

Inflow & Infiltration Mitigation Efforts

City of Eagan

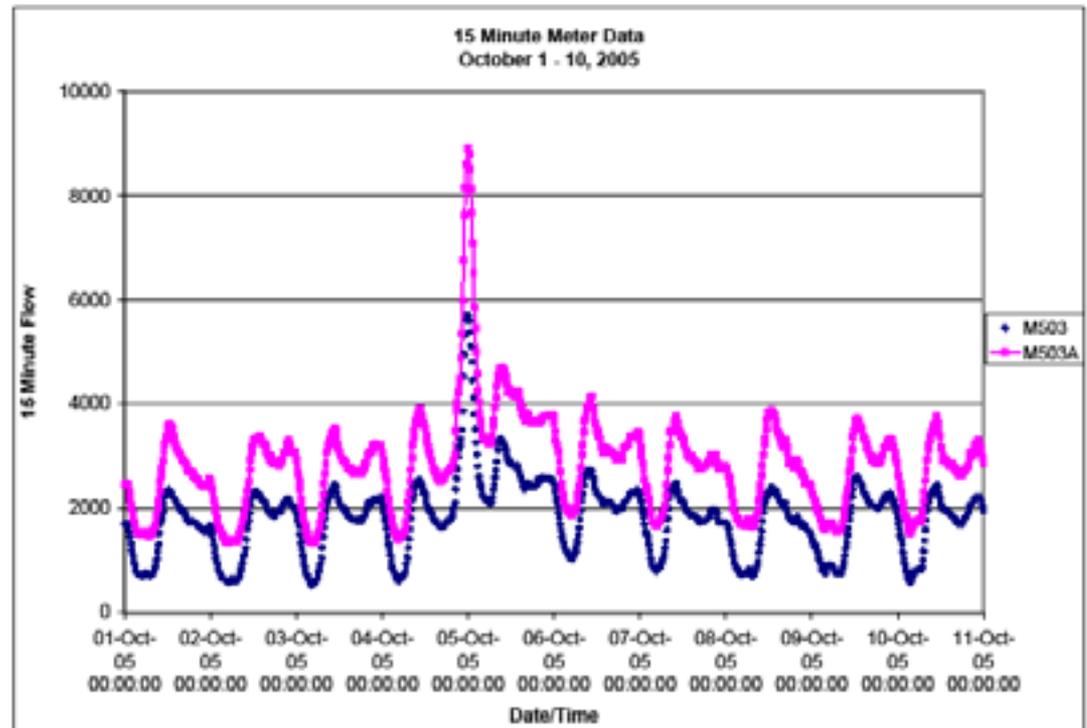


MCES Workshop
I & I Regional Efforts
February 16, 2012

Tom Colbert
Director of Public Works

CITY OF EAGAN INFLOW/INFILTRATION (I/I)

Meter Flow Recordings
showing sewer flow peak
resulting from 4.5" rainfall
event at SENECA Waste
Water treatment plant in
Eagan on 10/5/05



Inflow & Infiltration (I/I) Impacted Communities (37)

Arden Hills
Bayport
Chanhassen
Columbia Heights

EAGAN

Eden Prairie
Edina
Excelsior
Farmington
Golden Valley
Greenwood
Hopkins
Lauderdale

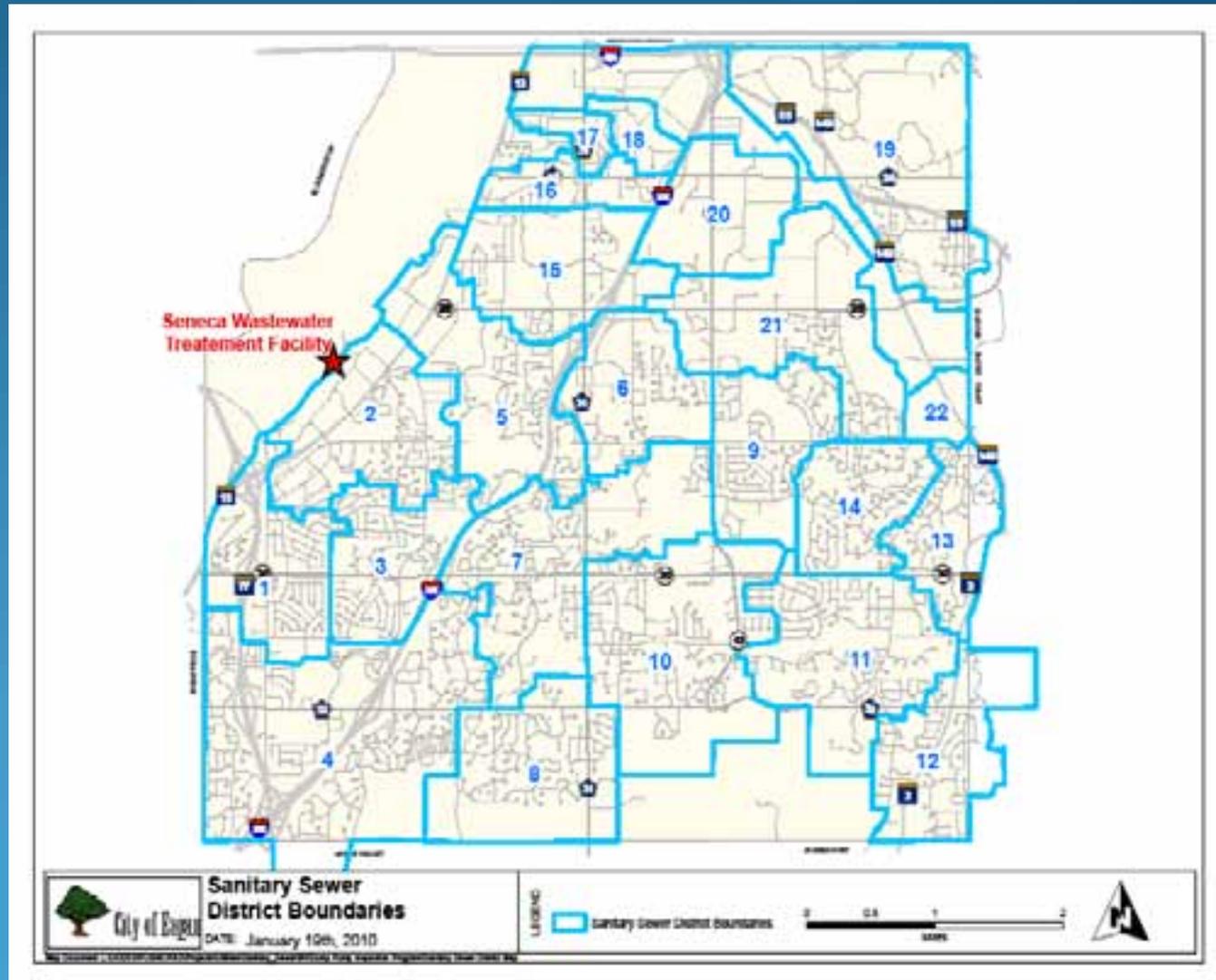
Lilydale
Long Lake
Maple Plain
Maplewood
Medicine Lake
Mendota
Minneapolis
Minnetonka
Minnetonka Beach
New Hope
Oakdale
Orono

Osseo
Roseville
St. Louis Park
Saint Paul
Savage
Shoreview
South St. Paul
Stillwater
Tonka Bay
Vadnais Heights
Waconia
West St. Paul



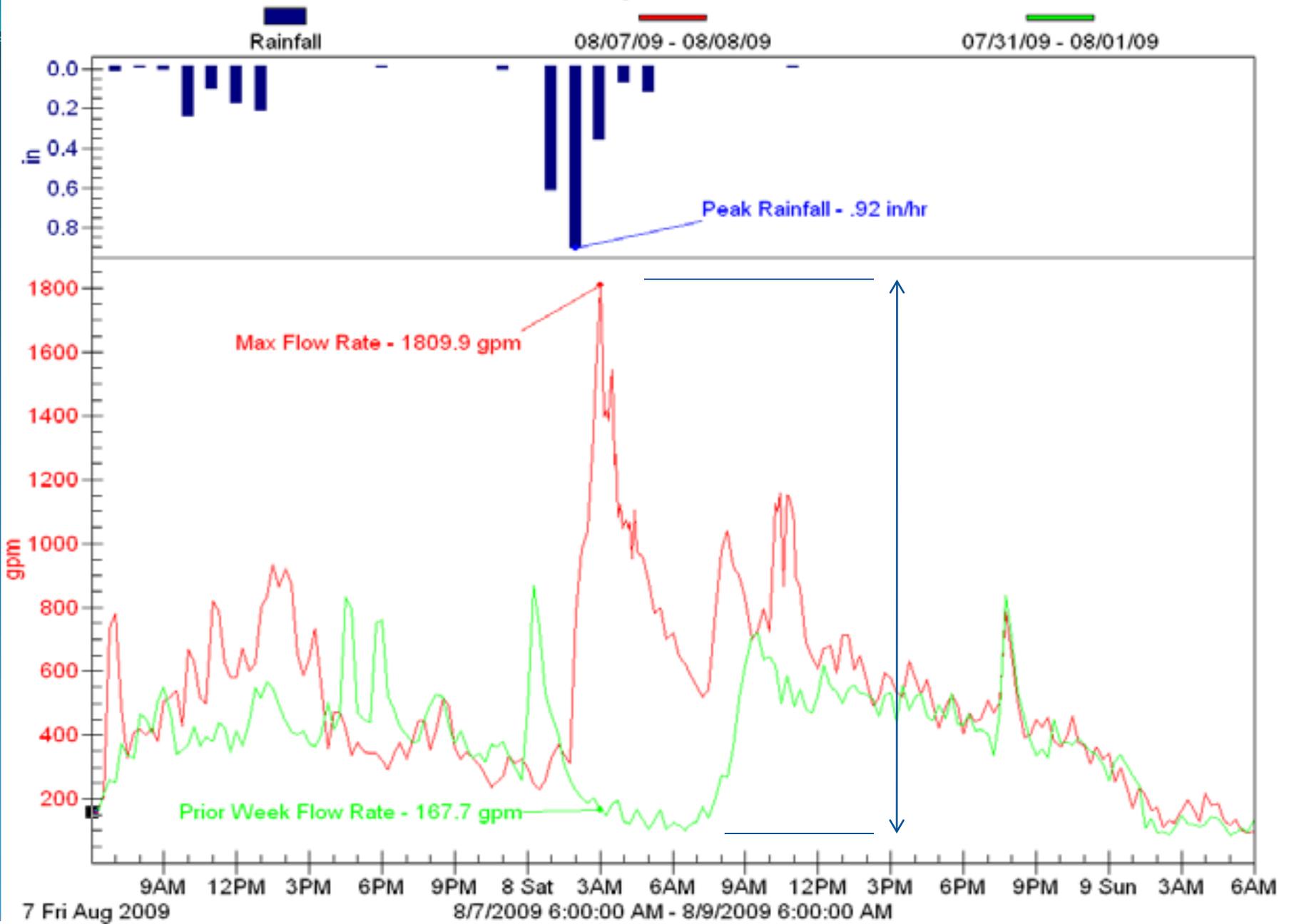
CITY OF EAGAN INFLOW/INFILTRATION (I/I)

CITY WIDE SEWER DISTRICTS



District 8 (WM28M2401)

Eagan, MN



CITY OF EAGAN INFLOW/INFILTRATION (I/I)



**Inflow and Infiltration is a Problem:
YOU can help us find the solution.**



Did you know improperly connected sump pumps and drainage systems are creating a big problem?

"Clear Water" is Going to the Wrong Place

The problem can come from many different places. It's our basins and business wastewater can be directed into the sanitary system by an improperly connected sump pump, and improper foundation drains and wall gutter connectors. When "clear water", such as rainwater, ground water or snowmelt, enters the wastewater treatment system, it is known as Inflow/Infiltration (I/I).

Eagan is Paying for an I/I Problem

Eagan is just one of more than 100 communities whose local sewer systems connect to a regional treatment system owned and operated by the Metropolitan Council Environmental Service (MCES). MCES treats the wastewater from community systems and charges communities for the amount of wastewater.

Eagan is one of 37 cities the MCES penalizes by imposing an excess I/I surcharge for contributing too much clear water into the wastewater treatment system - upwards of 4.8 million gallons per day that is improperly added into the wastewater by homes, businesses and City utilities. This creates capacity issues for wastewater treatment facilities and can result in overflow going into lakes, streams, ponds, and rivers from system back-ups (leaking drains).

The City (and its taxpayers) will pay nearly \$1.8 million in surcharges. That surcharge could become permanent and continue to increase if something is not done soon to correct these issues. Additionally, future development could lead MCES officials to turn Eagan into a future development/development applicant. The City is obligated to address the underlying issues by first identifying the sources of I/I and then working with all stakeholders to fix the problems.



How Do We Fix Our I/I Problem?

It's a big challenge. The City has identified and corrected I/I problems with City operated systems, such as sewer lines, manholes and lift stations. But that reflects only 40% of the total system. The privately owned portion accounts for the majority (60%) of the system.

Inspection of residential and commercial properties is necessary to locate the other sources of the environmental problem. By City Code, this requires trained inspectors working on behalf of the City of Eagan to arrange with property owners to enter private homes and businesses to identify potential sources of the I/I problem.

40% City system
60% Private system

CITY CODE REQUIREMENT

Section 3.40

Rules and Regulations relating to sewer service

- ✓ Clear Water Discharge Prohibited
- ✓ Compliance Inspection mandatory
- ✓ Corrective Repairs required within 60 days
- ✓ Utility Bill Surcharges for non-compliance
 - \$150/month (residential)
 - \$500/month (non-residential)
- ✓ City reimburses 50% of costs

Sanitary Sewer Lateral and Sump Pump Inspection Program Work Flow



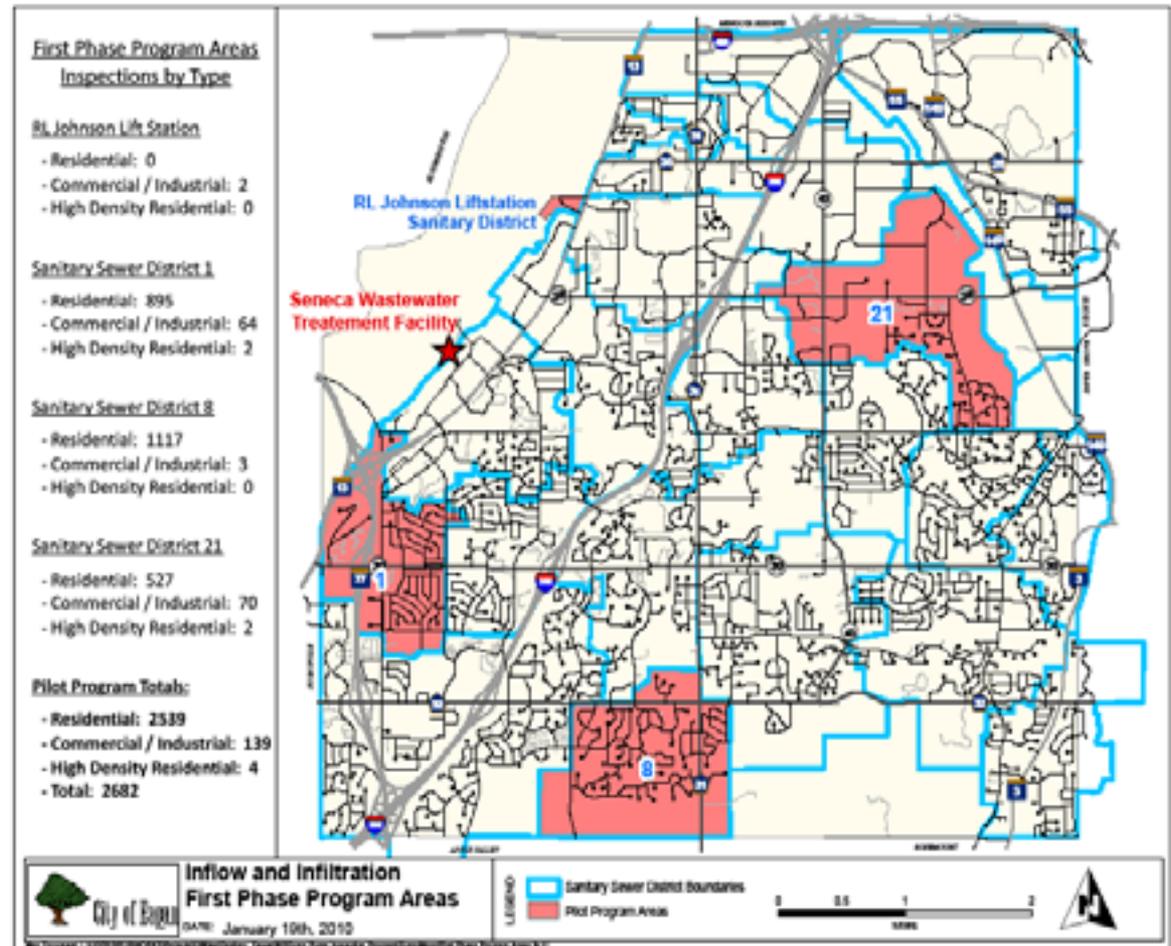
CITY OF EAGAN INFLOW/INFILTRATION (I/I)

FIRST PHASE

2010

Sewer Districts

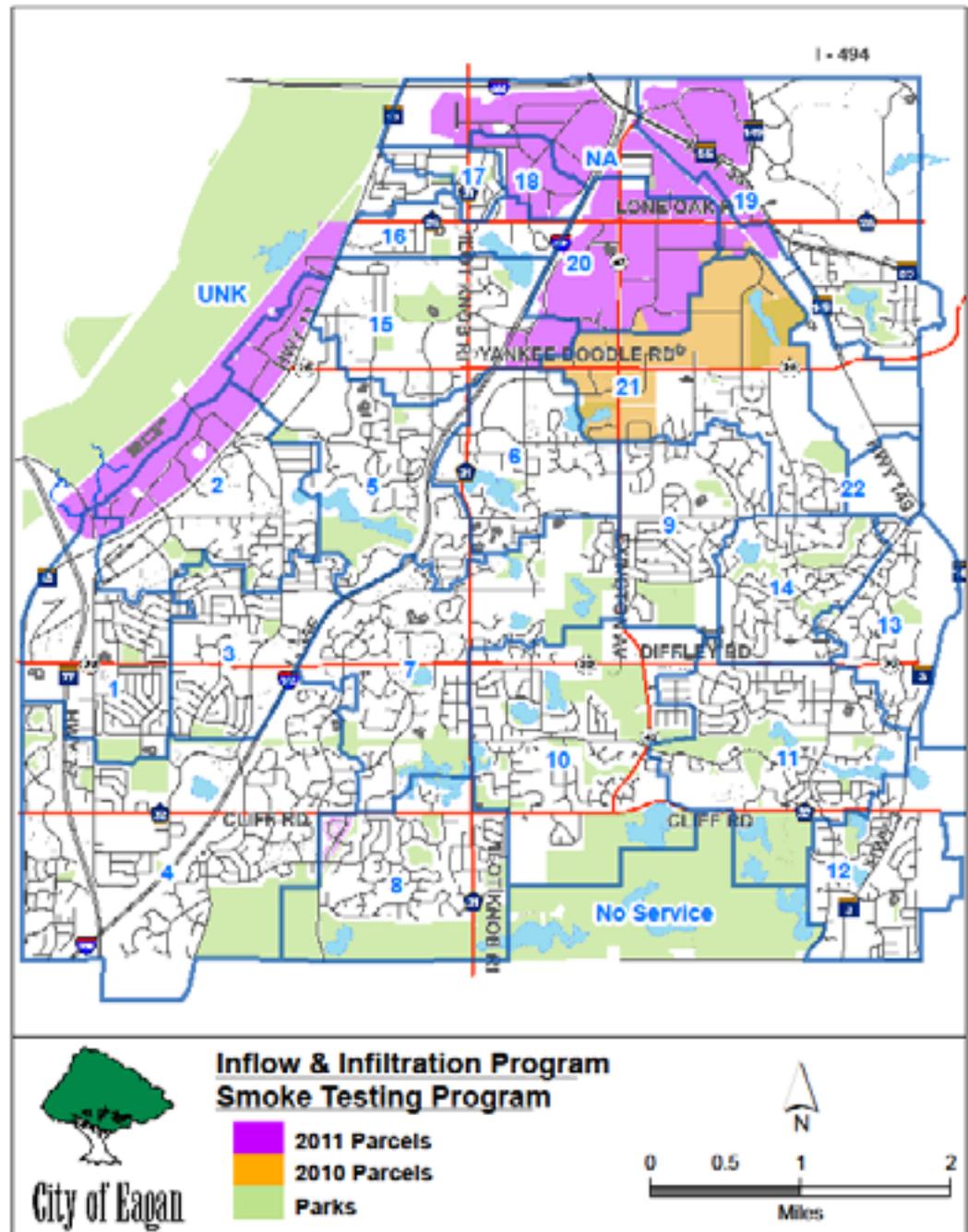
- # 1
- #8
- #21



CITY OF EAGAN INFLOW and INFILTRATION (I/I)

Smoke Testing (2010 & 2011) Sewer Districts

- #2
- #18
- #19
- #20
- #21



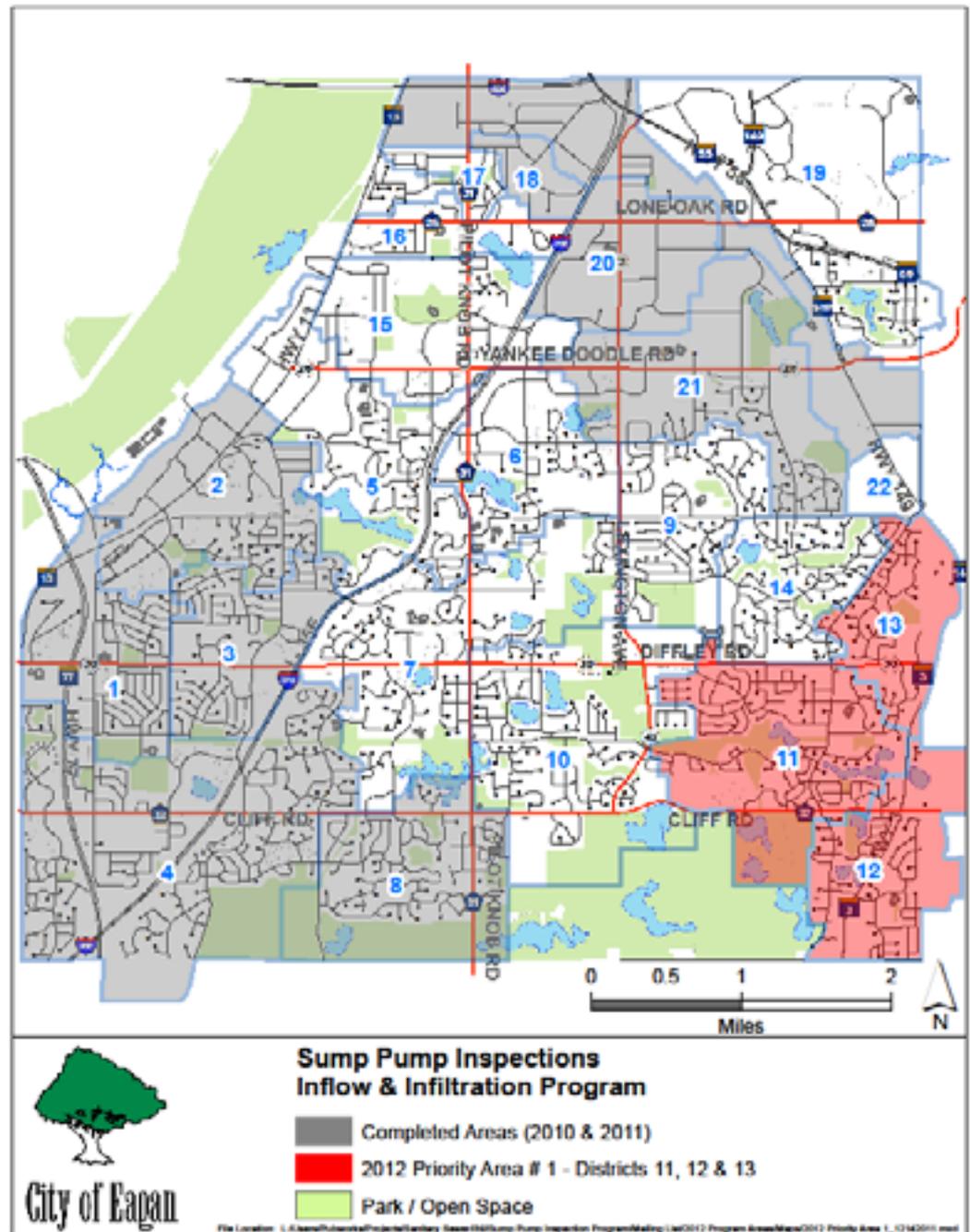
CITY OF EAGAN INFLOW and INFILTRATION (I/I)

THIRD PHASE

(2012)

Sewer Districts

- #11
- #12
- #13



FOUNDATION DRAIN CONNECTION



SUMP PUMP CONNECTION



Beaver Board collection system



Beaver Board Tile Drain Connection



BEAVER BOARD
OPENING –
SURFACE DRAINAGE



EAGAN'S I & I MITIGATION

By the numbers

Public System – Studies and Public Improvements

<u>Year</u>	<u>Amount</u>
2006	\$193,621
2007	\$360,796
2008	\$256,465
2009	<u>\$426,728</u>
TOTAL	\$1,237,610

EAGAN'S I & I MITIGATION

By the numbers

Private System – Inspection Services

<u>Year</u>	<u># of Insp</u>	<u>Amount</u>	<u>Average</u>
2010	2,675	\$632,696	\$236.52
2011	<u>5,799</u>	<u>\$754,936</u>	<u>\$130.18</u>
TOTAL	8,474	\$1,387,632	\$163.75
2012	7,000+	?	?

EAGAN'S I & I MITIGATION

By the numbers

Private System – Reimbursements/Co-Pays

<u>Year</u>	<u>Amount</u>	<u># of Prop</u>	<u>Highest \$</u>	<u>Lowest \$</u>
2010	\$13,658	34	\$2,625	\$8.65
2011	<u>\$25,549</u>	<u>140</u>	\$1,409	\$10.13
TOTAL	\$39,207	177		

EAGAN'S I & I MITIGATION

By the numbers

PRIVATE INSPECTIONS

<u>YEAR</u>	<u># of Insp</u>	<u>Non-Compliant</u>	<u>Sump Pumps</u>	<u>Services</u>
2010	2,675	175 (7%)	128 (5%)	59 (2%)
2011	5,799	279 (5%)	257 (4%)	30 (1%)
2012	<u>1,054</u>	<u>27 (3%)</u>	<u>27 (3%)</u>	<u>0</u>
TOTAL	9,528	481 (5%)	412 (4%)	89 (1%)

CITY OF EAGAN
INFLOW/INFILTRATION (I/I)

SURCHARGES

<u>YEAR</u>	<u># of Prop</u>	<u>Amount</u>	<u>Appeals</u>	<u>Adjustments</u>
2010	178	\$22,500	5	12
2011	<u>373</u>	<u>\$56,650</u>	<u>26</u>	<u>48</u>
TOTAL	551	\$79,150	31	60

CITY OF EAGAN
INFLOW/INFILTRATION (I/I)

Smoke Testing





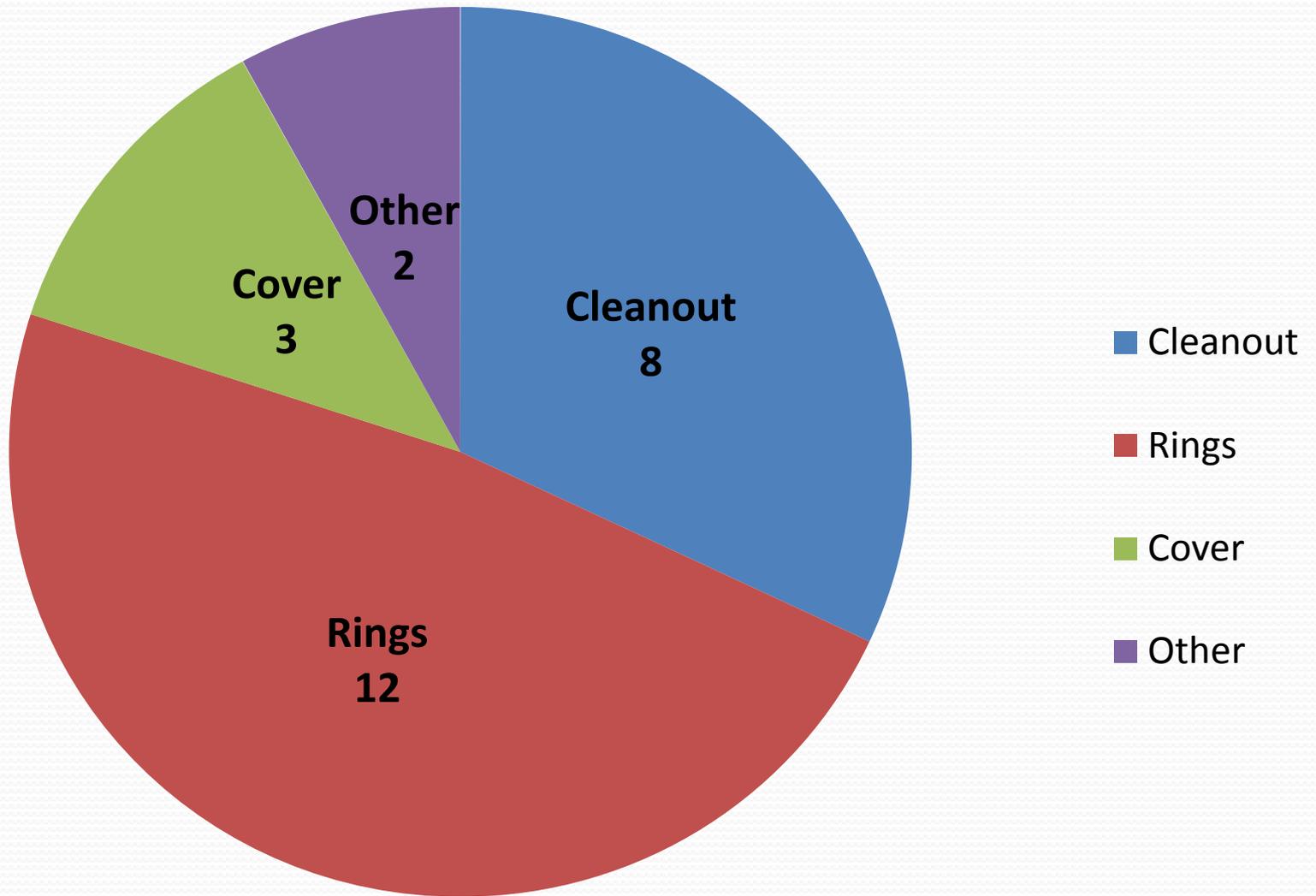


AUG 2 2011 10:49



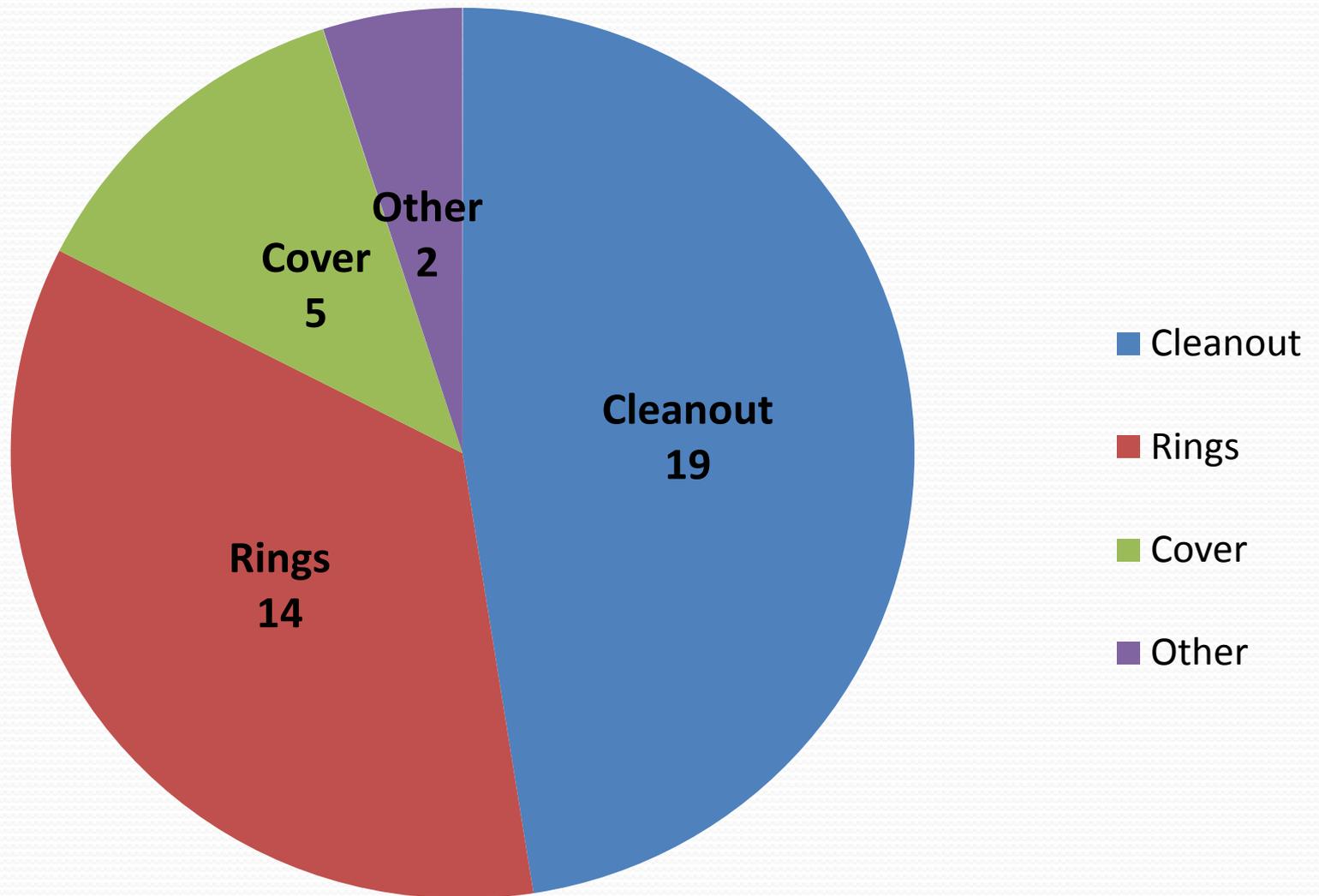


2010 Smoke Testing Results



64% of issues identified via 2010 Smoke Testing were privately owned

2011 Smoke Testing Results



72% of issues identified via 2011 Smoke Testing were privately owned

