

# IDDE INVESTIGATION:

## • LAUNDRY BROOK

TO: Ted Jerdee and Maria Rose, City of Newton Department of Public Works, Utilities Division

CC: Carol Harris and Zach Henderson – Woodard & Curran  
Garrett Bergey – SDE

FROM: Stephanie Kaiser and Chelsea Waite

DATE: May 14, 2021

RE: Newton IDDE Investigation Update

This memo summarizes the key findings of the Laundry Brook Illicit Discharge, Detection, and Elimination (IDDE) Investigations and recommendations for the next steps. The majority of the investigations in this area took place between August 2020 through January 2021. The remaining investigations were performed in the spring of 2021 in order to complete the catchment area manhole investigations for this area. The scope of this work is based on the IDDE investigation results memorandum submitted to the City of Newton (City) on September 15, 2020, in which Woodard & Curran recommended continuing with IDDE manhole sampling investigations systematically through sub-catchments of the Laundry Brook Catchment area.

### Laundry Brook Manhole Sampling

The IDDE investigations in Laundry Brook included sub-catchments 77-1 through 77-3 and 77-5 through 77-14. Sub-catchment 77-4, Edmond's Brook, was previously investigated in June 2020 and results were documented in the revised September 2020 memorandum; however, Edmond's Brook results have also been included herein such that this memorandum provides a comprehensive assessment of Catchment 77, Laundry Brook. Investigation field procedures included conducting rapid visual and olfactory inspection of key junction manholes in the sub-catchment area in order to identify illicit discharges; this procedure is consistent with the 2016 MS4 General Permit and the City's IDDE Program Manual. Storm manholes located along Route I-90 were not sampled as these are MassDOT jurisdiction, and the City of Newton does not own nor maintain this drainage infrastructure. However, the crews sampled the City-owned manholes just upstream and downstream of these manholes. During the Laundry Brook investigation, the field crews did not confirm any illicit discharges (i.e. obvious visual indications of wastewater) but did identify the following pipe segments with suspected illicit discharges based on criteria identified by the U.S. Environmental Protection Agency (EPA) in the 2016 MS4 General Permit. These pipe segments and associated sampling results are listed below in **Table 1**.

**TABLE 1. LAUNDRY BROOK SUMMARY OF CONTAMINATED PIPES**

Sub-Catchment ID	Pipe	Street	Ammonia (mg/L)	Surfactants (mg/L)	Comments
77-1	SWM-17677	Court Street	10	3	Rotten Egg Odor
77-1	SWM-13305	Between Crafts Street and Prescott Street	1	0.5	Dark Grey & Yellow Color/Oil Sheen on Top
77-1	SWM-15496	Lincoln Road	0.4	0.5	
77-1	SWM-20166	Crafts Street	0.2	0.25	
77-1	SWM-21983	Cross-Country Parallel to Ashmont Ave	0.1	0.25	

Sub-Catchment ID	Pipe	Street	Ammonia (mg/L)	Surfactants (mg/L)	Comments
77-3	SWM-22489	Parkview Avenue	5	0	Cabot Elementary School
77-3	SWM-22490	Bridges Avenue	3	0	Cabot Elementary School
77-4*	SWM-15944	Morse Road	10	0.5	Previously reported in the Edmond's Brook Memo
77-4*	SWM-19899	Burrage Road	0.6	0.25	Previously reported in the Edmond's Brook Memo
77-5	SWM-15399	Cross-Country off Salisbury Road	0.2	0.25	
77-5	SWM-22168	East Side Parkway	0.1	0.25	
77-5	SWM-22171	East Side Parkway	0.1	0	
77-6	SWM-5972	Homer Street	0.4	0.5	
77-9	SWM-3319	Walnut Street	2	0.25	
77-10	SWM-21098	Cross-Country Between Carriage Road and Colbert Road East	0.1	0.25	
77-11	SWM-22293	Beacon Street	1	0.25	
77-11	SWM-22212	Beethoven Avenue	0.6	0.25	Frank Zervas Elementary School
77-11	SWM-22499	Beaconwood Road	0.6	0.25	
77-11	SWM-21385	Beacon Street/Walnut Street Intersection	0.6	0	
77-11	SWM-13989	Ferncroft Road	0.2	0.25	
77-11	SWM-14048	Beacon Street	0	1	
77-11	SWM-837	Cross Country off Beacon Street	0	0.5	
77-11	SWM-14614	Beethoven Avenue	0	0.5	
77-11	SWM-18569	Beethoven Avenue	0	0.25	
77-13	SWM-15701	Ripley Street	10	2	
77-13	SWM-19738	Ripley Street	10	0.75	Musty Odor
77-13	SWM-21586	Warren Street	10	0.25	
77-13	SWM-14053	Intersection of Intervale Road and Hammondswood Road	3	0.25	Sewage Odor

\*Sub-catchment 77-4 is included in this table to show a comprehensive look at the Laundry Brook catchment.

Based on the pipe results presented in Table 1, building inspections are recommended for subsequent investigation. Buildings recommended for inspection and dye testing are presented in **Attachment A**, enclosed with this memorandum. Approximately 100 locations are recommended for inspection and dye testing. Facilities recommended for further investigation and dye testing are primarily residential buildings, however approximately 15% are commercial/municipal buildings.

**Table 2**, below, shows the current status of the storm drain pipes in the Laundry Brook catchment by linear feet and **Table 3** shows the current status of storm drain pipes by percent of total pipe length. Edmond's Book, sub-catchment 77-4, is included in this table to show a comprehensive status for Laundry Brook.

**TABLE 2. LAUNDRY BROOK IDDE PIPE STATUS BY LINEAR FEET**

Sub-Catchment	Confirmed (LF)	Suspected (LF)	Upstream Contamination (LF)	Standing Water (LF)	In Progress (LF)	No Contamination Found (LF)	Uninvestigated/Other (LF)	Total/ Sub-catchment (LF)
77-1	0	1,778	612	1,521	0	35,444	8,495	47,851
77-2	0	0	109	331	0	25,362	5,199	31,001
77-3	0	78	203	2,173	0	36,677	7,408	46,539
77-4	0	638	0	952	0	21,727	6,911	30,228
77-5	0	631	832	600	0	6,552	1,765	10,379
77-6	0	13	128	458	0	12,303	3,056	15,958
77-7	0	0	0	276	0	1,075	5,897	7,249
77-8	No Pipe Network	No Pipe Network	No Pipe Network	No Pipe Network	No Pipe Network	No Pipe Network	No Pipe Network	No Pipe Network
77-9	0	54	1,499	1,286	0	21,087	6,376	30,301
77-10	0	429	391	1,030	0	18,828	2,066	22,743
77-11	0	2,558	2,878	1,704	0	48,158	3,972	59,270
77-12	0	0	0	185	0	39,962	6,256	46,404
77-13	0	805	1,381	877	0	41,240	11,603	55,906
77-14	0	0	0	0	0	5,938	2,153	8,091
<b>Total/ Pipe Status</b>	<b>0</b>	<b>6,984</b>	<b>8,033</b>	<b>11,394</b>	<b>0</b>	<b>314,352</b>	<b>71,175</b>	<b>411,919</b>

**TABLE 3. LAUNDRY BROOK IDDE PIPE STATUS BY PERCENT**

Sub-Catchment	Confirmed (% of Total)	Suspected (% of Total)	Upstream Contamination (% of Total)	Standing Water (% of Total)	In Progress (% of Total)	No Contamination Found (% of Total)	Uninvestigated/Other (% of Total)
77-1	0%	4%	1%	3%	0%	74%	18%
77-2	0%	0%	0%	1%	0%	82%	17%
77-3	0%	<1%	<1%	5%	0%	79%	16%
77-4	0%	2%	0%	3%	0%	72%	23%
77-5	0%	6%	8%	6%	0%	63%	17%
77-6	0%	<1%	1%	2%	0%	77%	19%
77-7	0%	0%	0%	4%	0%	15%	81%
77-8	No Pipe Network	No Pipe Network	No Pipe Network	No Pipe Network	No Pipe Network	No Pipe Network	No Pipe Network
77-9	0%	<1%	5%	4%	0%	70%	21%
77-10	0%	2%	2%	5%	0%	83%	9%
77-11	0%	4%	5%	3%	0%	81%	7%
77-12	0%	0%	0%	0%	0%	86%	13%
77-13	0%	1%	2%	2%	0%	74%	21%
77-14	0%	0%	0%	0%	0%	73%	27%
<b>Total/ Pipe Status</b>	<b>0%</b>	<b>2%</b>	<b>2%</b>	<b>3%</b>	<b>0%</b>	<b>76%</b>	<b>17%</b>

**Table 3** shows that approximately 83% of the pipes within Laundry Brook were investigated and that no contamination was found in approximately 76% of the Laundry Brook Catchment Area. Approximately 7% of the catchment area piping indicated results requiring subsequent investigation. Approximately 17% of the pipes in Laundry Brook were not investigated. In many of these cases, the City's PeopleGIS database and record drawings show large cross-country culverts running with little to no access points to inspect or sample from. In other cases, the pipes were not investigated because they were owned by the MassDOT or private entities. A summary of pipes which could not be accessed for investigation is below:

- Sub-catchment 77-1: There is a 6-foot box culvert starting at the intersection of Wilton Road and Central Avenue to Jackson Road. SDE could not locate access points to this pipe.
- Sub-catchment 77-2: There is an 8-foot by 10-foot box culvert running through Cabot Park. SDE could not locate access points to this pipe.
- Sub-catchment 77-3: There is a 5-foot by 10-foot box culvert running cross-country from Gay Street to Clarendon Street. SDE could not locate access points to this pipe.
- Sub-catchment 77-4: Woodard & Curran and SDE previously investigated this area in June 2020. Some storm drain pipes in this area were not investigated because they are owned by Boston College.
- Sub-catchment 77-5: SDE could not find access to some storm drains on Langdon Street and Laudholm Road.
- Sub-catchment 77-6: SDE could not find access to much of the drainage on Homer Street as well as the drainage mapped at City Hall.
- Sub-catchment 77-7: 80% of the storm drain pipes in this sub-catchment are located in Newton Cemetery & Arboretum. Based on the City's GIS, there are parallel storm drains that run through this area. However, the City's record drawings show one drain and one sewer pipe. The drain is documented as a 4-foot by 5-foot box culvert. SDE could not locate access points to this pipe.
- Sub-catchment 77-9: The 5-foot by 10-foot Hammond Brook culvert runs cross-country from the Mason Rice Elementary School to Walnut Street. SDE could not locate access points to this pipe.
- Sub-catchment 77-12: SDE could not locate portions of the storm drain located on Commonwealth Avenue.
- Sub-catchment 77-13: SDE could not access various storm drain pipes throughout the sub-catchment. There are also potential mapping inaccuracies in this area. These mapping discrepancies are noted in the section below.
- Sub-catchment 77-14: SDE could not access various storm drains throughout the sub-catchment. There are also potential mapping inaccuracies in this area. These mapping discrepancies are noted in the section below.

### **Mapping Discrepancies**

During investigations of the Laundry Brook sub-catchments, areas were identified where the City's PeopleGIS-based drainage system mapping information differed from conditions observed in the field by SDE. Although field crews completed catchment investigations in these sub-catchments, sampling could not be performed at all mapped pipes as a result of these discrepancies.



Areas in the City with discrepancies between mapped drainage infrastructure and what was observed in the field are identified below:

- 77-1
  - Watertown Street at Hawthorn Street: storm drain flow direction in PeopleGIS was not accurate. Flow direction was corrected based on City record drawings. The edit was made in PeopleGIS.
- 77-13
  - Grant Avenue at Beacon Street: storm drain mapping in the area conflicts with available record drawings in this area. Some record drawings are not available. PeopleGIS edits were not completed due to lack of available information.
- 77-14
  - Pearl Street: storm drain mapping of two parallel pipes conflicts with record drawings that show two 6-inch “open joint drains” located on Pearl Street.

### **IDDE Next Steps**

The findings from the Laundry Brook catchment investigations described in this report were used to create a building inspection plan (Attachment A). Building plumbing facilities adjacent to contaminated pipes will be dye tested in an effort to confirm the source of illicit discharges suspected in pipe segments.

Typically, building inspections would be the next step in the IDDE investigation plan. However, due to COVID-19 safety restrictions, only inspection of commercial and unoccupied buildings would be feasible. Due to the limited number of building inspections that could be performed, we recommend deferring all buildings inspections until they can be performed in a comprehensive and efficient manner. To conduct the building inspections, letters would need to be sent to property owners to schedule the appointments and the owner would need to agree to having someone enter their facility. Letters would also outline COVID-19 safety regulations and any special City requirements.

Woodard & Curran recommends proceeding with manhole investigations in the remaining Problem Catchments throughout the next fiscal year in efforts to remain ahead of the regulatory schedule presented in the 2016 MS4 General Permit. Under this permit, manhole sampling in Problem Catchments is required to be completed by Permit Year 5 (June 30, 2023). The remaining Problem Catchments include: Catchment 81, Catchment 90, Catchment 32, and remaining sub-catchments in Catchment 11.

## **ATTACHMENT A – RECOMMENDATIONS FOR BUILDING INSPECTIONS**

## Laundry Brook Recommendations for Building Inspections

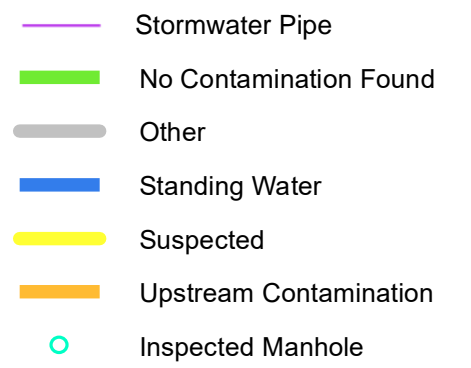
Catchment ID	Associated Pipe ID	Street Name	Building Number	Parcel ID	Property Type
77-1	SWM-15496	Crafts Street	43	14023 0011	Residential
77-1	SWM-15496	Crafts Street	49	14020 0003	Residential
77-1	SWM-15496	Crafts Street	57-59	14020 0004	Residential
77-1	SWM-15496	Crafts Street	58	23016 0006	Commercial
77-1	SWM-20166	Crafts Street	64	23016 0005	Commercial
77-1	SWM-20166	Crafts Street	67-69	14017 0018	Residential
77-1	SWM-20166	Crafts Street	71	14017 0019	Residential
77-1	SWM-20166	Crafts Street	75	14014 0020	Residential
77-1	SWM-20166	Crafts Street	78	23015 0026	Residential
77-1	SWM-20166	Crafts Street	87	14017 0021	Residential
77-1	SWM-20166	Maguire Court	16	23016 0003	Commercial
77-1	SWM-21983	Crafts Street	89-91	14017 0022	Residential
77-1	SWM-21983	Ashmont Avenue	12	14017 0001	Residential
77-1	SWM-21983	Ashmont Avenue	19-21	14016 0010	Residential
77-1	SWM-21983	Ashmont Avenue	25	14016 0010A	Residential
77-1	SWM-21983	Ashmont Avenue	28-30	14017 0026	Residential
77-1	SWM-21983	Ashmont Avenue	31-33	14016 0011A	Residential
77-1	SWM-21983	Ashmont Avenue	34-36	14017 0025B	Residential
77-1	SWM-21983	Ashmont Avenue	40-46	14017 0025A	Residential
77-1	SWM-17677	Court Street	76	23020 0010	Residential
77-1	SWM-17677	Court Street	77	23016 0032	Residential
77-1	SWM-17677	Court Street	84	23020 0009	Residential
77-1	SWM-17677	Court Street	95-97	23016 0035	Residential
77-1	SWM-17677	Court Street	103	23016 0036	Residential
77-1	SWM-17677	Washington Street	773	23020 0002	Commercial
77-1	SWM-13305	Crafts Street	90-110	23015 0027	Municipal
77-3	SWM-22489 SWM-22490	Cabot Street	229	22008 0008	School
77-4	SWM-15944	Kirkstall Road	164	22021 0030	Residential
77-4	SWM-15944	Kirkstall Road	172	22021 0029	Residential
77-4	SWM-15944	Kirkstall Road	178	22021 0028	Residential
77-4	SWM-15944	Kirkstall Road	179	22030 0009	Residential
77-4	SWM-15944	Kirkstall Road	184	22021 0027	Residential
77-4	SWM-15944	Kirkstall Road	185	22030 0010	Residential
77-4	SWM-15944	Kirkstall Road	191	22030 0011	Residential
77-4	SWM-15944	Kirkstall Road	192	22021 0026	Residential
77-4	SWM-15944	Morse Road	20	22030 0012	Residential
77-4	SWM-19899	Burrage Road	8	73028 0008	Residential
77-4	SWM-19899	Burrage Road	12	73028 0007	Residential
77-4	SWM-19899	Burrage Road	15	73026 0018	Residential
77-4	SWM-19899	Burrage Road	20	73028 0006	Residential
77-4	SWM-19899	Burrage Road	21	73026 0019	Residential
77-4	SWM-19899	Glendale Road	24	73026 0017	Residential
77-4	SWM-19899	Glendale Road	30	73026 0016	Residential
77-4	SWM-19899	Glendale Road	36	73026 0015	Residential
77-4	SWM-19899	Alderwood Road	63	73026 0020	Residential
77-5	SWM-15399	Cabot Street	109	13009 0019	Residential
77-5	SWM-15399	Cabot Street	121	13008 0001	Residential
77-5	SWM-15399	Langdon Street	134	13008 0008	Residential
77-5	SWM-15399	Langdon Street	140	13008 0009	Residential
77-5	SWM-15399	Laudholm Road	34	13009 0018	Residential
77-5	SWM-15399	Laudholm Road	35	13008 0002	Residential
77-5	SWM-15399	Langdon Street	131	13007 0008	Residential
77-5	SWM-15399	Langdon Street	141-143	13007 0009	Residential
77-5	SWM-15399	Cabot Street	143-145	13007 0010	Residential

## Laundry Brook Recommendations for Building Inspections

Catchment ID	Associated Pipe ID	Street Name	Building Number	Parcel ID	Property Type
77-5	SWM-15399	Cabot Street	149-151	13007 0011	Residential
77-5	SWM-15399	Salisbury Road	50-52	13007 0012	Residential
77-5	SWM-15399	Salisbury Road	44-46	13007 0013	Residential
77-5	SWM-22171	Salisbury Road	27-29	13006 0005	Residential
77-5	SWM-22171	Salisbury Road	21-23	13006 0004	Residential
77-5	SWM-22171	East Side Parkway	144	13006 0019	Residential
77-5	SWM-22171 SWM-22168	East Side Parkway	152	13006 0018	Residential
77-6	SWM-5972	Homer Street	330	64003 0005	Municipal
77-9	SWM-3319	Walnut Street	858	64005 0004	Commercial
77-9	SWM-3319	Walnut Street	860-862	64005 0003	Commercial
77-10	SWM-21098	Risley Road	41	32057 0010	Residential
77-10	SWM-21098	Prince Street	318	32057 0011	Residential
77-10	SWM-21098	Risley Road	33	32057 0009	Residential
77-10	SWM-21098	Risley Road	23	32057 0008	Residential
77-10	SWM-21098	Colbert Road East	55	32057 0005	Residential
77-10	SWM-21098	Colbert Road East	67	32057 0006	Residential
77-11	SWM-22212	Beethoven Avenue	30	54013 0003	School
77-11	SWM-13989	Ferncroft Road	24	53008 0008	Residential
77-11	SWM-13989	Ferncroft Road	25	53007 0013	Residential
77-11	SWM-13989	Ferncroft Road	31	53007 0014	Residential
77-11	SWM-13989	Ferncroft Road	32	53008 0007	Residential
77-11	SWM-14048	Ferncroft Road	6	53008 0011	Residential
77-11	SWM-14048	Beacon Street	1382	53015 0016	Residential
77-11	SWM-837	Beacon Street	1392	53015 0015	Residential
77-11	SWM-837	Allen Avenue	11	53015 0017	Residential
77-11	SWM-837	Allen Avenue	15	53015 0018	Residential
77-11	SWM-837	Allen Avenue	21	53015 0019	Residential
77-11	SWM-837	Allen Avenue	25	53015 0020	Residential
77-11	SWM-837	Glastonbury Oval	12	53015 0013	Residential
77-11	SWM-837	Glastonbury Oval	14	53015 0012	Residential
77-11	SWM-18569	Beethoven Avenue	136	54012 0014	Residential
77-11	SWM-18569	Beethoven Avenue	140	54012 0013	Residential
77-11	SWM-18569	Beethoven Avenue	150	54012 0012	Residential
77-11	SWM-18569	Beethoven Avenue	155	53016 0041	Residential
77-11	SWM-14614	Beethoven Avenue	126	54012 0017	Residential
77-11	SWM-14614	Beethoven Avenue	130	54012 0016	Residential
77-11	SWM-14614	Winslow Road	139	54012 0030	Residential
77-11	SWM-14614	Winslow Road	145	54012 0031	Residential
77-11	SWM-21385	Walnut Street	899-901	54022 0008	Commercial
77-11	SWM-21385	Beacon Street	1094	54022 0007	Commercial
77-11	SWM-21385	Beacon Street	1100-1102	54022 0006	Commercial
77-11	SWM-21385	Beacon Street	1106-1108	54022 0005	Commercial
77-11	SWM-21385	Beacon Street	1111	64003 0009D	Residential
77-11	SWM-21385	Beacon Street	1099	64003 0012	Commercial
77-11	SWM-22293	Beacon Street	1139	64003 0017	Residential
77-11	SWM-22293	Beacon Street	1143	64003 0018	Residential
77-11	SWM-22293	Beacon Street	1138-1142	54022 0046	Commercial
77-11	SWM-22293	Beacon Street	1144-1152	54022 0048	Commercial
77-11	SWM-22293	Beacon Street	1147-1149	64003 0018A	Residential
77-11	SWM-22293	Beacon Street	1158	54022 0049A	Commercial
77-11	SWM-22499	Wilson Circle	3-5	54022 0019H	Residential

## ATTACHMENT B – IDDE RESULTS SUB-CATCHMENT MAPS

### Pipe IDDE Investigation Status





Sub-catchment 77-2

Pipe IDDE Investigation Status

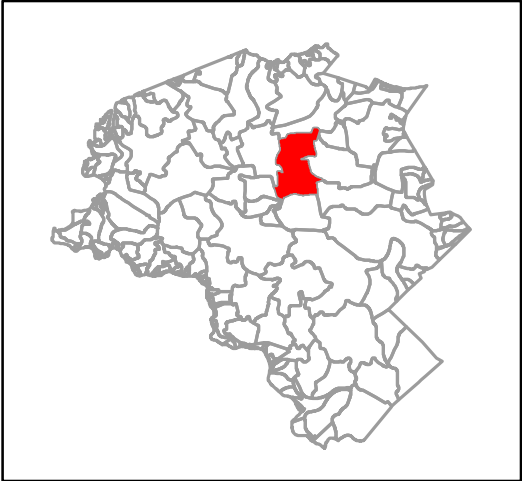
- Stormwater Pipe
- No Contamination Found
- Other
- Standing Water
- Suspected
- Upstream Contamination
- Inspected Manhole



Pipe IDDE Investigation Status

Sub-catchment 77-3

- Stormwater Pipe
- No Contamination Found
- Other
- Standing Water
- Suspected
- Upstream Contamination
- Inspected Manhole

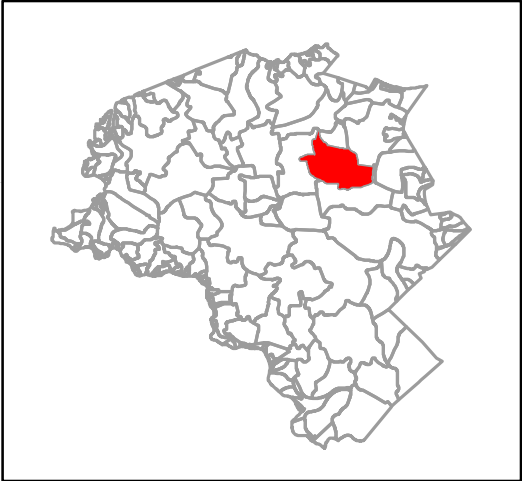




Sub-catchment 77-4

Pipe IDDE Investigation Status

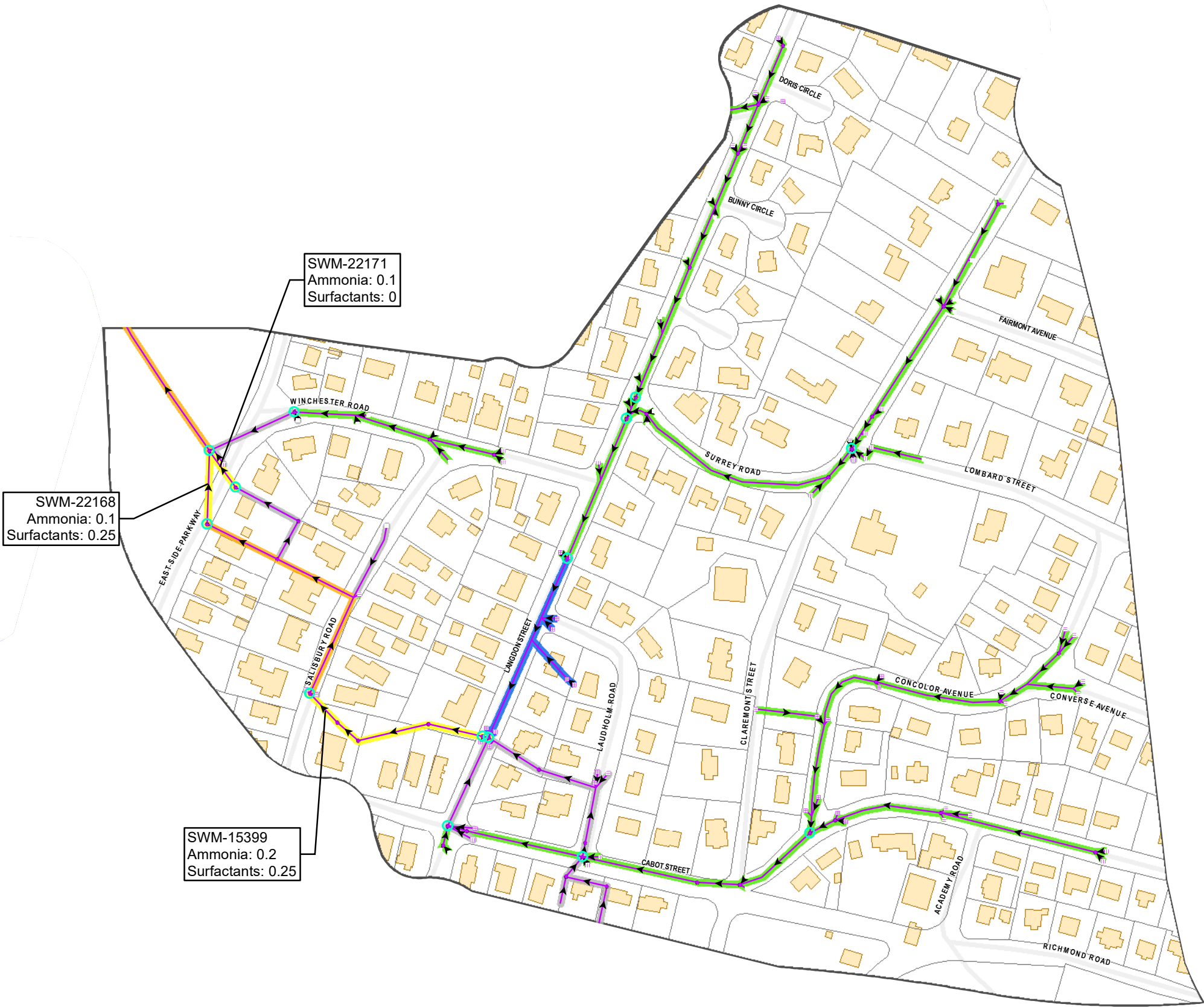
- Stormwater Pipe
- No Contamination Found
- Other
- Standing Water
- Suspected
- Upstream Contamination
- Inspected Manhole
- Outfall



Sub-catchment 77-5

Pipe IDDE Investigation Status

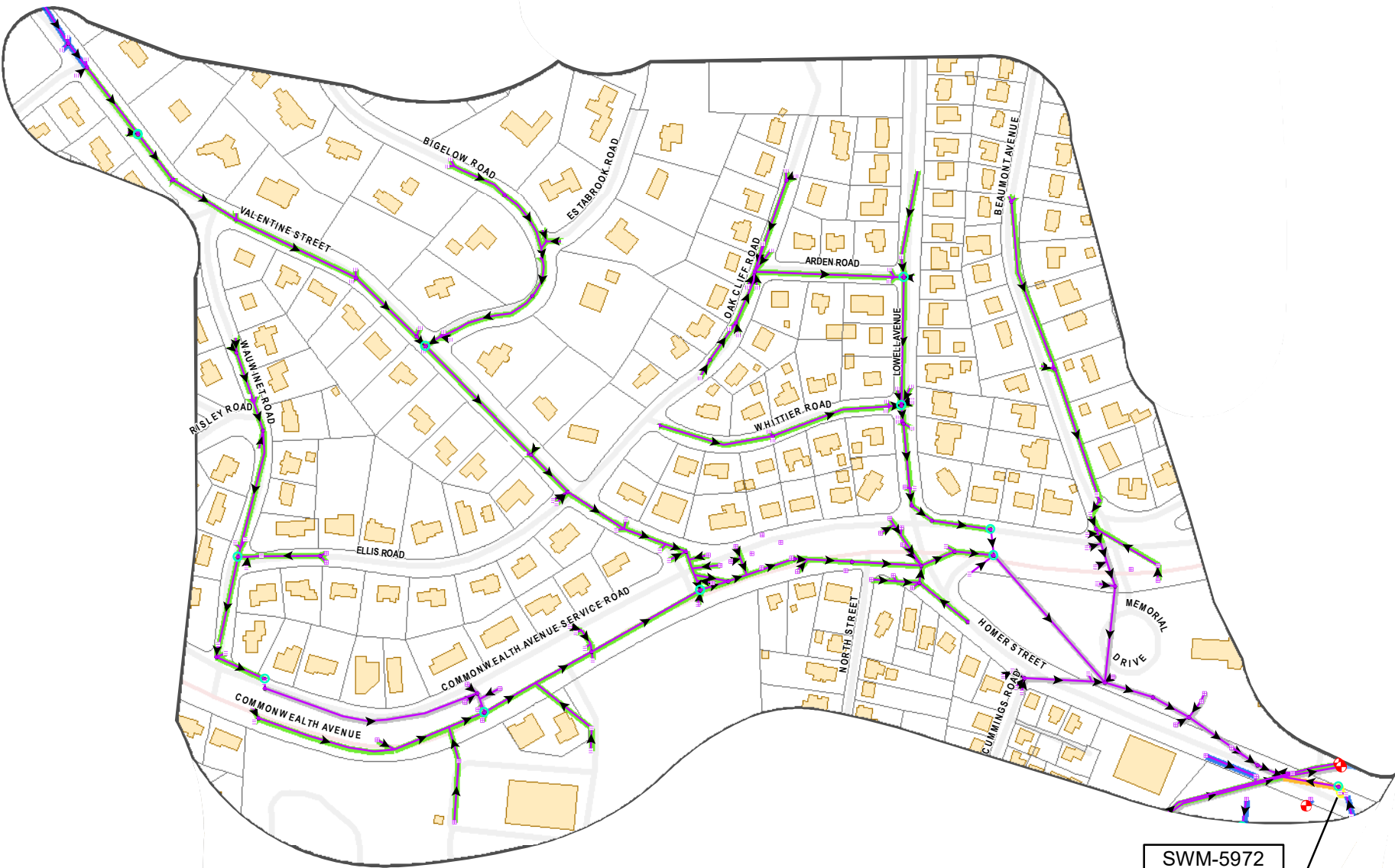
- Stormwater Pipe
- No Contamination Found
- Other
- Standing Water
- Suspected
- Upstream Contamination
- Inspected Manhole



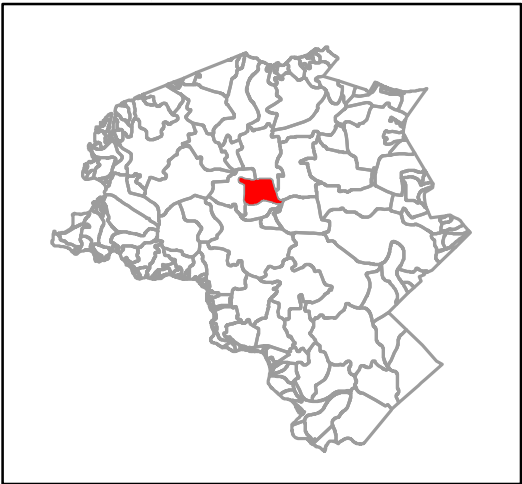
Sub-Catchment 77-6

Pipe IDDE Investigation Status

- Stormwater Pipe
- No Contamination Found
- Other
- Standing Water
- Suspected
- Upstream Contamination
- Inspected Manhole
- Outfall



SWM-5972  
Ammonia: 0.4  
Surfactants:0.5



Sub-catchment 77-7

Pipe IDDE Investigation Status

- Stormwater Pipe
- No Contamination Found
- Other
- Standing Water
- Suspected
- Upstream Contamination
- Inspected Manhole
- Outfall

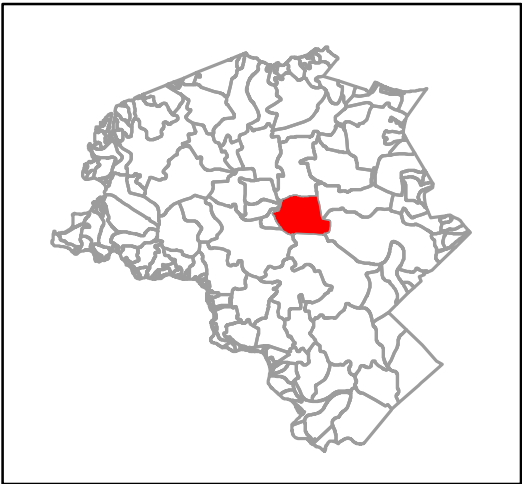
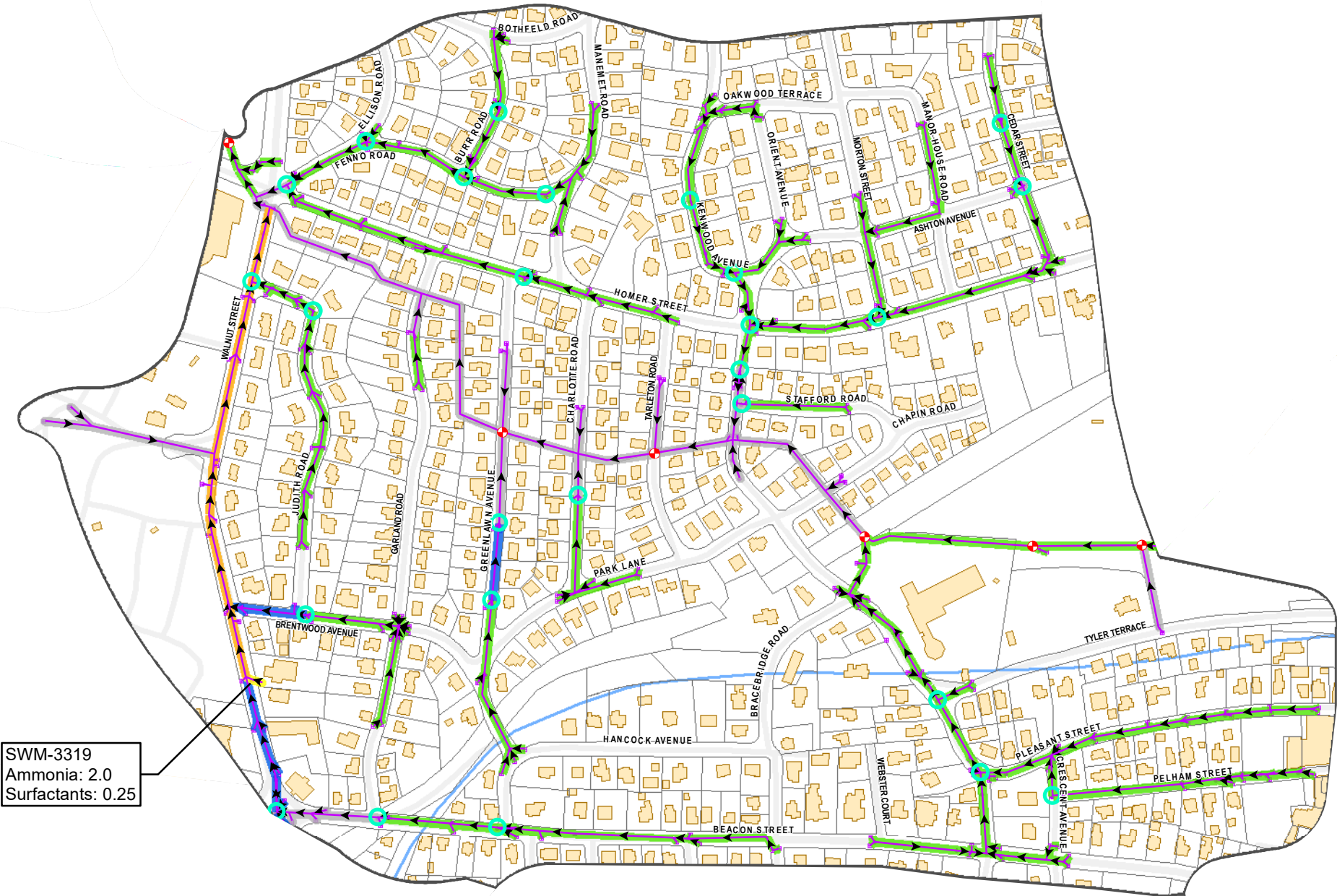




Sub-catchment 77-9

Pipe IDDE Investigation Status

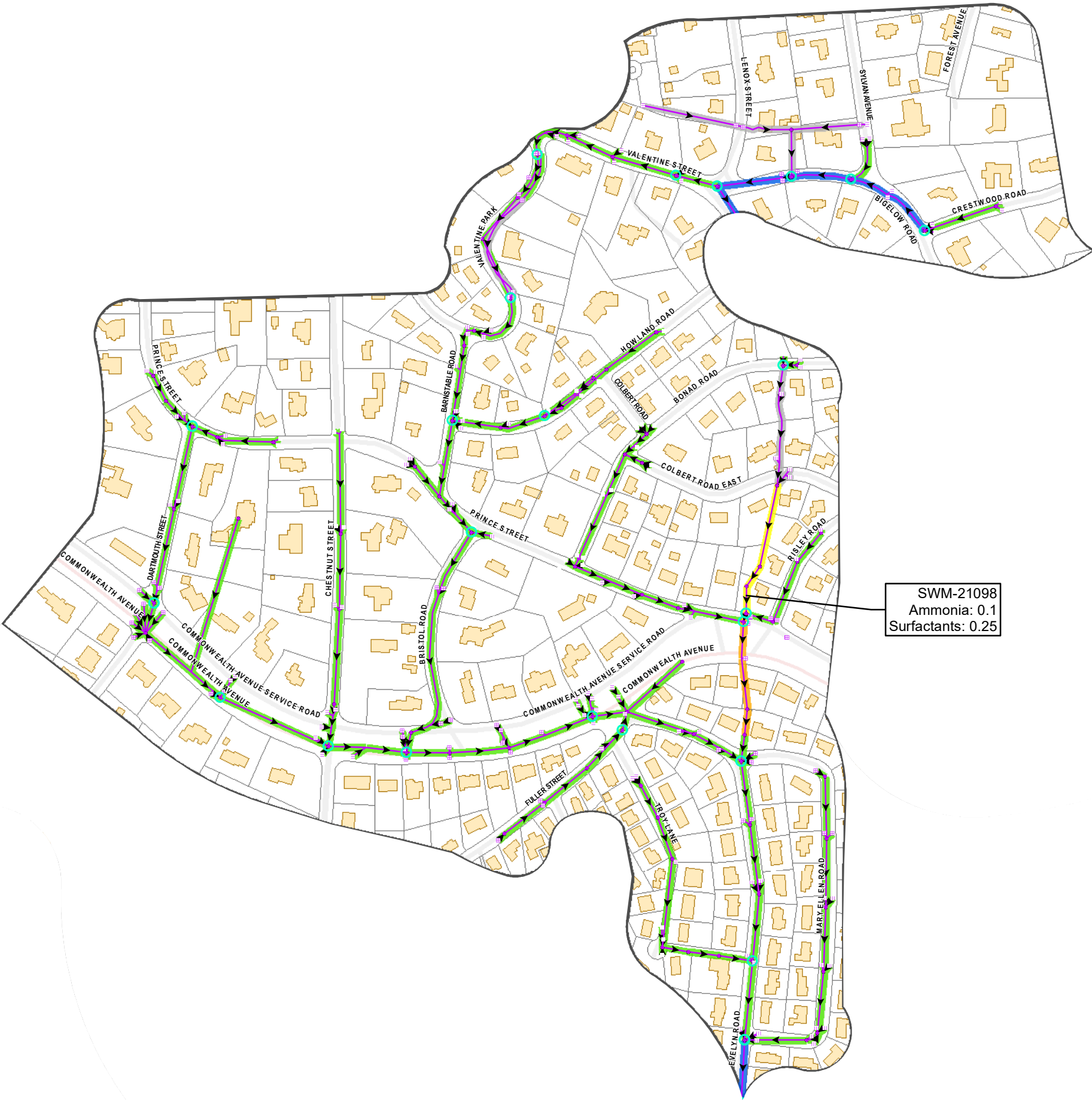
- Stormwater Pipe
- No Contamination Found
- Other
- Standing Water
- Suspected
- Upstream Contamination
- Inspected Manhole
- Outfall



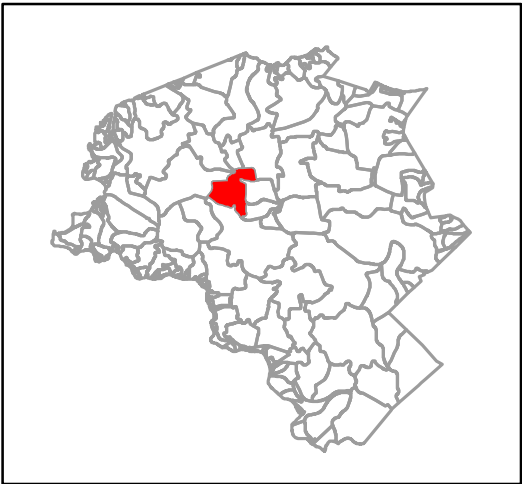
Sub-catchment 77-10

Pipe IDDE Investigation Status

- Stormwater Pipe
- No Contamination Found
- Other
- Standing Water
- Suspected
- Upstream Contamination
- Inspected Manhole



SWM-21098  
Ammonia: 0.1  
Surfactants: 0.25

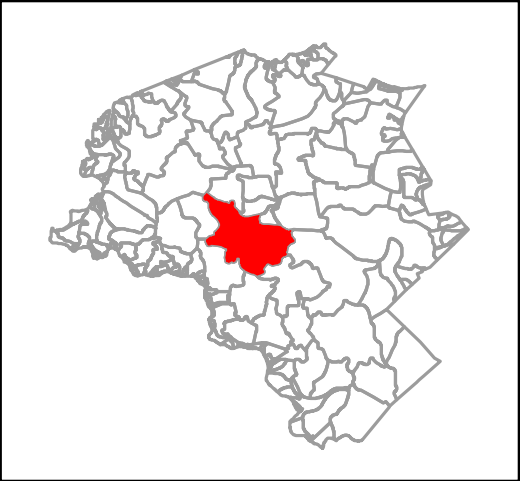
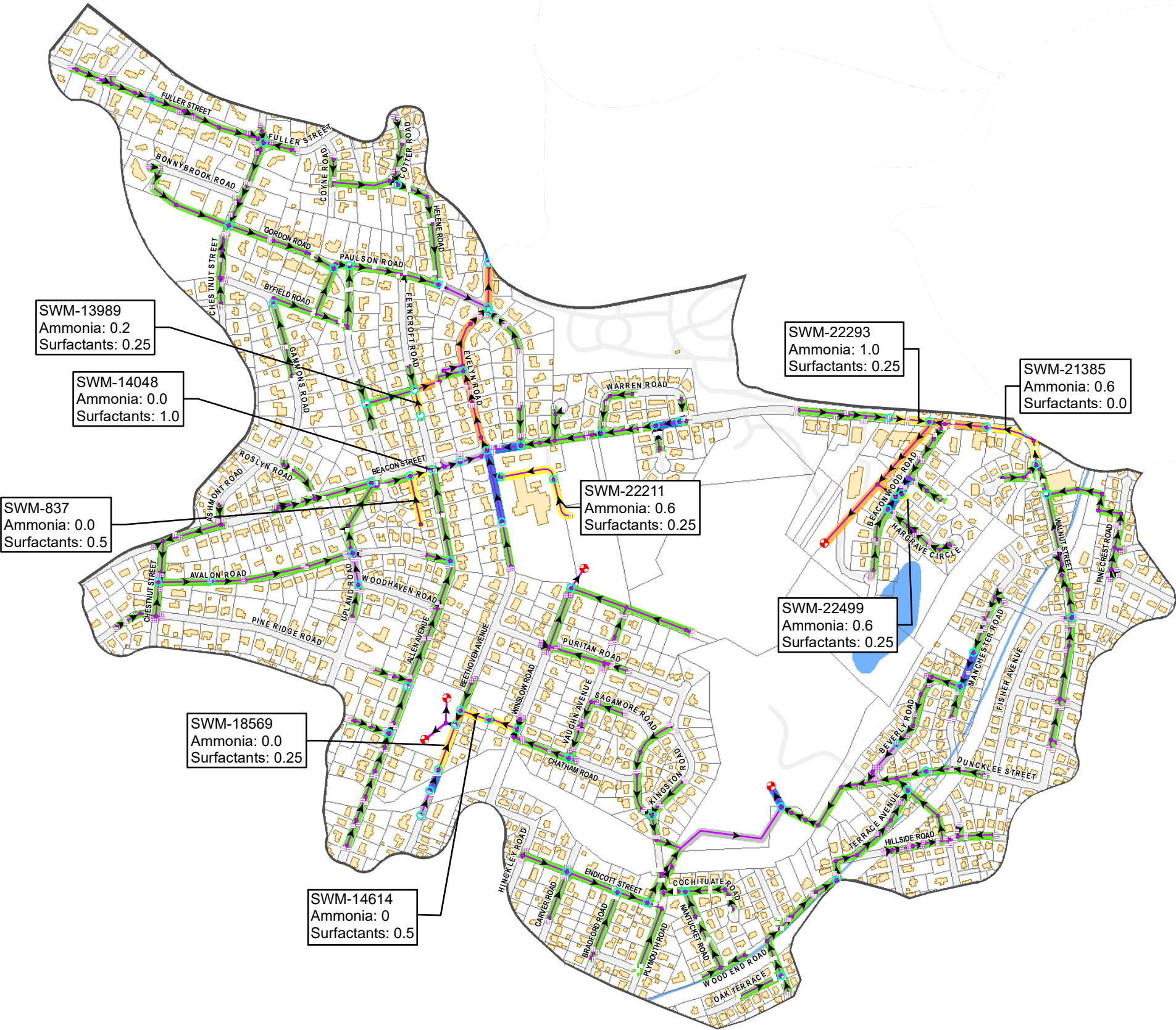




Sub-catchment 77-11

Pipe IDDE Investigation Status

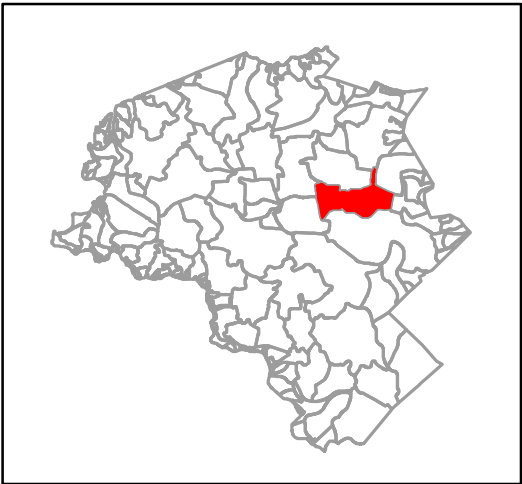
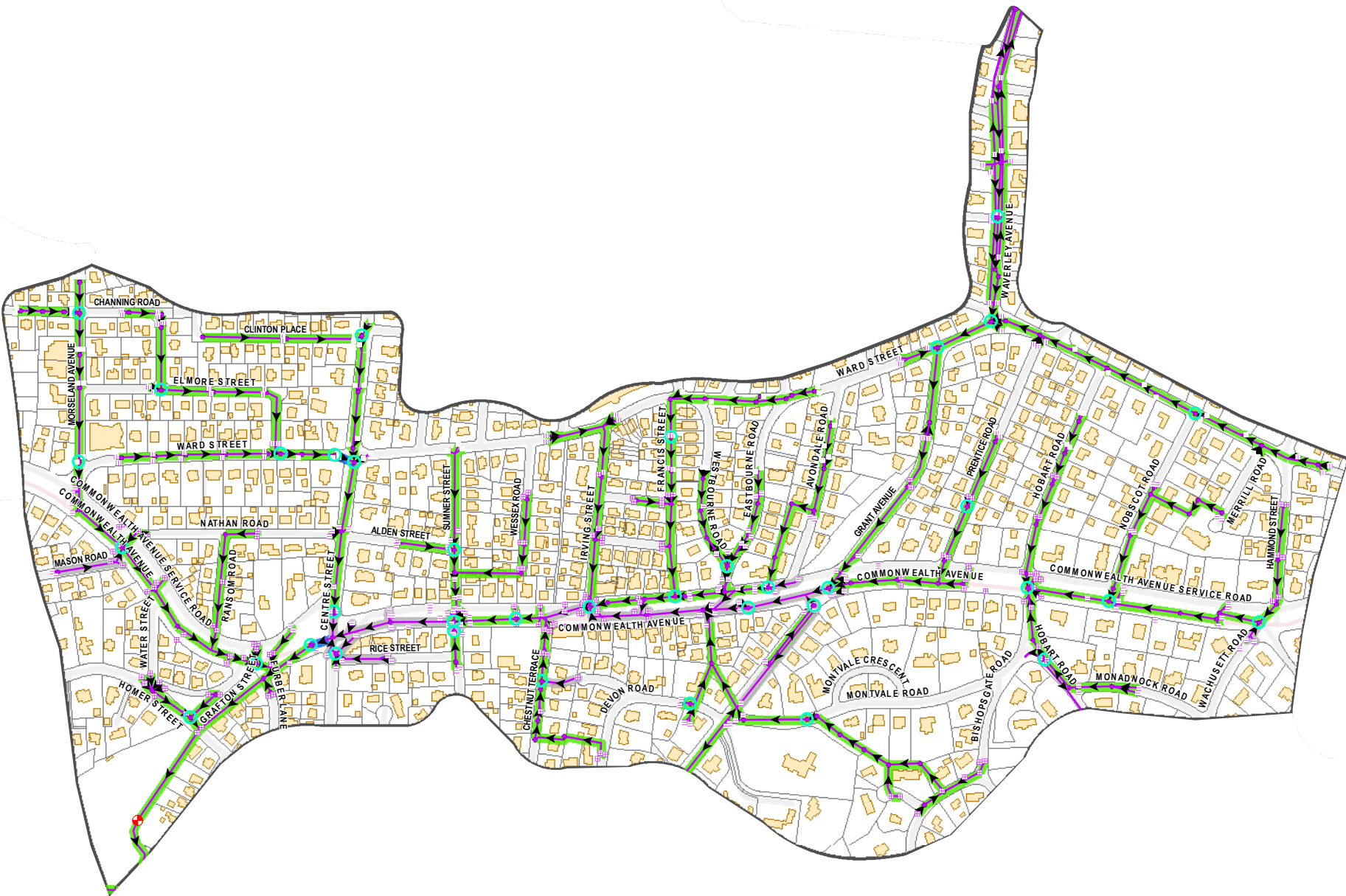
- Stormwater Pipe
- No Contamination Found
- Other
- Standing Water
- Suspected
- Upstream Contamination
- Inspected Manhole
- Outfall



Sub-catchment 77-12

Pipe IDDE Investigation Status

- Stormwater Pipe
- No Contamination Found
- Other
- Standing Water
- Suspected
- Upstream Contamination
- Inspected Manhole

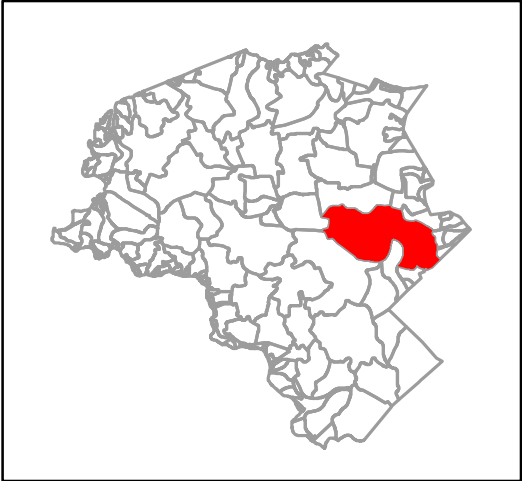
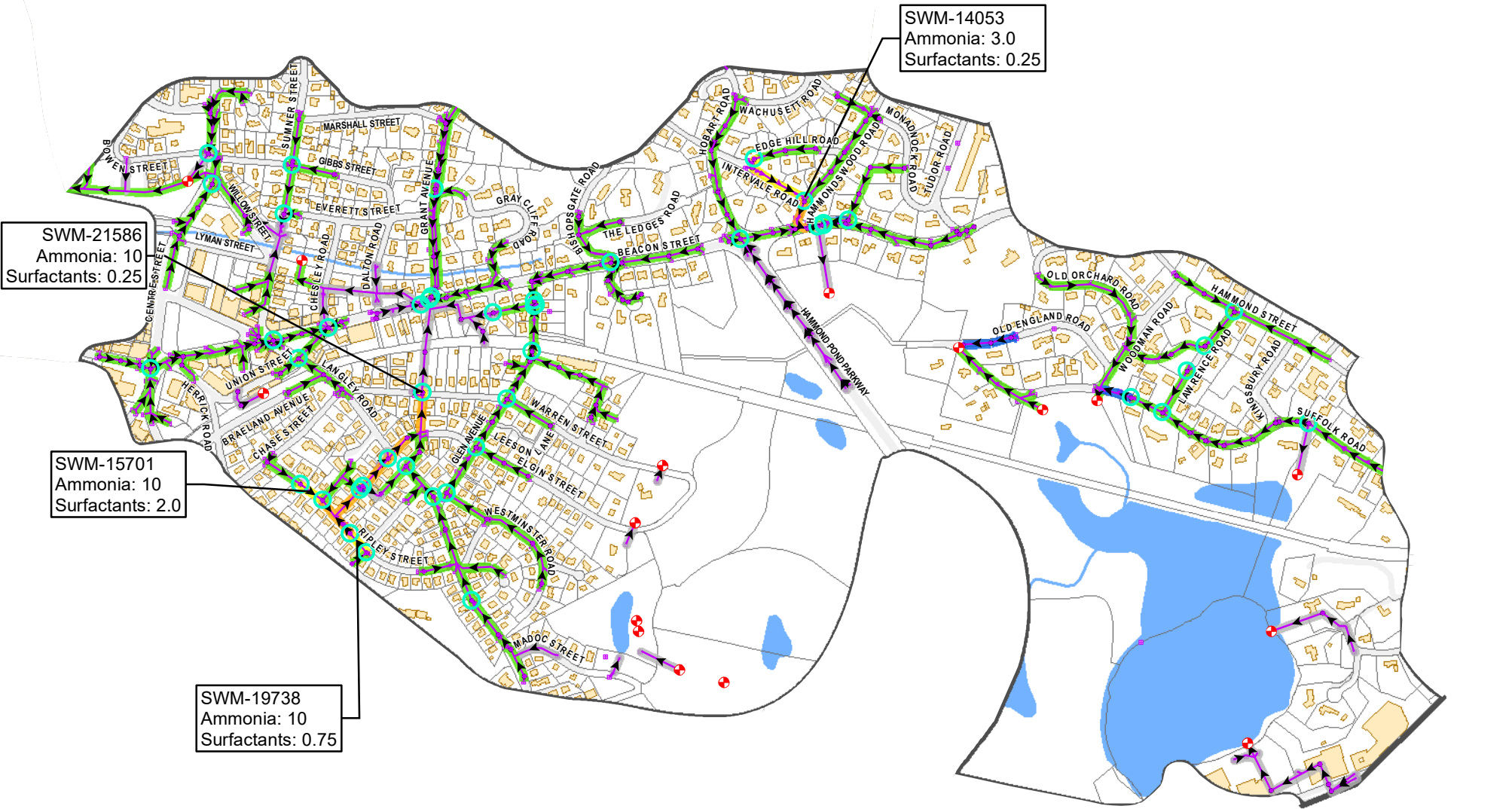




Sub-catchment 77-13

Pipe IDDE Investigation Status

- Stormwater Pipe
- No Contamination Found
- Other
- Standing Water
- Suspected
- Upstream Contamination
- Inspected Manhole
- Outfall



Sub-catchment 77-14

Pipe IDDE Investigation Status

- Stormwater Pipe
- No Contamination Found
- Other
- Standing Water
- Suspected
- Upstream Contamination
- Inspected Manhole
- Outfall

