



Audit of Public Works Maintenance: Streets & Drainage

Madison Rorschach
City Auditor
City Auditor's Office
August 19, 2025



Purpose of the Audit

- Audit evaluated the effectiveness of maintenance activities for streets and drainage infrastructure.
- Since 2005, Denton residents have authorized over \$443 million in streets and drainage improvements.

General Public Works Maintenance Process



Street Maintenance Projects are Generally Cost-Effective

- Streets regularly assesses asset condition to identify maintenance needs.
 - Some critical asset data is missing.
- Streets has not formally adopted maintenance prioritization service level goals.
 - Still some progress towards goals has been made.
- Maintenance projects appear to be applied cost-effectively.
 - Documentation of technique selection could be improved.
 - Some preventative techniques not performed.

Service Level Goals & Outcomes

Metric	Informal Goal	2019 Est.	2025 Est.
Average OCI	>70.0	63.5	69.5
Rehabilitative Ln. Mi.	<10.0%	20.3%	19.8%

Est. Condition of 2024 Maintenance

Est. Street Segment Condition	Maintenance Applied			
	Preventative		Corrective	
New	⚠	40%	⛔	8%
Preventative	✅	52%	⚠	20%
Corrective	⛔	3%	✅	45%
Rehabilitative	⛔	1%	⛔	10%
Unknown	?	4%	?	17%

Street Maintenance Long-Term Planning is Limited; Quality Assurance Doc. is Inconsistent

- Current project planning practices only extend to the near future.
 - Variable funding, received inconsistently complicates project planning.
 - Basic project cost planning tools have not been created.
- Work orders are used, but documentation is inconsistent.
 - Most Streets Division work orders are repairs but timeliness goals have not been established.

2024 Repair Work Order Documentation

	Doc. Available?
Related to Street Maint.	92%
Material Costs	82%
Related Invoices	0%
Quality Assurance Pics.	58%
Crew Leader Supervision	62%
Crew Leader Entered	90%

Long-Term, Sustainable Funding is Needed for the City to Maintain Quality Roads

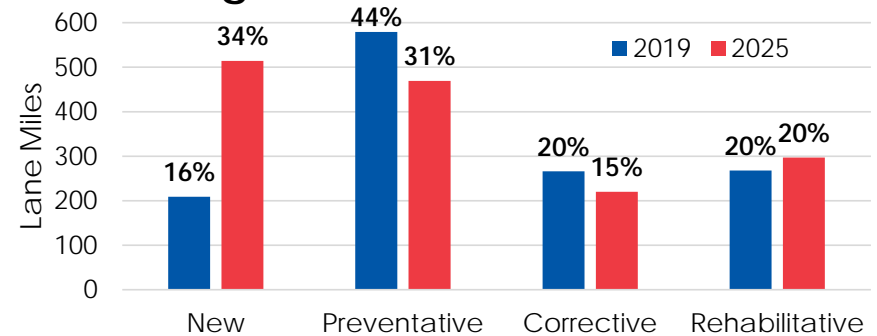
- Addt'l revenue is needed to achieve service level goals most economically through maintenance.
 - Maintenance cannot be legally funded by debt.
- While based on Council direction, reliance on utilities to fund street maintenance hinders budgeting & doesn't align with fairness principles.
 - Bond sale "savings" funding ties maintenance to debt.
- However, the Streets Division doesn't currently optimize resources.



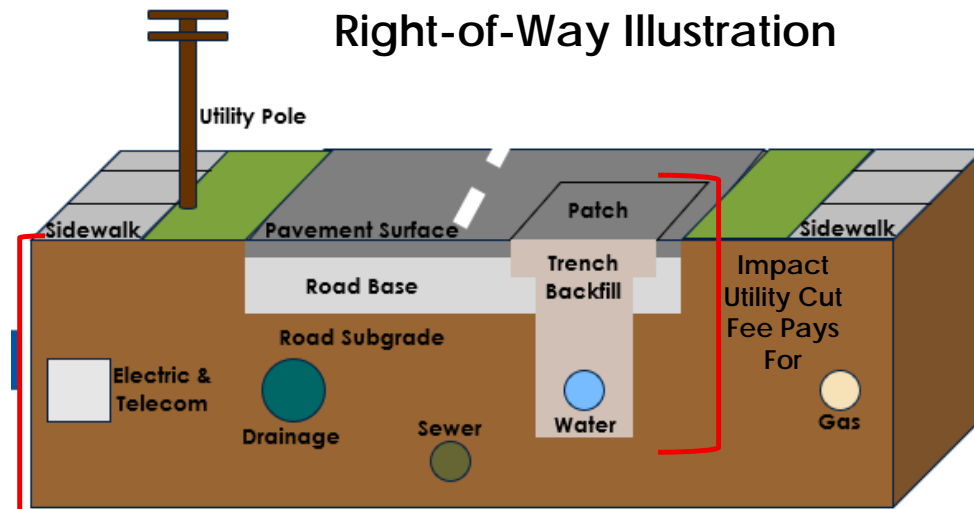
ID 25-338

User
Franchise
Fee Pays
For

Change in Maintenance Needs



Right-of-Way Illustration



Incomplete Drainage Asset Information Hinders Maintenance Prioritization & Planning

- Drainage has implemented an asset management system, but it is incomplete and missing key data.
- Asset condition monitoring has historically been limited.
- Some drainage service level goals are adopted due to regulatory requirements.

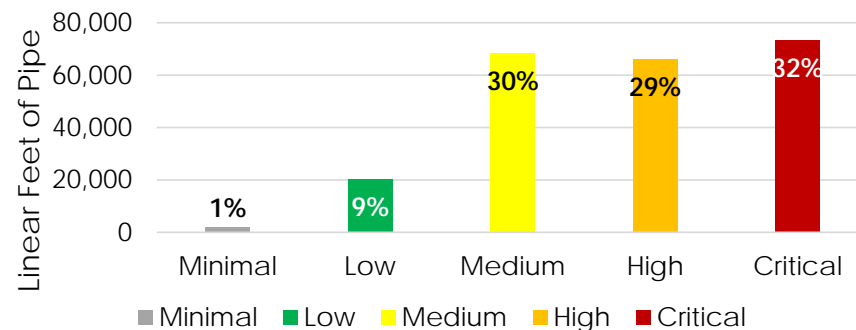


ID 25-338

Drainage Asset Inspections

Asset Category	Total Assets	2024 Inspection	Since 2019 Inspection
Inlets	8,583	0%	23%
Manholes	2,672	1%	32%
Outlets	1,748	0%	0%
Channels	2,428	0%	11%

Known Drainage Pipes Conditions

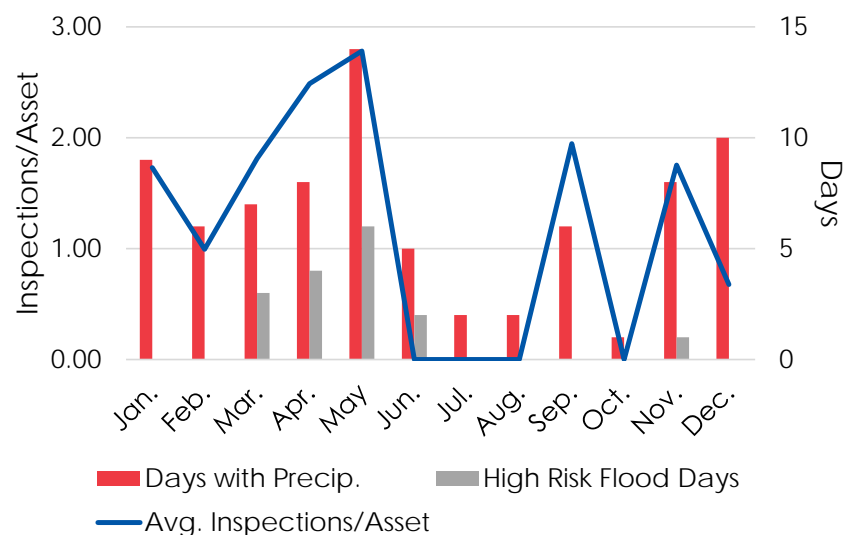


Drainage Maintenance Quality Assurance

Documentation is Limited

- Most drainage maintenance is reactive, limiting resource optimization.
- Street sweeping is completed but could be further formalized.
- Storm checks occur during rainier periods.
 - Criteria should be developed to trigger storm checks to optimize resources based on flood risk.

Relationship between Storm Checks & Precipitation



Drainage Fund Structure Limits Financial Visibility; Current Rates Don't Provide Adequate Revenue

- Drainage system maintenance is generally funded fairly.
 - Drainage fees are accounted for in the Wastewater fund, reducing visibility and hindering saving for long-term needs.
- Drainage fee rates have not been updated in over 20 years.
- Drainage fees are likely applied inconsistently.
 - Large refunds were unnecessarily issued to some customers.

Current Drainage User Fee Structure

Residential		Commercial
Sq. Ft. of Impervious Surface	Charge	
0-600	\$0.50	\$0.00186 per Sq. Ft. of Impervious Surface
601-1,000	\$1.00	
1,001-2,000	\$3.35	
2,001-3,000	\$5.45	
3,001-4,000	\$7.60	
4,001-5,000	\$9.75	
5,001-6,000	\$12.00	
Over 6,000	\$15.50	



Management Response Summary

Rec.	Recommendations*	Response	Implementation Actions*
1 & 2	Improve street asset condition monitoring.	50% Agree; 50% Partially Agree	Will develop a process to incorporate utility cut degradation impacts into the street condition score & to update street asset data as time allows.
3, 4, 5, & 6	Develop systematic street maintenance work planning tools.	75% Agree; 25% Partially Agree	Will develop base-line project cost estimates and formalize ongoing work order and annual planning processes to ensure consistency.
7, 8, & 9	Explore options to supplement street maintenance funding.	100% Agree	Will work with Finance to change budgeting practices, establish a utility cut fee, and reevaluating a roadway maintenance fee.
10, 11, 13, & 16	Systematically inventory and monitor drainage assets & develop service level goals to inform maintenance prioritization, planning, and funding.	100% Agree	Working to formalize needed SOPs, a capital improvement plan, and service level goals.
12, 14, & 15	Develop performance standards for drainage asset inspections, cleanings, repairs, & storm checks	67% Agree; 33% Partially Agree	Will implement standard operating procedures for these activities.
17, 18, 19, & 20	Improve Drainage fund transparency & increase revenue.	100% Agree	Will work with Finance to create a separate Drainage utility and develop fee applicability guidance; cost of service study is underway.
21 & 22	Improve invoice verification.	100% Agree	Will develop SOPs and explore expanding recommended invoice verification procedures.
23, 24, & 25	Improve public communication for public works maintenance projects.	100% Agree	Will create needed SOPs and work with Marketing and Communications to update webpages.



ID 25-338

*Detailed recommendations and implementation actions can be seen in the full audit report.

Questions?

Madison Rorschach

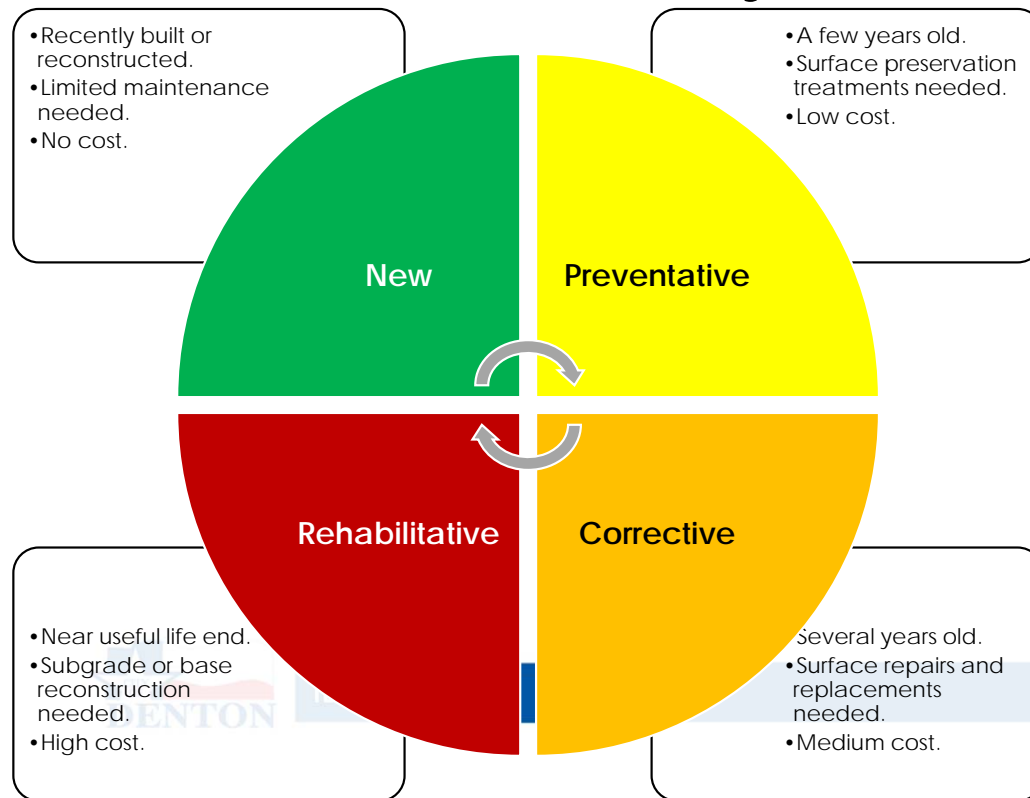
City Auditor

City Auditor's Office

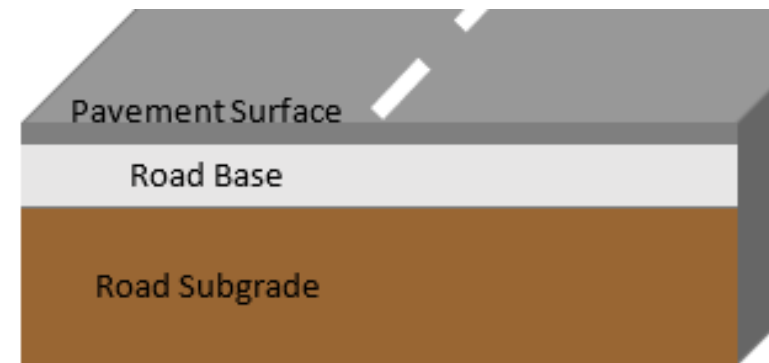


Roadway Reference Graphics

Street Condition Lifecycle



Simplified Street Cross Section



Drainage System Reference Graphics

Drainage Asset Types



Inlets

- Where stormwater enters the underground drainage system.
- Usually located on streets or in basins and includes control devices to block or trap illicit discharge.



Pipes

- Moves stormwater towards basins or waterways.
- Includes manholes that allow access for repairs.



Outlets

- Where stormwater exits the underground drainage system.
- May exit to channels, basins, or directly to waterways.



Channels

- Collects and moves water at ground-level towards basins or water ways.
- Includes bridges that allow for movement over stormwater flows.



Basins

- Collects, slows, or stops stormwater flow to reduce erosion and flooding.
- Includes dams that slow or redirect water flow.

Simplified Drainage System Stormwater Flow



Functions Involved in Streets & Drainage Maintenance (2025)

