



Capital Projects and Future Planning

February 10, 2024

Systems Wide Overview

- Water System
- Wastewater Systems (East/West)
- Public Facilities
- Park Systems
- Roadway Systems (City, State, County)
- Storm Drainage
- Equipment Needed
- Personnel (Current – Future)
- Financial Position

Study / Reports Completed for System(s)

- Capital Improvement Plan (by Jacob/Martin) - 2016
- Drought Contingency Plan – 2019
- Water and Wastewater Impact Fee Study – 2020
- Long-term Water Supply Study – 2020

- Water and Wastewater Rate Study – 2021
- Water System Master Plan – 2019 & 2020
- Wastewater System Master Plan – 2018, 2019 & 2020
- West Wastewater Plant Master Plan – 2019 & 2020
- East Wastewater Plant Master Plan – 2018
- Water & Wastewater Land Use Assumptions & CIP – 2019

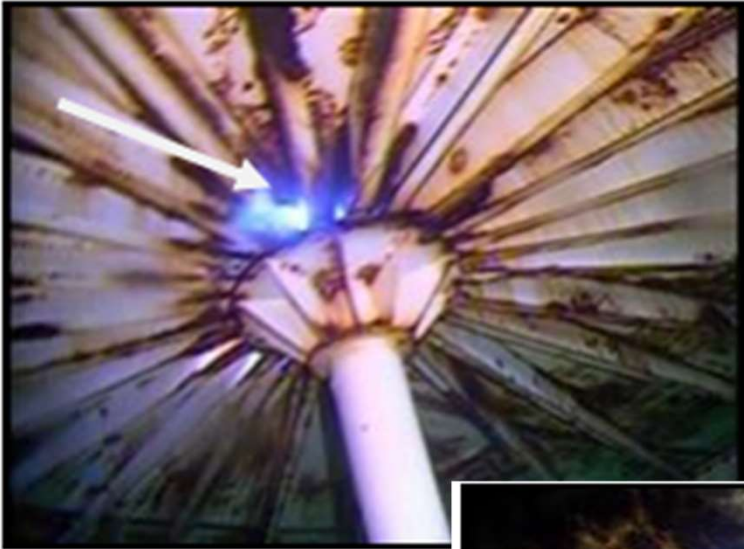
Water System Assets

- System likely originally constructed in 1940-1950
 - Approaching 70 to 80 years old in some areas
- 17.5 miles of supply and distribution line
- Connections = 660
- Current Loss Rate = ~ 19%
- Current Water Source
 - Walnut Creek Special Utility District
 - City Wells



Bobo Pump
Station Tank -
Exterior

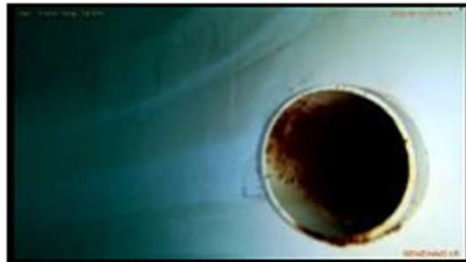
Bobo Pump Station Tank - Interior



Bobo Pump Station Pumps



FM 3433 Pump Station



FM 3433 Pump Station Pumps



Elevated Storage Tank (EST)

Installed –
2007/2008



Elevated Storage Tank (EST)

Inspection done in 2018.

Recommended:

- Interior Coatings – renovation 6-8 years
- Exterior Coatings – overcoat in 4-6 years
- Interior Cleaning/Condition Assessment – every two (2) years with sediment removal (TCEQ every five (5) years)
- Repair hole that existed in roof of tank
- Move electrical cable from dry interior access ladder
- Install a screen/flapper combo at overflow termination point

Elevated Storage Tank (EST)





Ground Storage Tank Well #3

- Installed: Unknown
- Currently pumps approx. 40 GPM
- Needs immediate attention



Ground Storage Tank Well # 3

- Interior photos of the pump house
- Should be two (2) booster pumps



Ground Storage Tank Well #4

- Installed: Unknown
- Currently pumps approx. 40 GPM
- Needs immediate attention





Ground Storage Tank Well #4

- Interior photos of the tank
- Significant rust and paint rehab needed

Ground Storage Tank Well #5

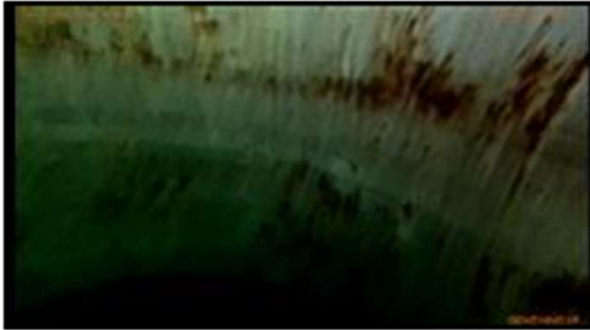


- Installed: 1981
- Currently pumps approx. 10 GPM
- Needs immediate attention



Ground Storage Tank Well #5

- Interior photos of the tank
- Significant rust and paint rehab needed



Ground Storage Tank Well #5

- Interior photos of the tank
- Significant rust and paint rehab needed



Ground Storage Tank Well #6

- Installed: 1999/2003
- Currently offline due to rehab

Goals and Objectives - Water

GOAL 1: Operate and maintain the City's water system efficiently and by the most cost-effective means.

Objective:

- Provide documentation of all maintenance and the cost involved throughout the planning periods.

GOAL 2: Provide clean potable water throughout the entire water system.

Objective:

- Replace old and deteriorating lines by 2036.

Goals and Objectives - Water

GOAL 3: Maintain and ensure adequate pressure for normal use and for fire protection.

Objectives:

- Ensure that pressures are adequate when expanding the system during the planning period.
- Upgrade line sizes by 2036 where needed to expand the system to meet minimum requirements.

Water System

Immediate Needs	Approx. Costs
Re-drill at current or new well sites	\$750,000 each site
Rehab Ground Storage Tanks at well sites	\$160,000
Bobo Pump Station	\$210,000
FM 3433 Pump Station	\$155,000
Elevated Water Tank	<u>\$25,000</u>
Sub-Total	\$550,000

Water System

Future Needs	Approx. Costs
Secondary Water Source	TBD
Second Elevated Water Tower	TBD
Second GST at BOBO Plant	TBD

Wastewater Systems



Wastewater System Assets

- East Wastewater Treatment Plant
- West Wastewater Treatment Plant
- 9.5 miles of gravity flow piping
- 0.8 miles of sewer force main
- 150 manholes
- Two (2) main lift stations
- One (1) collection lift station

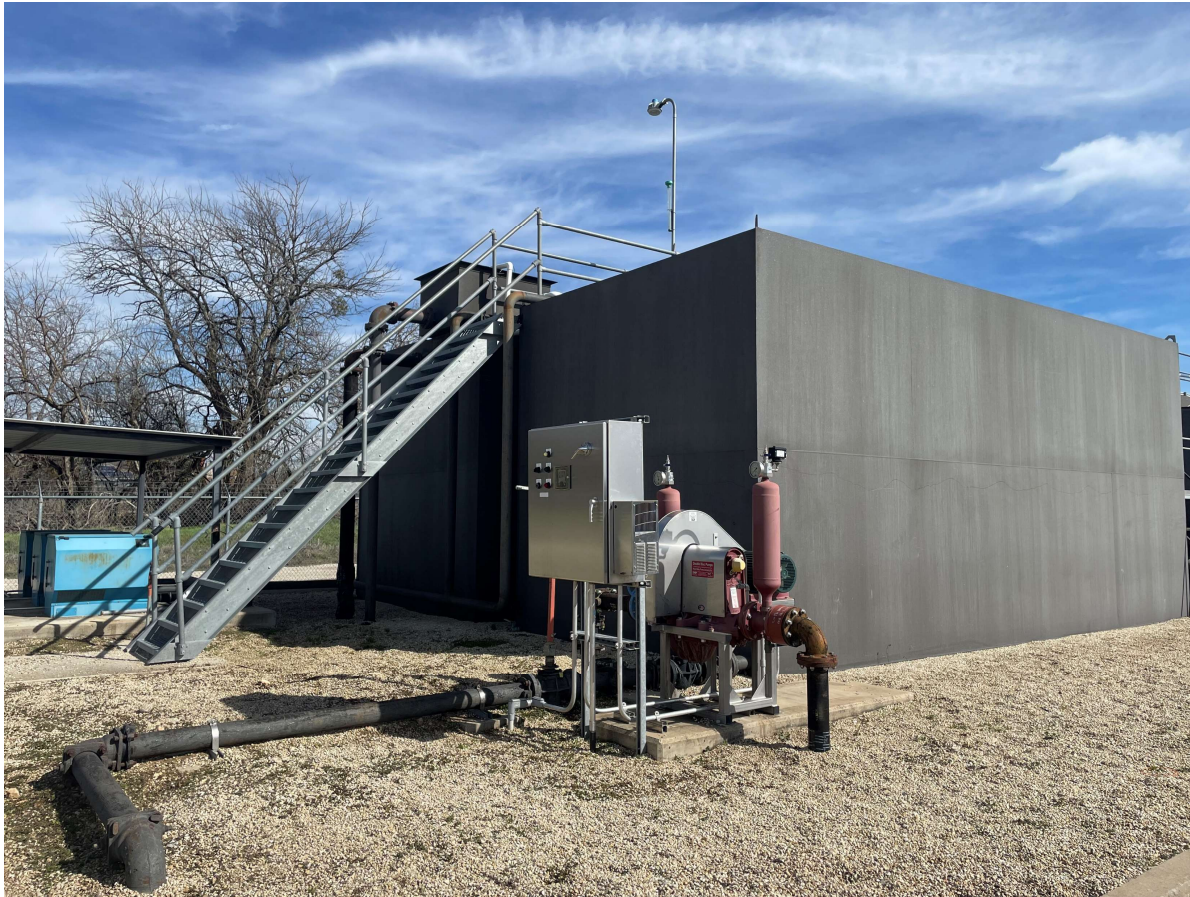
East Wastewater Treatment Plant

Originally built in 1991

Flow = .10 MGD (can be
expanded)



East Wastewater Treatment Plant



East Wastewater Treatment Plant



West Wastewater Treatment Plant

- Originally built in 1998
- Flow = .15MGD



West Wastewater Treatment Plant



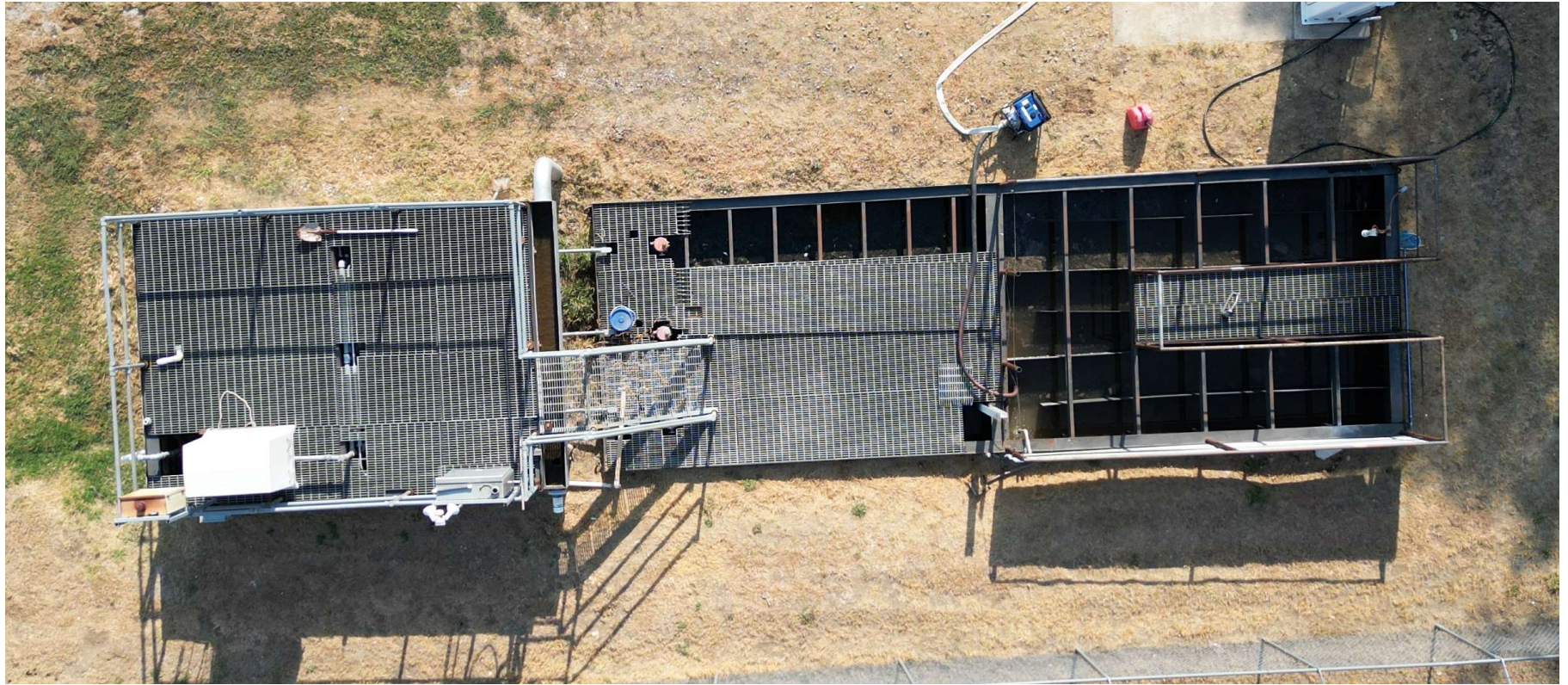


West
Wastewater
Treatment
Plant –
at Capacity

West Wastewater Treatment Plant



West Wastewater Treatment Plant



West Wastewater Treatment Plant



I/I TESTING/REPAIRS

Testing Options:

- Smoke Testing
- TV Sewer Lines



Lift Stations (Main & Collection)

- Two (2) main lift stations
- One (1) collection lift station



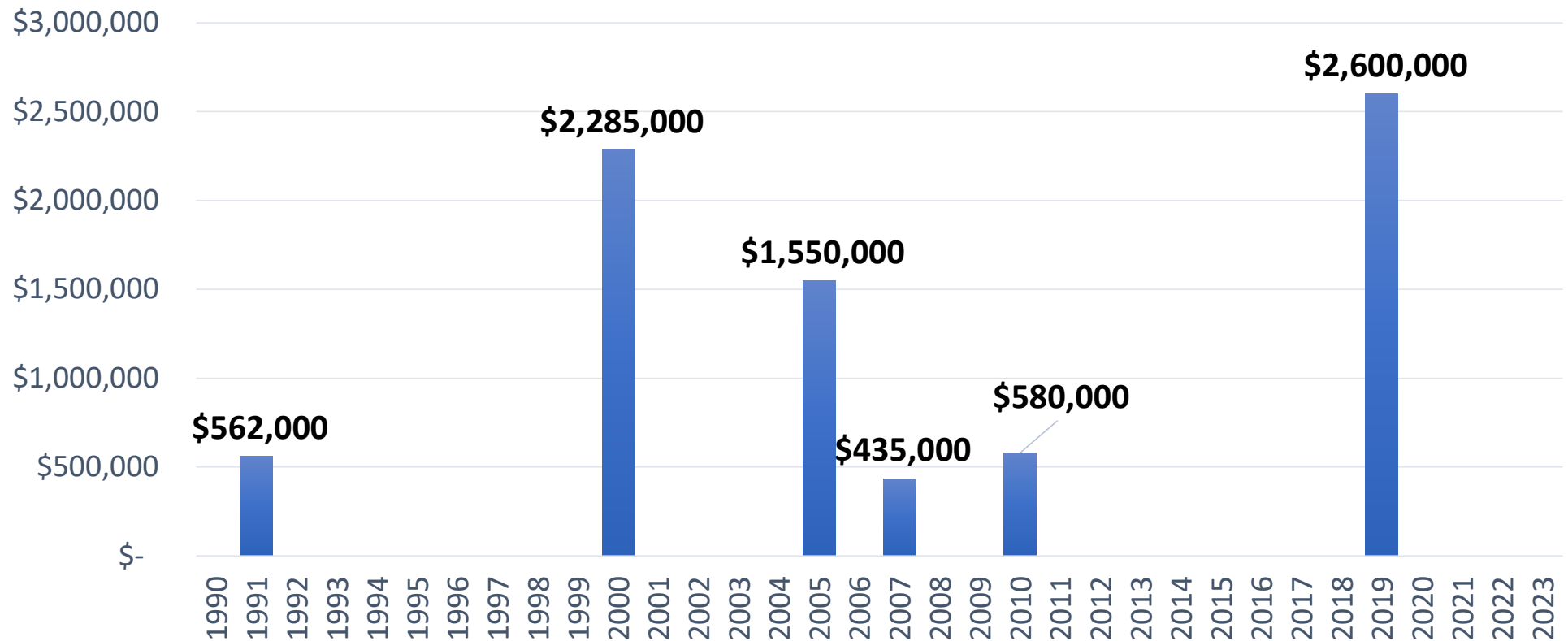
Goals and Objectives – WW/Sewer

GOAL 1: Provide the residents of the City with safe and sanitary sewage disposal.

Objective:

- Investigate & improve sources of inflow & infiltration (I/I) by 2016
- Replace dilapidated treatment units at the WWWTP by 2016
- Replace all dilapidated wastewater pipe in the system by 2036
- Repair and replace all leaking manholes in the system by 2036
- Use the new maps to document repairs to the system; identify areas in need of repair
- Connect residents that are not connected to the sewer system by 2036
- Install new manholes to come into compliance w/TCEQ spacing requirements by 2036
- Maintain a safe working environment for employees and the public in work zones

Investments in the Water/Sewer Systems



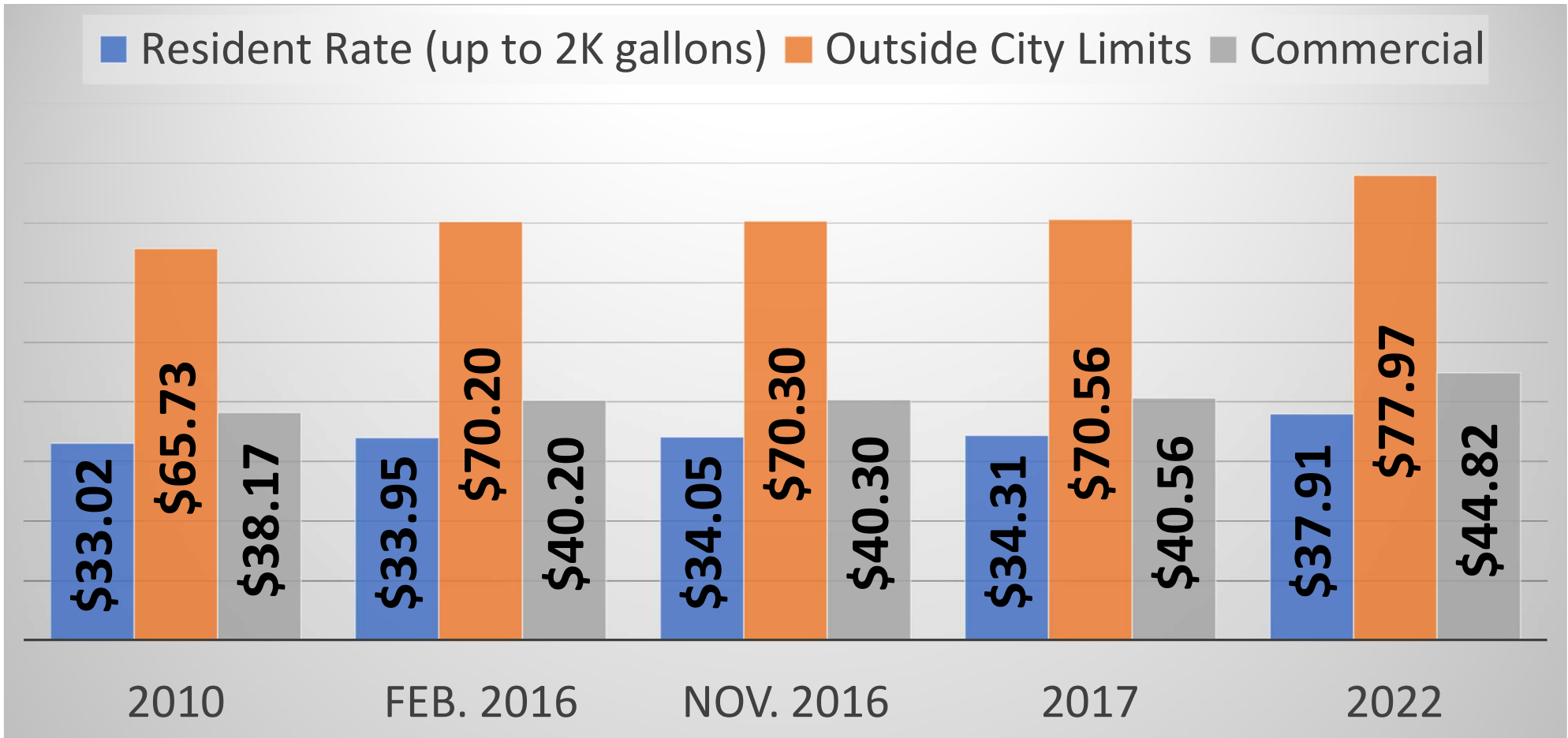
Discussions of Rhome System

FY 2013 Audit - Peter Chaney, CPA

- Advised water/sewer fund was “approaching insolvency”
- Deficiency as far back as 2005 (\$25K)
 - 2010 = \$261K
 - 2011 = \$265K
 - 2012 = \$265K
 - 2013 = \$423K

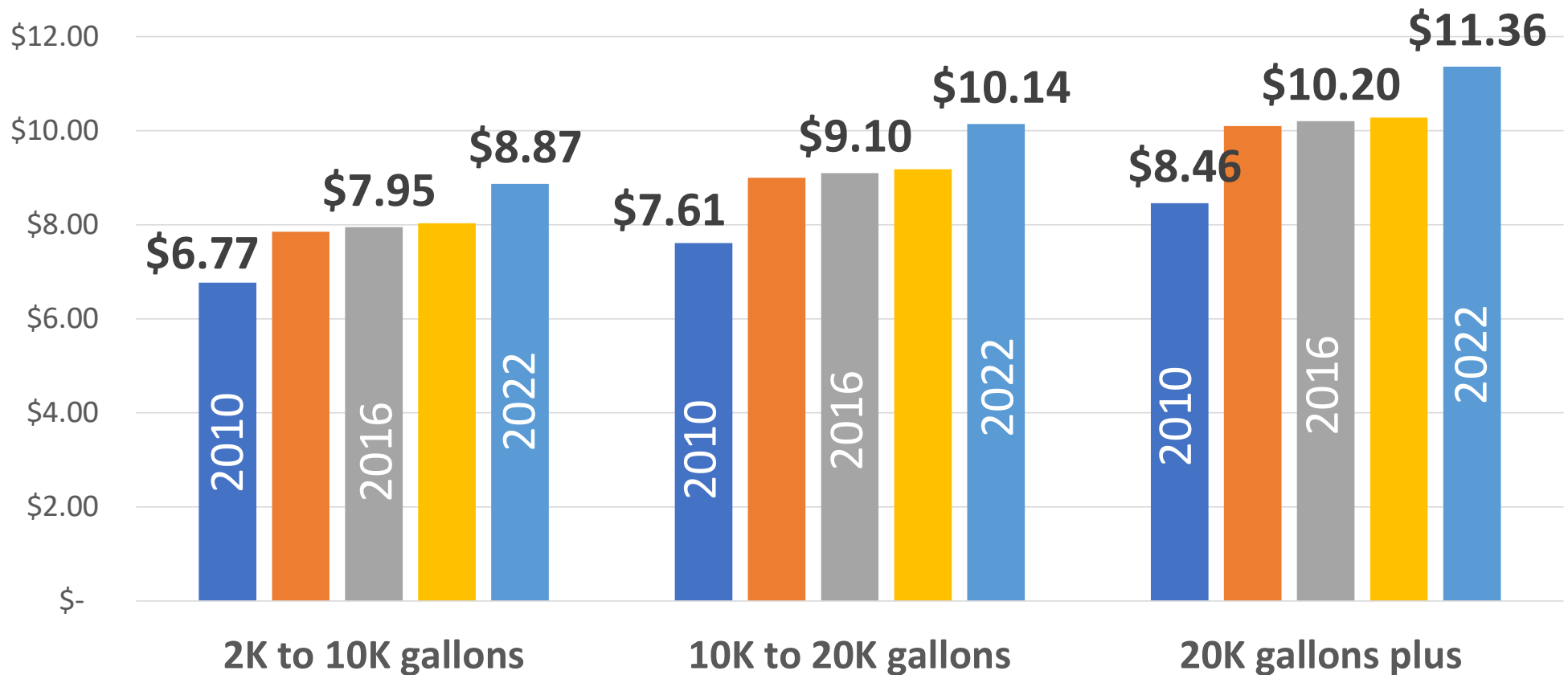
Water Rate Review – Base Rate

■ Resident Rate (up to 2K gallons) ■ Outside City Limits ■ Commercial



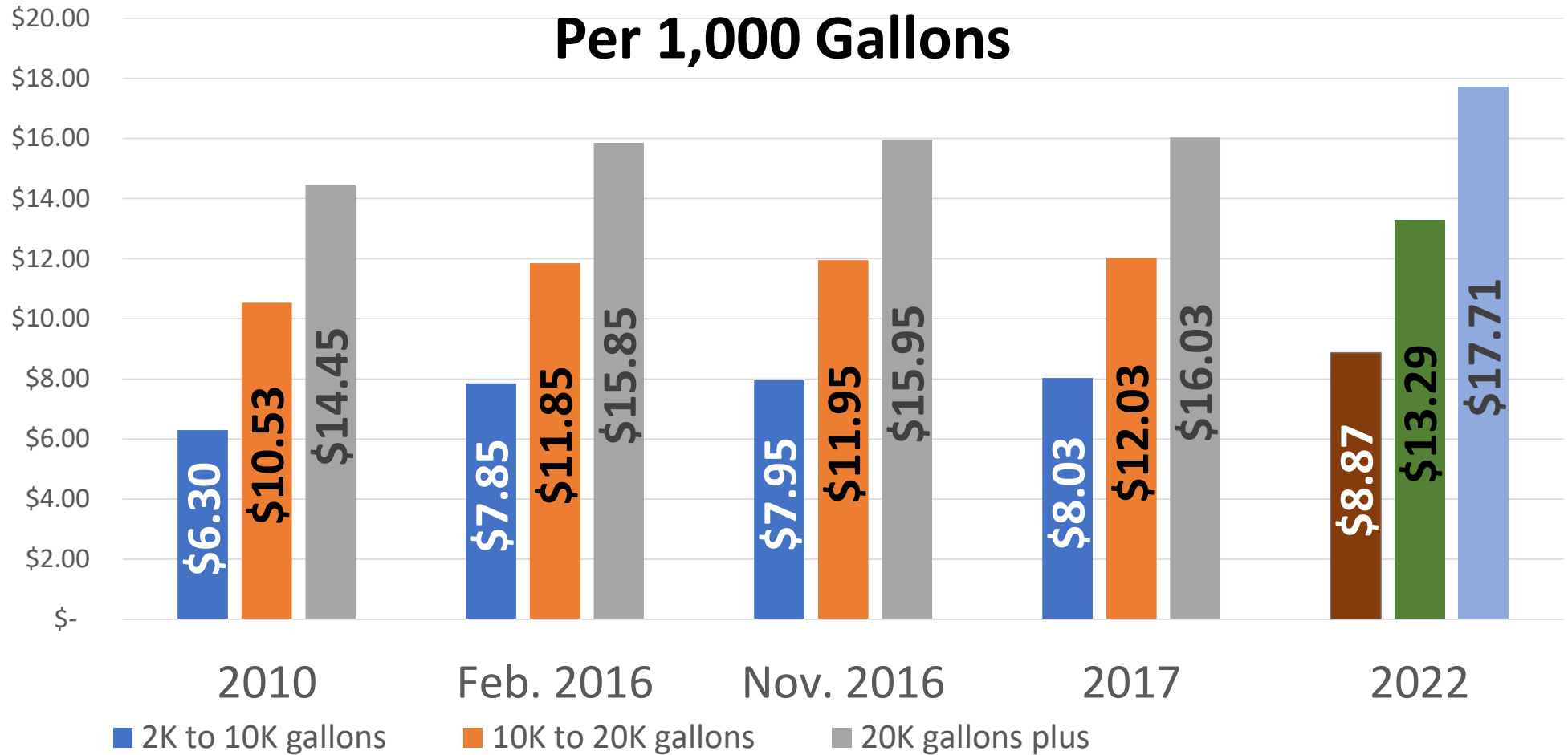
Water Rate Review – Resident

Per 1,000 Gallons



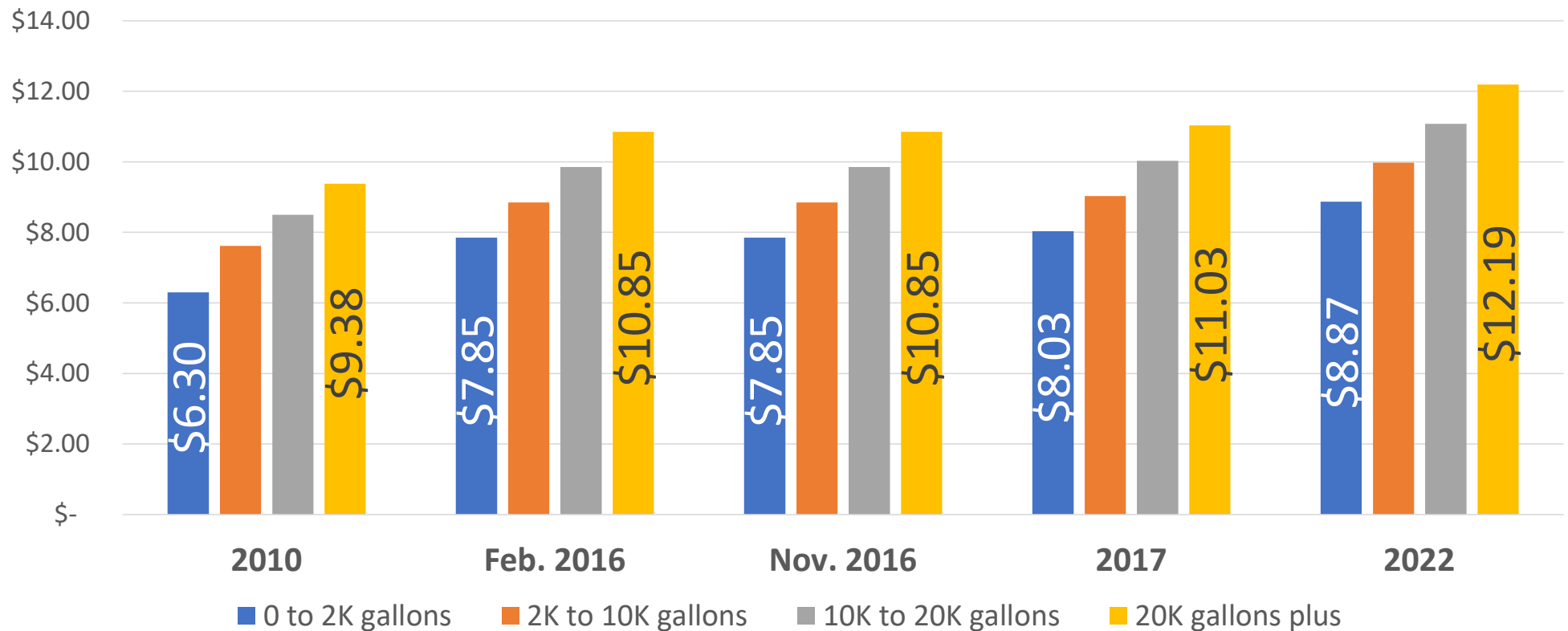
Water Rate Review – Outside City Limits

Per 1,000 Gallons



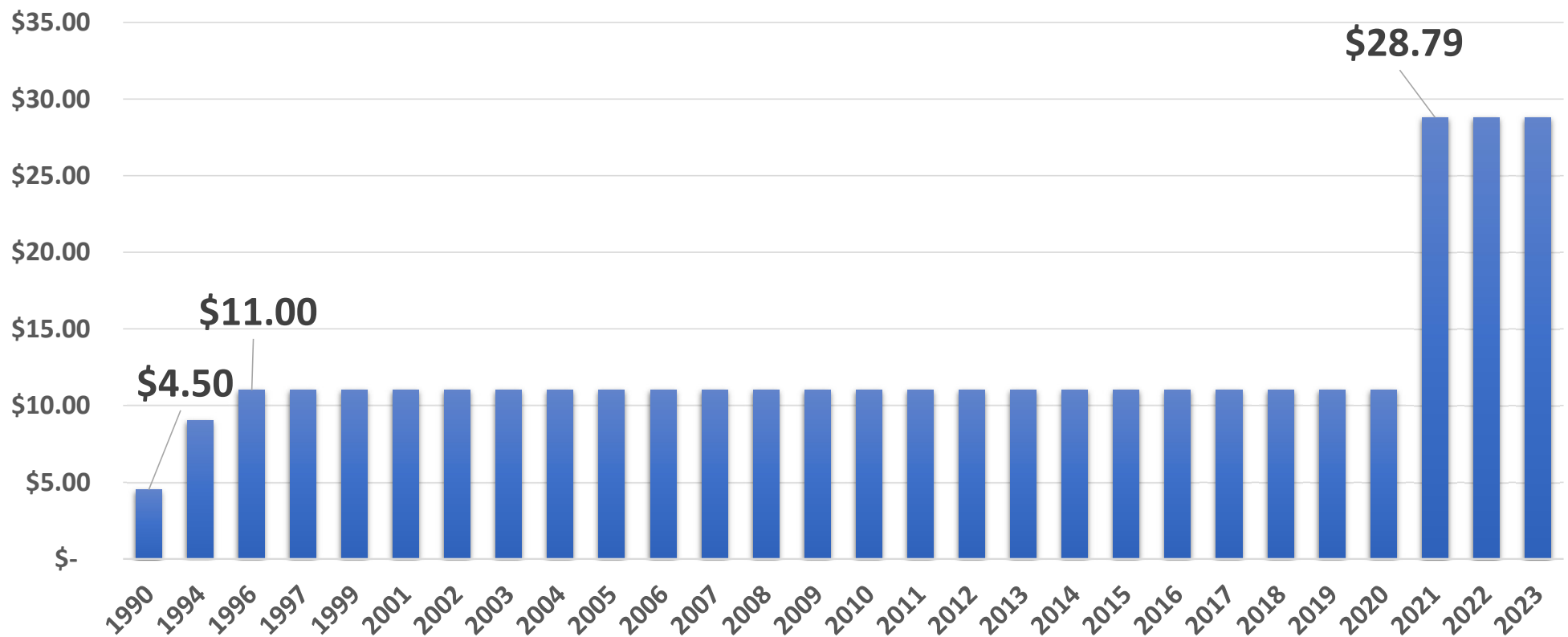
Water Rate Review – Commercial

Per 1,000 Gallons



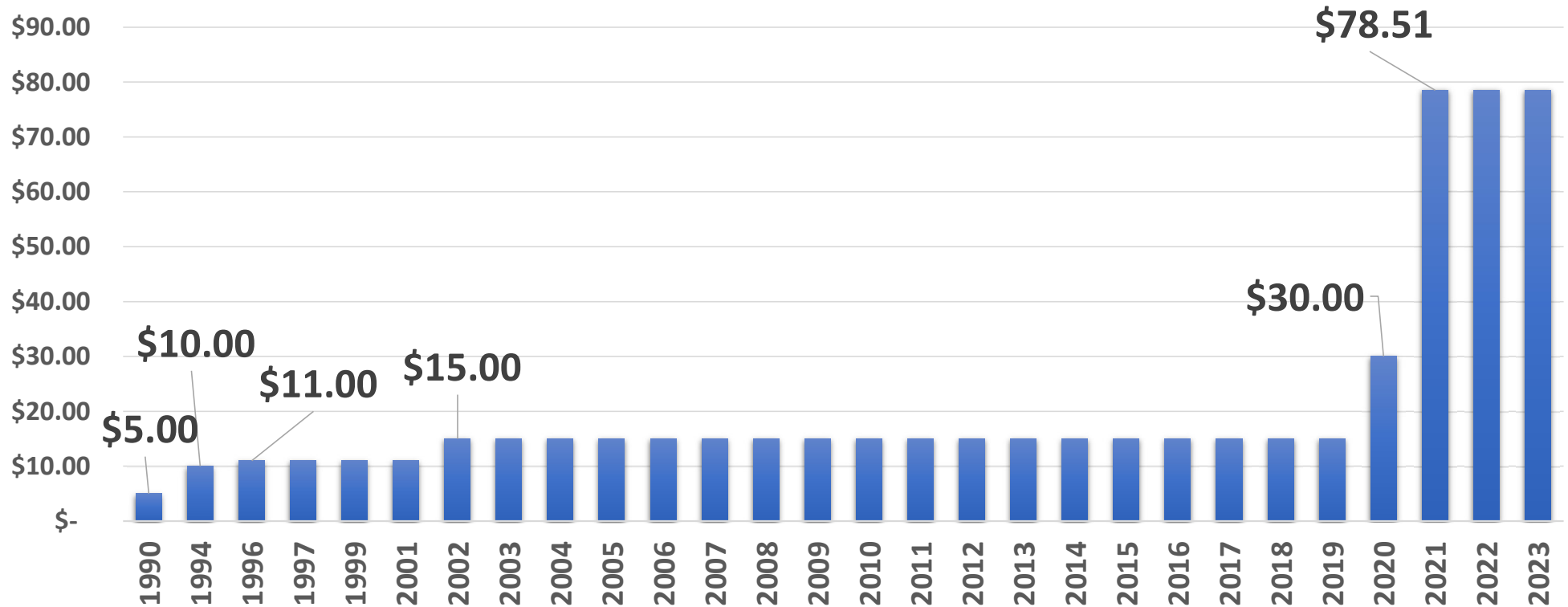
Wastewater Rate Review – Residential

Less than 4K gallons

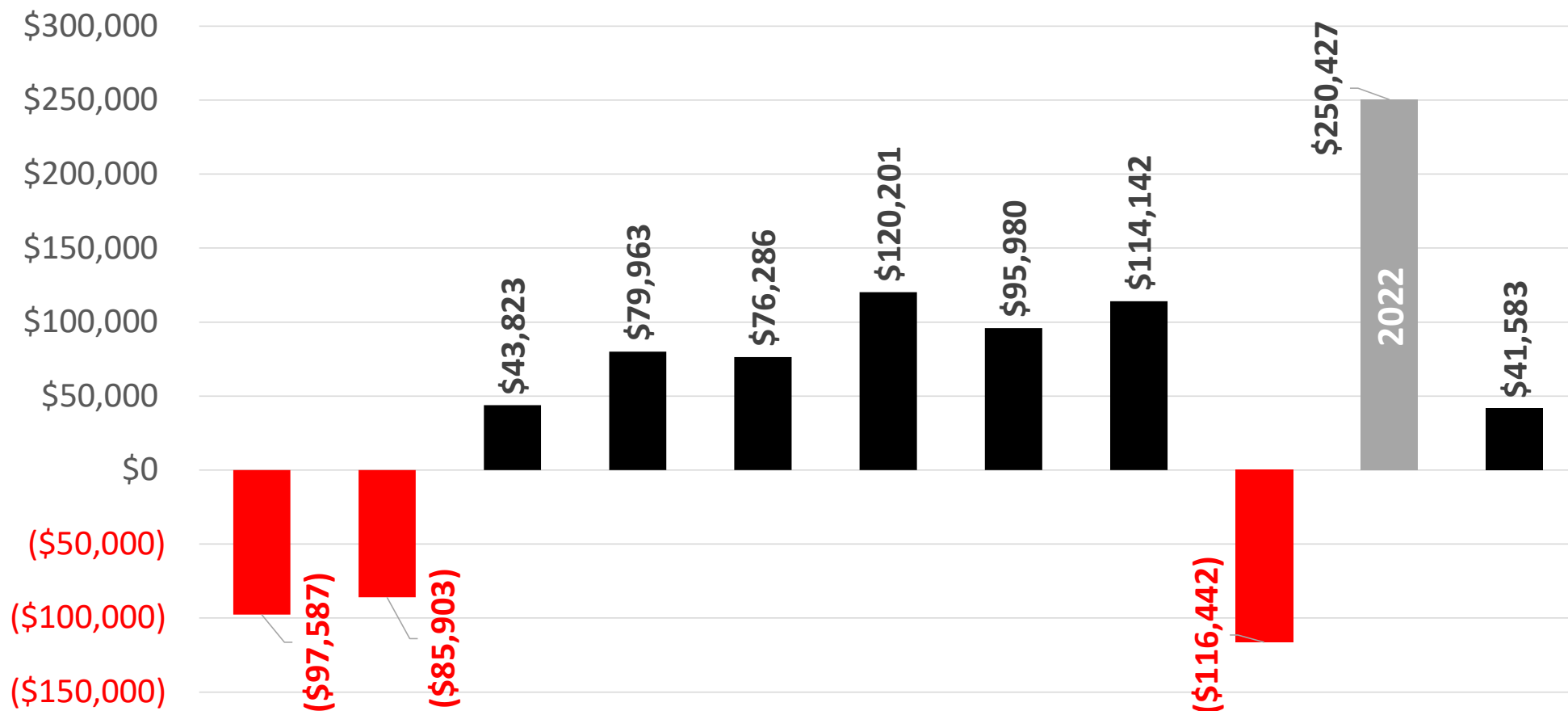


Wastewater Rate Review – Commercial

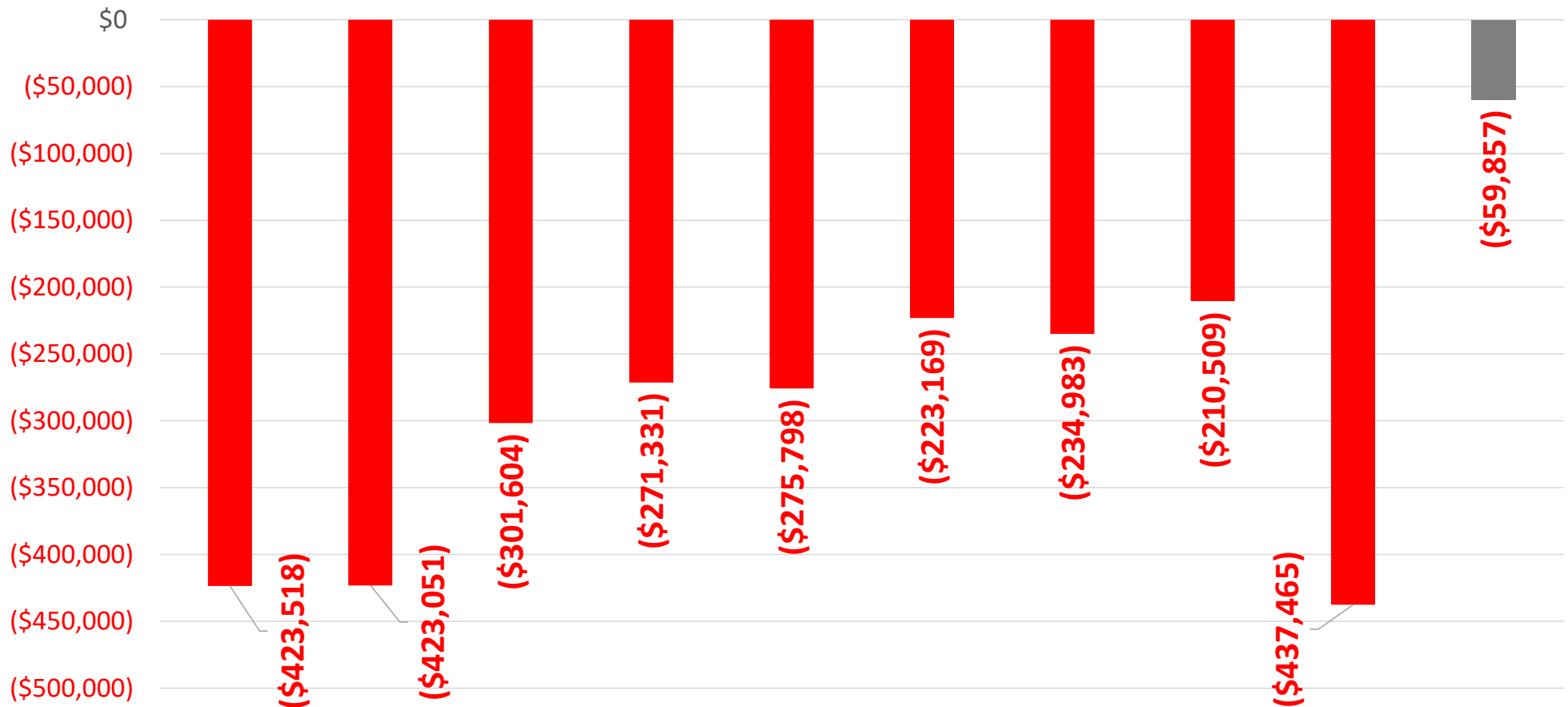
Less than 4K gallons



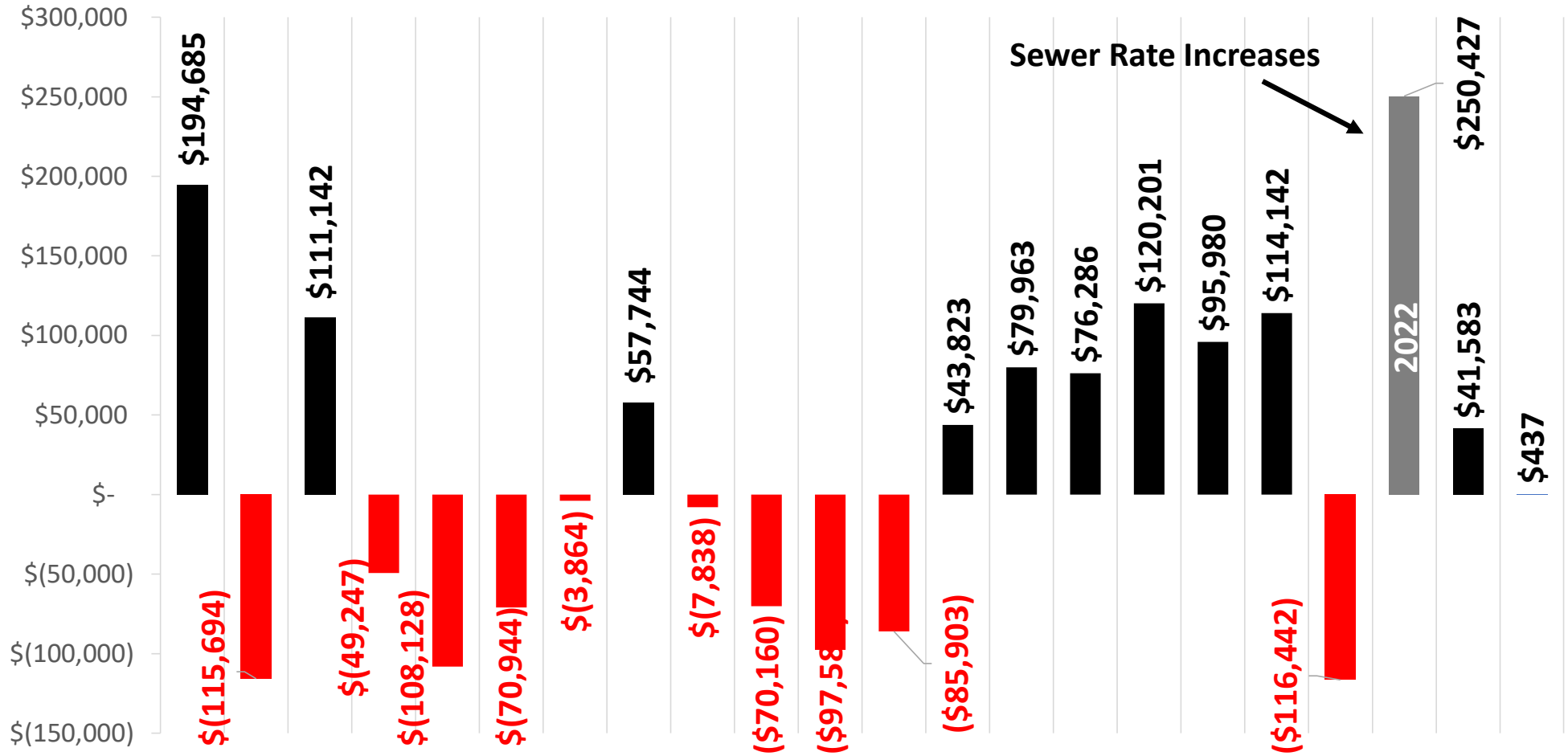
Revenue vs. Expenditures FY 2013 to 2023



Rev. vs. Expend. w/Depreciation FY 2013 to 2022



Fund Performance – FY 2003 to 2024



Wastewater (Sewer) System Needs

Immediate Needs	Project Estimates
Rehab/replacement of WWWTP	\$5M to \$12.7M
Replace clay pipes in Old Town area	\$3.5M

Public Works Needs – Equipment

Option #1	
Trailer Mounted Jetter	\$95,000
Trailer Mounted Hydro	\$85,000
Trade-in-value of Vactor	-\$30,000
Freight for New Equip.	<u>\$5,500</u>
Estimated Totals	\$155,500

Option #2	
Trailer Mounted Jetter	\$87,500
Trailer Mounted Hydro	\$78,000
Trade-in-value of Vactor	<u>-\$19,500</u>
Estimated Totals	\$146,000

Public Works Needs – Equipment, cont.

Equipment Needed	Approx. Cost
Sewer Camera	\$90,000
Crack Seal Machine for Roadways	\$65,000
Hot Box Pothole Patch Machine	\$65,000
One Ton Truck	\$95,000
Tools/Toolboxes/Mounted Lights	\$25,000
Supplies for Emergency Repairs	\$15,000
2 - Generators for Water Pump Stations	\$200,000
1- Mounted Generator w/Transfer Switches	<u>\$90,000</u>
Estimated Totals	\$645,000

Public Works Projects

Project	Timeline
Water/Sewer Rate Study	Immediately
Drill Wells for Water Capacity	Immediately
Repair Old Clay Pipes in City	Immediately
West WWTP Replace (with screw press, filters, and muffin master machine)	Immediately
Replace/rehab Ground Storage Tanks	Immediately
Lead/Copper Project	October 2024
Purchase generators	Immediately
Purchase tools/toolboxes for trucks	Immediately
Consider alternative for bathrooms at city park	April 2024

Public Works Projects, cont.

Project	Timeline
Backhoe Cover	2 years
Repaint/rehab Elevated Tan	2 years
Review handgun ordinance for PW's	2 years
Park Equipment Upgrades	5 years
Construct PW's Shop	5 years

State Programs - Grants / Loans

- Drinking Water State Revolving Fund (DWSRF) Loan
- Texas Water Dev. Board Fund (DFund) Loan
- Clean Water State Revolving Fund (CWSRF)
- Upper Trinity Groundwater Conservation District
- SWIFT Loans

Roadway System

- Major Highways = SH 114 and US Hwy 81/287
 - Main Street – Hwy 81/287 Business
 - FM 3433
-
- Total Street Miles = 25.89
 - Approximately 5% of city streets are curb & gutter
 - Approximately 5% was in low to poor condition (2016)

Goals and Objectives

GOAL: To have a safe and drivable street system that can accommodate the City's vehicular demands.

Objective: Continue to inspect road surfaces & repair when necessary.

Maintenance

Priority	Frequency	Description
1	Each Year	Start street seal coat program. Should include 1.5% of City's streets each year on a continuous basis.
2	Each Year	Cleaning & deepening ditches on each side of paved streets including clearing culverts. Grade edges of asphalt paving to clear grass & silt build-up. Clear curb and gutters of sedimentation & vegetation.

City Projects

Priority	Name	Description
1	Virginia Lane	Widening and new three (3) lane undivided minor arterial
2	Virginia Lane to SH 114	New three (3) lane undivided minor arterial
3	Hickory to Virginia	New three (3) lane undivided minor arterial
4	Hickory St.	Widening & new three (3) lane undivided minor arterial
5	Pioneer Rd.	Widening to three (3) lane undivided minor arterial
6	E 2 nd Street	Quiet Zone Installation for Train Crossing
7	Morris Street	Repave/drainage/utilities reconstruction
8	Crown Point	Various roads need rebuild or crack/seal
9	Alliance Blvd.	Entrance area from SH 114 needs repair
10	Old Town	Various roads need rebuild or crack/seal
11	Redbud	Reconstruction and widening
12	Oak Court	Paving (currently gravel)
13	Family Park	Repave/resurface parking lot area

Old Town Streets



Old Town Streets, cont.



Crown Point Streets



By Well Entrance



Iron Horse Court



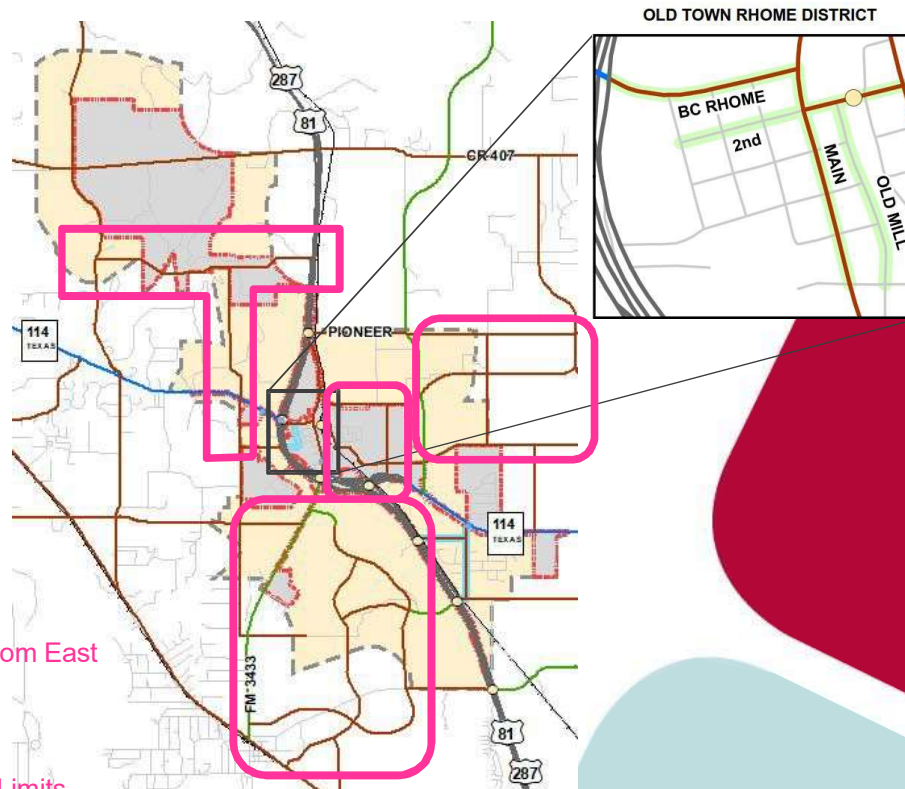
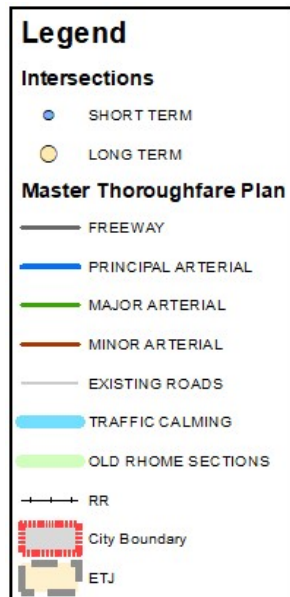
State or County Projects

Priority	Name	Description
1	SH 114 & US 287	Install signal light to help with traffic control and safety.
2	S Main St	Road Repair
3	SH 114 & Alliance Blvd.	Install signal light to help with traffic control and safety.
4	FM 3433	Widening to four (4) lane divided major arterial
5	CR 4651	Widening and construction of three (3) lane undivided minor arterial
6	FM 3433 - Ramhorn Hill Connection	New four (4) lane major arterial and three (3) lane minor arterial
7	Ramhorn Hill Rd	Widening to a three (3) lane undivided minor arterial

Development Related

Priorit y	Name	Description
1	Virginia Ln.	Hickory to Future Joy Rd. Dependent on Prairie Point
2	S Main St	Future Joy Rd to Future CR 4733. Dependent on Prairie Point
3	Joy Road	Widening and new four (4) lane divided major arterial. Dependent on Prairie Point

Master Thoroughfare Plan



- Crown Point/Prairie Point
 - Access via SH 114 from East
- Rolling V
- General Connectivity/Grid
- Future Access to NW City Limits

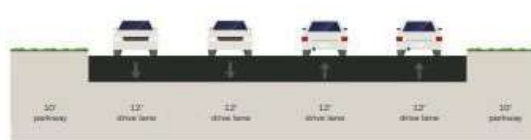
Master Thoroughfare Plan Cross Sections

Minor Arterial

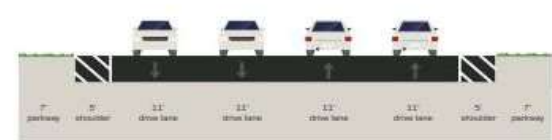
Minor Arterial - 3U



Minor Arterial - Urban



Minor Arterial - Rural



Major Arterial

Major Arterial - 5U



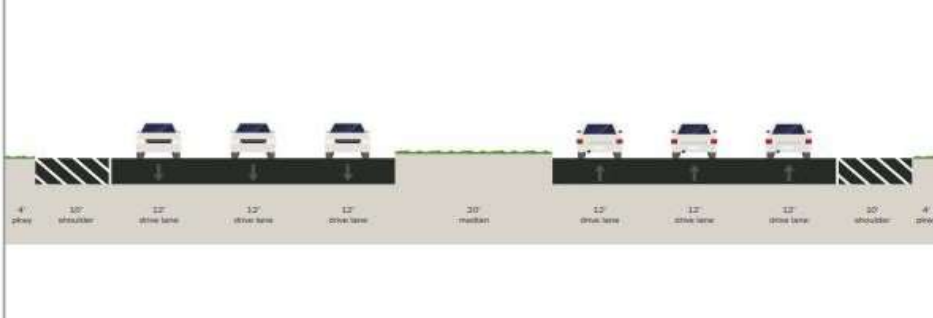
Major Arterial - Urban



Major Arterial - Rural

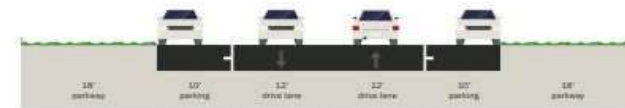


Principal Arterial

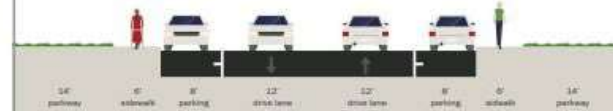


Old Rhine

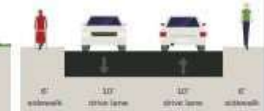
Old Rhine - Existing



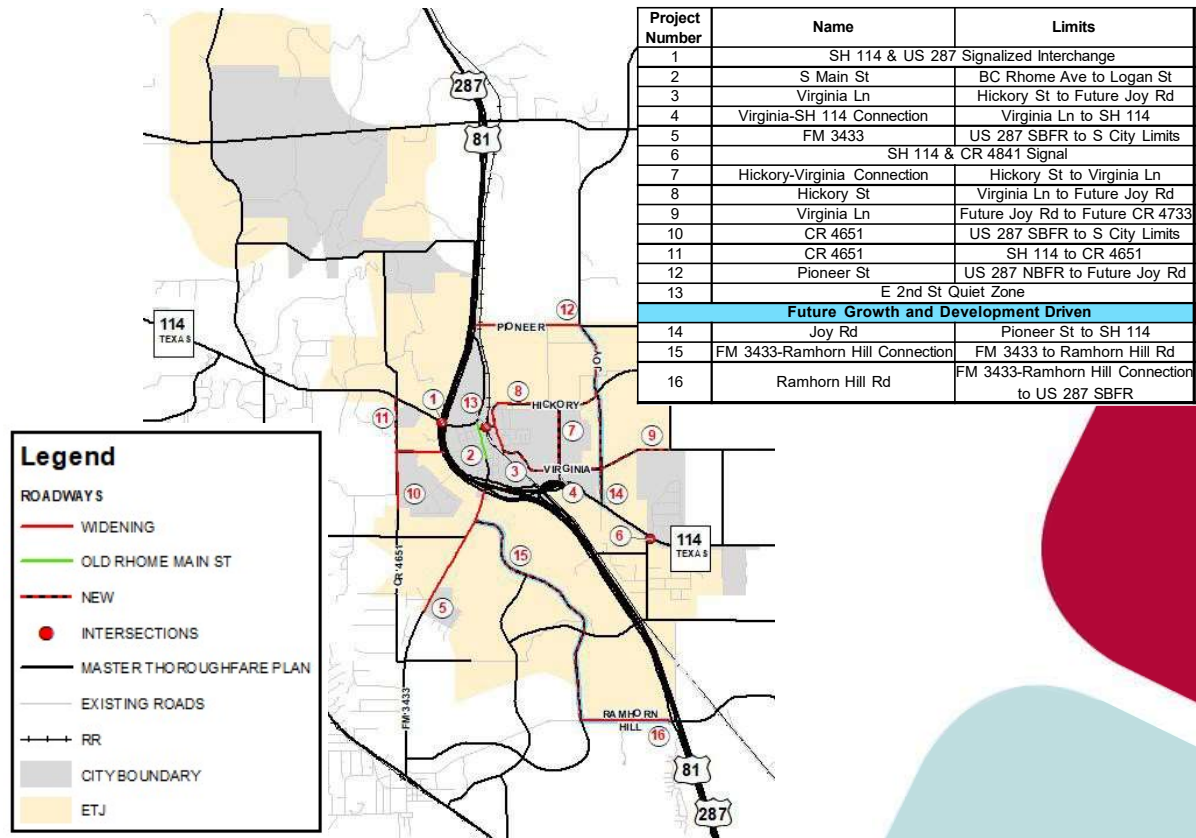
Old Rhine - Widened



Old Rhine - Constrained



Capital Improvements Plan



Storm Drainage System

- Drains into three (3) creeks
 - West Fork of Trinity River
 - Derrett Creek
 - Elizabeth Creek
- Storm Culverts at street crossings, low channels, and ditches
- Four (4) areas of city in FEMA 100-yr floodplain

Goals and Objectives

GOAL 1:

To minimize or eliminate flooding at the Morris and Dogwood Street intersection and the area of the By Well Estates.

Objective:

- Install two culverts; one at Morris St. and at Dogwood.
- Clean and grade ditches, as necessary.

Goals and Objectives

GOAL 2:

Minimize or eliminate potential flooding through residential areas.

Objective:

- Re-grade silted ditch lines by 2020 & eliminate ponding in low areas.
- Clean out silted structures by 2020.
- Replace undersized culverts by 2036.

Goals and Objectives

GOAL 3:

Maintain major drainage structures that release storm water from the City.

Objective:

- Clean and regrade ditches & culverts inlets/outlets to promote proper drainage.
- Replace undersized culverts by 2036.

Facilities Overview

City Owned Buildings

- Community Center (in-use)
- Senior/Community Building (vacant)
- Police Department (in-use)
- Fire Department (in-use)
- Public Works (in-use)
- Old City Hall (vacant)
- Old School (vacant)

Leased Facilities

- City Hall

Marie Moore Educational Center



Marie Moore Educational Center



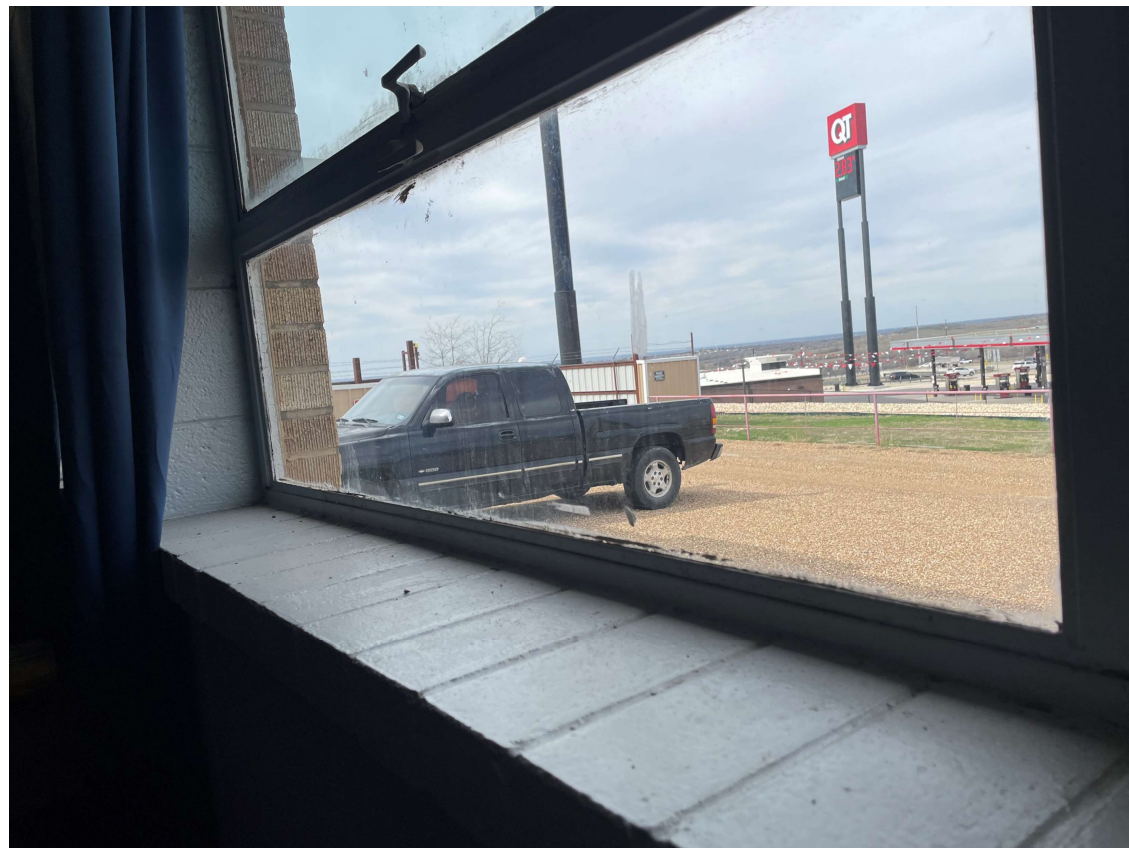
Marie Moore Educational Center



Marie Moore Educational Center



Marie Moore Educational Center



Senior/Community Building



Senior/Community Building



Senior/Community Building



Park Systems

City Parks

- Veteran's Park
- Family Park Pavilion
- Family Park (with restrooms)
- By Well Site (Future Park = 39 acres approx.)
- Prairie Point Site (Future Park = 10 acres approx.)

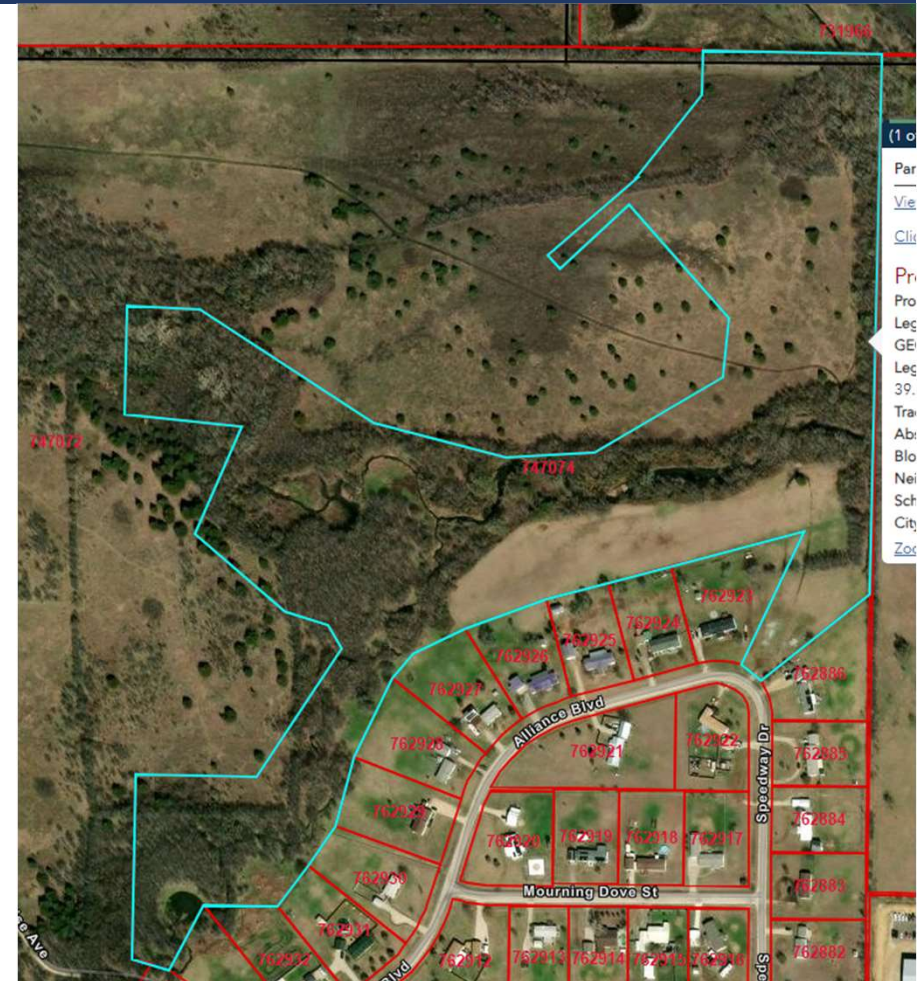
Park System



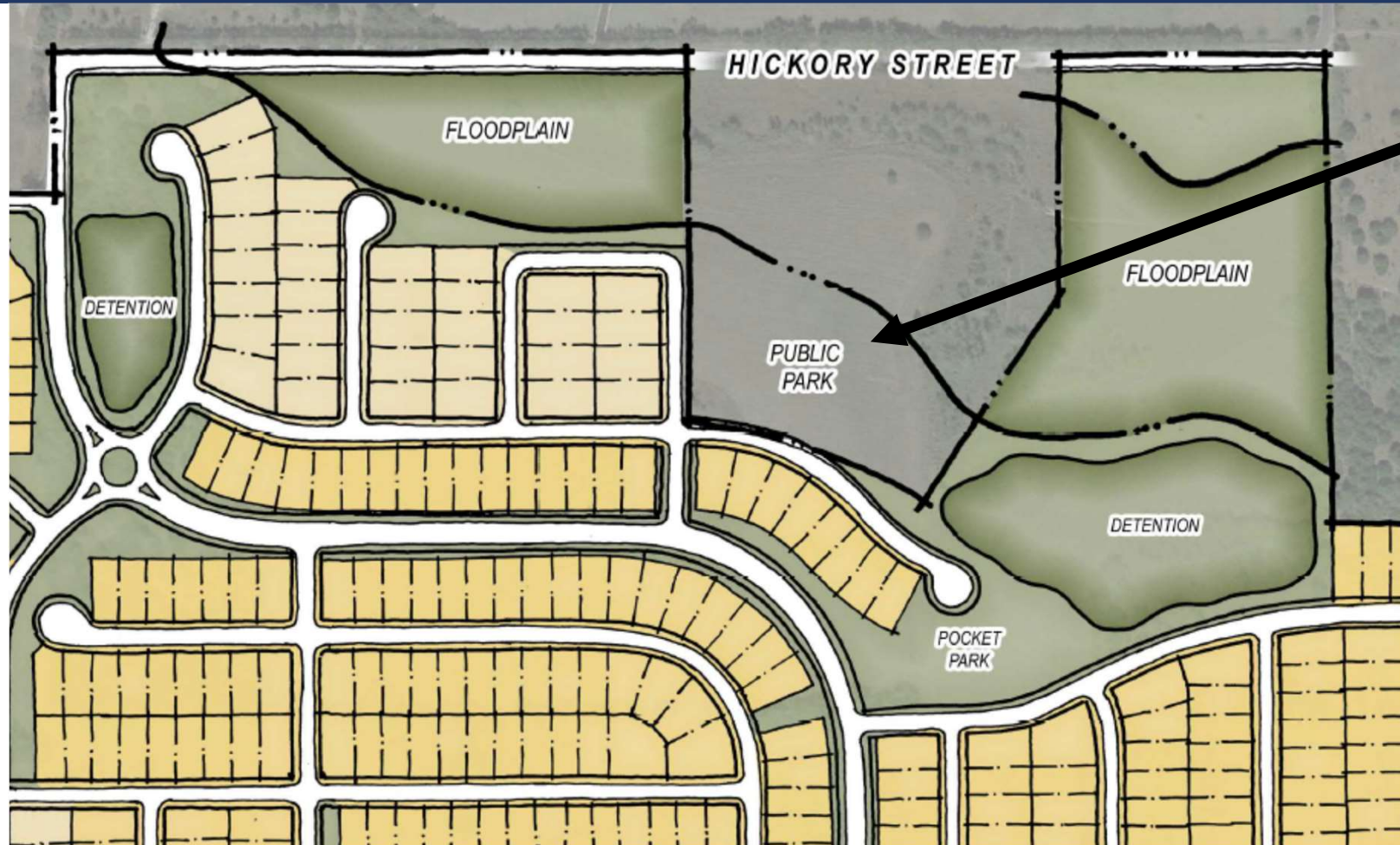
Park System



Park System



Park System



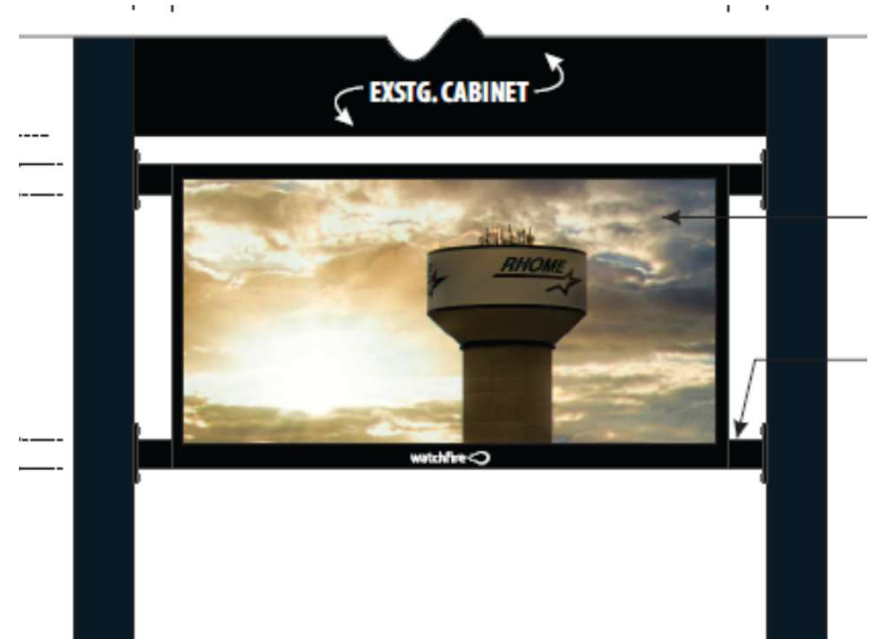
Other City Projects

Monument Signs

- By Well = \$2,500
- Ellis = No bid response
- Crown Point = No bid response
- Chisholm = No bid response

Other City Projects, cont.

- Electronic signage \$30K to \$47K



Potential Bond Projects / Funding

- A. Improvements to Water Infrastructure
Water Well Drilling \$2.5M to \$3.0M
- B. Constructing, Improving, Extending City's Sewer System
West WWTP Repairs/Replacement \$4.3M to \$11M
- C. Constructing, Improving, Extending City's Sanitary Sewer Lines
I/I Repairs (Old Clay Pipes) \$3.5M

Fire-EMS Goals/Projects

Project	Timeline
Repairs on Existing Station	Immediately
Purchase of New Apparatus	See Slide
SAFER Grant Application	12 months
Construction of New Fire Station	3 – 5 years

Fire-EMS Needs – Equipment

Equipment	FY 2025	FY 2026	FY 2027	Price Per Unit	FY 2029
Thermal Imager (3)	2	1		\$5,000	\$15,000
Multi-gas Detector (3)	1	1	1	\$1,500	\$4,500
2 nd Set of Extrication Tools		1		\$40,000	\$40,000
Flashlights (18)	12	6		\$200	\$3,600
Generator/Scene Lights			1	\$5,000	\$5,000
Lifepak-15 12 Lead	1			\$35,000	\$35,000
Lucas CPR		1		\$21,000	<u>\$21,000</u>
					\$124,100

Fire-EMS Needs – Apparatus

Apparatus	Manuf. Date	Front Line 15 years	Reserve 5 years	Retire Date
Engine 217	2003	2018	2023	2024
Engine 317	2009	2024	Due	2029
Brush Truck 117	2000	2015	2020	2024
Rescue 117	2013	2028	2033	2034
Brush Truck 217	2022	2037	2042	2043
Ladder Truck	TBD			

Police Goals/Projects

Project	Timeline
Repairs on Existing Station	Immediately
Implement Computer Aided Dispatch (CAD)	12 to 18 months
Implement Record Management System	12 to 18 months
Motor Patrol Program	12 months
Construction of New Police Station	3 – 5 years
Organize Property Room – Clean out PD Bays	12 months
Pursue Recognition/Accreditation	1 – 3 years
Create Inservice Schedule for New Hires/FTO Coord.	12 months
Secure long-term dispatch solution	12 to 18 months

Police Needs – Vehicles

Equipment Needed	Fiscal Year
Patrol Vehicle	2025
Patrol Vehicles (2) /Motorcycles (2)	2026
Patrol Vehicles (4) – replacement patrol/admin	2027
Replacement Vehicle (125)	2028
Patrol Vehicle (1) /Replacement Vehicle (1) (123)	2029
Replacement Vehicles (4)	2030

Police Needs – Equipment

Equipment Needed	Timeline
Computer Aided Dispatch	12 to 18 months
Records Management System	12 to 18 months
Body Worn Camera System (replace current system)	
Laser (5)	
Patrol Rifles (20)	

Administration Goals/Projects

Project	Timeline
Replace software for Finance/Court/UB	12 months
Complete document scanning/shredding	12 months
Bad debt collection policy	12 months
Create Economic Development Program	2 years
Sales Tax Revenue Sharing Evaluation	Per Council Direction
Regional Water/Wastewater Options	Per Council Direction

Paid Personnel – Current

Department	Personnel
Administration (Admin., City Sec., Finance Spec.)	3
Utility Billing	1
Municipal Court	1.5
Police Department	9
Fire – EMS	4
Public Works	<u>5</u>
Total	23.5

Personnel Forecast

Position	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
Patrol Sergeant	1		2		
Police Officers		4	2		
Police Detective				1	
Police Captain/Asst. Chief					1
PW Technician					
PW Admin Support					
Code Enforcement					
Fire Fighters	1	1	1		
Utility Billing/Admin		1			