VILLAGE OF SHOREWOOD

Sewer System Information Meeting 12/13/10

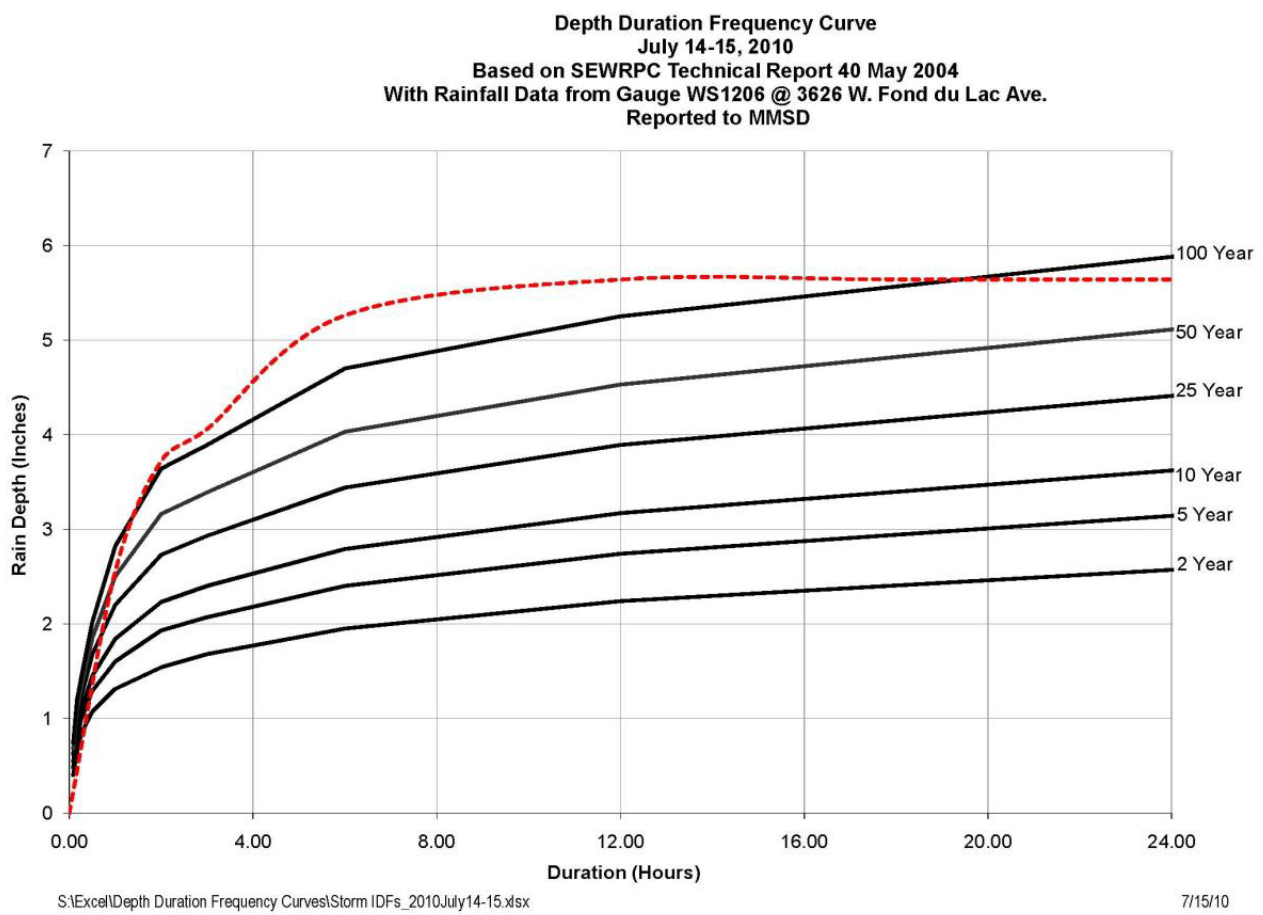
TONIGHT'S GOALS

- Recap of the study findings
- Communicate the technical aspects of plan implementation
- Find out the type of questions people have about it
- Get feedback on:
  - The scale of the plan
  - Funding alternatives
  - Timetable
  - Communication methods

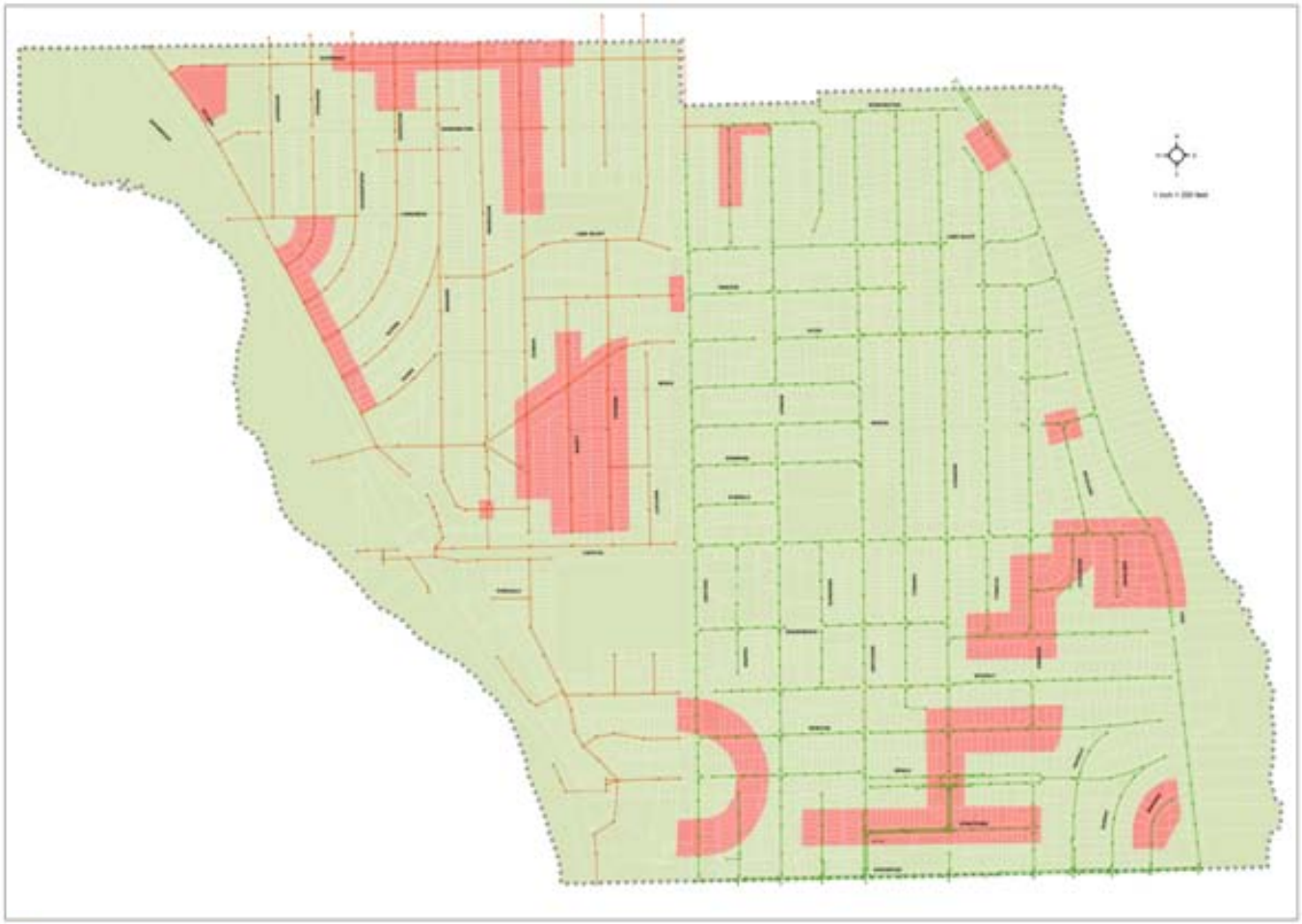
RECAP OF FINDINGS AND SUGGESTED PROJECTS

Mustafa Emir, Village Engineer

PERSPECTIVE ON PROBABILITY OF RAIN



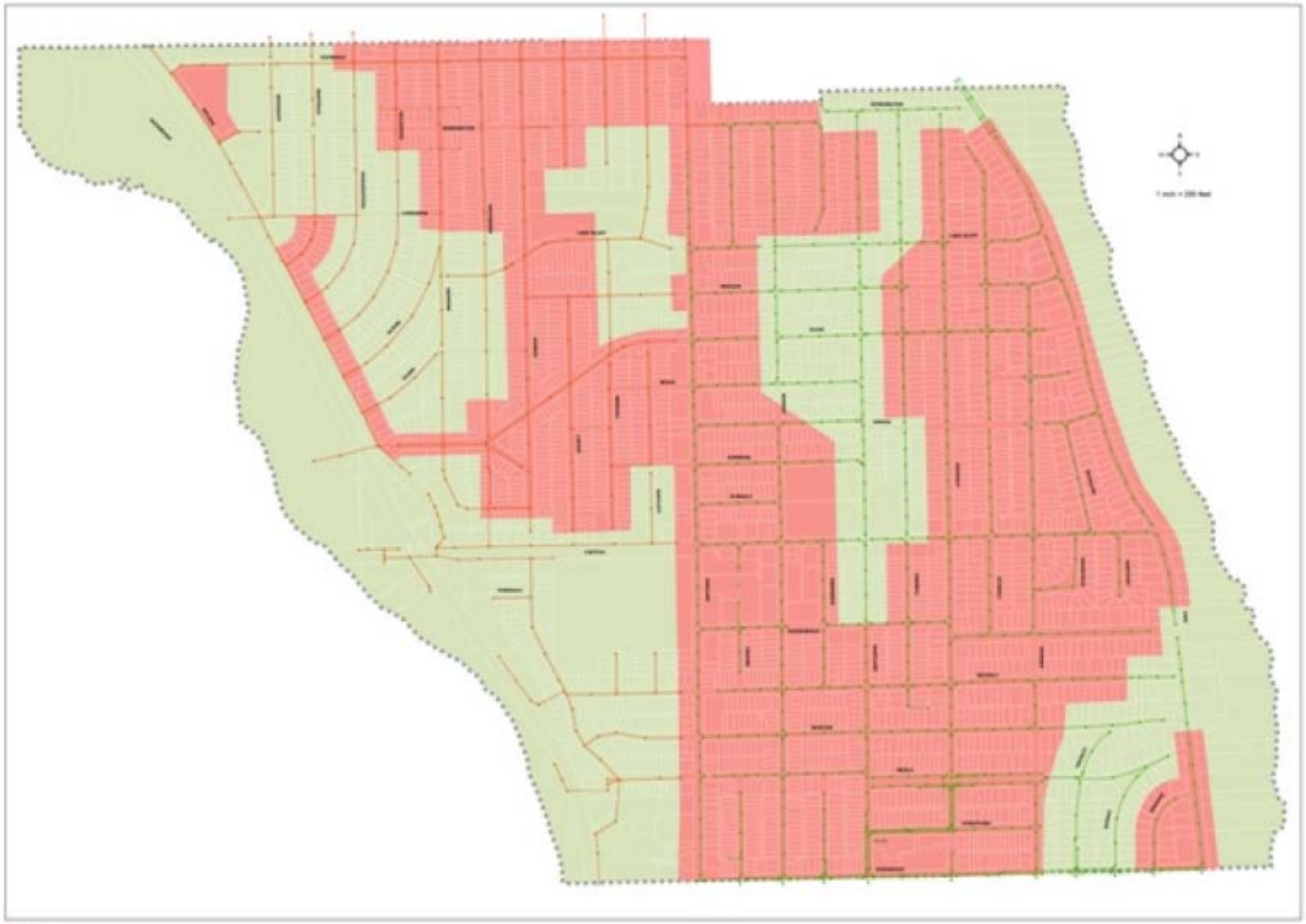
2 INCH-1 HOUR RAIN



Village of Shorewood Sewer Backup Risk Zones - Exisiting

Bonestroo

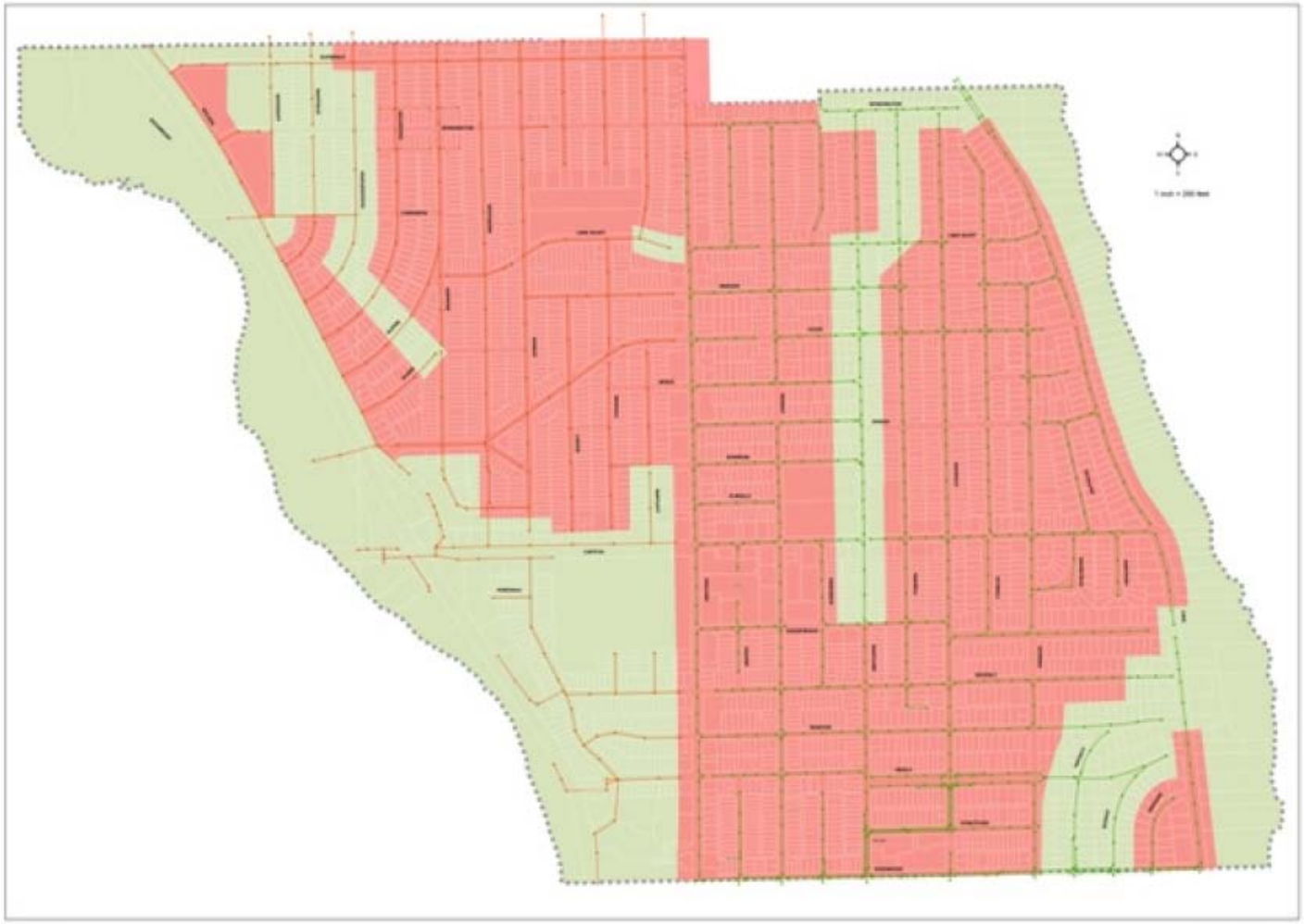
3 INCH-1 HOUR RAIN



Village of Shorewood Sewer Backup Risk Zones - Exisiting

Bonestroo

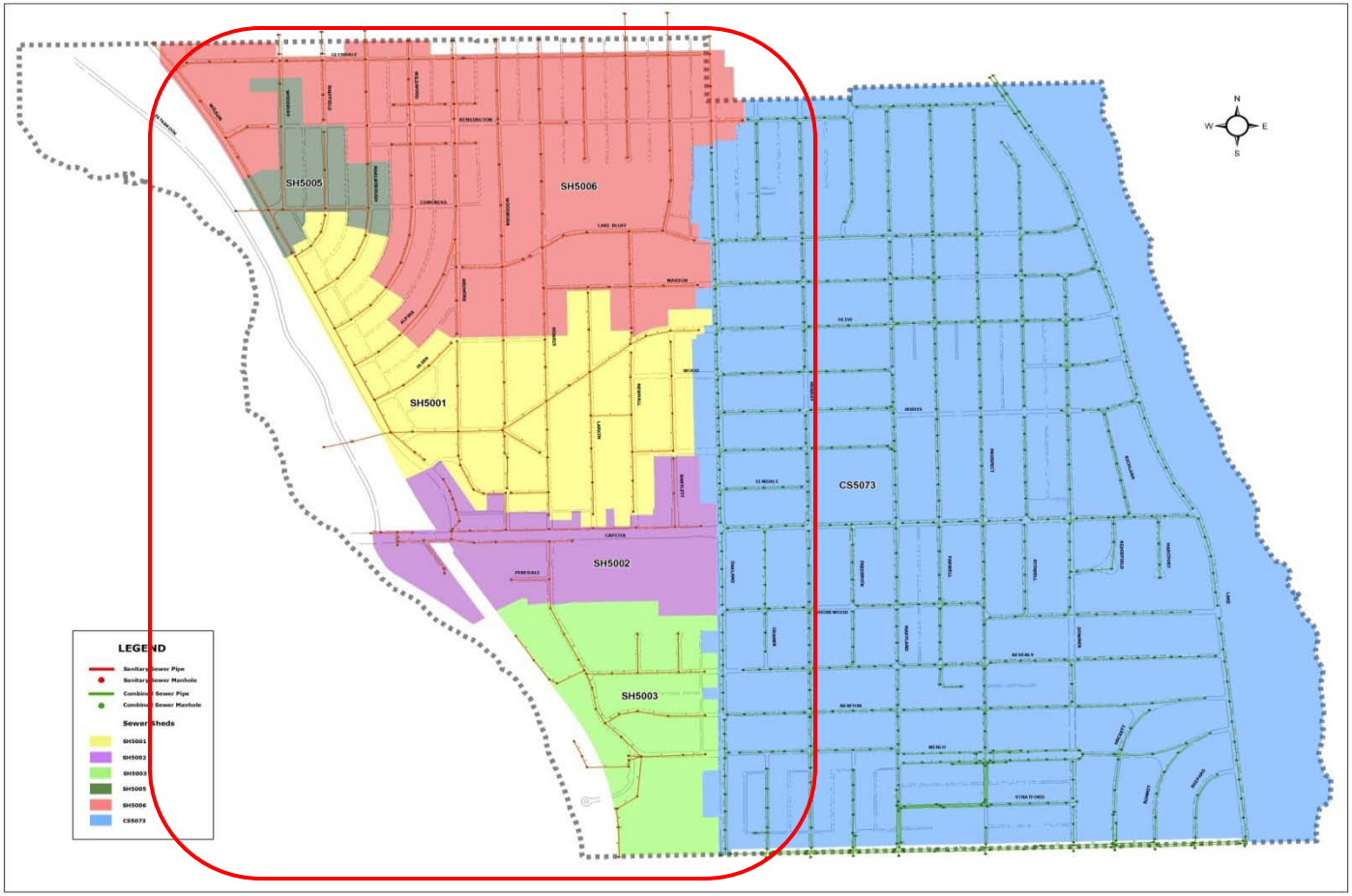
4 INCH-1 HOUR RAIN



Village of Shorewood Sewer Backup Risk Zones - Exisiting

Bonestroo

SEPARATED SANITARY SEWER AREA



Village of Shorewood Sewer Basin Map

1 inch = 200 feet

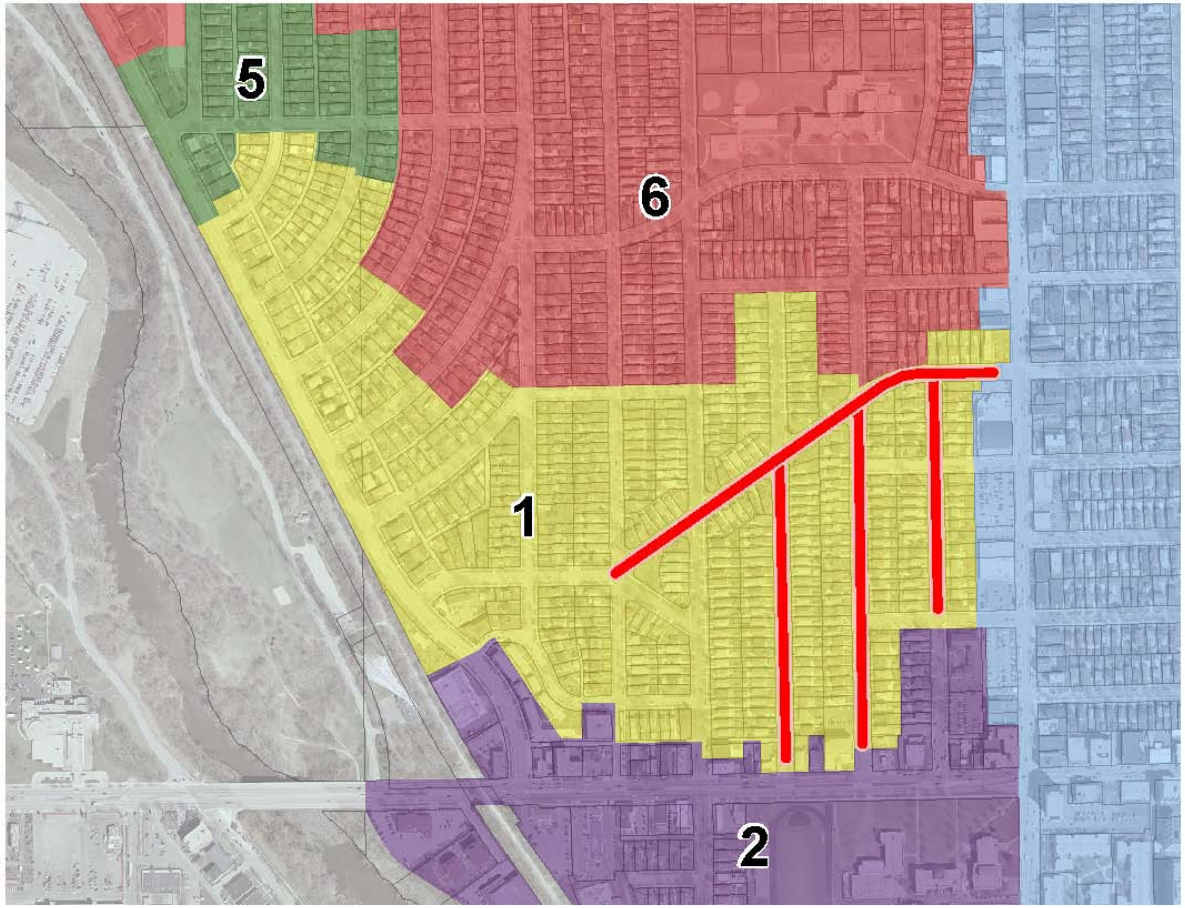
Bonestroo

BASIN 1 – SANITARY SEWER BACK-UP RISK REDUCTION

Sanitary Sewer Projects

	Incremental Cost	Cumulative Cost	Number of Homes at Risk in Rainfall			
			1 inch-1 hour	2 inch-1 hour	3 inch-1 hour	4 inch-1 hour
Existing	-	-	-	150	400	400
Sanitary Sewer Construction	$ 2 M	$ 2 M	-	-	400	400
Lateral Rehab **~ 40% reduction in I/I**	$ 1.6 M	$ 3.6 M	-	-	-	400
Foundation Disconnect **~ 80% reduction in I/I**	$ 3.0 M	$ 6.6 M	-	-	-	-

BASIN 1 PROPOSED SANITARY SEWER

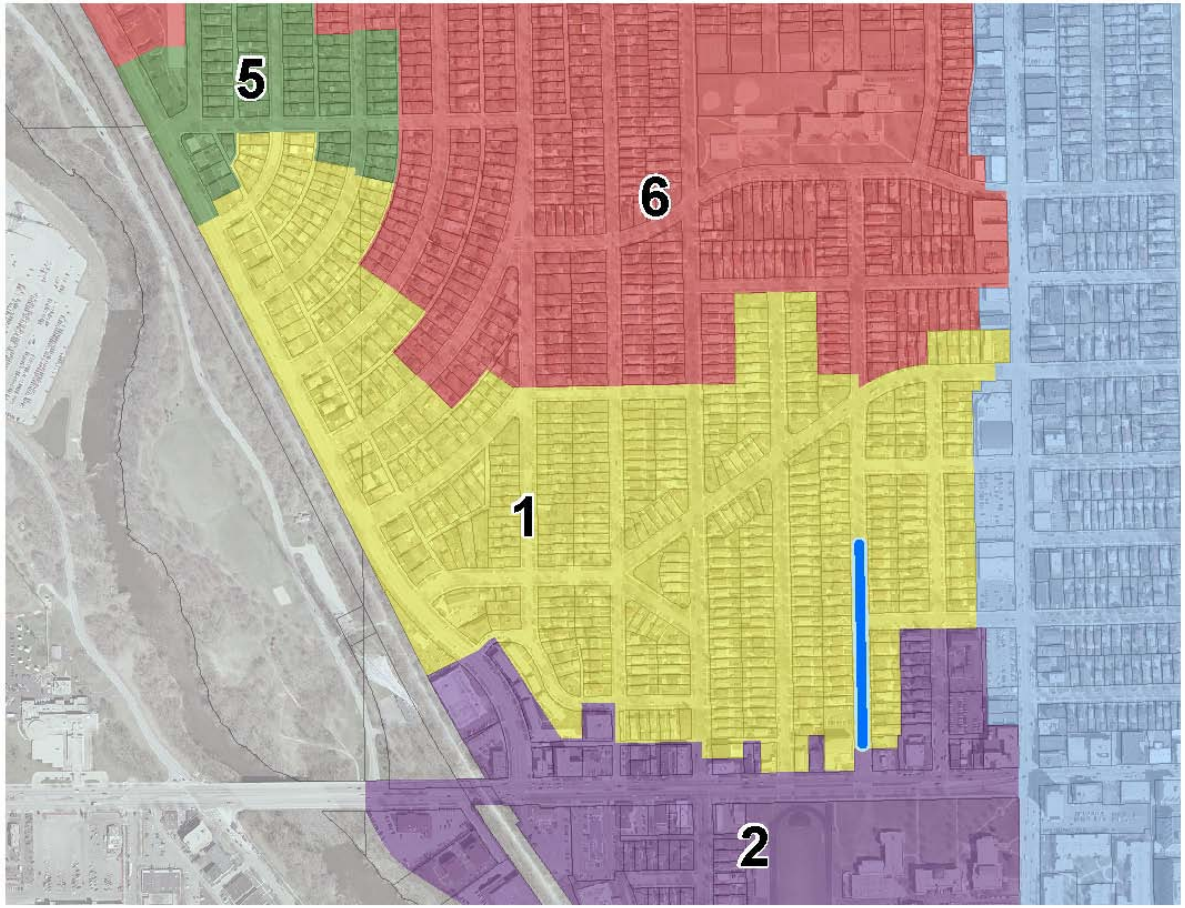


BASIN 1 – STREET FLOODING REDUCTION

Storm Sewer Projects

	Cost
Existing	-
Change drainage route by building a Storm Sewer pipe from Kenmore and Newhall to the new Capitol Dr. Storm Sewer	$300,000
1,000 feet of new Storm Sewer on Newhall	

BASIN 1 PROPOSED STORM SEWER

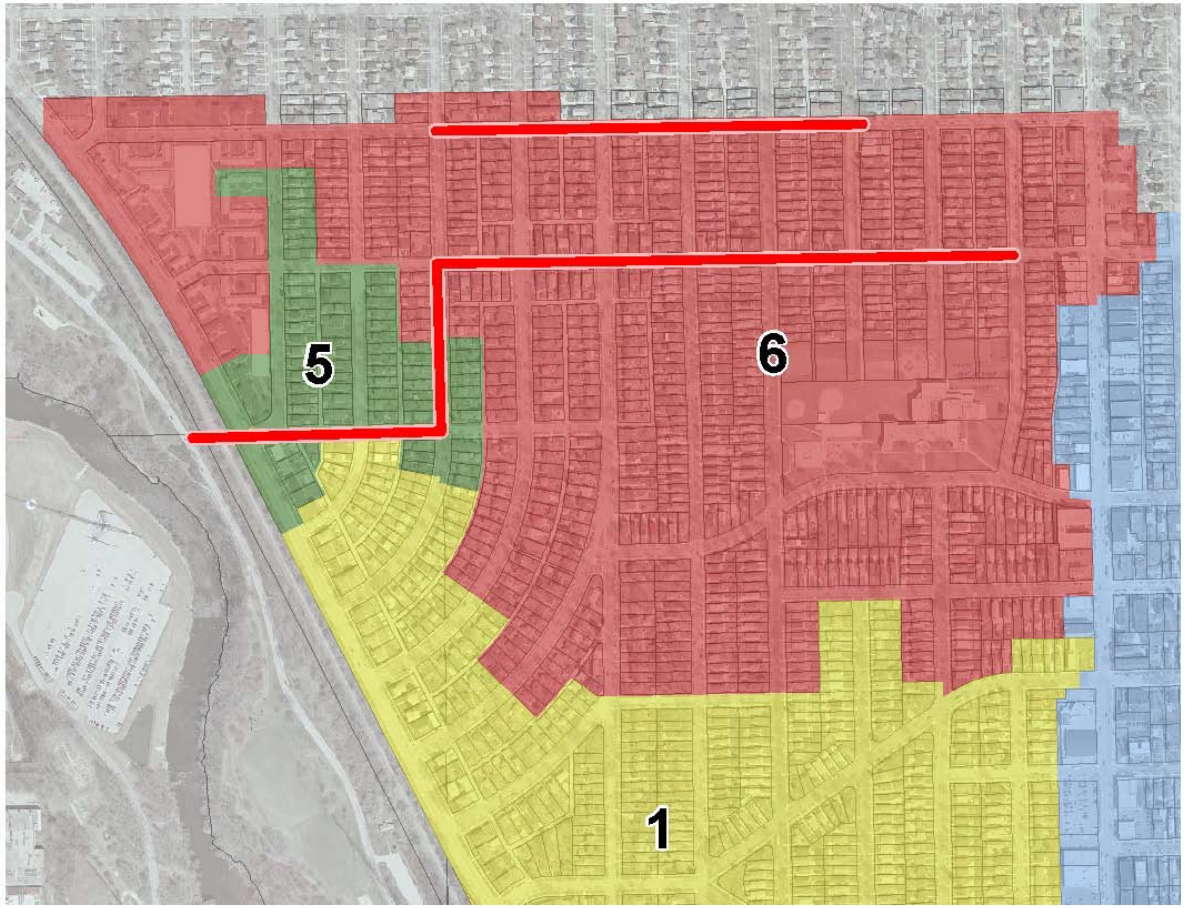


BASIN 6 SANITARY SEWER BACK-UP RISK REDUCTION

Sanitary Sewer Projects

	Incremental Cost	Cumulative Cost	Number of Homes at Risk in Rainfall			
			1 inch -1 hour	2 inch -1 hour	3 inch -1 hour	4 inch -1 hour
Existing	-	-	-	175	600	640
Sanitary Sewer Construction	$ 3 M	$ 3 M	-	-	-	640
Lateral Rehab **~ 40% reduction in I/I**	$ 2.8 M	$ 5.8 M	-	-	-	175
Foundation Disconnect **~ 80% reduction in I/I**	$ 5.25 M	$ 11.05 M	-	-	-	-

BASIN 6 SANITARY SEWER PROJECTS

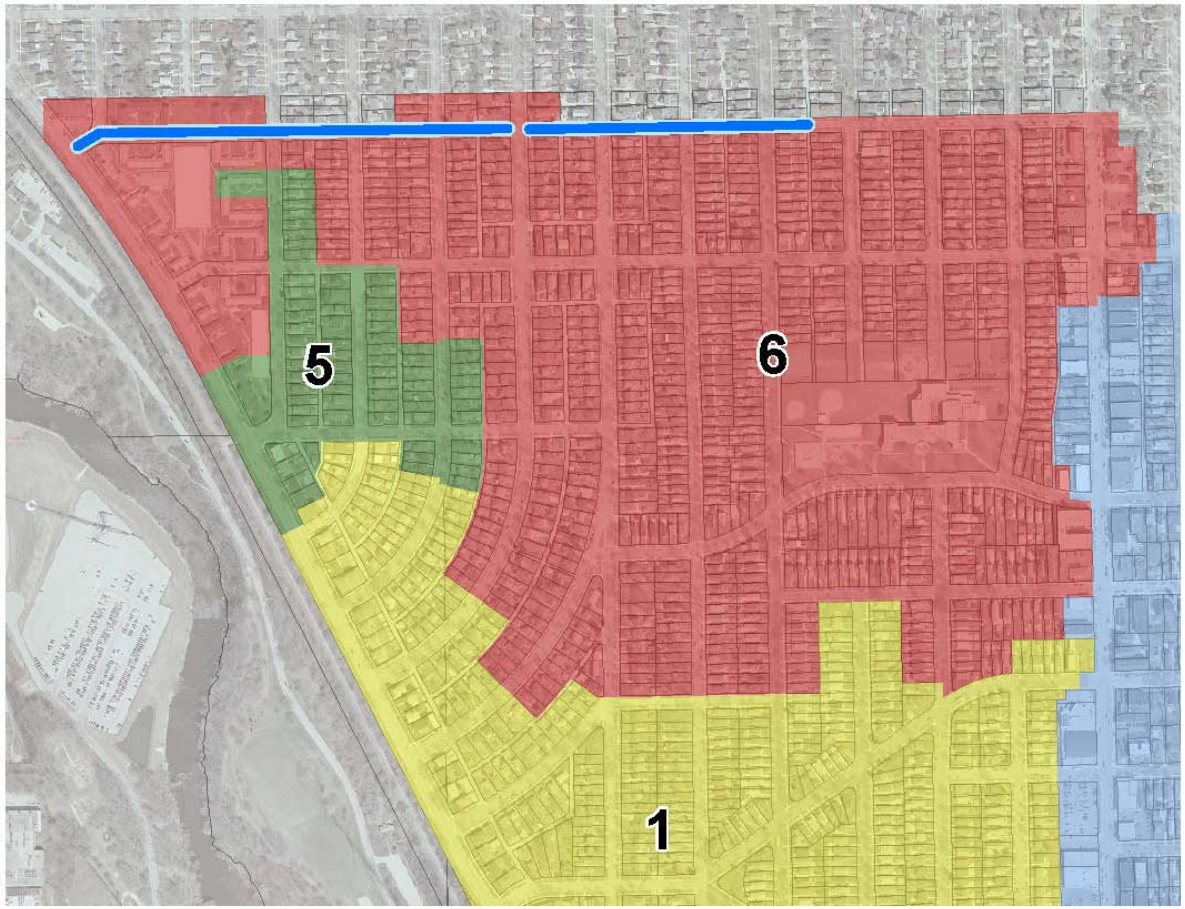


BASIN 6 STREET FLOODING REDUCTION

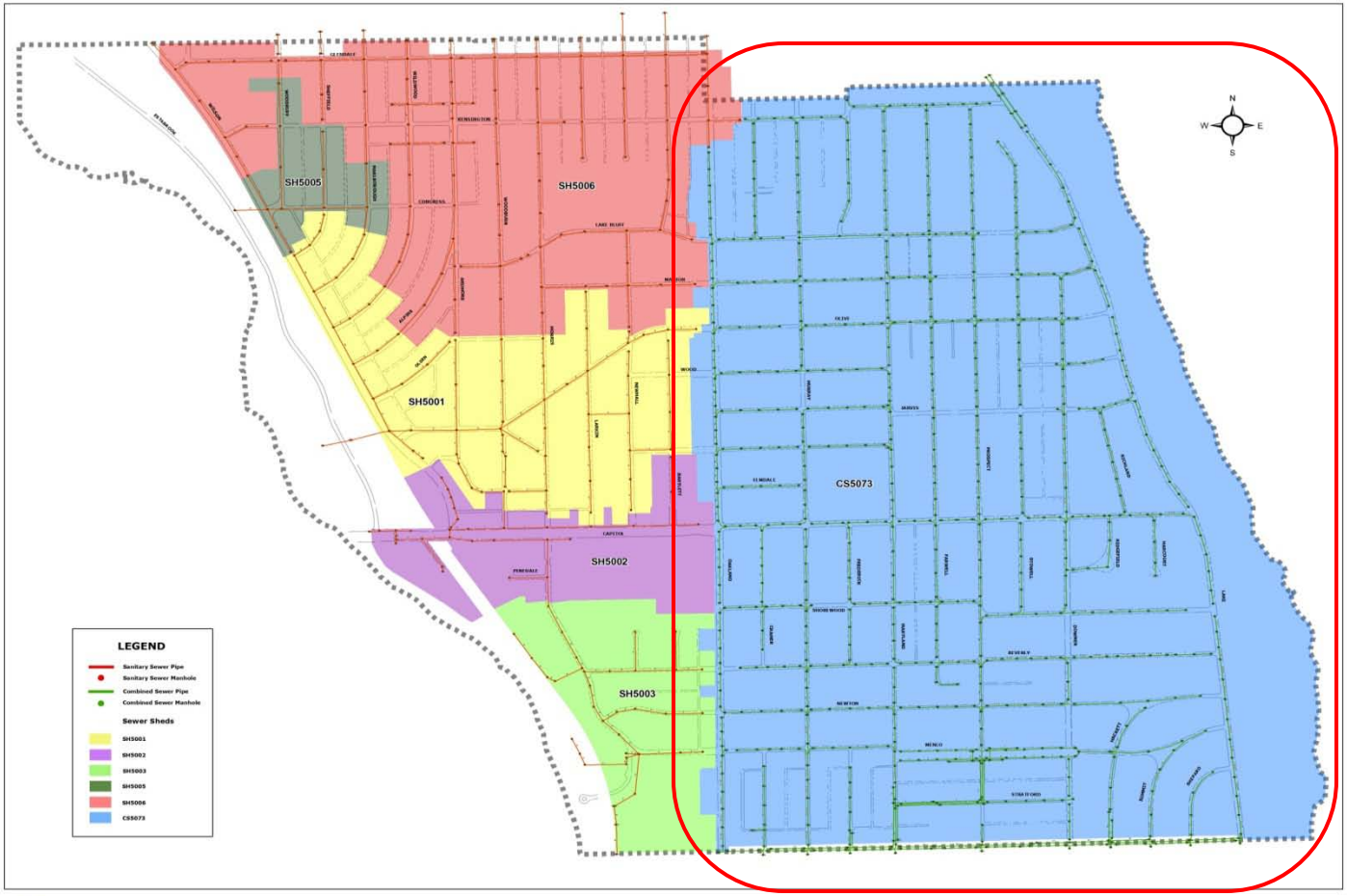
Storm Sewer Projects

	Incremental Cost	Cumulative Cost
Existing	-	-
Upsizing 1,200 feet of existing Storm Sewers on Glendale from Wildwood to Larkin	$420,000	$420,000
Add 1,800 feet of new Storm Sewers on Glendale from Wildwood to Larkin	$900,000	$1,320,000

BASIN 6 PROPOSED STORM SEWER



COMBINED SEWER AREA



Village of Shorewood Sewer Basin Map

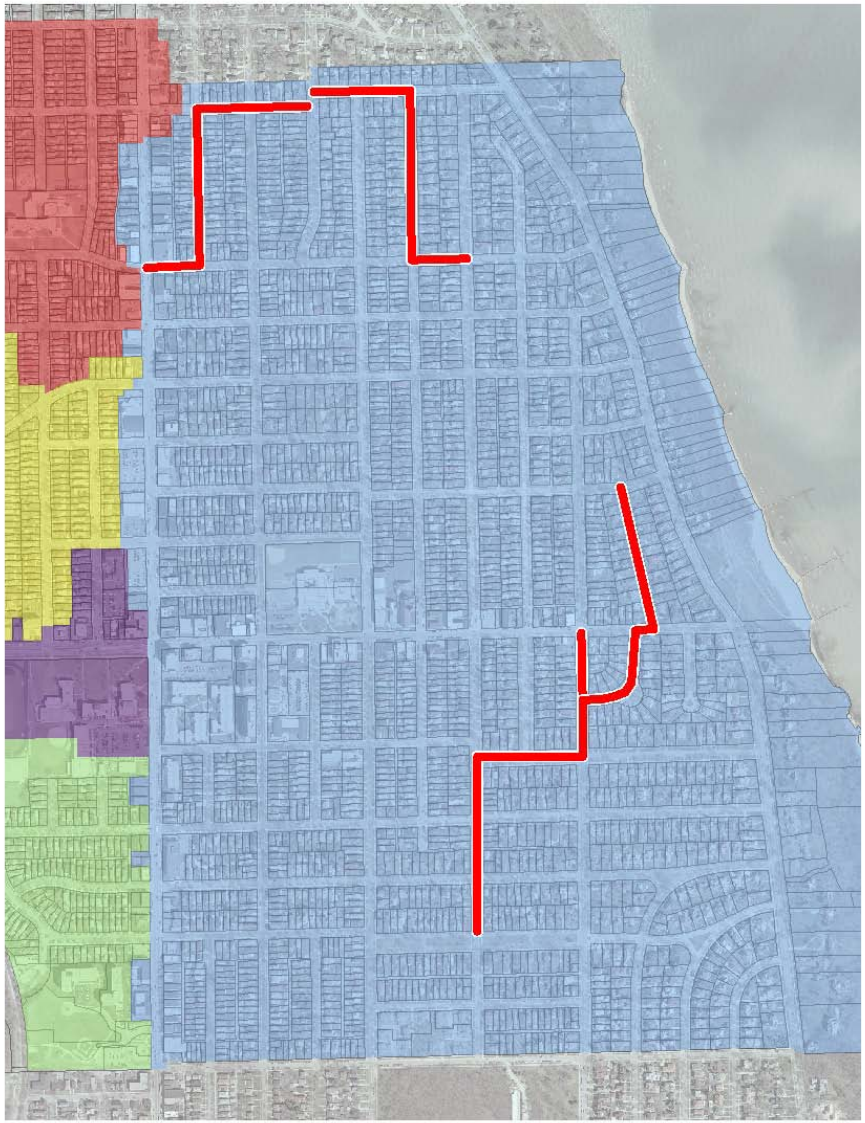
1 inch = 200 feet

Bonestroo

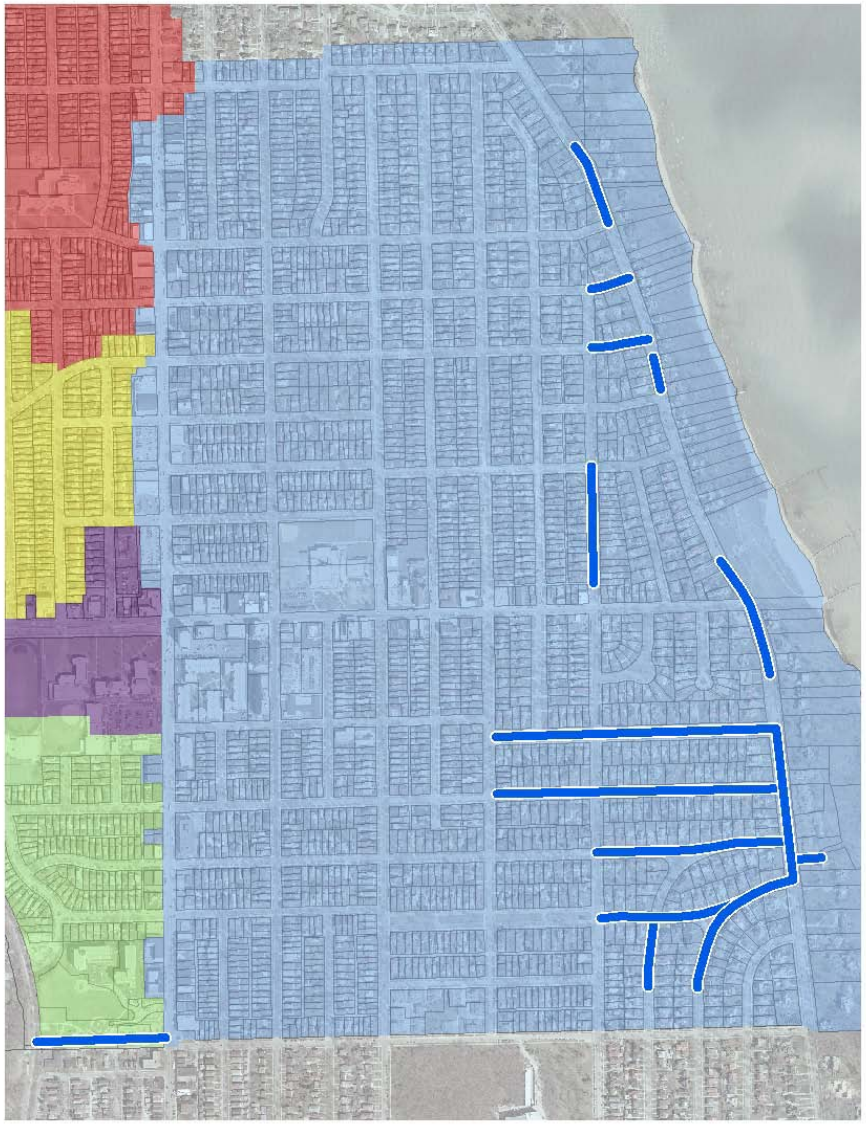
COMBINED SEWER BACK-UP RISK REDUCTION

	Incremental Cost	Cumulative Cost	Number of Homes at Risk in Rainfall			
			1 inch -1 hour	2 inch -1 hour	3 inch -1 hour	4 inch -1 hour
Existing	-	-	-	225	1600	1850
Combined Sewer Upgrades	$ 3.3 M	$3.3 M	-	-	1350	1850
Storm Sewer Construction	$ 3 M	$ 6.3 M	-	-	1000	1500
Strategic Separation	$7.5 M	$ 13.8	-	-	600	1100
or						
Full Separation	$ 24 M	$ 30.3	-	-	-	-

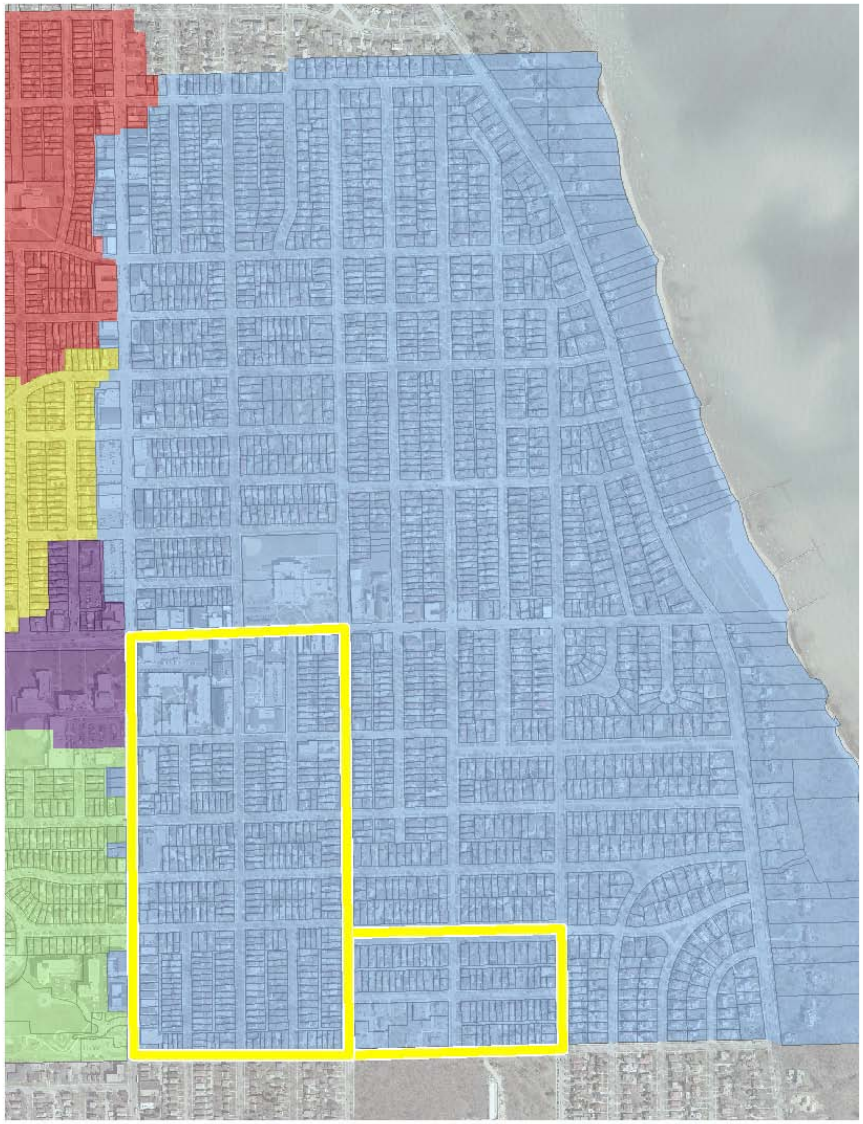
NEW COMBINED SEWERS



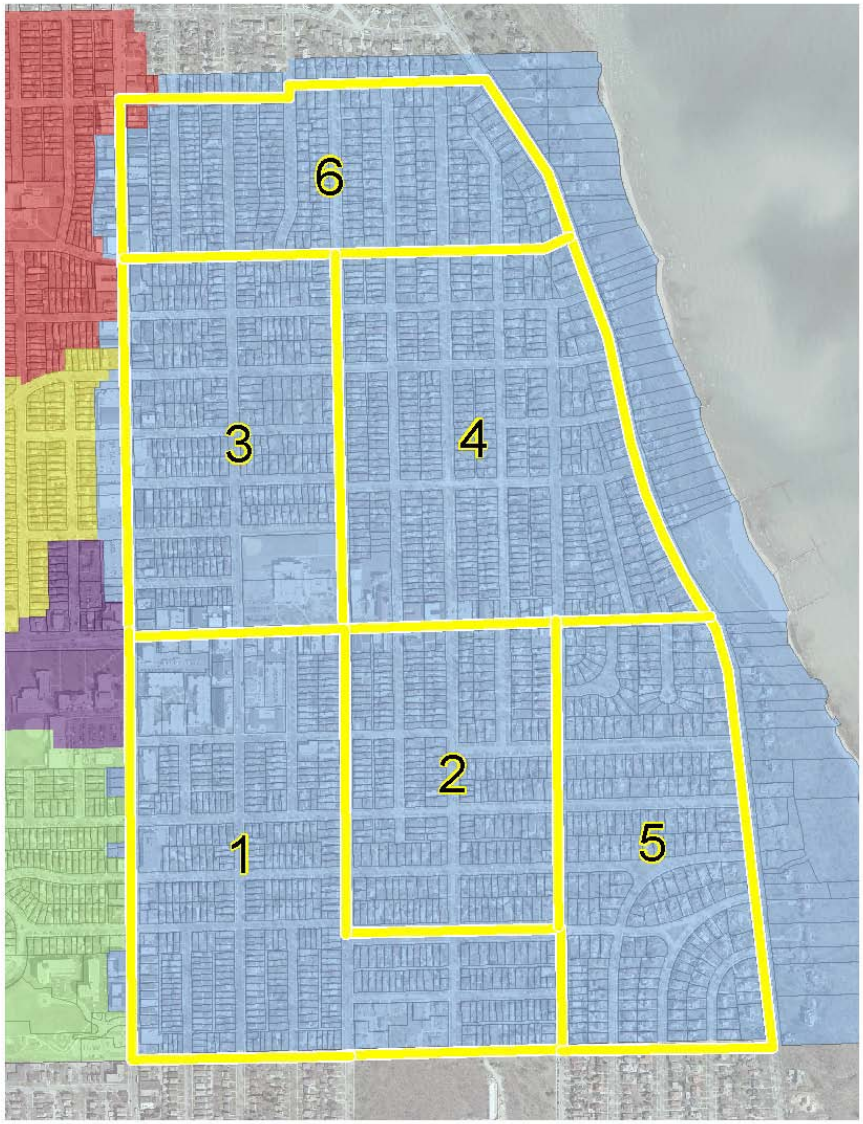
NEW STORM SEWERS



PRIORITY SEPARATION AREA



PHASED SEPARATION



DISCUSSION OF PLAN IMPLEMENTATION

Chris Swartz, Village Manager

PLAN IMPLEMENTATION

- Based on the findings of the study, the Village has drafted a comprehensive implementation plan
- Preliminary plan is based on 4 GOALS and a list of FINANCIAL PRINCIPLES
- Community agreement is required on implementation plan

GOAL 1

- **GOAL 1: Provide basement back-up protection for 2 inches of rain in 1 hour throughout the Village by 2015**
  - Sanitary sewer replacement and reconfiguration in Basins 1 and 6
  - Combined sewer capacity increase project near Downer Ave. in combined sewer area
  - Virtual separation projects in combined sewer area
  - Coordinate street replacement program with these projects
  - Vigorously restrict cross connections between sanitary and storm sewer pipes
  - Coordinate road reconstruction with storm sewer projects
  - Coordinate with “green” concepts (i.e. water storage basin)

GOAL 1 – SUMMARY

Location	Project	Cost with Inflation	Proposed Timetable
Basin 1	Sanitary Sewer Construction	$2,000,000	2011
Basin 6	Sanitary Sewer Construction	$3,000,000	2011
Combined Area	Combined Sewer Upgrades	$3,349,500	2011, 2013
Combined North	Virtual Separation (Storm sewer)	$1,639,091	2014
Combined South	Virtual Separation (Storm sewer)	$1,688,263	2015
		$11,676,854	

GOAL 2

- **GOAL 2: Reduce Inflow and Infiltration (I&I) in separated area by 40% by 2035 and 80% long-term, for back-up protection for 4 inches of rain in 1 hour**
  - Private sanitary lateral replacement – 40% reduction in I&I by 2035
    - Basin 1 – Up to 400 homes
    - Basin 2, 3, 5 – Up to 250 homes
    - Basin 6 – Up to 700 homes
    - Basin 1 laterals will be highest priority, however the timing of all replacements will be coordinated with other sewer construction projects

GOAL 2

- **GOAL 2, continued…**
  - Foundation drain disconnection – 80% reduction in I&I long-term
    - Foundation drain disconnection would be required upon the sale of homes per the Village Code Compliance Program
    - The Village would provide a subsidy for property owners who complete foundation drain disconnection at the time of completing lateral replacement

GOAL 2 – SUMMARY

Location	Project	Reduction of I&I in Basin After Project	Cost with Inflation (3% per year)	Proposed Timetable
Basin 1	Lateral Rehab Program	40%	$2,900,718	2014-2018
Basins 2, 3, and 5	Lateral Rehab Program	40%	$2,672,824	2019-2027
Basin 6	Lateral Rehab Program	40%	$6,434,626	2028-2033
All Areas	Foundation Drain Disconnect	80%	$3,645,926	Ongoing
		Total	**$15,654,094**	

GOAL 3

- **GOAL 3: Separation of the sanitary and storm sewer in the combined area will be completed by 2035, resulting back-up protection against a minimum of 4 inches per 1 hour in this area**
  - Completed in 6 phases
  - Priority: southwest portion of combined area

GOAL 3 - SUMMARY

Project	Location in Combined Area	Cost with Inflation (3% per year)	Proposed Timetable
Phase 1	Southwest ("L")	TBD	2013-2015
Phase 2	Maryland to Downer, Capitol to Menlo	TBD	2016-2018
Phase 3	Oakland to Maryland, Lake Bluff to Capitol	TBD	2019-2021
Phase 4	Maryland to Lake, Lake Bluff to Capitol	TBD	2022-2024
Phase 5	Downer to Lake, Capitol to Edgewood	TBD	2025-2027
Phase 6	Oakland to Lake, Kensington to Lake Bluff	TBD	2028-2030
		$41,400,624	

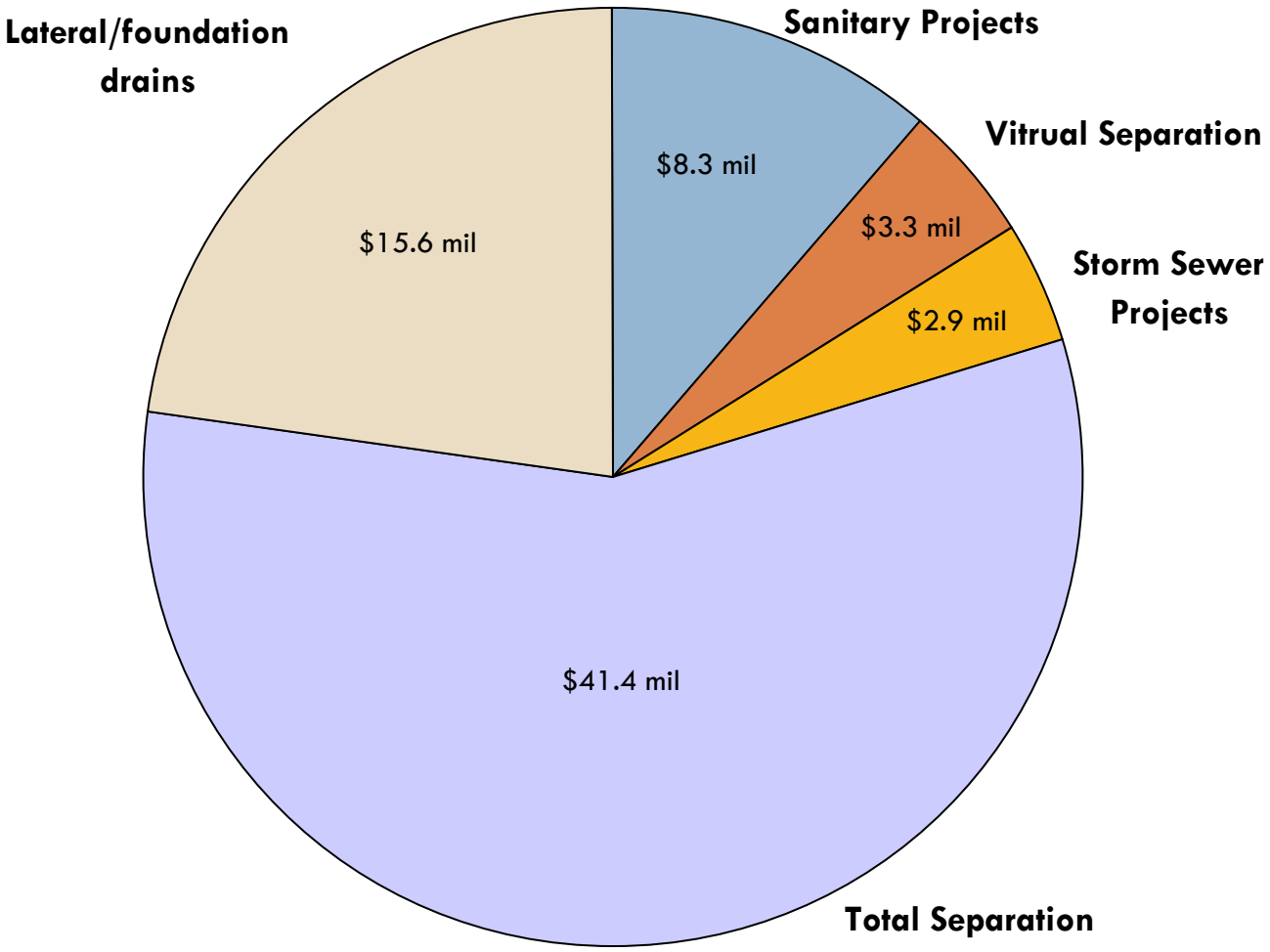
GOAL 4

- **GOAL 4: Reduce street flooding throughout the Village to provide a minimum of 2 feet freeboard during 3 inch per hour rainfall by 2020.**
  - Storm sewer upsizing and reconfiguration projects in Basins 1 and 6
  - Virtual separation in combined area (also listed in GOAL 1)
  - Seek MMSD pipe increase from Oakland Ave. to deep tunnel
  - Seek new drainage way from Oakland Ave. to Milwaukee River
  - Coordinate road reconstruction with storm sewer projects
  - Coordinate with “green” concepts (i.e. water storage basin)

GOAL 4 – SUMMARY

Location	Project	Cost with Inflation (3% per year)	Proposed Timetable
Basin 1	Storm Sewer Construction	$300,000	2011
Basin 6	Storm Sewer Construction	$432,600	2012
		$927,000	2012
Combined North	Virtual Separation	*(funded in Goal 1)*	2013
Combined South	Virtual Separation	*(funded in Goal 1)*	2014
Combined South	MMSD pipe capacity increase	$1,060,900	2013
Combined South	Storm Sewer Construction	$273,182	2014
		$2,993,682	

PROJECT COST COMPARISON



FINANCIAL PRINCIPLES

1. Storm sewer related expenses will be funded by a newly created Storm Sewer Utility Fund.
2. Public sanitary sewer related improvements will be funded by a mix of General Property Tax Levy and the existing Sanitary Sewer Utility Fund.
3. Village will seek federal and state grants and low interest loans.
4. A mixture of general obligation and revenue or special assessment bonds will be utilized.
5. Major sanitary/storm sewer borrowing will be funded for a term of 15 to 25 years.

FINANCIAL PRINCIPLES, CONTINUED…

6. Debt service for general fund levy will not exceed ____ per thousand dollars of equalized value.
7. Debt service will not exceed __% of operating budget of sanitary sewer utility fund.
8. Special assessments will be used for new or replacement laterals, foundation disconnection or sump pump collection systems.
   - Subsidies will be made available to incentivize foundation drain disconnection at the time of lateral replacement.
   - Additional subsidies through Property Tax Levy will be considered when detailed costs are known.
9. Special assessments will be repaid over 10-15 years.

RISKS

- MMSD limitations
- Community support
- Costs/Funding
- Organizational capacity
- Implementation/Timing

ROUND TABLE DISCUSSION QUESTIONS

1. **How do you feel about the scale of this plan?**
   - Is a comprehensive approach appropriate or should it be downsized?

2. **How do you feel about the different funding methods?**
   - Are multiple funding alternatives appropriate?

3. **How do you feel about the proposed 25 year timetable?**
   - Too aggressive or not aggressive enough?

4. **What are the most effective methods for communicating this plan to the community?**

5. **What other concerns do you have?**

DISCUSSION

NEXT STEPS

- Communication to the community
- Community agreement on levels of protection
- Prioritization of solution alternatives
- Financial Strategy and Analysis
- Consensus Building
- Implementation (beginning May 2011)