

# Information Item: Inflow and Infiltration (I/I) Mitigation Program

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Environment Committee: September 9, 2014



# 2004 & 2010 Task Forces

## Purpose

- Created to address excessive wet weather peak flow in regional system
  - Mitigate excess peak flow: \$150 million
  - System capacity expansion: \$1 billion
- Established program
  - Notifies communities with excess peak flow
  - Local work plans to mitigate
- Investigated need for program continuance

# Phase 1 I/I Program 2007-2012

- 2004 – 2010      Peak flow monitoring
  - 2007 – 2011      Local I/I mitigation (*5-years*)
  - 2012              Mitigation deadline extended
- 
- **25% Cap provision – extends deadline for completing work**
  - **Community can elect to mitigate versus pay “surcharge”**
  - **All communities elect to implement mitigation versus paying surcharge**

# Phase 1 I/I Work Plan Communities

|                  |                  |                 |
|------------------|------------------|-----------------|
| Arden Hills      | Lilydale         | Osseo           |
| Bayport          | Long Lake        | Plymouth        |
| Bloomington      | Maple Plain      | Roseville       |
| Chanhassen       | Maplewood        | Savage          |
| Chaska           | Medicine Lake    | Shoreview       |
| Columbia Heights | Medina           | South St. Paul  |
| Eagan            | Mendota          | St. Anthony     |
| Eden Prairie     | Minneapolis      | St. Bonifacius  |
| Edina            | Minnetonka       | St. Louis Park  |
| Excelsior        | Minnetonka Beach | St. Paul        |
| Farmington       | Mound            | Stillwater      |
| Golden Valley    | New Brighton     | Tonka Bay       |
| Greenwood        | New Hope         | Vadnais Heights |
| Hopkins          | Newport          | Waconia         |
| Lakeville        | Oakdale          | West St. Paul   |
| Lauderdale       | Orono            |                 |

## Summary

Total: 47 Communities

# Local Mitigation Efforts

## Public Infrastructure

- Investigative studies, system modeling and inspections
- Pipe line rehabilitation/replacement
- MH and lift station wet well rehabilitation

## Private Property

- Cross connection discovery and disconnection
- Sump pump/foundation drain disconnection program
- Rain leader disconnection program
- Service line inspection/repair/replacement

# Local Reported Expenses

| Period      | Annual Reported Expenses<br>(Millions) |
|-------------|--|
| 2004 – 2007 | \$18                                   |
| 2008        | \$16                                   |
| 2009        | \$13                                   |
| 2010        | \$56                                   |
| 2011        | \$9                                    |
| 2012        | <u>\$1</u>                             |
| Total:      | \$113                                  |

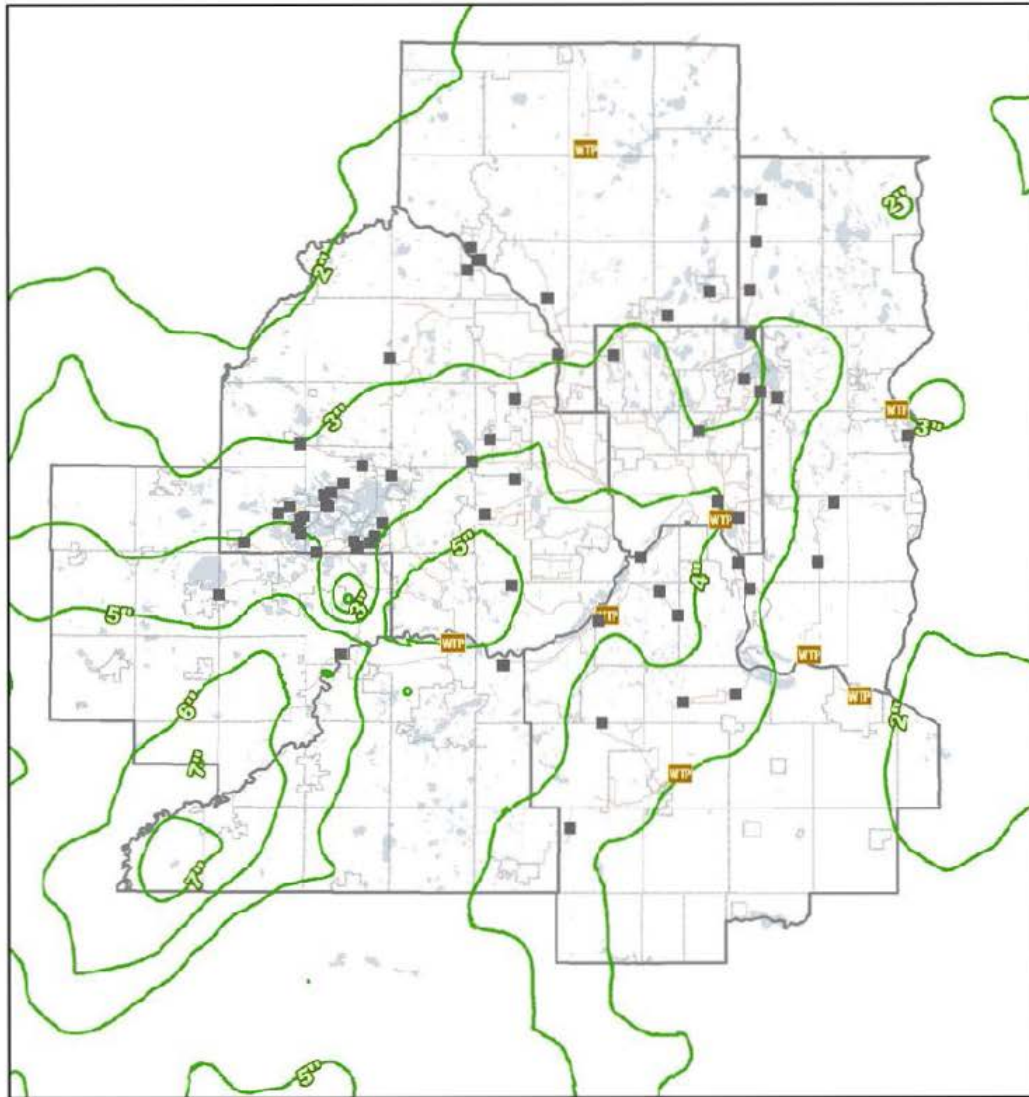
*2010: \$50 million reported expenses from Minneapolis for work completed in 2004-2010.*

# Spring 2014

- Extended winter
- Precipitation events April 28 & May 13
- Antecedent conditions
  - Elevated ground water tables & lake levels (Lake Minnetonka)
  - June 1 & June 19 significant system response locally & regionally
  - Events represented 50 year events in some localized areas

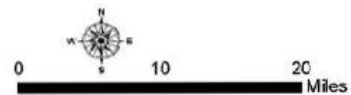
# I/I Rain Event

June 17th - June 20th 2014



8/25/2014

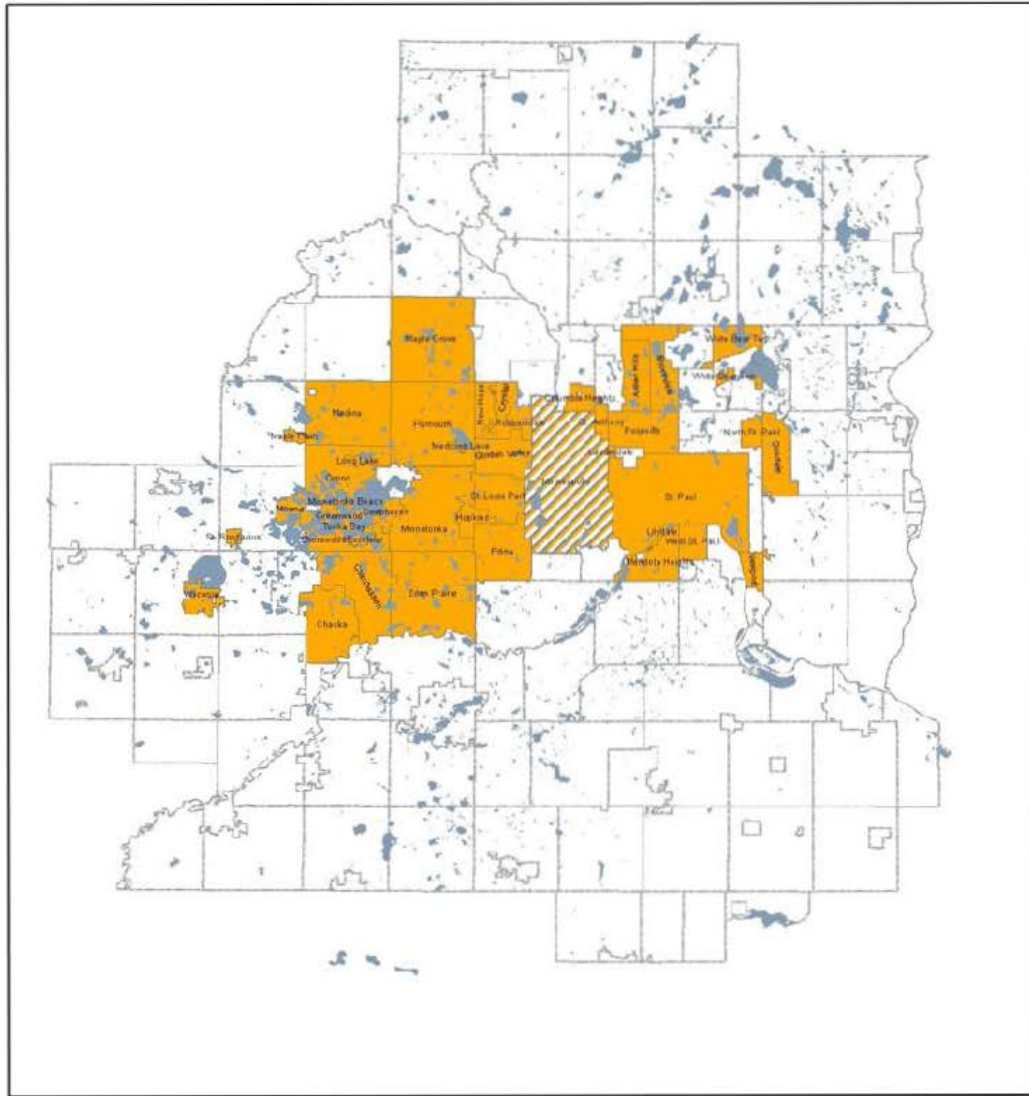
- Lift Stations
- WTP Wastewater Treatment Plants
- Interceptors
- Rain Event Contours (1.0' Interval)








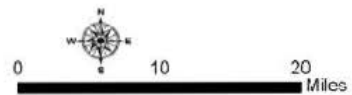
# 2015 Workplan

## I/I Exceedence Communities



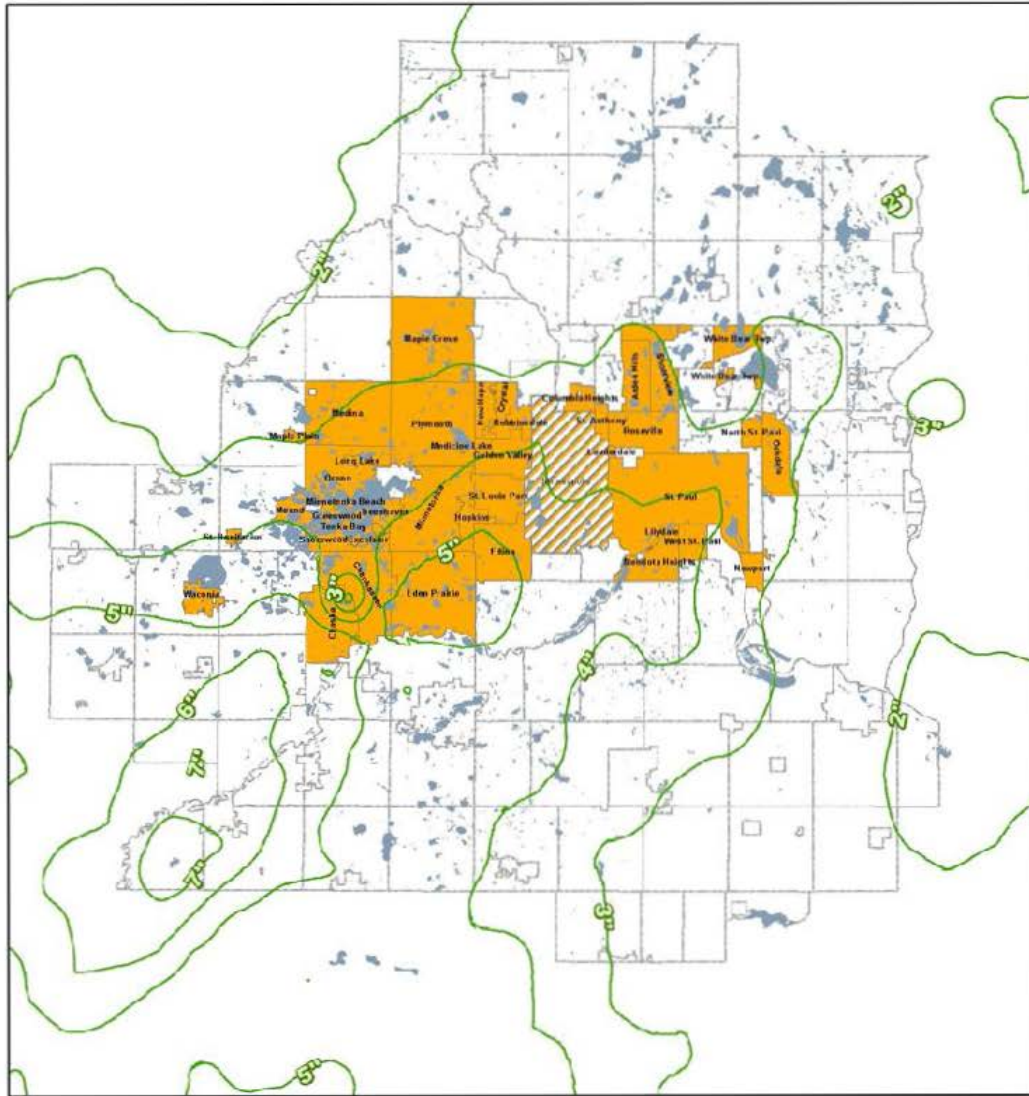
8/25/2014

-  I/I Exceedence Communities
-  Minneapolis
-  Community Boundaries



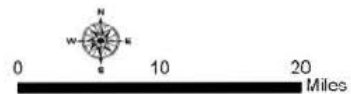
# July 19th Storm Event

## And I/I Exceedence Communities



8/25/2014

- Rain Event Contours (1.0" Interval)
- I/I Exceedence Communities
- ▨ Minneapolis
- Community Boundaries



# 2015 Work Plan Communities

|                  |                   |                     |
|------------------|-------------------|---------------------|
| Arden Hills      | Long Lake         | Plymouth            |
| Chanhassen       | Maple Grove *     | Robbinsdale         |
| Chaska           | Maple Plain       | Roseville           |
| Columbia Heights | Medicine Lake     | Shoreview           |
| Crystal          | Medina            | Shorewood *         |
| Deephaven        | Mendota Heights * | St. Anthony         |
| Eden Prairie     | Minnetonka        | St. Bonifacius      |
| Edina            | Minnetonka Beach  | St. Louis Park      |
| Excelsior        | Mound             | St. Paul            |
| Golden Valley    | New Hope          | Tonka Bay           |
| Greenwood        | Newport           | White Bear, Town of |
| Hopkins          | North St. Paul    | Waconia             |
| Lauderdale       | Oakdale           | West St. Paul       |
| Lilydale         | Orono             |                     |

## Summary

Total: 41 Communities

\* Expected appeal

# 2015 Work Plan Communities

|                  |                   |                     |
|------------------|-------------------|---------------------|
| Arden Hills      | Long Lake         | Plymouth            |
| Chanhassen       | Maple Grove *     | Robbinsdale         |
| Chaska           | Maple Plain       | Roseville           |
| Columbia Heights | Medicine Lake     | Shoreview           |
| Crystal          | Medina            | Shorewood *         |
| Deephaven        | Mendota Heights * | St. Anthony         |
| Eden Prairie     | Minnetonka        | St. Bonifacius      |
| Edina            | Minnetonka Beach  | St. Louis Park      |
| Excelsior        | Mound             | St. Paul            |
| Golden Valley    | New Hope          | Tonka Bay           |
| Greenwood        | Newport           | White Bear, Town of |
| Hopkins          | North St. Paul    | Waconia             |
| Lauderdale       | Oakdale           | West St. Paul       |
| Lilydale         | Orono             |                     |

## Summary

Total: 41 Communities

New: 5 Communities

\* Expected appeal

# 2015 Work Plan Communities

|                  |                   |                     |
|------------------|-------------------|---------------------|
| Arden Hills      | Long Lake         | Plymouth            |
| Chanassen        | Maple Grove *     | Robbinsdale         |
| Chaska           | Maple Plain       | Roseville           |
| Columbia Heights | Medicine Lake     | Shoreview           |
| Crystal          | Medina            | Shorewood *         |
| Deephaven        | Mendota Heights * | St. Anthony         |
| Eden Prairie     | Minnetonka        | St. Bonifacius      |
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| Greenwood        | Newport           | White Bear, Town of |
| Hopkins          | North St. Paul    | Waconia             |
| Lauderdale       | Oakdale           | West St. Paul       |
| Lilydale         | Orono             |                     |

## Summary

Total: 41 Communities

Over 25% of MWC:  
18 Communities

\* Expected appeal

# I/I Workshop

- October 1, 2014 (Wednesday)
- League of Minnesota Cities – St. Paul
- Public works, engineering staff & local officials
- Update on Council's regional I/I program
  - Accomplishments (Local & Regional)
- Summary of June 2014 storm events & system response
- Local efforts on private property I/I mitigation efforts
- Program enhancements – private property focus

# Questions