



**Sewer Lateral Program Workshop**  
**December 15<sup>th</sup>, 2015**



# Introduction:

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## Council Meeting/Workshop Calendar:

### Meetings:

- ~~November 10~~ ~~Mound City Council Meeting – Workshop Pt 1~~  
~~– Information dissemination~~
- ***December 15*** ***Workshop Session – Pt 2 - Tailor Solution for Mound Staff Direction on possible ordinances/code changes/etc.***
- January-February 2016 Mound City Council Meeting  
Return proposed ordinances/code changes for Council



# Introduction:

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## Workshop Outline:

- Follow up on discussion topics
- Present staff recommended program outline
- Q/A with Bert Tracy from City of Golden Valley
- Update on MCES Coordination
  - Investigative work & MCES Surcharge
- Breakdown of components in the recommended program
  - Point of Sale
  - Demolition/Rebuild or Addition
  - City Wide Voluntary/Self Reporting
  - Risk Targeted Inspection Projects
- Next Steps



# Recap - Impetus:

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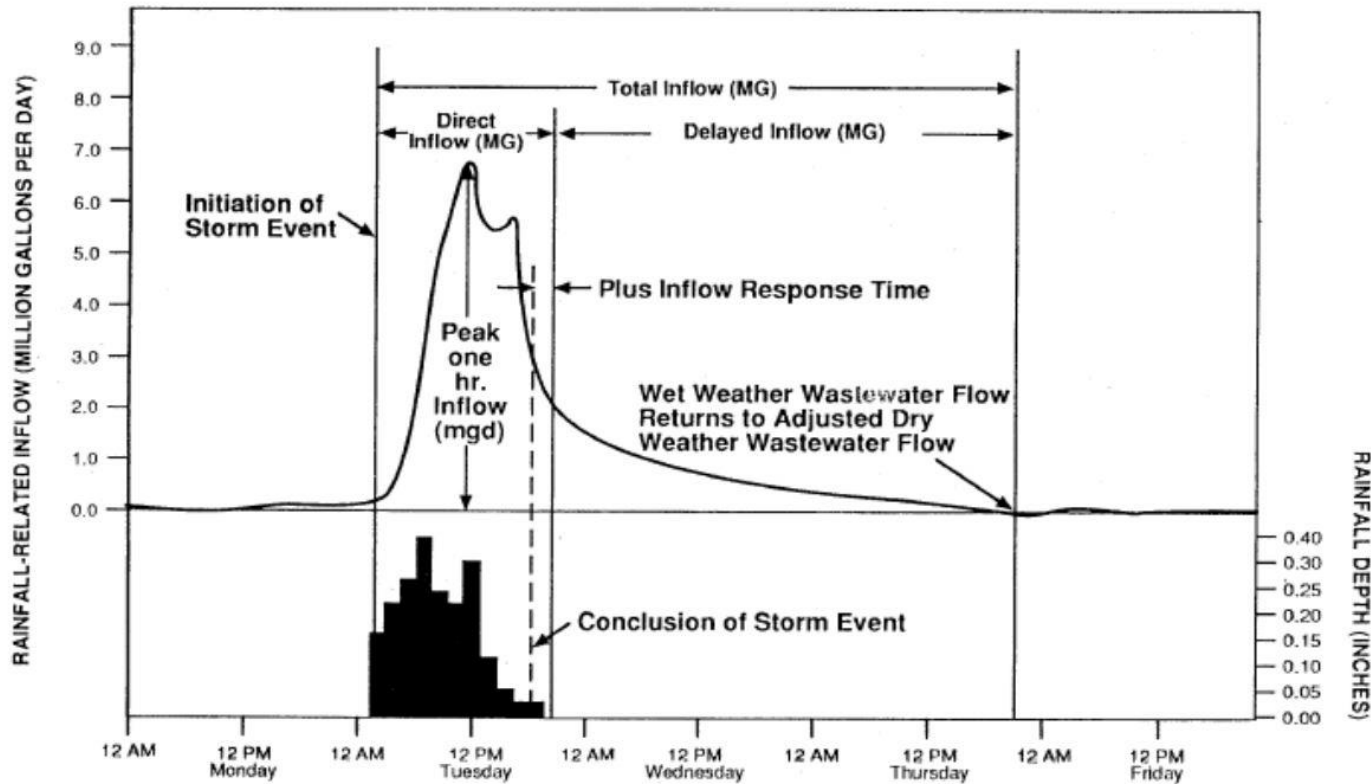
MCES Sewer Surcharges based on exceedance:

- MCES bills a Surcharge for amounts pumped to their facilities that are above and beyond the exceedance threshold:
  - 2015 Surcharge of \$933,750 (from flow that occurred in 2014)
  - Annualized over 4 years (2015-2018) this is \$233,437.50/year
- MCES allows these surcharges to be levied directly, or be replaced by work performed to eliminate sources of I/I – to date we have performed the city's annual sewer lining projects to satisfy this requirement
  - \$233,437.50 in annual work that we have to complete to satisfy
- ***New for 2016 – work on Private Sewer Laterals CAN be counted as MCES Surcharge satisfying work***

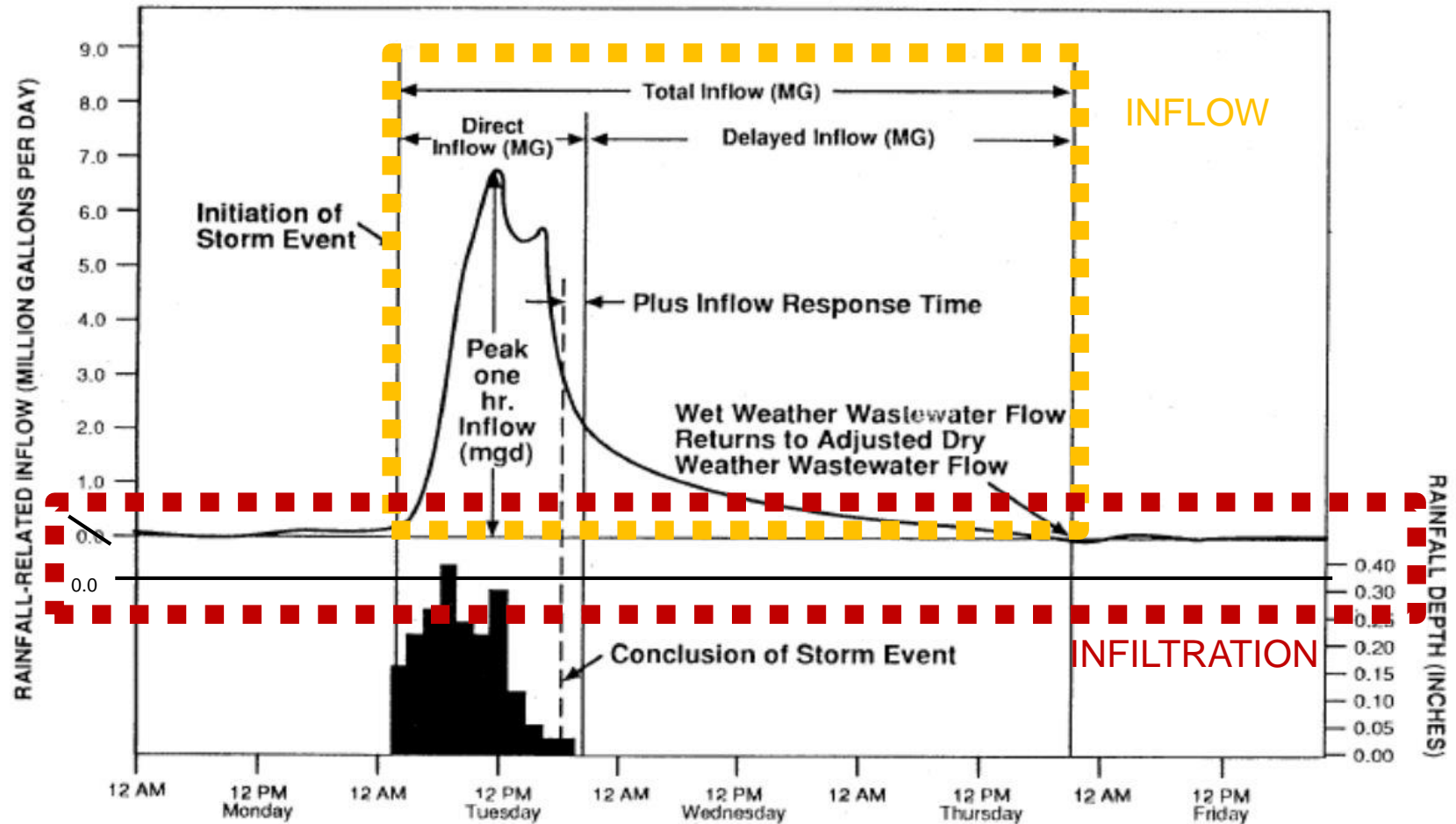


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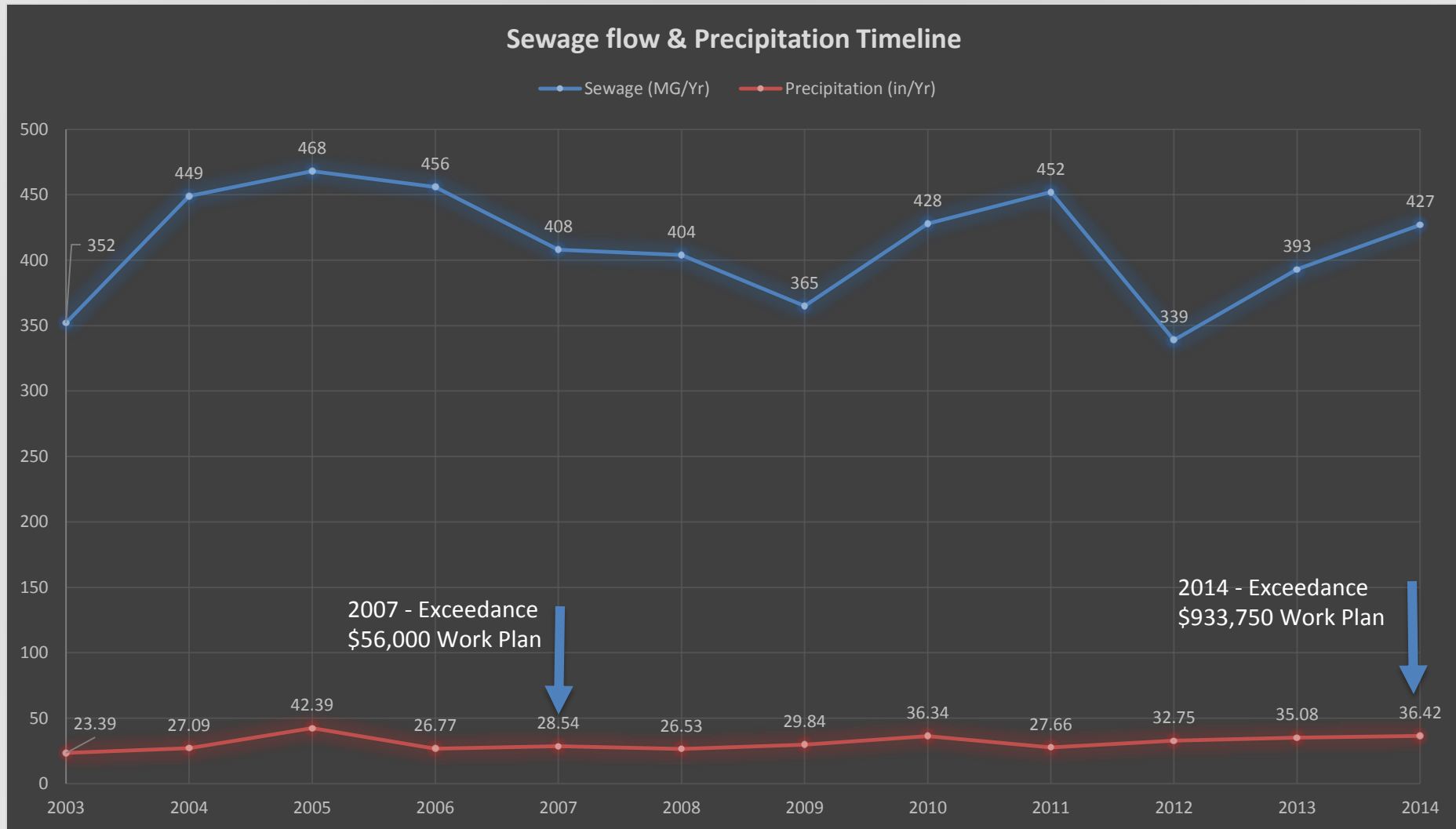
Exceedances - In July of 2015 MCES began measuring **hourly** exceedances, rather than **daily**. Mound's threshold for an exceedance in 2016 is 3.79 mgd



# Impetus:



# Recap - Impetus:





## 2016 I/I Program Year Community Response Form

This form is to be completed by communities that received an exceedance notification for Program year 2015. If a community chooses to be billed a surcharge, it must complete Part A. If a community chooses to perform mitigation work, it must complete Parts A and B. Send completed form and any supporting documentation to:

**Mail:** Rebecca Fabunmi  
Principal Engineer, MCES Community Programs  
390 N. Robert Street  
St. Paul, MN 55101

**Fax:**  
Attn: Engineering Services  
(651) 602-1030

**Email:** rebecca.fabunmi@metc.state.mn.us

**Part A:** ☐ Community chooses I/I Surcharge ☐ Community chooses I/I Mitigation Work

**Community Name:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

**Part B: 2016 I/I Mitigation Work Plan Value:** \$ \_\_\_\_\_

1. **Public Facility Work:** Attach detailed description of the 2016 I/I reduction work. Include work completed in 2014 & 2015 look back period. Itemize type of work to be completed in 2016 on public sanitary sewer system and estimated or actual costs. MCES may request additional documentation to verify actual or planned expenditures. Include the percent of each project that is related to I/I mitigation.

**Summary of Costs (attach additional pages as needed):** \_\_\_\_\_

\_\_\_\_\_

Public Facility      SUBTOTAL (B1)      = \$ \_\_\_\_\_

2. **Private Property Work:** Attach detailed description of community's inspection program for broken service laterals and illegal connections of sump pumps or passive drain tile(s). Complete number & value of work as indicated.

\_\_\_\_\_ Sump pump disconnections: \$150 per dwelling      = \$ \_\_\_\_\_

\_\_\_\_\_ Foundation drain disconnections: \$3,000 per building      = \$ \_\_\_\_\_

\_\_\_\_\_ Rain leader disconnections: \$100 per single family dwelling      = \$ \_\_\_\_\_

\_\_\_\_\_ Rain leader disconnections: \$3,000 per commercial dwelling      = \$ \_\_\_\_\_

\_\_\_\_\_ Service lateral repairs: \$5,000 per repair      = \$ \_\_\_\_\_

\_\_\_\_\_ Other: (Describe in designated space below)      = \$ \_\_\_\_\_

Private Property      SUBTOTAL (B2)      = \$ \_\_\_\_\_

# Recap - Impetus:





## 2016 I/I Program Year Community Response Form

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# Recap - Impetus:

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☐ Community chooses I/I Mitigation Work

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## 2016 I/I Program Year Community Response Form

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St. Paul, MN 55101

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# Recap - Impetus:

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Public Facility SUBTOTAL (B1) = \$ \_\_\_\_\_

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\_\_\_\_\_ Other: (Describe in designated space below) = \$ \_\_\_\_\_

Private Property SUBTOTAL (B2) = \$ \_\_\_\_\_



# Recap - Impetus:

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## 4. *Private Property Improvements*

- a. Inspection costs for looking for sump pumps, drain tile, yard drains and rain leaders connected to the sanitary sewer
- b. TV inspection of service laterals
- c. Disconnect sump pumps, drain tile, area drains, and rain leaders from the sanitary sewer system
- d. Repair or replace broken service laterals
- e. 25% credit of private property work subtotal may be added to private property work improvements in recognition of staff time (see I/I Program Year Community Response Form, Part B)

Yes; Full at reasonable, actual costs or standard costs per note 2, below.



# Discussion Topics from Council:

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## My Homework

- Rain Barrels/Rain Barrel Programs
- Lateral Line Insurance
- Comparable Size Community programs



# Discussion Topics from Council:

## My Homework

- Rain Barrels/Rain Barrel Programs
  - [www.recycleminnesota.org](http://www.recycleminnesota.org)
  - Water use/conservation
  - Could capture some flow, In the 1,000's of gal I/I needs 100,000's of gal



### How to Assemble and Install Your Rain Barrel

The barrel shown on the right is a typical food-grade plastic drum that you can use to build your own rain barrel. Most of these barrels are between 40 and 60 gallons and can be obtained from vendors other than the manufacturer who initially used the barrel. (See Insert 1: Local Vendors for these barrels or search the web for others.) Because of this, you will need to ask if the vendor knows the following traits for a "good" rain barrel:

- > Was it ever used to contain chemicals or other harmful substances? This can leach into the ground when you water your garden, harm the soil, pollute the ground water, and possibly affect you and your family. Always smell a barrel before buying it to test for lingering smells. Pickle smells are OK.
- > Does it have a tight fitting lid to prevent curious little critters from getting in?
- > Is it made from UV tolerant plastic so it will not decay with sun exposure?
- > What color does it come in? The practical aspect of this is to keep the water relatively cool. If the barrel is clear, it will get too warm. The aesthetic aspect is simple. If you do not like how it looks against your house, you are less likely to use it.

#### Assembly A: Faucet

- Drill a 3/4" hole roughly 3 or 4 inches from the bottom.
- Screw the spigot into the hole.
- From inside the barrel, slide the rubber washer over the spigot threads.
- Slide the metal washer over the threads behind the rubber washer.
- Screw on the bushing and tighten.

| Cost:  | Materials Needed  |
|--------|---|
| \$4.49 | 1/2" Hose spigot  |
| \$1.50 | 3/4" Inside diameter rubber washer                                    |
| \$0.50 | 3/4" Inside diameter steel washer                                     |
| \$0.75 | PVC Bushing with inside diameter to fit on non-hose end of the spigot |
| \$1.96 | 1-1/2" Wing nut plug (rubber)*  |

#### Assembly B: Overflow

- Drill a 1-1/2" hole ~6" from the top.
- From inside the barrel, push the smaller end of the female insert adapter through the drilled hole.
- Attach overflow hose onto the insert adapter. Cut hose to a length that will reach a vegetated area or at least 4 ft from the house foundation.
- Tighten the hose clamp where the hose covers the adapter to secure it.
- From the inside of the barrel, caulk the seam where the adapter meets the barrel walls.

| Cost:                                     | Materials Needed  |
|---|---|
| \$7.99 Available at large hardware stores | 1-1/2" Sump pump drain kit, including: <ul style="list-style-type: none"><li>&gt; 1-1/2" Inside diameter male adapter</li><li>&gt; Hose clamp with range including 1-1/2"</li><li>&gt; 1-1/2" Overflow hose (weather resistant)</li></ul> |
| \$2.99                                    | Marine or other weather resistant caulk   |

\*Note: The rubber wing nut plug should be used to seal "Plug" in the Figure 2 drawing below if multiple barrels are being connected. To connect another barrel, remove the spigot from the first barrel, and screw in a hose adapter. Optional: installing another rubber wing nut plug on the side of the barrel as close to the bottom of the barrel as fits helps with yearly cleaning. (See "Plug" in Figure 1). If barrels are not winterized, leaving this valve open (rubber wing nut plug out) will prevent the barrel from freezing in the winter. Rubber plugs should be kept inside in the winter to prevent cracking.

#### Figure 1

#### Figure 2



# Discussion Topics from Council:

## My Homework

- Lateral Line Insurance
  - Most companies exclude I/I as a reason for repair
  - Most coverage limits are somewhat low
  - Could opt to be self insured and choose the coverage/limits/standards

HomeServe USA®



### What's Covered?

For only \$9.99/month, your plan covers:

- ✓ Locating the blockage or collapse
- ✓ Excavation to expose pipe
- ✓ Pipe replacement or repair
- ✓ Repair or replacement of seals and joints
- ✓ Unblocking
- ✓ Fitting external valves
- ✓ Fusing
- ✓ Welding
- ✓ Pipe cutting
- ✓ Backfilling of areas disturbed by repairs

#### Q: What items are included as part of the warranty?

A: The external water and/or sewer line warranty covers the underground service line from the foundation of your home to the point where the line becomes the utility's responsibility. If any part of the line is clogged, broken and/or leaking, SLWA will repair or replace the line in order to restore service (including clearing tree roots from the water or sewer line).

#### Q: What items are excluded as part of the warranty?

A: The water line warranty does not cover the costs of repairs to the meter or meter vault, nor does it cover branch lines to sprinklers, pools, hot tubs, etc. The sewer line warranty does not cover septic systems. The warranties are designed to ensure that the homeowner has utility service to the primary residence for purposes of drinking, cooking and cleaning. Repairs for damages caused by the homeowner, a third party, natural disaster, act of God or by other insurable causes are also not covered. Complete Terms & Conditions for your residence can be viewed by returning to the homepage and clicking on "View Terms and Conditions". You will be asked to enter your zip code to ensure the correct version is displayed.

# Discussion Topics from Council:

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## My Homework

- Comparable Size Community programs – revisit shortly..





# Staff Recommended Program:

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## Objectives:

- Rapidly and effectively eliminate risk of exceedance penalties
  - Reduce MCES Surcharge as fast as possible
- Reduce overall I/I through targeted investigation, repair, and renewal
  - Continue to reduce I/I
- Focus up front effort on discovery and inflow elimination (Big I > Hourly Peaks)



# Staff Recommended Program:

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## Framework:

- Point of Sale Inspections
- Demolition/Rebuild or Addition Inspections
- City Wide Voluntary/Self Reporting Inspections
- Risk Targeted Inspection Project(s) led by the city
  - Multiple Funding Options



# Q & A:

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Bert Tracy -  
Public Works Maintenance Manager,  
City of Golden Valley



# Staff Recommended Program - Means:

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- Proactive stance on I/I work in Municipal Lines
  - This work is a credit against the MCES surcharge
- Proactive stance on investigation of high-risk private laterals
- Point of sale and demo/rebuild/addition programs will compel investigations
  - Approximately 100 home sales/yr and 15 demo/rebuilds
- Failed inspections lead to inflow repairs
  - Gutters, foundation drains, sump pumps, etc)
  - sewer fee for failure to repair
- Shared financial participation
  - Investigation/repair cost participation credits against sewer fee
- Retain evidence of lateral defects
- City Reserves the right to take proactive stance on known private lateral infiltration at a later date



# Staff Recommended Program - Resources:

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- Currently expect to allocate \$250k/year to annualized surcharge required work – “buy down” or pay up
- Current CIPP Program is \$150k/year in lining of high risk municipal mains
  - This equates to approximately 2500 linear feet of pipe rehabbed
- Leaves us with \$100k/year in possible investigative and city cost participation activities
  - Investigation:  $\$300/\text{unit} * 150 \text{ units/year} = \$45,000$
  - Repairs:  $\$2200/\text{unit avg} * 25 \text{ units/year} = \$55,000$



# Staff Recommended Program - Resources:

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- Funds are currently sourced through normal billing revenues in Sewer Enterprise Fund, or G.O./Utility Bonds
- Sewer Fee collected would go into escrow to pay “up to” city contribution in repairs, fund retains any residual amounts
- Consider city-wide I/I fee as a possible source for sustainability
  - \$4.00/household per quarter



# Staff Recommended Program - Timeline:

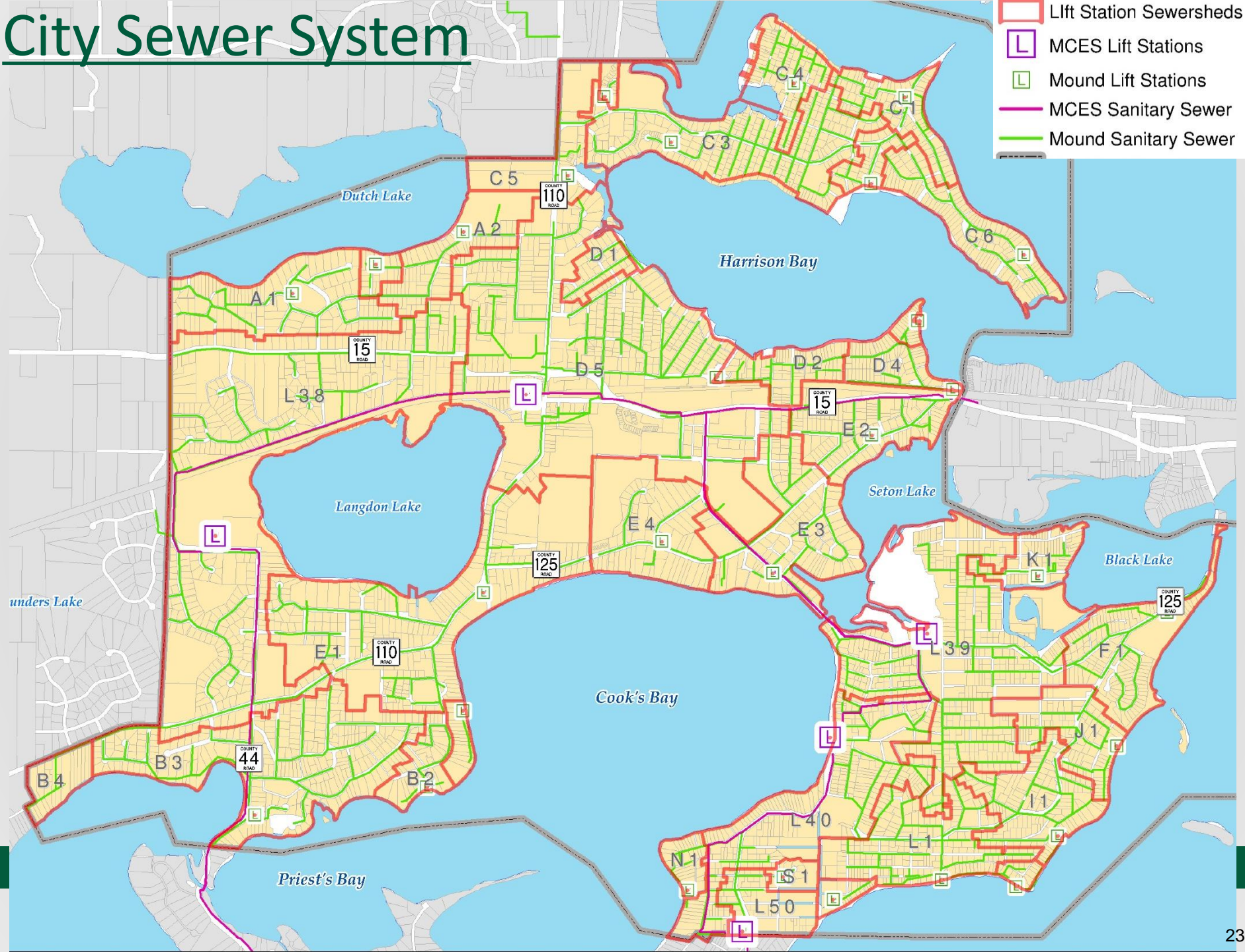
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- ~4000 homes in Mound
- Hope to inspect 250/year
  - Between all facets of program
    - Point of sale
    - Demo/Rebuild/Addition
    - Voluntary/Self reporting
- 16 Year run to capture every home
- This prioritizes the “worst first” concept





# City Sewer System



# Breakdown – Point of Sale:

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- Requires televising of lateral from connection to the main to the last drain/connection on the line in the home
- Televising is paid for by the homeowner
- Certifies the home free of Inflow & Infiltration sources:
  - No Cross connections
  - No Sump Pump connections
  - No Foundation drains or downspout connections
  - No damaged or leaking/infiltrating lateral pipe
- Home must be certified by the city before it can be conveyed in a sale
- City issues approval for conveyance once lateral is reinspected
  - Money may also be escrowed to cover the 2x cost of potential repairs
- Sewer fee is levied to sewer bill for incomplete repairs



# Breakdown – Demo/Rebuild/Addition:

- City's permit process for these activities will kick off the need for an inspection
- Televising is paid for by the homeowner
- Certifies the home free of Inflow & Infiltration sources:
  - No Cross connections
  - No Sump Pump connections
  - No Foundation drains or downspout connections
  - No damaged or leaking/infiltrating lateral pipe
- City maintains copy of record of inspections for certification for sale, within a certain time period, Making reinspection for a sale unnecessary
- City will certify repairs have been completed as a condition of a new certificate of occupancy/close out of building permit
- Sewer fee is levied to sewer bill for incomplete repairs





# Breakdown – Voluntary/Self Reporting:

- Televising is paid for by the homeowner
- Certifies the home free of Inflow sources:
  - No Cross connections
  - No Sump Pump connections
  - No Foundation drains or downspout connections
- Damaged or leaking/infiltrating lateral pipe are recorded and will trigger repair at point of sale, or at a later date reserved by the city
- City participates in cost of inflow source repairs under this program, up to the limit of the annual funds for MCES  
Surcharge work
- No sewer fee is levied for voluntary/self reported repairs that are incomplete



# Discussion Topics from Council:

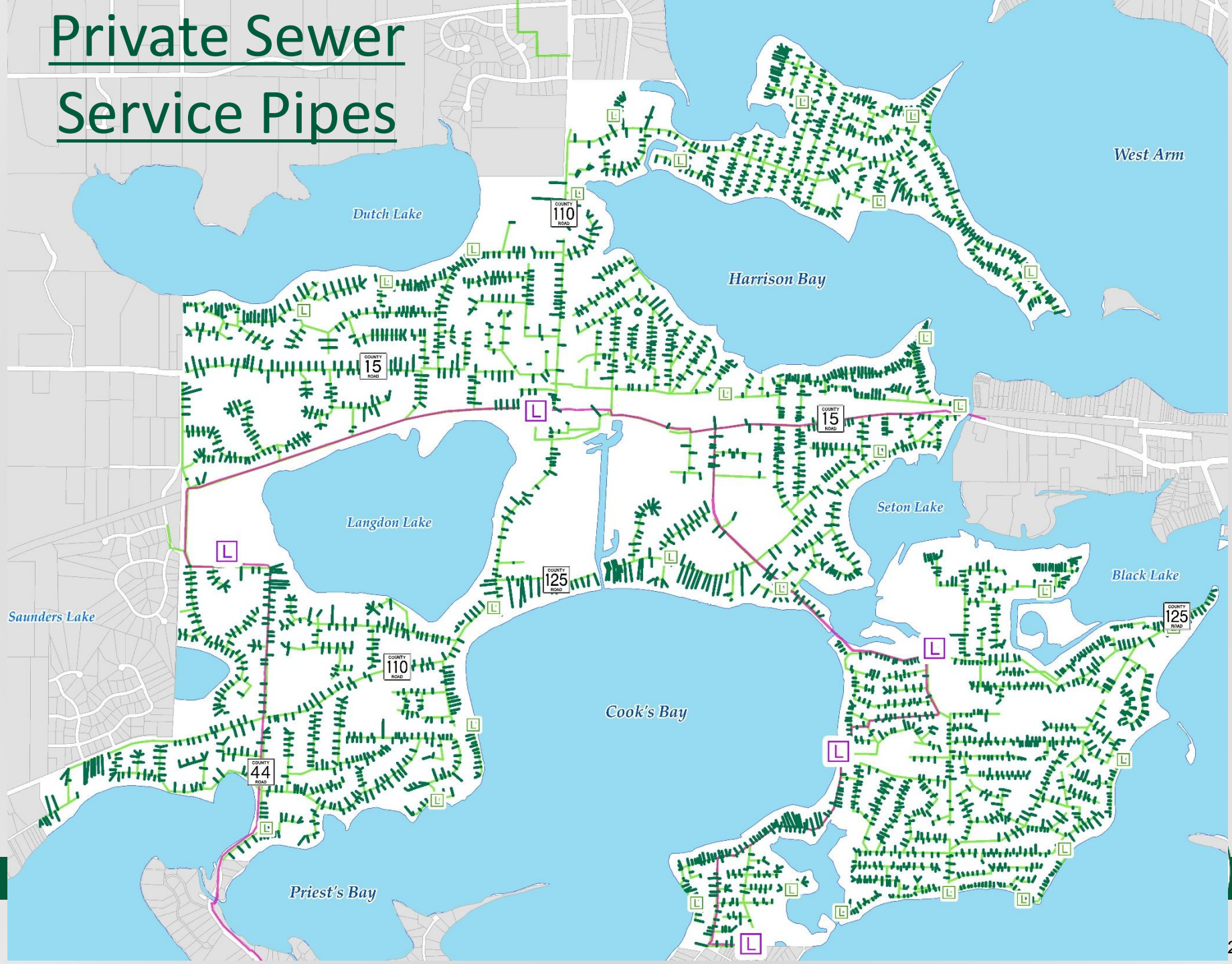
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## My Homework

- Comparable Size Community programs
  - No other communities are identical to Mound
    - 30 lift stations
    - ~40 miles of shoreline
    - Integrated System with MCES



# Private Sewer Service Pipes



## SUMMARY OF EXISTING SUMP PUMP AND LATERAL PROGRAMS

|  | Municipality   | Point of Sale Program | Sump Pump/Lateral Lining Program  | Fines/Fees   |
|--|----------------|-----------------------|---|--|
|  | Chanhassen     | No                    | sewer fee of \$100 per month added to every sewer billing for property owners not in compliance   | \$100/month until in compliance  |
|  | Fridley        | Yes                   | MCES I/I Grant previously used, no dedicated city funds   | \$300/quarter until in compliance.   |
|  | Golden Valley  | Yes                   | MCES I/I Grant previously used, no dedicated city funds. Repairs can also be assessed to property taxes (429)   | \$500/month until in compliance.   |
|  | Minneapolis    | No                    | MCES I/I Grant previously used, no dedicated city funds   |  |
|  | New Brighton   | No                    | City offers up to \$500 to get the sump water out of the building. City offers up to \$25 for inspection of homes. Average incentive payout is about \$260. To qualify for funds, sump pump must be inspected.  | \$100/month until in compliance  |
|  | Roseville      | No                    | MCES I/I Grant previously used, no dedicated city funds   |  |
|  | South St. Paul | Yes                   | Property owner bears sole financial responsibility  |  |
|  | St. Paul       |                       | MCES I/I Grant previously used, no dedicated city funds<br>Additionally, the City can assess the repair and property owners can repay the loan through property taxes over a twenty year period.  |  |
|  | West St. Paul  | No                    | MCES I/I Grant previously used, no dedicated city funds<br>Sewer Service Repair Grant from City which will cover 15% of the private sewer service repair costs up to \$5,000 per property Repairs can also be assessed over 10 years to property taxes (429). There is an additional program for disabled/fixed income residents for deferring assessment costs.  | \$50 per month for single family homes, and \$300 per month for all other properties |
|  | Duluth         | Yes                   | I/I Reduction Program Grant Funds includes \$1,400 for working sump pump or gravity system, \$350 for removal of a house trap, \$250 to tap into existing storm line or I/I stub, and \$150 for additional electrical work. Additionally, the City may reimburse property owners for repairing, replacing, or re-lining services (in the form of a grant) for 80% of the cost of work up to \$4,000. The Private Sewer System Grant Funds will reimburse 80% of the out-of-pocket expenses up to \$3,000. |  |



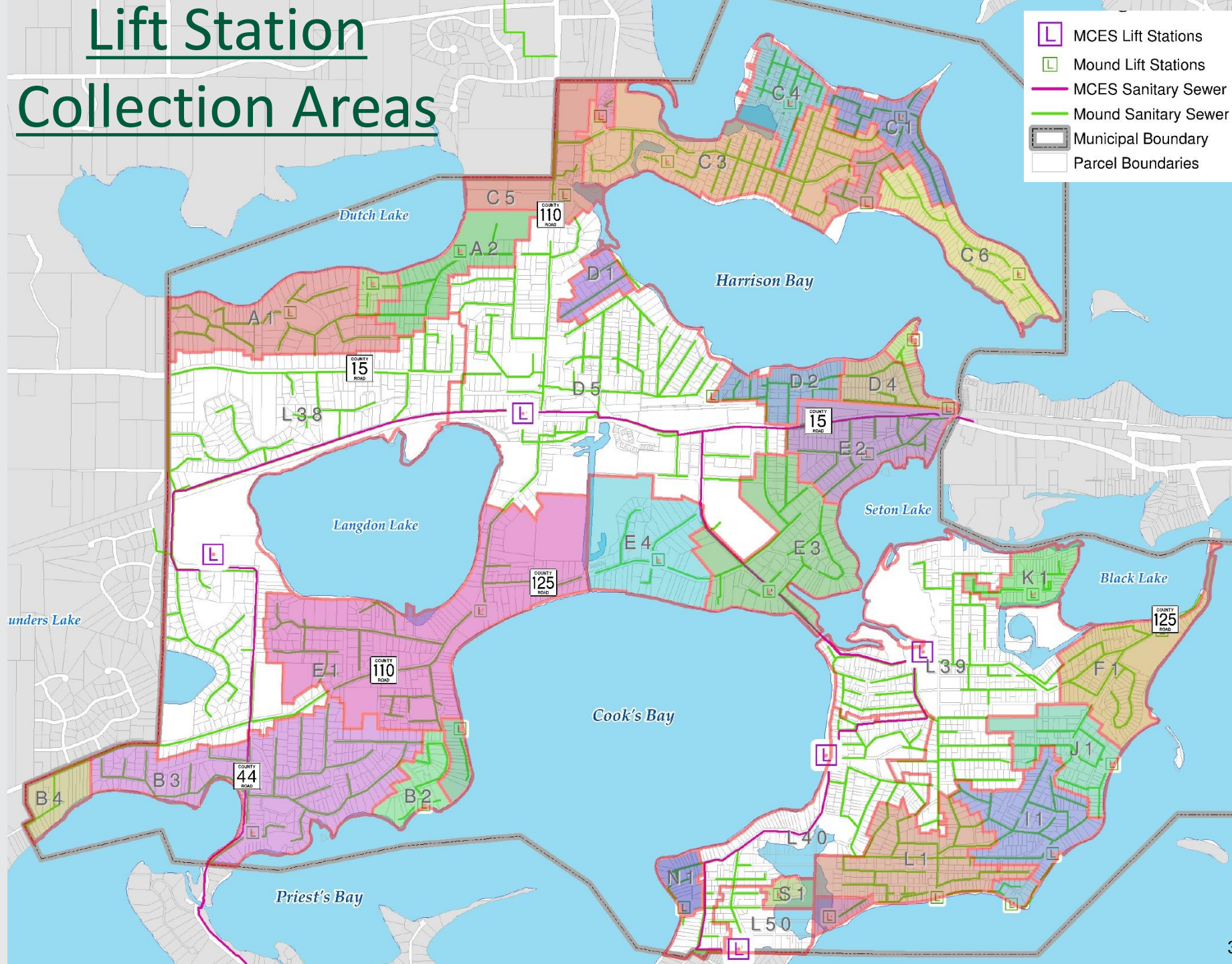
# Risk Targeted Inspection Projects:

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- Update analysis performed in the 2007 I/I study with up to date data, and include MCES lift stations with new data (the white hole phenomenon in our maps)



# Lift Station Collection Areas





# Risk Targeted Inspection Projects:

## CITY OF MOUND INFILTRATION & INFLOW STUDY

### I & I RANKING BY LIFT STATION SERVICE AREA (I & I PER LF)

FIGURE NO. 2  
MAY, 2007

— CITY BOUNDARY

□ LIFT STATION

#### Lift Station Service Areas

> 100 Gal/ft

C4; D1

50-100 Gal/ft

A2; A3; D3; E2; F1

40-50 Gal/ft

C5; D2

30-40 Gal/ft

B3; C1; D4; I1; N1; P1

20-30 Gal/ft

B1; C6; E3; E4; J1; K1; R1

10-20 Gal/ft

A1; C2; C3; C7; E1; L1; S1

10 > Gal/ft

B2

#### MCES/NO DATA

B4; D5; G1; H1; L38; L50



1,000 0 1,000  
Ft

BOLTON & MENK, INC.  
Consulting Engineers & Surveyors

Engineers & Surveyors

# Risk Targeted Inspection Projects:

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- Discovery of Inflow connections would require repair within a certain time frame
- Inflow connections would initiate the sewer fee if not completed within a reasonable amount of time
- Damaged or leaking/infiltrating lateral pipe are recorded and will trigger repair at point of sale, or at a later date reserved by the city

# Risk Targeted Inspection Projects:

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- Update analysis performed in the 2007 I/I study with up to date data, and include MCES lift stations with new data (the white hole phenomenon in our maps)
- This would allow us to focus on high I/I areas that we know exist from available data
- Laterals would be televised, paid for by the city
- Certifies the home free of Inflow sources:
  - No Cross connections
  - No Sump Pump connections
  - No Foundation drains or downspout connections
- Damaged or leaking/infiltrating lateral pipe are recorded and will trigger repair at point of sale or at a later date reserved by the city



# Risk Targeted Inspection Projects:

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Funding options available to pursue inspection projects

- G.O. Funds
  - Spreads cost over greatest number of taxpayers
- Sewer Revenue funds
  - Mindful of the current rates
  - We are already spending these dollars in a similar fashion to satisfy MCES Surcharge/required work
  - Need to make sure we continue to tackle municipal main projects as well
- I/I sewer fee
  - Fees could be dedicated to I/I work and the balance of the fund could dictate the amount of work to be performed



# Next Steps:

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A proposed ordinance should...

- Re-define ownership boundaries of sewer laterals
- Define and establish Point of Sale program
- Define and establish Demo/Rebuild/Addition Program
- Define and establish Voluntary/Self Reporting Program
- Define Clear water, Inflow
  - Define Cross connections
  - Define sump pump discharge connections
  - Define foundation drain and down spout connections
- Define Infiltration
  - Define broken/leaky pipes
  - Define the appearance of groundwater flow
- Define and establish sewer fees to sewer bills





# Next Steps:

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Direct Staff to prepare ordinance/code changes to match desired program

Language written by staff, engineering, legal, and reviewed

For council consideration at a later date

