PUBLIC WORKS COMMISSION MEETING AGENDA

TUESDAY, JANUARY 23, 2024 AT 5:30 PM

COUNCIL CHAMBERS, SECOND FLOOR, MUNICIPAL BUILDING - 106 JONES STREET, WATERTOWN, WI 53094

By Phone or GoToMeeting: Members of the media and the public may attend by calling:(Toll Free): 1 877 309 2073 or 1 (646) 749-3129 **Access Code:** 196-221-861 or https://meet.goto.com/196221861 Please join meeting from your computer, tablet or smartphone. All public participants' phones will be muted during the meeting except during the public comment period.

1. **CALL TO ORDER**
2. **COMMENTS AND SUGGESTIONS FROM CITIZENS PRESENT**

   Each individual who would like to address the Committee will be permitted up to three minutes for their comments
3. **REVIEW AND APPROVE MINUTES**
   - A. Review and approve: Public Works minutes from January 9, 2024
4. **BUSINESS**
   - A. Review and take possible action: City of Watertown Quarry Annual Report submittal
   - B. Review and discuss: City of Watertown Flood Control Master Plan recommendations
5. **ADJOURNMENT**

Persons requiring other reasonable accommodations for any of the above meetings, may contact the office of the City Clerk at mdunneisen@CityofWatertown.org, phone 920-262-4006

A quorum of any City of Watertown Council, Committee, Board, Commission, or other body, may be present at this meeting for observing and gathering of information only

PUBLIC WORKS COMMISSION MEETING AGENDA
TUESDAY, JANUARY 9, 2024

Commission members present: Alds Bartz, Board, Smith, Wetzel, Comm'r Thompson
City Employees present: Assistant Engineer Andrew Beyer

1. CALL TO ORDER
Meeting called to order at 5:30

2. COMMENTS AND SUGGESTIONS FROM CITIZENS PRESENT

3. REVIEW AND APPROVE MINUTES
A. PUblic Works Commission meeting December 12, 2023
Motion to approve Comm'r Thompson
2nd Ald Board
Carried by unanimous voice vote

4. BUSINESS
A. Review and take possible action: petition to repair WIllman Court
Funds for City street repairs are already allocated for 2024 and 2026. Comm'r Thompson expressed concern about safety issues for residents as Beyer stated that Willmon Court has a paser rating of 1. Comm'r Thompson expressed concern of a safety issue since the paser rating is so low. Is there some way to "limp" this along until 2026?
Beyer stated that the city has purchased a hot box so that hot patch can be used to fill holes rather than the less effective cold patch.
Motion by Ald Board to deny the repair request at Willmon Court since the design for the street has not been done, there are no funds allocated in the 24-25 budget and Willmon is scheduled to be repaired in 2026 along with the 12th Street repair. He also desired that the Street Department patch the street as needed until construction is complete.
2nd Ald Bartz
Motion carried by unanimous voice vote

B. Review and take possible action: request to discharge clear or unpolluted water into sanitary sewer during winter months on Willman Court.
The resident at 1002 Willmon Court asked to discharge his sump pump into the sanitary sewer. Public Works must approve such requests and the resident must comply with Waste Water Department requirements.
Motion by Ald Smith to approve this request for discharge into the sanitary sewer in the inclusive months that are included.
2nd Commr Thompson
Carried by unanimous voice vote

5. ADJOURNMENT
Motion to adjourn Ald Bartz
2nd Ald Wetzel
Motion carried by unanimous vote

Meeting adjourned at 5:40 p.m.

Respectfully submitted,
Bob Wetzel
Public Works Commission Chair

Note: These minutes are uncorrected and any corrections made thereto will be noted in the proceedings at which these minutes are approved.

THE CITY OF WATERTOWN

ENGINEERING DIVISION

Andrew Beyer, P.E.
920.262.4052

Maureen McBroom, ENV SP
920-206-4264

Ritchie M. Piltz, CSI
920.262.4034

Administrative Assistant
Wanda Fredrick 920.262.4060

MEMO

TO: Chairperson Wetzel and Commissioners

FROM: Andrew Beyer, P.E.

DATE: January 17, 2024

RE: January 23, 2024 Public Works Commission Meeting

- Review and take possible action: City of Watertown Quarry Annual Report submittal

BACKGROUND

Review and take possible action: City of Watertown Quarry Annual Report submittal

The City of Watertown owns and operates the quarry located at 408 Bonner Street within the City Limits. As required by the Wisconsin Department of Natural Resources, a quarry operator is responsible for submitting an annual report to the administering authority, the City of Watertown in this case, for review and approval. The annual report is attached for Commission review.

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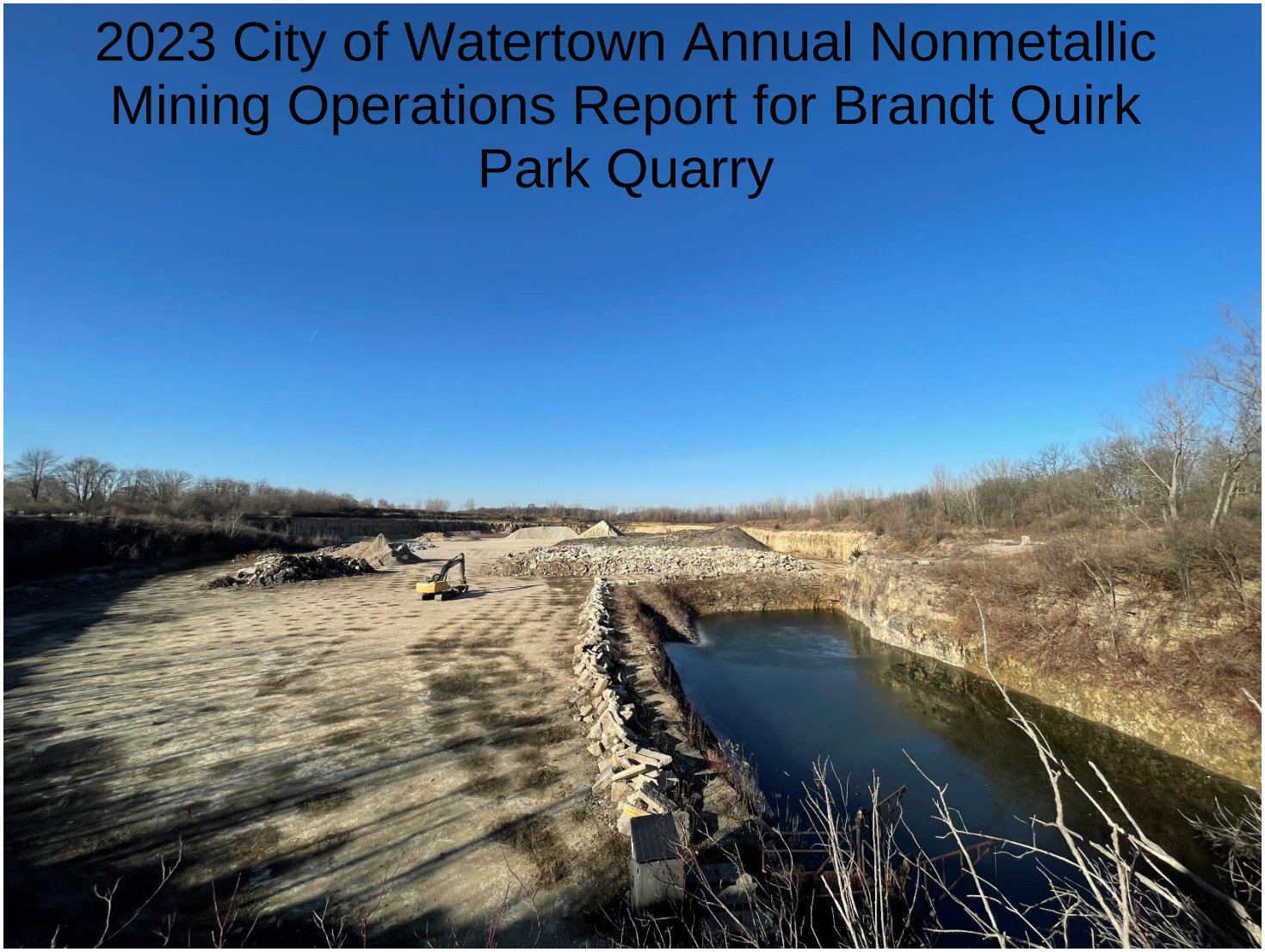
Maureen McBroom, ENV SP
920-206-4264

Public Works Projects Manager
Chris Newberry 920.342-4180

920.262.4034

Administrative Assistant
Wanda Fredrick 920.262.4060

2023 City of Watertown Annual Nonmetallic Mining Operations Report for Brandt Quirk Park Quarry



This report is submitted on behalf of the City of Watertown in fulfillment of Wisconsin Administrative Code NR 135.36 and the City of Watertown's permitting process of Chapter 377 Nonmetallic Mining of the Code of Ordinances.

Current and future uses

The quarry is presently used primarily as a storage area for stockpiles for rock of differing gradation sizes, crushed and uncrushed concrete, and asphalt. Very little virgin rock materials have been used from the quarry in the last two years. In the spring of 2023 8,000 tons of asphalt was crushed for use on the City's future projects. During winter months the facility is used for storing snow from the downtown area. The top portion of the facility (South of the quarry limits) is used to stage supplies for Streets and Parks divisions.

The quarry is nearing its designed horizontal limits of construction. It is estimated that quarry depth can be increased approximately 15 feet below current elevations. Depending on the usage and rate of extraction, the quarry life could be over 25 years. The quarry is currently planned to be a lake after its mining usefulness has ended and reclamation is completed. The quarry would then become a part of the Brandt-Quirk Park, which is located directly north of the quarry. Presently, the managing departments are investigating the current use, and future use, and management of the quarry.

Operators

The City of Watertown is the operator of this quarry. It has been overseen by the City's Public Works Department - Streets Division and Engineering Division. The addresses for the divisions are:

Street Division
811 S. First Street
Watertown, WI 53094

Engineering Division
106 Jones Street
P. O. Box 477
Watertown, WI 53094

Location

The quarry is in the northwestern portion of the City of Watertown and is adjacent to Brandt Quirk Park.

Address: 408 Bonner Street Watertown, WI 53094.

Tax parcel number: 14-291-0915-3231-058

Legal description: That parcel of land commencing at the Northwestern corner of out lot 21, thence Easterly along said Northern Out Lot boundary line, approximately 1,000 feet to a point; thence Southerly along a line parallel with the Western boundary line of Out

Lot 21approximately 1620 feet to a point; thence Southeasterly approximately 1250 feet to a point on the Southern boundary line of Out Lot 21, said point being approximately 920 feet West of the Southeastern corner of Out Lot 21; thence Westerly to the Chicago, Milwaukee, St Paul and Pacific right of way; thence Northwesterly along said right of way to the Western boundary line of Out Lot 21; thence Northerly to the place of beginning.
Also a parcel of land commencing at a point on the Northern boundary line of Out Lot 22, approximately 920 West of the Northeastern corner of Out Lot 22; thence Southerly along a line parallel with the Eastern boundary line of said Out Lot approximately 900 feet to a point; thence Southeasterly approximately 360 feet to a point, said point being on the Westerly line of Bonner Street extended; thence Southerly along a line approximately 135 feet to the Southern boundary line of Out Lot 22; thence Westerly to the Chicago, Milwaukee, St Paul and Pacific right of way; thence Northwesterly along said right of way to a point at which said right of way intersects with the Northern boundary line of Out Lot 22; thence Easterly along said boundary line to the place of beginning.
See attached map for location within the City.

Quarry Size
The current acreage affected by nonmetallic mining is approximately 23.8 acres. Quarry land has not been permanently or temporarily reclaimed. Exhibits showing the City of Watertown Brandt Quirk Park Quarry are attached to this report as references.

I certify that this information is true and accurate, and that the nonmetallic mining site described herein complies with all conditions of the applicable nonmetallic mining permit and Chapter NR 135, Wisconsin Administrative Code.

_____ Date __/__/__
Andrew M Beyer, P.E.
Assistant City Engineer

THE CITY OF WATERTOWN

ENGINEERING DIVISION

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Administrative Assistant
Wanda Fredrick 920.262.4060

MEMO

TO: Chairperson Wetzel and Commissioners

FROM: Andrew Beyer, P.E.

DATE: January 17, 2024

RE: January 23, 2024 Public Works Commission Meeting

- Review and take possible action: City of Watertown Flood Control Master Plan adoption

BACKGROUND

Review and take possible action: City of Watertown Flood Control Master Plan adoption

The City of Watertown with its stormwater consultant Ruekert & Mielke has completed a Flood Control Master Plan in an effort to minimize the impacts of future potential flooding to public infrastructure and private property. A city-wide stormwater system inventory was completed in the field between 2019 and 2021 to verify and capture the existing system; computer modeling was completed for the storm sewer system (18 inches and larger) under the 10-year, 100-year and 500-year storm events to predict the extent of flooding in defined drainage areas.

The Flood Control Master Plan resulted in conceptual recommendations with cost estimates for 15 priority drainage areas in the City strategically utilizing traditional stormwater improvements such as detention ponds (surface or underground), pipe upsizing, green infrastructure and pump stations. The overall cost for full implementation of the Flood Control Master Plan (in 2023 dollars) is between $26,000,000 - $31,000,000. The Engineering Division seeks adoption of the Flood Control Master Plan and approval to move into implementation of the plan.

The Flood Control Master Plan can be found here: Watertown Flood Control Master Plan - OneDrive (sharepoint.com)

Enclosed:

1. Draft Resolution
2. Flood Control Master Plan Recommendations

APPENDIX A

Table 1. Submodel Prioritization Comparison

Submodel Abbreviation	Submodel Name	Location	Frequency of Surface Flooding			City GIS Flooding		Depth of Flooding / Severity			Land Use			Model Score	Number of Structures Flooded	Sanitary Sewer I/I Impacts			Prior Damage Costs			Community Impacts			Community Score	Total Priority Score	Lift Station	Arterial Roads	City Notes (City comments/ R-M comments)	Alternatives					
			500-yr	100-yr	10-yr	No	Yes	0.0' - 1.0'	1.1' - 2.0'	2.1' +	Open	Commercial	Residential			None	Moderate	Significant	None	Moderate	Significant	None	Moderate	Significant						Upsize Pipe	Storage	Alleys	Divert Flow	Rain Barrels	Sub-18-inch
			1	2	3	1	2	1	2	3	1	2	3			0	2	4	0	2	4	0	2	4											
MRR5.1	Commerce Dr. Creek	Chandwick Dr. between West St and Commerce Dr.			3		2			3			3	54	22										22	76			**Red Fox Ct low spot and Commerce Drive accessibility.**	X	X		X	X	X
MRR5.2	Deer Trail	Milford St between Commerce Dr. and Johnson St.			3		2			3			3	54	28								2		30	84		X	South St. is a main thoroughfare to Milford St. & floods during heavy rain events. At least 1 lane to remain open during 500-year event./ **South St. between Maplecrest Ln and Milford St. Low spot at Winnebago Way**.	X				X	
MRR5.3	Bethseda	Hoffman Rd between Fairview Dr. and Hoffman Dr.			3		2	1				2		12	0									4	4	16		X	Fairview Dr./Hoffman Rd. are access to WWTP; multiple feet of flooding recorded in 2018. At least 1 lane to remain open in 500-year events.	X					X
MRR5.5	Downstream Watertown HS Creek	S. Monroe St. between Elm St. and Layfayette St.			3		2			3		2		36	43									43	79			**Continue piping of creek between parking lot outfall and Bernard St.**	X					
MRR5.6	Downstream Dayton Creek	West St. between Dayton St. and Milford St.			3	1				3	1			9	10									10	19			**Dayton St. access.**	X					X
MRR5.8	Upper Dayton Creek	Louisa St between Welsh Rd. and Elba St.			3		2		2				3	36	15								2		17	53		X	Drainage ditch in backyards between Meadow and Clement overtops in heavy rain events; high frequency of maintenance needed; downstream Dayton St. is a main North-South route crossing the RR tracks; at least 1 lane to remain open during 500-year events/ **Underground storage upstream and upsizing downstream**.	X	X				X
MRR5.10	Brandt-Quirk Creek	Carriage Hill Dr. between Endeavour Dr to W. Main St.			3		2			3			3	54	15									4	19	73		X	W. Main St. Viaduct under RR Tracks is impassable in heavy events; at least 1 lane to remain open during 500-year event.	X	X				X
MRR6.1	North of RR	Residential between Jefferson and Railroad tracks			3	1				3			3	27	72			4			4			4	84	111			Homes around 7th, 8th Streets get flooded; some basement back-ups reported/ **Intersection of 9th and Dodge sees overland flooding into adjacent yards.**	X	X	X			X
MRR6.2	Mary St.	Mary St. between Dakota St. and Terry Ln			3		2			3		2		36	36					2				4	42	78			Twelfth St. is a main arterial crossing RR tracks; at least 1 lane to remain open during 500-year events. Manhole cover on Sunset routinely pops off structure during heavy rain events. Hart St. routinely floods - impassable to trucks and other vehicles. WE Energies property has historically flooded, but private storm was up-sized in 2020. High groundwater.	X	X				X
MRR6.3	North ALDI	River Dr between Railroad Tracks and William St.			3		2	1					3	18	4								2		6	24		X	Residential areas flood in large rain events. / **Main area of concern is along River Drive and at the intersection of River Drive and 3rd Street**.	X	X				X
MRR6.4	ALDI Creek	Franklin St from Rock River to Lakeside Terrace			3	1				3			3	27	9								2		11	38			Intersection of Mary & Neenah floods in heavy rain events. Stormwater ditch upstream of Utah Street floods regularly. Storm pipe runs under Schurz School property.	X	X				X
MRR6.6	Lake Victoria	Franklin St from Dakota St to 10th St.			3	1		1					3	9	5								2		7	16	X		Lakeside Terrace historically floods in heavy rain events; storm improvements have been made in the past. High groundwater? French Drains here.	X					X
MRR6.8	Airport Creek	Church St between Jefferson Rd and Granit Ln.			3	1				3			3	27	3								2		5	32			Lauren Lane area floods in heavy rain events. At least 1 lane to remain open during 500-year event.	X					X
SSL1.3	Drain South to Rock	Residential between 2nd St and 4th St.			3		2			3			3	54	31									4	35	89		X	Spaulding St is a main road on north side of City crossing Silver Creek; at least 1 lane to remain open durign 500-year event; Spaulding & Center is a known flooding problem area/ **Spaulding St and N 2nd St. intersection and Spaulding and Center St. intersection**.	X	X				X
SSL1.5	Drain to HWY 16	Medowbrook Dr between 4th St. and Memrial Dr.			3		2		2			2		24	2									4	6	30			Main Route to Hospital & Medical Facilities; Frontage Road to have at least 1 lane passable during 500-year event.	X	X				X

Sanitary Sewer I/I impacts example definition: Moderate would represent an incrase of flows at the treatment plant and Significant would represent flow backs into basements.
Prior Flooding Cost example definition: Moderate would represeent costs up to $20,000 and Significant would represent costs above $20,000.
Community Impacts example definition: Moderate would represent an inconvenience to community events, included but not limited to markets and traffic detours, and Significant would represent road closures for multiple days.
Rain Barrels: Rain barrels are a green infrastructure alternative that can be applied to all areas with heavy residential and industrial land use. It was not modeled in all alternatives because in the larger rain events the reduction effects are small. Rain barrel assumptions included one house would have a 55-gallon drum as a rain barrel.

APPENDIX B

AREA OF CONCERN SUMMARIES AND RECOMMENDATIONS

City of Watertown

City-Wide Flood Study Analysis, 2023

MRR5.1

Drainage Area Location: MRR5.1. Existing residential subdivision in the vicinity of Red Fox Court cul-de-sac. Near the regional dry pond storm water facility, Bielinski Pond.

Project Purpose: During large storm events, flooding occurs at the Red Fox Court cul-de-sac. Flooding extends in all directions from the cul-de-sac. The purpose of this recommendation is to reduce flooding in this area of concern.

Google Maps aerial view (2023)

Flooding on Red Fox Court (2018)

Project Description: The proposed improvements consist of new storm sewer in combination with green infrastructure best management practices (BMPs) at residential properties, and storm sewer pipe upsizing. The proposed storm sewer starts at Red Fox Court and discharges to the existing Bielinski Pond for a total of 600 lineal feet of new 42 to 48-inch storm sewer pipe. The proposed green infrastructure is estimated for the existing six properties on the Red Fox Court cul-de-sac. There are different options for green infrastructure BMPs, but rain barrels and rain gardens capture similar storm water runoff storages for residential properties. Pipe upsizing would take place along the storm sewer mains in Chadwick Drive.

Flood Reduction: Flooding depths were reduced in the cul-de-sac for the 10, 100, and 500-year recurrence storm events as shown in the table below.

	Existing Conditions Max Flooding Depth (ft.)	Proposed Conditions Max Flooding Depth (ft.)
10-Year	2.33	0.22
100-Year	2.60	0.58
500-Year	2.79	2.45

Construction Cost Estimate: $450,000

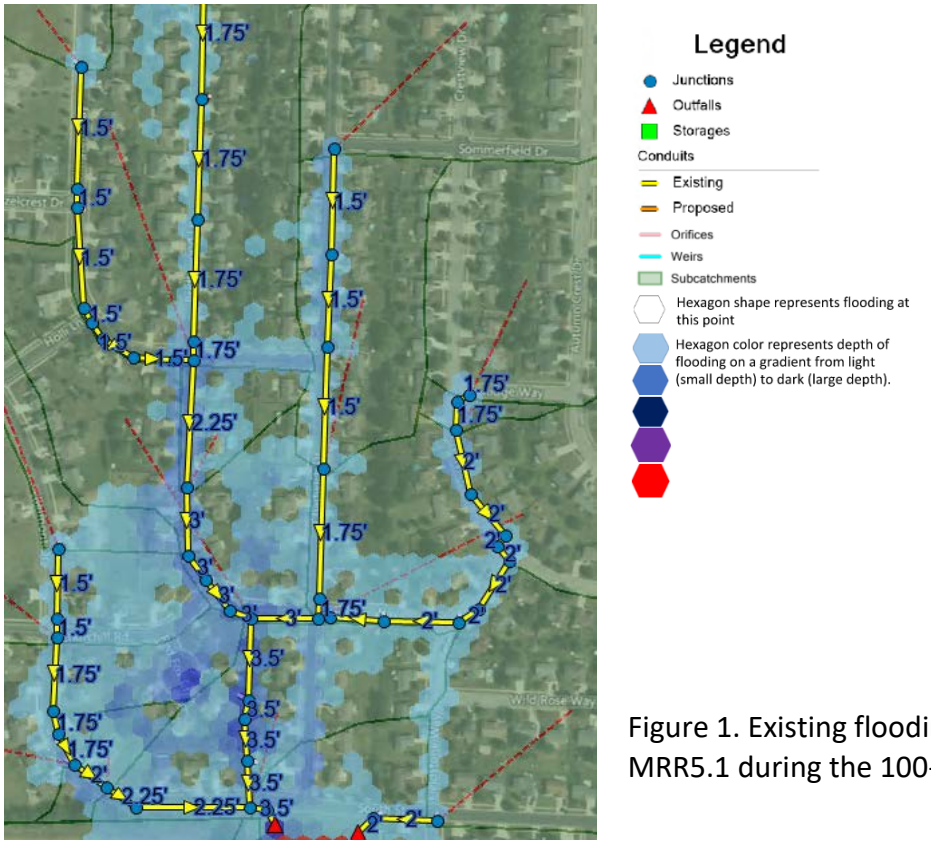


Figure 1. Existing flooding conditions in MRR5.1 during the 100-year storm event.

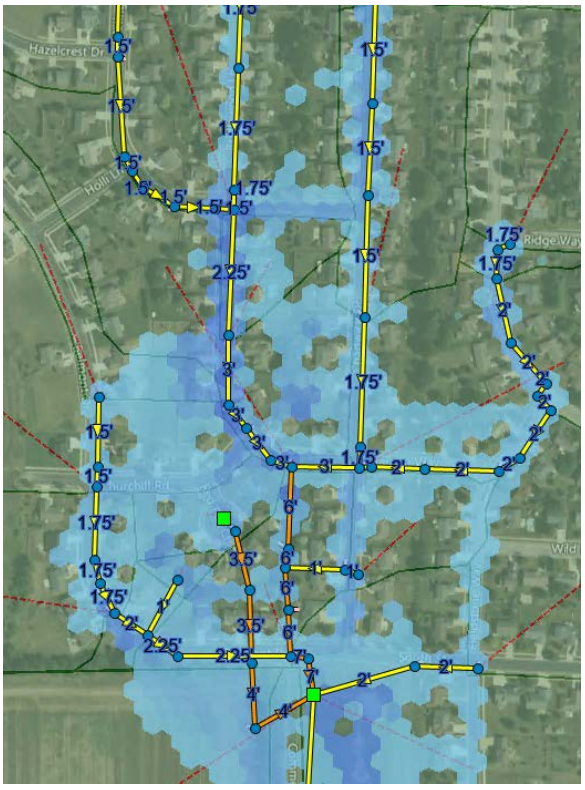


Figure 2. Flooding conditions after implementation of recommendations during the 100-year storm event in Red Fox Court. The location of the proposed new storm sewer and upsizing is shown as orange. Green infrastructure BMP is shown as a light green.

City of Watertown

City-Wide Flood Study Analysis, 2023

MRR5.2

Drainage Area Location: MRR5.2. Existing residential subdivision in the vicinity of South St. and Winnebago Way.

Google Maps aerial view (2023)

Project Purpose: During large storm events, flooding occurs at the intersection of South St. and Winnebago Way. Flooding extends in all directions of the intersection. The purpose of the recommendation is to reduce flooding in this area of concern.

Project Description: The proposed improvements consist of pipe upsizing in combination with green infrastructure best management practices (BMPs) at residential properties. Pipe upsizing would be approximately 1,500 lineal feet of 36 to 54-inch storm sewer main on South St. and approximately 1,800 lineal feet of 43x68-inch to 48x76-inch storm sewer main on Grey Fox Run. The proposed green infrastructure BMP is estimated for approximately 80% of the properties upstream to participate. There are different options for residential use green infrastructure BMPs, but rain barrels and rain gardens capture similar storm water runoff storage for residential properties.


Flooding on 500 block of South Street (2018)


Flooding on 500 block of South Street (2018)

Flood Reduction: Flooding depths were reduced in the roadway intersection for the 10, 100, and 500-year recurrence storm events as shown in the table below.

	Existing Conditions Max Flooding Depth (ft.)	Proposed Conditions Max Flooding Depth (ft.)
10-Year	1.69	0.64
100-Year	2.05	0.70
500-Year	2.30	0.75

Construction Cost Estimate: $1.3 Million

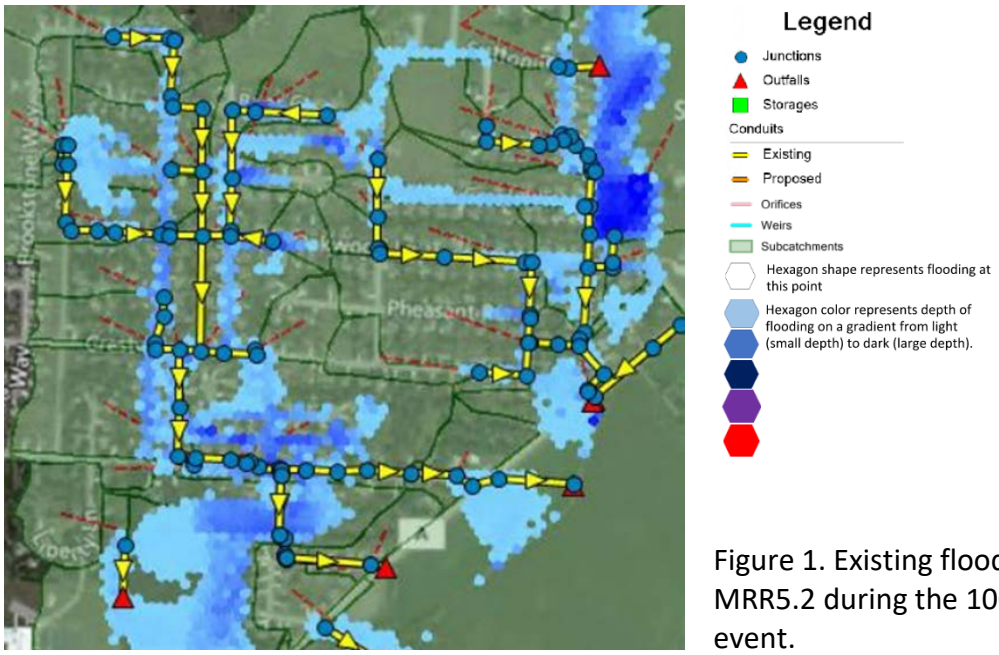


Figure 1. Existing flooding conditions in MRR5.2 during the 100-year storm event.

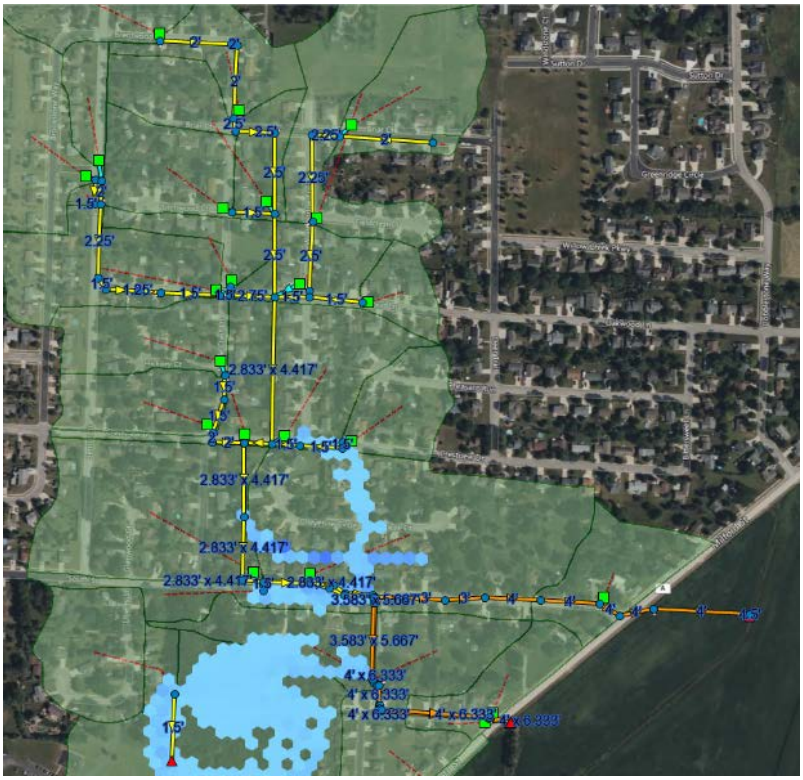


Figure 2. Flooding conditions after implementation of recommendations during the 100-year event at the intersection of South St. and Winnebago Way. The locations of proposed pipe upsizing are in orange. Green infrastructure BMPs are in light green.

City of Watertown

City-Wide Flood Study Analysis, 2023

MRR5.3 & MRR5.5

Drainage Area Location: MRR5.3 & MRR5.5. Existing commercial development along the west shore of the Rock River. The outfalls along Hoffman and Fairview Drives. The confinement of the open channel from Union Park to Bernard Street through existing commercial and industrial development.

Google Earth aerial view (2023)

Project Purpose: The intersection of Hoffman Dr. and Fairview Dr. is a natural low spot in comparison to the surrounding roads and properties. Hence when there is a large rain event, a lot of stormwater from the overland flow or from surcharging manholes drains to this location. The daylight of the storm sewer system near the Rose Garden Restaurant is confined by Bernard Street before the storm water can continue downstream to outfall to the Rock River.

Project Description: The existing storm sewer outfalls are undersized. Increasing the capacity of the system to the immediately upstream of the outfalls to assist with the flooding. Continuing the piped system from the Pick N Save parking lot to Bernard Street would minimize the storm water confinement between the parking lot and Bernard Street. Pipe upsizing would take place along the south side of Hoffman Drive as well as the outfalls under Hoffman Dr. and Fairview Dr.


Flooding Rose Garden Restaurant (2018)


Flooding at the intersection of Hoffman and Fairview Drives (2018)

Flood Reduction: Flooding depths were reduced at the Fairview and Hoffman Dr intersection for the 10-, 100-, and 500-year rain events as shown in the table below.

	Existing Conditions Max Flooding Depth (ft.)	Proposed Conditions Max Flooding Depth (ft.)
10-Year	0.67	0.22
100-Year	0.98	0.31
500-Year	1.13	0.39

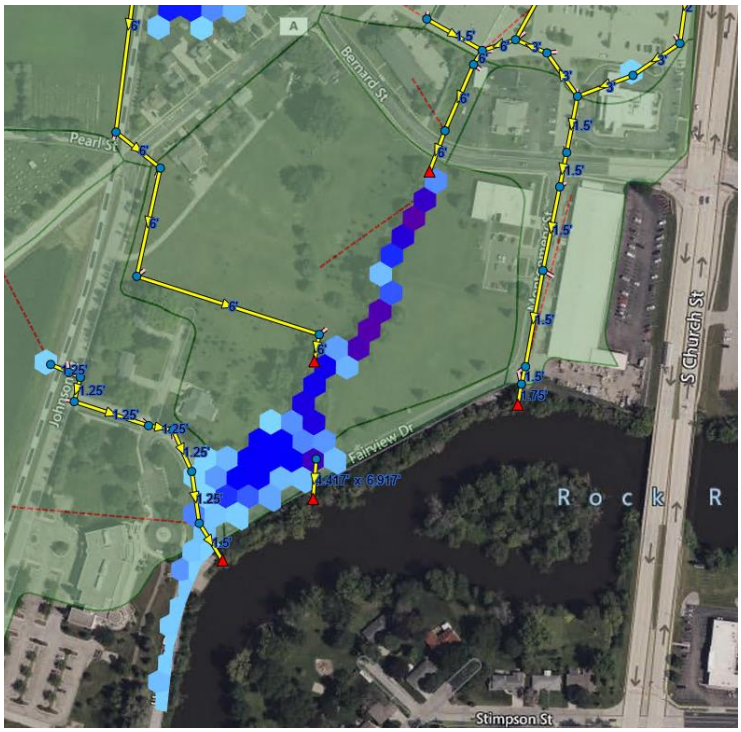
City of Watertown

City-Wide Flood Study Analysis, 2023

MRR5.3 & MRR5.5

<u>Project Elements</u>: The project would include the upsizing of pipes and the corresponding road and lawn restoration. Existing drainage pathways and grading would remain.

<u>Construction Cost Estimate</u>: $395,000-$420,000



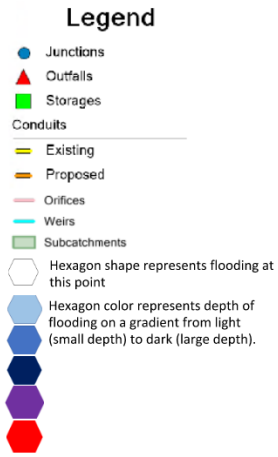


Figure 1. Existing flooding conditions during the 100-year event. Along Fairview Dr. the maximum flooding depth is 1.13 ft.

Figure 2. Flooding conditions after implementation of recommendations during the 100-year event at the intersection of Hoffman and Fairview Drives. Maximum flooding depth of 0.31 ft in this area of concern.

City of Watertown

City-Wide Flood Study Analysis, 2023

MRR5.6

Drainage Area Location: MRR5.6. Existing industrial properties in the vicinity of the intersection of Dayton St. and West St.

Project Purpose: During large storm events, flooding occurs along Dayton St. Flooding extends north and south along the road. Dayton St. is a main north-south road for the neighborhoods north of State Highway 19. The purpose of any improvement would be to reduce flooding depths to safe levels along Dayton St. in this area.

Google Maps aerial view (2023)

Google Street view of WisPAK drive main area of concern (2013)

Project Description: The proposed improvements consist of a storm water detention facility at the existing WisPAK site east of Dayton St, approximately 1,100 feet north of the intersection of Dayton St. and West St. The proposed facility has a proposed volume of 1.8 acre-feet. The outlet of the storage connects back into the existing storm sewer in Dayton St.

Flood Reduction: Flooding depths were reduced in the roadway for the 10-, 100-, and 500-year recurrence storm events as shown in the table below.

	Existing Conditions Max Flooding Depth (ft.)	Proposed Conditions Max Flooding Depth (ft.)
10-Year	1.81	0
100-Year	2.10	0.16
500-Year	2.26	1.48

Construction Cost Estimate: $130,000

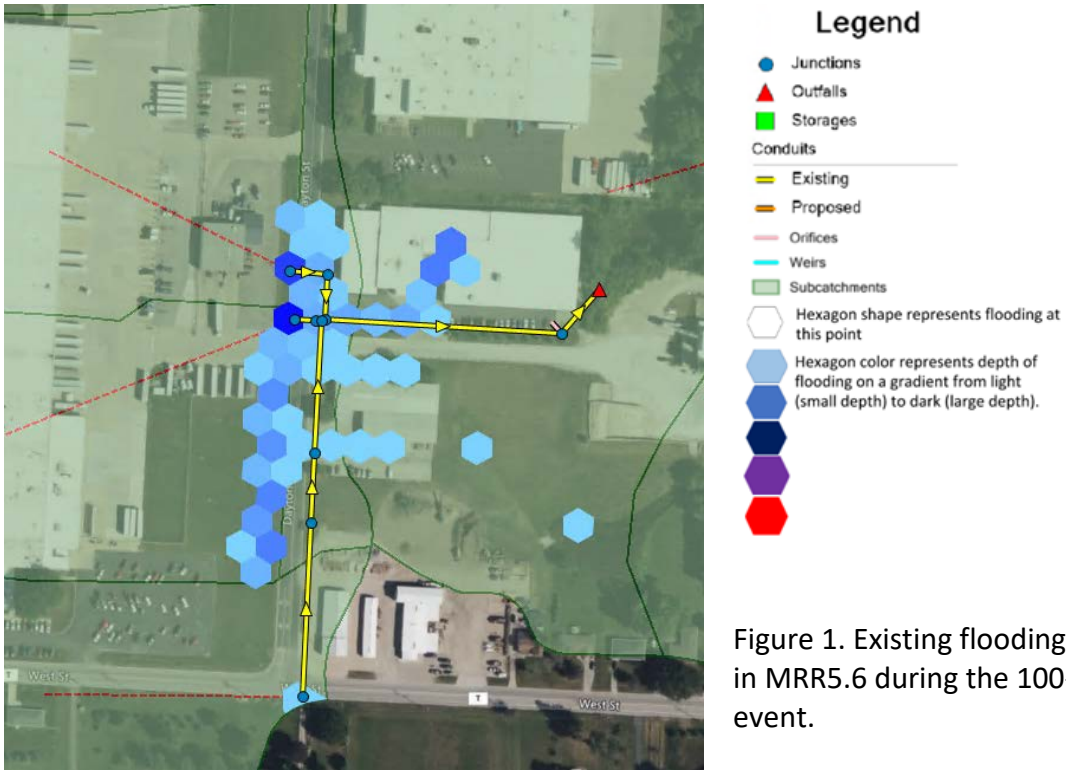


Figure 1. Existing flooding conditions in MRR5.6 during the 100-year storm event.

Figure 2. Flooding conditions after implementation of recommendations during the 100-year storm event along Dayton Street. The proposed storm water storage at WisPAK is shown in light green. The increase of flooding along West St. (CTH T) is the result of the pipes less than 18-inches included in the proposed conditions, however this flooding depth of 3.5 inches is not anticipated to be a concern during the 100-year event. The flooding along West St. is 0.3 feet within the street. The flooding area of concern is further north on Dayton St. where the flooding crosses the road.

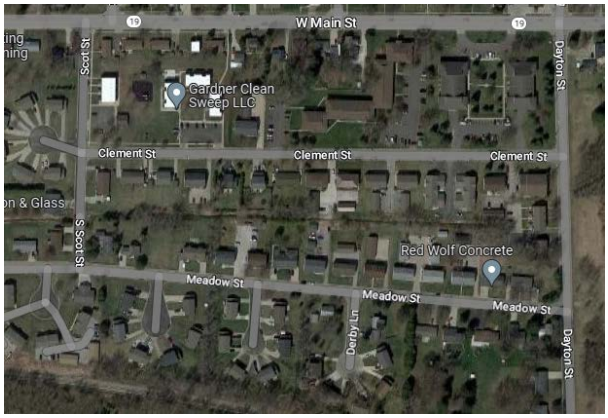
City of Watertown

City-Wide Flood Study Analysis, 2023

MRR5.8

Drainage Area Location: MRR5.8. Existing residential subdivision in the vicinity of Clement St. and Meadow St. The open channel creek between Clement St. and Meadow St. has a depth on average of 2.5-feet.

Google street view on Scot St. looking east (2019)



Google Maps aerial view (2023)

Project Purpose: During large storm events, flooding occurs in the open channel in the backyard of homes along the south side of Clement St. and north of Meadow St. The flooding extends out of the channel banks into the backyards. The purpose is to reduce flooding in this area of concern to allow vehicles to safely pass.

Project Description: The proposed improvements to the area consist of pipe upsizing in combination with potential underground storage at an undeveloped site or beneath a parking lot, west of the open channel flow. Pipe upsizing is approximately 200 linear feet of 58x91-inch storm pipe under Dayton St. Storm. Sewer reconfiguration is also recommended for approximately 500 lineal feet of 18 to 30-inch storm sewer main along Clement St. The proposed underground storage has a volume of approximately 1.7 acre-feet. The outlet of the storage connects back into the parallel storm sewer system south of W. Main St.

Flood Reduction: Flooding depths were reduced in the backyard channel for the 10, 100, and 500-year recurrence storm events as shown in the table below.

	Existing Conditions Max Flooding Depth (ft.)	Proposed Conditions Max Flooding Depth (ft.)
10-Year	1.60	0.14
100-Year	1.60	0.65
500-Year	3.51	1.16

Construction Cost Estimate: $500K

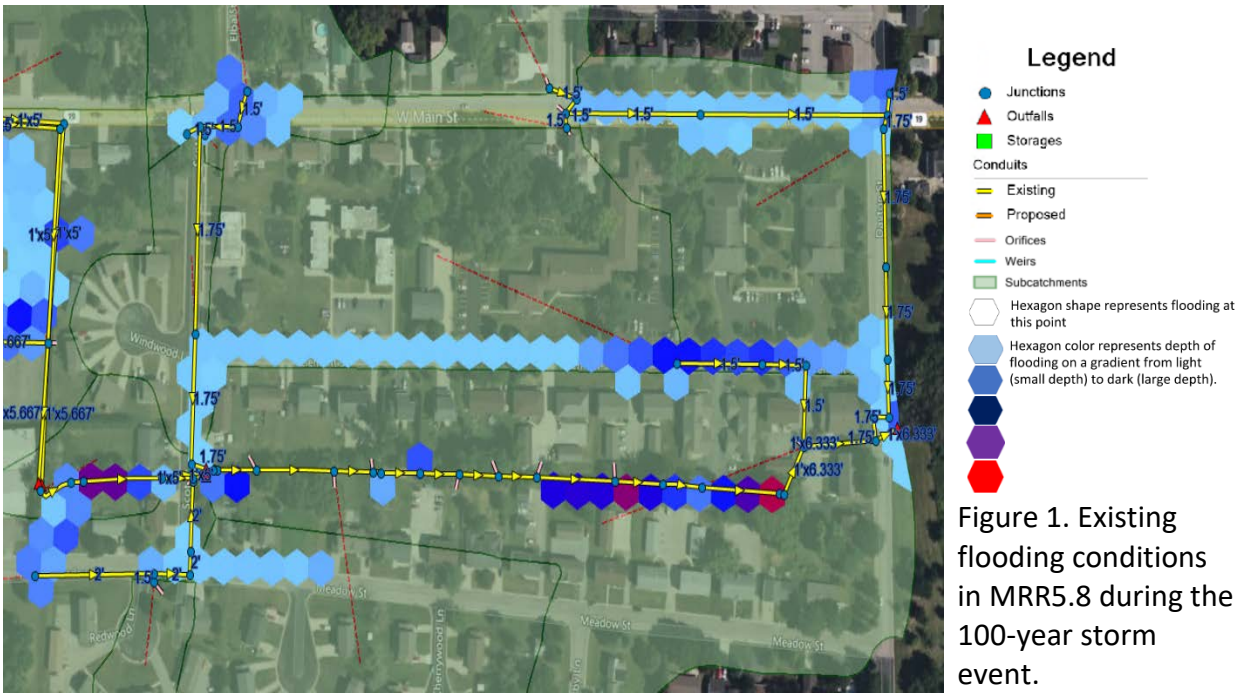


Figure 1. Existing flooding conditions in MRR5.8 during the 100-year storm event.

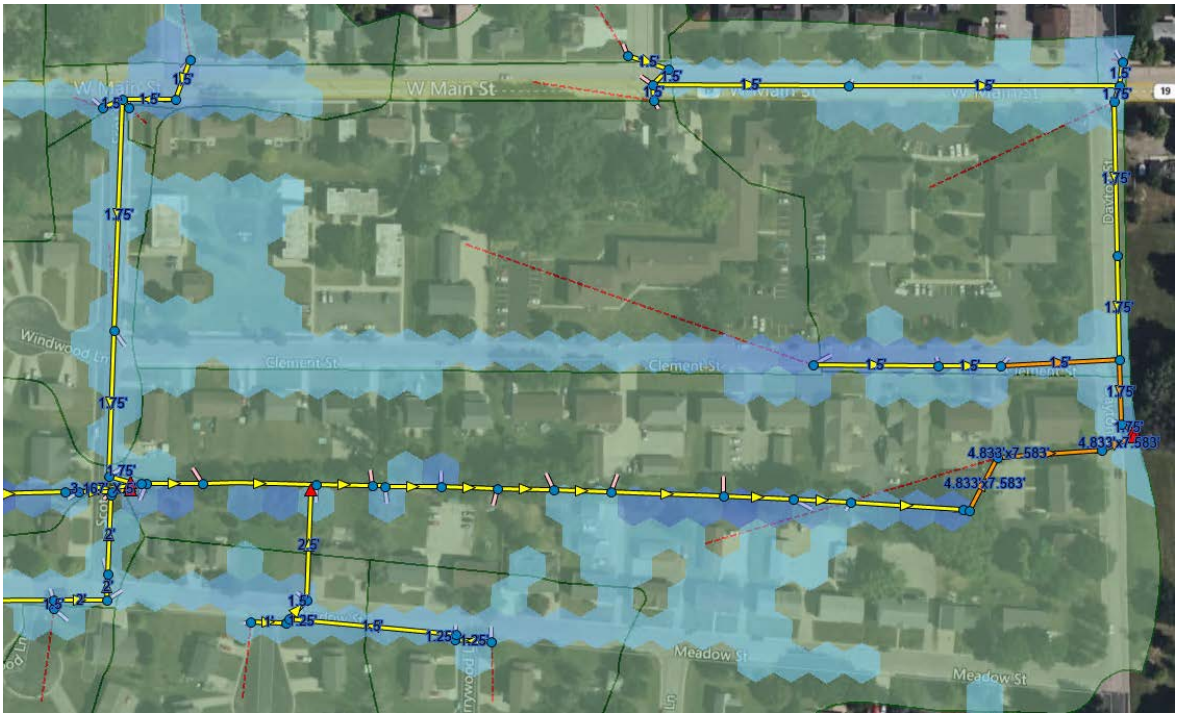


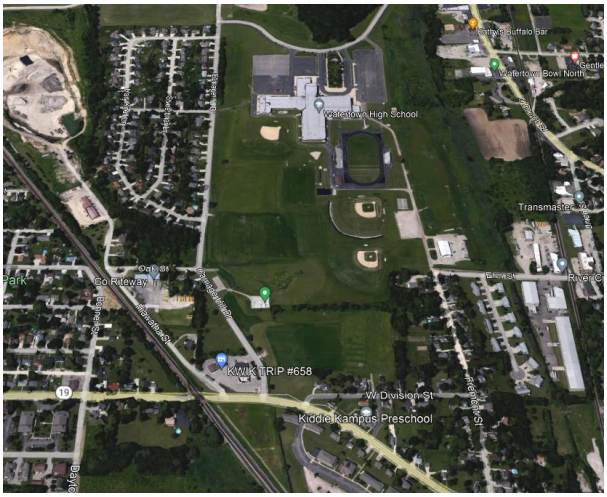
Figure 2. Flooding conditions after implementation of recommendations during the 100-year event along the open channel between Clement St. and Meadow St. Location of proposed upsizing and storm sewer reconfiguration are in orange. The underground storage is shown in light green. The increase in flooding along Meadow St. is the result of the addition of sub-8-inch pipes added to the proposed conditions. Flooding depth along Meadow St averages 6-inches within the street limits.

City of Watertown

City-Wide Flood Study Analysis, 2023

MRR5.10

Drainage Area Location: MRR5.10. Existing residential, commercial, and institutional development in the area of the intersection of Main Street (STH 19) and Carriage Hill Drive.



Carriage Hill Drive, Main Street, and Watertown High School-Google Area (2023)

Project Purpose: During large storm events, flooding occurs throughout this area. The most critical flooding occurs at the intersection of Main Street and Carriage Hill Drive, and just south of Carriage Hill Drive. The purpose of any improvement would be to reduce flooding depths to safe levels along Main Street and Carriage Hill Drive during the 100-Year storm event. Flooding at the intersection also overflows to the west towards the viaduct.

Project Description: The proposed improvements to the area include a wet-detention basin at the existing skate park along the east side of Carriage Hill Drive approximately 750 feet north of the intersection of Main Street and Carriage Hill Drive. This wet detention basin has a proposed volume of 2.3 acre-feet. Also included is a proposed wet-detention basin east of Carriage Hill Drive and north of Division Street on an existing open parcel approximately 700 feet east of Carriage Hill Drive. The proposed wet-detention basin behind the lots on Division Street has a proposed volume of 26 acre-feet.

Flooding on Main Street at Carriage Hill Drive-Looking West (2018)

Flooding on Main Street at Carriage Hill Drive-Looking East (2018)

This recommendation also includes upsizing the existing storm sewer crossing underneath Main Street, the inclusion of future storage (20 acre-feet) upstream within the City of Watertown Future Growth area, and the provision of a storm water pump station that would pump water from the Main Street Viaduct under the railroad bridge. The total volume estimated to be pumped during the 100-Year storm event is 0.89 MG (Million Gallons). A portable trailer mounted pump may also be an option in lieu of a permanent pump station.

Flood Reduction: This recommendation reduced flooding depths in this intersection and immediately south of the intersection for the 10, 100, and 500-Year recurrence storm events as shown on the following table:

	Existing Conditions Max Flooding Depth (ft.)	Proposed Conditions Max Flooding Depth with Pumping (ft.)	Proposed Conditions Max Flooding Depth without Pumping (ft.)
10-Year	4.23	0.14	0.30
100-Year	4.24	0.33	0.61
500-Year	4.85	0.63	3.03

Construction Cost Estimate:
$5,800,000
$7,500,000 with Storm Water Pumping.

City of Watertown

City-Wide Flood Study Analysis, 2023

MRR5.10

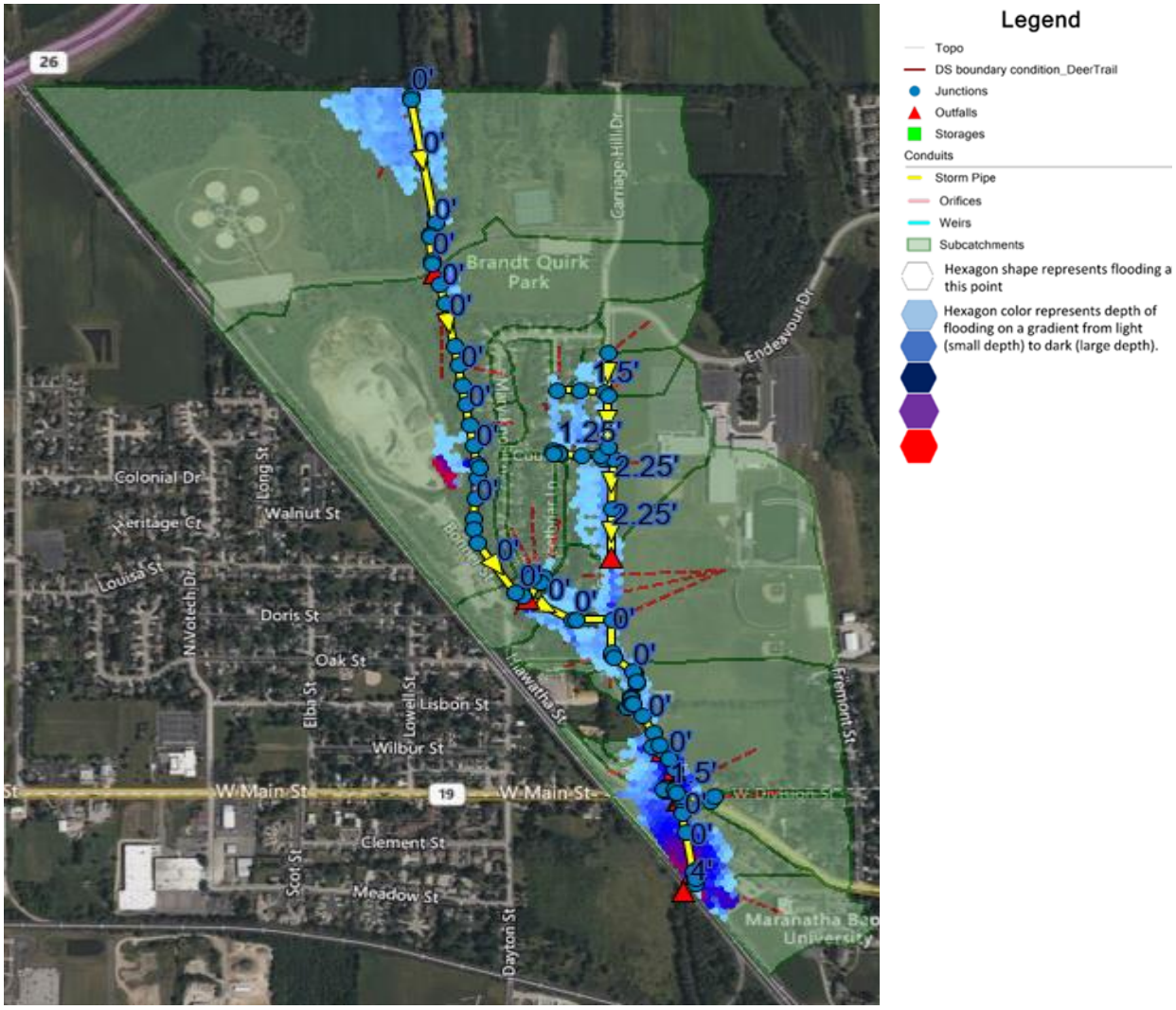


Figure 1. Existing flooding conditions in MRR5.10 during the 100-Year storm event.

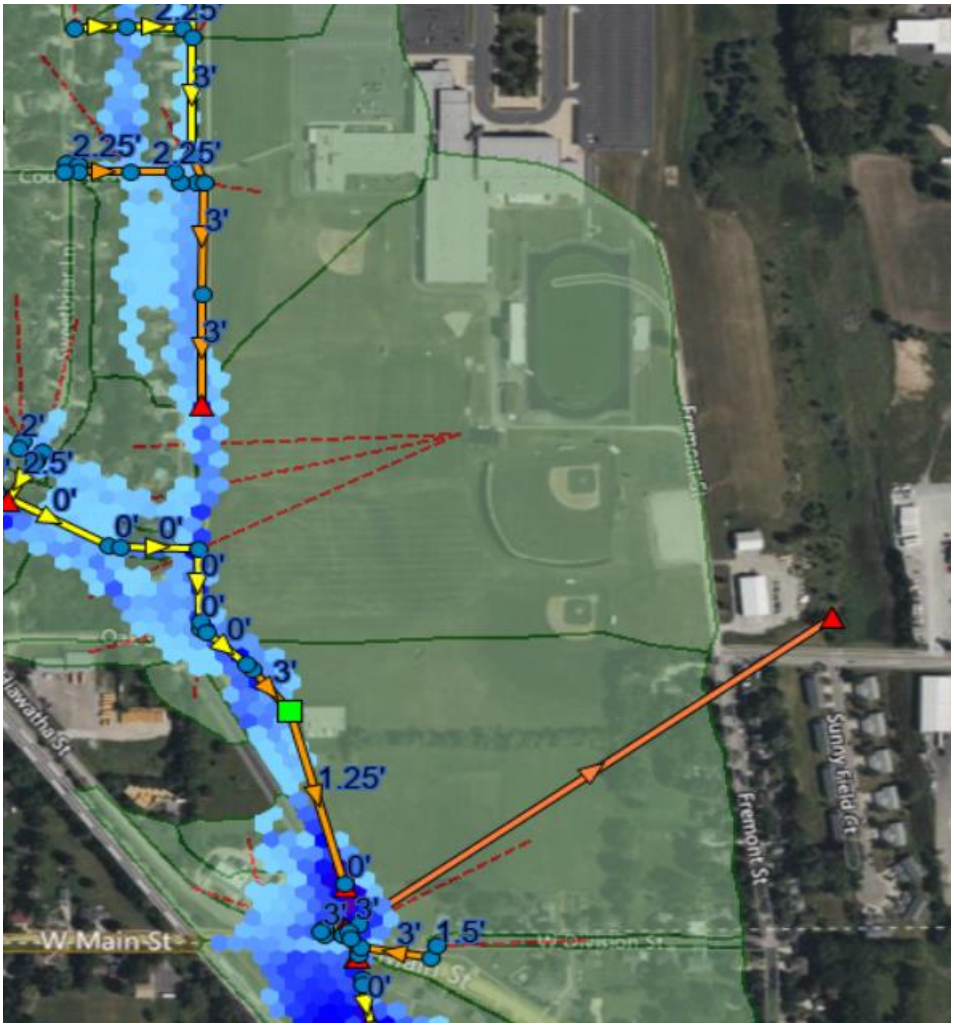


Figure 2. Flooding conditions during the 100-Year storm event after implementation of a wet-detention basin at the existing Skate Park along Carriage Hill Drive, pipe upsizing, and a storm water pump station located at the Main Street Viaduct. The proposed Skate Park wet detention basin is shown in light green. Pipe upsizing areas and the proposed storm water pump station and associated force main are shown in dark orange, however the final force main alignment is to be determined. Approximately 2,400 lineal feet of 15 to 48-inch storm sewer will be provided as part of the proposed upsizing.

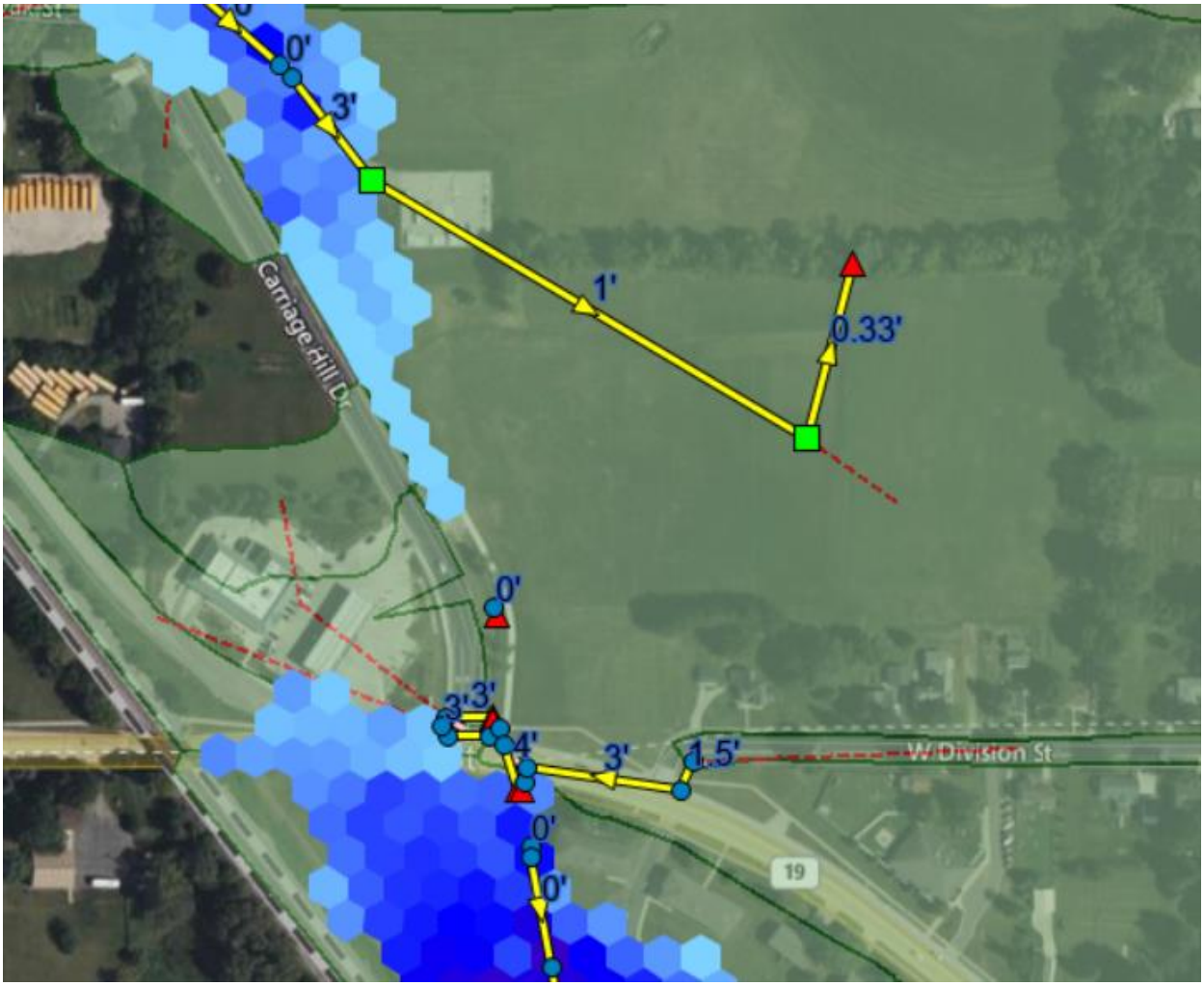


Figure 3. Flooding conditions during the 100-Year Storm Event after implementation of a wet detention basin north of Division Street in addition to the detention basin at the existing Skate Park along Carriage Hill Drive, pipe upsizing, and a storm water pump station located at the Main Street Viaduct. Storage upstream at the Future City Growth Area which was included in the analysis to reduce flows entering the area of the intersection from the north is recommended to be at least 20 acre-feet and could be a restored wetland project or other BMP (Best Management Practice) such as wet detention. The proposed wet detention basins are shown in light green.

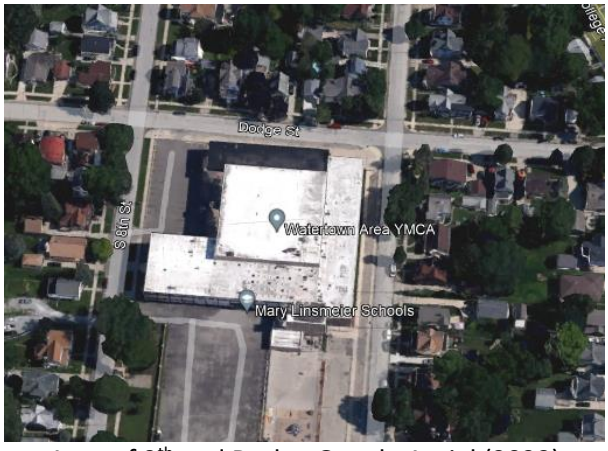
City of Watertown

City-Wide Flood Study Analysis, 2023

MRR6.1

Drainage Area Location: MRR6.1. Existing residential subdivision in the vicinity of 9th Street and Dodge Street.

Project Purpose: During large storm events this area has experienced street flooding extending west and south of the intersection of 9th Street and Dodge Street. The purpose of this recommendation is to reduce flooding at the intersection to allow vehicles to safely pass through this area during a 100-year storm flooding event.



Area of 9th and Dodge Google Aerial (2023)

Project Description: The proposed improvements to the area consist of storm sewer pipe upsizing in combination with potential underground storage at the former YMCA site along Dodge Street between 8th and 9th Street. Pipe upsizing would take place along the storm sewer mains in Dodge Street, Wisconsin Street, and 9th Street. The proposed detention area would have a volume of 1.8 acre-feet. The outlet of the underground storage would connect back into the storm sewer in 9th Street north of the intersection with Wisconsin Street. A storm water pump station is also proposed near the intersection of 9th and Dodge that would convey

Intersection of 9th Street and Dodge Street looking north along 9th (2023)

Intersection of 9th Street and Dodge Street looking west along Dodge Street (2023)

runoff via force main to the proposed storm sewer in Wisconsin Avenue, which drains west to the Rock River. The pump station includes a wet well and force main for conveyance west to the Rock River. The wet well would be at the southwest corner of the intersection of 9th Street and Dodge Street. A portable trailer mounted pump may also be an option in lieu of a permanent pump station. Storm water pumping on its own will not completely solve flooding issues at this location, pumping would be used in combination with other options such as stormwater storage.

City of Watertown

City-Wide Flood Study Analysis, 2023

MRR6.1

Flood Reduction: Flooding depths were reduced in the intersection of 9th Street and Dodge Street during the 10, 100, and 500-Year recurrence storm events, implementing the aspects described in the project description and as shown in the table below:

	Existing Conditions Max Flooding Depth (ft.)	Proposed Conditions Max Flooding Depth with Pumping (ft.)
10-Year	2.07	0.00
100-Year	3.24	0.18
500-Year	4.30	0.51

Construction Cost Estimate:
$4,000,000,
$5,000,000 with Storm water Pumping.

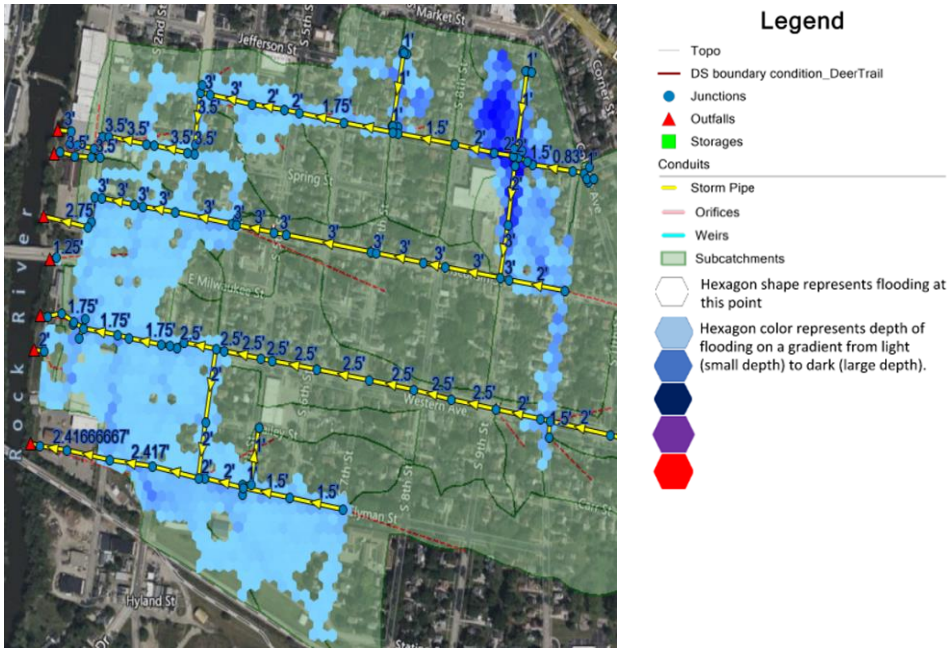


Figure 1. Existing flooding conditions in MRR6.1 during the 100-Year Storm Event.

Figure 2. Flooding conditions after implementation of recommendations during the 100-Year Storm Event. The locations of proposed pipe upsizing are shown in orange. The storm water pump station with its associated force main is in dark green, however the alignment shown is for illustrative purposes only as the pipe would likely follow the road right-of-way. Pipe upsizing areas and the proposed storm water pump station and associated force main are shown in dark orange.

Approximately 6,300 lineal feet of 30 to 60-inch storm sewer will be relayed as part of the proposed upsizing.

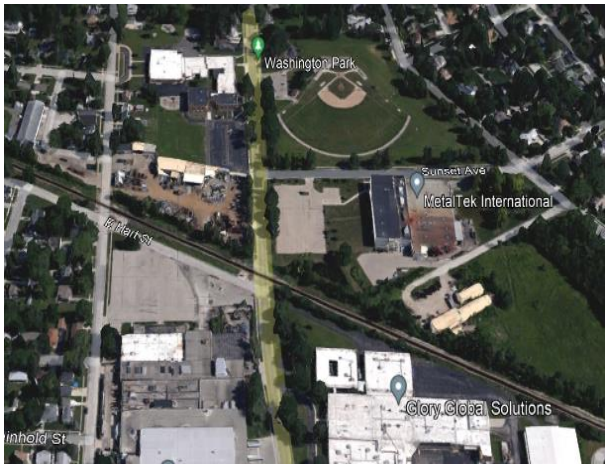
Figure 3. Proposed underground storage location and proposed storm sewer routing adjustment.

City of Watertown

City-Wide Flood Study Analysis, 2023

MRR6.2

Drainage Area Location: MRR6.2. Hart Street between 9th and 12th Streets.



Project Area-Google Aerial (2023)

Project Purpose: During large storm events this area has flooded, with the most critical flooding occurring along Hart Street, and in the residential and industrial neighborhoods to the west and south of the intersection of Hart Street and 12th Street. This project will reduce flooding in the area.

Project Description: The proposed improvements include pipe upsizing in combination with potential underground storage in the area near the Western Corporation property located between 11th Street and 12th Street, and underground storage at Washington Park located at the northeast corner of 12th Street and Sunset Drive. In addition, the recommendation includes a storm water pump station and associated force main to convey storm water runoff to the west towards the Rock River. The proposed storage at Washington Park would have a volume of approximately 8.0 acre-feet. For the detention in the area of the Western Corporation, the proposed detention will have a volume of approximately 8.3 acre-feet. The storm water pump station includes a wet well and a force main for conveyance to the Rock River. The proposed pump station would be along Hart Street just west of 12th Street. A portable trailer mounted pump may also be an option in lieu of a permanent pump station. Storm water pumping on its own will not completely solve flooding issues at this location, pumping would be used in combination with other options such as stormwater storage.


Flooding on Sunset Avenue (2018)


Flooding on Hart Street (2018)

Flood Reduction: Flooding depths were reduced in the area of the intersection of 12th Street and Hart Street for the 10, 100, and 500-Year recurrence storm events as shown in the table on the following page:

	Existing Conditions Max Flooding Depth (ft.)	Proposed Conditions Max Flooding Depth with Pumping (ft.)
10-Year	2.06	0.07
100-Year	2.77	0.30
500-Year	3.13	0.61

Construction Cost Estimate:
$5,500,000
$8,000,000 with Storm water Pumping.

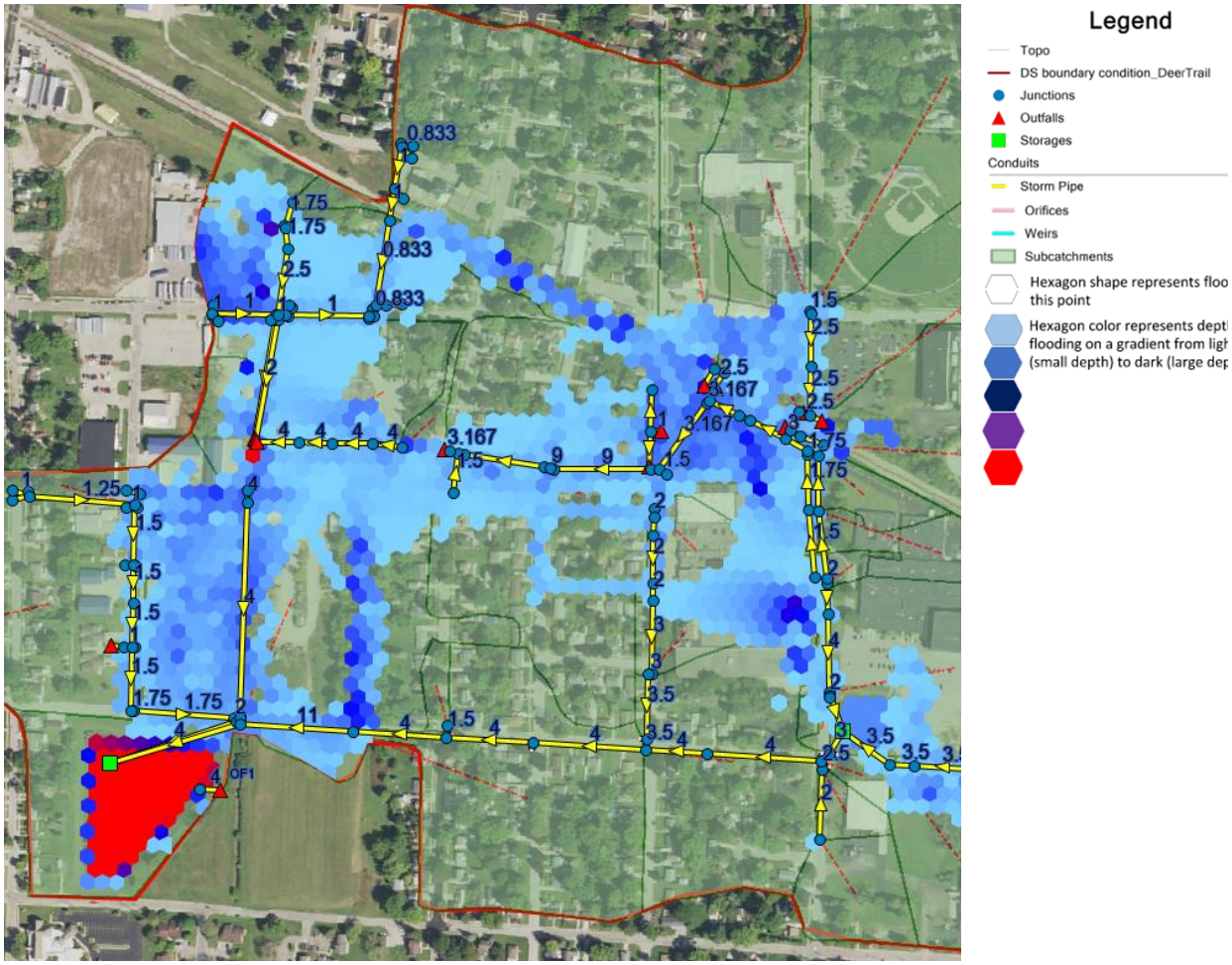


Figure1. Existing flooding conditions in MRR6.2 during the 100-Year Storm Event.

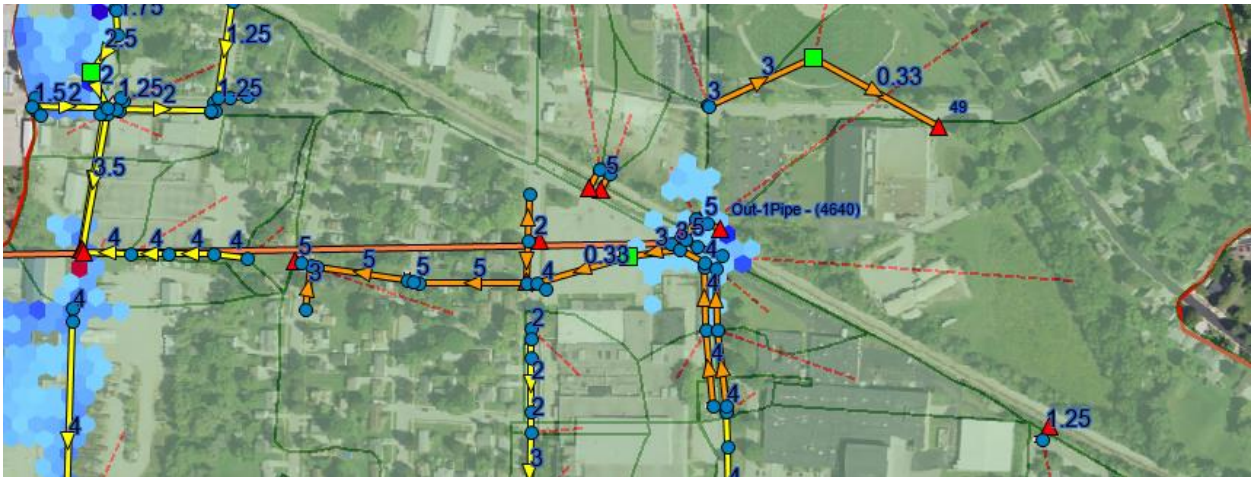


Figure 2. Flooding conditions after implementation of recommendations during the 100-Year Storm Event in 12th Street and Hart Street. The locations of proposed storm pipe upsizing are in orange. Storage at Washington Park and in the area of Western Corporation are in light green, the storm water pump station with associated force main is in dark orange. Approximately 3,700 lineal feet of 24-inch to 60-inch storm sewer will be provided as part of the proposed upsizing.

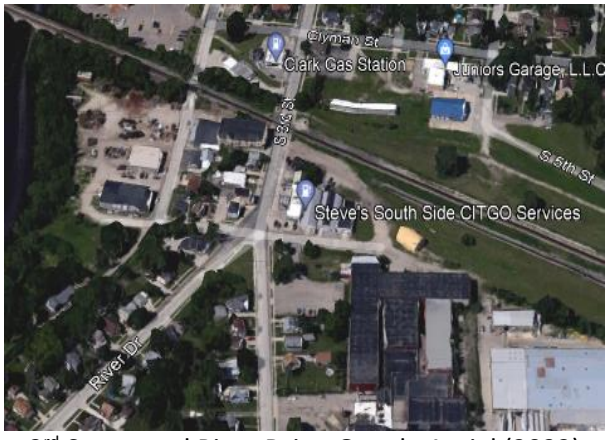
City of Watertown

City-Wide Flood Study Analysis, 2023

MRR6.3

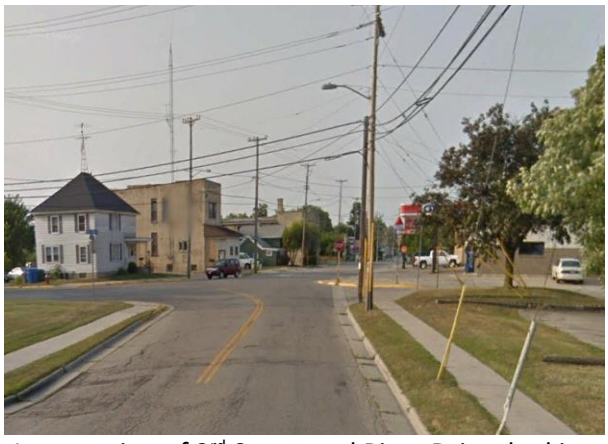
Drainage Area Location: MRR6.3. Existing residential development with some mixed industrial properties in the vicinity of 3rd Street and River Drive.

Project Purpose: During large storm events, flooding occurs at the intersection of 3rd Street and River Drive. Flooding extends in all directions of the intersection. The purpose of the recommendation presented here is to reduce flooding in this area to the maximum extent possible.

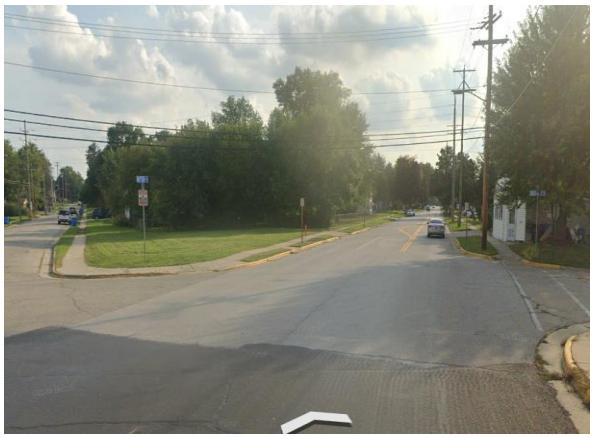


3rd Street and River Drive-Google Aerial (2023)

Project Description: The proposed improvements consist of pipe upsizing in combination with a potential storm water detention facility at an undeveloped site just south of the existing railroad and east of 3rd Street. Pipe upsizing would take place along the storm mains in River Drive, Hyland Street, and 3rd Street. Lateral sizing is also recommended. The proposed detention facility will have a storage volume of 1.8 acre-feet, can improve aesthetics, and can be used for educational purposes. This could be a type of constructed wetland system with native plants, trails and educational signage.



Intersection of 3rd Street and River Drive, looking north on 3rd Street (2023)



Intersection of 3rd Street and River Drive, looking south along River Drive (2023)

Runoff conveyed within the existing storm sewer in Mary Street would drain into the proposed facility, while the outlet of the storage facility connects into the existing storm sewer in 3rd Street just south of the intersection with River Drive.

Flood Reduction: Flooding depths were reduced in the roadway at the intersection of 3rd Street and River Drive for the 10, 100, and 500-Year storm events as shown in the table below.

	Existing Conditions Max Flooding Depth (ft.)	Proposed Conditions Max Flooding Depth (ft.)
10-Year	0.40	0.00
100-Year	0.64	0.00
500-Year	1.23	0.22

Construction Cost Estimate:
$1,500,000

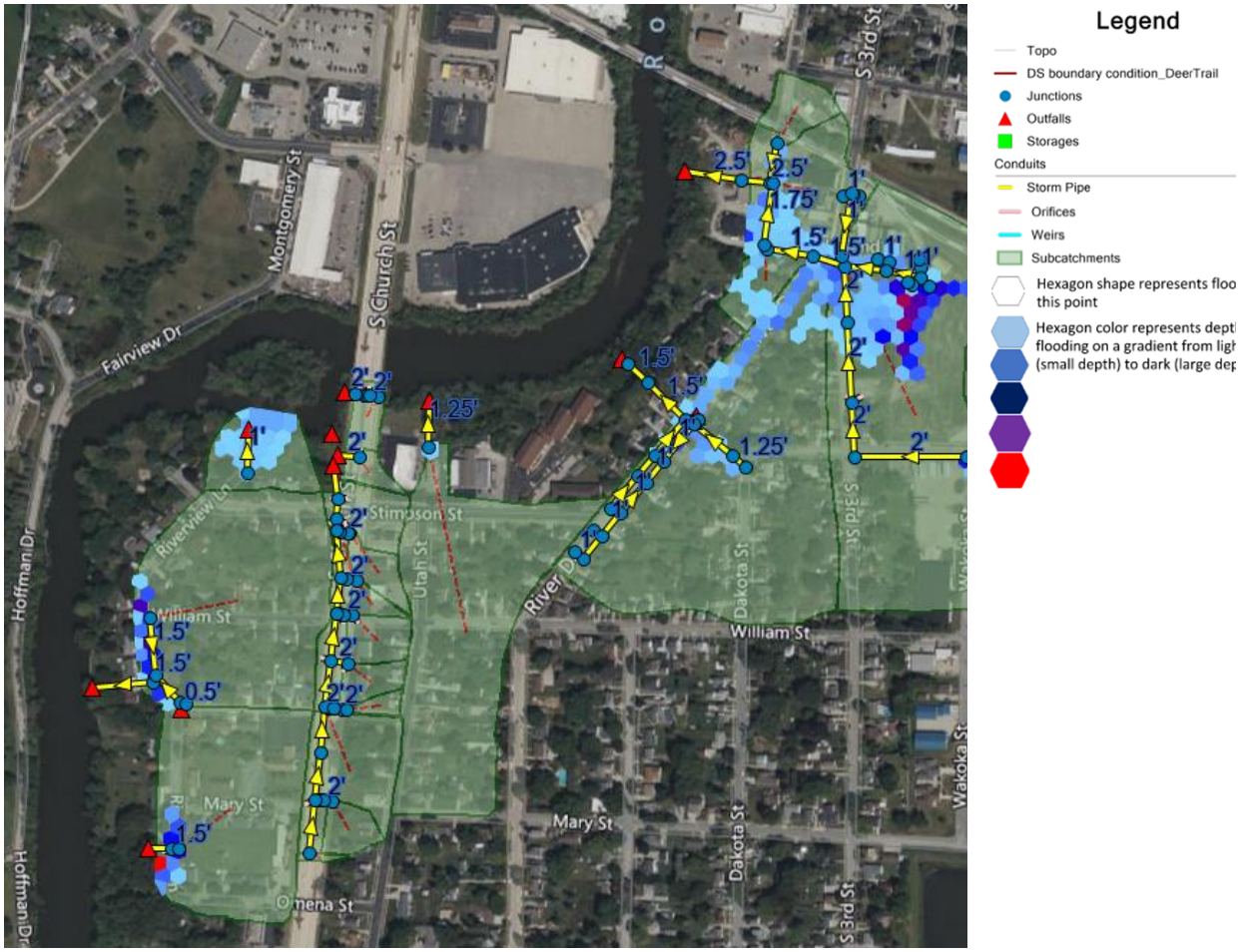


Figure 1. Existing flooding conditions in MRR6.3 during the 100-Year Storm Event.

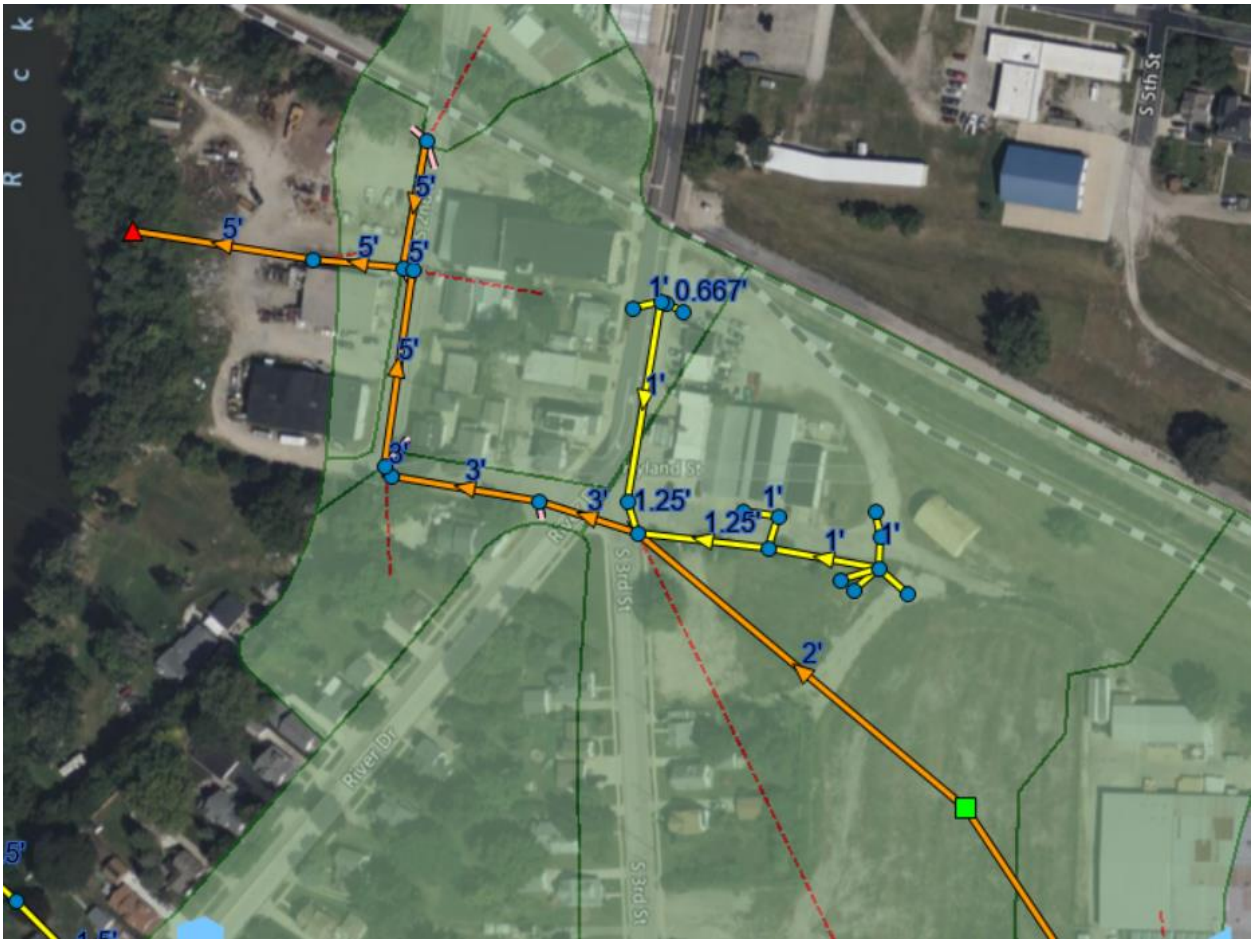


Figure 2. Flooding conditions after implementation of recommendations during the 100-year event at the intersection. Locations of proposed pipe upsizing are shown in orange. The proposed storm water facility is shown in light green. Approximately 2,300 lineal feet of 15-inch to 60-inch storm sewer will be provided as part of the proposed upsizing.

City of Watertown

City-Wide Flood Study Analysis, 2023

MRR6.4

Drainage Area Location: MRR6.4. Existing residential development bounded by Clark Street to the north, Franklin Street to the south, and Utah Street to the West.

Project Purpose: The main area of flooding during larger storm events occurs in the vicinity of Utah Street. The purpose of the project is to reduce flooding in this area.

Clark Street, Franklin Street, River Drive and Utah Street Area-Google Aerial (2023)

Flooding on Franklin Street (2018)

Project Description: The proposed improvements involve pipe upsizing in combination with a potential underground storage facility at Schurz Elementary School located on Franklin Street. The proposed underground storage facility would have a storage volume of 2.8 acre-feet. The outlet of the pond drains to an existing storm sewer in Franklin Street. Pipe upsizing would be in Clark Street and Utah Street.

Flood Reduction: Flooding depths were reduced at Utah Street for the 10, 100, and 500-Year storm events as shown in the table below.

	Existing Conditions Max Flooding Depth (ft.)	Proposed Conditions Max Flooding Depth (ft.)
10-Year	2.24	0.00
100-Year	3.00	0.14
500-Year	3.91	0.54

Construction Cost Estimate:
$1,500,000.

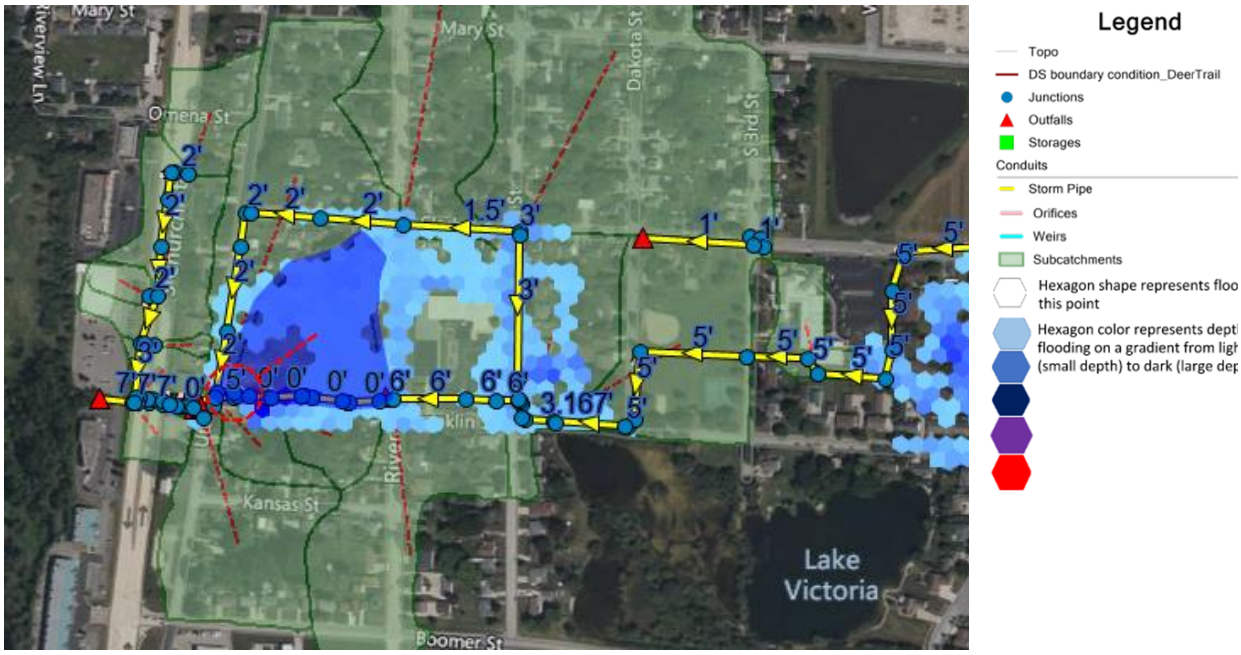


Figure 1. Existing flood conditions in MRR6.4 during the 100-Year Storm Event.

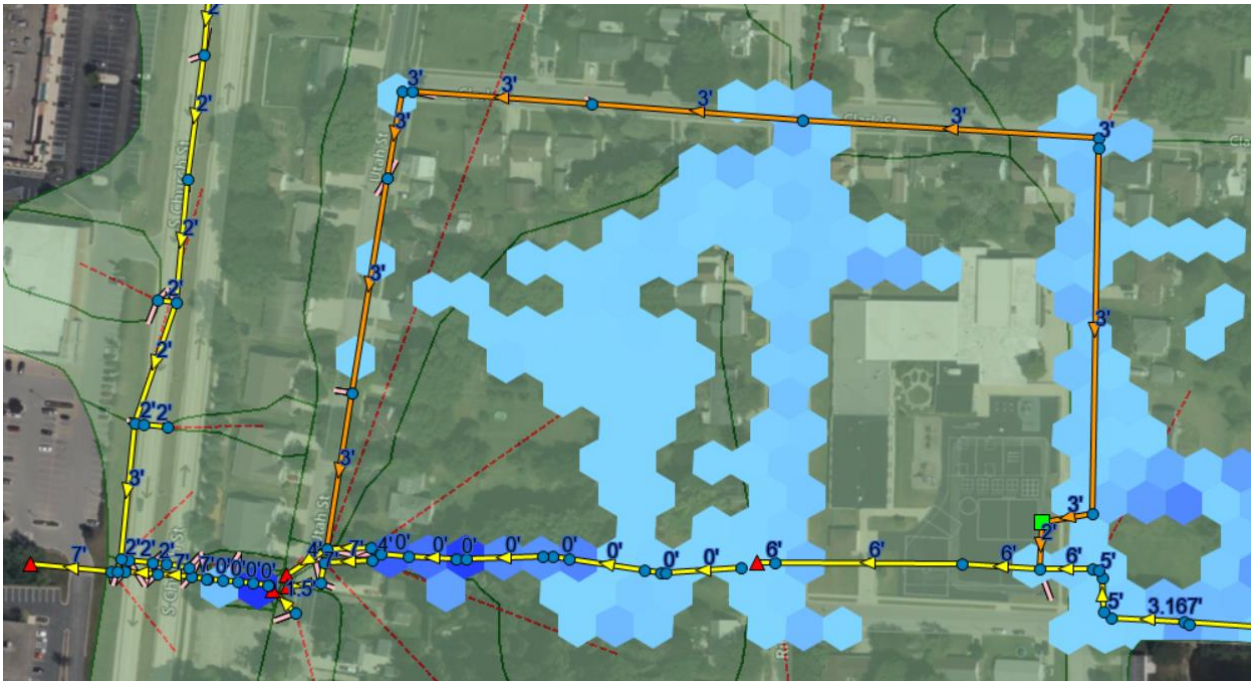


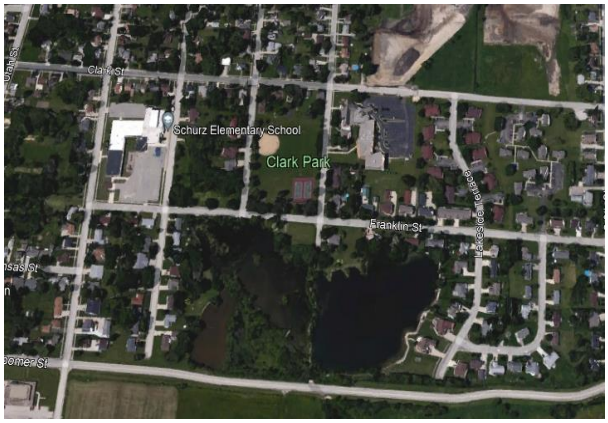
Figure 2. Flooding conditions after implementation of recommendations during the 100-Year storm event at Utah Street. Pipe upsizing locations are shown in orange. The proposed storage facility at Schurz Elementary School is shown in light green. Approximately 2,200 lineal feet of 24-inch to 36-inch storm sewer will be provided as part of the proposed upsizing.

City of Watertown

City-Wide Flood Study Analysis, 2023

MRR6.6

Drainage Area Location: MRR6.6. Existing residential development bounded by Clark Street to the North and Boomer Street to the South.



Clark Street and Franklin Street Area-Google Aerial (2023)

Project Purpose: During large storm events, this area floods frequently. The main area of flooding occurs along Clark Street and Lakeside Terrace. The recommendation would reduce flooding to the maximum extent possible in this location.

Project Description: The proposed improvements consist of pipe upsizing along Clark Street, Carlson Place, Lakeside Terrace, and Boomer Street. Existing negative slope (or back pitched) storm sewer pipes in Lakeside Terrace were also fixed to improve hydraulic performance.


Intersection of Franklin Street and Lakeside Terrace-Looking east on Franklin Street (2023)

Flood Reduction: Flooding depths were reduced along Lakeside Terrace for the 10, 100, and 500-Year storm events as shown in the table below.

Construction Cost Estimate:
$1,500,000

	Existing Conditions Max Flooding Depth (ft.)	Proposed Conditions Max Flooding Depth (ft.)
10-Year	0.97	0.00
100-Year	1.73	0.00
500-Year	2.70	0.48

Figure 1. Existing flooding conditions in MRR6.6 during the 100-Year storm event.

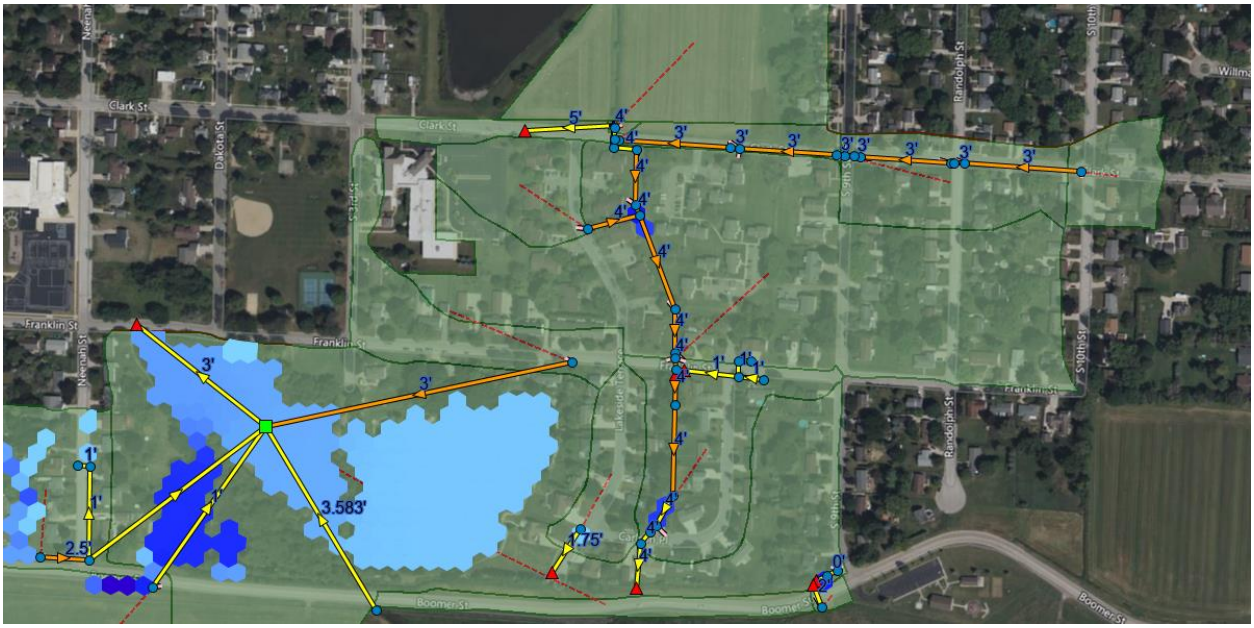


Figure 2. Flooding conditions after implementation of recommendations during the 100-year event. Locations of proposed pipe upsizing are shown in orange. Approximately 3,200’ of 8-inch to 48-inch storm sewer will be provided as part of the proposed upsizing.

City of Watertown

City-Wide Flood Study Analysis, 2023

MRR6.8

Drainage Area Location: MRR6.8. Existing residential development in the area of Loeb Lane and Lauren Lane; as well as commercial properties near the airport along Air Park Drive.

Project Purpose: During large storm events, this area has a tendency to flood. The main areas of flooding occur near the intersection of Loeb Lane and Lauren Lane, as well as near the existing cross-culverts under Air Park Drive. The purpose of this recommendation is to reduce flooding to the maximum extent possible in these locations.

Loeb Lane, Lauren Lane, and Air Park Drive Area-Google Aerial (2023)

Project Description: The proposed improvements involve pipe upsizing along Loeb Lane, Lauren Lane, and Air Park Drive.

Flood Reduction: Flooding depths were reduced near the intersection of Loeb Lane and Lauren Lane for the 10, 100 and 500-Year storm events as shown in the table below.

Construction Cost Estimate:
$1,500,000

Intersection of Loeb Lane and Air Park-Looking south at Loeb Lane (2023)

	Existing Conditions Max Flooding Depth (ft.)	Proposed Conditions Max Flooding Depth (ft.)
10-Year	1.47	0.00
100-Year	2.29	0.31
500-Year	3.65	0.95

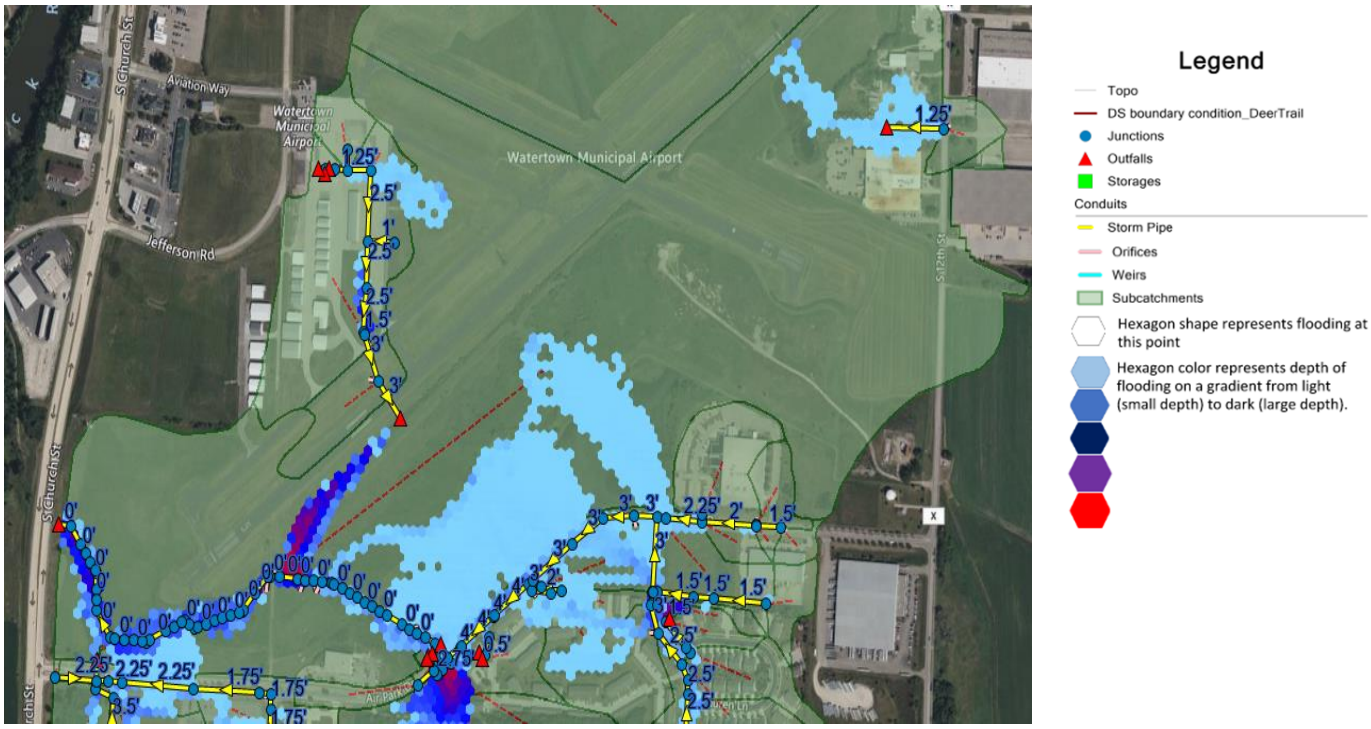


Figure 1. Existing flooding conditions in MRR6.8 during the 100-Year Storm Event.

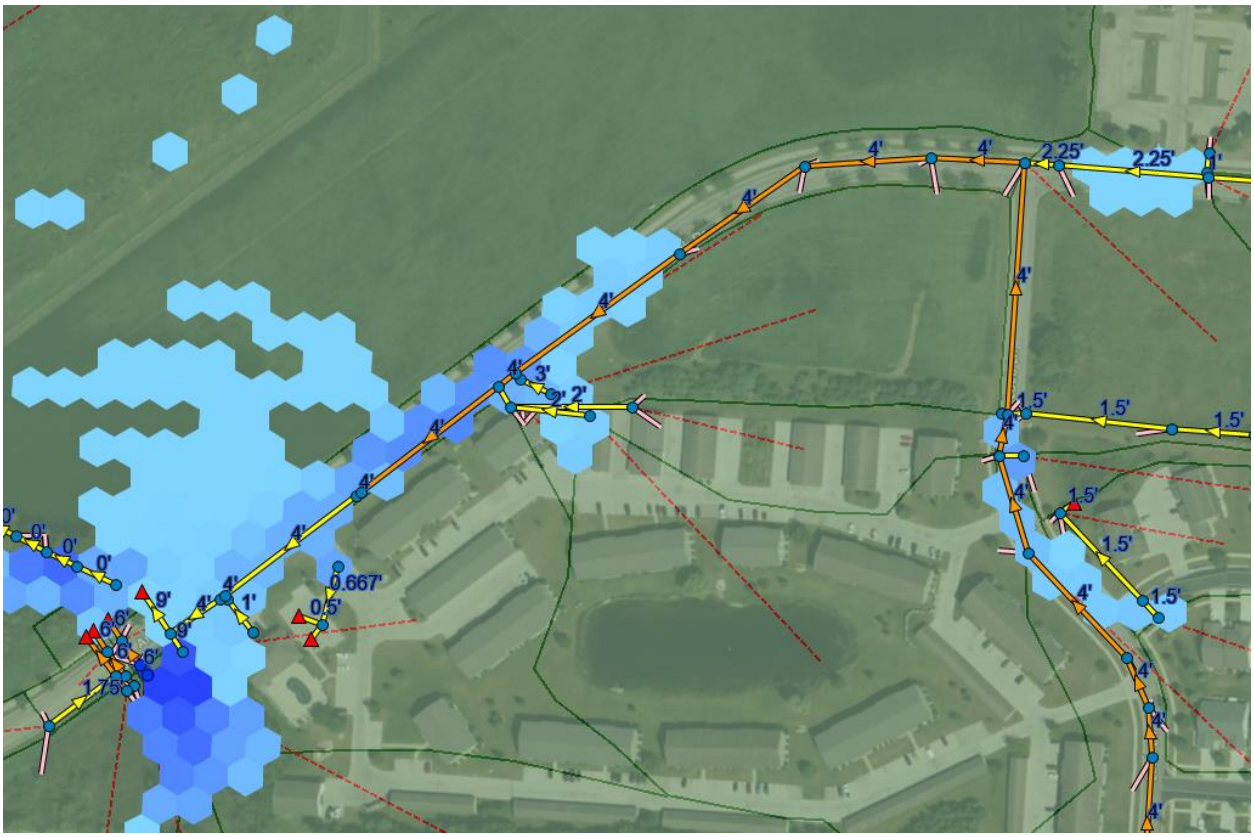


Figure 2. Flooding conditions after implementation of recommendations during the 100-year event. Locations of proposed pipe upsizing are shown in orange. Approximately 2,700 lineal feet of 48-inch to 72-inch storm sewer will be provided as part of the proposed upsizing.

Appendix M

City of Watertown

City-Wide Flood Study Analysis, 2023

SSL1.3

Drainage Area Location: SSL1.3. Existing residential properties in the vicinity of Center St. and Spaulding St.

Project Purpose: During large storm events, flooding occurs at the intersection of E. Spaulding St. and Center St. Flooding extends in all directions of the intersection. This area receives a lot of traffic from Douglas Elementary School located immediately southwest of the primary flooding. This recommendation will reduce flooding at the intersection to allow vehicles to safely pass through this area during a 100-year storm event.

Google Maps aerial view (2023)

Google street view at the intersection of Spaulding St. and Center St. looking east (2023)

Project Description: The proposed improvements to the area consist of pipe upsizing, in combination with a potential underground storage facility at Douglas Elementary School (located at the intersection of E. Spaulding St. and Center St.). The underground storage facility has a storage volume of 1.6 acre-feet. The outlet of the storage facility drains to an existing storm sewer in Center St. Storm sewer relay would include approximately 700 lineal feet of 18 to 21-inch storm sewer main in Center St. north of E. Spaulding St., and 200 lineal feet of 24-inch storm sewer main in E. Spaulding St. west of Center St.

Flood Reduction: Flooding depths were reduced in the roadway intersection for the 10, 100, and 500-year recurrence storm events as shown in the table below.

	Existing Conditions Max Flooding Depth (ft.)	Proposed Conditions Max Flooding Depth (ft.)
10-Year	0.90	0.59
100-Year	1.14	0.76
500-Year	1.26	0.89

Construction Cost Estimate: $750,000

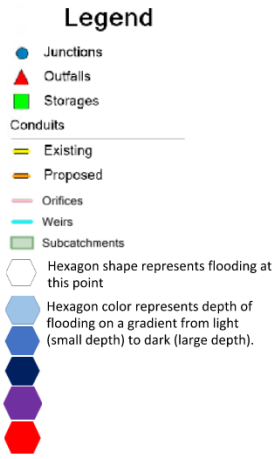


Figure 1. Existing flooding conditions in SSL1.3 during the 100-year storm event.

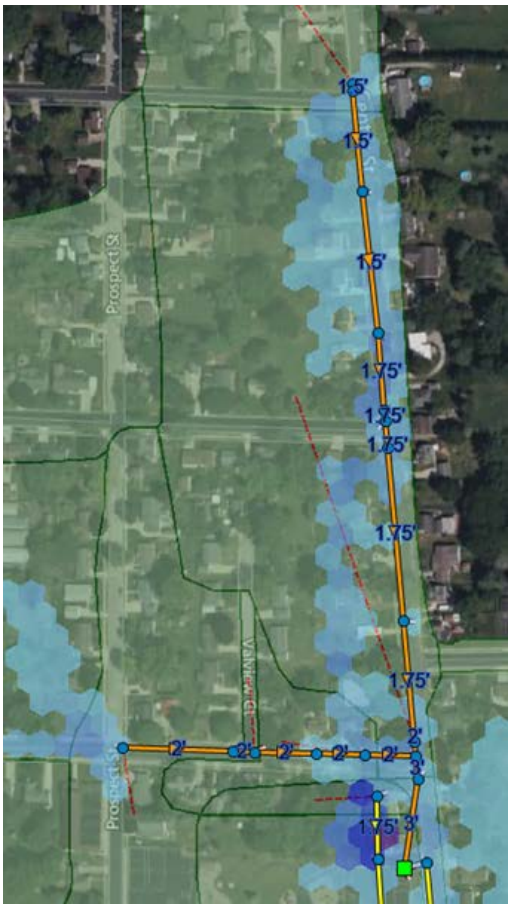
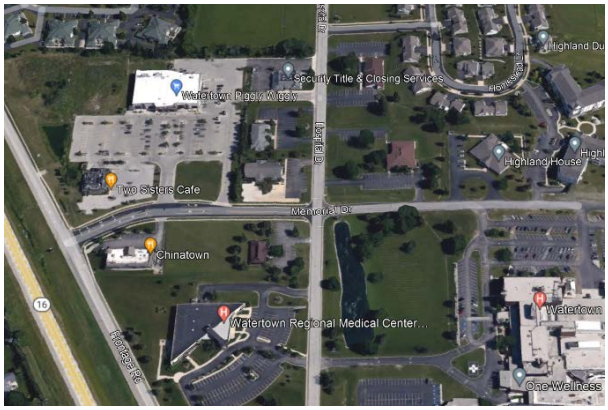


Figure 2. Flooding conditions after implementation of recommendations during the 100-year storm event along Center Street. The location of proposed pipe upsizing is in orange. The underground storage is light green. The increase in flooding further north on Center St. is the result of the addition and upsizing of the sub-18-inch pipes in the proposed conditions. Flooding here is less than 6-inches within the street and the main area of concern is still at the intersection of Center St. and Spaulding St.

Drainage Area Location: SSL1.5. Existing commercial property, along with areas of the hospital property and some residential property to the north of the hospital.



Memorial Drive and Hospital Drive-Google Aerial (2023)

Project Purpose: During large storm events surface flooding occurs in this area. The primary area of flooding occurs in the vicinity of Memorial Drive and Hospital Road. The purpose of this recommendation is to reduce flooding along Memorial Drive and Hospital Drive.

Project Description: The proposed improvements involve storm sewer pipe upsizing in combination with a potential revision of the existing privately owned aesthetic pond located along Hospital Drive, in front of the hospital. The existing aesthetic pond would be converted to a wet-detention facility. The proposed wet-detention facility would add 6.4 acre-feet of usable flood storage. The outlet of the pond would drain to an existing ditch on the north side of Memorial Drive.


Intersection of Memorial Drive and Hospital Drive-Looking north on Hospital Drive (2023)

Flood Reduction: Flooding depths were reduced in the roadway intersection of Memorial Drive and Hospital Drive for the 10,100, and 500-Year recurrence storm events as shown in the table below.

Construction Cost Estimate:
$1,300,000

	Existing Conditions Max Flooding Depth (ft.)	Proposed Conditions Max Flooding Depth (ft.)
10-Year	1.00	0.00
100-Year	1.24	0.18
500-Year	2.11	0.55

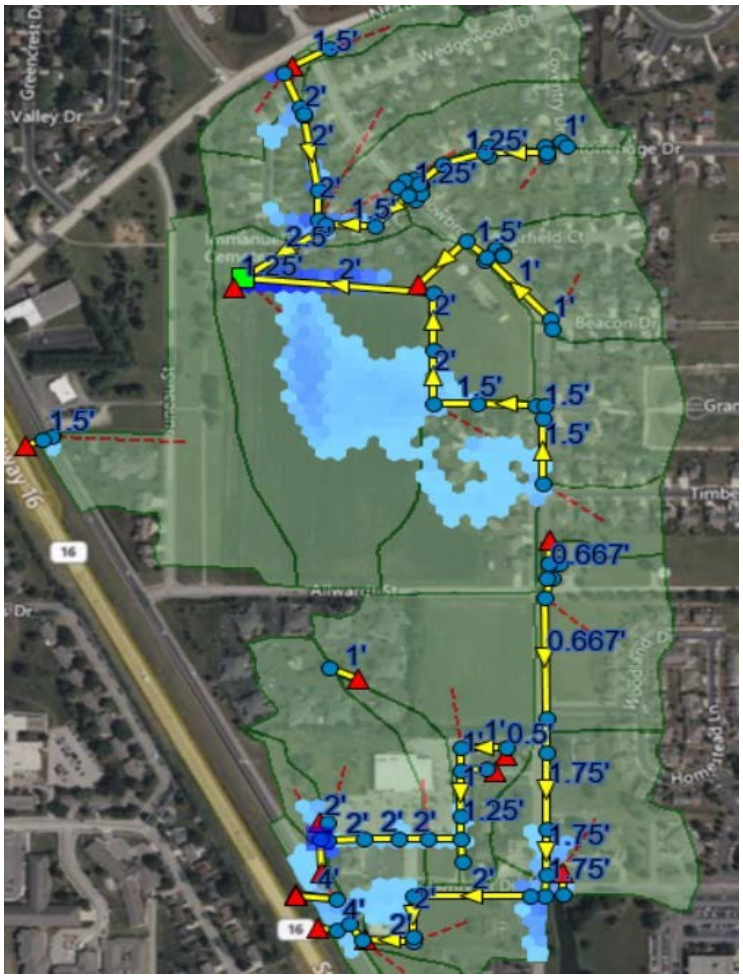


Figure 1. Existing flooding conditions in SSL1.5 during the 100-Year Storm Event.

Figure 2. Flooding conditions after implementation of recommendations during the 100-year event at the intersection. The locations of proposed pipe upsizing are in orange. The proposed wet-detention basin is represented by a light green box. Approximately 1,200 lineal feet of 21 to 36-inch storm sewer will be provided as part of the proposed upsizing.

DRAFT RESOLUTION TO
ADOPT CITY OF WATERTOWN FLOOD CONTROL MASTER PLAN

SPONSOR: ALD. WETZEL
FROM: PUBLIC WORKS COMMISSION

WHEREAS, The City of Watertown has suffered multiple large flooding events in recent decades, including in years 1996, 2008 and 2018; and,

WHEREAS, Following the historic 1000-year rain event which occurred on August 17, 2018, the Public Works Commission tasked the City Engineering Division with minimizing potential future flooding impacts to public infrastructure and private property; and,

WHEREAS, The City of Watertown commissioned the completion of a flood control master plan with Ruekert & Mielke; and,

WHEREAS, The Flood Control Master Plan has been completed and findings have been reviewed by the Public Works Commission and the Committee of the Whole; and,

WHEREAS, The plan will serve as a guide for making future decisions related to the improvement of the stormwater management system to minimize potential future flooding impacts to public infrastructure and private property.

NOW, THEREFORE, BE IT RESOLVED BY THE COMMON COUNCIL OF THE CITY OF WATERTOWN, WISCONSIN:

That the City of Watertown Common Council hereby adopts the Flood Control Master Plan and the proper City Officials be and are hereby authorized to implement the Flood Control Master Plan.

	YES	*NO*
DAVIS		
LAMPE		
BOARD		
BARTZ		
BLANKE		
SMITH		
SCHMID		
WETZEL		
MOLDENHAUER		
MAYOR MCFARLAND		
TOTAL		

ADOPTED February 6, 2024

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CITY CLERK

APPROVED February 6, 2024

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MAYOR

(February 6, 2024) Exhibit #XXXX