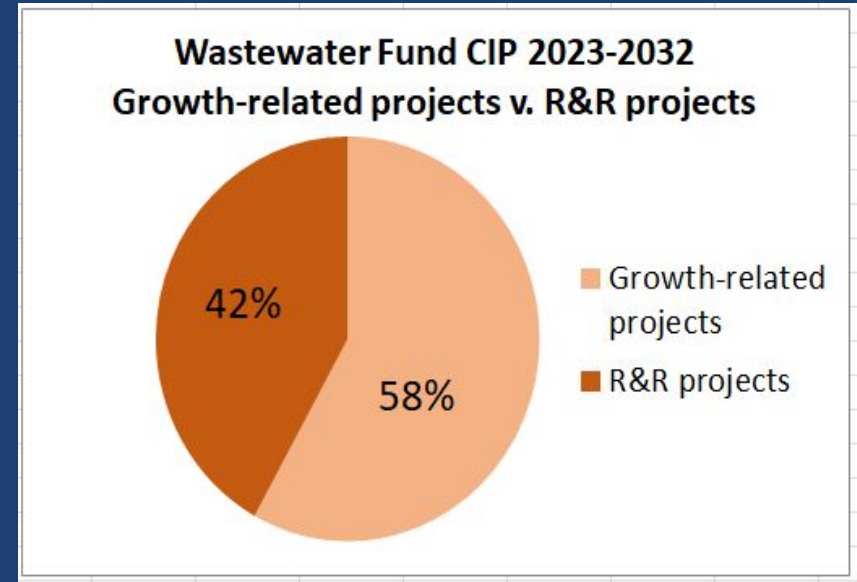
Stormwater System Challenges:

- Undersized infrastructure unable to handle moderate rain events
- Multiple sinkholes due to failure of aging infrastructure
- Algae and other water quality concerns in open drainageways
- Damage caused by stormwater co-mingling with irrigation

Water and Sewer Fund CIP Projects: Growth-related vs. Repair & Replacement (R&R)

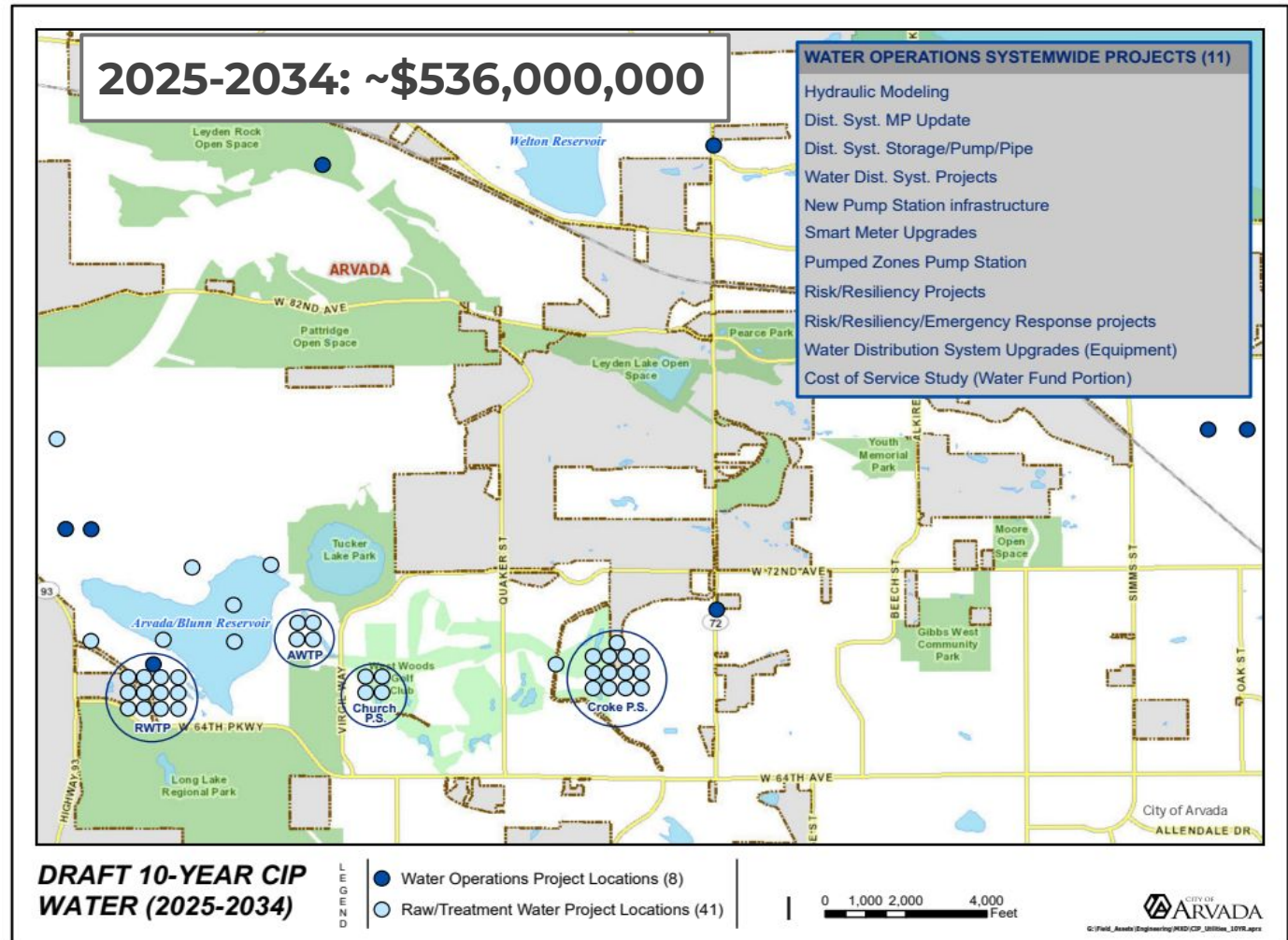


Growth-related projects are primarily the Gross Reservoir Expansion project + developer-contributed system expansion projects.

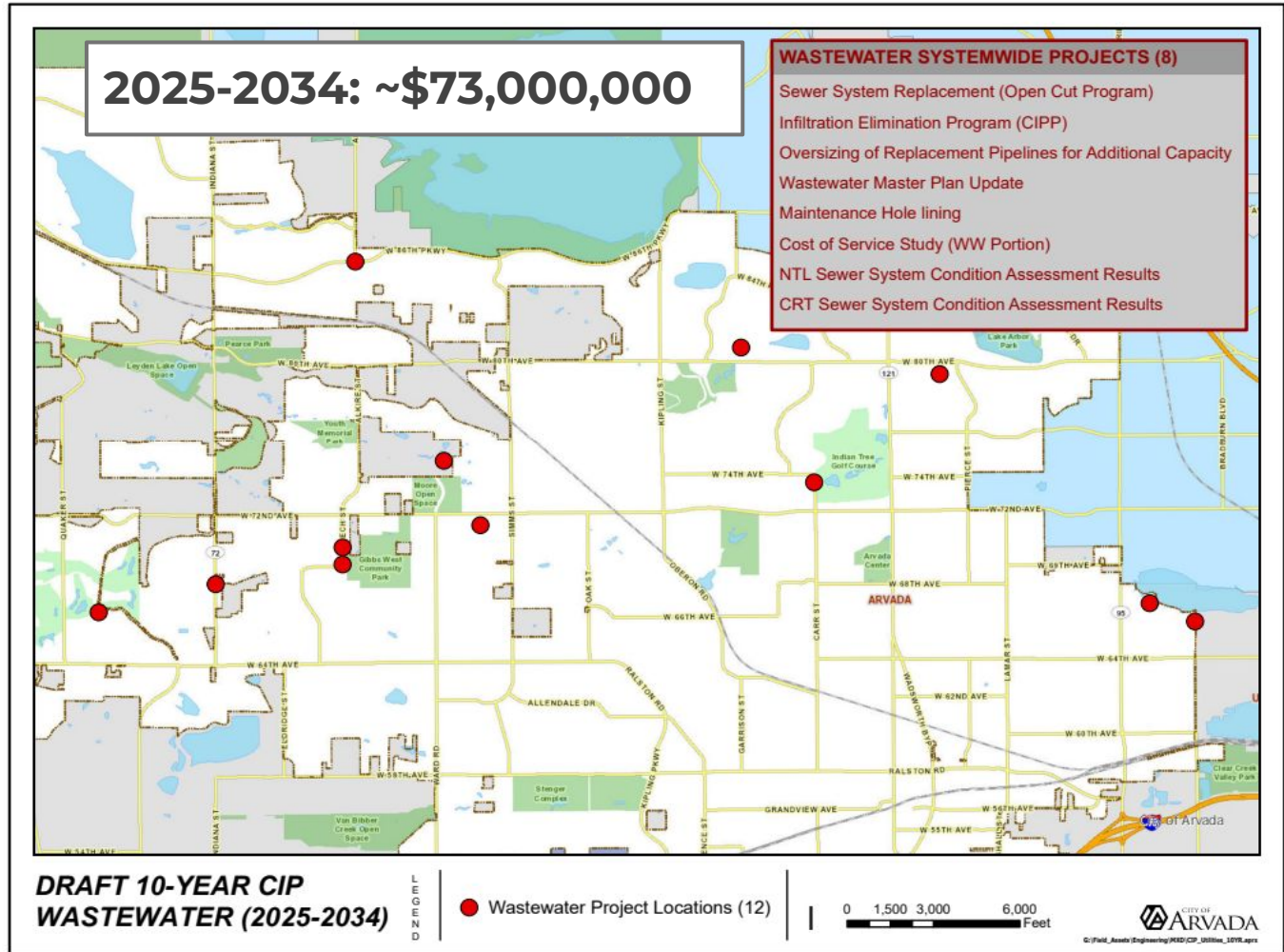


The majority of Wastewater projects are a combination of growth and R&R, and cannot be separated

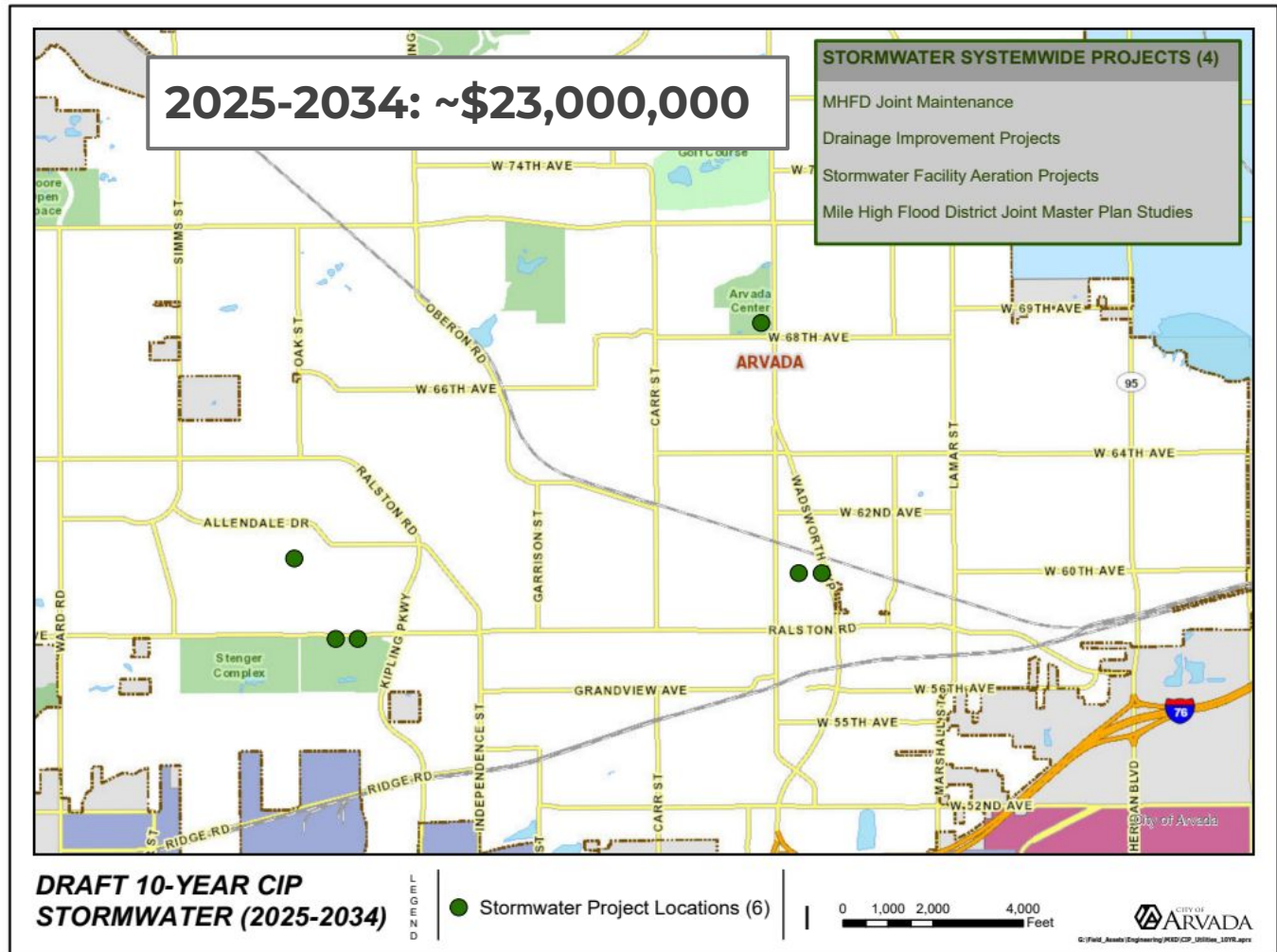
Water System Project Map (draft 2025-2034 projects)



Wastewater System Project Map (draft 2025-2034 projects)



Stormwater System Project Map (draft 2025-2034 projects)



Capital Reinvestment Supports Reliable Water, Sewer and Stormwater Services



Reinvestment projects will “keep the lights on” for the water, sewer and stormwater utilities.

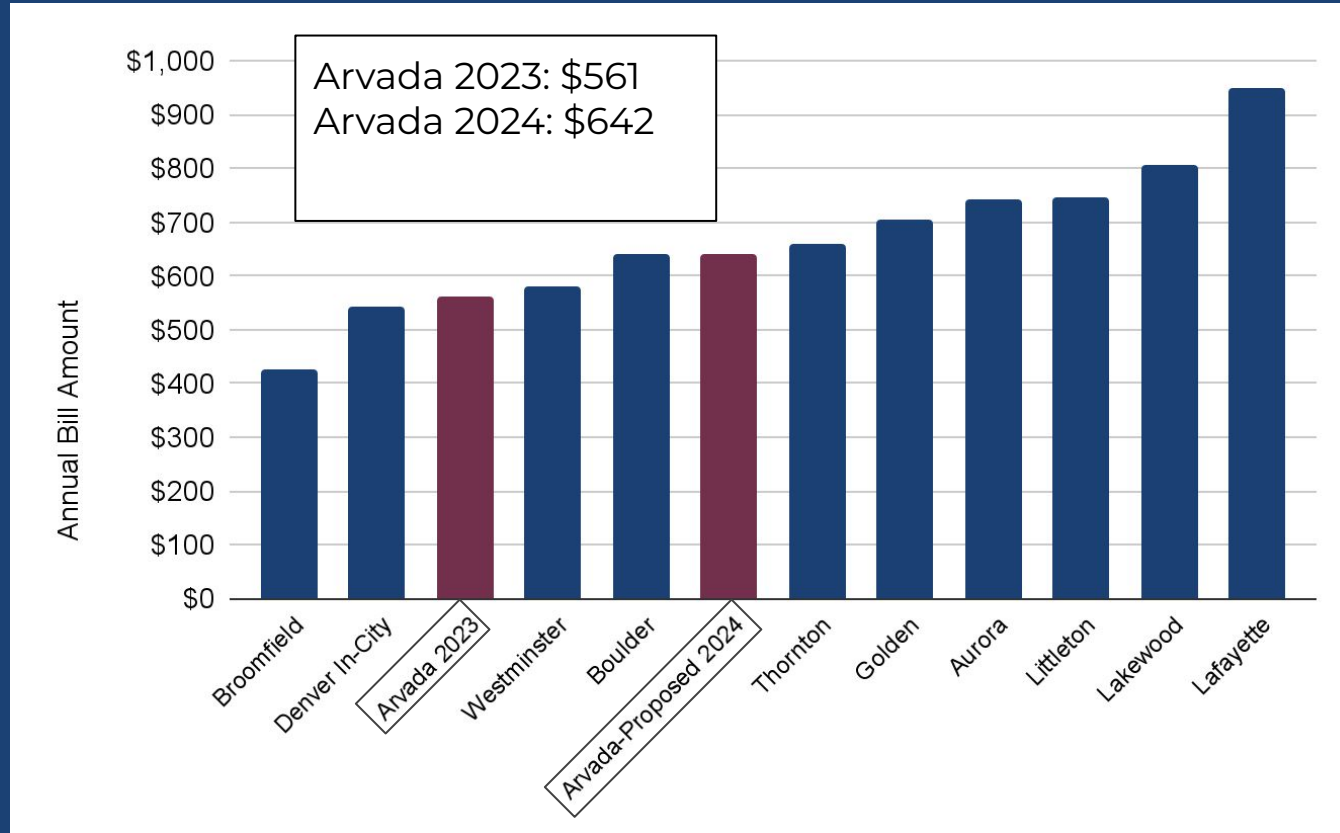
All identified projects address system pieces/parts that are aging and need replacement to function properly for our customers.

Utilities Financial Strategy Overview - 2019 to Present

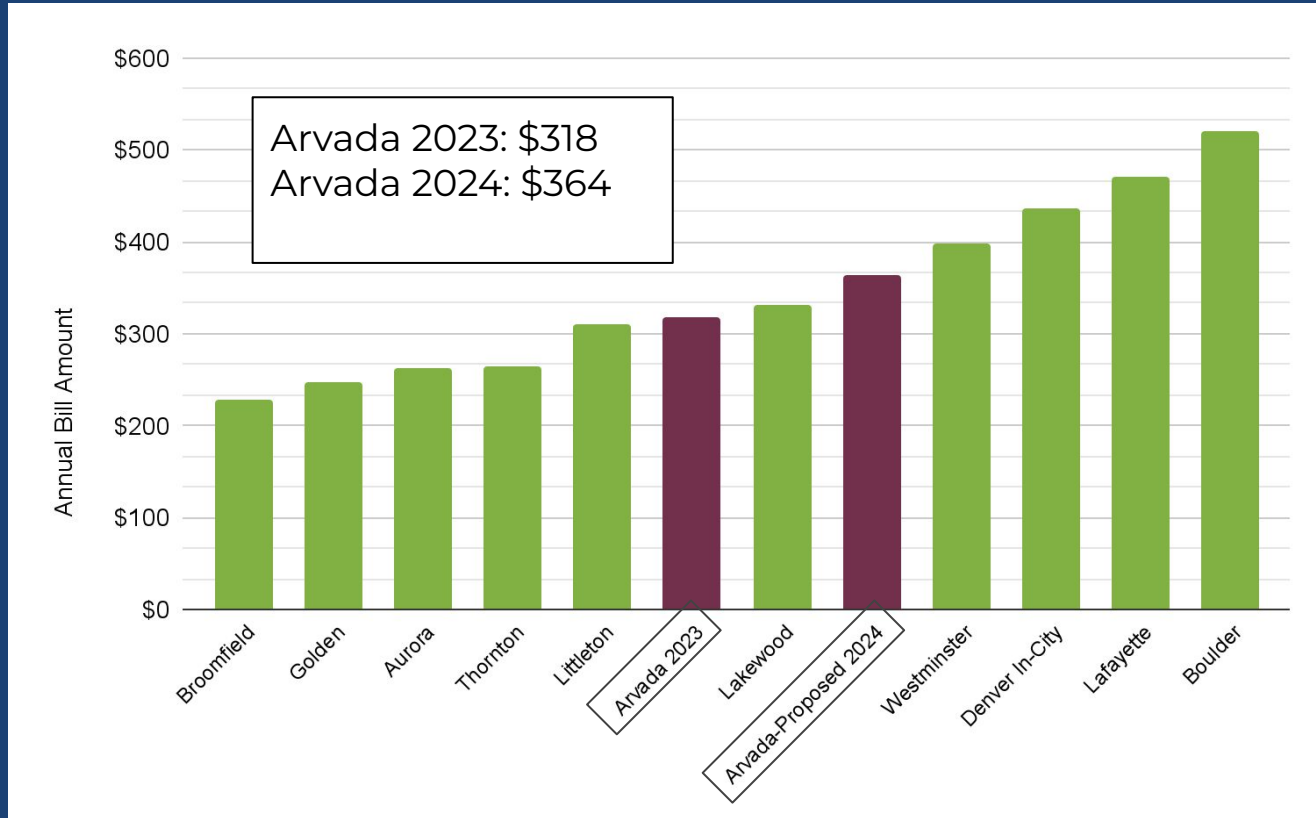
- 2019-2022: Water, Sewer and Stormwater Master Plans
- 2021: Approached City Council with initial Financial Strategy concepts
- 2022: Roadmap and alternatives
- Revenue sources:
 - Annual rates adjustments
 - Annual bimonthly service fee adjustments (since 2022)
 - System Development Charge adjustments, effective October 1, 2023
 - Debt financing:
 - Spending the December 2022 Bonds: \$50M water, \$50M sewer
 - There is a need for additional funding for outyear capital project funding
 - City team is investigating/ranking all funding options - bonds, low-interest loans, grants. **We are looking for funding!**

2024 Utilities Rate and Fee Recommendation Recap

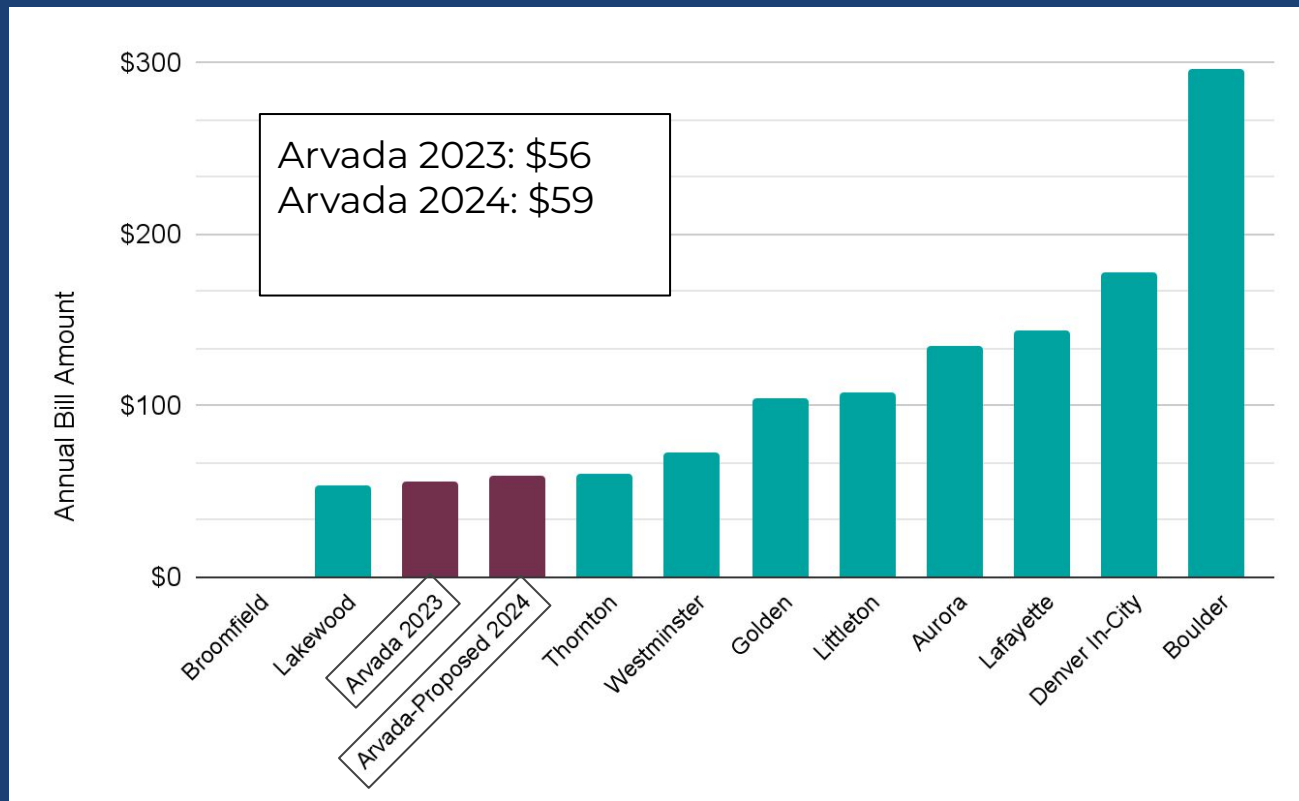
Single Family **Typical** Annual Water Charges 2023 Comparisons with 2024 Increases



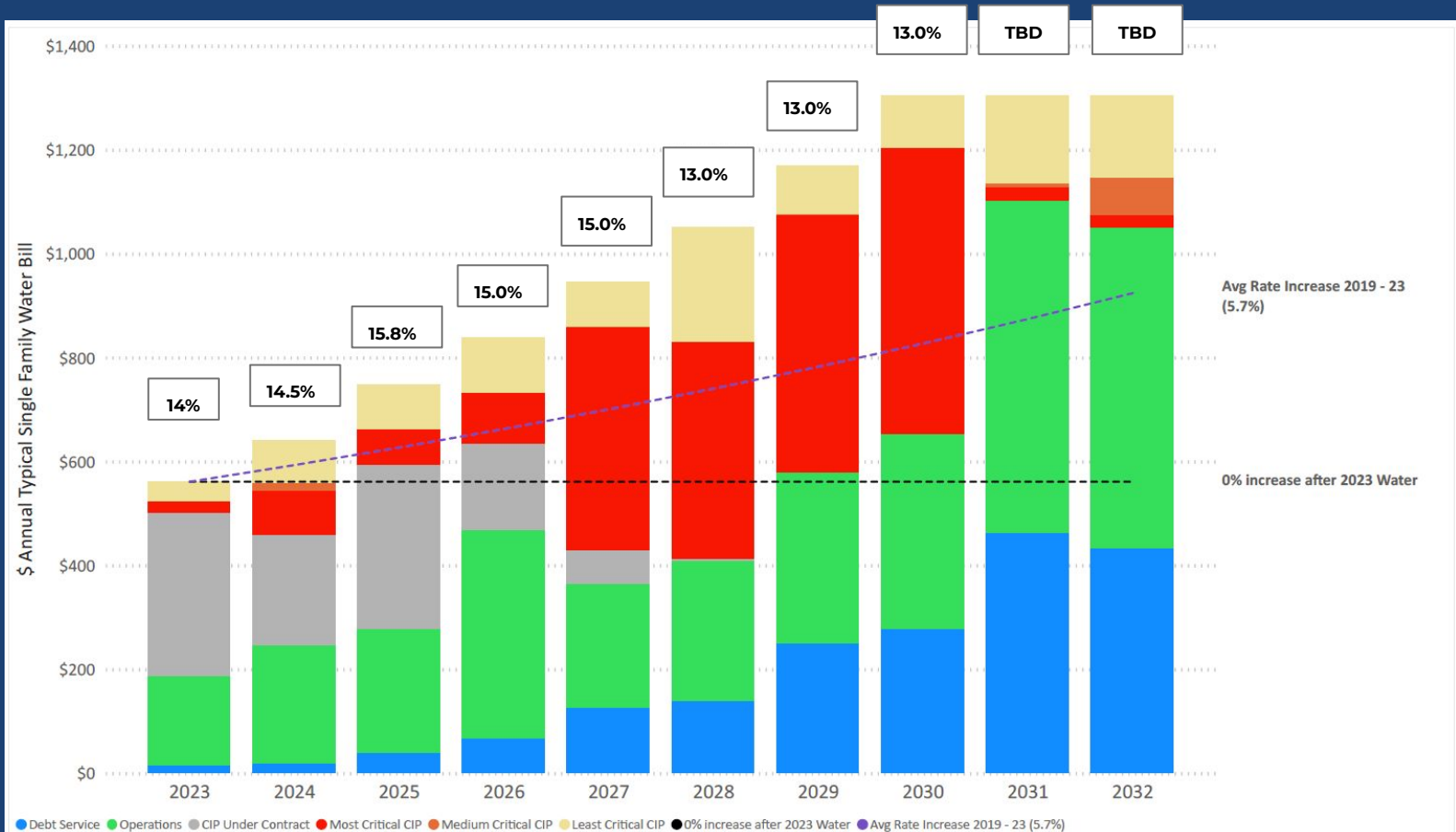
Single Family **Typical** Annual Sewer Charges 2023 Comparisons with 2024 Increases



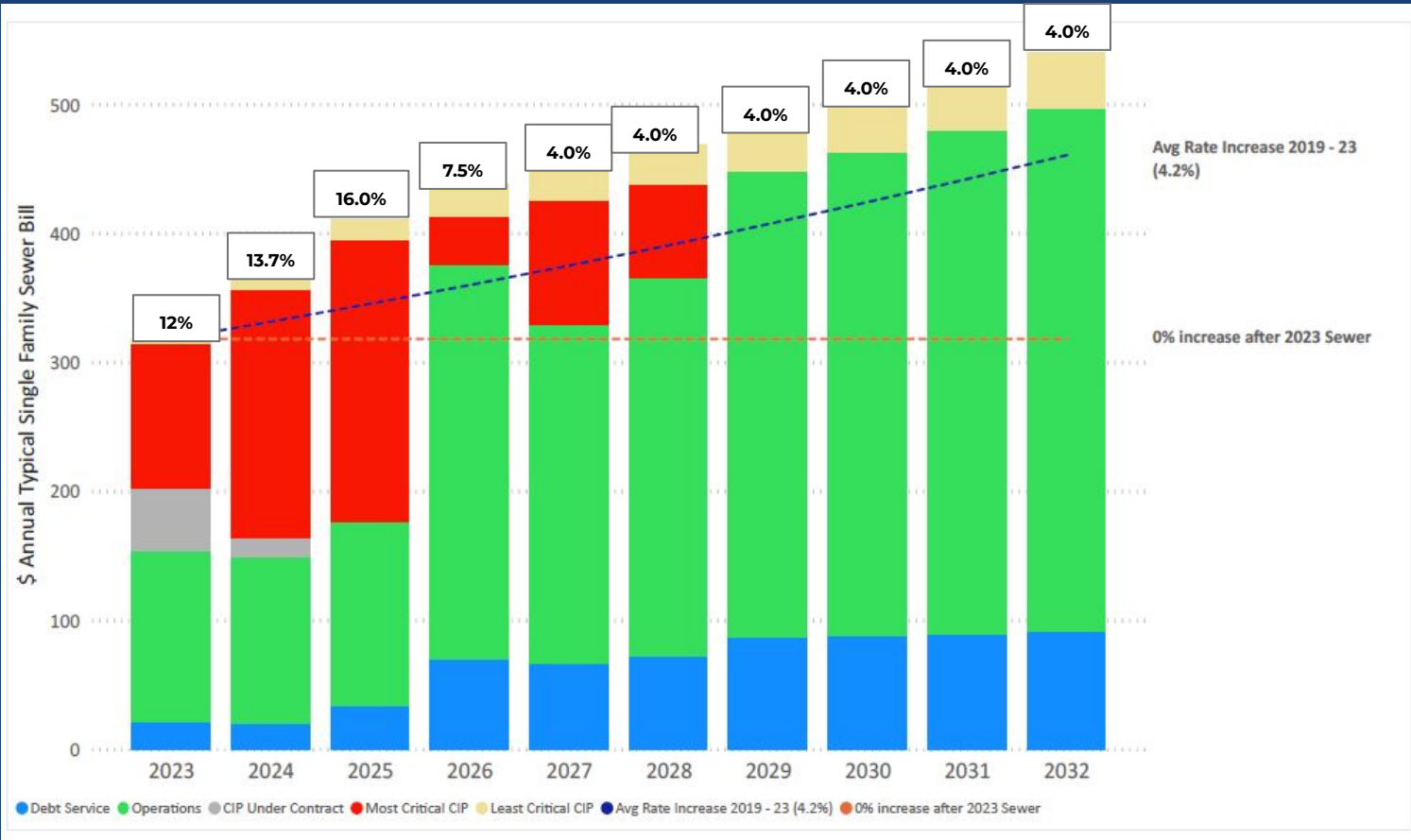
Single Family **Typical** Annual Stormwater Charges 2023 Comparisons with 2024 Increases



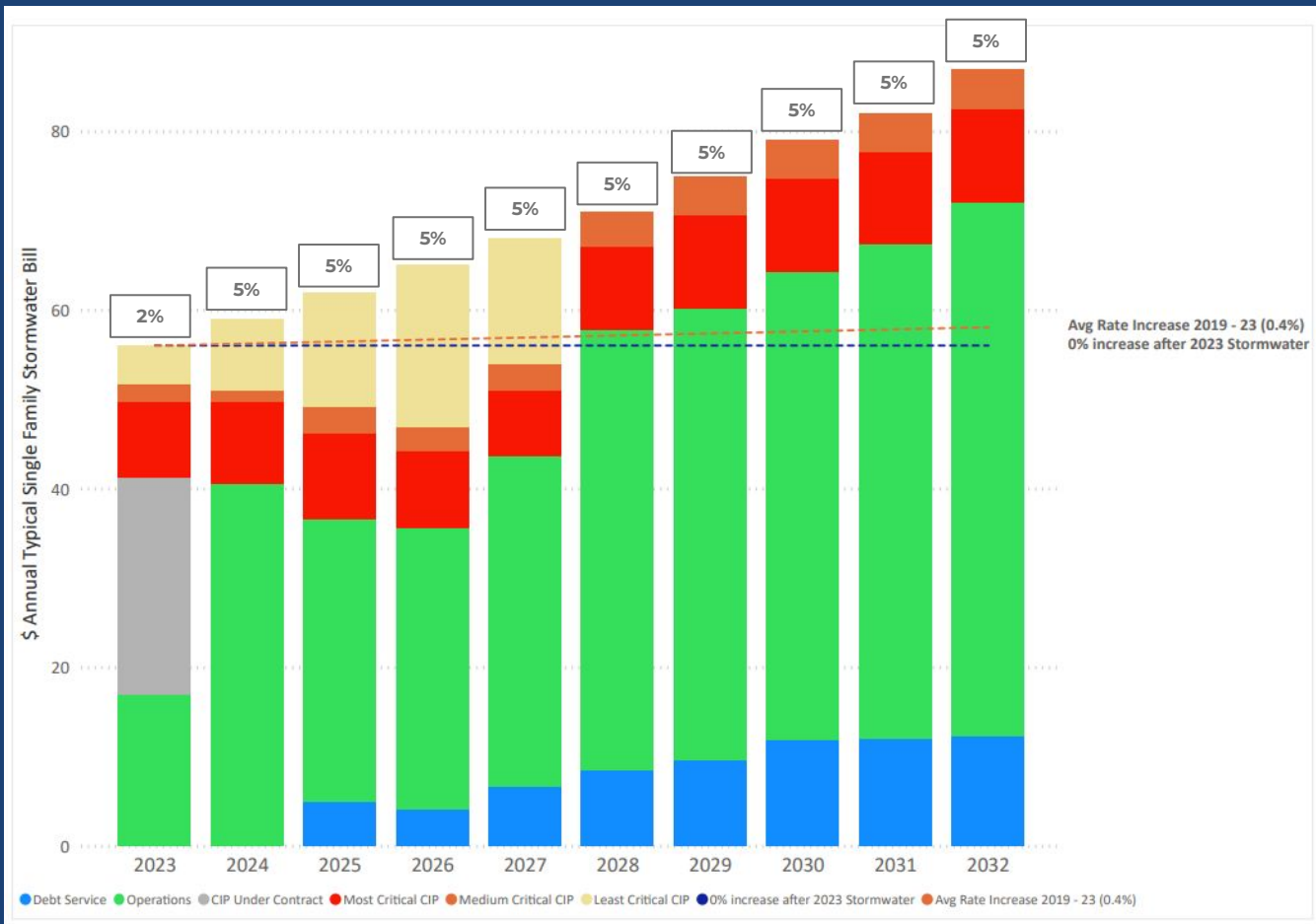
Cost Allocation for a Single Family **Water** Bill & Increases needed to fully fund Master Plan Projects



Cost Allocation for a Single Family **Sewer** Bill



Cost Allocation for a Single Family **Stormwater** Bill



Current City Assistance Programs and Affordability Program Recommendations

Current assistance programs and data:

- Hardship credits of \$100 - 2023 (2), 2022 (0), 2021 (2)
- Payment arrangements: 2023 (513), 2022 (1,078)
- 2023 Low Income Housing Water Assistance Program (federal): \$123,615 in bill forgiveness

Affordability Recommendations: City team preparing information for future workshops, including:

- Definitions + Benchmarks
- Community Comparisons
- Program Recommendations

State and Federal Funding Opportunities

- The City team submitted four Congressionally Directed Spending applications to Senators Bennet and Hickenlooper (late March)
- The City team is working with a consultant to identify the funding opportunities for Utilities projects that are in the City's best interests

FY25 Congressionally Directed Spending Official Request Form for U.S. Senators Michael Bennet and John Hickenlooper

Please submit your Congressionally Directed Spending (CDS) request for fiscal year 2025 (FY25) by **11:59 PM MT on Friday, March 29th**.

As our offices work to secure important federal funding for Colorado, we welcome CDS requests for the upcoming FY25. The CDS process is an opportunity for state and local government entities and nonprofits to request funding from members of Congress for specific projects in their home states. Funding for projects, if selected by the Senate Committee on Appropriations and ultimately passed into law by Congress, would be distributed as part of the federal appropriations process during FY25.

Senators Bennet and Hickenlooper are providing a joint application process for FY25 CDS projects. Applicants will be able to complete *one* application form which will be received by both offices. **Each Senator will then review project requests and submit to the Senate Committee on Appropriations individually.**



8101 Ralston Road, Arvada, CO 80002

March 29, 2024

Senator Michael Bennet
directspending@bennet.senate.gov

Senator John Hickenlooper
cds@hickenlooper.senate.gov

Re: Letter of Support for FY25 Congressionally Directed Spending Requests

Dear Senators Bennet and Hickenlooper,

The City of Arvada has submitted four projects for consideration during this Fiscal Year 2025 Congressionally Directed Spending cycle, and I am pleased to provide this Letter of Support. These projects will directly benefit the City's residents and businesses, and are critical to meeting the Arvada City Council's Strategic Goals related to housing, public safety, quality of life, and proactive infrastructure management.

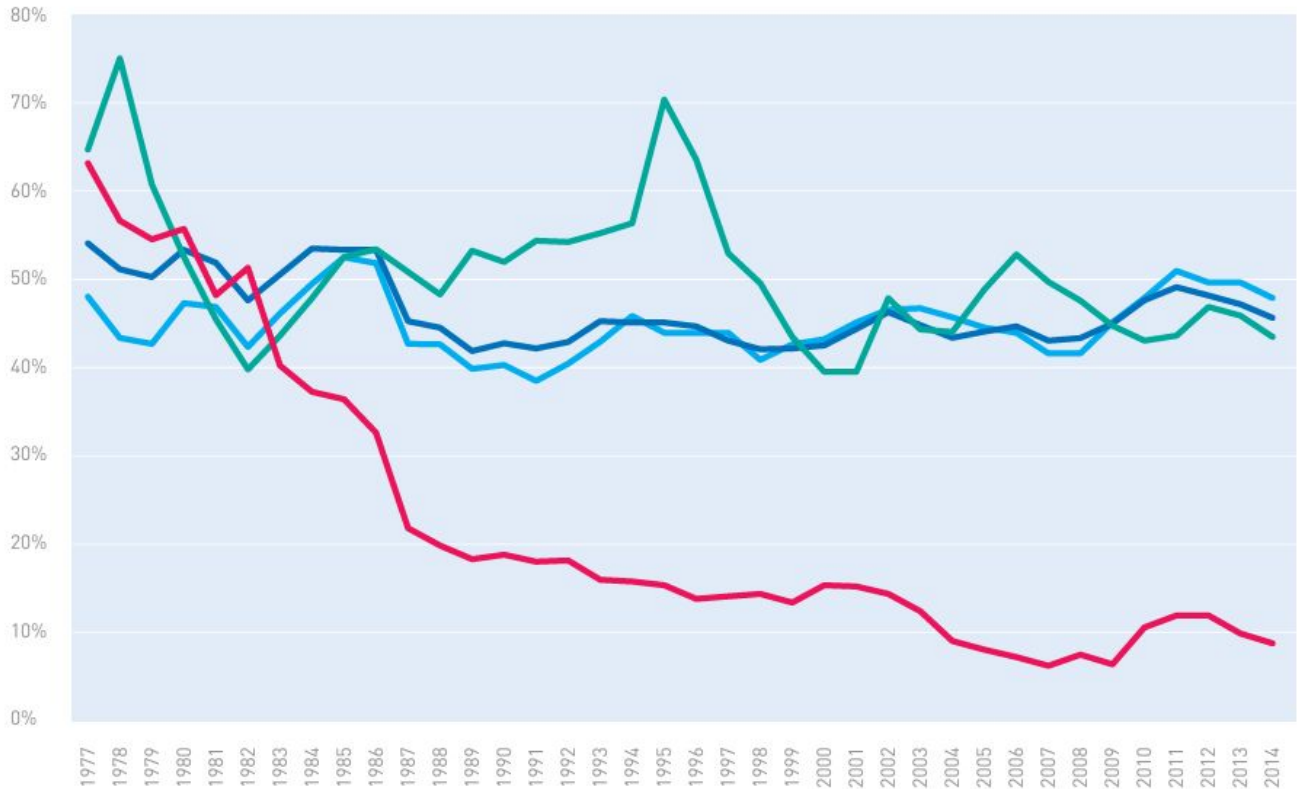
Here are some details about each of the projects:

Historic Federal Funding by Industry

Figure 3

Federal Contribution to Total Infrastructure Spending

Water Utilities Highways Aviation All Transportation Infrastructure



Source: CBO 2015.

Next Steps

City Council Date	Topics to be Discussed
July Workshop	• Revenues (Rates/Fees) 101 • Historic info, customer demographics, road map and options/choices • Affordability Options • Funding options, choices, pros/cons
August Workshop	• Rate/fee ranges and edits/responses to requests from 7/22 • Affordability Options • Funding options, choices, pros/cons
September Workshop	• Final discussion about rates/fees • Customer impacts • Graphs/charts
October 7, 2024	1st reading for revenue (rates/fees) adjustments
October 21, 2024	Public Hearing/2nd reading for revenue (rates/fees) adjustments

Thank you.



MEMORANDUM

INFRASTRUCTURE WORK SYSTEM

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TO: Sharon Israel, Jacqueline Rhoades
FROM: Utilities Engineering Team
SUBJECT: Updated Level of Service Goals for Water, Wastewater, and Storm Water Utilities

Summary

City Utilities staff, in conjunction with Utilities Engineering staff, have defined and set goals for each utility area. These are summarized in Table 1 at the end of this memo. These goals will provide direction for:

- A benchmark where the system meets expectations and where improvements are needed
- Prioritization of CIP Projects
- Identification of budget needs
- Common work goals for utilities teams
- Communication with stakeholders outside of utilities
- Explanation and rationale for utility operations and decisions

The City's definition of Level of Service is as follows:

Develop numerous criteria for each area of the utility to define the accepted level of risk and provide this level of service to all customers.

All of the goals identified in Table 1 are based on industry standards, industry best practices, and/or regulatory requirements. All are goals routinely met by many utilities. Some of the goals are aspirational and City staff and teams are committed to working towards those aspirational goals.

City Council goals were also considered and the following goals are specifically incorporated:

- SR5 - By 12/25, the City will have 100% of the water supply needed for build-out as defined by the Comprehensive Plan.
- < 25 breaks per year
- CIPP lining program
- Inspect and clean 25% of manholes, inlets, and outfall structures every year
- *Clearpoint - 90 minutes for response - this is being removed as it has been met 100% since it was established*

Additionally, the City Council strategic goals for infrastructure included developing and implementing master plans for raw water, treatment, distribution, and the sanitary sewer collection system. Master plans have been completed on the treatment, distribution, storage tanks, and sanitary sewer collection system and the recommendations are being implemented. The raw water system master planning is ongoing in 2023.

Many of the goals reference likely and unlikely failures. Likely failures are defined as any one thing breaking or failing to operate within a utility system. Examples include pipe break, motor overheating, electronic relay no longer working, etc. Unlikely failures are defined as either multiple likely failures happening at the same time or a failure mode that is not normally encountered.

Updates to these goals will happen in coordination with the long-term planning asset database and in advance of each two-year budget cycle. This document will inform the 25-26 budget cycle.

Each utility area work team set goals via workshop.

ITEMS WITH DATES IDENTIFIED THAT HAVE BEEN ACHIEVED ARE IN *GREY ITALICS*.

ASPIRATIONAL GOALS DENOTED WITH **.

Table 1 – City of Arvada Utility System Level of Service Goals – Updated April 2023

Area*	LOS Goals*	Rationale	Work Needed to Meet LOS Goals
1 Water Rights and Raw Water Supply	100% of Build-Out water supply is well defined by December 2025. Plan for construction needs is established and scheduled. - Any identified additional raw water storage is identified in the long-term rates model and the plan for construction is established and scheduled. - Use of Arvada water rights is maximized. 100% of indoor water demand at build-out is provided under a 1000-year drought (0.001% chance) recurrence. 100% of indoor water demand at build-out and 50% of outdoor demand (critical landscaping kept alive) is provided under the design drought (1953-1967). - Protect and maintain Arvada water rights. - Maximize water supply resiliency through the Denver Water contracts. - Participate in watershed protection associations for Clear Creek and Ralston Creek. Identify strategic financing opportunities for protection projects. - Identify and establish thresholds for water quality in raw supply. Delineate management approach for exceeding thresholds.** - Maintain Water Conservation Plan.	- Public Health and Safety (PH&S) requires having a safe reliable water supply - Regulatory compliance - State law, decrees, and agreements - Support a stable economy - Resident and visitor expectations of a safe, resilient, high quality water supply and a robust, reliable infrastructure	- Water Resources Master Plan (ongoing) - Water quality monitoring and thresholds for raw supply and Arvada reservoir**
2 SCADA and Controls	- All remote assets have a minimum of two methods of communication.** (To be met with completion of fiber optic network). - Maintain two methods of communication between all water treatment plants. - Maintain fiber ring around Ralston WTP. Improve fiber ring to allow for monitoring of hardware.** - Each facility has two methods of auto/manual control for resiliency. - All communications equipment is standardized, specifically radios, transmitters, PLCs, and computer network).** - Shelf spares will be maintained. - Equipment will be reviewed for obsolescence and spare parts availability in every two-year budget cycle. - SCADA and cyber security policies will be reviewed with each two-year budget cycle. - Choose one or more industry standards (AWWA or NIST) to follow by 2024 for cyber security best practices. Develop formal cyber security policies in alignment with the chosen industry standard. Meet or exceed the chosen industry standard within 5 years. - Outside experts will be hired a minimum of every two years to evaluate the SCADA and controls systems for cyber security. - Maintain the ability to manually operate all pump stations and all treatment processes. Manual operation is a resiliency approach. - No SCADA Day exercise is performed every year. - Real-time data trends are necessary for optimal operation of all portions of the system	- PH&S - Safe, reliable water supply - Regulatory Compliance - Environmental protection - Fire protection - Community assurance and resident and visitor expectations - Generating and making available the data needed for continuous improvement in operations and increasing operational efficiencies.	- SCADA and communications assessment to address resiliency and obsolescence - Determine City standards and plan for meeting the chosen standard - include the IT department team. - Plan and budget for outside expert analysis

Area*	LOS Goals*	Rationale	Work Needed to Meet LOS Goals
	for field personnel. The ability to create and view real-time trends will be improved. • Staff will receive regular training on all operational control approaches, electronics, and communications equipment. • Operational controls approach and methods will have written documentation no later than 2025.** • Perform Vulnerability Assessment for this area, to be completed by consultant by 2024. Fund 20% of identified vulnerabilities with 2025-2026 budget.		
3 Raw Water Infrastructure	• Diversions of Arvada water rights are in 100% compliance with State law, all decrees, and all agreements. • Supply conveyance via ditches and pipelines will have zero incidents per year of unlikely failures. • Diversions and intake structures will have zero incidents per year of unlikely failures. • Dams will have zero significant deficiencies per year per the State Engineer's Office inspections. • Raw water infrastructure will divert and convey 100% of indoor water demand under build-out demand under an unlikely failure scenario. • Raw water infrastructure will divert and convey 100% of water demand under build-out demand under a likely failure scenario. • Water quality and the limnology of Arvada Reservoir will be studied by an outside consultant by 2025. The study will include a plan for improving the quality and a monitoring plan.** • A bathymetric survey of Arvada Reservoir will be a regular occurrence with the occurrence interval determined by 2025.** • Evaluate raw water pump stations by 2025 for improvements related to resilience. Include capital projects needed for resilience in the rate model.** • Perform an energy audit of all raw water pump stations by 2026.** Implement the identified energy efficiency improvements by 2036. The energy audit will include evaluation of pump curves against actual pumping conditions. The City will leverage Xcel's programs for implementing energy efficiency improvements. The evaluation will include the billing categories and rates for each Xcel meter. • Following a fire event, head gates will be closed for an as yet undetermined length of time to assist in maintaining a high level of finished water quality. Take only contaminated water as necessary to meet supply needs. • Perform Vulnerability Assessment for this area, to be completed by consultant by 2024. Fund 20% of identified vulnerabilities with 2025-2026 budget.	• PH&S - Safe, reliable water supply • Regulatory compliance • State law, decrees, and agreements • Fire protection via potable distribution system • Support a stable economy • Resident and visitor expectations of a safe, resilient, high quality water supply and drainage system and a robust, reliable infrastructure	• Update dam safety with most current PMF estimates. • Raw water pump station analysis/master plan and develop rehabilitation and resiliency plan • Limnology study of Arvada Reservoir by 2025** • Plan and budget for regular bathymetric survey of Arvada Reservoir in the 2025-2026 budget cycle.
4 Potable Water	• 0 per year SDWA Primary Standards violations regardless of raw water quality (i.e., under normal, challenging, and catastrophic conditions such as fire or flood). • <1 per 6 years Tier 3 SDWA record keeping violation. • Provide Max Day Demand under routine failure scenarios.	• PH&S – Safe, non-corrosive potable water • CDPHE, SDWA and EPA regulations	• Start Partnership process. • Plan and budget for Vulnerability Assessment projects.

Area*	LOS Goals*	Rationale	Work Needed to Meet LOS Goals
Treatment	• Provide Average Day Demand under unlikely failure scenarios. • Begin working internally toward achieving Partnership for Safe Water Phase IV status. • Meet the City's water quality goals as established. • <5 Taste & Odor or Color Events per year. T&O event is defined as more than 5 calls. Color event is defined as more than 5 calls and is not related to flushing or construction. • Physical security meets industry standards with zero incidents/year of unauthorized personnel inside the plant fence. • Proactively meet the upcoming Lead and Copper Rule Revisions, including lead service line replacement. • Perform Vulnerability Assessment for this area, to be completed by consultant by 2024. Fund 20% of identified vulnerabilities with 2025-2026 budget. • Meet at least 25 of the possible 30 points for the water supply system per ISO standards.	• Fire protection within City limits meeting Insurance Services Office guidelines. • Meet resident and visitor service without the need for demand management due to non-drought reasons • Maintain resident and visitor high expectations of a safe, resilient, high quality water supply	• <i>Develop a task force to determine water quality goals and set water quality goals.</i> • <i>Projects identified by Corona</i> • <i>Meet City Code for fluoride concentrations and addition.</i>
5 Water Storage Tanks	• Provide Operational storage equivalent to 30% average day demand. • Provide equalization storage equal to 2.5 hours of the difference between Peak Hour and Max Day demands. • Provide emergency storage equivalent to 100% average day demand. • Provide fire flow storage to meet maximum fire flow for 2.5 hours in all zones. • Storage quantities are additive. • Account for dead storage. • Meet or exceed best practices for design and operation of system storage as defined by AWWA M32. • Total storage requirement and total storage available shall be calculated for each zone based on the volume hydraulically connected to each zone. • Begin working internally toward achieving Partnership for Safe Water Phase IV status. • The storage system shall be designed such that any one tank in zones 4 and higher can be taken out of service for a year without any effect on service (N+1 concept).** • The storage system shall be designed such that any one tank in zones 1 through 3 can be taken out of service for a year without any effect on service (N+1 concept).** • Any findings from bi-monthly or comprehensive inspections that require a capital project are included in the funding for the following 2-year budget cycle. • 100% of tanks pass sanitary inspections 100% of the time. Should repairs/deficiencies be noted in a sanitary inspection, the repair/correction is made within the time allotted by CDPHE. • Install continuous disinfectant residual monitoring on the discharge of all tanks by 2028. • Perform Vulnerability Assessment for this area, to be completed by consultant by 2024. Fund 20% of identified vulnerabilities with 2025-2026 budget. • Implement on-line monitoring of tank water quality in all tanks by 2027.	• PH&S - Safe, non-corrosive potable water • Fire protection protects PH&S, property values, and reduces insurance costs to residents and visitors • Resiliency for emergency supply • CDPHE, SDWA and EPA regulations • AWWA best practices • Meet resident and visitor high expectations of a safe, resilient, high quality water supply without the need for demand management not due to non-drought reasons • Mitigate pressure surges and reduce pipe breaks	• Additional storage required. Continue hydraulic modeling to identify locations. • Additional storage needed for resiliency • Begin Partnership process. • Budget money to address sanitary survey defects. • Budget money to address Vulnerability Assessment projects. • Security project to add cameras and AI analytics. Obtaining quotes. • Plan and budget for water quality monitoring equipment. Chris has started this. • <i>Storage master plan to address both of the above and aging infrastructure.</i>

Area*	LOS Goals*	Rationale	Work Needed to Meet LOS Goals
6 Pump Stations and PRVs	• PRV service to each zone served primarily by a PRV (no storage in the zone) shall have peak day capacity plus fire flow under routine failure. • PRV service to zones with dedicated storage in the zone shall have max day capacity under routine failure. • Pumping capacity to zones without storage located in the zone shall meet peak hour demand + fire flow under routine failure. • Pumping capacity to zones with dedicated storage located in the zone shall meet max day capacity under routine failure. • Maintain 20 psi minimum with a routine failure for max day plus fire flow. • System pressure ranges fall within City standards. • Maintain pressures at +/- 10 psi of median readings 95% of time for distribution system and residents and visitors. • By 2026, have a plan for analyzing surge and transients from all pump stations. Complete the analysis by 2030.** • Remote continuous pressure monitoring, 1 per zone. Implementation to begin by 2024 and achieved by 2028. • With the exception of Canyon Pines and Ranson, any one pump station can be taken completely out of service between October and March**. • Perform an energy audit of all finished water pump stations by 2026**. Implement the identified energy efficiency improvements by 2036. The energy audit will include evaluation of pump curves against actual pumping conditions. The City will leverage Xcel's programs for implementing energy efficiency improvements. The evaluation will include the billing categories and rates for each Xcel meter. • Perform Vulnerability Assessment for this area, to be completed by consultant by 2024. Fund 20% of identified vulnerabilities with 2025-2026 budget.	• PH&S - Safe, non-corrosive potable water • Fire protection protects PH&S, property values, and reduces insurance costs to residents and visitors • Meet resident and visitor high expectations of a robust and reliable infrastructure without the need for demand management not due to non-drought reasons • Prevent shortened pipe life and reduce breaks • CDPHE, SDWA and EPA regulations	• Master plan of PRVs with regards to resiliency • Master plan of pump stations with regard to resiliency and surge potential • Electrical evaluation of pump stations regarding back-up power • Energy audit of pump stations • Begin installation of remote continuous pressure monitors, 1 per zone.
7 Potable Water Pipe	• < 25 pipeline breaks annually. • < 10 service line breaks annually. • Emergency Response - crews on site within one hour. • Every valve turned every 3 years. Transmission lines - every valve is turned annually. • Entire system is uni-directionally flushed every 3 years. • Provide Max Day Demand under two Routine Failure Scenarios (i.e., two pipe breaks). • Every air valve is maintained every year. • System will meet at least 35 of the 40 points from the water evaluation for ISO rating. • Meet the City standard of 43 psi downstream of the meter pit for every meter. • Where buildings are sprinklered, the system will meet the sprinkler requirements for zoning on a minimum of 90% of properties. Up to 10% of properties may require changes to building construction to meet sprinkler requirements. • Begin working internally toward achieving Partnership for Safe Water Phase IV status. • Exceed AWWA industry standard/recommended leakage/non-revenue water loss.** • Zero Tier 1 violations/year.	• PH&S - Nationally, most pathogen outbreaks occur in the distribution system. • Fire protection protects PH&S, property values, and reduces insurance costs to residents and visitors • A proactive approach is more cost effective than a reactive approach • AWWA Guidelines • SDWA, EPA, and CDPHE regulations - Distribution system violations are Tier 1 and Tier 2 violations that endanger public health	• Continue Water System Replacement Program. • Begin Partnership work • Plan and budget for flow monitoring throughout the system, particularly at PRVs. • Master plan of transmission mains. • <i>Fire flow evaluation via hydraulic modeling.</i>

Area*	LOS Goals*	Rationale	Work Needed to Meet LOS Goals
	• Zero Tier 2 violations/year. • <1 Tier 3 violation every 6 years. • Minimum pipe replacement approaches 1.3% of total pipe length (transmission and distribution) by 2030. This provides a 75-year replacement program. • Perform Vulnerability Assessment for this area, to be completed by consultant by 2024. Fund 20% of identified vulnerabilities with 2025-2026 budget.	• Meet resident and visitor high expectations of a robust and reliable infrastructure	
8 Water Meters and Backflow Prevention	• Follow AWWA M6 for O&M of Meters for proper billing of all residents and visitors. • Move to monthly billing cycles to all residents and visitors by 2026.** • Response within one business day to routine service calls (meter account has water). • <2 hrs. response for emergency call (non-water break emergency - meter/service line only). • Payment enforcement per City Code. • Program to audit large meters ($\geq 1.5"$) on a regular basis is developed by 2024 and implemented by 2026. • Implement meter/transmitter program such that ~6-8% are replaced annually. Implement this program in conjunction with the new meter replacement program, in place by 2028.** • Meters and transmitters are replaced such that there are less than ~20 monthly end of life service calls.** • Zero 120-day violations Cross-Connections for commercial meter accounts in the Distribution System. • No more than 10 active regulatory issues related to use of Alternative Compliance or Site Specific Deviations. • 100% compliance with backflow prevention device testing requirements. • Re-survey every 5 years (minimum) all non-single-family residential meter accounts for compliance with current backflow protection that do not currently have the highest level of containment protection. • Perform Vulnerability Assessment for this area, to be completed by consultant by 2024. Fund 20% of identified vulnerabilities with 2025-2026 budget.	• PH&S • Business revenue to fund continuing service to all residents and visitors • Fairness to all residents and visitors • Basis for non-revenue water use auditing • Meet resident and visitor high expectations of a robust and reliable infrastructure • State backflow prevention regulations	• Modifications to procedures and policies needed to meet some of the goals. No new CIP projects needed.
9 Collection Systems Pipe and Utility Locates	• 2 or fewer sewer main line blockages per year that have a risk management claim • Utility locates prevent damages to City owned infrastructure. 95% of utility locate tickets will be completed within 72 hours of notification. 100% of emergency locate tickets will be completed within one hour of notification. • Clean 15" and smaller pipe every 24 months via jetting. • Every FOGG device will be inspected a minimum of every six months. • 0 SSO or release for 25 year storm or less • All SS 15" and smaller will be replaced or rehabilitated through CIPP by 2028. • Emergency response is to be on-site within 90 minutes. • 811 response of 90 minutes. (Emergency locates)	• PH&S – Prevent contact and/or cross-contamination with raw sewage • Environmental Protection • Proactive preventive maintenance protects public health • Protect private property (basement backups) • CDPHE and EPA Regulations • Good stewards of public finance	• Small study/evaluation on cleaning schedule to determine if a second truck is needed or we can change the schedule due to CIPP / PVC pipe. • Implement and budget for imminent projects identified by the Master Plan. • Pursue a study/business

Area*	LOS Goals*	Rationale	Work Needed to Meet LOS Goals
	Implement a long-term water quality monitoring program for the collection system by EOY 2023.	- Meet resident and visitor high expectations of a robust and reliable infrastructure. - Proactive monitoring of the current system	case for a fee-based FOGG program. <i>Develop a water quality program with new equipment in 2022 (budget for equipment).</i>
10 Lift Stations	- Zero incidents per year of the wetwell overflowing to the pond for maintenance issues (i.e., clogged pump) at Alkire. - Zero incidents per year of the wetwell overflowing to the pond for up to 25-year storm at Alkire. - Perform an energy audit of all lift stations by 2026.** Implement the identified energy efficiency improvements by 2036. The energy audit will include evaluation of pump curves against actual pumping conditions. - The City will leverage Xcel's programs for implementing energy efficiency improvements. The evaluation will include the billing categories and rates for each Xcel meter. - Perform an audit every 3 years, starting in 2026, to determine the site is within approved design capacity.	- PH&S – Prevent contact and/or cross-contamination with raw sewage - Environmental Protection - Proactive preventive maintenance protects public health - Protect private property (basement backups) - CDPHE and EPA Regulations - Good stewards of public finance - Meet resident and visitor high expectations of a robust and reliable infrastructure	
11 and 12 Stormwater Pipe, Drainageways, and Infrastructure	<2 unforeseen failures per year for City-owned infrastructure that require construction work** - Emergency response time - 90 minutes - Stormwater system capable of withstanding a 5-year storm event.** - Maintain Drainage Improvement Projects Program (formerly Miscellaneous Drainage Program). - Maintain the S.O.P. for cleaning privately-owned water quality and detention facilities. - Develop and implement a schedule for cleaning City-owned water quality facilities. - Define City responsibilities regarding irrigation ditches within City ROW by 2026. - Plan and implement a video and cleaning program for City-owned storm pipe by 2026.	- Public safety - Compliance with all Federal, State and local regulations - Protection of life, property and the environment via reduced flood risk - Improve water quality in our natural drainageways - Maintain resident discount for flood insurance and continue to mitigate flood emergencies. - Meet resident and visitor high expectations of a safe, resilient, high-quality drainage system and a robust, reliable infrastructure	- Develop implementation plan for 2021 Stormwater Master Plan. - Continue using framework for Drainage Improvement Projects Program project selection. - Equipment and personnel to develop a regular CCTV inspection program - S.O.P. for cleaning of City- and privately-owned water quality facilities. - Implementation plan for open waterways S.O.P.

*ID Number corresponds to Long-term Planning Asset Database structure.

**Aspirational goal for the utilities team.

WATER Master Plan Implementation Projects TO DATE	Total 2023- 2032	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
2022 Water Replacement - <i>SUBSTANTIALLY COMPLETE</i>	\$ 2,145,477	\$ 2,145,477	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Castlegate Water Line - <i>SUBSTANTIALLY COMPLETE</i>	\$ 1,470,604	\$ 1,470,604	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WTP Roof Replacement - <i>SUBSTANTIALLY COMPLETE</i>	\$ 504,000	\$ 504,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2023 Water Replacement - BOND FUNDING	\$ 4,500,000	\$ 4,500,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Water System Replacement (Operations)	\$ 93,000,002	\$ 8,100,000	\$ 8,300,000	\$ 8,600,000	\$ 8,800,000	\$ 9,866,667	\$ 9,866,667	\$ 9,866,667	\$ 9,866,667	\$ 9,866,667	\$ 9,866,667
Hydraulic Modeling	\$ 786,317	\$ 226,315	\$ 50,000	\$ 50,000	\$ 60,000	\$ 66,667	\$ 66,667	\$ 66,667	\$ 66,667	\$ 66,667	\$ 66,667
Highway 93 Lakes Water Storage Project	\$ 20,500,000	\$ -	\$ -	\$ -	\$ -	\$ 2,050,000	\$ 18,450,000	\$ -	\$ -	\$ -	\$ -
Smart Meter Upgrades	\$ 7,800,000	\$ 2,000,000	\$ 2,900,000	\$ 2,900,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Distribution System Master Plan Update	\$ 700,000	\$ -	\$ 400,000	\$ -	\$ -	\$ -	\$ -	\$ 300,000	\$ -	\$ -	\$ -
RWTP Engineering&Reinvestment	\$ 49,500	\$ 49,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Ralston Plant and System Storage Tanks Replacement and Expansion	\$ 4,950,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 450,000	\$ 4,500,000
Lead and Copper Corrosion Control and Service Line Replacement	\$ 2,100,000	\$ -	\$ 2,100,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Risk and Resiliency Assessment / Emergency Response Plan Updates	\$ 600,000	\$ -	\$ 200,000	\$ -	\$ -	\$ 300,000	\$ -	\$ 100,000	\$ -	\$ -	\$ -
Zone 5 "Purple Line" - CITY PORTION 35%	\$ 1,268,000	\$ 1,268,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Chemical System Improvement	\$ 250,000	\$ 250,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Water Distribution System Upgrades (Equipment)	\$ 5,945,128	\$ 541,216	\$ 552,040	\$ 563,081	\$ 574,343	\$ 585,830	\$ 597,546	\$ 609,497	\$ 621,687	\$ 640,338	\$ 659,549
Water Treatment Plant Repair Program	\$ 7,670,000	\$ 500,000	\$ 570,000	\$ 600,000	\$ 600,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000
Water Treatment Plant Replacement and Expansion	\$ 241,830,000	\$ 1,600,000	\$ 10,000,000	\$ 7,116,200	\$ 6,906,900	\$ 59,231,900	\$ 52,325,000	\$ 52,325,000	\$ 52,325,000	\$ -	\$ -
Chemical System Improvement	\$ 1,370,000	\$ 250,000	\$ -	\$ 1,120,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sliplining of 54" Transmission Main	\$ 1,100,000	\$ -	\$ 1,100,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Smart Meter Upgrades - BOND FUNDING	\$ 2,100,000	\$ 2,100,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2021 Water Replacement	\$ 391,816	\$ 391,816	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2021 Water Replacement - BOND FUNDING	\$ 2,564,427	\$ 2,564,427	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
RWTP Reaction Tank Rehab	\$ 374,055	\$ 374,055	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
AWTP Clarifier Rehab	\$ 1,020,281	\$ 1,020,281	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Canyon Pines Pump Station	\$ 7,058,788	\$ 7,058,788	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Imp. Disinfection Infrastructure	\$ 230,744	\$ 230,744	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Zone 5 "Purple Line" - EXTERNAL FUNDING SOURCE 65%	\$ 2,015,000	\$ 2,015,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
UT Comm Strategic Plan	\$ 60,000	\$ 60,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Denver Water Moffat Project Participation - BOND FUNDING	\$ 96,320,000	\$ 20,000,000	\$ 25,040,000	\$ 29,560,000	\$ 12,520,000	\$ 9,200,000	\$ -	\$ -	\$ -	\$ -	\$ -
Ralston Water Treatment Plant Filter & Solids Rehab - BOND FUNDING	\$ 21,405,000	\$ 21,405,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Pumped Zones Storage Tank Zone 5	\$ 400,000	\$ -	\$ 400,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Pumped Zones Storage Tank Zone 5 - EXTERNAL FUNDING SOURCE	\$ 3,600,000	\$ -	\$ 3,600,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Pumped Zones Storage Tank Zone 6	\$ 1,400,000	\$ -	\$ -	\$ 1,400,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Pumped Zones Storage Tank Zone 6 - EXTERNAL FUNDING SOURCE	\$ 2,600,000	\$ -	\$ -	\$ 2,600,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Pumped Zones Pump Station	\$ 6,250,000	\$ -	\$ 1,400,000	\$ 3,500,000	\$ 1,350,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Lead and Copper Corrosion Control and Service Line Replacement - BOND FUNDING	\$ 230,000	\$ 230,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Water Resources Master Plan	\$ 550,000	\$ 250,000	\$ -	\$ -	\$ -	\$ -	\$ 300,000	\$ -	\$ -	\$ -	\$ -
Pumped Zones Piping for New Pump Station	\$ 6,000,000	\$ -	\$ -	\$ 6,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL Cost Estimates:	\$ 553,109,139	\$ 81,105,223	\$ 56,612,040	\$ 64,009,281	\$ 30,811,243	\$ 82,201,064	\$ 82,505,880	\$ 64,167,831	\$ 63,780,021	\$ 11,923,672	\$ 15,992,883
TOTAL Cost Estimates with Cumulative Annual Inflation Applied:	\$ 592,682,950	\$ 81,105,223	\$ 62,358,846	\$ 74,030,096	\$ 34,857,319	\$ 86,541,511	\$ 90,587,528	\$ 65,092,130	\$ 64,639,495	\$ 13,195,241	\$ 20,275,560

WASTEWATER											
Master Plan Implementation Projects TO DATE	Total 2023-2032	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Sewer System Replacement (Operations)	\$ 9,505,000	\$ -	\$ 862,000	\$ 905,000	\$ 950,000	\$ 998,000	\$ 1,048,000	\$ 1,100,000	\$ 1,155,000	\$ 1,213,000	\$ 1,274,000
Infiltration Elimination Program	\$ 5,470,204	\$ 450,204	\$ 230,000	\$ 480,000	\$ 250,000	\$ 676,667	\$ 676,667	\$ 676,667	\$ 676,667	\$ 676,667	\$ 676,667
Oversizing of Replacement Pipelines for Additional Capacity	\$ 3,390,000	\$ -	\$ -	\$ 360,000	\$ 390,000	\$ 440,000	\$ 440,000	\$ 440,000	\$ 440,000	\$ 440,000	\$ 440,000
Wastewater Master Plan Update	\$ 400,000	\$ -	\$ -	\$ 400,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Condition Assessment Results (to be updated in 2024 after completion)	\$ 5,967,000	\$ -	\$ -	\$ -	\$ 291,000	\$ 3,168,000	\$ 2,508,000	\$ -	\$ -	\$ -	\$ -
NORTH TRUNK LINE PROGRAM:											
NTL Improvements Phase I - BOND FUNDING	\$ 1,000,000	\$ 1,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NSTL 61st & Tennyson	\$ 5,250,000	\$ -	\$ -	\$ 5,250,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NTSI - W 81 Oak to Johnson	\$ 1,950,000	\$ 1,950,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NTSL 81st & Kipling - BOND FUNDING	\$ 1,887,803	\$ 1,887,803	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
North Sewer Trunk Line 61st and Tennyson (NT10) - BOND FUNDING	\$ 14,690,000	\$ 690,000	\$ 10,000,000	\$ 4,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
North Trunk Sewer Improvements - W. 81st & Teller to W. 72nd & Sheridan (NT7)- BOND FUNDING	\$ 13,950,000	\$ 950,000	\$ 13,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
North Trunk Sewer Improvements - W. 84th from Alkire to Simms (NT2) - BOND FUNDING	\$ 5,500,000	\$ -	\$ 400,000	\$ 5,100,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
North Trunk Sewer Improvements - 68th & Sheridan to Tennyson & W. 64th (NT8)	\$ 11,300,000	\$ -	\$ 600,000	\$ 10,700,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Condition Assessment Results (to be updated in 2024 after completion)	\$ 5,967,000	\$ -	\$ -	\$ -	\$ 291,000	\$ 3,168,000	\$ 2,508,000	\$ -	\$ -	\$ -	\$ -
CENTRAL TRUNK LIINE PROGRAM:											
Ralston Trunk Sewer Improvements - W. 69th from Coors to Urban (CRT6) - BOND FUNDING	\$ 7,797,000	\$ 7,797,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Ralston Trunk Sewer Improvements - Simms to Pierson (CRT7) - BOND FUNDING	\$ 4,500,000	\$ 400,000	\$ 4,100,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Ralston Trunk Sewer Improvements - W. 69th from Eldridge to Coors (CRT5)	\$ 1,850,000	\$ -	\$ -	\$ 185,000	\$ 1,665,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Ralston Trunk Sewer Improvements - W. 75th from Ward to Union (CRT8)	\$ 1,000,000	\$ -	\$ -	\$ -	\$ 100,000	\$ 900,000	\$ -	\$ -	\$ -	\$ -	\$ -
Ralston Trunk Sewer Improvements - Union from W. 75th to W. 71st (CRT9)	\$ 4,500,000	\$ -	\$ 500,000	\$ 4,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2022 Wastewater CIPP Project	\$ 2,923,278	\$ 2,923,278	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Alkire Lift Station - EXTERNAL FUNDING	\$ 2,701,975	\$ 2,701,975	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sewer System Replacement (Operations) - BOND FUNDING	\$ 750,000	\$ 750,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Alkire Force Mains	\$ 2,200,000	\$ -	\$ 2,200,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL Cost Estimates:	\$ 114,449,260	\$ 21,500,260	\$ 31,892,000	\$ 31,380,000	\$ 3,937,000	\$ 9,350,667	\$ 7,180,667	\$ 2,216,667	\$ 2,271,667	\$ 2,329,667	\$ 2,390,667
TOTAL Cost Estimates with Cumulative Annual Inflation Applied:	\$ 118,464,051	\$ 21,500,260	\$ 31,967,000	\$ 32,248,388	\$ 4,487,751	\$ 10,698,268	\$ 8,353,718	\$ 2,216,667	\$ 2,271,667	\$ 2,329,667	\$ 2,390,667

STORMWATER Master Plan Implementation Projects TO DATE	Total 2023-										
	2032	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Arvada Center Detention Pond	\$ 1,660,000	\$ -	\$ 105,000	\$ 604,000	\$ 951,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Ralston Creek at Ward Road	\$ 2,588,000	\$ 750,000	\$ 184,000	\$ -	\$ 254,000	\$ 1,400,000	\$ -	\$ -	\$ -	\$ -	\$ -
Ralston Creek Improvements	\$ 180,000	\$ 180,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Bates Lake Watershed Drainage Improvements	\$ 358,237	\$ 3,237	\$ 105,000		\$ 250,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Bates Lake Watershed Drainage Improvements - EXTERNAL FUNDING SOURCE	\$ 1,305,000	\$ -	\$ -	\$ 604,000	\$ 701,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Ralston Creek Improvements - Vance Street to Wadsworth By-Pass	\$ 1,744,000	\$ -	\$ 20,000	\$ 424,000	\$ 634,000	\$ 666,000	\$ -	\$ -	\$ -	\$ -	\$ -
Ralston Creek Improvements - Vance Street to Wadsworth By-Pass - EXTERNAL FUNDING SOURCE	\$ 180,000	\$ 180,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Tennyson Street Outfall	\$ 568,000	\$ -	\$ 568,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Mile High Flood District Joint Master Plan Studies	\$ 1,345,157	\$ 529,157	\$ 65,000	\$ 68,000	\$ 71,000	\$ 102,000	\$ 102,000	\$ 102,000	\$ 102,000	\$ 102,000	\$ 102,000
Stormwater/Irrigation Separation Projects	\$ 2,296,000	\$ -	\$ -	\$ 242,000	\$ 254,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000
Stormwater Facility Aeration Projects	\$ 534,000	\$ -	\$ 92,000	\$ 78,000	\$ 82,000	\$ 47,000	\$ 47,000	\$ 47,000	\$ 47,000	\$ 47,000	\$ 47,000
Van Bibber Creek from Oak St to Kipling Pkwy	\$ 804,000	\$ 425,000	\$ 300,000	\$ -	\$ 79,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Van Bibber Creek from Oak St to Kipling Pkwy - EXTERNAL FUNDING SOURCE	\$ 1,276,000	\$ -	\$ 225,000	\$ 551,000	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
MHFD Joint Maintenance	\$ 277,528	\$ 55,456	\$ 28,982	\$ 29,851	\$ 30,747	\$ 31,669	\$ 32,619	\$ 33,598	\$ 34,606	\$ -	\$ -
Drainage Improvement Projects	\$ 9,905,243	\$ 1,678,243	\$ 575,000	\$ 640,000	\$ 712,000	\$ 1,050,000	\$ 1,050,000	\$ 1,050,000	\$ 1,050,000	\$ 1,050,000	\$ 1,050,000
Ralston Creek at Croke Canal Crossing	\$ 1,325,000	\$ 1,325,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Lake Arbor Dredging	\$ 4,906,133	\$ 4,906,133	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Arvada Center Southern Detention Pond Outlet	\$ 54,340	\$ 54,340	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL Cost Estimates with Cumulative Annual Inflation Applied:	\$ 31,306,638	\$ 10,086,566	\$ 2,267,982	\$ 3,240,851	\$ 4,518,747	\$ 3,596,669	\$ 1,531,619	\$ 1,532,598	\$ 1,533,606	\$ 1,499,000	\$ 1,499,000

2023 Capital Project Color-coding Definitions

Lens: Level of Service impact to customers or impact to number of people

Water and Wastewater Projects

Priority Color	Definition	Description
Red	High critical	Population impacted > 1 zone/Tier 1 or Tier 2 regulatory violation
Orange	Medium critical	Population impacted >1 zone/ Tier 3 regulatory violation
Yellow	Low critical	No regulatory violation or small number of people impacted by failure
Gray		Under construction contract and/or funded 100% by system development charges
Blue	Substantially Complete in 2023	Substantially Complete in 2023

Stormwater Projects

Priority Color	Definition	Description
Red	High critical	Reactive maintenance/resident calls/minimum Level of Service
Orange	Medium critical	No immediate threat to public safety/still important to meet Level of Service
Yellow	Low critical	Minimal safety risk
Gray		Under construction contract

From the water that fills your glass to the suds that go down your drain, the **Arvada Utilities Department** is committed to serving you every step of the way. We provide reliable water, wastewater, and stormwater services that ensure **Arvada continues to thrive.**

Our promises to you:



Turn on the tap; you can count on the water being treated, monitored, and tested to protect your health and safety.



Send water down the drain; you can be confident it will remain safely in our sewer system, protecting the environment, until it reaches the wastewater plant for treatment.



Whether snow, rain, or sleet, know that stormwater runoff is being managed in a way that protects you and our environment.



Arvada’s water, sewer, and stormwater systems include critical infrastructure, from pipes to treatment systems and everything in between.

Components of these systems are aging and need to be replaced or rehabilitated; the City adopted a series of long-range plans to address this. Learn more about the City’s investments in our infrastructure and Arvada’s future at ArvadaCO.gov/Utilities-Transparency.



Your rates help us pay for reinvesting in the system. Developers pay SDCs to cover the cost of increased capacity needs due to growth.

Thank you for making these investments with us!



City of Arvada
8101 Ralston Road
Arvada, CO 80002



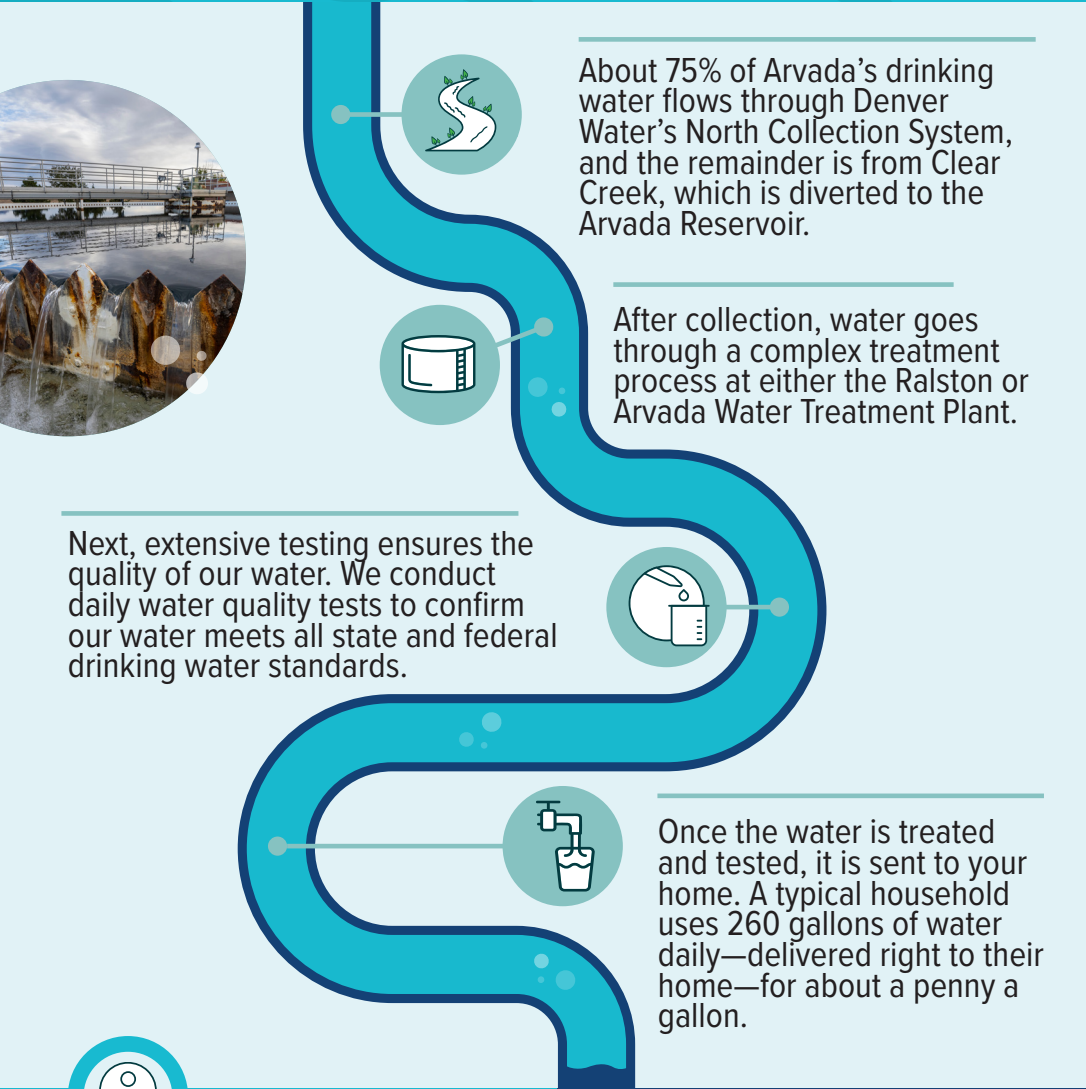
BENEATH THE SURFACE:

**Arvada’s
Water, Sewer, &
Stormwater Systems**

Water

The City of Arvada is responsible for treating, storing, and distributing safe drinking water to maintain a healthy community for more than 120,000 people.

Let's talk about how that happens:



Did you know the water bill you pay is an investment in each of these steps? Water rates help us pay for:

- + Maintaining over 600 miles of water pipes, two treatment plants, and other critical infrastructure
- + The rising cost of operating and maintaining the system
- + A secure water future for Arvada



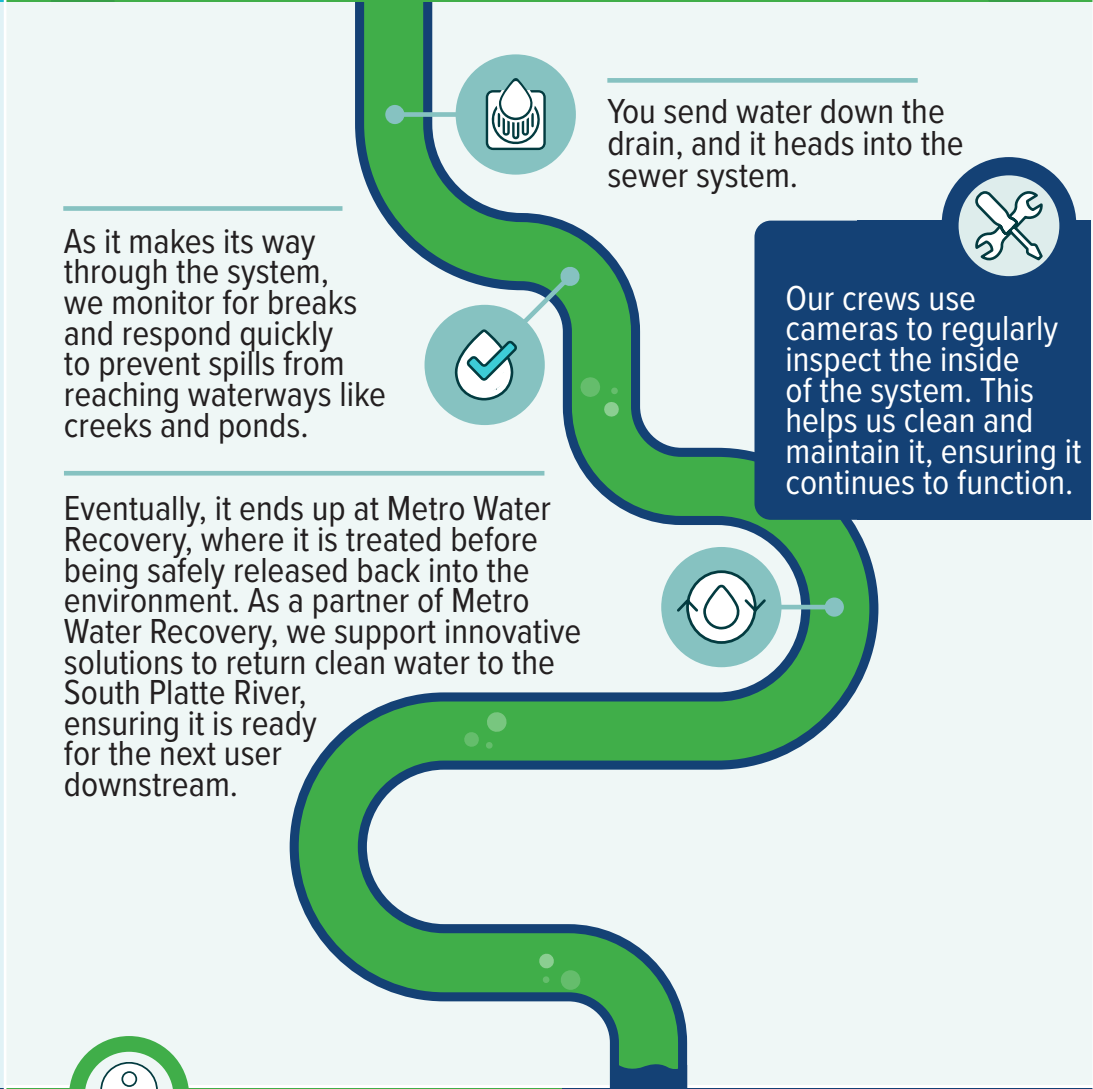
ArvadaCO.gov/Water

Arvada's vibrant community relies on safe water. To maintain our excellent water quality, we must invest in the critical infrastructure that treats and delivers it.

Wastewater

It's our responsibility to ensure that wastewater is cleaned and safely returned to the environment. Our wastewater system keeps sewage from overflowing into Arvada waterways, businesses, and basements.

Here's how the system works:



Did you know you help invest in our sewer system as well? When you pay your sewer bill, you are helping pay for:

- + Maintaining over 450 miles of sewer pipes
- + Wastewater treatment by Metro Water Recovery
- + Reliable sewer services and a clean, healthy community



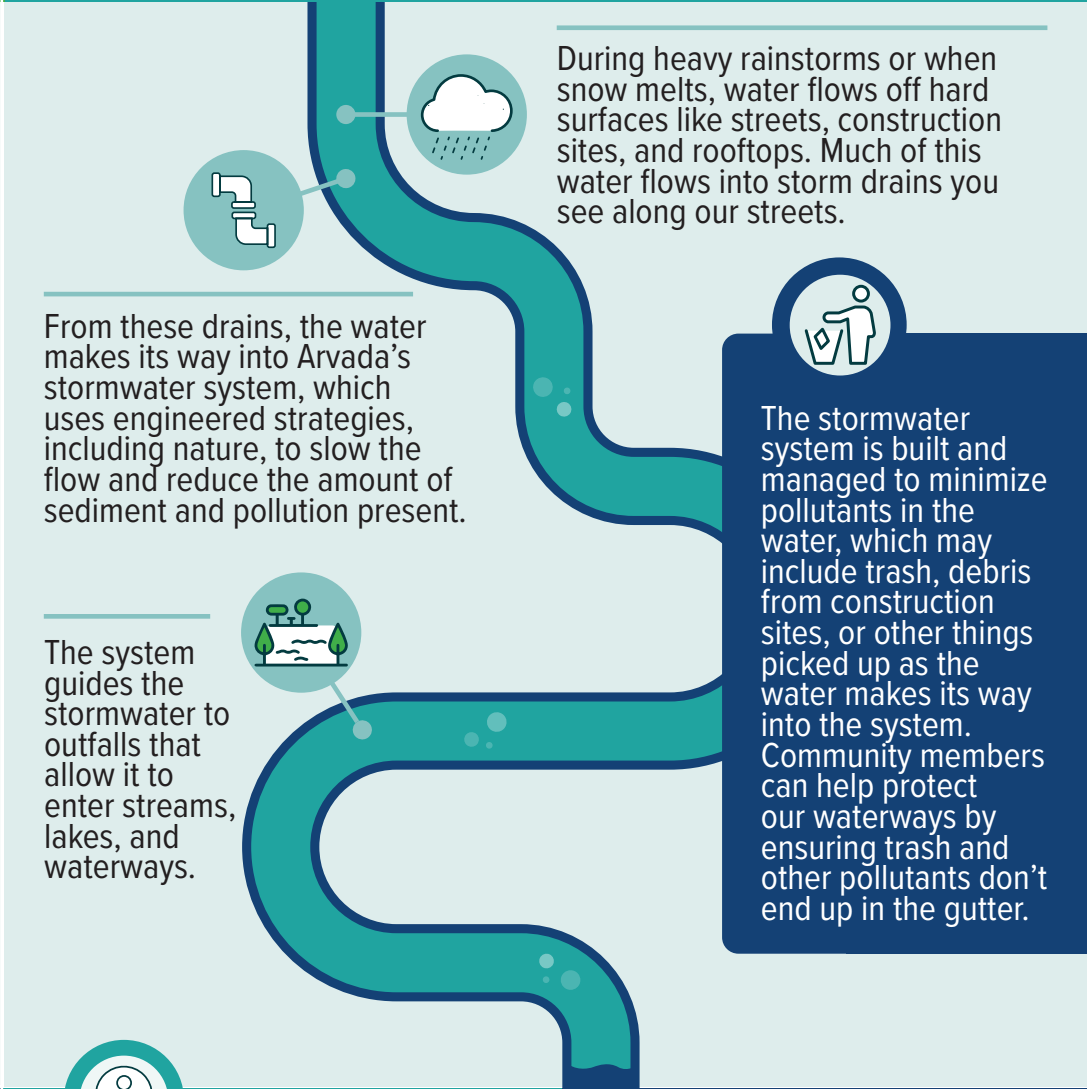
ArvadaCO.gov/Sewer

Many components of our wastewater system are nearing the end of their expected life and require reinvestment.

Stormwater

Each time it rains, the water you see flowing off roofs and into the gutter is collected by our stormwater system to be safely returned to our waterways.

Here's a snapshot of how our stormwater system works:



Your bills also help manage Arvada's stormwater system, keeping your community and environment safe. Stormwater rates help pay for:

- + Over 220 miles of storm pipes and other critical infrastructure
- + Operating and maintaining the system
- + Expanding the stormwater system's capacity to manage floods and prevent pollution from leaking into our waterways



ArvadaCO.gov/Stormwater

Much of our stormwater system is undersized for the type of storms we now see and needs more capacity to manage the water during significant storms.



REPORT TO CITY COUNCIL

AGENDA ITEM
2.B.

TO: THE HONORABLE CITY COUNCIL

DATE: April 8, 2024

SUBJECT: Waste Hauling Program Overview

Report in Brief

The City team will provide an overview of how the City's Waste Hauling Program is planned and implemented. The team will also provide an overview of the Solid Waste Enterprise Fund.

Prepared by:

Christine Gray, Utilities Business Manager

Reviewed by:

Approved by:

Sharon Israel, Director of Utilities	3/22/2024
Bryan Archer, Director of Finance	3/22/2024
Jessica Morales, Assistant City Attorney	3/25/2024
Tammy Hedlund, Legal Specialist	3/25/2024
Don Wick, Deputy City Manager	3/25/2024
Rachel Morris, City Attorney	3/25/2024
Lorie Gillis, City Manager	3/27/2024

Enclosure, exhibits & attachments required to support the report

Waste Hauling Program Overview

City Council Workshop

April 8, 2024



Agenda Outline

1. Presentation Goals
2. Genesis of the Waste Hauling Program
3. Development and Implementation
4. Program Status
5. Solid Waste Enterprise Fund and Next Steps
6. 2024 Events

Today's Presentation Goals

Understand our Waste Hauling program, history, future decision points.

Be informed about our program and understand current program goals, outcomes, challenges, and objectives.

Be prepared for upcoming rate and fee recommendations.

Genesis of the Program

- Prior to program, customers could use any Licensed Hauler that provided services and were permitted, at the customer's requested level of service.
- From late 2000's to inception, multiple surveys, advisory committees, and councils indicated a community need and want for the city to guide the Organized Waste Hauling Effort.

Genesis of the Program



Image generated using ChatGPT with the Prompt Arvada and Waste Hauling

- On June 15, 2020, the Arvada City Council held a public hearing and approved the related ordinance and agreements to institute the system.
- Competitive Request For Proposal for Curbside Services
 - A City Team scored submittals by Alpine, Republic, Waste Connections, and Waste Management.
 - Republic Services was awarded.
 - Contract was signed in 2021 for a 5 year period. Additionally, the City has 2 annual renewal options.
- City of Arvada Webpage Dedicated to Program History

Genesis of the Program

- The City began offering curbside recycling and trash services in July 2021.
- The program aims to enhance waste collection services by reducing traffic congestion, promoting environmental conservation, and standardizing service quality across Arvada.
- Slogan during implementation was “One Street, One Truck, One Arvada”.



Development and Implementation



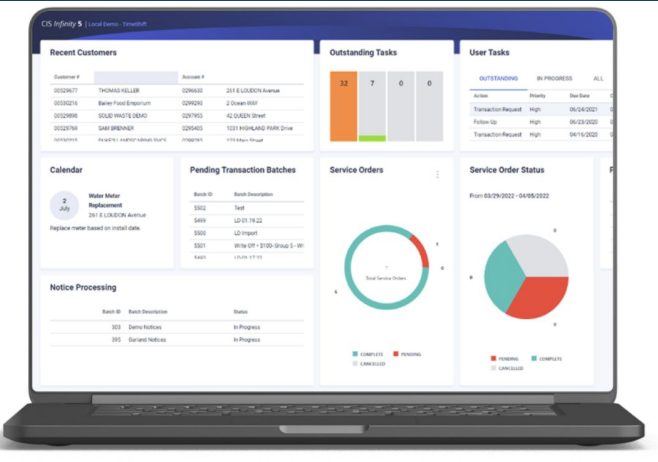
CDPHE Recycling Advertising Campaign



- Created Enterprise Fund to Support Waste Hauling Services, seeded by a loan from Utilities.
- Added 2 FTE for program support
- Purchase City of Arvada Carts, including \$1,000,000 in grant dollars (Front Range Waste Diversion \$500,000 & \$500,000 Recycling Partnership, Colorado Department of Public Health and Environment, Municipal Measures)
- Integration with existing Utilities Services and Customer Information System (CIS) processes.

Development and Implementation

- Team Support from Utilities Services
 - Lead Billing and Payment Efforts w/Republic Services Field Operational Support
 - Stakeholder Engagement in collaboration with Sustainability and Permitting.
 - Weekly Operational Meeting w/Republic
 - Internal engagement with Sustainability Efforts are ongoing.



Advanced Customer Information Software

Program Status: Annual Report

Waste Hauling Report Card

Year 2 July 2022 - June 2023

65% of Arvada households participate in organized waste hauling programs with curbside recycling.

63% of residents rate the City program as fair to good (2022 Community Survey)

Households of 7 units or fewer

25,875
Total eligible households

16,887
in City program



Homeowners Associations (HOAs) and Metro Districts

9

HOAs in the City's program (+2 from 2021-2022)

Participation by service level



Recycling diversion rate

16%
Jul 2022 -
Jun 2023 average

21%
highest diversion
rate (Jan. 2023)

Licensed haulers

13 licensed haulers



Pick-up accuracy rate

99.98%
average
(July 2022 - July 2023)

99.99%
Since
January 2023

2022 drop off events

4 large item events
5,771 customers served
556.34 tons collected
1,783 mattresses recycled

2.5 weeks of
leaf recycling events



Program Status: Participation Rates

- **Participation Rates:** There are about **26,000** non-HOA households with 7 units or fewer are eligible for the City program, about **17,000** households are enrolled in levels 1-3 of the City program, and about **9,000** households receive minimum service •
- **9** HOAs are enrolled in levels 1-3 of the City program. About **14,000** HOA households receive minimum service. No metro districts are enrolled in the program.

Households of 7 units or fewer

25,875
Total eligible
households

16,887
in City
program



Program Status: Rate Structures

Effective:

Aug, 2023 - June 2024

Includes 88 cents/month
for City program
administration

Service Level	Monthly Fee
Level 3 95 gallon trash cart 95 gallon recycling cart	\$20.34 / month
Level 2 65 gallon trash cart 95 gallon recycling cart	\$16.06 / month
Level 1 35 gallon trash cart 95 gallon recycling cart	\$11.79 / month
Minimum service No cart, choose your own hauler (bulky item and leaf drop-off included)	\$5.28 / month
Additional Services	Fees
Additional Recycling Cart	\$3.08 / month
Additional Trash Cart	\$4.27 / month
Tags for Extra Trash Bags (details below)	\$3.62 / tag
Bulky Item Pick Up (details below)	\$15.53

Enterprise Fund Status

- The Solid Waste Enterprise Fund was established so the Waste Hauling Program runs “like a business” and is not subject to TABOR.
- Because this operates as an enterprise fund, the city is obligated to set revenue requirements to cover costs. In general, the fund cannot be subsidized from other sources.
- We collect customer payments on the Utilities bill, then use that revenue to pay Republic for curbside and large item services. Revenue also covers city program expenses.

Enterprise Fund Status



2023	
Revenue:	\$4.5 million
Contract Expenses:	\$3.4 million
Operating/Debt Expenses:	\$800,000
Addition to Fund Balance	\$300,000

Enterprise Fund Status



- Republic Services has notified Arvada that they will raise rates capped by the contract maximum of 3.5%
- In addition to Contract for Curbside Services, in 2023
 - \$40,490 for Springback mattress recycling
 - \$54,000 for leaf recycling events
- Rate/Fee Model Updates
 - Original model established 2020
 - Updates include additional contract costs, expenses, and personnel

Next Steps



- May 13, 2024: City fee adjustment discussion and recommendation at Council Workshop.
- June 2024: Council Resolution to set rates and fees
- July 1, 2024: Effective date of new rates and fees.

2024 Scheduled Events



Bulky item drop-off events

NAAC at 19500 W. 64th Parkway

- Saturday, June 8, 2024
- Saturday, August 10, 2024

City of Arvada Leaf Recycling Event

- November 2 through 16, 2024 (closed Sundays)

Waste Hauling Program Overview

City Council Workshop

April 8, 2024



Waste Hauling Report Card

Year 2 July 2022 - June 2023

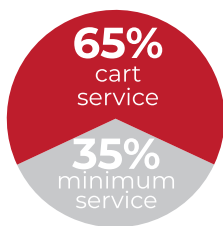
65% of Arvada households participate in organized waste hauling programs with curbside recycling.

63% of residents rate the City program as fair to good (2022 Community Survey)

Households of 7 units or fewer

25,875
Total eligible households

16,887
in City program



Homeowners Associations (HOAs) and Metro Districts

9

HOAs in the City's program (+2 from 2021-2022)

Participation by service level



11,250
Level 3
large cart



3,590
Level 2
medium cart



2,047
Level 1
small cart



23,008
Minimum Service
(HOA and non-HOA)

Recycling diversion rate

16%
Jul 2022 -
Jun 2023 average

21%
highest diversion
rate (Jan. 2023)

Licensed haulers

13 licensed haulers



Pick-up accuracy rate

99.98%
average
(July 2022 - July 2023)

99.99%
Since
January 2023

2022 drop off events

4 large item events

5,771 customers served
556.34 tons collected

1,783
mattresses recycled

2.5 weeks of
leaf recycling events



City of Arvada Waste Hauling Program Annual Report

Year 2: July 2022 - June 2023

In June 2020, Arvada City Council approved the formation of a City of Arvada Waste Hauling program. The program started on July 5, 2021. This report provides an update on progress toward program objectives and outlines successes, challenges and opportunities for Service Year 2.

Program Objectives

The following are objectives for the City of Arvada's Organized Waste Hauling Program:

1. Provide a cost-effective waste hauling program to all eligible City residents - **complete**
2. Ensure all eligible Arvada residents have access to recycling services - **complete**
3. Increase recycling diversion rate in the City
4. Improve the quality of customer service to the community, including a high level of pick-up accuracy rate across the City - **complete**
5. Provide Arvada residents with access to large item drop-off and leaf recycling events - **complete**
6. Reduce the number of waste hauling trucks on City streets (reduce street wear and tear; reduce noise and air pollution)



Objective	2021-2022	2022-2023
Provide a cost-effective waste hauling program to all eligible residents	16,243 households in service levels 1-3 9,308 households in minimum service 13,943 HOA households in minimum service	16,887 households in service levels 1-3 8,988 households in minimum service 14,020 HOA households in minimum service
Increase recycling diversion rate in the City	July 2021-June 2022 avg. diversion rate = 18% (increase from 13% in 2020) 2022 highest diversion rate= 24% in Jan. 2022	July 2022-June 2023 avg. diversion rate = 16.14% (decrease from 18% in 2022) 2023 highest diversion rate= 20.57% in Jan 2023
Improve the quality of customer service to the community, including a high pick-up accuracy rate	July 2021- June 2022 = 99.74% average accuracy rate Since Jan 2022 = 99.90% average accuracy rate	July 2022- June 2023 = 99.98% average accuracy Since Jan 2023 = 99.99% average accuracy
Provide Arvada residents with access to large item drop-off and leaf recycling events	2021 events 2 large item 317.46 tons of trash collected 929 mattresses recycled 3 leaf recycle 592 tons of leaves composted	2022 events 4 large item 556.34 tons of trash collected 1,783 mattresses recycled 2.5 weeks leaf recycle 240 tons of leaves composted
Reduce the number of waste hauling trucks on City streets (reduce street wear and tear; reduce noise and air pollution)	The number of licensed waste haulers is unchanged. 9 waste haulers service Arvada.	13 licensed waste haulers. Only 9 waste haulers service Arvada for residential services.

Participation Rate

- **25,875 non-HOA households with 7 units or fewer are eligible for the City program**
16,887 households are enrolled in levels 1-3 of the City program
8,988 households receive minimum service
- **9 HOAs are enrolled in levels 1-3 of the City program**
14,020 HOA households receive minimum service
No metro districts are enrolled in the program

Service Levels

Level 1	Level 2	Level 3	Min. Service
Small Cart \$11.50/mo	Med Cart \$15.63/mo	Lg Cart \$19.76/mo	No Cart \$5.13/mo
35 gallon trash cart 95 gallon recycling cart Weekly trash pick up Bi-weekly recycling pick up On demand bulk pick up Leaf recycling events Bulk drop off events Add additional recycling carts	65 gallon trash cart 95 gallon recycling cart Weekly trash pick up Bi-weekly recycling pick up On demand bulk pick up Leaf recycling events Bulk drop off events Add additional recycling carts	95 gallon trash cart 95 gallon recycling cart Weekly trash pick up Bi-weekly recycling pick up On demand bulk pick up Leaf recycling events Bulk drop off events Add additional trash or recycling carts	Choose your own hauler Leaf recycling events Bulk drop off events

All prices listed are monthly charges. Waste hauling fees will be charged on utility bills which are on bimonthly cycles.



***Note:** HOAs and metro districts with an active waste hauling contract as of December 31, 2020 were not required to join the City's program. HOAs and Metro Districts that form after program launch are required to participate in the City's program with cart service.

2022-2023 Successes and Challenges

Recycling Rate

-  The recycling diversion rate in the City's program achieved a high of 20.57% in January 2023.
-  The annual average diversion rate was down 2% from the 2021-2022 reporting year.
-  The City team will work to increase recycling rates through increased education and communication.



Customer Service and Pick-Up Rate

-  Missed pick ups have steadily declined. As of June 2023, the waste hauling program is delivering a 99.98% accuracy rate.
-  Many of the lessons learned in year one were solved in year two. For example, Republic truck drivers implemented a tracking system for service exceptions, this reports on missed pickups and overfilled cans.
-  Truck drivers leave a message for customers when extra bags are outside of bins about the “pay as you throw” model to help educate customers.

Drop Off Events

-  In July 2022 to June 2023, the City offered four large item drop off events that provided service to 5,771 customers and collected 556.34 tons of trash. 1,783 mattresses were diverted from the landfill through recycling.
-  The City offered a 2 ½ week leaf recycling drop off period that collected 240 tons of leaves that were diverted from the landfill.
-  Leaf recycling drop-off was left open for 2 ½ weeks. Even with more access fewer tons of leaves were dropped off in total. More investigation into why residents may or may not be using this service is needed.



REPORT TO CITY COUNCIL

AGENDA ITEM
2.C.

TO: THE HONORABLE CITY COUNCIL

DATE: April 8, 2024

SUBJECT: Staff Updates

Report in Brief

The purpose of this workshop is for staff to provide City Council with brief updates on projects and issues that do not require a full workshop.

Prepared by:
Chris Koch, CCO Admin

Reviewed by:

Approved by:

Enclosure, exhibits & attachments required to support the report