

Illicit Discharge Detection and Elimination



Monroe County Department of Environmental Services
Michael J. Garland, P.E., Director



Sources of Illicit Discharges

- Sanitary wastewater
- Effluent from septic tanks
- Car wash wastewater's
- Improper oil disposal
- Radiator flushing disposal
- Laundry wastewater's
- Spills from roadway accidents
- Improper disposal of auto and household toxics
- Swimming Pools

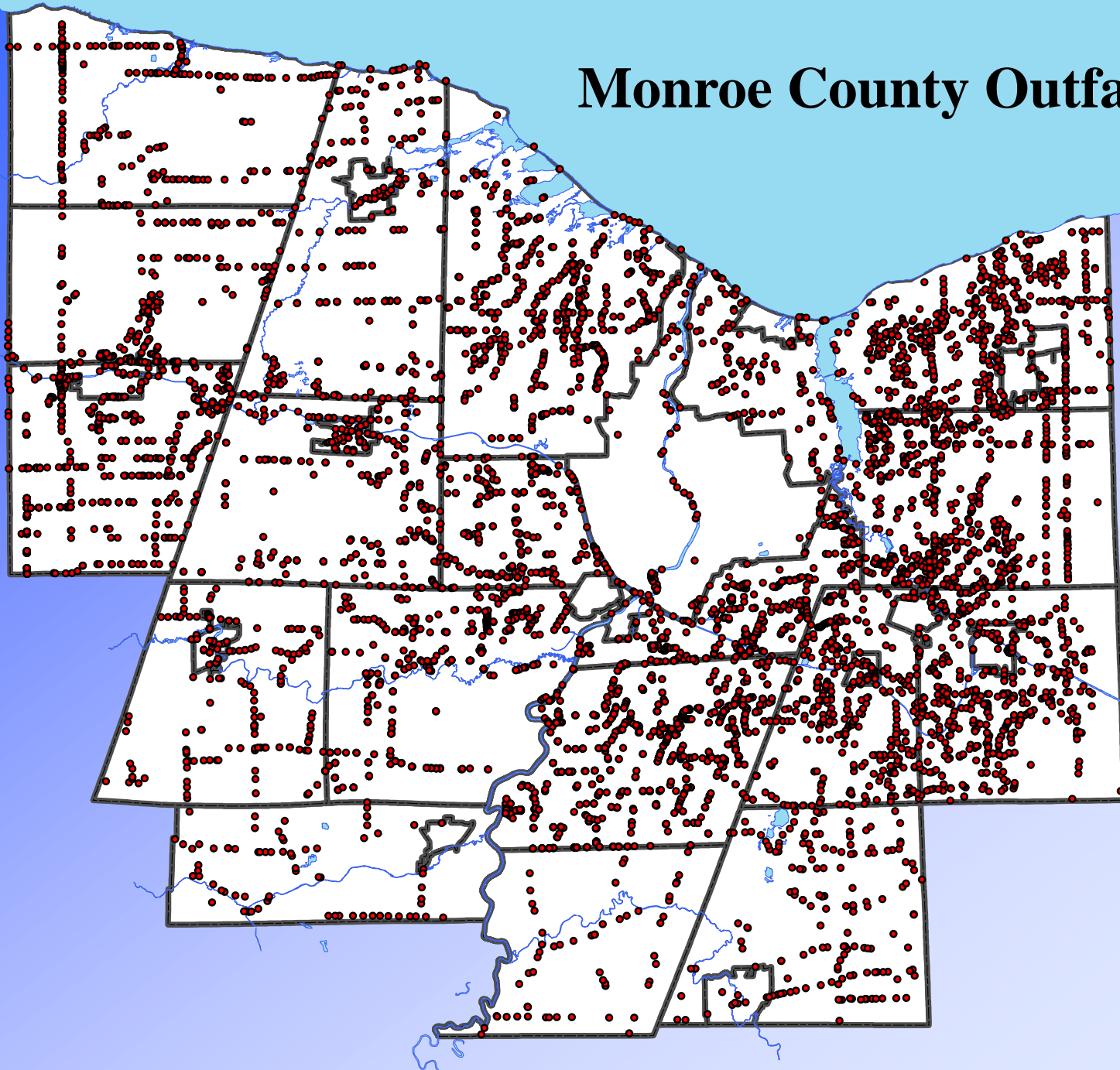


Its about the Outfall





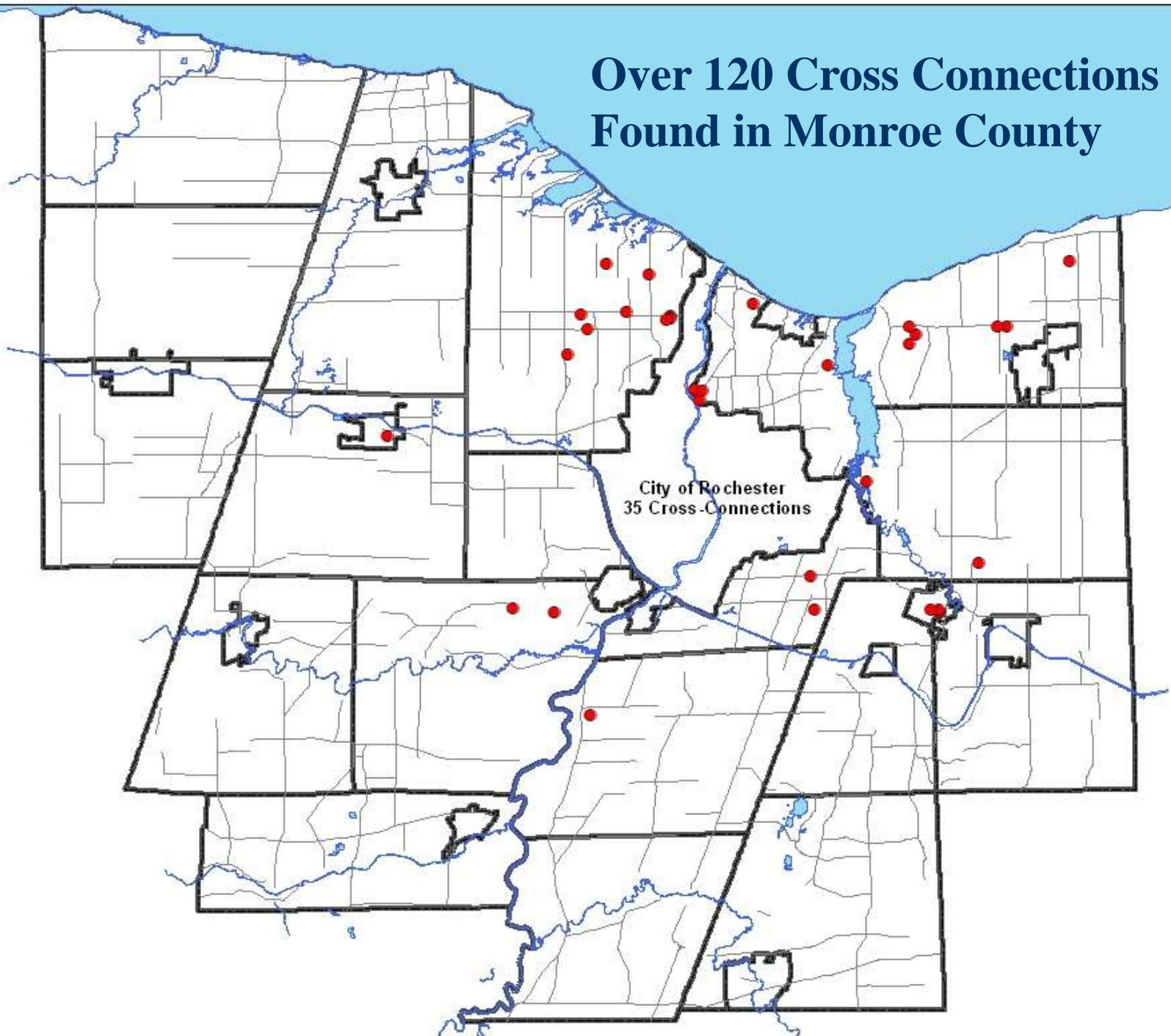
Monroe County Outfalls



Cross Connections

Sanitary to Storm

Over 120 Cross Connections Found in Monroe County



**37,000 Gallons
of
Wastewater / Day**

Outfall Inspection Techniques

A worker wearing an orange short-sleeved shirt, a blue hard hat, and blue work boots is kneeling on a paved surface. The worker is leaning over a circular manhole opening. They are holding a red and yellow sampling device, possibly a water sampler or a flow meter, over the manhole. A metal manhole cover is visible to the right of the worker. The background is a light-colored, textured pavement.

- **Visual Inspection**
- **Sampling**

Outfall Inspections

- Odors
- Stains
- Color
- Foam
- Oily Sheen
- Floatables
- Impacted Vegetation
- Dry Weather Flows

Follow the Water !!!

Outfall Monitoring Observation Sheet

Outfall Number/Address _____

Observers Name _____ Town _____

Date _____ Time _____

Weather Conditions:**

Date of last rainfall or significant snow melt (if known) _____

Or, Circle the one that applies

1. No Rain/Snow Melt in past 72 hrs
2. No Rain/Snow Melt in past 48 hrs
3. Recent Rain/Snow Melt within 24 hrs
4. Currently Raining or Snow Melt

Approximate Pipe Diameter _____ Name of Receiving Stream _____

Adjacent Land Use: (circle one)

Residential, Commercial, Industrial, Agricultural, Parkland/Open Space

At the time of the observation, is the outfall pipe: discharging? Yes / No Visable/Submerged

Please describe the outfall by circling the appropriate condition(s) within each category:

Odor: Chemical, Chlorine, Musty, Harsh, Sewage, Rotten Eggs, None
Color: Muddy, Cloudy, Grey, Green, Brown, Blue, Red, Clear, Other _____
Floatables: Oily, Rainbow, Trash, Foam, Toilet Paper, None, Other _____
Vegetation: Excessive Growth, Inhibited Growth, Dead Plants, Looks Normal
Structural Damage: Cracks, Deterioration, Peeling Paint, Other _____
Deposits/Stains: Dark Staining, White Deposit, Other _____

Estimate the depth of flow in the outfall pipe (inches) _____

Other Observations:

Sample Data Collection:

Overall Outfall Characterization:

___ Unlikely ___ Suspect (one strong indicator) ___ Potential (two or more indicators) ___ Obvious

**Visual inspection can
be an efficient method**

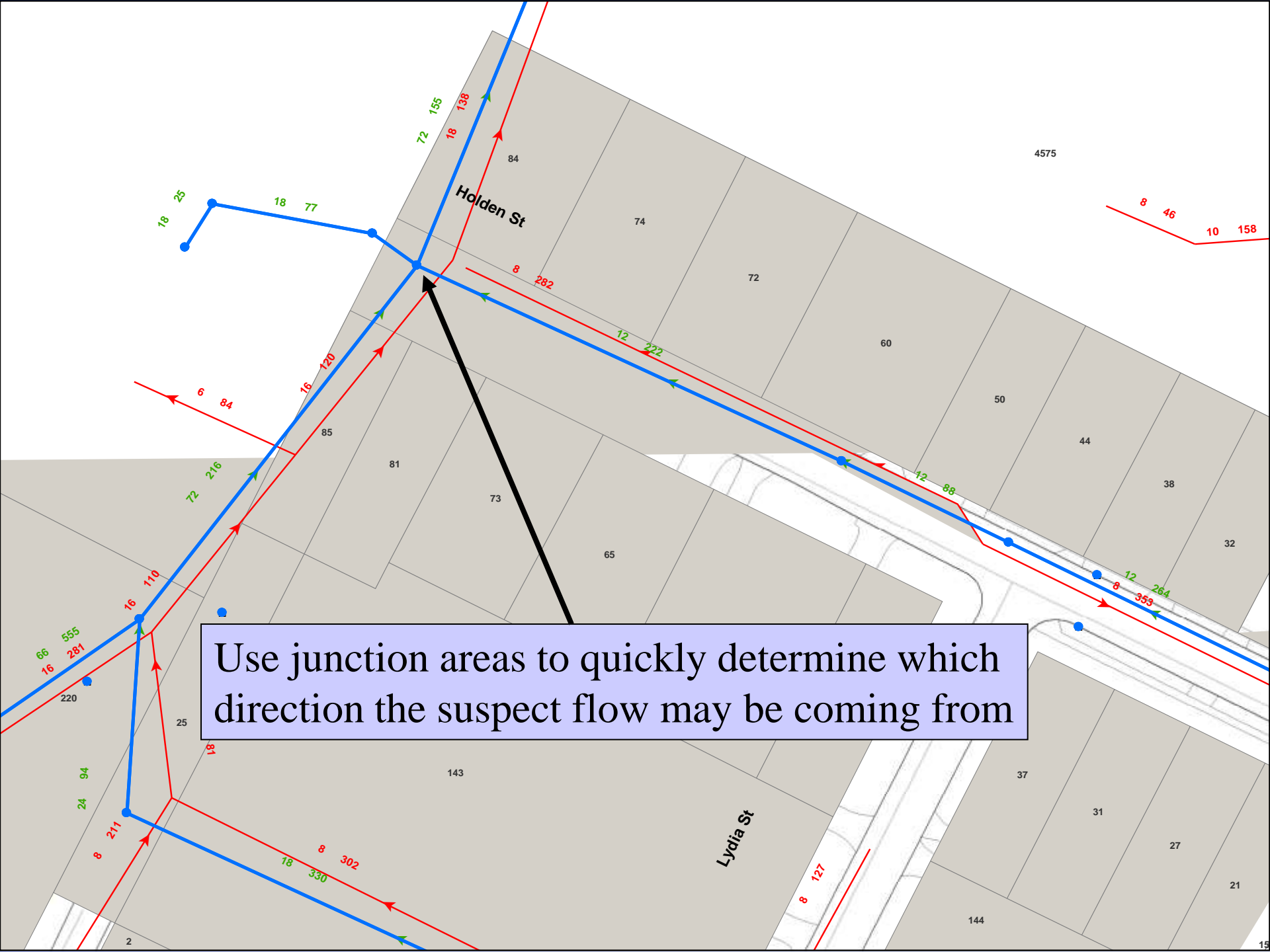






Tracking Suspicious Flows or a Positive Sample Result

- **Trace the upstream collection area of the outfall**
- **Drive the collection area and make visual observations looking for potential sources of the illicit flow**



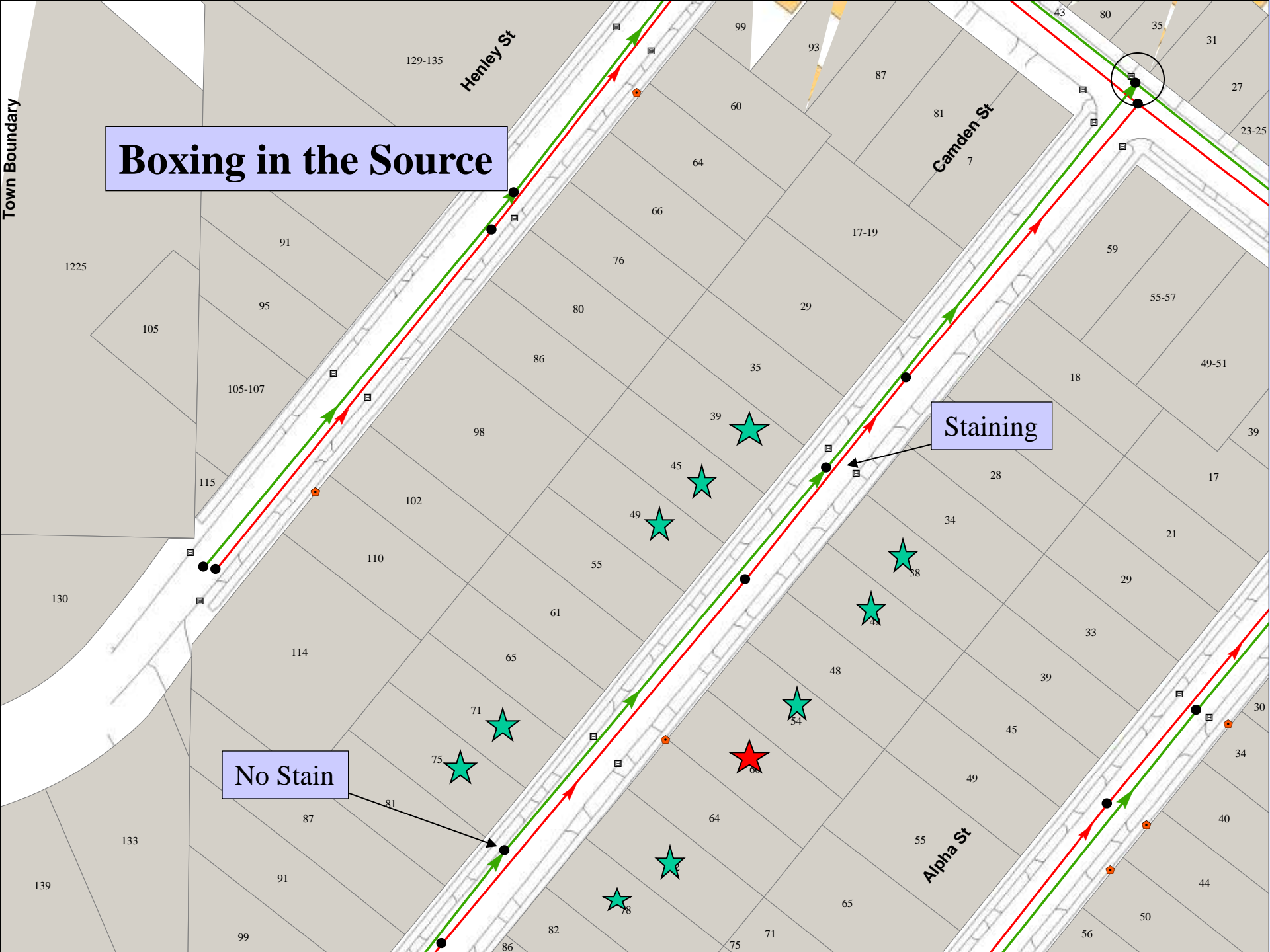
Use junction areas to quickly determine which direction the suspect flow may be coming from

Town Boundary

Boxing in the Source

Staining

No Stain



129-135

Henley St

99

93

87

81

Camden St

43

80

35

31

27

23-25

60

64

66

17-19

91

76

59

1225

95

80

29

105

86

35

18

105-107

98

39

Staining

115

102

49

34

130

110

55

17

61

48

38

29

114

65

33

71

54

45

No Stain

75

68

49

87

81

64

55

133

91

78

Alpha St

139

99

82

75

71

65

56

50

44

30

34

40

44

Dye Testing



**Hundreds of Dye Tests
Performed**





Televising



Smoke Testing

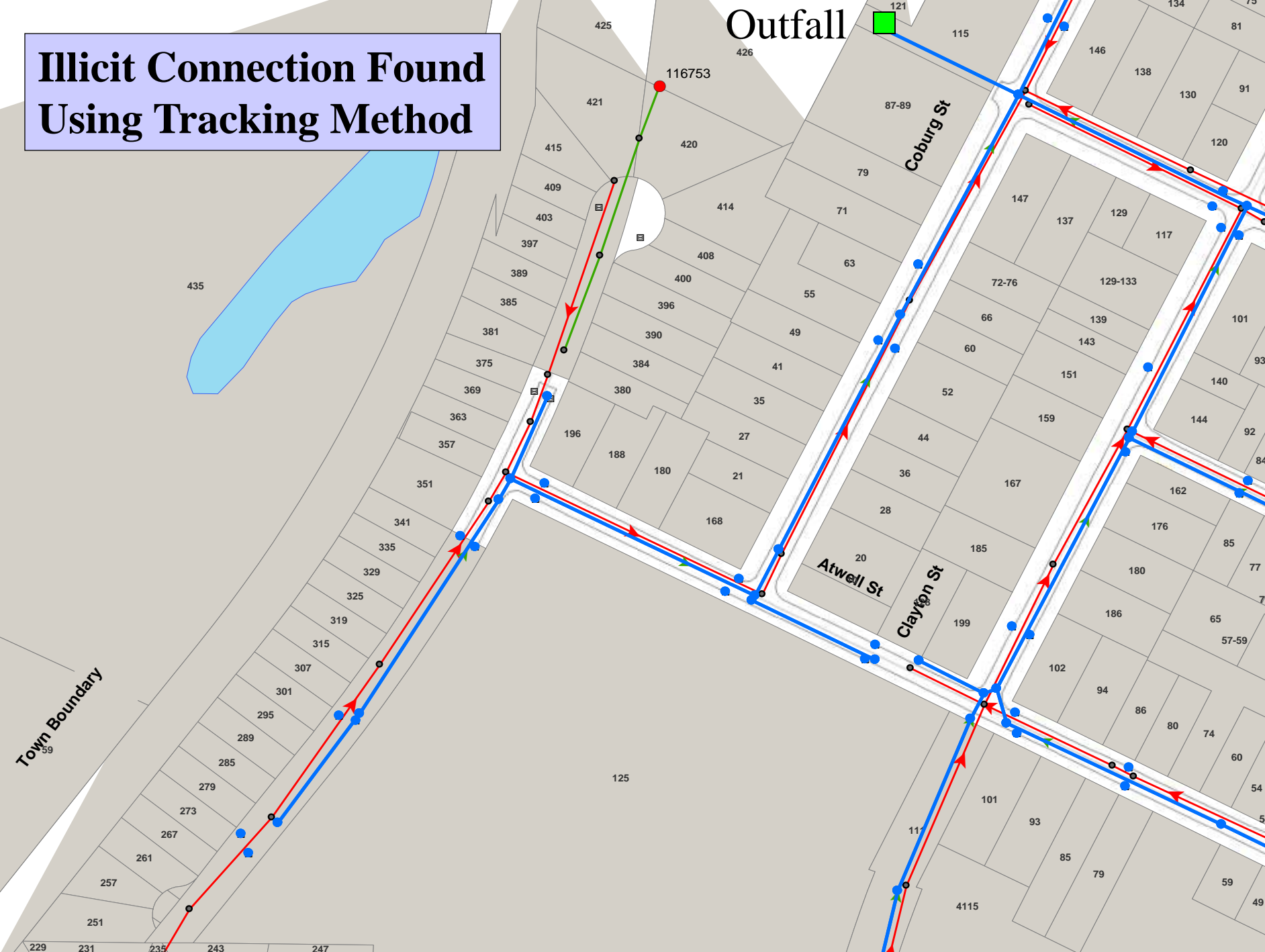


An Illicit Discharge



Illicit Connection Found Using Tracking Method

Outfall



Example of Staining

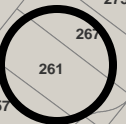
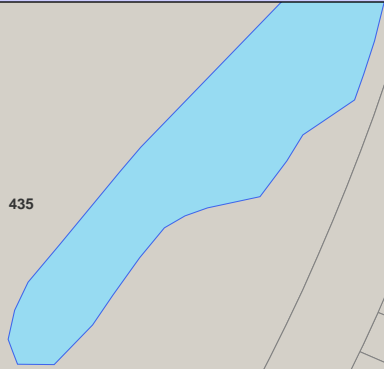


Illicit Connection Found Using Tracking Method

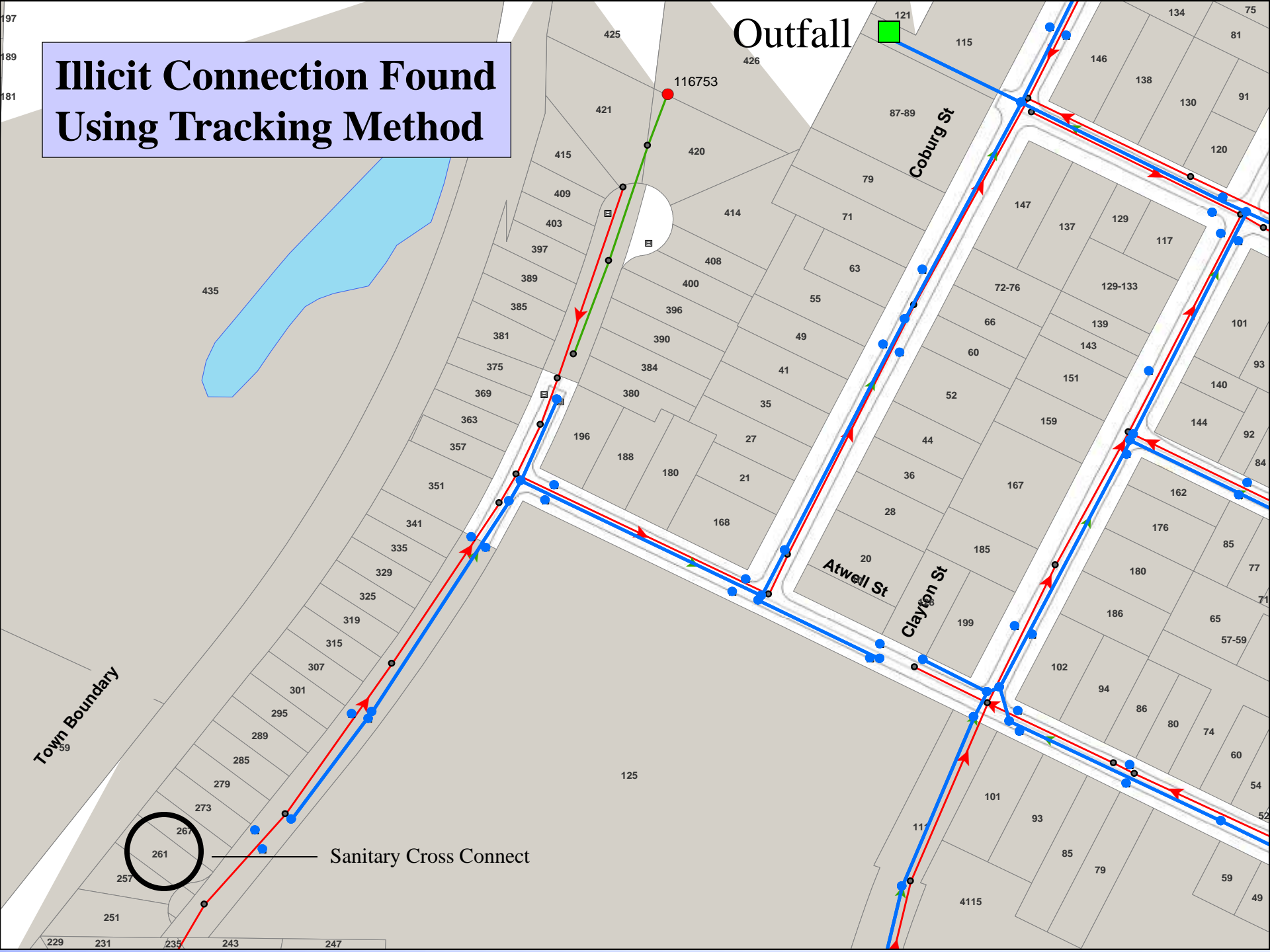
Outfall



Town Boundary



Sanitary Cross Connect



SEWER CONNECTION DETAILS

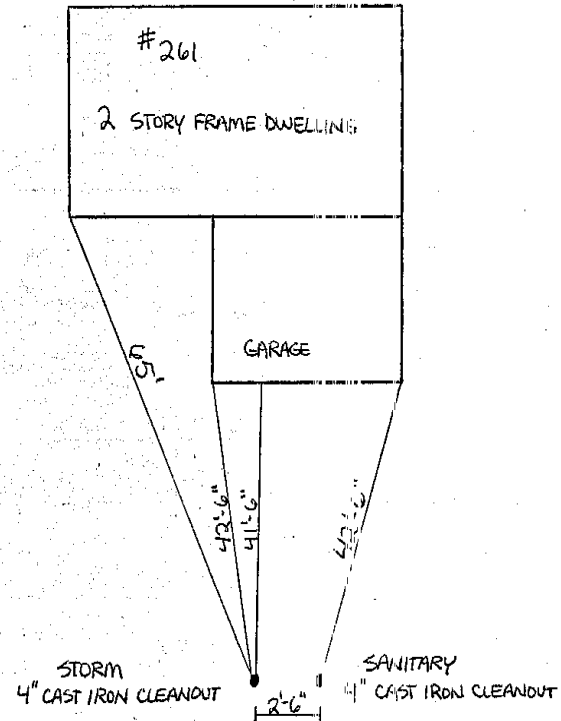
DISTRICT OWNED

PRIVATE OWNED


Comb.	<input type="checkbox"/>	Mat	Size	Depth	@	Comb.	<input type="checkbox"/>	Mat	Size	Depth	@
San.	<input type="checkbox"/>	Mat	Size	Depth	@	San.	<input type="checkbox"/>	Mat	Size	Depth	@
Storm	<input type="checkbox"/>	Mat	Size	Depth	@	Storm	<input type="checkbox"/>	Mat	Size	Depth	@
C.O. INSTALLED						SAN. 3/9/88 DATE STORM 3/9/88					
						CAST IRON MAT. CAST IRON SIZE 4" DEPTH 4' ±					

Sewer Connection Records

Cleanouts with 4 inch Laterals



LEMOYN AVE.



Sanitary waste pipe

Sump Pump Line

Sanitary Cleanout

Storm Cleanout

2007/08/21 11:59



New Subdivision Built in 2004

2 of 7 Homes
Cross-Connected



Septic Systems

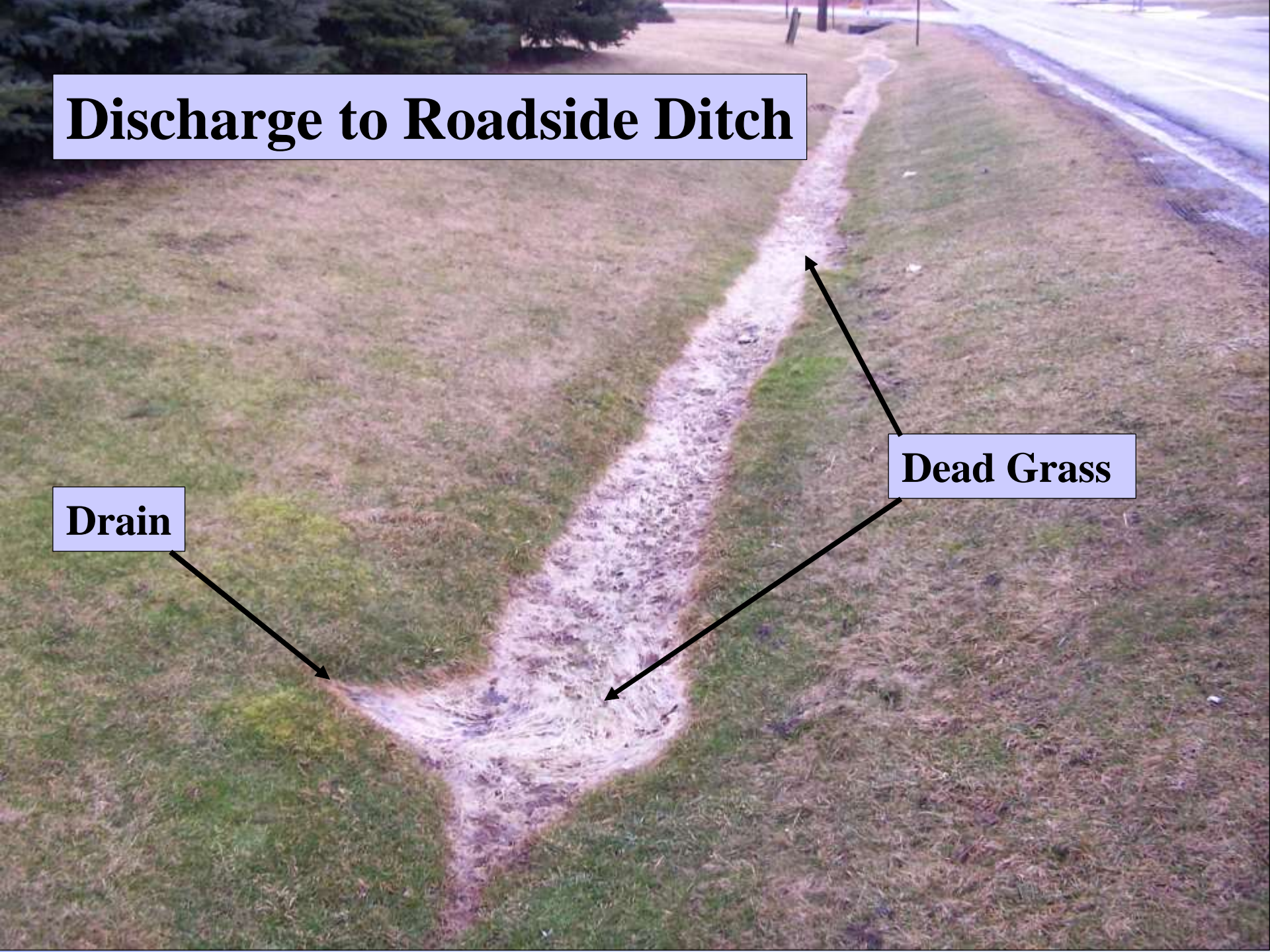




Discharge to Roadside Ditch

Drain

Dead Grass





Illicit Discharge Can Make a Difference

Slater Creek Stormwater Assessment

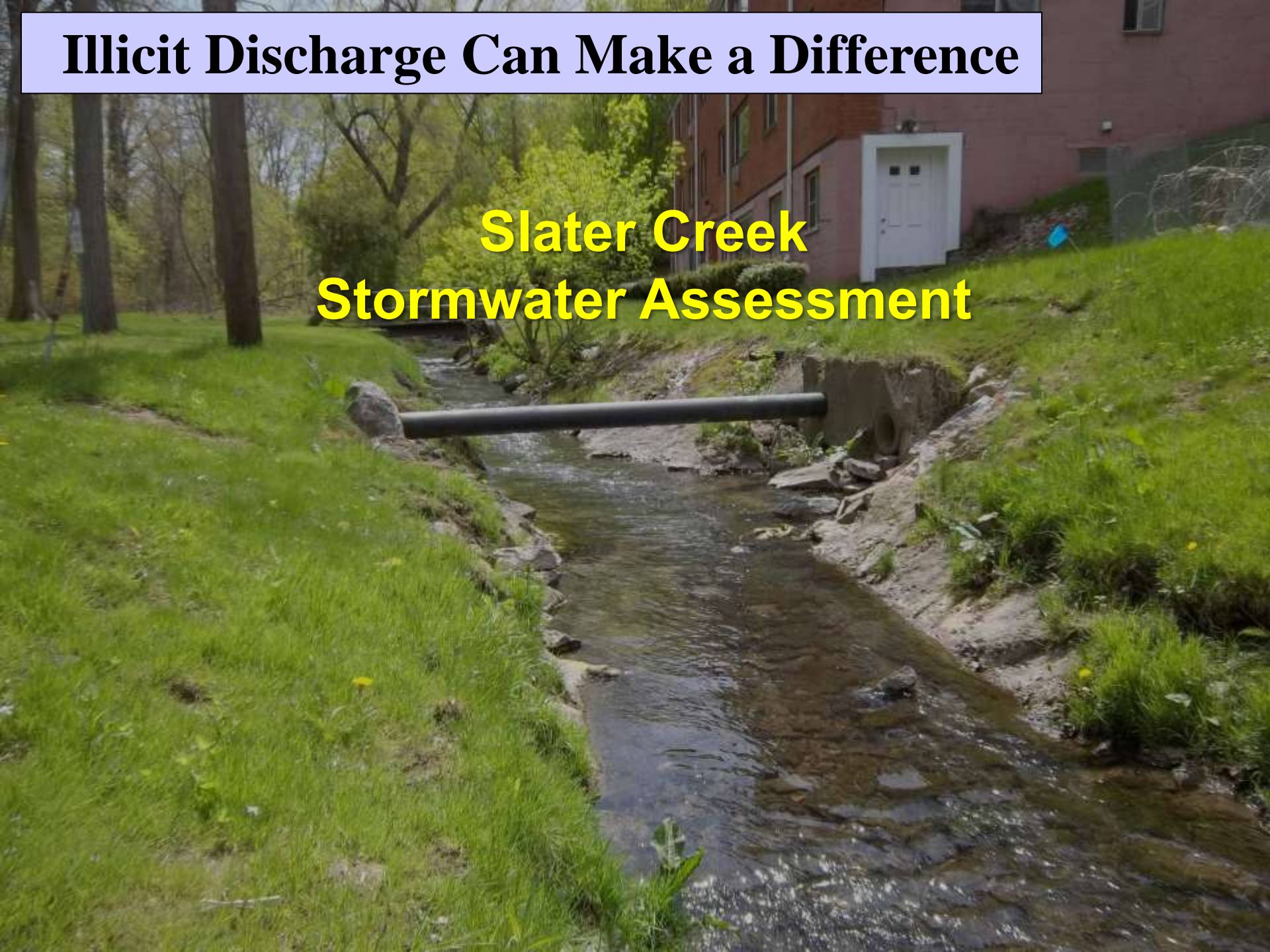


Table 5 Summary of NY State Biomonitoring

Site	Date	Status	Comments
Mt Read	1999	Severely Impacted	Sewage Strongly Indicated
	2002	Severely Impacted	Sewage Strongly Indicated
Britton	2000	Moderately Impacted	Consistent with Organic Waste Inputs
Latta	2000	Slightly Impacted	Consistent with Organic Waste Inputs

One of Top 10 Most impaired Streams in NYS

6 Months of Monitoring

Slater Creek Station 1 Ecoli MPN June - December 2014

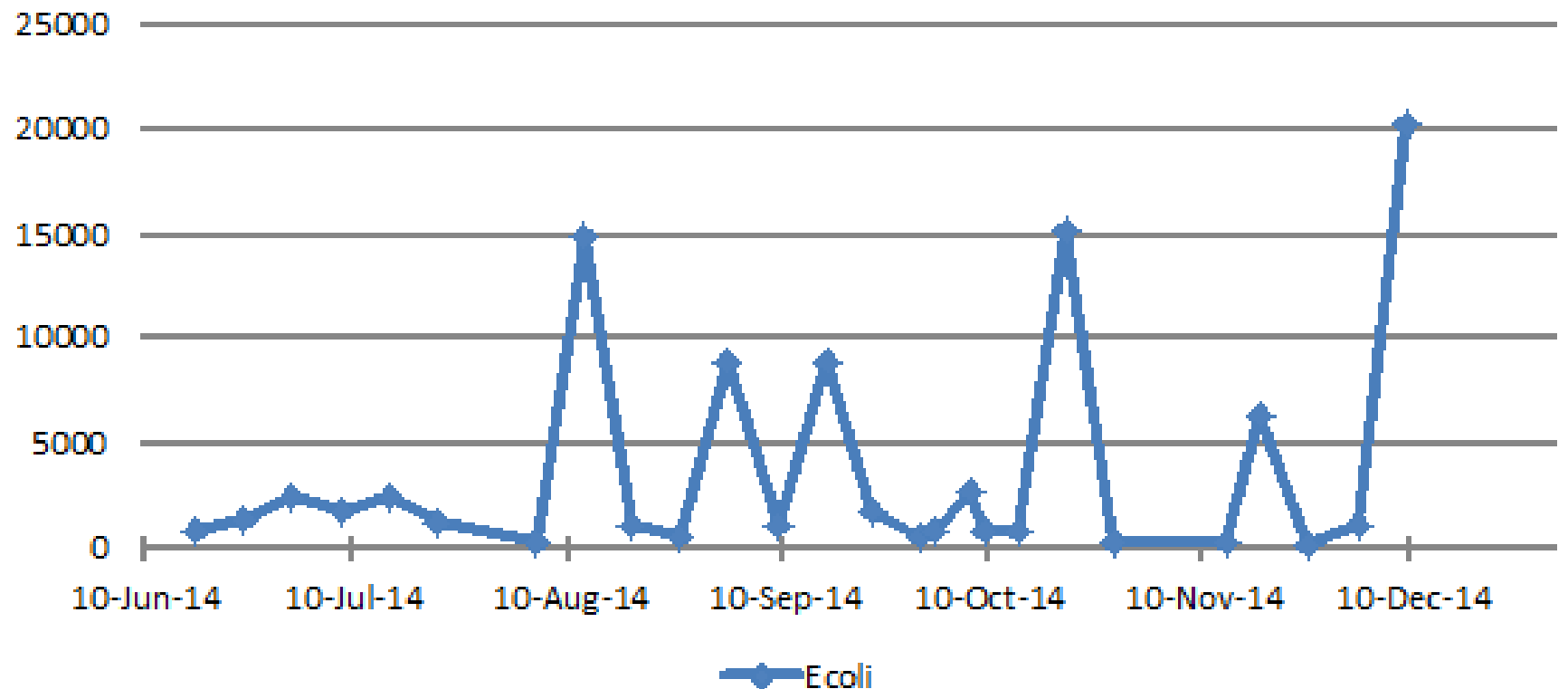
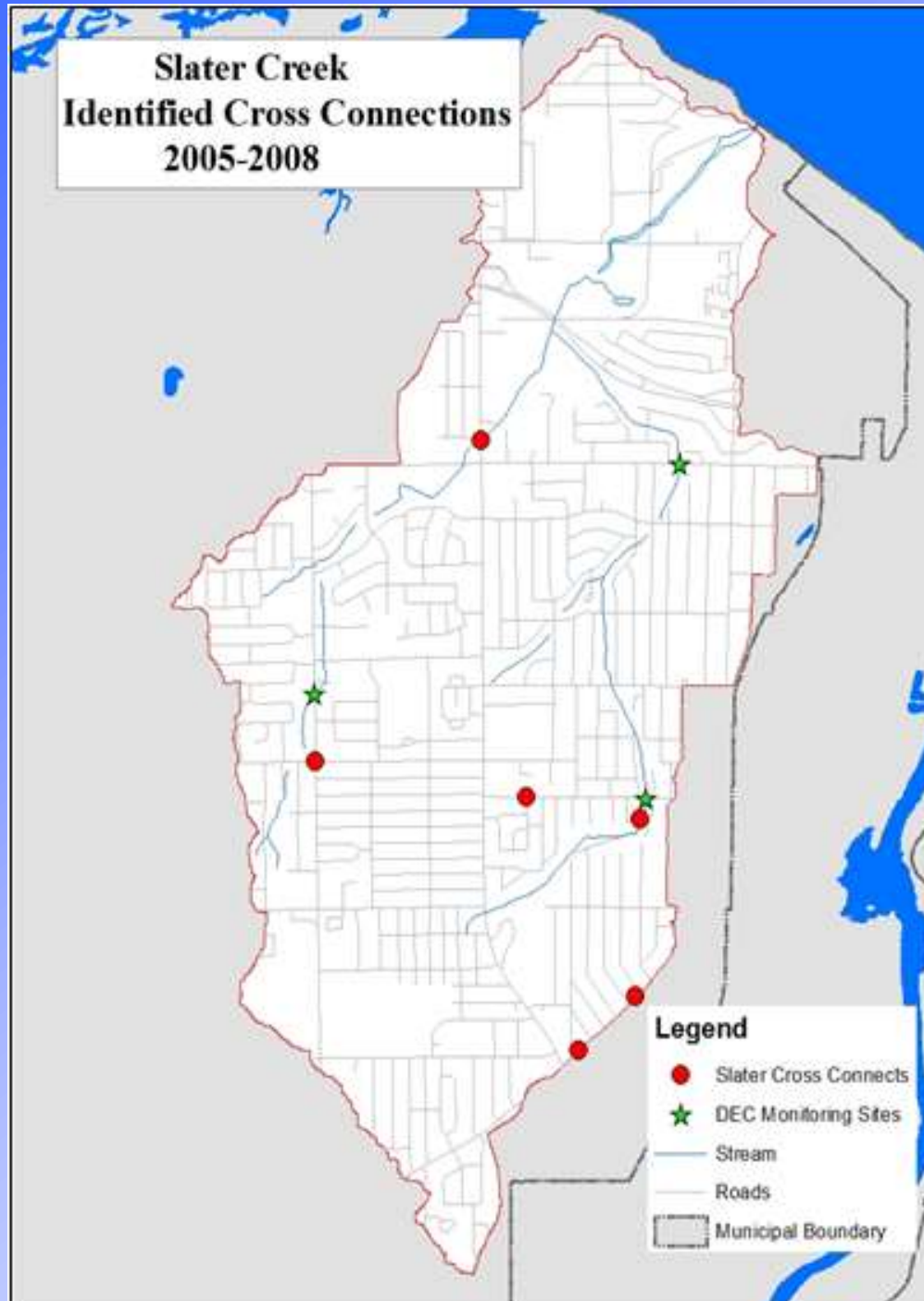


Figure ?? Weekly Concentrations of E. coli at Ling Rd Station 1

**Slater Creek
Identified Cross Connections
2005-2008**



**Slater Creek Segment Sampling
October 9, 2014
Ecoli Results in MPN/100 mL**



Legend

- Sample Site
- Stream
- Roads
- ▭ Municipal Boundary

Great Lakes Protection Fund Research Project

*New optical technology to efficiently
detect and locate sewage contamination*



**Rochester is one of
three study areas for
new technology**



Eliminating the Discharge

- Identify the source
- Notify property owner
- Warning Letters
- Investigation crew determine exact cause
- Pursue contractor/builder if possible
- DES perform residential repair

134 WINCHESTER ST

126 WINCHESTER ST

120 WINCHESTER ST



134 WINCHESTER ST

126 WINCHESTER ST

120 WINCHESTER ST









**The Future of
IDDE
Exfiltration and
Hotspots**

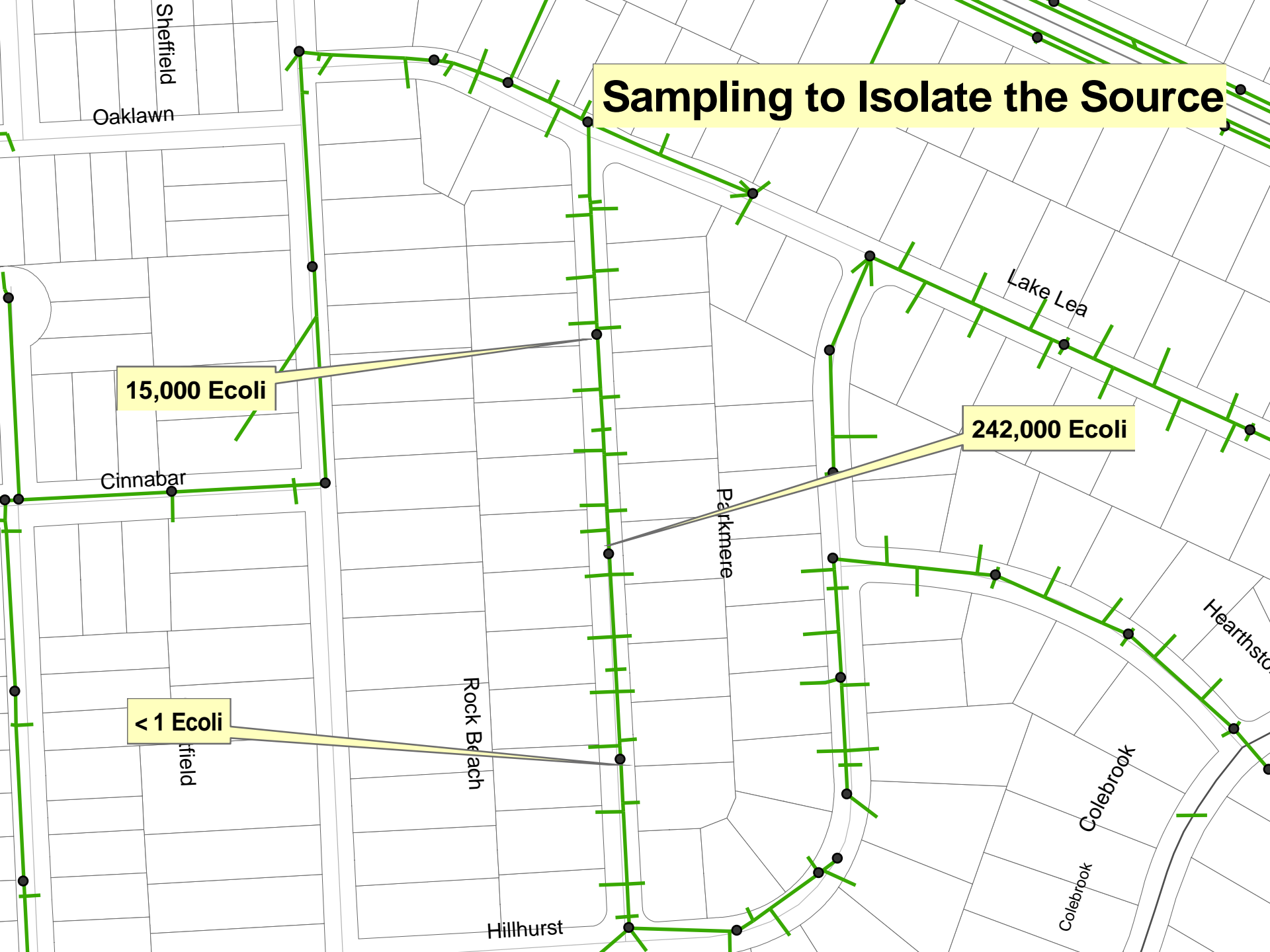
Ex-filtration:

Sanitary Waste Leaking into Storm

- **Sanitary pipe above the storm**
- **Broken main or lateral**
- **High Ecoli levels, no floatables/solids**
- **May or may not have staining, odor**
- **High Ecoli during wet weather**



Sampling to Isolate the Source

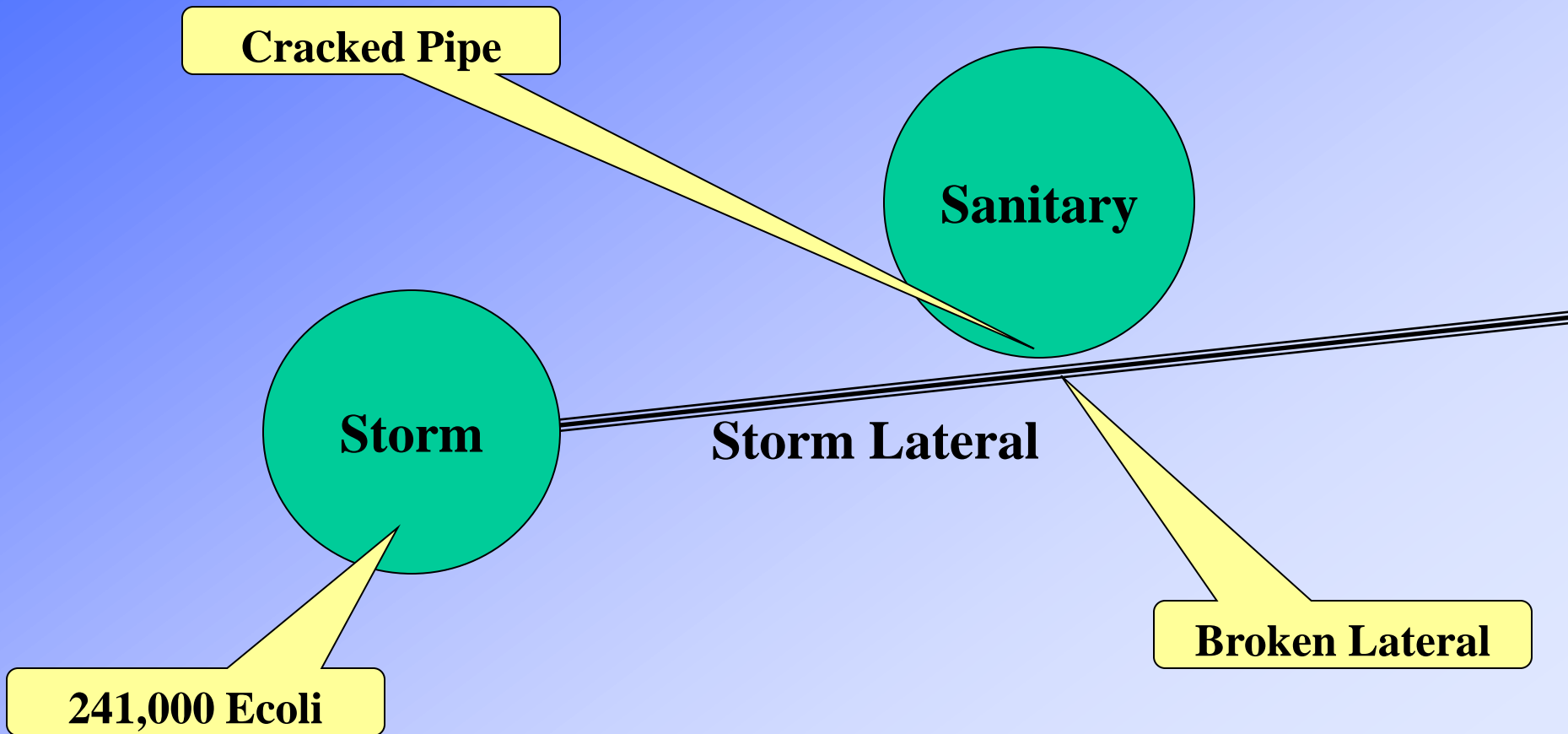


15,000 E. coli

242,000 E. coli

< 1 E. coli

Example of Exfiltration





09/09/09 13:21
74.1 FT.

CROSS CONECTION

Beach Ave Outfall



Seascape

Cloverdale

Tamarack

Larch

Brocton

Welland

Clematis

Clio

Braddock

Beach

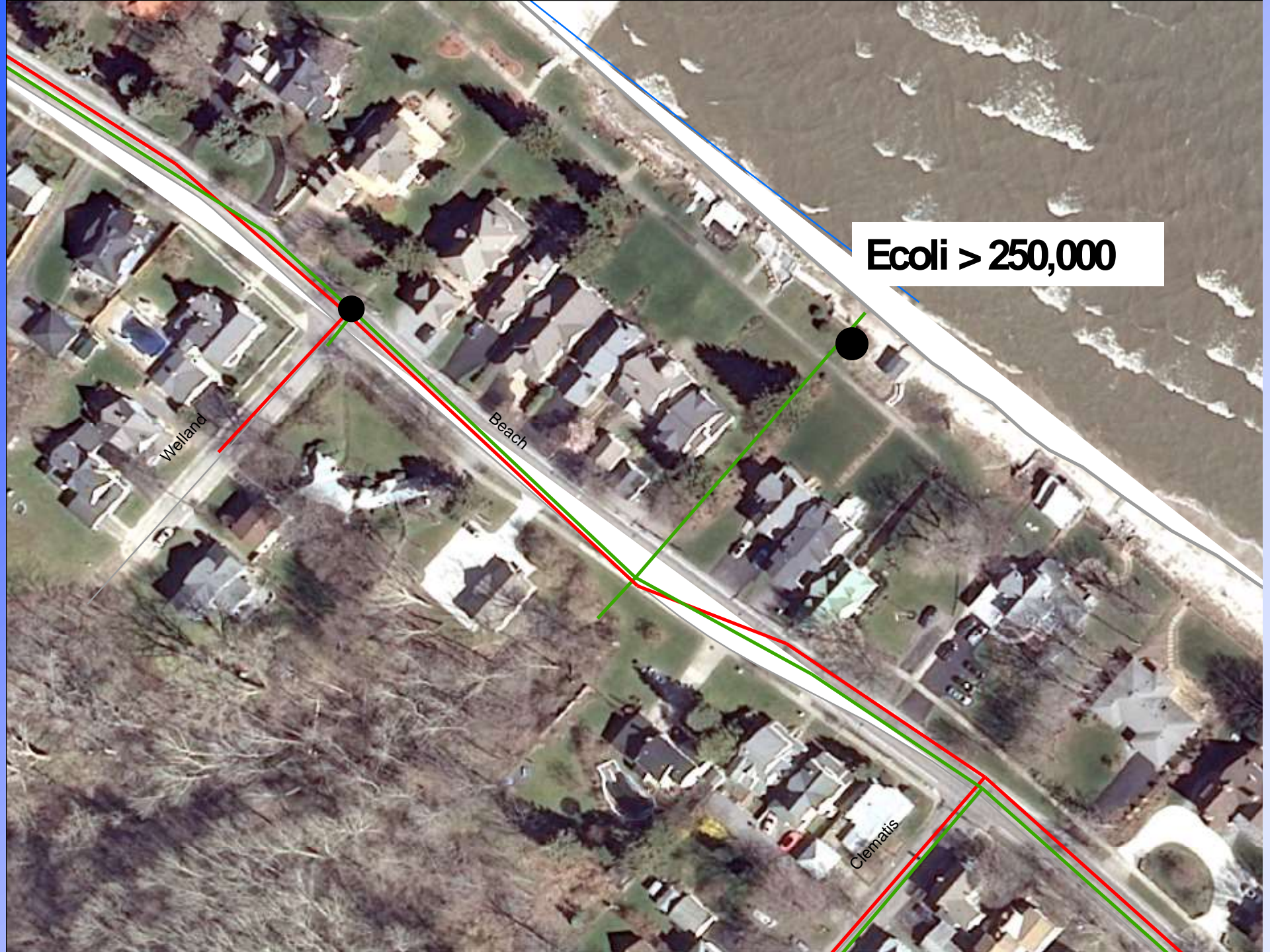
Meriden

Henley

Camden

Alpha

Wilder

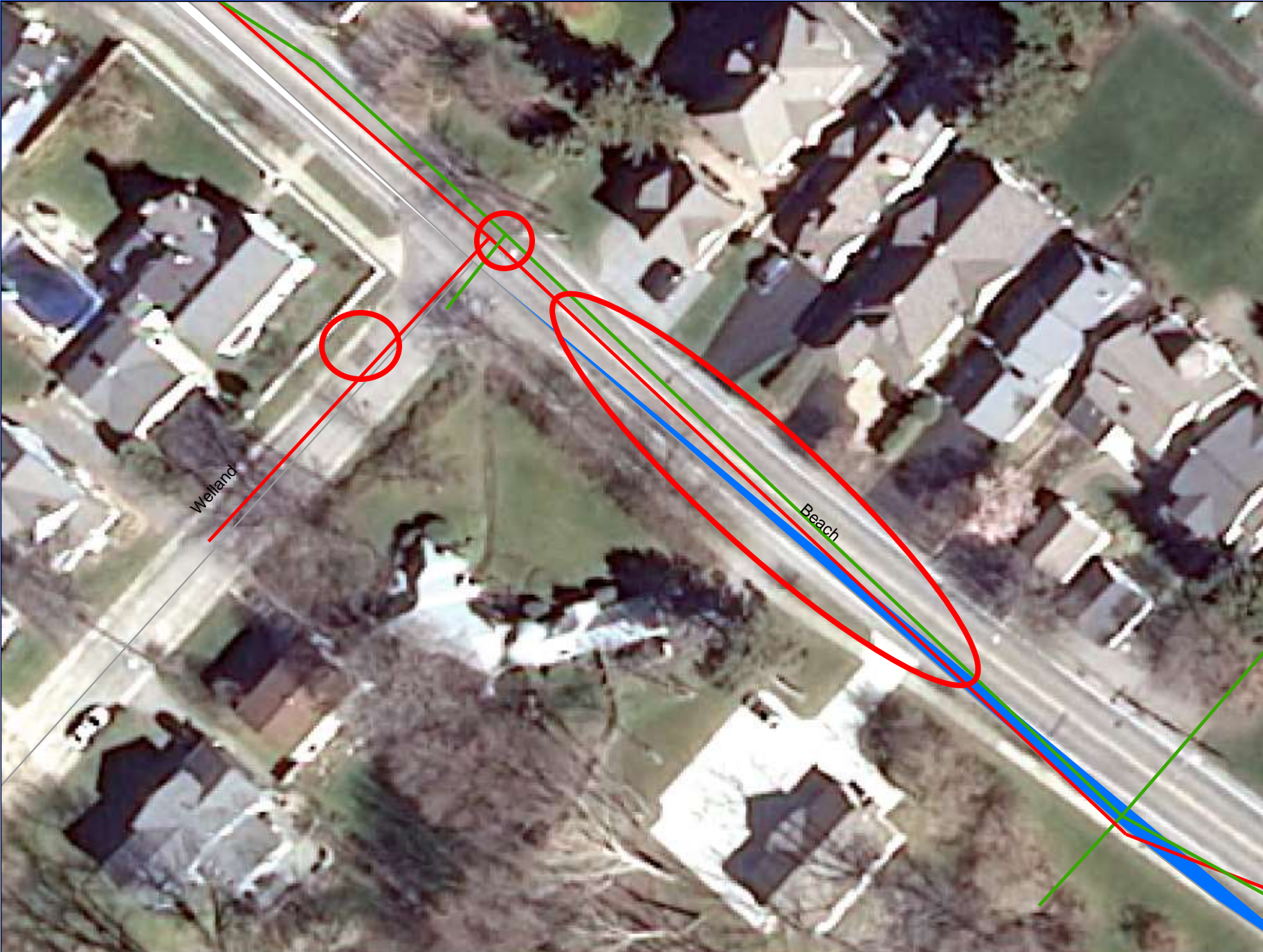


Ecoli > 250,000

Welland

Beach

Clematis



Welland

Beach



Cost to Repair Typical Cross Connections

	64 Maynard St	87 Camden St	45 Clio St
Investigation	\$ -	\$ -	\$ -
Dye Test	\$ -	\$ -	\$ 203.90
Televising	\$ 187.70	\$ 131.44	\$ 120.45
Repair	\$ 2,237.99	\$ 1,998.07	\$ 4,064.42
Restoration	\$ 666.90	\$ 303.37	\$ 1,376.94
Total	\$ 3,092.59	\$ 2,432.88	\$ 5,525.47

Cost to Repair Exfiltration

	Labor & Material	Vehicle	Total
Investigation	\$ -		\$ -
Dye test	\$ -		\$ -
Televising	\$ 188.96	\$ 325.00	\$ 513.96
Repair	\$ 10,001.05	\$ 9,891.89	\$ 19,892.94
Restoration	\$ 4,833.00		\$ 4,833.00
			\$ -
Total	\$ 15,023.01	\$ 10,216.89	\$ 25,239.90

Transitory Discharges





Inlets are the Link



Carpet Cleaner Discharge to CB



Washing Kitchen Mats Outside







Wait, What ?



Is that a Camera?



What's an illicit discharge ?



I'm just feeding
my pet rat Wilbur

Pumping Sewage to the Street



Vehicle Washing



Overflowing Grease Interceptor



Poor Housekeeping Behind the Bldg



Stain Indicates Dumping



Stain Indicates Dumping



Implications of the Illicit Discharge Ordinance

- **Specific language prohibiting illicit connections, and illegal discharges**
- **Ensures access for inspection and monitoring**
- **BMP's**
- **May require septic system inspections?**
- **Penalties for non-compliance**
- **Enforcement by MS4**





Section XIII. Watercourse Protection

Maintain watercourse within the property in a manner that prevents illicit discharges and keeps watercourse free of trash, debris or other items that would pollute, contaminate, retard flow



IDDE Common Deficiency: Failure to conduct ORI during dry weather

Table 20: Field Screening for an IDDE Program

Step	Strategies
Step 1. Acquire necessary mapping, equipment and staff	<ul style="list-style-type: none">• Use basic street maps or detailed maps from initial assessment• Minimal field equipment required; use a portable spectrophotometer if desired• Two staff per crew with basic field training required; more specialized staff or training is optional
Step 2. Determine when to conduct field screening	<ul style="list-style-type: none">• <u>During dry season and leaf off conditions</u>• <u>After a dry period of at least 48 hours</u>• Low groundwater levels

(“EPA’s IDDE Publication” Page 65)

IDDE Common Deficiency: Failure to identify and eliminate illicit connections/discharges



Example ORI:

- Dry weather flow
- Staining/Deposits
- Green algae growth

Example Next Steps:

- Sampling
- Tracking
- Televising
- Dye Testing



MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9, 2014

If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition

SPDES ID

Minimum Control Measure 3. Illicit Discharge Detection and Elimination

The information in this section is being reported (check one):

On behalf of an individual MS4

On behalf of a coalition

How many MS4s contributed to this report?

1. Enter the number and approx. percent of outfalls mapped: # %

2. How many of these outfalls have been screened for dry weather discharges during this reporting period (outfall reconnaissance inventory)?

3.a. What types of generating sites/sewersheds were targeted for inspection during this reporting period?

Auto Recyclers

Landscaping (Irrigation)

Building Maintenance

Marinas

Churches

Metal Plating Operations

Commercial Carwashes

Outdoor Fluid Storage

Commercial Laundry/Dry Cleaners

Parking Lot Maintenance

Construction Vehicle Washouts

Printing

Cross-Connections

Residential Carwashing

Distribution Centers

Restaurants

Food Processing Facilities

Schools and Universities

Garbage Truck Washouts

Septic Maintenance

Hospitals

Swimming Pools

Improper RV Waste Disposal

Vehicle Fueling

Industrial Process Water

Vehicle Maint./Repair Shops

Other:

None

Sewersheds:

MS4 Annual Report Form

This report is being submitted for the reporting period ending March 9,

2	0	1	4
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If submitting this form as part of a joint report on behalf of a coalition leave SPDES ID blank.

Name of MS4/Coalition:

Stormwater Coalition of Monroe County									
---------------------------------------	--	--	--	--	--	--	--	--	--

 SPDES ID:

N	Y	R	2	0					
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Minimum Control Measures 4 and 5
Construction Site and Post-Construction Control

The information in this section is being reported (check one):

On behalf of an individual MS4

On behalf of a coalition

How many MS4s contributed to this report?

2	5
---	---

- 1a. Has each MS4 contributing to this report adopted a law, ordinance or other regulatory mechanism that provides equivalent protection to the NYS SPDES General Permit for Stormwater Discharges from Construction Activities? Yes No
- 1b. Has each Town, City and/or Village contributing to this report documented that the law is equivalent to a NYSDEC Sample Local Law for Stormwater Management and Erosion and Sediment Control through either an attorney certification or using the NYSDEC Gap Analysis Workbook? Yes No NT

If Yes, Towns, Cities and Villages provide date of equivalent NYS Sample Local Law.

09/2004 03/2006 NT

2. Does your MS4/Coalition have a SWPPP review procedure in place? Yes No
3. How many Construction Stormwater Pollution Prevention Plans (SWPPPs) have been reviewed in this reporting period?

6	1
---	---

4. Does your MS4/Coalition have a mechanism for receipt and consideration of public comments related to construction SWPPPs? Yes No NT

If Yes, how many public comments were received during this reporting period?

		0
--	--	---

5. Does your MS4/Coalition provide education and training for contractors about the local SWPPP process? Yes No

6. Identify which of the following types of enforcement actions you used during the reporting period for construction activities, indicate the number of actions, or note those for which you do not have authority:

- | | | | | | | | | | |
|---|---|----------------------|----------------------|----------------------|----------------------|---|----------------------|---|------------------------------------|
| <input checked="" type="radio"/> Notices of Violation | # | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 5 | <input type="text"/> | 9 | <input type="radio"/> No Authority |
| <input checked="" type="radio"/> Stop Work Orders | # | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 4 | <input type="text"/> | | <input type="radio"/> No Authority |
| <input checked="" type="radio"/> Criminal Actions | # | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 0 | <input type="text"/> | | <input type="radio"/> No Authority |
| <input checked="" type="radio"/> Termination of Contracts | # | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 0 | <input type="text"/> | | <input type="radio"/> No Authority |
| <input checked="" type="radio"/> Administrative Fines | # | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 0 | <input type="text"/> | | <input type="radio"/> No Authority |
| <input checked="" type="radio"/> Civil Penalties | # | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 0 | <input type="text"/> | | <input type="radio"/> No Authority |
| <input checked="" type="radio"/> Administrative Orders | # | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 5 | <input type="text"/> | | <input type="radio"/> No Authority |
| <input checked="" type="radio"/> Enforcement Actions or Sanctions | # | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 3 | <input type="text"/> | 3 | |
| <input checked="" type="radio"/> Other | # | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 0 | <input type="text"/> | | <input type="radio"/> No Authority |

Illicit Discharges.....

.....They're Out There

Andy Sansone

Monroe County

Environmental Services

585-753-7684

asansone@monroecounty.gov

