

CITY OF IONIA

**STORM WATER
CAPITAL IMPROVEMENT
PLAN**

2019 EDITION



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2130311

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Introduction

The City of Ionia public infrastructure includes drinking water supply and delivery systems, wastewater collection and treatment systems, storm drainage systems and public streets. These systems are aging and certain parts need to be repaired or replaced to keep up with deterioration over time.

Waiting until something breaks to make emergency repairs is expensive. A more proactive approach can minimize life cycle costs using the following steps:

- Evaluate the condition and capacity of assets to determine the needs.
- Implement a maintenance program for the small needs.
- Implement a Capital Improvement Plan for the big needs.
- Develop financial strategies to fund all planned work before needs become emergencies.

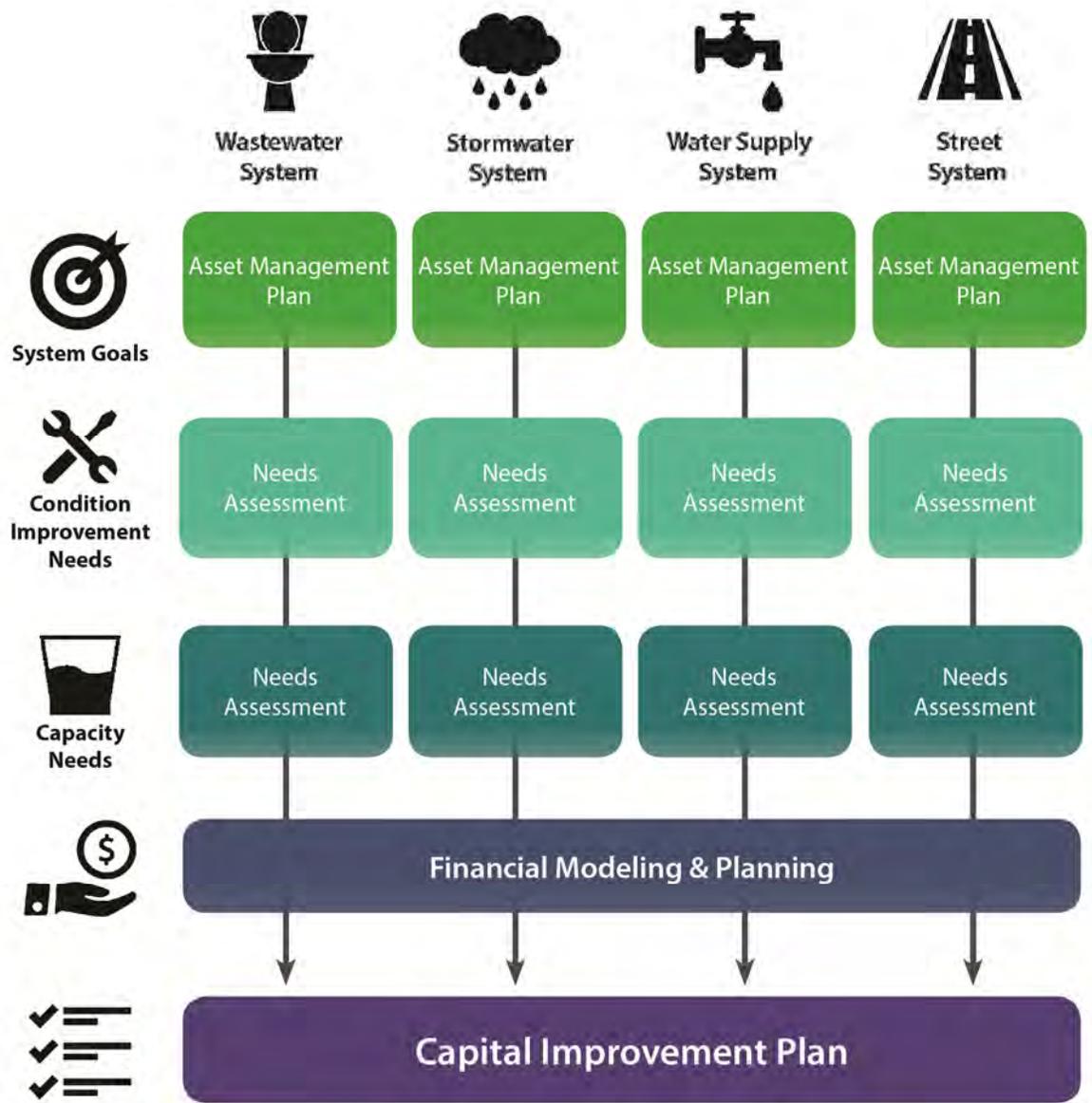
The City of Ionia is actively managing the needs of these systems. The needs have been evaluated and financial strategies have been considered. This Capital Improvement Plan presents the City of Ionia's infrastructure priorities that have been established within a 10-year planning period, a timeline for accomplishing the needed improvements, and a financial strategy to implement the plan.

Planning Framework

Asset management is a programmatic way of managing the needs of infrastructure. The asset management plan for each system guides the program and establishes goals for the system. By implementing the asset management program, the needs of each system are determined and prioritized. Each system has two kinds of needs: condition improvement needs and capacity needs.

Condition improvements may be needed to repair aging and deteriorated parts of the system.

Capacity may be needed to ensure the infrastructure will meet the needs of the people.



Current Needs Assessments

The City of Ionia has completed the following needs assessments upon which this Capital Improvement plan has been developed:

System	Condition Improvement Needs Assessments	Capacity Improvement Needs Assessments
Wastewater System	DPW investigation and field experience	DPW investigation and field experience
Stormwater System	Stormwater System Evaluation P&N Report: September 2019	Sewer Flow Study P&N Report: September 2019
Water Supply System	Water Asset Management Plan FTC&H: 2016	Water Asset Management Plan FTC&H: 2016
Street System	2018 PASER Ratings	Not Applicable

Coordinating the Systems to Minimize Cost

When capital improvements are planned considering both kinds of needs across all infrastructure systems the potential for tearing up good streets to work on underground utilities can be reduced and overall cost can be minimized. This requires financial planning for all infrastructure systems together and a capital improvement plan that is coordinated.

Ongoing Capital Improvement Planning

Capital improvement planning is an ongoing process. Plans are expected to change as new information becomes available and economic conditions change. While the various studies to determine the needs may be updated at differing times, this Capital Improvement Plan is intended to be updated annually to always reflect the current plan moving forward.

Part One: Capital Improvements

Overview Map

Project Summaries

CITY OF IONIA
 IONIA COUNTY, MI
 UTILITY SYSTEM
CAPITAL IMPROVEMENT PLAN
 SEPTEMBER, 2019
Prein&Newhof
 2130311

LEGEND

Storm Sewer Spot Repair

Project Year

-  2021
-  2027

CIP Projects

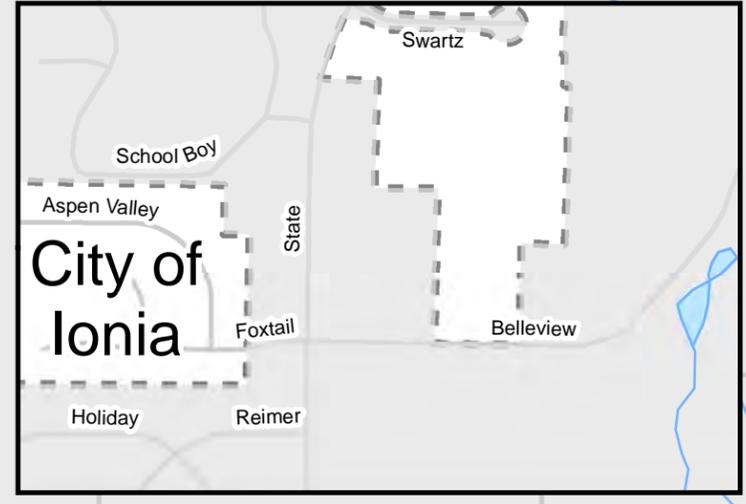
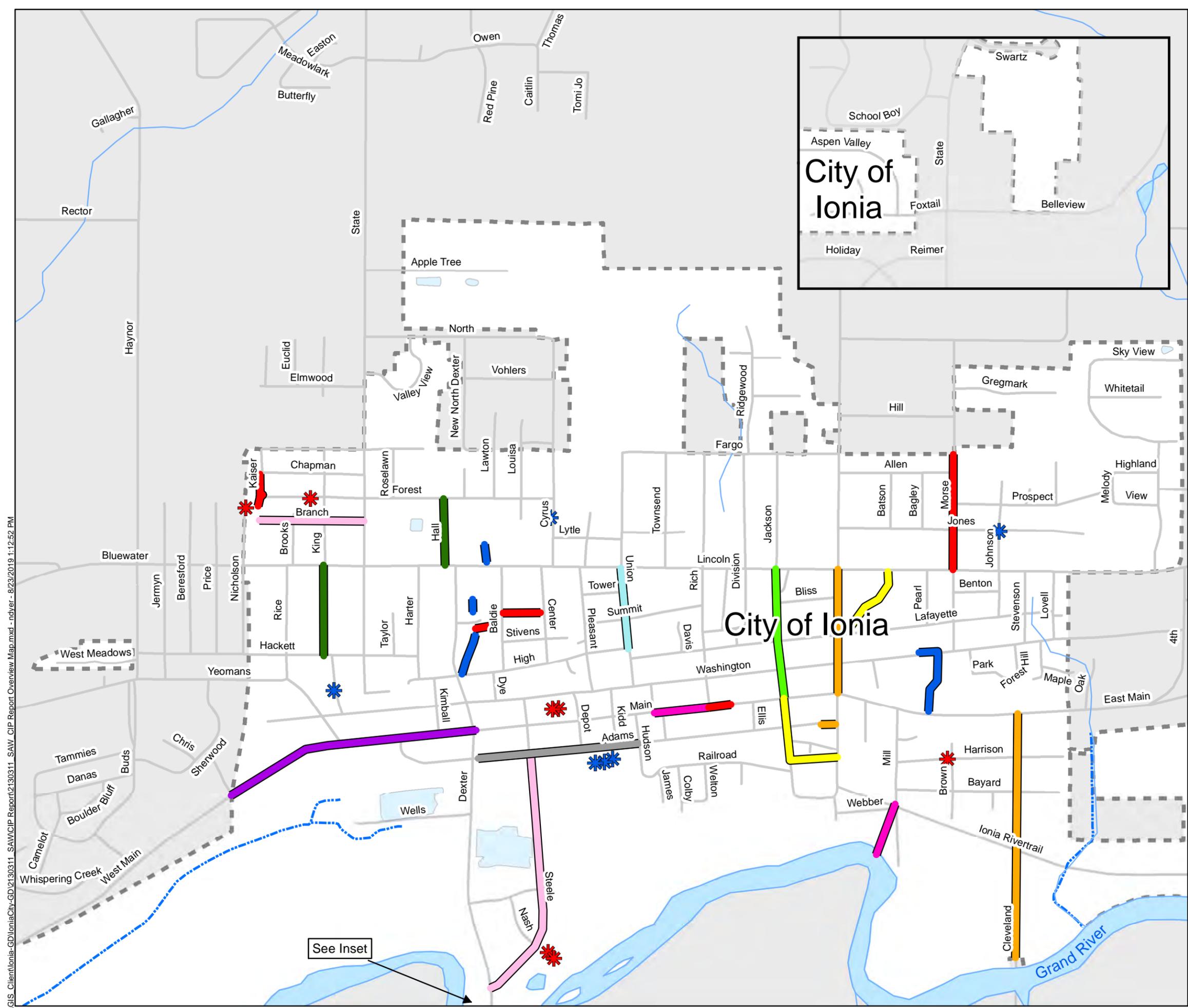
Year

-  2020
-  2021
-  2022
-  2023
-  2024
-  2025
-  2026
-  2027
-  2028
-  2029
-  2030

-  County Drain
-  Pond



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See Inset

Project Summary: Clean and Televisive Storm System

Project Scope: Clean and televise 5% of the storm system every year.

Need: This project will allow for continuing pipe condition assessment and root removal, and assist in keeping pipes clean and conveying stormwater as designed.

Planned Year: yearly

Anticipated Project Costs: Total cost is estimated at \$32,000/year plus inflation

Street Fund	\$32,000
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Project Summary: Steele Street (Adams to Dexter)

Project No: 202002

Project Scope: Full utility replacement and road reconstruction on Steele Street from Adams to Dexter.

Need: The storm pipe is broken, cracked and has holes. Proposed sanitary sewer and water replacement is based on the City’s utility plan.

Planned Year: 2020

Anticipated Project Costs: Total cost is estimated at \$2,176,000

Street Fund	\$695,000
Water Fund	\$702,000
Sanitary Sewer Fund	\$779,000



Project Summary: Branch Street (State to west end)

Project No: 202003

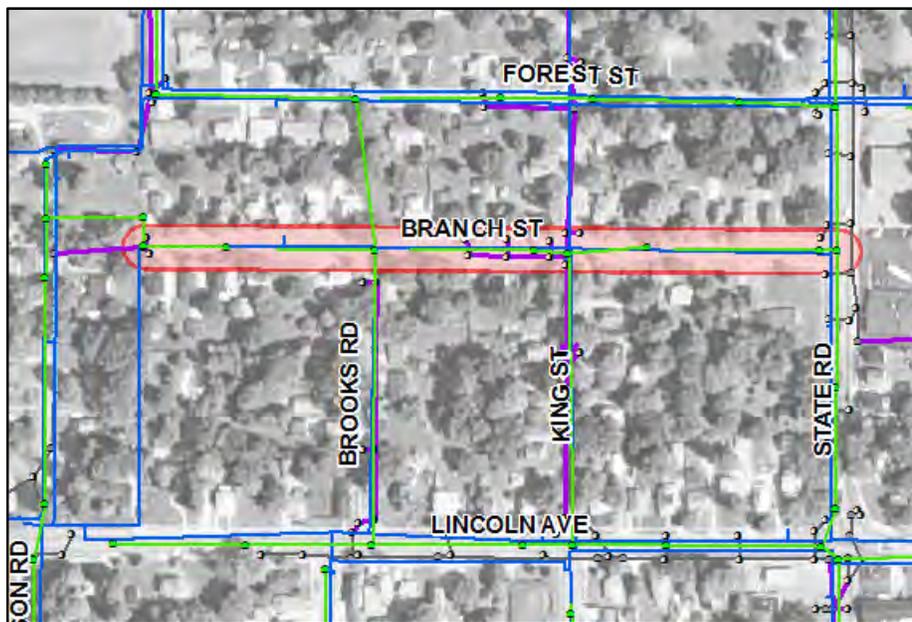
Project Scope: Full utility replacement and road reconstruction on Branch Street from State Street to the west end.

Need: The road condition was assessed as failing. Two pipe failures were found in the storm sewer. Proposed sanitary sewer and water replacement is based on the City’s utility plan.

Planned Year: 2020

Anticipated Project Costs: Total cost is estimated at \$900,000

Street Fund	\$210,500
Water Fund	\$338,000
Sanitary Sewer Fund	\$351,500



Project Summary: Storm Sewer Spot Repairs, Phase 1

Project No: 202102

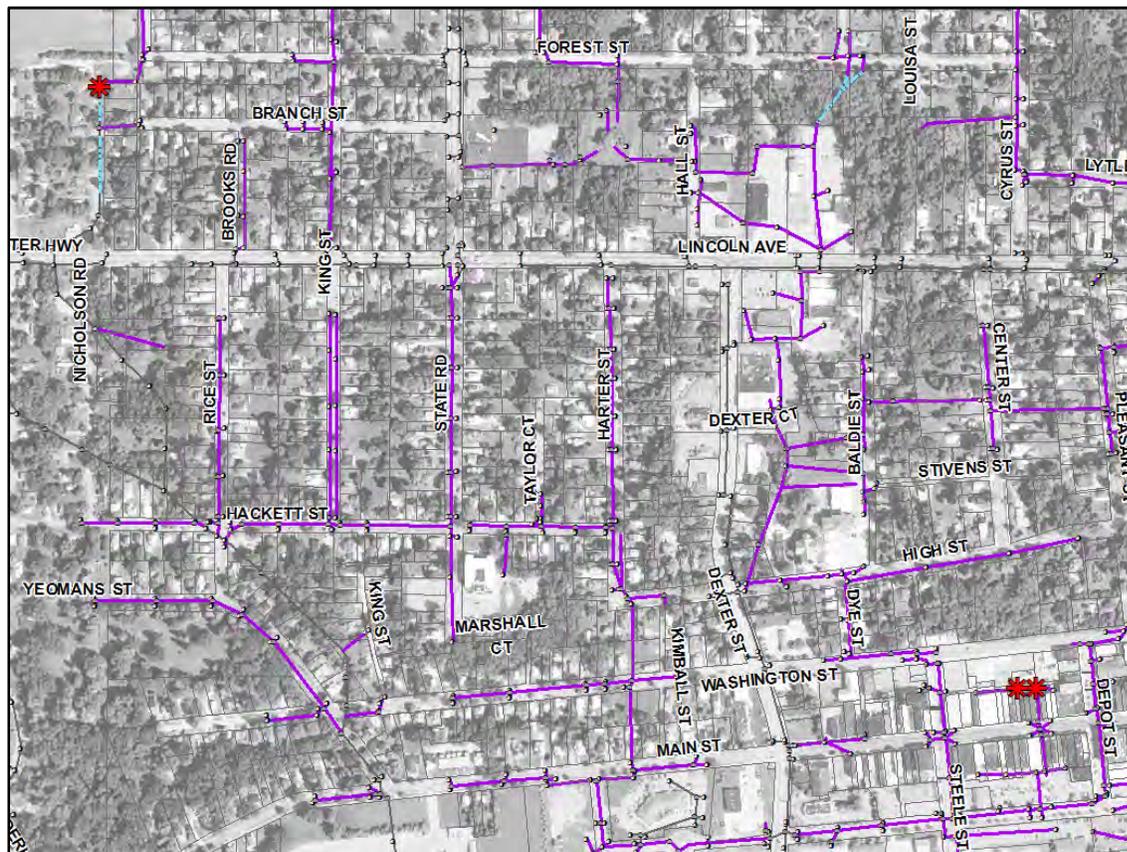
Project Scope: Repair of three storm sewer defects found during pipe zoom camera or inline televising inspection. Defects appear to be repairable by spot repair rather than replacement of the entire pipe, but repair will require excavation. Additional spot repairs may be found with future televising.

Need: Storm Sewer pipe conditions are rated as failing due to holes found.

Planned Year: 2021

Anticipated Project Costs: Total cost is estimated at \$20,000

Street Fund	\$20,000
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Project Summary: Storm Sewer Lining (CIPP)

Project No: 202103

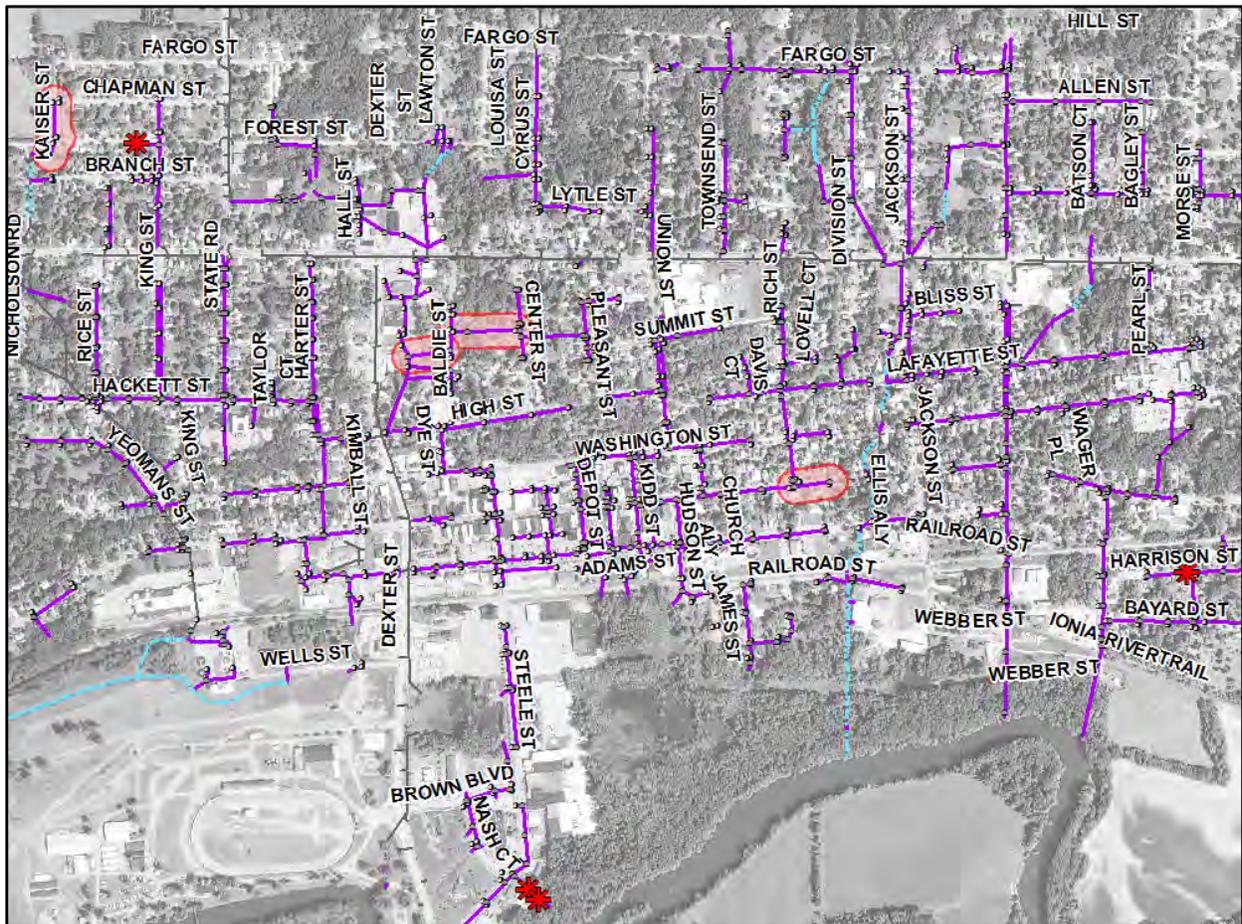
Project Scope: Cured in Place Pipe (CIPP) lining of four storm sewer spot repairs and seven storm sewer pipe segments.

Need: These pipes were identified to have structural defects that could be repaired with CIPP. CIPP lining provides structural repair of pipes without excavation, so surface restoration costs are minimal compared to a full pipe reconstruct.

Planned Year: 2021

Anticipated Project Costs: Total cost is estimated at \$160,000

Street Fund	\$160,000
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Project Summary: Morse Street (Lincoln to City limit)

Project No: 202104

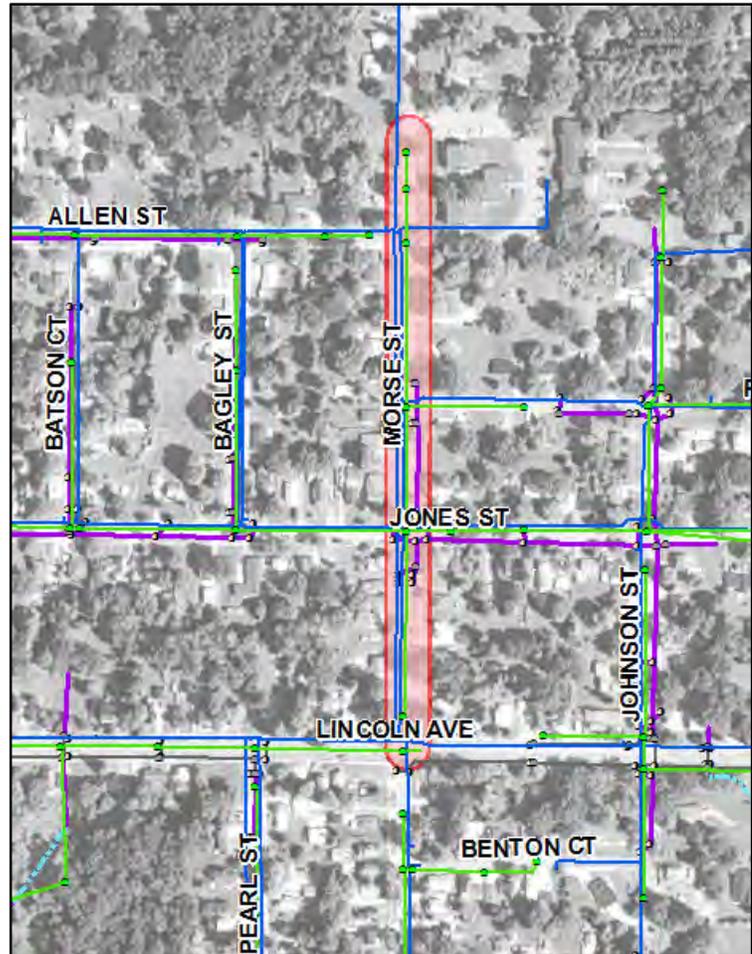
Project Scope: Complete road reconstruction and utility replacement on Morse Street from Lincoln to the City limit.

Need: The road is in poor condition. Proposed sanitary sewer and water replacement is based on the City’s utility plan.

Planned Year: 2021

Anticipated Project Costs: Total cost is estimated at \$1,023,000

Street Fund	\$256,000
Water Fund	\$410,000
Sanitary Sewer Fund	\$357,000



Project Summary: Cleveland St. Road Improvements (Main to bridge)

Project No: 202202

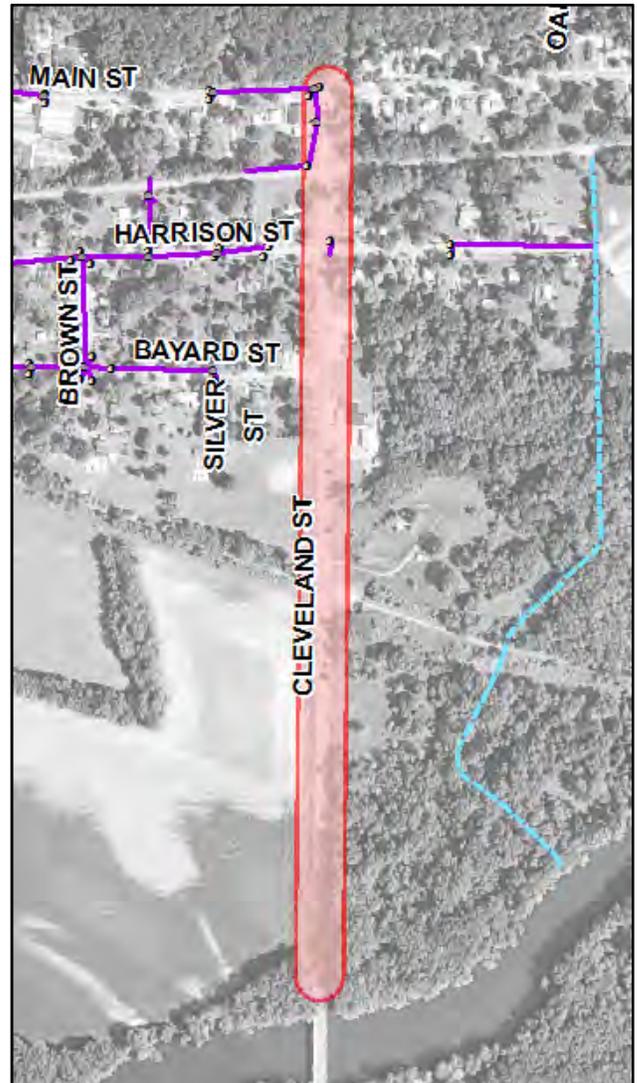
Project Scope: Replace storm pipe between Main Street and the bike path, and crossing Harrison Street. Reconstruct Main St. at the Cleveland Street pipe crossing. Crush, shape and pave Cleveland Street from Main to the bridge.

Need: The storm sewer between Main Street and the bike path is broken, has holes, cracks, joint offsets, and sags. The road is in poor condition.

Planned Year: 2022

Anticipated Project Costs: Total cost is estimated at \$454,000

Street Fund	\$454,000
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Project Summary: Jefferson Street (E. Main to Lincoln), Adams west of Jefferson

Project No: 202203

Project Scope: Complete road reconstruction and utility replacement on Jefferson Street from E. Main to Lincoln. Replace storm pipe at Adams west of Jefferson, and small patch of road over west end of pipe.

Need: The road is in poor condition, and the storm pipe on Jefferson Street has sections where it is broken and has holes. Sanitary sewer and water pipe replacement on Jefferson Street is proposed due to the City’s utility plan. The storm pipe on Adams is cracked, broken, and has a sag.

Planned Year: 2022

Anticipated Project Costs: Total cost is estimated at \$1,413,000

Street Fund	\$484,000
Water Fund	\$467,000
Sanitary Sewer Fund	\$462,000



Project Summary: M-21/Lafayette Storm Connection

Project No: 202302

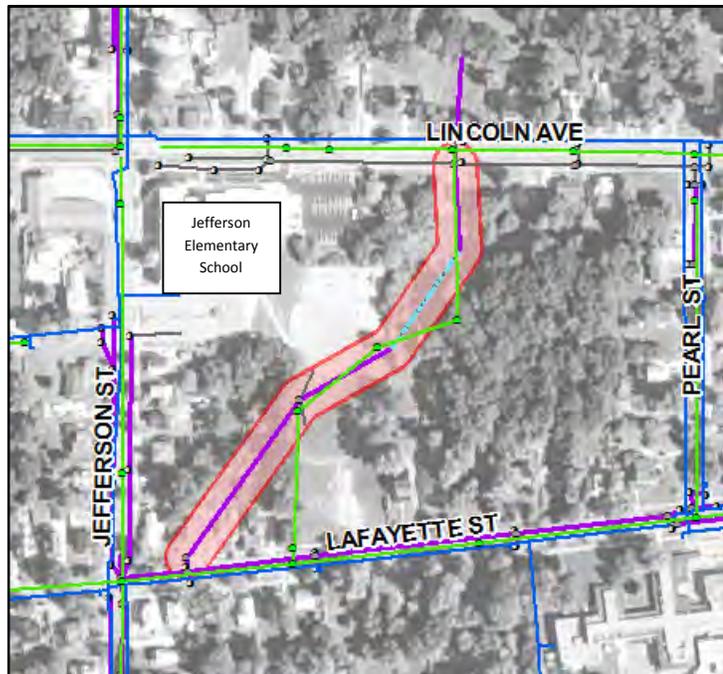
Project Scope: Abandon storm pipe under houses near Lafayette. Reconstruct the storm pipe from Jefferson Elementary School field to Lafayette, parallel to sanitary sewer. Replace the storm pipe under the garage and driveway at M-21 with pipe burst and 15-inch HDPE slipline.

Need: The storm pipe in this project area is failing with holes and broken areas, and is under or near to several houses or garages.

Planned Year: 2023

Anticipated Project Costs: Total cost is estimated at \$136,000

Street Fund	\$136,000
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Project Summary: Jackson Street Ph. 1 (Main to Railroad), Railroad (Jackson to Jefferson)

Project No: 202303

Project Scope: Full road reconstruction and utility replacement on Jackson Street from Main to Railroad and on Railroad Street from Jackson to Jefferson. Install new 42-inch storm pipe in the project area to be used for re-route of the drain west of Jackson.

Need: Re-routing the drain into pipe on Jackson will alleviate flooding concerns for residents that live adjacent to the drain.

Planned Year: 2023

Anticipated Project Costs: Total cost is estimated at \$1,151,000

Street Fund	\$525,000
Water Fund	\$350,000
Sanitary Sewer Fund	\$276,000



Project Summary: Jackson Street Ph. 2 (E. Main to Lincoln)

Project No: 202402

Project Scope: Full road reconstruction and utility replacement on Jackson Street from M-21 to Main Street. Replace storm sewer with 42-inch pipe to re-route the drain west of Jackson down Jackson Street. The north end of the proposed 42-inch pipe was estimated to be constructed at south end of Perry Park.

Need: Re-routing the drain into pipe on Jackson will alleviate flooding concerns for residents that live adjacent to the drain. This portion of Jackson Street is rated as poor condition.

Planned Year: 2024

Anticipated Project Costs: Total cost is estimated at \$1,387,000

Street Fund	\$515,000
Water Fund	\$430,000
Sanitary Sewer Fund	\$442,000



Project Summary: Hall Street (Lincoln to Forest)

Project No: 202502

Project Scope: Full road replacement and utility reconstruction on Hall Street from M-21 to Forest Street.

Need: The road was rated as poor condition and deformed and sagging storm pipe was found in the project area. Proposed sanitary sewer and water replacement is based on the City’s utility plan.

Planned Year: 2025

Anticipated Project Costs: Total cost is estimated at \$626,000

Street Fund	\$146,000
Water Fund	\$268,500
Sanitary Sewer Fund	\$211,500



Project Summary: King Street (Hackett to Lincoln)

Project No: 202503

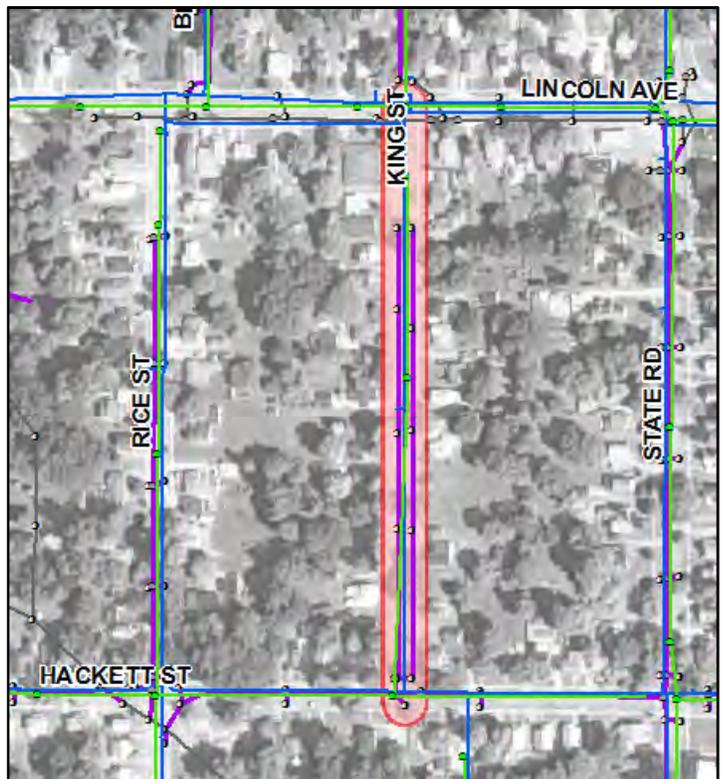
Project Scope: Full road reconstruction and utility replacement on King Street from Hackett to M-21. The project cost estimate reflects replacement of the parallel storm sewer with one, 12-inch diameter pipe.

Need: The road was rated as poor condition, and cracks and multiple fractures were found in the storm pipe. Proposed sanitary sewer and water replacement is based on the City’s utility plan.

Planned Year: 2025

Anticipated Project Costs: Total cost is estimated at \$868,000

Street Fund	\$254,000
Water Fund	\$313,000
Sanitary Sewer Fund	\$301,000



Project Summary: Union Street (High to Lincoln)

Project No: 202602

Project Scope: Mill existing Union Street road surface, shape and resurface from Summit to M-21. Reconstruct Union Street from High to Summit with concrete street surface. Cost estimates reflect full utility replacement from High to Summit, and full replacement of parallel storm sewer with a single pipe.

Need: Televising revealed broken and cracked storm sewer in the project area. Proposed sanitary sewer and water replacement is based on the City’s utility plan.

Planned Year: 2026

Anticipated Project Costs: Total cost is estimated at \$1,540,000

Street Fund	\$1,086,000
Water Fund	\$220,000
Sanitary Sewer Fund	\$234,000



Project Summary: Storm Sewer Spot Repairs, Phase 2

Project No: 202702

Project Scope: Repair four storm sewer pipe defects found during pipe zoom camera or inline televising inspection. Repair two storm sewer catch basin defects found during structure inspection. All defects appear to be repairable by spot repair rather than replacement of the entire pipe, but repair will require excavation.

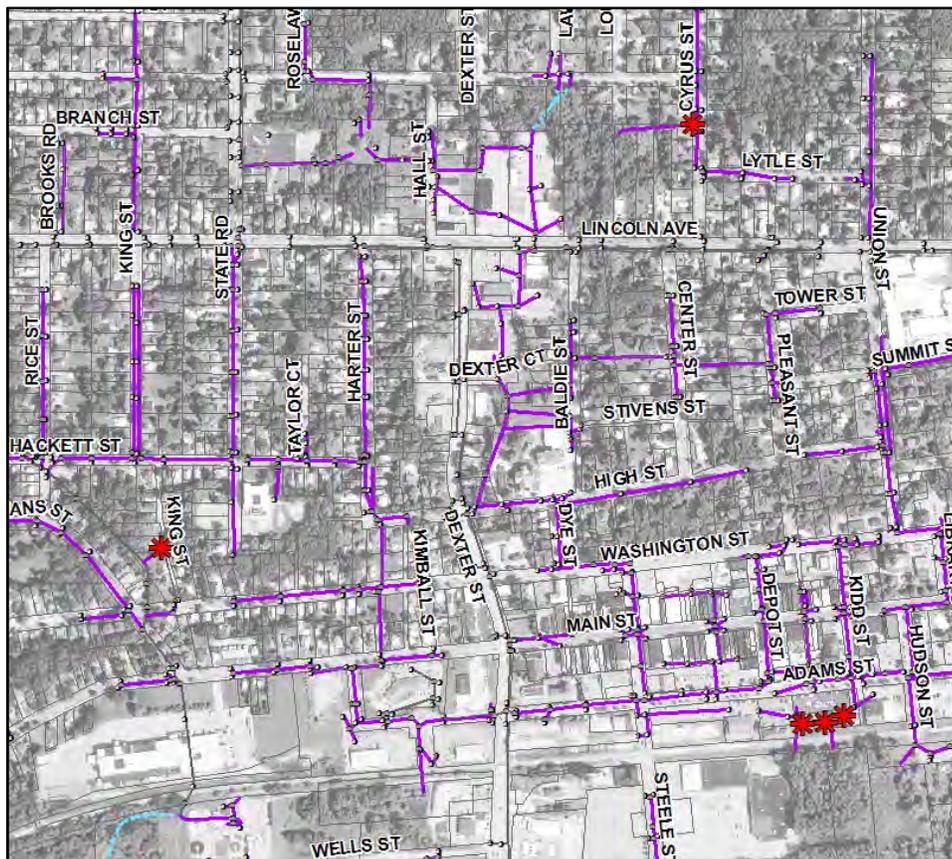
Additional spot repairs may be found with future storm sewer televising.

Need: Storm sewer inspection found pipe fractures, deformation, broken areas, holes, and catch basins with large gaps in the structure.

Planned Year: 2027

Anticipated Project Costs: Total cost is estimated at \$59,000

Street Fund	\$59,000
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**Project Summary: Abandon Cross Country Storm from Washington to Main
(East of Mill)**

Project No: 202703

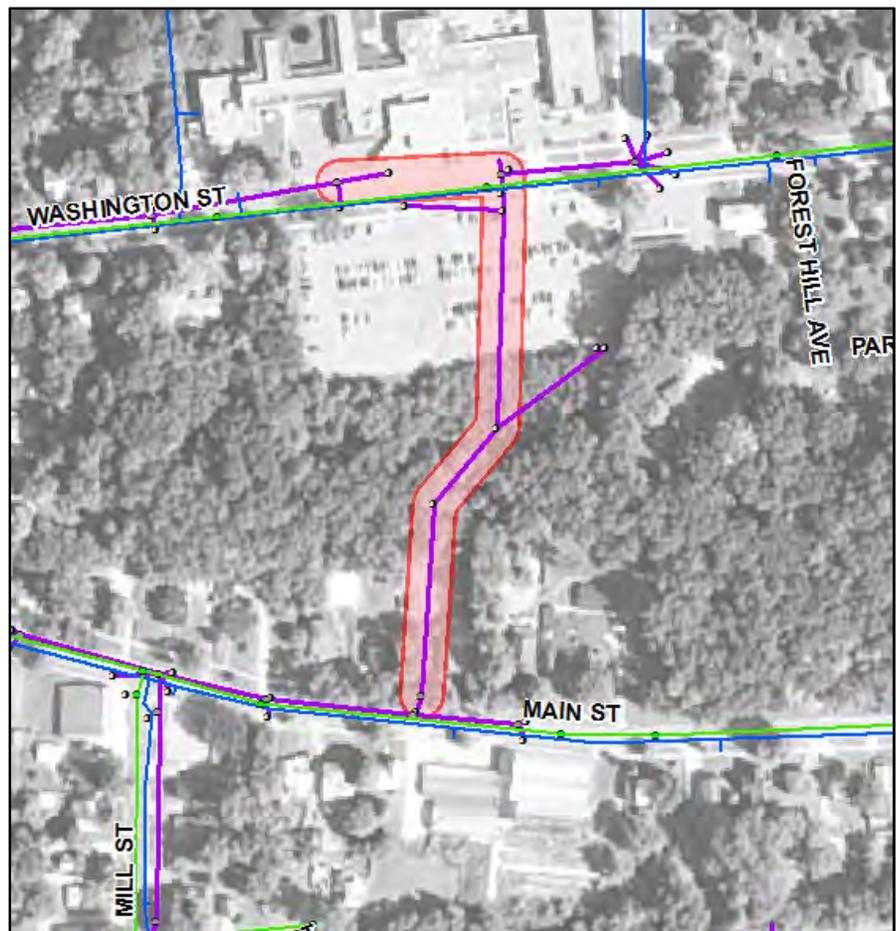
Project Scope: Remove or abandon the cross-country sewer through the old parking lot and south towards Main Street. Connect storm sewer on Washington Street to direct storm water west down Washington Street.

Need: The parking lot south of Washington Street has been abandoned and is zoned for future residential. This cross-country storm pipe is no longer needed to drain the parking lot, and has multiple defects. Broken and deformed sections were found in the storm pipe under the parking lot and south to Main Street. Removal or abandonment of this pipe may simplify storm sewer maintenance in the project area.

Planned Year: 2027

Anticipated Project Costs: Total cost is estimated at \$105,000

Street Fund	\$105,000
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Project Summary: Storm Sewer Easements between Dexter and Baldie, north of High

Project No: 202704

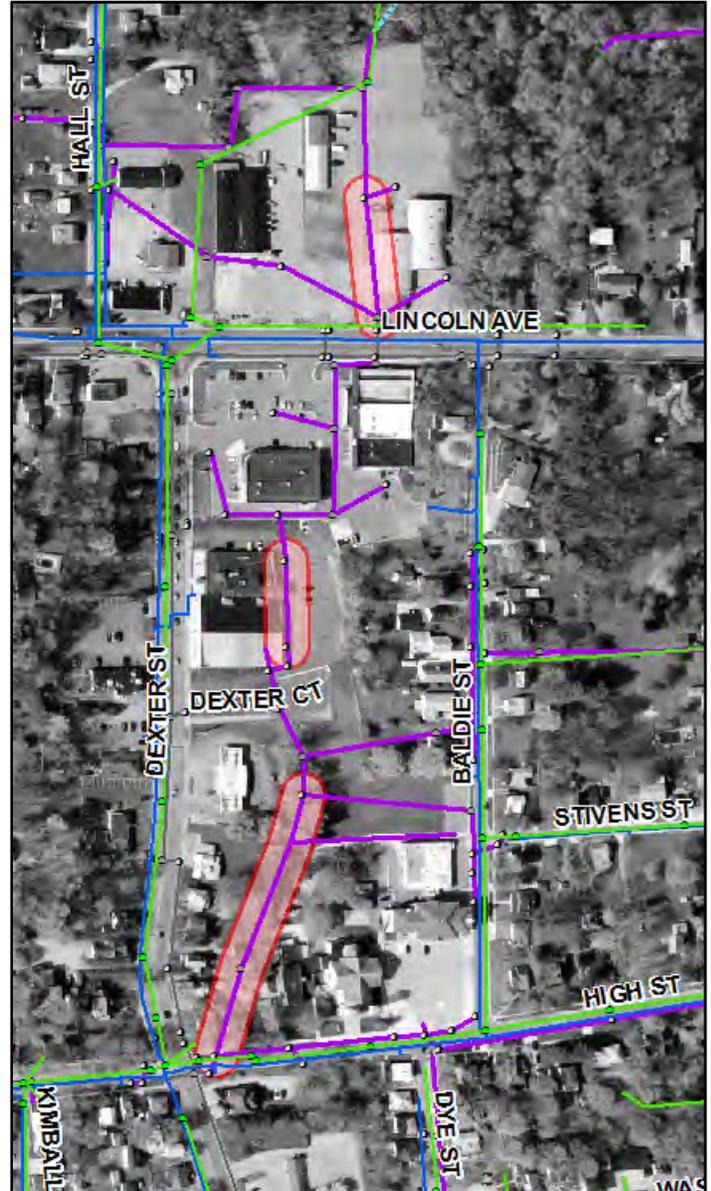
Project Scope: Dig and replace the 36-inch pipe north of M-21, and pipe burst and pull in an HDPE slipline for the 24-inch and 36-inch pipes highlighted south of M-21.

Need: Investigation of the storm sewer revealed failing pipe in these areas including collapsing pipe, broken sections, and holes. The pipe south of M-21 is not easily accessible for excavation due to trees, buildings, and walls. A pipe restoration that does not require complete excavation would be recommended. The pipe north of M-21 may be open cut as the adjacent building shown in the map has been removed.

Planned Year: 2027

Anticipated Project Costs: Total cost is estimated at \$286,000

Street Fund	\$286,000
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Project Summary: Main Street (Dexter to City limit)

Project No: 202802

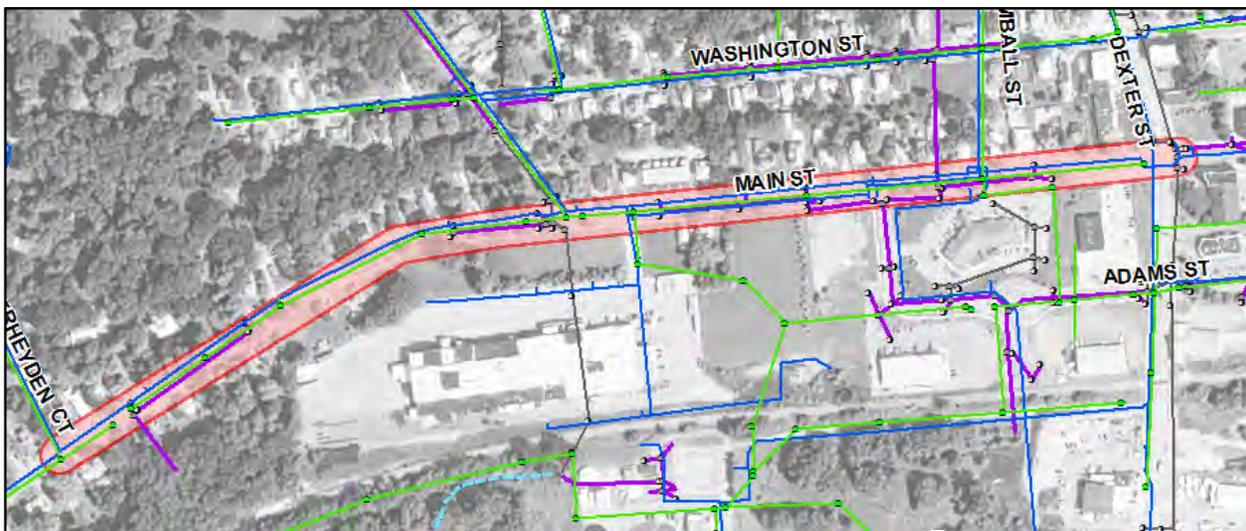
Project Scope: Full road reconstruction and utility replacement on Main Street from Dexter to the City limit.

Need: Storm investigation revealed pipe fractures, holes, broken areas, deformed areas, separated joints, and roots. The road is in poor condition. Proposed sanitary sewer and water system repairs according to the City’s utility plan.

Planned Year: 2028

Anticipated Project Costs: Total cost is estimated at \$2,493,000

Street Fund	\$684,000
Water Fund	\$894,000
Sanitary Sewer Fund	\$915,000



Project Summary: Mill Street Storm Outlet Improvements

Project No: 202902

Project Scope: Replace 12-inch storm outlet with a larger diameter pipe using pipe bursting and pulling a 24-inch HDPE slipline pipe.

Need: Storm pipe is over capacity and located in the river floodplain and a forest. Excavation in this area would be difficult.

Planned Year: 2029

Anticipated Project Costs: Total cost is estimated at \$157,000

Street Fund	\$157,000
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Project Summary: Main Street Storm Improvements (Library to Rich)

Project No: 202903

Project Scope: Construct a 24-inch parallel storm sewer pipe outside of the brick road on Main Street between Library and Rich.

Need: Storm sewer inspection on Main Street revealed a 50% to 75% flow blockage in the entire project area. The flow blockage appears to be concrete that was poured into the storm sewer and has cured in the pipe. Removal of the flow blockage from the pipe may not be feasible due to the large amount of concrete. Construction of a parallel overflow pipe will allow for stormwater conveyance and avoid excavation of the brick road.

Planned Year: 2029

Anticipated Project Costs: Total cost is estimated at \$199,000

Street Fund	\$199,000
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Project Summary: Adams Street (Dexter to Hudson)

Project No: 203002

Project Scope: This project consists of full road reconstruction and utility replacement on Adams Street from Dexter to Hudson. Replace the pipe on Adams Street from Dexter to Steele with 48-inch diameter storm pipe, Steele to 340 feet east of Steele with 36-inch diameter pipe, and from that location to Depot with 30-inch diameter pipe. Replace pipes on Adams Street from Depot to Hudson with new storm pipe equal to the existing diameter pipe. Excavate one spot repair in the parking lot.

Need: The storm sewer in the project area is under capacity and in poor condition. Storm sewer defects found in this pipe include holes, broken pipe, and cracks. Proposed replacement of sanitary sewer and water is based on the City’s utility plan.

Planned Year: 2030

Anticipated Project Costs: Total cost is estimated at \$2,225,000

Street Fund	\$929,000
Water Fund	\$701,000
Sanitary Sewer Fund	\$595,000



Part Two: Financial Strategy

Implementation Timeline

Implementation Timeline -City of Ionia Storm CIP

Planned FY ⁽¹⁾	Project No.	Project Title	Total Est. City Cost ⁽²⁾	Local Street	Water Fund	Sanitary Fund	Storm Fund	% Road Cost from Water Fund	% Road Cost from Sanitary Fund
2020	202001	Clean & Televis 5% Storm System	\$32,000				\$31,875		
2020	202002	Steele Street (Adams to Dexter)	\$2,176,000	\$395,611	\$701,702	\$778,712	\$299,689	33.3%	33.3%
2020	202003	Branch Street (State to End)	\$900,000	\$161,234	\$337,721	\$351,236	\$49,088	33.3%	33.3%
2020 Total			\$3,108,000	\$556,845	\$1,039,423	\$1,129,948	\$380,651		
2021	202101	Clean & Televis 5% Storm System	\$33,000				\$32,513		
2021	202102	Storm Sewer Spot Repairs, Priority 1	\$20,000				\$19,508		
2021	202103	Storm Sewer Lining (CIPP)	\$160,000	\$16,519			\$142,769		
2021	202104	Morse Street (Lincoln to City Limit)	\$1,023,000	\$171,120	\$409,640	\$357,100	\$84,402	33.3%	33.3%
2021 Total			\$1,236,000	\$187,639	\$409,640	\$357,100	\$279,191		
2022	202201	Clean & Televis 5% Storm System	\$35,000				\$34,503		
2022	202202	Cleveland St. Road Improvements (Main to Bridge)	\$454,000	\$425,047			\$28,085		
2022	202203	Jefferson Street (E. Main to Lincoln), Adams west of Jefferson	\$1,413,000	\$232,958	\$467,016	\$461,979	\$250,902	33.3%	33.3%
2022 Total			\$1,902,000	\$658,005	\$467,016	\$461,979	\$313,490		
2023	202301	Clean & Televis 5% Storm System	\$34,000				\$33,826		
2023	202302	M-21/Lafayette Storm Connection	\$136,000	\$81,800			\$53,919		
2023	202303	Jackson Street Ph. 1(Main to Railroad), Railroad (Jackson to Jefferson)	\$1,151,000	\$149,363	\$350,181	\$275,561	\$375,604	33.3%	33.3%
2023 Total			\$1,321,000	\$231,163	\$350,181	\$275,561	\$463,349		
2024	202401	Clean & Televis 5% Storm System	\$35,000				\$34,503		
2024	202402	Jackson Street Ph. 2 (E. Main to Lincoln)	\$1,387,000	\$211,628	\$429,879	\$442,162	\$303,208	33.3%	33.3%
2024 Total			\$1,422,000	\$211,628	\$429,879	\$442,162	\$337,711		
2025	202501	Clean & Televis 5% Storm System	\$36,000				\$35,193		
2025	202502	Hall Street (Lincoln to Forest)	\$626,000	\$93,202	\$268,323	\$211,170	\$52,648	33.3%	33.3%
2025	202503	King Street (Hackett to Lincoln)	\$868,000	\$143,072	\$312,553	\$300,588	\$110,927	33.3%	33.3%
2025 Total			\$1,530,000	\$236,274	\$580,876	\$511,758	\$198,768		
2026	202601	Clean & Televis 5% Storm System	\$36,000				\$35,896		
2026	202602	Union Street (High to Lincoln)	\$1,540,000	\$1,024,435	\$220,420	\$233,630	\$61,455	12.5%	12.5%
2026 Total			\$1,576,000	\$1,024,435	\$220,420	\$233,630	\$97,351		
2027	202701	Clean & Televis 5% Storm System	\$37,000				\$36,614		
2027	202702	Storm Sewer Spot Repairs, Priority 2	\$59,000				\$58,583		
2027	202703	Abandon Cross Country Storm from Washington to Main (East of Mill)	\$105,000	\$78,052			\$26,582		
2027	202704	Storm Sewer in Easements between Dexter and Center, north of High	\$286,000	\$89,173			\$196,180		
2027 Total			\$487,000	\$167,225	\$0	\$0	\$317,959		
2028	202801	Clean & Televis 5% Storm System	\$38,000				\$37,347		
2028	202802	Main Street (Dexter to City Limit)	\$2,493,000	\$437,111	\$893,582	\$914,697	\$246,762	0.0%	0.0%
2028 Total			\$2,531,000	\$437,111	\$893,582	\$914,697	\$284,109		
2029	202901	Clean & Televis 5% Storm System	\$39,000				\$38,094		
2029	202902	Mill Street Storm Outlet	\$157,000	\$30,854			\$125,252		
2029	202903	Main Street Storm (Library to Rich)	\$199,000	\$92,743			\$106,205		
2029 Total			\$395,000	\$123,598	\$0	\$0	\$269,550		
2030	203001	Clean & Televis 5% Storm System	\$39,000				\$38,855		
2030	203002	Adams Street (Dexter to Hudson)	\$2,225,000	\$296,761	\$701,057	\$594,749	\$631,867	33.3%	33.3%
2030 Total			\$2,264,000	\$296,761	\$701,057	\$594,749	\$670,723		
10-Year Total			\$17,772,000	\$4,130,686	\$5,092,073	\$4,921,582	\$3,612,851		

Notes:

⁽¹⁾ Unplanned repairs may necessitate adjustments in priority.

⁽²⁾ All costs estimated in 2019 dollars. Total estimated cost is rounded up to the nearest \$1,000.

