



RAW SEWAGE IN BASEMENTS AND LAKES

Carl C. Sonnenberg
City Manager/Utilities &
Public Works Director

Portable Pump Ready to Pump Raw Sewage to a Lake to Prevent Homeowner Basement Flooding



“Big Boy” 4,000 gallon/minute Portable Raw Sewage Pump



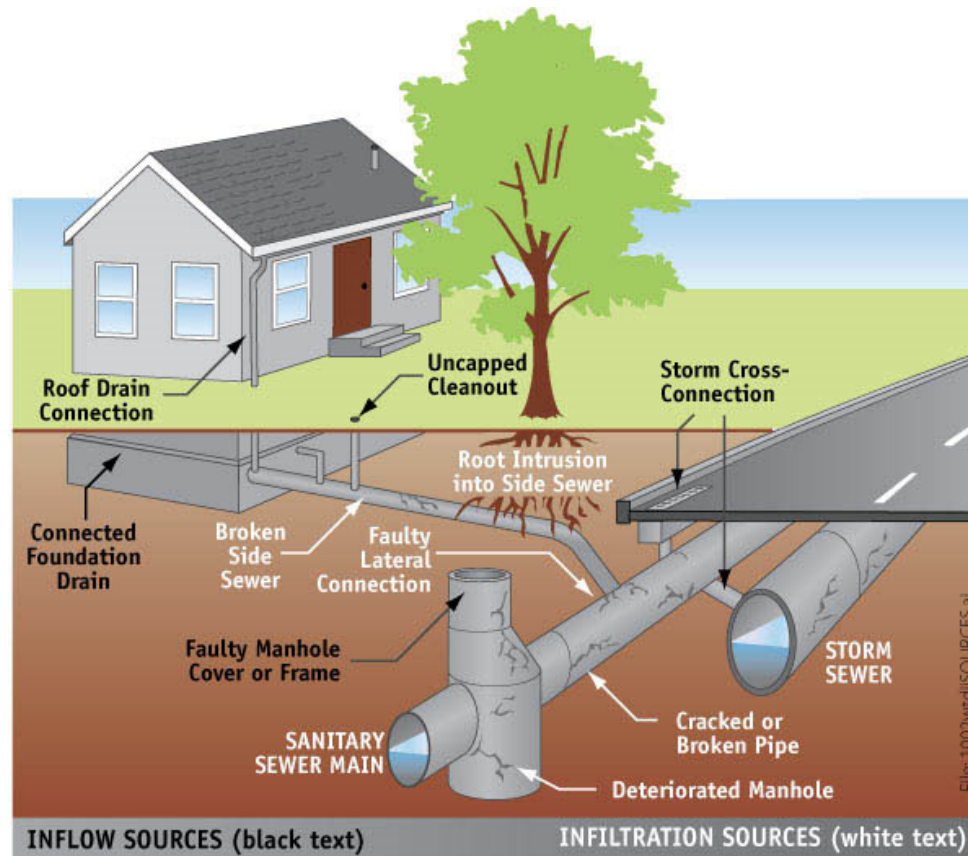
Raw Sewage Contaminates Clear Lake



Raw Sewage Contaminates Clear Lake



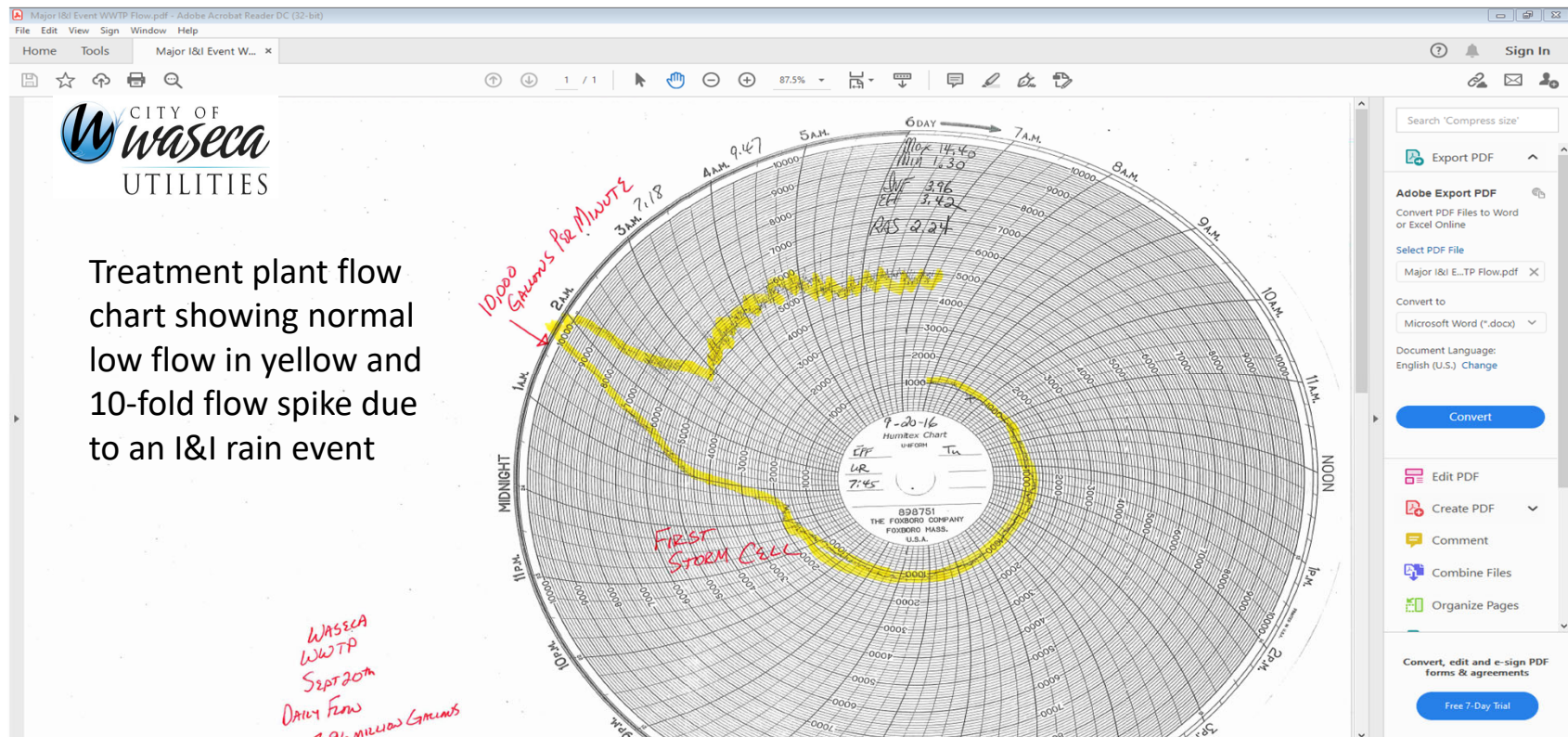
What is under city streets and my yard? Various Sources of Inflow & Infiltration (I&I) that may flood a Sanitary Sewer System



Waseca does not have storm sewer cross-connection. We have smoke tested the town for illegal connections and have made many repairs.

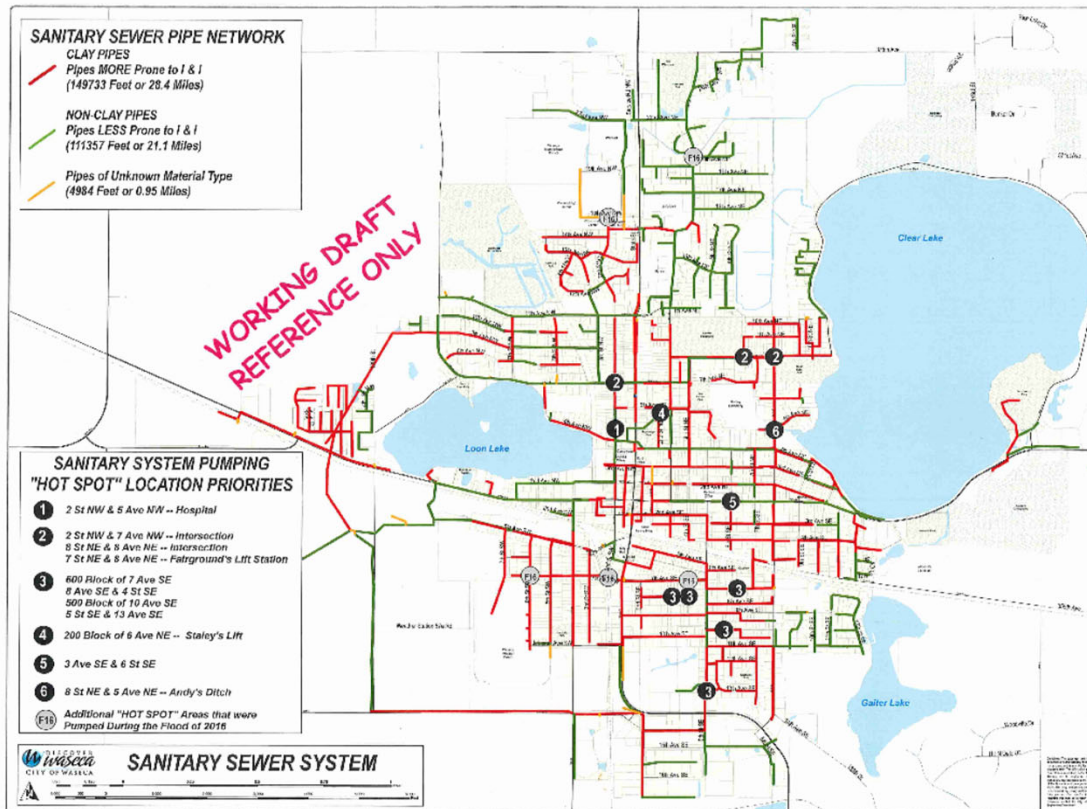
MAJOR I&I FLOW AT THE WWTP

10-fold increase in wastewater flow causes raw sewage illegal discharges & permit violations



RAW SEWAGE PUMPING LOCATIONS

as many as 12 locations dependent on the severity of the high flow event



MPCA—S.O.C.
“SCHEDULE OF COMPLIANCE”
to eliminate raw sewage releases

CITY ONGOING SANITARY SEWER REPAIRS



CITY OF WASECA SCHEDULE OF COMPLIANCE I&I REDUCTION PLAN-

SEPTEMBER 2018

Minimum Five (5) Year Plan for Simultaneous Implementation of Phases

1. **Phase One: Sewer System Evaluation Survey Program (SSES)**
 - a. **Focused sanitary sewer flow monitoring south of Eleventh Avenue NW/NE** to determine localized high flow “hot spots”
 - b. Further evaluation of “hot spots” using dye testing, manhole inspections, and/or closed circuit TV (CCTV) as appropriate
 - c. Collection system modeling based on pipe sizes, base flows, and peak flows, as determined after flow monitoring
 - d. Identification of prioritized “hot spots”, system deficiencies, and engineering cost estimates
 - e. Annual update report to the City Council and public of all program phases
 - f. **Authorize preparation of Facilities Plan and apply for financial assistance**
 - g. Develop & distribute a public outreach best practices tool kit for I&I reduction

2. **Phase Two: City Infrastructure Improvements** (prioritized based on funding & evidence based investigation)
 - a. **Repair broken pipes identified during smoke testing conducted during October 2018** (with dye testing as appropriate)
 - b. Inventory & replace manhole covers that have drain holes with sealed covers
 - c. Inventory & replace manhole covers in areas subject to flooding with watertight covers
 - d. Inventory & raise manhole structures in surface water ponding areas
 - e. Install drain tile behind curbs for private property discharge of clean water when City streets are reconstructed
 - f. **City sanitary sewer pipe lining as identified during the SSES program phase**
 - g. City sanitary pipe and City storm water/surface water pipe replacement when City streets are reconstructed
 - h. Inspect/line/replace City owned building sanitary sewer laterals
 - i. **Identify and eliminate City property contributions to I&I sources**
 - j. Review & revise existing maintenance and operations best practices

S.O.C. PRIVATE PROPERTY REPAIRS



1. **Phase Three: Private Property Improvements** (prioritized based on funding and evidence based investigation)
 - a. City inspection of sump pump connections through a City Council Resolution
 - b. City televising inspection of sanitary service laterals through a City Council Resolution
 - c. Repair broken pipes, such as clean out covers, identified during October 2018 smoke testing
 - d. Review & revision of City Codes and Council Policies to enforce prohibition of clean water discharges to the City's sanitary sewer system. The end goal is to require disconnection of all clean water inflow sources and elimination of sanitary service lateral infiltration as identified during the SSES program phase.
 - e. Develop and implement an I&I reduction demonstration project

INITIAL 2017 SEWER REHAB COST SUMMARY

What the City of Waseca Can't Afford

- \$11,043,584 to line City Sanitary Sewers
- \$ 8,905,600 to line and grout City Manholes
- \$16,576,845 to line and grout private property sewer laterals
- **\$36,526,029 TOTAL ESTIMATE**

WHAT'S NEXT?

- *Continue to plug away with what we can afford*
- *Continue to apply for federal and state bonding*
- *Continue evolving City policies & ordinances*
- *Continue to integrate I&I construction into the street capital plan*

Long Term Funding Considerations

- All property owners are currently responsible for their entire service lateral (sewer pipe).
- Current practice with street reconstruction projects is for the sanitary sewer fund to pay for new private service lateral from the City main to the property lines (typically 30-60 feet).
- Should service lateral costs be shared directly by private property owners and by all customers?
- Should service lateral costs be assessed to the property owner during street reconstruction work?
- Should there be cost sharing differences for lining vs replacement?
- Other considerations?

Policy Discussion...not only the money

- Line all bad (deficient) service laterals? How far into the private service should we go?
- Repair each bad lateral only on a case-by-case basis?
- Re-start the I&I Inspection Program? Now? After each service is televised?
- Consider a Point-Of-Sale Ordinance requiring I&I inspection and repair or lining of a deficient service pipe as part of the property sale?
- Other thoughts?
- Carl: We need to be methodical, certain, transparent.

Demonstration Project with City Infrastructure--2021

- *Where?* North of Clear Lake Park—1950's Noetzel Residential Addition as far as the Fairgrounds Lift Station.
- *Why here first?* Direct pumping of raw sewage into Clear Lake near the Beach House during peak sewage flows from a rain event or spring snow melt.
- *What was Done?* Poly-lining of 2,800 feet of city sanitary sewer & sealing 19 manholes.
- *What was the investment?* Total construction cost of \$206,770 paid directly from utility customers' revenue.
- NO illegal sewage pumping to date at this location since project completion!