

Infrastructure Assessment
WAUKEGAN
City of Progress Illinois

City of Waukegan

Infrastructure Analysis

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Executive Summary

WAUKEGAN
City of Progress *Illinois*

City of Waukegan Infrastructure Assessment

Executive Summary

THE GOAL OF THE STUDY

Proactive and strategic investments in Waukegan's assets will support health, safety, economic performance, and quality of life within the community. This report examines the City's infrastructure, including capital assets, infrastructure facilities, and equipment to assist the City in evaluating its needs and prioritizing capital projects over the next ten years.

General guidelines of this evaluation were to assess the condition of various infrastructure assets and develop preliminary cost estimates required to bring the overall condition of the City's assets to a serviceable rating of 'fair' to 'good'. This evaluation, together with financial analysis by the City's Finance Department, will provide the basis for developing future multi-year master plans to achieve this objective. More refined cost estimates would be developed during master plan development and ultimately during actual design of the prioritized improvements. This analysis is intended to serve as a guide and resource for future City discussions regarding infrastructure master planning and capital improvement budget allocations.

INTRODUCTION

The purpose of this evaluation is to assist the City in developing multi-year capital improvement plan for 11 infrastructure categories (Assets). Below is a listing of the various infrastructure categories examined, with brief descriptions of the work completed summarized in the following pages:

- Water
- Wastewater
- Stormwater
- Cemetery
- Sidewalks
- Alleys
- Street Lights
- Traffic Signals
- Street Signs
- Parking Lots
- Pavement

It will be beneficial for the City to undertake the recommended studies and actions identified in this report for the various infrastructure asset categories to optimize its future infrastructure investment capital.

WATER

Asset	293 Miles of Watermain & Appurtenances Lake Michigan Intake & Water Treatment Facility, Booster Pumping Station
Data collection / Evaluation	GIS Data / Onsite field observation / City staff / Stanley Engineering
Preliminary Cost Estimate	\$109,880,000
Anticipated Life Cycle	75-100 years water mains, hydrants, valves, ground storage tanks and structures at the water treatment facility 20-30 years for equipment at the water treatment facility and booster pumping station

Summary Statement:

The existing water treatment plant is 90 years old. An assessment of each treatment process at the plant was conducted to identify areas of need and create a ranking by priority. Similarly, the booster pump stations and ground storage structures were also evaluated.

The City's water main distribution system was studied to identify the age and conditions of water main pipes, hydrants and valves. Areas identified to contain excessive failure histories were prioritized.

WASTEWATER

Asset	220 Miles of sewer pipe 12 – Lift Stations
Data collection / Evaluation	GIS data / Staff discussion / Onsite field evaluations
Preliminary Cost Estimate	\$57,021,000
Life Cycle	75 – 150 years for sewers and manholes 20-30 years for lift station pumping equipment

Summary Statement:

The City owns an extensive wastewater collection system and 12 lift stations. The operation and condition of the sanitary collection system and each lift station were evaluated in the development of the projected cost to improve this asset to an overall condition rating of fair to good.

STORMWATER

Asset	Drainage system for approx. 25 square miles
Data collection / Evaluation	GIS data / Staff discussion / Onsite field evaluations
Preliminary Cost Estimate	\$104,560,000
Life Cycle	75 -150 years

Summary Statement:

The City's GIS mapping of the stormwater system is only approximately 60% complete. Many segments have yet to be located and mapped, and is recommended as a future action.

City staff identified 22 areas as having a high reoccurrence of flooding. Preliminary costs were developed for the anticipated work needed to provide relief to these areas. These cost estimates were used as the basis to identify system needs throughout the remainder of the area within the City. Drainage studies for several of the more complex areas will be needed to develop more effective and efficient solutions.

CEMETERY

Asset	18.6 acre Pre-Civil War Cemetery
Data collection / Evaluation	GIS data / Staff discussion / Onsite field evaluation
Preliminary Cost Estimate	\$650,000

Summary Statement:

The City owns and maintains the Oakwood Cemetery located on the southeast section of the City. This cemetery has a deteriorating retaining wall along Sheridan Road that was evaluated. Cost estimates were developed to rehabilitate the wall. Costs were also established to address a severe erosion condition located on the southeast side of the cemetery.

SIDEWALKS

Asset	600 Miles
Data collection / Evaluation	GIS/evaluated condition of 10% => projected City-wide total
Preliminary Cost Estimate	\$17,000,000
Life Cycle	40 years

Summary Statement:

The City identified early on that comprehensive analyses of the condition of the sidewalks would not be required as part of this evaluation due to the enormity and inaccessibility of this asset. Approximately 10% of the City's sidewalks were selected at random to serve as a base for developing budgetary estimates. A visual on-site evaluation was performed on this sample to assess the condition and potential areas of concern. This assessment was then extrapolated to develop a preliminary estimate of cost for the City's entire sidewalk system.

ALLEYS

Asset	20 Miles
Data collection / Evaluation	GIS data / Onsite field observation
Estimated Value of Asset to Reconstruct	\$20,000,000
Preliminary Cost Estimate	\$8,250,000
Life Cycle	25 years

Summary Statement:

A visual on-site evaluation was performed to assess the condition of each alley and identify areas of concern. This information forms the basis for defining the priority rating and preliminary cost estimates for rehabilitation of this asset to an overall condition rating of fair to good.

STREET LIGHTS

Asset	993 Poles & Appurtenances
Data collection / Evaluation	GIS data / Staff discussion / Onsite field evaluation
Preliminary Cost Estimate	\$5,300,000
Life Cycle	20-50 Years

Summary Statement:

Both the City and Commonwealth Edison have ownership of different streetlights within the City's boundaries. Staff has estimated that the City owns approximately 10% of the street lights throughout the community. Due to the enormity of this asset, City staff determined that 10% of the City's street lights would be selected at random to serve as a basis for developing cost estimates. This information was used to forecast draft estimates of cost for the replacement of the current high-pressure sodium lighting to more energy-efficient LED lighting for the City-owned streetlights.

TRAFFIC SIGNALS

Asset	17 Signalized Intersections
Data collection / Evaluation	GIS data / staff discussion / onsite field evaluation
Preliminary Cost Estimate	\$1,900,000
Life Cycle	20-30 years

Summary Statement:

The City owns and maintains traffic signals at 17 intersections. The condition of the signals for each of the intersections was analyzed and used to develop estimated costs for replacement or repairs necessary to improve this asset to an overall condition rating of fair to good.

STREET SIGNS

Asset	12,837 Street Signs
Data collection / Evaluation	GIS data /IMS (laser-camera array) / Onsite field observations
Preliminary Cost Estimate	\$1,740,000
Life Cycle	25 years

Summary Statement:

A complete sign inventory and condition rating was conducted. The data collected was used to develop the draft estimate of cost for replacement or repairs necessary to improve this asset to a condition rating of fair to good. This information meets the requirements identified by the U.S. Department of Transportation for municipalities.

CITY PARKING LOTS

Asset	11 Parking lots (9,087 stalls)
Data collection / Evaluation	GIS data /IMS (laser-camera array) / Staff discussion / Onsite field observation.
Preliminary Cost Estimate	\$831,000
Life Cycle	15 years

Summary Statement:

The City owns eleven parking lots. These facilities were each inspected using electronically collected assessment data to document the conditions for each parking lot. This information was analyzed and used to develop draft estimates costs for resurfacing or repairs necessary to improve this asset to an overall condition rating of fair to good.

PAVEMENT

Asset	238 Miles of Roadway
Data collection / Evaluation	GIS/IMS (laser-camera array) / Onsite field observations
Preliminary Cost Estimate	\$220,000,000
Life Cycle	15 years

Summary Statement:

The roadway pavements were analyzed using a vehicle equipped with an automated collection system featuring a laser-camera array developed by IMS. The collected data was used as input into pavement management software, which determines the roadway condition index and can project its life expectancy. This segment-specific information forms the basis for defining the segment priority rating and costs for rehabilitation.

Waukegan Infrastructure Assessment
Asset Preliminary Cost Estimates

Asset	Preliminary Cost Estimate
Water	\$ 109,880,000
Wastewater	\$ 57,021,000
Stormwater	\$ 104,560,000
Cemetery	\$ 650,000
Sidewalks	\$ 17,000,000
Alleys	\$ 8,250,000
Street Lights	\$ 5,300,000
Traffic Signals	\$ 1,900,000
Street Signs	\$ 1,740,000
City Parking Lots	\$ 831,000
Pavement	\$ 220,000,000
Total	\$ 527,132,000

Waukegan Infrastructure Assessment

Asset Preliminary Cost Estimates with Priority

Asset	Priority 1	Priority 2	Priority 3	Preliminary Cost Estimate
Water	\$ 32,830,000	\$ 49,820,000	\$ 27,230,000	\$ 109,880,000
Wastewater	\$ 24,582,000	\$ 28,392,000	\$ 4,047,000	\$ 57,021,000
Stormwater	\$ 7,449,000	\$ 6,779,000	\$ 90,332,000	\$ 104,560,000
Cemetery	\$ 525,000	\$ 125,000		\$ 650,000
Sidewalks	\$ 5,666,666	\$ 5,666,666	\$ 5,666,666	\$ 17,000,000
Alleys	\$ 3,000,000	\$ 250,000	\$ 5,000,000	\$ 8,250,000
Street Lights	\$ 3,000,000	\$ 1,500,000	\$ 800,000	\$ 5,300,000
Traffic Signals	\$ 1,189,000	\$ 667,500	\$ 43,500	\$ 1,900,000
Street Signs	\$ 875,000	\$ 500,000	\$ 365,000	\$ 1,740,000
City Parking Lots	\$ 425,000	\$ 339,000	\$ 67,000	\$ 831,000
Pavement	\$ 95,000,000	\$ 80,000,000	\$ 45,000,000	\$ 220,000,000
Total	\$ 174,541,666	\$ 173,955,166	\$ 178,635,166	\$ 527,132,000

NEXT STEPS

The City has a wide range of assets that are vital to ensure the long-term success of the City of Waukegan. Developing an improvement strategy that strategically prioritizes the modernization of assets as capital becomes available will serve the City well. We recommend that the City implement the following recommendations to better manage its vital infrastructure assets:

1. Continue in the development of its GIS database, particularly in areas currently incomplete such as storm water drainage system.
2. Integrate current infrastructure assessment data with a planning software (i.e. Cartegraph) to develop an asset management platform
3. Identify potential funding sources (County, State, Federal, IEPA, IDOT, private sector)
4. Develop a longer-term (10-20 year), generalized capital improvement plan to coincide with City's long-term vision
5. Develop a specific 5-year capital improvement plan across the various infrastructure asset categories to implement improvements in highest prioritized assets, as initial component of implementing City's long-term vision
6. Develop a staged program that implements needed planning and engineering studies with financing, design and construction
7. Continual monitoring of results and measurement toward achieving 5-year, 10-year and 20-year objectives

WAUKEGAN
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CITY OF WAUKEGAN WATER

Name	Priority 1 PCE	Priority 2 PCE	Priority 3 PCE	Total PCE
Water Treatment Plant (WTP)	\$ 13,150,000	\$ 13,750,000	\$ 750,000	\$ 27,650,000
Booster Pump Stations (BPS)	\$ 2,690,000	\$ 770,000	\$ 230,000	\$ 3,690,000
Water Distribution System (WDS)	\$ 16,990,000	\$ 35,300,000	\$ 26,250,000	\$ 78,540,000
Total	\$ 32,830,000	\$ 49,820,000	\$ 27,230,000	\$ 109,880,000
<i>Preliminary Cost Estimates (PCE) includes design & construction engineering, construction, and contingency (2017 dollars)</i>				

City of Waukegan, Illinois

Infrastructure Analysis

Water: Water Treatment Plant

Item #:

W-2

Department:

Water

Priority: 1,2,3



Preliminary Cost Estimate: **\$27,650,000**

Description
Various studies, equipment upgrades, and system improvements

CITY OF WAUKEGAN WATER TREATMENT PLANT

Project Order	Name	PCE	Priority
Water Treatment Plant (WTP)			
1	Perform Arch Flash Study	\$ 60,000	1
2	Chemical Storage and Feed Improvements	\$ 64,000	1
3	Chlorination Improvements	\$ 31,000	1
4	Complete SCADA Update	\$ 660,000	1
5	Reservoir Improvements	\$ 140,000	1
6	Install Turbidimeters	\$ 120,000	1
7	Fencing and Gate Improvements	\$ 30,000	1
8a	Improvements to the #1 High Service Pump, Motor and Valve	\$ 170,000	1
8b	Improvements to the remaining High Service Pumps, Motors and Valves	\$ 2,010,000	1
9a	Performance Test the 1967 Sediment Basins to Abandon 1929 Basins	\$ 500,000	1
9b	Improvements to 1929 Sediment Basins if not Abandoned	\$ 2,385,000	1
10	Overall Building and Façade Improvements Ph 1	\$ 920,000	1
11	Replace Venturi Flow Meters with Magmeters and Replace Isolation Valves	\$ 670,000	1
12	Upgrades to the Raw Water Pump Station	\$ 1,170,000	1
13	Replace Slide Gate on the # 7 Filter Bed	\$ 220,000	1
14	Filter Improvements	\$ 4,500,000	1
15	Add Second Gravity Thickening Basin	\$ 1,620,000	2
16	New Electrical Building and Upgrades	\$ 11,590,000	2
17	Repair 1929 Garage Floor	\$ 110,000	2
18	Upgrades to the 24" Intake Line	\$ 360,000	2
19	Update Control Consoles on 1967 Filters	\$ 70,000	2
20	Service Reclaim Pumps and Motors	\$ 50,000	3
21	Security Improvements	\$ 140,000	3
22	Overall Building Repairs Ph 2	\$ 560,000	3
Subtotal		\$ 27,650,000	
<i>Preliminary Cost Estimate(PCE) includes design & construction engineering, construction, and contingency (2017 dollars)</i>			

CITY OF WAUKEGAN BOOSTER PUMP STATIONS

#	Name	Priority 1 PCE	Priority 2 PCE	Priority 3 PCE	Total PCE
Booster Pump Stations (BPS)					
1	Beechnut Booster Pump Station	\$ 1,590,000	\$ 410,000	\$ 20,000	\$ 2,020,000
2	Fountain Square Booster Pump Station	\$ 80,000	\$ 290,000	\$ 170,000	\$ 540,000
3	Golfmoor Booster Pump Station	\$ 1,020,000	\$ 70,000	\$ 40,000	\$ 1,130,000
Subtotal		\$ 2,690,000	\$ 770,000	\$ 230,000	\$ 3,690,000
<i>Preliminary Cost Estimates (PCE) includes design & construction engineering, construction, and contingency (2017 dollars)</i>					

City of Waukegan, Illinois

Infrastructure Analysis

Water: Beechnut Booster Pump Station - Site, Building and Tank

Item #:

W-5

Department:

Water

Priority: 1,2,3



Preliminary Cost Estimate: **\$1,940,000**

Description

Replace heater, replace variable frequency drives, and remove obsolete equipment & controls, Replace HVAC system, replace high service pumps, repaint piping, repair electrical feed, engine generator, replace PLCs, replace variable frequency drives, replace cathodic protection, replace roofing, replace front doors, remove obsolete equipment & controls, Pressure wash exterior, interior robotic inspection, exterior inspection, investigate buckling, replace mortar and caulk

City of Waukegan, Illinois

Infrastructure Analysis

Water: Fountain Square Booster Pump Station - Site, Building and Tank

Item #:

W-6

Department:

Water

Priority: 1,2,3



Preliminary Cost Estimate:

\$540,000

Description

Install exterior security lights and cameras, pavement replacement, Replace heater, replace variable frequency drives, and remove obsolete equipment & controls, Pressure wash exterior, interior robotic inspection, exterior inspection

City of Waukegan, Illinois

Infrastructure Analysis

Water: Golfmoor Booster Pump Station - Site, Building and Tank

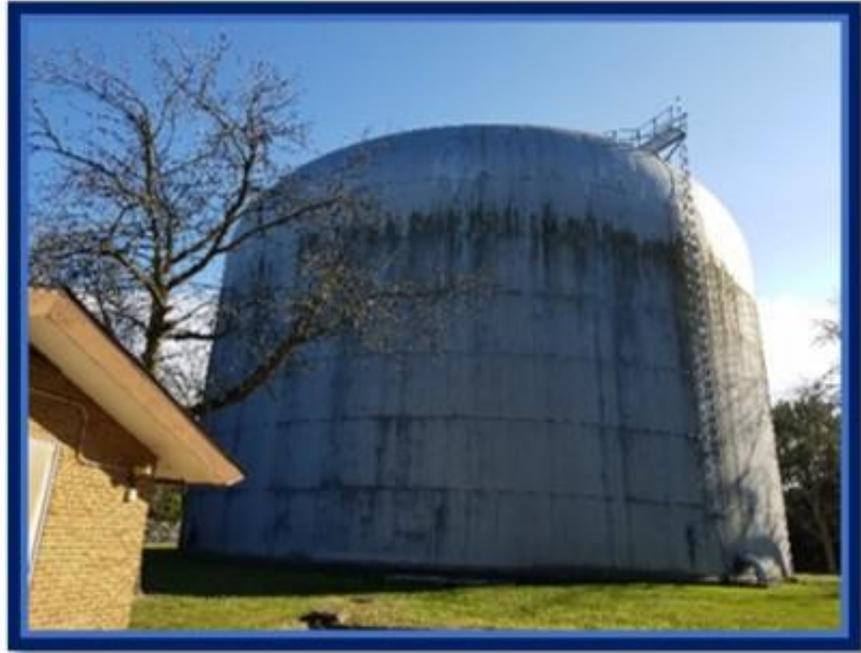
Item #:

W-7

Department:

Water

Priority: 1,2,3



Preliminary Cost Estimate:

\$1,130,000

Description

Pressure wash exterior, interior robotic inspection, exterior inspection, Replace fascia & soffit, replace pump motors, replace variable frequency drives, repaint piping, replace conduit & wiring in basement, replace lighting in basement, remove abandoned piping, remove obsolete equipment & controls, capacity improvements (if planning to sell more water to north) Interior robotic inspection, exterior inspection, replace mortar and caulk, replace coating interior & exterior

CITY OF WAUKEGAN WATER DISTRIBUTION SYSTEM

#	Name	Priority 1 PCE	Priority 2 PCE	Priority 3 PCE	PCE Total
Water Distribution System (WDS)					
1	Update water master plan, update water model	\$ 270,000	\$ -	\$ -	\$ 270,000
2	Replace watermain	\$ 8,720,000	\$ 9,920,000	\$ 13,230,000	\$ 31,870,000
3	Replace lead service lines	\$ 1,890,000	\$ 1,890,000	\$ 2,520,000	\$ 6,300,000
4	Leak detection survey	\$ 90,000	\$ -	\$ -	\$ 90,000
5	Replace non-functioning valves	\$ 2,780,000	\$ 1,670,000	\$ 2,220,000	\$ 6,670,000
6	Replace non-functioning fire hydrants	\$ 3,150,000	\$ 1,930,000	\$ 2,570,000	\$ 7,650,000
7	Complete water meter replacement program, 400 remaining	\$ 90,000	\$ 90,000	\$ 120,000	\$ 300,000
8	Redundant Waterline between Beechnut and Fountain Square	\$ -	\$ 19,800,000	\$ -	\$ 19,800,000
9	1.5 M Gallon Elevated Storage Tank	\$ -	\$ -	\$ 5,590,000	\$ 5,590,000
Subtotals		\$ 16,990,000	\$ 35,300,000	\$ 26,250,000	\$ 78,540,000
<i>Preliminary Cost Estimate (PCE) includes design & construction engineering, construction, and contingency (2017 dollars)</i>					

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Distribution System

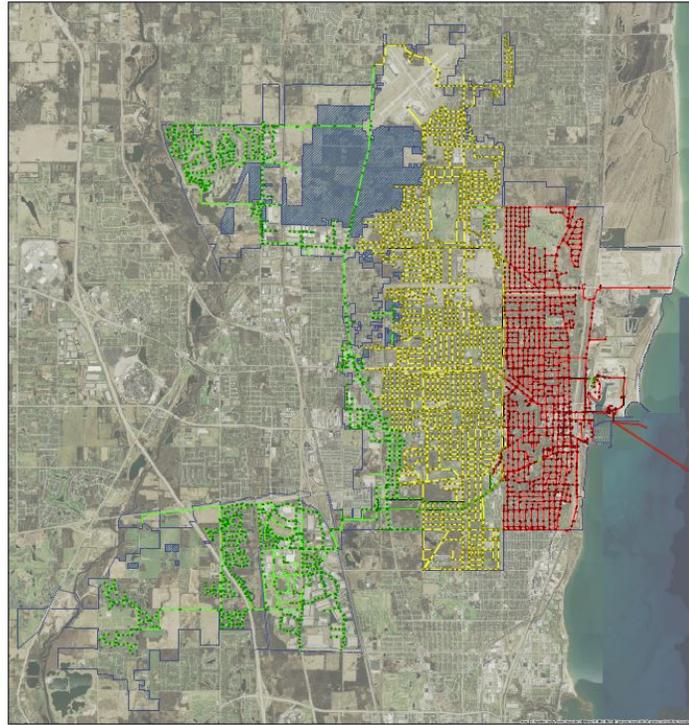
Item #:

W-9

Department:

Water

Priority: 1



Preliminary Cost Estimate: **\$78,540,000**

Description
Update Water Master Plan, Update Water Model, replace watermain, poor condition, replace lead service lines, 1/100 a year for 10 years, leak detection survey, update water master plan, Update water model, replace non-functioning valves, replace non-functioning fire hydrants, complete water meter replacement program, 400 remaining, redundant waterline between Beechnut and Fountain Square, replace watermain, 1/100 a year for 7 years, replace 1/50 of valves a year for 7 years, replace 1/50 of fire hydrants a year for 7 years, 1.5 M Gallon Elevated Tank (Height Dependent)

WAUKEGAN
City of Progress *Illinois*

**CITY OF WAUKEGAN
WASTEWATER**

	Name	One	Two	Three	Cost
N/A	Sanitary Sewer Master Plan Flow Optimization Study for the Elimination of Lift Stations	\$ 150,000			\$ 150,000
N/A	Wastewater SCADA	\$ 525,000	\$ 65,000		\$ 590,000
LS-1	Town & Country	\$ 118,000	\$ 92,000		\$ 210,000
LS-2	Delany	\$ 1,900,000			\$ 1,900,000
LS-3	Water Plant		\$ 92,000		\$ 92,000
LS-5	Lakehurst	\$ 96,000	\$ 2,002,000		\$ 2,098,000
LS-6	Jewel	\$ 24,000	\$ 92,000		\$ 116,000
LS-7	Nickel and Dimes	\$ 24,000	\$ 92,000		\$ 116,000
LS-8	Country Lane	\$ 206,000	\$ 134,000		\$ 340,000
LS-9	Daybreak Farms	\$ 118,000	\$ 92,000		\$ 210,000
LS-10	River Bend	\$ 103,000	\$ 92,000		\$ 195,000
LS-11	Dan Mark	\$ 88,000	\$ 92,000		\$ 180,000
LS-12	Greenwood	\$ 88,000	\$ 92,000		\$ 180,000
LS-13	Fountain Square	\$ 24,000	\$ 92,000		\$ 116,000
N/A	Collection System Improvements	\$ 21,118,000	\$ 25,363,000	\$ 4,047,000	\$ 50,528,000
Preliminary Cost Estimates (PCE) includes design & construction engineering, construction, and contingency (2017 dollars)		\$ 24,582,000	\$ 28,392,000	\$ 4,047,000	\$ 57,021,000

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Wastewater Sanitary Sewer Master Planning

Item #:

WW-2

Department:

Wastewater

Priority: 1



Preliminary Cost Estimate:

\$150,000

Description

Sanitary Sewer Master Plan Flow Optimization Study for the elimination of lift stations; Analysis of undeveloped areas: Determination of likely land uses, Calculation of potential wastewater flows, Preliminary design of wastewater collection and transport system modifications.

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Wastewater SCADA Upgrade

Item #:

WW-3

Department:

Wastewater

Priority: 1,2



Preliminary Cost Estimate:

\$590,000

Description

Modify wastewater SCADA system to monitor all 12 lift stations including tablets and software for monitoring

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Wastewater Lift Station #1: Town and Country

Item #:

WW-4

Department:

Wastewater

Priority: 1,2



Preliminary Cost Estimate: **\$210,000**

Description

Upgrade pump impeller to match other pump, Non-contact flow meter, bypass pumping piping and quick connect port.

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Wastewater Lift Station #2: Delany

Item #:

WW-5

Department:

Wastewater

Priority: 1



Preliminary Cost Estimate:

\$1,900,000

Description

Non-contact flow meter, Add elevator to ladder run, abandon drywell and install submersible pumps

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Wastewater Lift Station #3: Water Plant

Item #:

WW-6

Department:

Wastewater

Priority: 2



Preliminary Cost Estimate:

\$92,000

Description

Non-contact flow meter

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Wastewater Lift Station #5: Lakehurst

Item #:

WW-7

Department:

Wastewater

Priority: 1,2



Preliminary Cost Estimate: **\$2,098,000**

Description
New wet well and valve pit, non-contact flow meter, abandon existing wet well and valve pit, bypass pumping piping and quick connect port

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Wastewater Lift Station #6: Jewel

Item #:

WW-8

Department:

Wastewater

Priority: 3



Preliminary Cost Estimate:

\$116,000

Description

Non-contact flow meter, bypass pumping piping and quick connect port, install sump pump

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Wastewater Lift Station #7: Nickel & Dimes

Item #:

WW-9

Department:

Wastewater

Priority: 1,2



Preliminary Cost Estimate:

\$116,000

Description

Non-contact flow meter, bypass pumping piping and quick connect port, install sump pump

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Wastewater Lift Station #8: Country Lane

Item #:

WW-10

Department:

Wastewater

Priority: 1,2



Preliminary Cost Estimate:

\$340,000

Description

Natural gas generator, non-contact flow meter, new control boxes, bypass pumping piping and quick connect port, lockable Hatches, install sump pump

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Wastewater Lift Station #9: Daybreak Farms

Item #:

WW-11

Department:

Wastewater

Priority: 1,2



Preliminary Cost Estimate: **\$210,000**

Description
Non-contact flow meter,install new pumps with larger impeller suction openings (current opening 1.5"), bypass pumping piping and quick connect port

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Wastewater Lift Station #10: River Bend

Item #:

WW-12

Department:

Wastewater

Priority: 1,2



Preliminary Cost Estimate:

\$195,000

Description

Non-contact flow meter, bypass pumping piping and quick connect port, new control boxes, verify high water flood elevation of pond, build berm to protect generator

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Wastewater Lift Station #11: Dan Mark

Item #:

WW-13

Department:

Wastewater

Priority: 1,2



Preliminary Cost Estimate:

\$180,000

Description

Non-contact flow meter, new control boxes, bypass pumping piping and quick connect port, install sump pump

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Wastewater Lift Station #12: Greenwood

Item #:

WW-14

Department:

Wastewater

Priority: 1,2



Preliminary Cost Estimate:

\$180,000

Description

Non-contact flow meter, new control boxes, bypass pumping piping and quick connect port, install sump pump

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Wastewater Lift Station #13: Fountain Square

Item #:

WW-15

Department:

Wastewater

Priority: 1,2



Preliminary Cost Estimate: **\$116,000**

Description

Non-contact flow meter, bypass pumping piping and quick connect port, install sump pump

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Wastewater Collection System Improvements

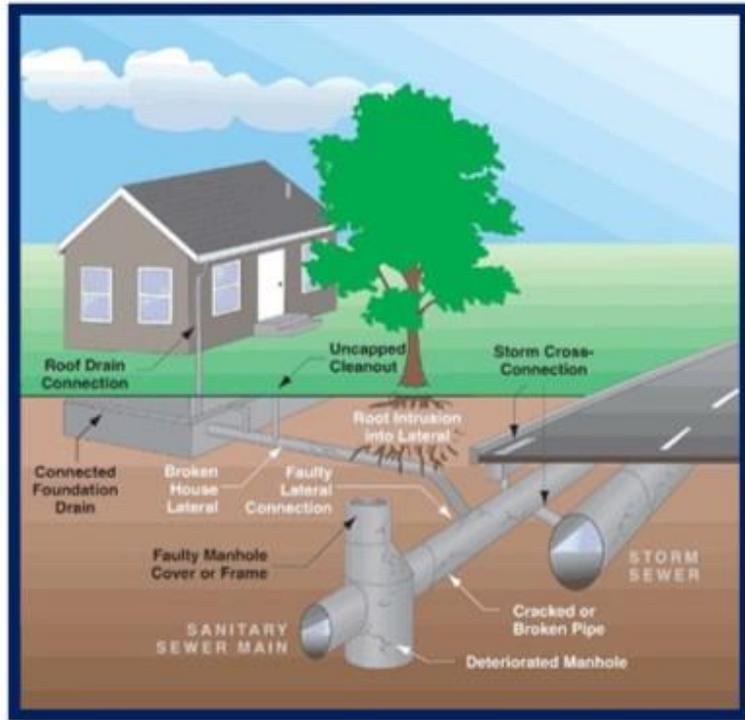
Item #:

WW-16

Department:

Wastewater

Priority: 1,2,3



Preliminary Cost Estimate: \$50,528,000

Description

Repair/replacement of various system deficiencies including investigation, lining, and replacements of manholes and sewers.

**CITY OF WAUKEGAN
COLLECTION SYSTEM IMPROVEMENTS**

Priority	Description	Cost	Details
Priority 1	> 100 Yrs.	\$ 21,118,000	Flow Monitoring for three months, Smoke Testing, Manhole Inspections, Sewer Televis and Clean, Sewer Basin Repairs Allocation
Priority 2	75 - 100 Yrs.	\$ 25,363,000	Flow Monitoring for three months, Smoke Testing, Manhole Inspections, Sewer Televis and Clean, Sewer Basin Repairs Allocation
Priority 3	< 75 Yrs.	\$ 4,047,000	Flow Monitoring for three months, Smoke Testing, Manhole Inspections, Sewer Televis and Clean, Sewer Basin Repairs Allocation

WAUKEGAN
City of Progress Illinois

CITY OF WAUKEGAN

STORMWATER

STORMWATER SYSTEM SUMMARY

Name	Priority 1 PCE	Priority 2 PCE	Priority 3 PCE	Total PCE
Stormwater System Improvements	\$ 1,069,000	\$ 339,000	\$ 81,452,000	\$ 82,860,000
Location Improvements - Stormwater Study	\$ 6,380,000	\$ 6,440,000	\$ 8,880,000	\$ 21,700,000
Preliminar Cost Estimates(PCE) includes design & construction engineering, construction, and contingency (2017 dollars)	\$ 7,449,000	\$ 6,779,000	\$ 90,332,000	\$ 104,560,000

STORMWATER SYSTEM IMPROVEMENTS

Name	Priority 1 PCE	Priority 2 PCE	Priority 3 PCE	Total PCE
Storm Sewer Atlas Update	\$ 100,000	-	-	\$ 100,000
Master City-wide Stormwater Study	\$ 630,000	-	-	\$ 630,000
Yearly TV & Clean Storm Sewers	\$ 240,000	\$ 240,000	\$ 320,000	\$ 800,000
Stormwater System Maintenance - ditching, culverts and structures	\$ 99,000	\$ 99,000	\$ 132,000	\$ 330,000
Estimated Proration Stormwater Improvements	\$ -	\$ -	\$ 81,000,000	\$ 81,000,000
Priority Subtotal	\$ 1,069,000	\$ 339,000	\$ 81,452,000	\$ 82,860,000

CITY OF WAUKEGAN

STORMWATER

LOCATION IMPROVEMENTS

Location Number	Name	Priority 1 PCE	Priority 2 PCE	Priority 3 PCE	Total PCE
1	Victory and 9th	\$ 270,000			\$ 270,000
2	Washington – LeBaron to Westwaukee	\$ 3,100,000			\$ 3,100,000
3	New York - Glen Flora to Ridgeland	\$ 1,830,000			\$ 1,830,000
4	Ash and Atlantic	\$ 610,000			\$ 610,000
5	Pioneer and Belvidere	\$ 170,000			\$ 170,000
6	Grand and Metropolitan	\$ 230,000			\$ 230,000
7	Flossmoor and Hyde Park	\$ 170,000			\$ 170,000
8	Brookside and Butrick		\$ 440,000		\$ 440,000
9	University and Tiffany		\$ 340,000		\$ 340,000
10	Genesee and South Avenue		\$ 450,000		\$ 450,000
11	Seahorse Drive		\$ 130,000		\$ 130,000
12	Gillet and County Street		\$ 210,000		\$ 210,000
13	Pine – Ridgeland to Garden		\$ 230,000		\$ 230,000
14	Green Bay Road and Southview/Crescent/Grandville and Crestville Ct.			\$ 4,550,000	\$ 4,550,000
15	Creek from Bonnie Brook Golf Course - Crossing Lewis and Sunset		\$ 2,770,000		\$ 2,770,000
16	Burr Oak Circle and Cashmore Road			\$ 1,130,000	\$ 1,130,000
17	Sunset and McAree – Northwest Neighborhood		\$ 1,040,000		\$ 1,040,000
18	West Bonnie Brook		\$ 410,000		\$ 410,000
19	Ferry and Yeoman			\$ 3,200,000	\$ 3,200,000
20	Blanchard and Western		\$ 320,000		\$ 320,000
21	River Park Drive		\$ 100,000		\$ 100,000
Priority Subtotal		\$ 6,380,000	\$ 6,440,000	\$ 8,880,000	\$ 21,700,000

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Stormwater Updates and Studies

Item #:

SW-3

Department:

Stormwater

Priority: 1



Preliminary Cost Estimate:

\$730,000

Description

Update the existing storm atlas to accurately reflect sizing and routing of storm sewers and overland flow/conveyance ditches. Atlas update will be done in GIS and include rim and invert information. Following the atlas update, a hydraulic analysis of the city's drainage system will be performed to identify system deficiencies and develop recommended system improvements. The study will consider storm sewers, culverts, creeks/streams, as well as major overland flow paths. Master Plan would be phased by tributary basins to assist with funding and programming. The eastern portion of the City, roughly east of Green bay Road drains eastward towards lake Michigan via rivers/creeks (Skokie & Waukegan Rivers, North Shore Ditch, etc.), while western portions drain towards the Chicago River through various creeks/streams (Irondale Creek, Meadow Haven Creek, etc.).

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Stormwater Victory and 9th

Item #:

SW-5

Department:

Stormwater

Priority: 1



Preliminary Cost Estimate:

\$270,000

Description

Preliminary investigation indicates 10" "trunk sewer" serving ~4 acres of tributary ROW. Replace approximately 800' of 10" sewer ranging from 12" to 36"

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Stormwater Washington - LeBaron to Westwaukee

Item #:

SW-6

Department:

Stormwater

Priority: 1



Preliminary Cost Estimate:

\$3,100,000

Description

Preliminary investigation indicates storm sewer/inlets drain to flat, poorly drained ditches adjacent to Washington on south, within flood plain. BFE shown as 597', roadway shown as 596'. Raise ~1,820' of roadway ~2' and replace existing storm sewers

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Stormwater New York - Glen Flora to Ridgeland

Item #:

SW-7

Department:

Stormwater

Priority: 1



Preliminary Cost Estimate:

\$1,830,000

Description

Preliminary investigation indicates Waukegan River/Yeoman Creek is conveyed via 12'x8' box culvert south towards Ridgeland & New York, then transitioning to 78" culvert crossing under Daniel Webster School. Conveyance capacity is too low. Provide ~1,000' of 10'x6' box culvert from Ridgeland & New York south around school to open ditch

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Stormwater Ash and Atlantic

Item #:

SW-8

Department:

Stormwater

Priority: 1



Preliminary Cost Estimate:

\$610,000

Description

Preliminary investigation indicates 10" "trunk sewer" serving ~3 acres of tributary ROW. Replace approximately 2,200' of 10" sewer ranging from 12" to 42"

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Stormwater Pioneer and Belvidere

Item #:

SW-9

Department:

Stormwater

Priority: 1



Preliminary Cost Estimate: **\$170,000**

Description

Preliminary investigation indicates storm sewer along Belvidere crosses south via 36" sewer that outlets to dual 24" sewers. One sewer runs SE under bldg to open ditch and other runs south to end of Pioneer and open ditch. Replace 24" on Pioneer with ~325' of 36" sewer and regrade ditches for improved conveyance

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Stormwater Grand and Metropolitan

Item #:

SW-10

Department:

Stormwater

Priority: 1



Preliminary Cost Estimate:

\$230,000

Description

Preliminary investigation indicates 24 "trunk sewer" serving ~5 acres of tributary ROW reduces to 18". Replace approximately 700' of sewer with 18" to 24"

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Stormwater Flossmoor and Hyde Park

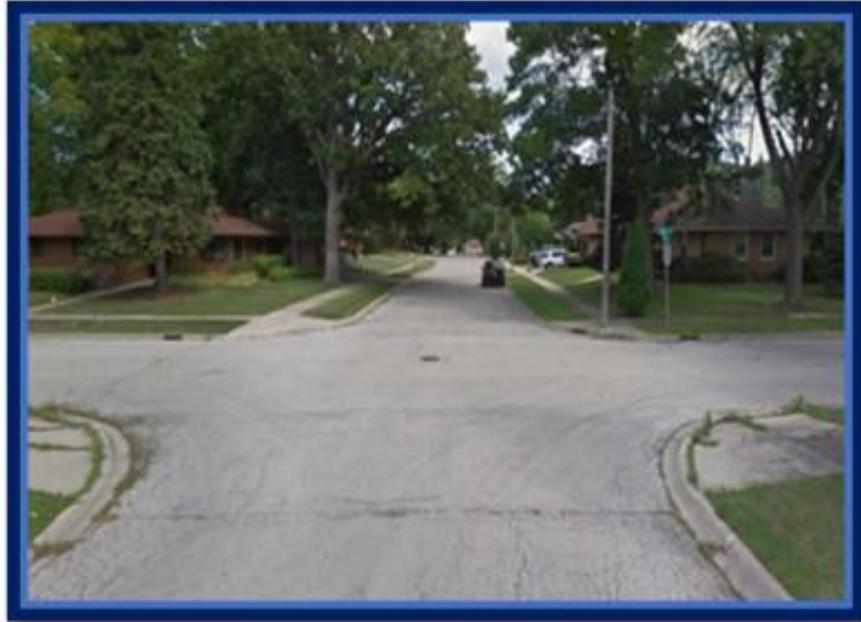
Item #:

SW-11

Department:

Stormwater

Priority: 1



Preliminary Cost Estimate:

\$170,000

Description

Preliminary investigation indicates 3 legs of intersection drain towards the intersection with insufficient inlets to pick up flows and storm sewer to convey runoff. Provide ~500' of 15" sewer and 4 additional inlets

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Stormwater Brookside and Butrick

Item #:

SW-12

Department:

Stormwater

Priority: 2



Preliminary Cost Estimate:

\$440,000

Description

Preliminary investigation indicates 60" "trunk sewer" reduces to 42" as it outlets to creek. Replace ~600' of 42" sewer with 60"

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Stormwater University and Tiffany

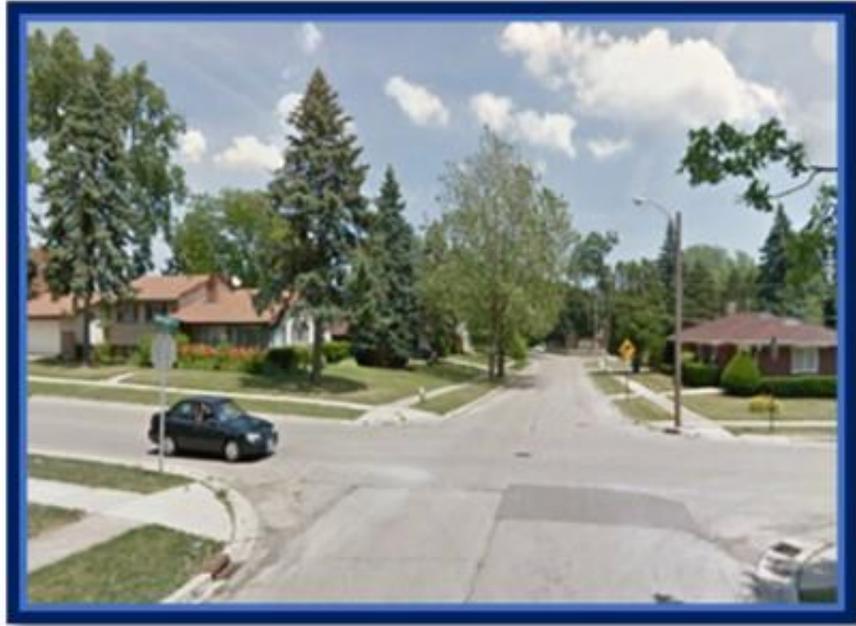
Item #:

SW-13

Department:

Stormwater

Priority: 2



Preliminary Cost Estimate:

\$340,000

Description

Preliminary investigation appears to indicate ~13 acres of tributary ROW to 24"-42", excluding potential flow from Erie Family Health Care. Some question about atlas connectivity as well. Replace ~1,055' of sewer with 30"

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Stormwater Genesee and South Avenue

Item #:

SW-14

Department:

Stormwater

Priority: 2



Preliminary Cost Estimate:

\$450,000

Description

Preliminary investigation indicates ~3.7 acres of tributary ROW to intersection with 27" outlet. Significant slopes to west and relatively flat pavement east of intersection, interception problem & deficient sewer sizes. Upsize 8" sewer and provide new 12" sewer (~1330'), provide supplemental sewer crossing under RR to east and install high capacity grates

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Stormwater Seahorse Drive

Item #:

SW-15

Department:

Stormwater

Priority: 2



Preliminary Cost Estimate:

\$130,000

Description

Preliminary investigation appears to indicate ~0.7 acres of tributary ROW to 10"-12".
Replace/upsized ~480' of sewer with 12"-18" sewer.

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Stormwater Gillet and County Street

Item #:

SW-16

Department:

Stormwater

Priority: 2



Preliminary Cost Estimate:

\$210,000

Description

Preliminary investigation appears to indicate ~6.5 acres of tributary ROW to 24". Replace/upsized ~500' of sewer with 36-48"

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Stormwater Pine – Ridgeland to Garden

Item #:

SW-17

Department:

Stormwater

Priority: 2



Preliminary Cost Estimate:

\$230,000

Description

Preliminary investigation appears to indicate ~5.25 acres of tributary ROW to dual 15" on Garden. Replace/upsized ~790' of 15" sewer 18" to convey with surcharged flows

City of Waukegan, Illinois

Infrastructure Analysis

**Project Name: Stormwater Green Bay Road and Southview/Crescent/
Grandville and Crestville Ct.**

Item #:

SW-18

Department:

Stormwater

Priority: 3



Preliminary Cost Estimate: **\$4,550,000**

Description

Preliminary analysis shows a mixture of commercially developed areas/ROW and low density unincorporated County residential without detention, and limited outlet capacity to Gurnee (~160 acres tributary). Multiple locations with low areas/drainage ditches that outlet to undersized 10"-18" sewers, along with some size variations within trunk network - larger pipes "neck-down". Replace/upsized ~1,660' of sewer ranging from 15"-54". Obtain roughly 4 acres to provide ~22.4 ac-ft of new detention.

City of Waukegan, Illinois

Infrastructure Analysis

**Project Name: Stormwater Creek from Bonnie Brook Golf Course -
Crossing Lewis and Sunset**

Item #:

SW-19

Department:

Stormwater

Priority: 2



Preliminary Cost Estimate:

\$2,770,000

Description

Preliminary analysis shows that the Waukegan River (~1.68 sq mile tributary area) is conveyed via culverts into lake in Sunset apartments at Lewis, with outlet from lake as single 72" combining 72"x44" from west in Sunset and flowing south into creek as 72"x44". Pipe/culverts too small to convey 100-yr flows, replace outlet from Sunset Lake with triple 72" culverts and install 1,695' of supplemental 8'x5' box culvert to new outlet location at junction chamber.

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Stormwater Burr Oak Circle and Cashmore Road

Item #:

SW-20

Department:

Stormwater

Priority: 3



Preliminary Cost Estimate: **\$1,130,000**

Description

Preliminary analysis shows ~166 acres tributary to creek at Cashmore/York House, which is picked up into 24"x35" culvert. Inlets and storm sewer connect to this restrictive culvert. Replace ~1,680' of culvert with 43"x68" culvert.

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Stormwater Sunset and McAree – Northwest Neighborhood

Item #:

SW-21

Department:

Stormwater

Priority: 2



Preliminary Cost Estimate:

\$1,040,000

Description

Preliminary analysis shows that ~6 acres of tributary ROW is conveyed via 12"-27" sewers to multiple outlet points along Sunset and open ditch west of McAree. Portions of storm sewer are undersized, replace ~2,130' with 18"-36" sewers. Additionally an apparent section of deficient trunk sewer is located on Sunset west of Lewis. Install ~680' of parallel 38"x60" sewer from the existing junction of 38"x60" and 44"x72" sewer to the proposed 8'x5' box culvert indicated in improvement location #15.

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Stormwater West Bonnie Brook

Item #:

SW-22

Department:

Stormwater

Priority: 2



Preliminary Cost Estimate:

\$410,000

Description

Preliminary analysis shows that ~0.8 acres of tributary ROW drains down the roadway without effective ditches or storm sewer. Install ~1,050' of 12"-18" sewer and ~1,400' of roadside ditches.

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Stormwater Ferry and Yeoman

Item #:

SW-23

Department:

Stormwater

Priority: 3



Preliminary Cost Estimate:

\$3,200,000

Description

Preliminary analysis shows subdivision developed without detention, with ~18.2 acres of tributary ROW draining via 24"-27" outlet sewers at Ferry & Yeoman. Replace ~4,455' with 15"-42" sewers and install ~ 7 ac-ft of detention on open space within the subdivision.

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Stormwater Blanchard and Western

Item #:

SW-24

Department:

Stormwater

Priority: 2



Preliminary Cost Estimate:

\$320,000

Description

Preliminary analysis shows ~2 acres of tributary ROW draining via 12" sewer to Montesano & Western. Replace ~1100' of 15"-24" sewer.

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Stormwater River Park Drive

Item #:

SW-25

Department:

Stormwater

Priority: 2



Preliminary Cost Estimate:

\$100,000

Description

Preliminary analysis shows Meadow Haven Creek Tributary being conveyed via dual 72" culvert, which is too small. Install additional 72" culvert and replace ~140' of 12" sewer.

CITY OF WAUKEGAN STORMWATER COLLECTION SYSTEM

Priority	Cost	Details
Priority 1	\$ 1,069,000	Storm Sewer Atlas Update, Master City-wide Stormwater Study, yearly TV & clean storm sewers, maintain ditching, culverts and structures
Priority 2	\$ 339,000	Yearly TV & clean storm sewers, maintain ditching, culverts and structures
Priority 3	\$ 81,452,000	Estimated proration of stormwater improvements, yearly TV & clean storm sewers, maintain ditching, culverts and structures

WAUKEGAN
City of Progress Illinois

CITY OF WAUKEGAN CEMETERY

Name	Priority 1 PCE	Priority 2 PCE	Priority 3 PCE	Total PCE
Cemetery Erosion Control	\$ 525,000			\$ 525,000
Cemetery Concrete Wall Restoration		\$ 125,000		\$ 125,000
	\$ 525,000	\$ 125,000	\$ -	\$ 650,000
<i>Preliminary Cost Estimates (PCE) includes design & construction engineering, construction, and contingency (2017 dollars)</i>				

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Cemetery Erosion Control

Item #:

C-2

Department:

Cemetery

Priority: 1



Preliminary Cost Estimate:

\$525,000

Description

Abandon the existing storm sewer outlet and replace with approximately 900' of appropriately sized storm sewer outlet, and stabilize the ravine to address erosion via grading, Geosynthetic Concrete Composite mat (GCCM), gabions, turf mat and native seeding.

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Cemetery Concrete Wall Restoration

Item #:

C-3

Department:

Cemetery

Priority: 2



Preliminary Cost Estimate: **\$125,000**

Description
Concrete Wall Restoration

WAUKEGAN
City of Progress *Illinois*

CITY OF WAUKEGAN

SIDEWALKS

Name	Priority 1 PCE	Priority 2 PCE	Priority 3 PCE	Total PCE
Sidewalks City-Wide	\$ 5,666,666	\$ 5,666,666	\$ 5,666,666	\$ 17,000,000
Total				\$ 17,000,000
<i>Preliminary Cost Estimates (PCE) includes design & construction engineering, construction, and contingency (2017 dollars)</i>				

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Sidewalks City-Wide

Item #:

S-2

Department:

Sidewalks

Priority: 1,2,3



Preliminary Cost Estimate: **\$17,000,000**

Description

The Sidewalk condition was evaluated from a sample area within the City limits. An onsite evaluation was then performed to assess the condition of the sidewalk within the targeted area. A value for the corrective work was then developed then extrapolated for the City. The Cost by Priority was then equally divided into the three-priority category's. The budget numbers can be better defined once more defined funding information is available.

WAUKEGAN
City of Progress *Illinois*

CITY OF WAUKEGAN
ALLEYS

Name	Priority 1 PCE	Priority 2 PCE	Priority 3 PCE	Total PCE
Alleys	\$ 3,000,000	\$ 250,000	\$ 5,000,000	\$ 8,250,000
Total				\$ 8,250,000
<i>Preliminary Cost Estimates (PCE) includes design & construction engineering, construction, and contingency (2017 dollars)</i>				

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Alleys

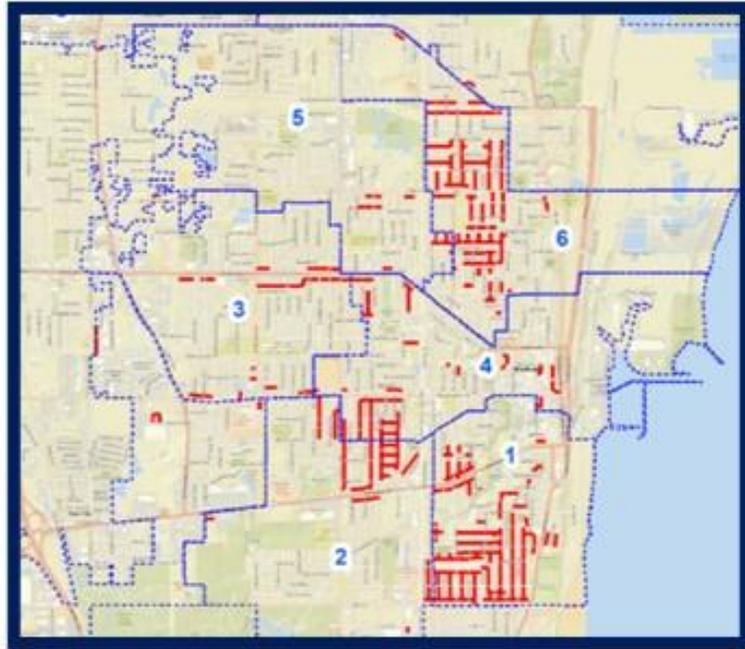
Item #:

A-2

Department:

Alleys

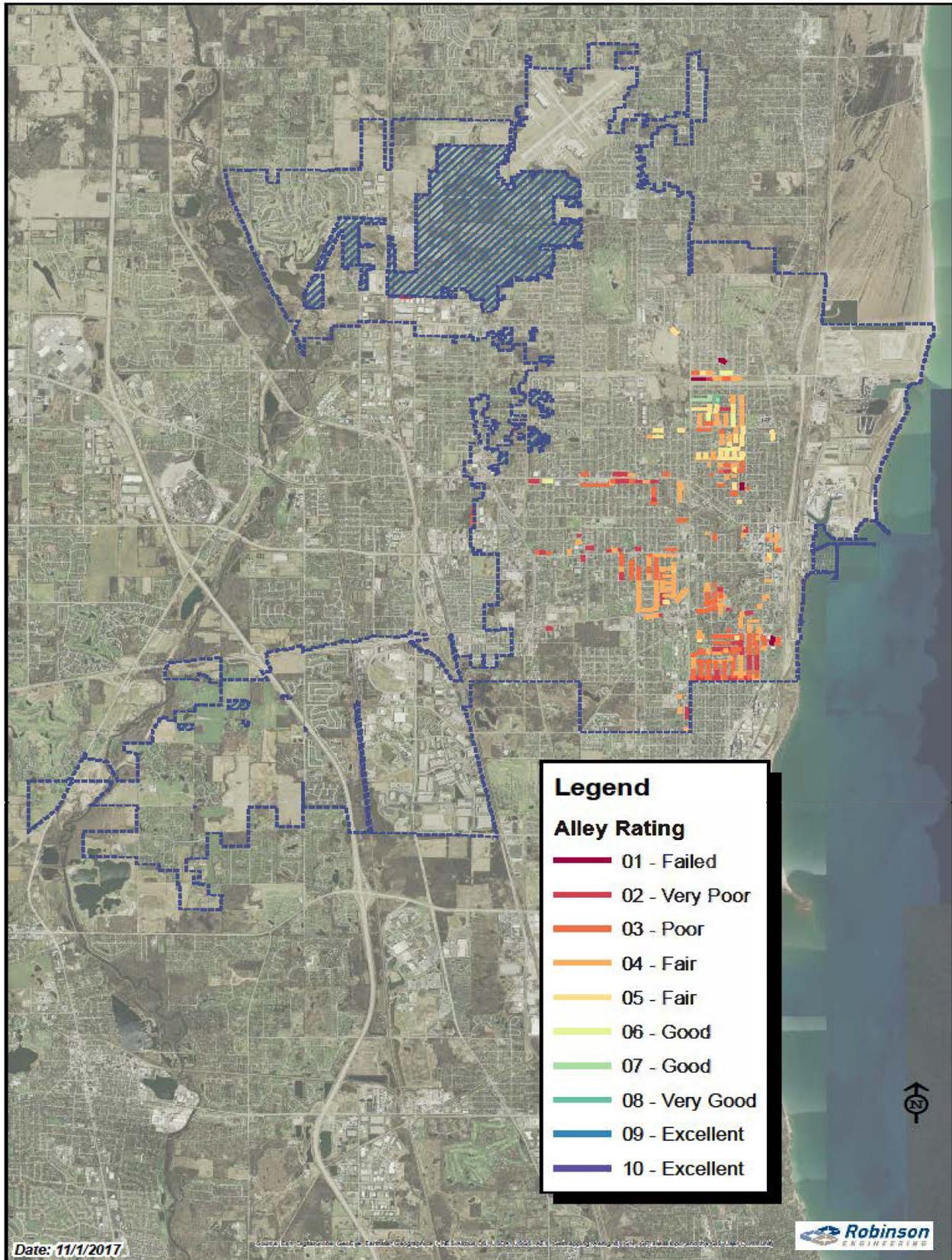
Priority: **1,2,3**



Preliminary Cost Estimate: \$8,250,000

Description
Visual on-site evaluation was performed to assess the condition of each Alley segment identifying the areas of concern. This information was used to develop a cost and priority rating.

CITY OF WAUKEGAN ALLEY RATINGS



WAUKEGAN
City of Progress *Illinois*

CITY OF WAUKEGAN

STREET LIGHTS

Name	Priority 1 PCE	Priority 2 PCE	Priority 3 PCE	Total PCE
Streetlights	\$ 3,000,000	1,500,000	800,000	\$ 5,300,000
Total				\$ 5,300,000
<i>Preliminary Cost Estimates (PCE) includes design & construction engineering, construction, and contingency (2017 dollars)</i>				

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Street Lights - City Wide

Item #:

SL-2

Department:

Street Lights

Priority: 1,2,3



Preliminary Cost Estimate:

\$5,300,000

Description

The Street Light condition was evaluated from a sample area drawn from the City's GIS system. Based on the sample area, a value for the corrective work was then developed then extrapolated for the City. The cost was allocated in three segments; Replace old heads with new LED heads on poles in good condition; Replace all slightly damaged poles with new LED heads; Replace all damaged poles with new poles and new LED heads.

WAUKEGAN
City of Progress Illinois

CITY OF WAUKEGAN TRAFFIC SIGNALS

Name	Priority 1 PCE	Priority 2 PCE	Priority 3 PCE	Total PCE
Dugdale and Lewis		\$ 7,000		\$ 7,000
Franklin and North	\$ 324,000			\$ 324,000
Glen Flora and Butrick	\$ 6,000			\$ 6,000
Glen Flora and Jackson	\$ 529,000			\$ 529,000
Glen Flora and Lewis	\$ 6,000			\$ 6,000
Glen Flora and McAree		\$ 324,000		\$ 324,000
Glen Flora and Sheridan	\$ -			\$ -
Glen Rock & Jackson	\$ 324,000			\$ 324,000
10th and McAlister			\$ 324,000	\$ 324,000
10th and Lewis		\$ 6,000		\$ 6,000
Greenleaf and Lakehurst Circle			\$ 19,000	\$ 19,000
Lewis and Brookside			\$ 6,000	\$ 6,000
Lewis and Harding			\$ 3,000	\$ 3,000
Lewis and Ridgeland			\$ 6,000	\$ 6,000
Lewis and Roger Edwards		\$ 6,000		\$ 6,000
Lewis and Williamsburg		\$ 4,000		\$ 4,000
14th and Lewis	\$ 6,000			\$ 6,000
Total	\$ 1,195,000	\$ 347,000	\$ 358,000	\$ 1,900,000

Preliminary Cost Estimates (PCE) includes design & construction engineering, construction, and contingency (2017 dollars)

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Traffic Signals Dugdale and Lewis

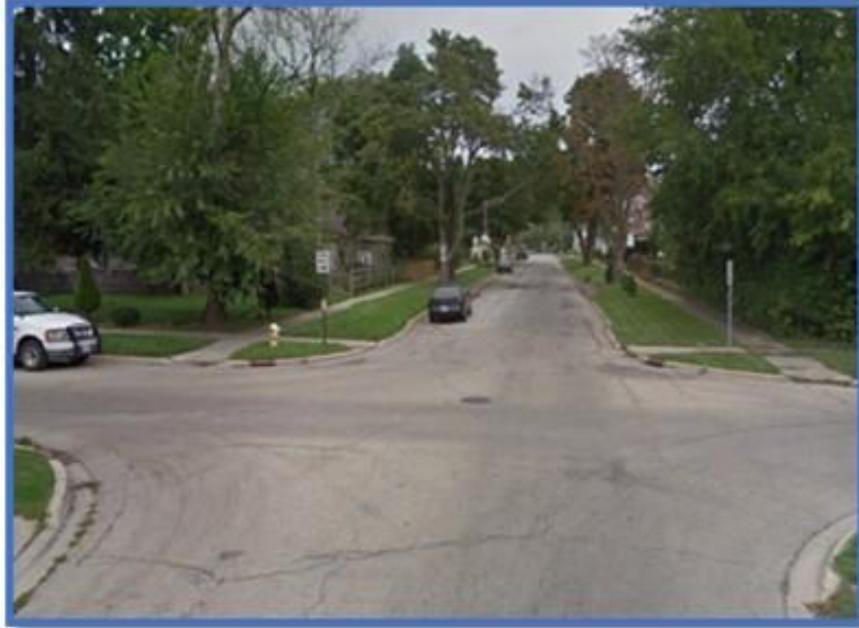
Item #:

TS-2

Department:

Traffic Signals

Priority: 2



Preliminary Cost Estimate:

\$7,000

Description

Install R10-3 Series Pedestrian Signs per IDOT Standard TS-05 for Pedestrian Countdown Traffic Signals. Perform recurring inspection of painted steel posts and mast arms.

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Traffic Signals Franklin and North

Item #:

TS-3

Department:

Traffic Signals

Priority: 1



Preliminary Cost Estimate:

\$324,000

Description

Mount traffic signals on mast arms to make them more visible; Add lights to combination poles; Add pedestrian countdown signals; Install vehicle video detection on lighting mast arm.

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Traffic Signals Glen Flora and Butrick

Item #:

TS-4

Department:

Traffic Signals

Priority: 1



Preliminary Cost Estimate:

\$6,000

Description

Install R10-3 Series Pedestrian Signs per IDOT Standard TS-05 for Pedestrian Countdown Traffic Signals

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Traffic Signals Glen Flora and Jackson

Item #:

TS-5

Department:

Traffic Signals

Priority: 1



Preliminary Cost Estimate:

\$529,000

Description

Install traffic signal interconnect on Glen Flora Avenue from Lewis Avenue to Sheridan Road (4 traffic signals along 1.3 miles of roadway). Mount the traffic signals on mast arms to make them more visible; Add lights to combination poles; Add pedestrian countdown signals; Install vehicle video detection on lighting mast arm; Coordinate signals.

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Traffic Signals Glen Flora and Lewis

Item #:

TS-6

Department:

Traffic Signals

Priority: 1



Preliminary Cost Estimate:

\$6,000

Description

Install R10-3 Series Pedestrian Signs per IDOT Standard TS-05 for Pedestrian Countdown Traffic Signals; Perform recurring inspection of painted steel posts and mast arms.

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Traffic Signals Glen Flora and McAree

Item #:

TS-7

Department:

Traffic Signals

Priority: 2



Preliminary Cost Estimate:

\$324,000

Description

Mount the traffic signals on mast arms to make them more visible; Add lights to combination poles; Add pedestrian countdown signals; Install vehicle video detection on lighting mast arm.

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Traffic Signals Glen Rock & Jackson

Item #:

TS-8

Department:

Traffic Signals

Priority: 1



Preliminary Cost Estimate:

\$324,000

Description

Mount the traffic signals on mast arms to make them more visible; Add lights to combination poles; Add pedestrian countdown signals; Install vehicle video detection on lighting mast arm.

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Traffic Signals 10th and McAlister

Item #:

TS-9

Department:

Traffic Signals

Priority: 3



Preliminary Cost Estimate:

\$324,000

Description

Mount the traffic signals on mast arms to make them more visible; Add lights to combination poles; Add pedestrian countdown signals; Install vehicle video detection on lighting mast arm

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Traffic Signals 10th and Lewis

Item #:

TS-10

Department:

Traffic Signals

Priority: 2



Preliminary Cost Estimate:

\$6,000

Description

Install R10-3 Series Pedestrian Signs per IDOT Standard TS-05 for Pedestrian Countdown Traffic Signals; Replace mast arm shroud at northeast corner

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Traffic Signals Greenleaf and Lakehurst Circle

Item #:

TS-11

Department:

Traffic Signals

Priority: 3



Preliminary Cost Estimate: \$19,000

Description

Install R10-3 Series Pedestrian Signs per IDOT Standard TS-05 for Pedestrian Countdown Traffic Signals; Upgrade controller cabinet to be compatible with LCDOT Passage System

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Traffic Signals Lewis and Brookside

Item #:

TS-12

Department:

Traffic Signals

Priority: 3



Preliminary Cost Estimate:

\$6,000

Description

Install R10-3 Series Pedestrian Signs per IDOT Standard TS-05 for Pedestrian Countdown Traffic Signals.

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Traffic Signals Lewis and Harding

Item #:

TS-13

Department:

Traffic Signals

Priority: 3



Preliminary Cost Estimate:

\$3,000

Description

Install R10-3 Series Pedestrian Signs per IDOT Standard TS-05 for Pedestrian Countdown Traffic Signals.

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Traffic Signals Lewis and Ridgeland

Item #:

TS-14

Department:

Traffic Signals

Priority: 3



Preliminary Cost Estimate:

\$6,000

Description

Install R10-3 Series Pedestrian Signs per IDOT Standard TS-05 for Pedestrian Countdown Traffic Signals.

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Traffic Signals Lewis and Roger Edwards

Item #:

TS-15

Department:

Traffic Signals

Priority: 2



Preliminary Cost Estimate:

\$6,000

Description

Install R10-3 Series Pedestrian Signs per IDOT Standard TS-05 for Pedestrian Countdown Traffic Signals.

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Traffic Signals Lewis and Williamsburg

Item #:

TS-16

Department:

Traffic Signals

Priority: 2



Preliminary Cost Estimate:

\$4,000

Description

Install R10-3 Series Pedestrian Signs per IDOT Standard TS-05 for Pedestrian Countdown Traffic Signals; Add signing to restrict traffic from exiting driveway on east leg.

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Traffic Signals 14th and Lewis

Item #:

TS-17

Department:

Traffic Signals

Priority: 1



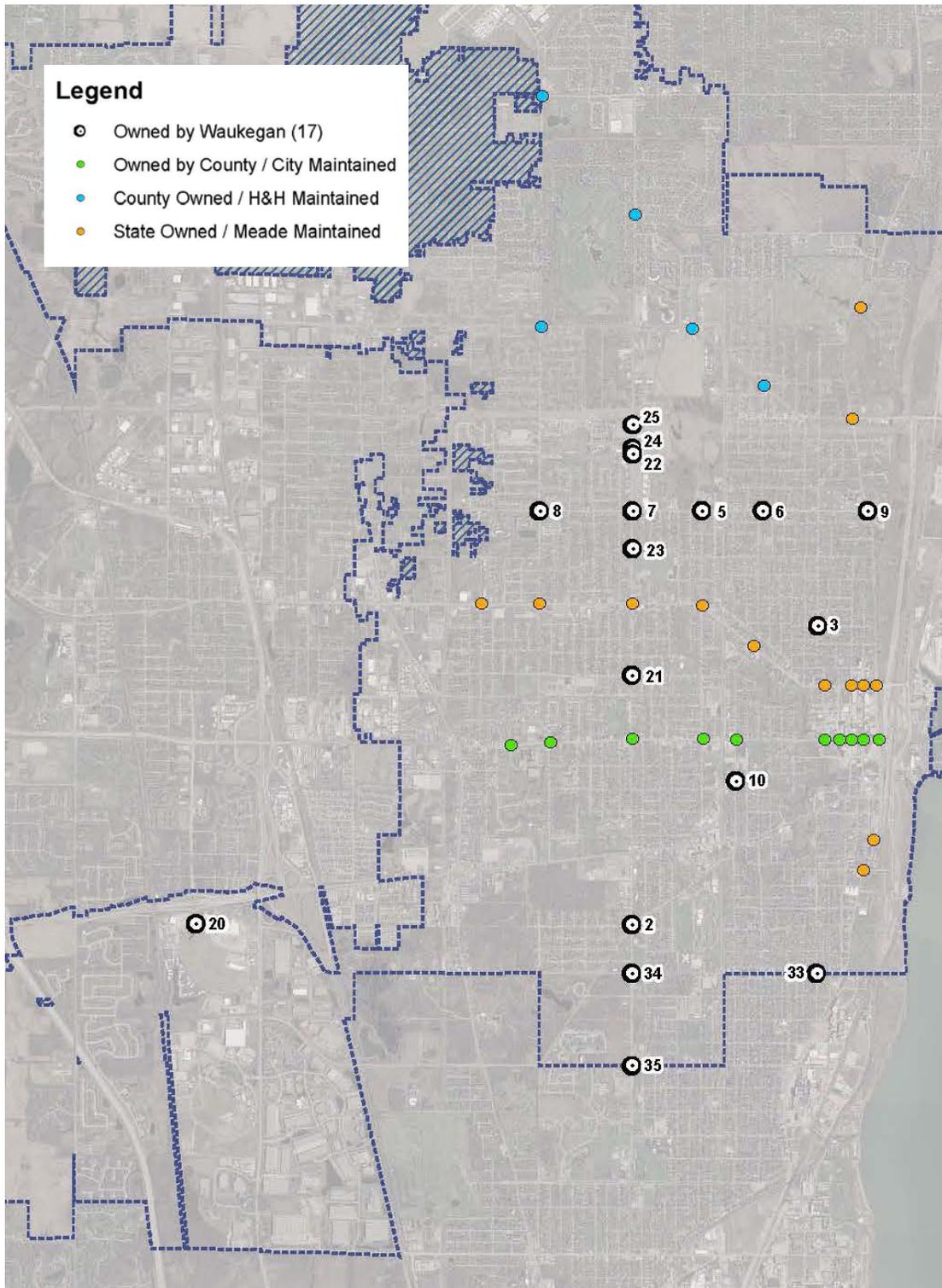
Preliminary Cost Estimate:

\$6,000

Description

Install R10-3 Series Pedestrian Signs per IDOT Standard TS-05 for Pedestrian Countdown Traffic Signals.

City of Waukegan Traffic Signals



WAUKEGAN
City of Progress Illinois

CITY OF WAUKEGAN STREET SIGNS

Name	Priority 1 PCE	Priority 2 PCE	Priority 3 PCE	Total PCE
Street Signs	\$ 875,000	\$ 500,000	\$ 365,000	\$ 1,740,000
<i>Preliminary Cost Estimates (PCE) includes design & construction engineering, construction, and contingency (2017 dollars)</i>				

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Street Signs

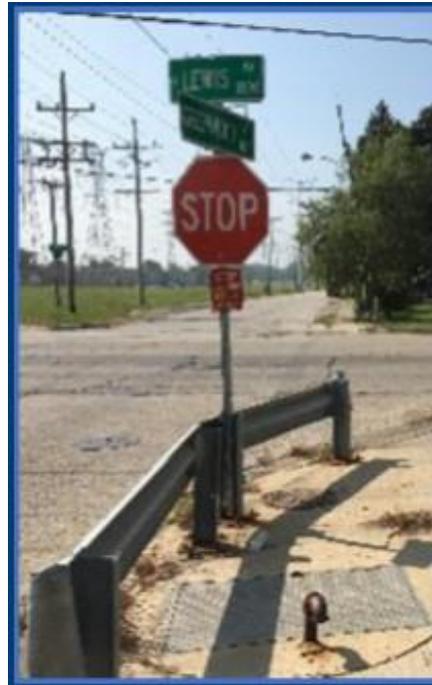
Item #:

SS-2

Department:

Street Signs

Priority: 1,2,3



Preliminary Cost Estimate:

\$1,740,000

Description

Street Sign data was collected, and classified under the type of sign, post, and their condition utilizing Infrastructure Management System (IMS) system.

CITY OF WAUKEGAN
STREET SIGN TYPES

Type	Number	Preliminary Cost Estimates
Guide and Informational	28,94	\$ 569,200
Marker	256	\$ 14,800
Miscellaneous	2,187	\$ 97,400
Object Marker	100	\$ 6,400
Recreational and Cultural Interest	242	\$ 25,800
Regulatory	5,486	\$ 759,000
School	288	\$ 57,000
Warning	1,384	\$ 210,400
Total:	12,837	\$ 1,740,000

WAUKEGAN
City of Progress Illinois

CITY OF WAUKEGAN PARKING LOTS

Name	Priority 1 PCE	Priority 2 PCE	Priority 3 PCE	Total PCE
Lot A - Madison St. and West St.		\$ 60,000		\$ 60,000
Lot B - Clayton St. and County St.		\$ 77,000		\$ 77,000
Lot D - Clayton St. and Sheridan Rd.	\$ 120,000			\$ 120,000
Lot E - Sheridan Rd. and Washington		\$ 24,000		\$ 24,000
Lot F - Sheridan Rd. and Water St.	\$ 248,000			\$ 248,000
Lot G - Madison St. and Pershing Rd.	\$ 57,000			\$ 57,000
Lot H - Madison St.		\$ 106,000		\$ 106,000
Lot I - Madison St. and Pershing Rd.		\$ 72,000		\$ 72,000
Lot K - Madison St. and Amstuz Expy.				\$ -
Lot L - Spring St. and Washington St.				\$ -
Lot O - Sheridan Rd. and Clayton St.			\$ 67,000	\$ 67,000
Total	\$ 425,000	\$ 339,000	\$ 67,000	\$ 831,000
<i>Preliminary Cost Estimates (PCE) includes design & construction engineering, construction, and contingency (2017 dollars)</i>				

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Parking Lots Madison and West (Lot A)

Item #:

PL-2

Department:

Parking Lots

Priority: 2



Preliminary Cost Estimate: **\$60,000**

Description
Parking Spaces: 52
Area (Sq ft): 21,607

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Parking Lots Clayton St and County (Lot B)

Item #:

PL-3

Department:

Parking Lots

Priority: 2



Preliminary Cost Estimate: **\$77,000**

Description
Parking Spaces: 84
Area (Sq ft): 28,588

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Parking Lots Clayton and Sheridan (Lot D)

Item #:

PL-4

Department:

Parking Lots

Priority: 1



Preliminary Cost Estimate:

\$120,000

Description

Parking Spaces: 98

Area (Sq ft): 37,761

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Parking Lots Sheridan and Washington (Lot E)

Item #:

PL-5

Department:

Parking Lots

Priority: 3



Preliminary Cost Estimate: **\$24,000**

Description
Parking Spaces: 23
Area (Sq ft): 8,331

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Parking Lots Sheridan and Water (Lot F)

Item #:

PL-6

Department:

Parking Lots

Priority: 1



Preliminary Cost Estimate: \$248,000

Description
Parking Spaces: 231
Area (Sq ft): 78,191

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Parking Lots Madison and Pershing (Lot G)

Item #:

PL-7

Department:

Parking Lots

Priority: 1



Preliminary Cost Estimate:

\$57,000

Description

Parking Spaces: 52

Area (Sq ft): 17,423

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Parking Lots Madison (Lot H)

Item #:

PL-8

Department:

Parking Lots

Priority: 2



Preliminary Cost Estimate: \$106,000

Description
Parking Spaces: 119
Area (Sq ft): 39,566

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Parking Lots Madison and Pershing (Lot I)

Item #:

PL-9

Department:

Parking Lots

Priority: 2



Preliminary Cost Estimate:

\$72,000

Description

Parking Spaces: 92,

Area (Sq ft): 26,722

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Parking Lots Madison and Amstuz Expy (Lot K)

Item #:

PL-10

Department:

Parking Lots

Priority:



Preliminary Cost Estimate: **\$0**

Description
Parking Spaces: 52
Area (Sq ft): 21,607

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Parking Lots Spring and Washington (Lot L)

Item #:

PL-11

Department:

Parking Lots

Priority:



Preliminary Cost Estimate: **\$0**

Description
Parking Spaces: 91, Area (Sq ft): 30,973

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Parking Lots Sheridan Rd. and Clayton St. (Lot O)

Item #:

PL-12

Department:

Parking Lots

Priority: 3



Preliminary Cost Estimate: **\$67,000**

Description
Parking Spaces: 74
Area (Sq ft): 30,591

WAUKEGAN
City of Progress Illinois

CITY OF WAUKEGAN

PAVEMENT

Name	Priority 1 PCE	Priority 2 PCE	Priority 3 PCE	Total PCE
Pavement	\$ 95,000,000	\$ 80,000,000	\$ 45,000,000	\$ 220,000,000
<i>Preliminary Cost Estimates (PCE) includes design & construction engineering, construction, and contingency (2017 dollars)</i>				

The roadway pavements were analyzed using a vehicle equipped with an automated collection system featuring a laser-camera array developed by IMS. The collected data was used as input into pavement management software, which determines the roadway condition index and can project its life expectancy. This segment-specific information forms the basis for defining the segment priority rating and costs for rehabilitation.

City of Waukegan, Illinois

Infrastructure Analysis

Project Name: Pavement

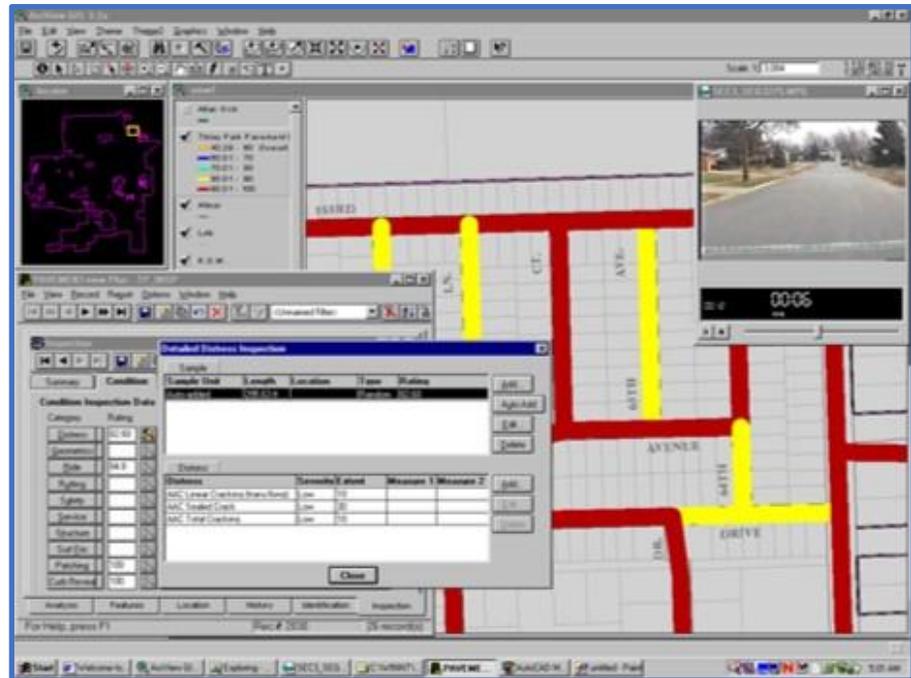
Item #:

P-2

Department:

Pavement

Priority: 1,2,3



Preliminary Cost Estimate:

\$220,000,000

Description

Data on the Pavement condition was collected using Infrastructure Management Services (IMS) automated data collection vehicles which performed a pavement surface distress survey, which measured rutting and roughness, deflection, using a multi-camera video logging system. The data was then sorted and the Pavement Surface Evaluation Rating (PASER) system.