



Forest Park Area Sanitary and Storm Sewer Study

Workshop 1

Agenda

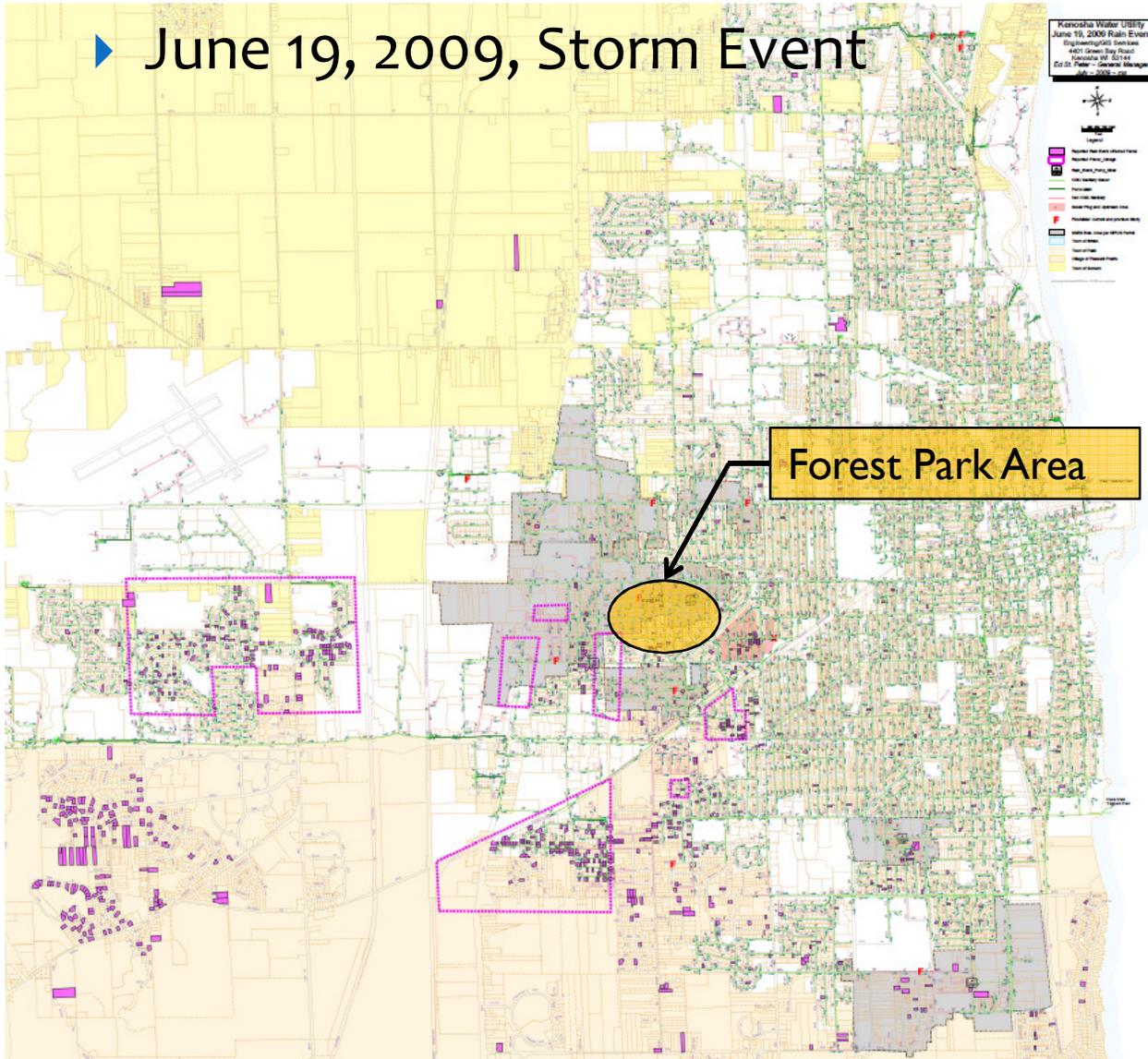
- ▶ Remarks from City
- ▶ Short Informational Presentation On Sanitary and Storm Sewer Study and Intended Results
- ▶ Workshop 1
 - ▶ Listing of Hopes and Fears
 - ▶ Prioritization
- ▶ Information Survey Completion



▶ September 2009

History

▶ June 19, 2009, Storm Event



Reasons for Study

- ▶ Storm and Sanitary Sewer Capacity Problems
 - ▶ Affects water quality of Lake Michigan and other receiving waters
 - ▶ Affects transportation
 - ▶ Strains City resources
 - ▶ Substantial and recurring property damage
 - ▶ Dissatisfied residents



▶ September 2009

Schedule

- ▶ **October 2009:** Out in neighborhood gathering information from residents
- ▶ **October/November 2009:** Gathering field data
- ▶ **October-December 2009:** Study and analysis
- ▶ **December 2009:** Next meeting to discuss concepts
- ▶ **December-February 2009:** Additional Analysis
- ▶ **February 2009:** Next meeting to discuss report findings
- ▶ **Spring 2010:** Report Completed



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Results of the Study will be Used to:

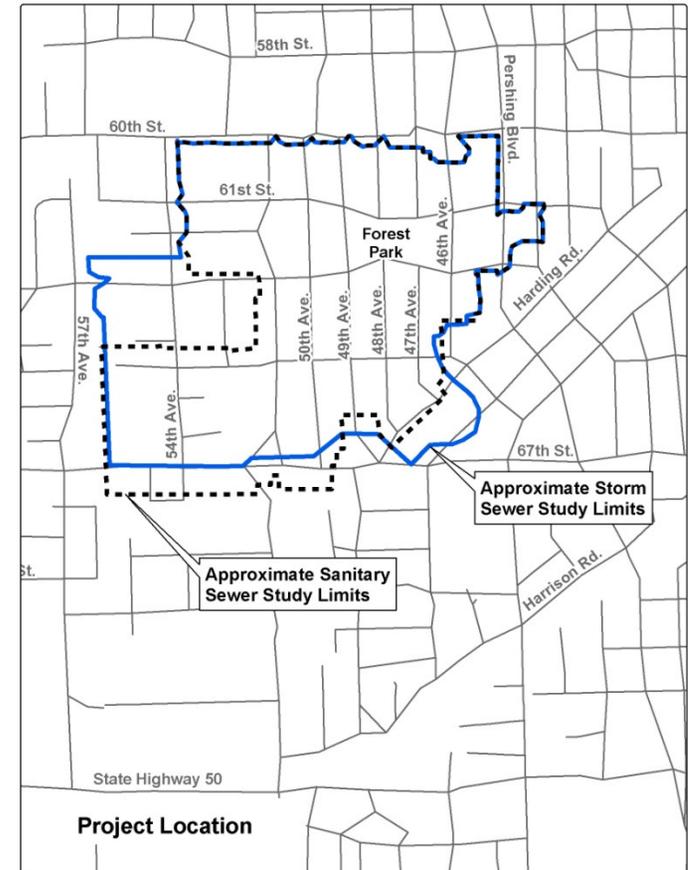
- ▶ Identify the key causes for flooding.
- ▶ Develop solutions that will alleviate flooding.
- ▶ Prioritize storm sewer and sanitary sewer improvement projects to address flooding.
- ▶ Partner with residents to jointly resolve contributing factors.
- ▶ Implement projects

Solutions and
Implementation



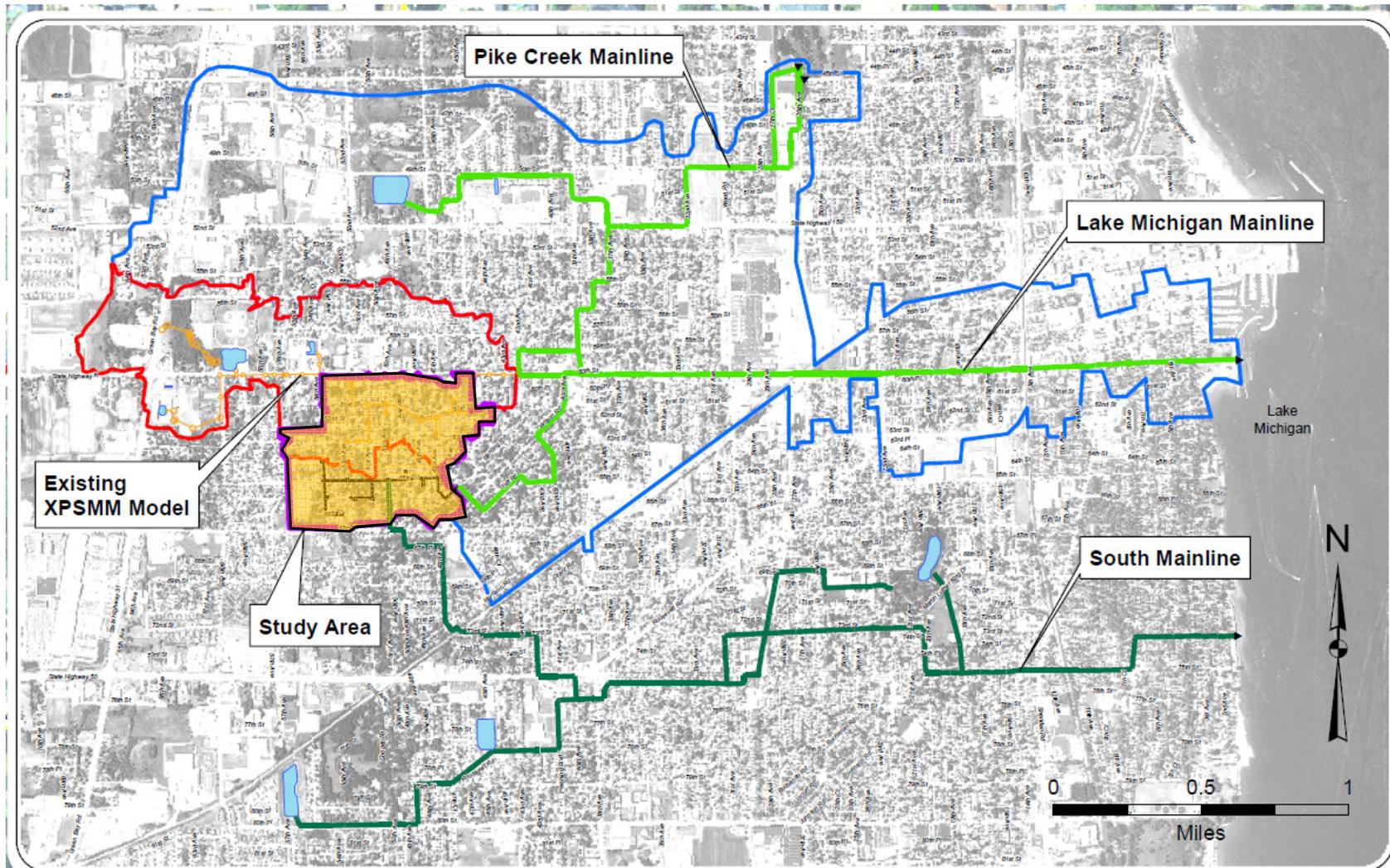
Components of Study

- ▶ Storm Sewer
 - ▶ Determine condition of pipes (*Condition Analysis*)
 - ▶ Determine how much stormwater pipes can hold (*Capacity Analysis*)
- ▶ Sanitary Sewer
 - ▶ Determine how much wastewater pipes can hold (*Capacity Analysis*)
 - ▶ Determine unnecessary contributors to sanitary system (*Infiltration/Inflow Analysis*)
- ▶ Public Involvement
 - ▶ Workshop meetings
 - ▶ Resident survey
 - ▶ Phone Calls and Face-to-face meetings



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Components of Study



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Possible Contributors to Street and Basement Flooding

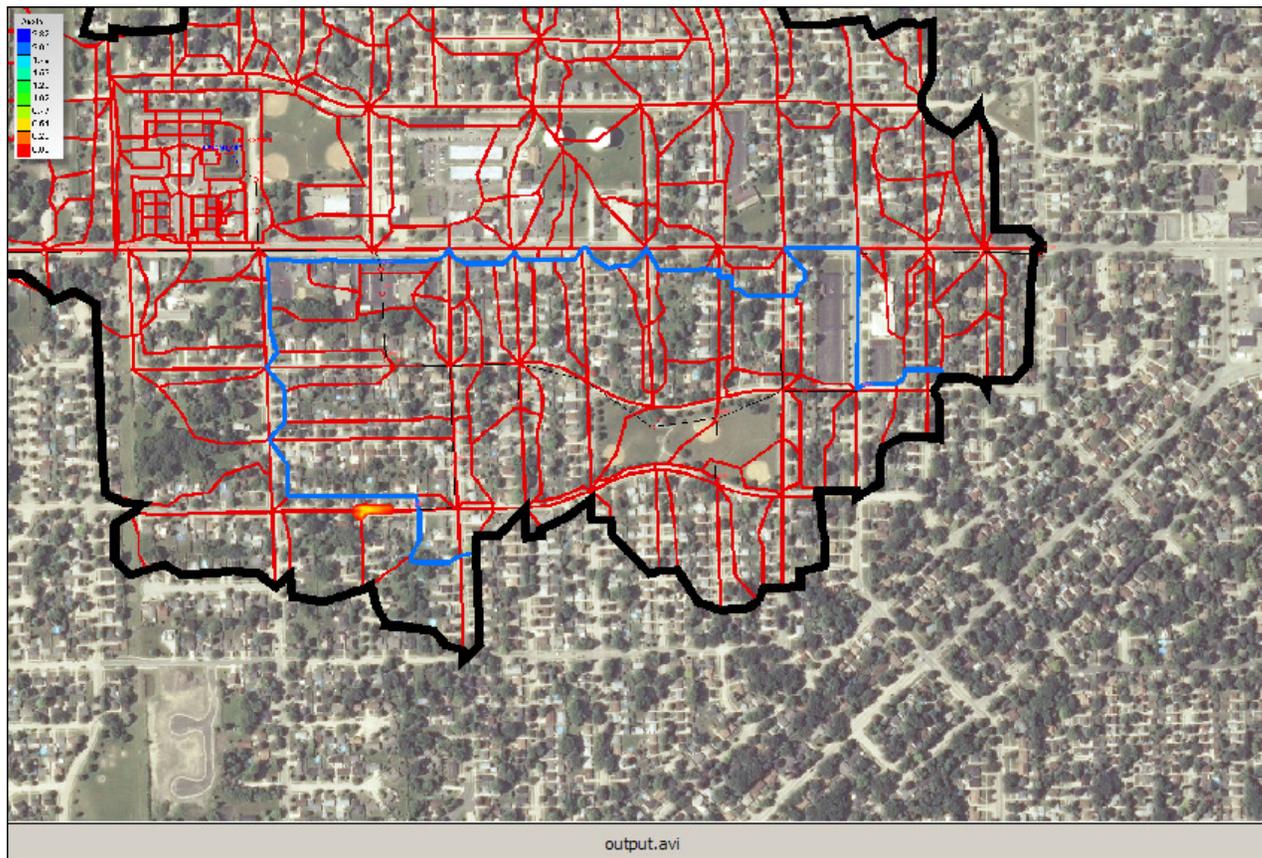
- ▶ Inlet Capacity
 - ▶ Stormwater has limited points of entry into storm sewer system
- ▶ Stormwater Inflow to Sanitary System
 - ▶ Sanitary system not designed to handle increased flows of stormwater from streets, sump pumps, foundation drains, and infiltration.
- ▶ Downstream Limitations
 - ▶ Downstream storm sewer and sanitary sewer pipes are full and cannot handle increased flows.
- ▶ Elevated Groundwater Table
- ▶ Home Characteristics
 - ▶ Stormwater draining toward house, not away
 - ▶ Large impervious (driveway, roof, etc.) areas which result in higher runoff
 - ▶ Clogged roof gutters



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Modeling as a Tool

- ▶ Modeling is a way to replicate real life storm-events and the impacts to the surrounding area
 - ▶ 4" Storm Event Reveals Flooding Areas: Video Clip



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Potential Solutions

Stormwater

- Conveyance Upgrades
- Storm Sewer Diversions
- Conventional Detention
- Underground Detention
- Green Detention Systems (Bioretention, Rain Garden, Rain Barrel)
- Stormwater Pumping Station
- Daylighting of Storm Sewers to Open Channel
- Property Acquisition
- Funding Mechanisms/Grants

Sanitary

- Sump Pump/Drain Tile Disconnection
- Conveyance Improvements
- Backwater Check Valves/Standpipes
- Manhole Chimney Sealing
- Slip-line Pipes
- Rebuild Manholes

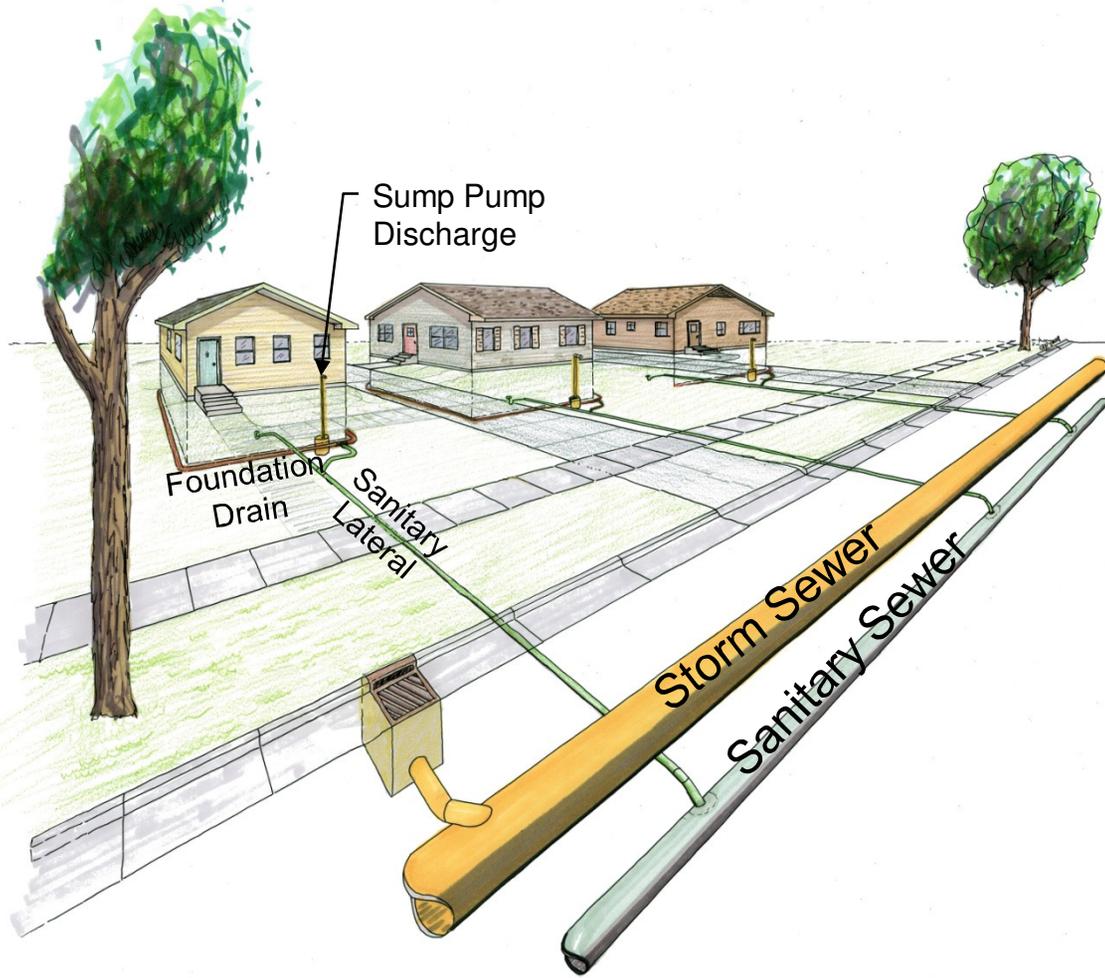


Strand Stormwater BMPs				
Bioretention Basin	St. Elizabeth's Hospital, Walling Park, Lake Mills, Madison, VT			
Infiltration Basin	Trak Bicycle, Vermont, VT, Eric Foubly, Brantley, VT			
Bioretention Swale Swale	Riverton Road, Eric Foubly, Brantley, VT			
Rain Garden	Eric Stearns, II, Cover of the, Dunderberg, VT			
Green Roof	Strand Assoc., Madison, VT, Madison, VT, Madison, VT			



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Resident Survey



Kenosha Stormwater Utility
 Attn: Shelly Eillingmeyer
 625 53rd Street, Room 305
 Kenosha, WI 53140
 (262) 653-4149



September 15, 2009

Re: Forest Park Area Information Survey

In an effort to better understand the cause of flooding in the Forest Park area, we are asking you to fill out this brief survey. We thank you in advance for your cooperation and strongly encourage your participation. As we all work together, we hope to minimize the potential for flooding and sanitary sewer backups in your neighborhood.

Instructions:

Please fill out this form and return by September 30, 2009, in one of the following ways:

1. Mail or drop off at the above address.
2. E-mail to shelly@kwsu.org
3. Fax to (262) 653-4656.
4. Complete survey online (Link to survey located at www.kenosha.org under the Current News section)
5. Bring to Public Information Meeting No. 1 on September 24, 2009, at the Kenosha Civil War Museum.

Resident Information

Name: _____
 Street Address: _____
 Home Phone: _____
 Daytime Phone: _____
 Cell Phone: _____
 Number of Years at Current Address: _____

Survey Questions

1. Do you have a basement? Yes No
2. If you have a basement, have you experienced storm-related flooding in your basement? Yes No

If yes, what was the approximate depth of water? _____

If yes, how often and in what year(s) did this occur? _____

3. Which of the following best describes the cause(s) of your storm-related basement flooding (check all that apply)?

- Sump pump failure
- Foundation cracks/leaks
- Sump pump could not keep up
- Windows/windows-wall (gutters)
- Floor drains (sewer waste)

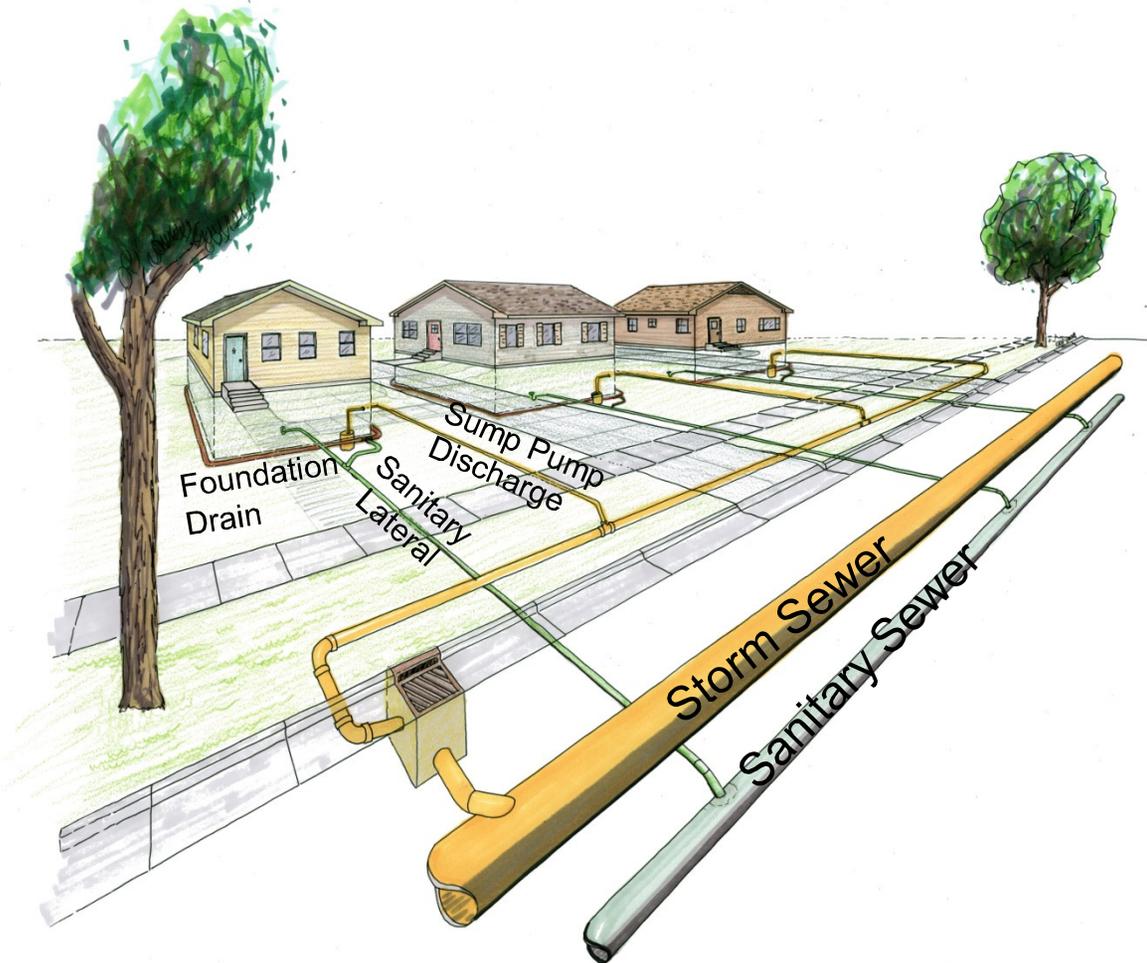
Other: _____

Please complete the back side of this survey and sketch.



September 2009

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- Floor drain (garage/trash)

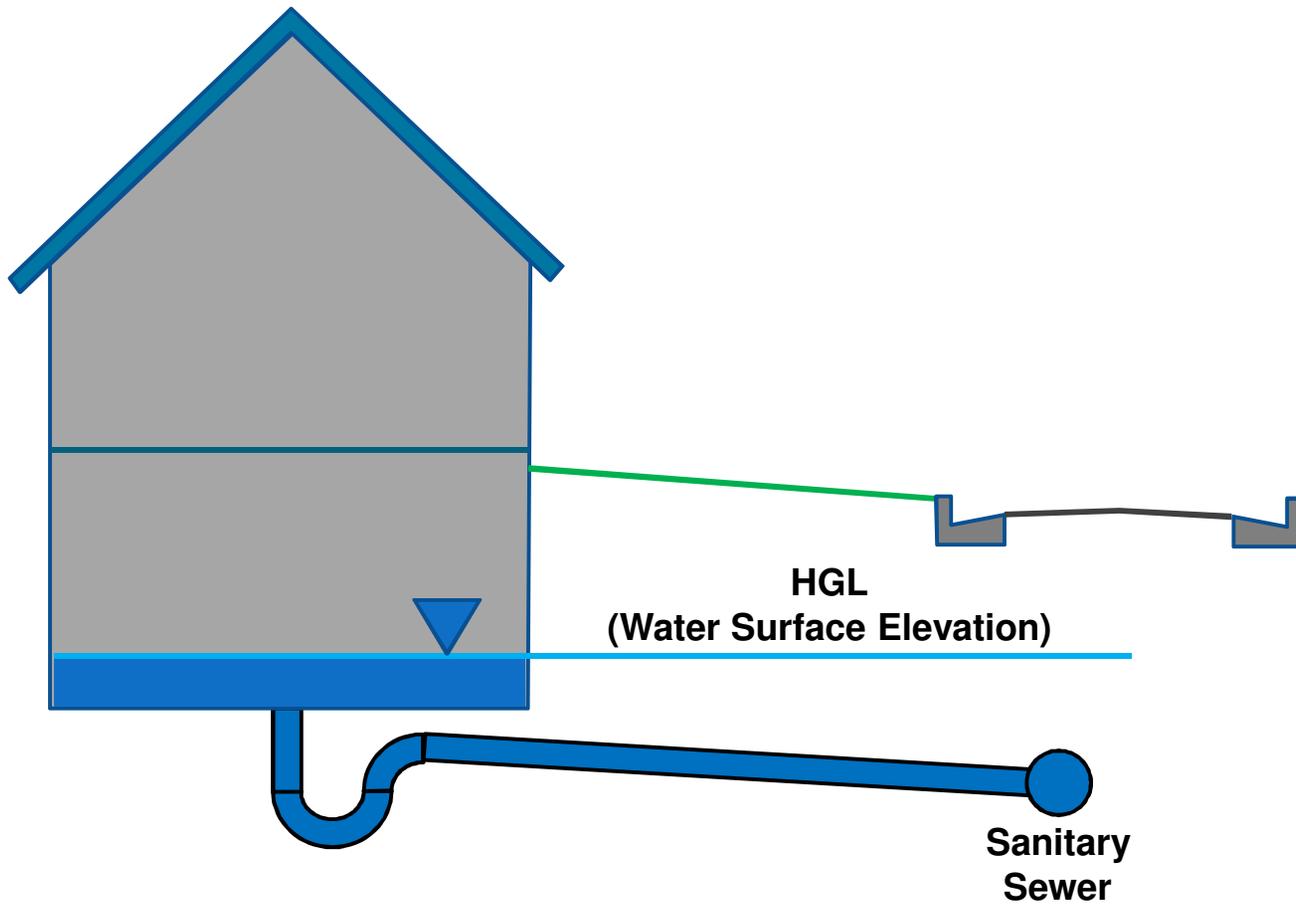
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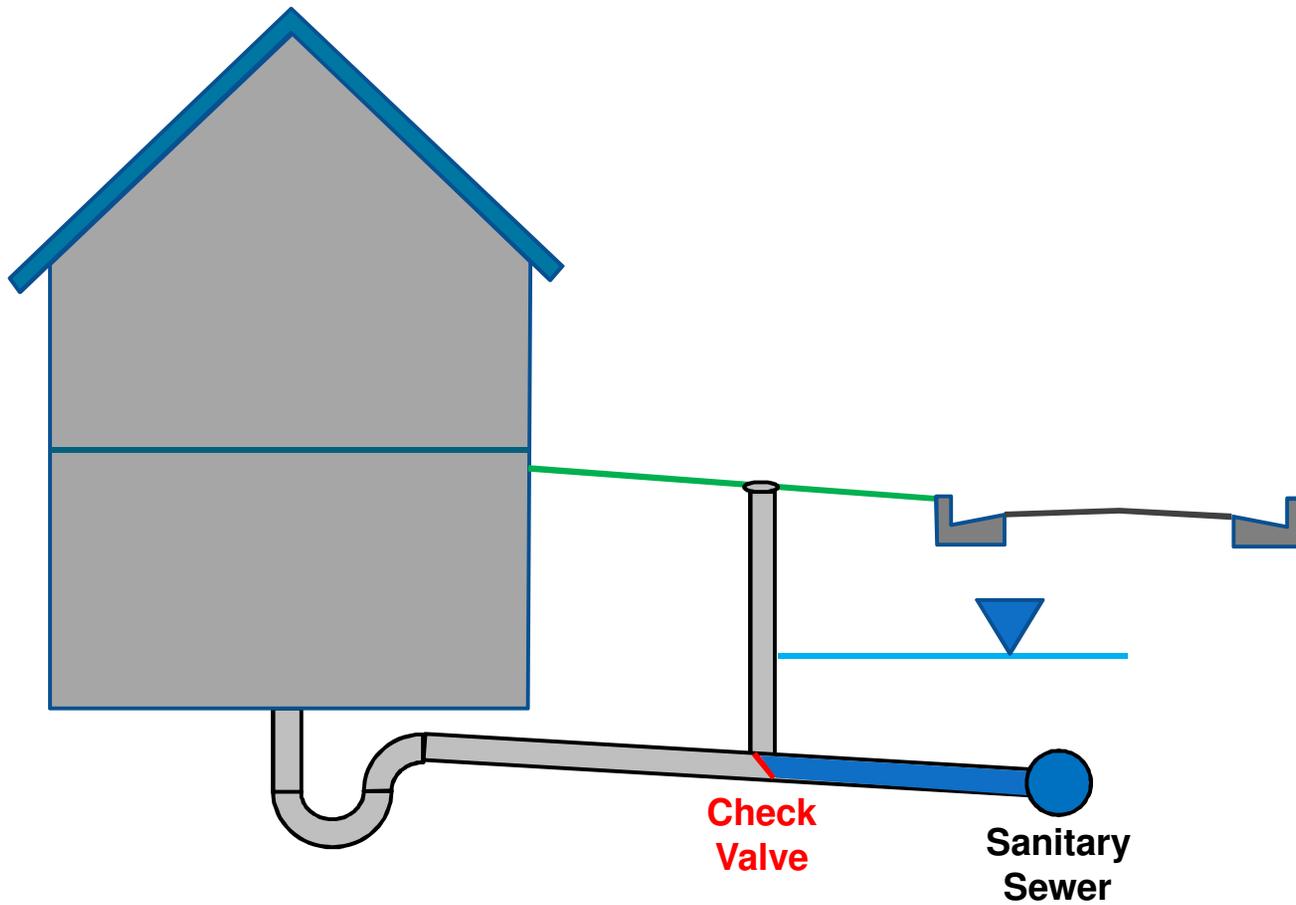
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Problem



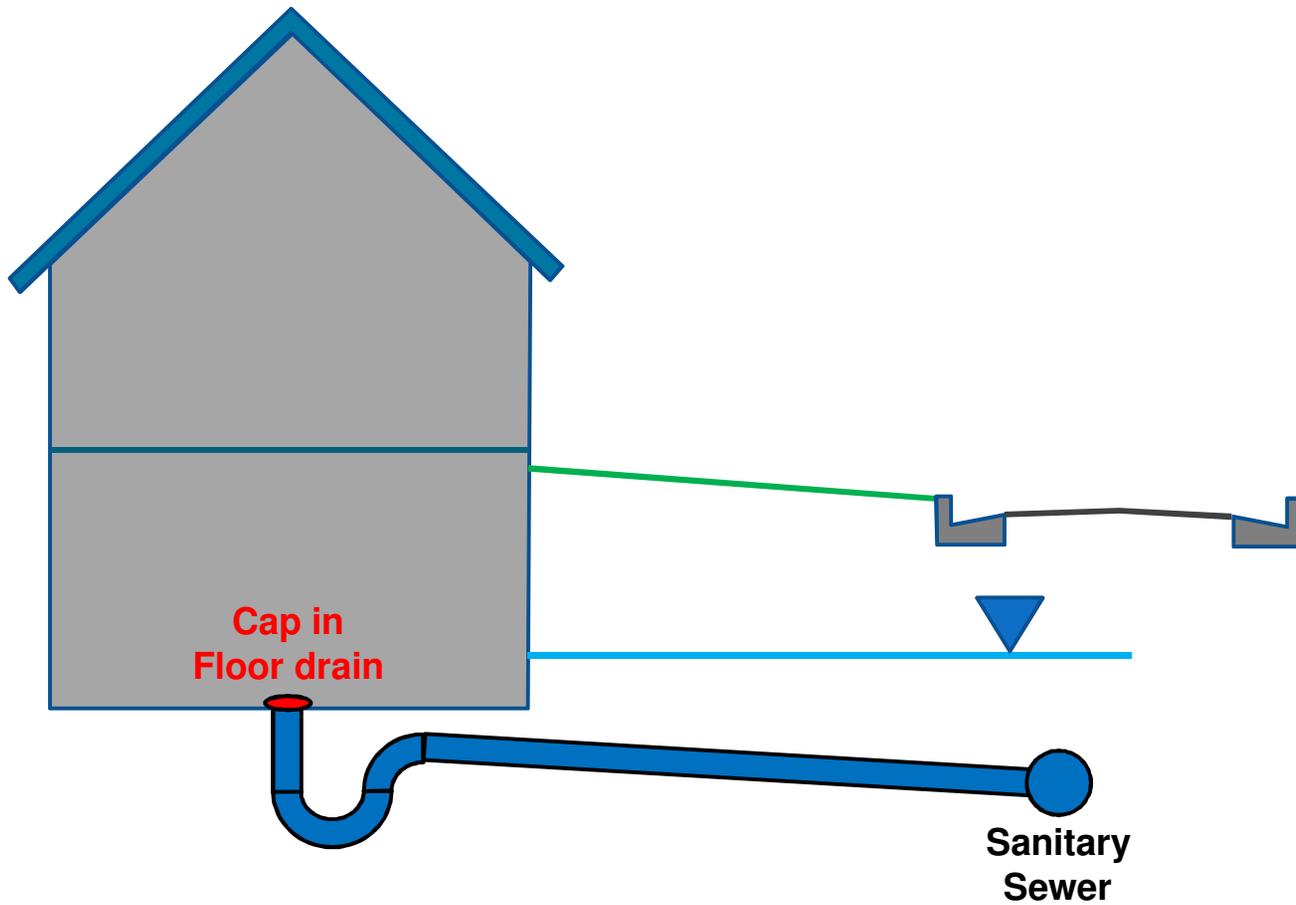
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Common Solution A



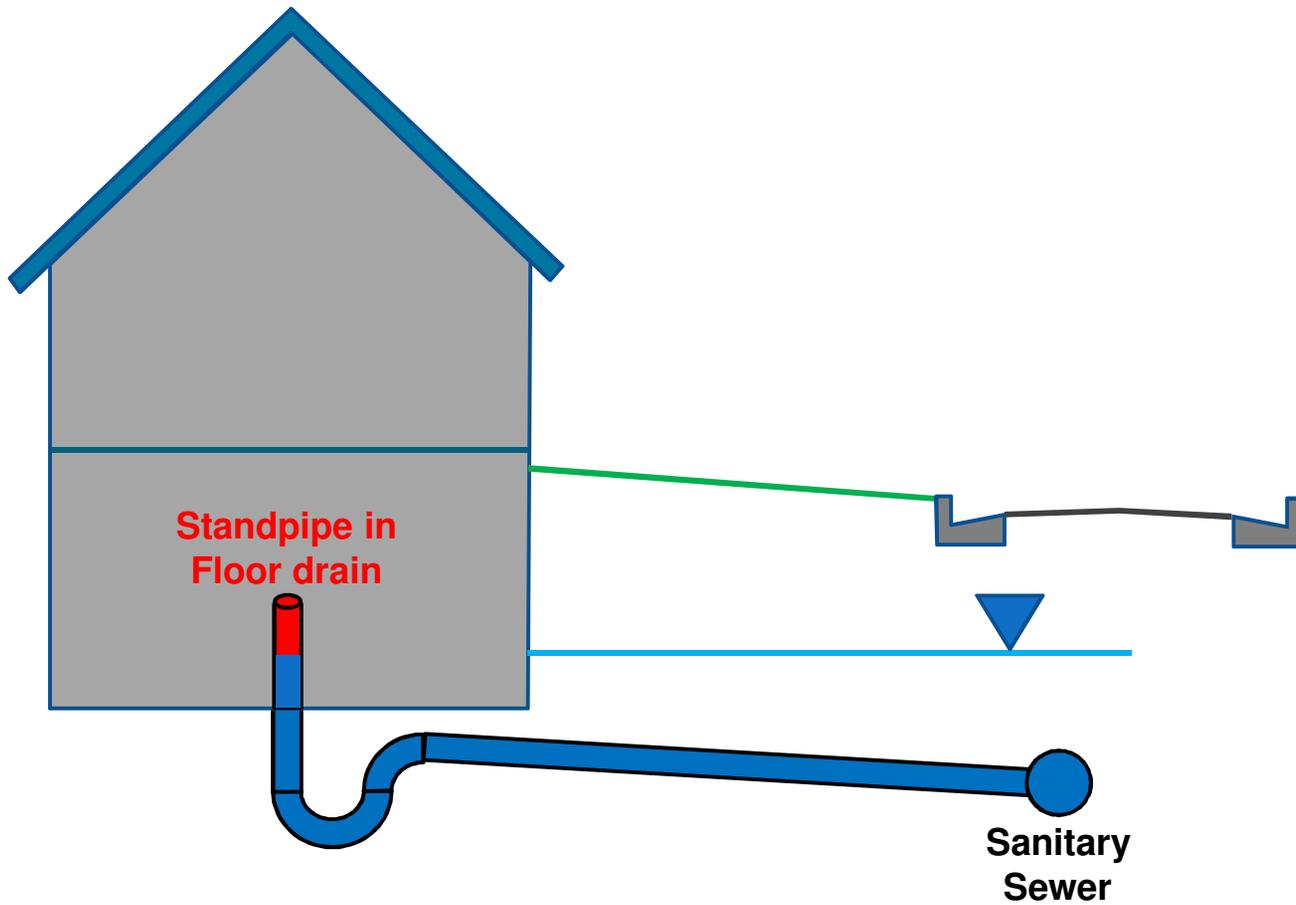
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Common Solution B



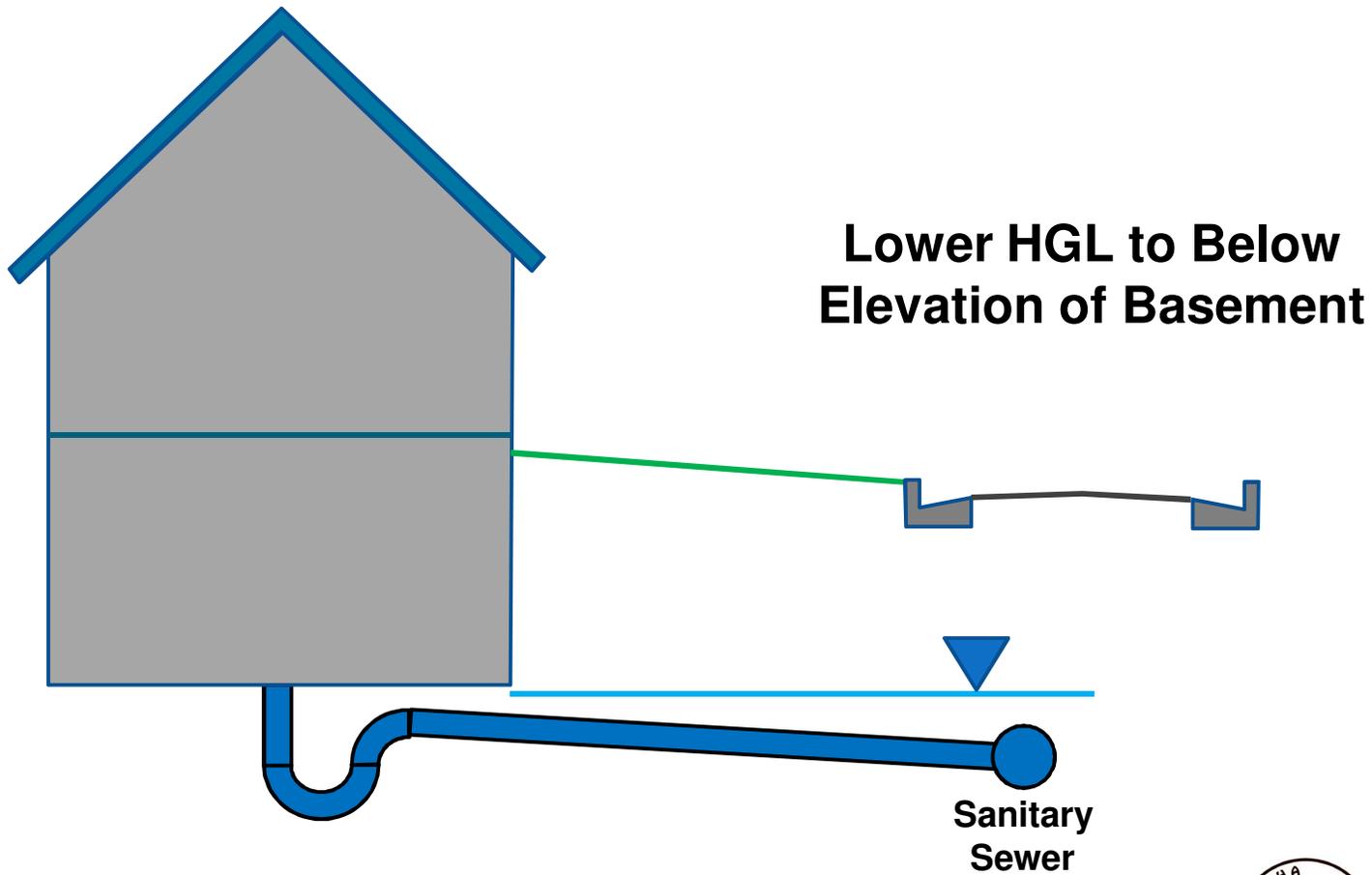
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Common Solution C



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Long Term Solution



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Workshop 1 Portion

Hopes, Fears, and Prioritization

Question 1

I hope the Forest Park Area Study will _____.

- 5-10 minutes



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Question 2

I fear the Forest Park Area Study will _____.

- 5-10 minutes



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Prioritization

Place 2 dots on your greatest hopes.

Place 2 dots on your greatest fears.



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Thank you for your participation!

Before you go, be sure to complete the **Forest Park Area Information Survey**.



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