

Bennington IDDE
 Outfall Code: BTN-9

Results:
 6-12-15
 pH: 7.52
 Conductivity (uS/cm): 605
 Temperature (C): 17.7
 Ammonia (mg/L): 1.45
 E. coli (MPN/100ml): Not Tested
 Detergents (MBAS, ppm): 0.75
 Chlorine (mg/L): 0
 Potassium (ppm): 2
 ECS Alert: N/A

Initial visit on 6-12-15 - sampled from pooled water.
 Return visit in 7-15 found no pooled runoff.
 Believe detergents to be linked to car washing in residential building parking lot.

Bennington Outfalls

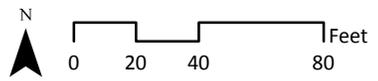
Overall Characterization

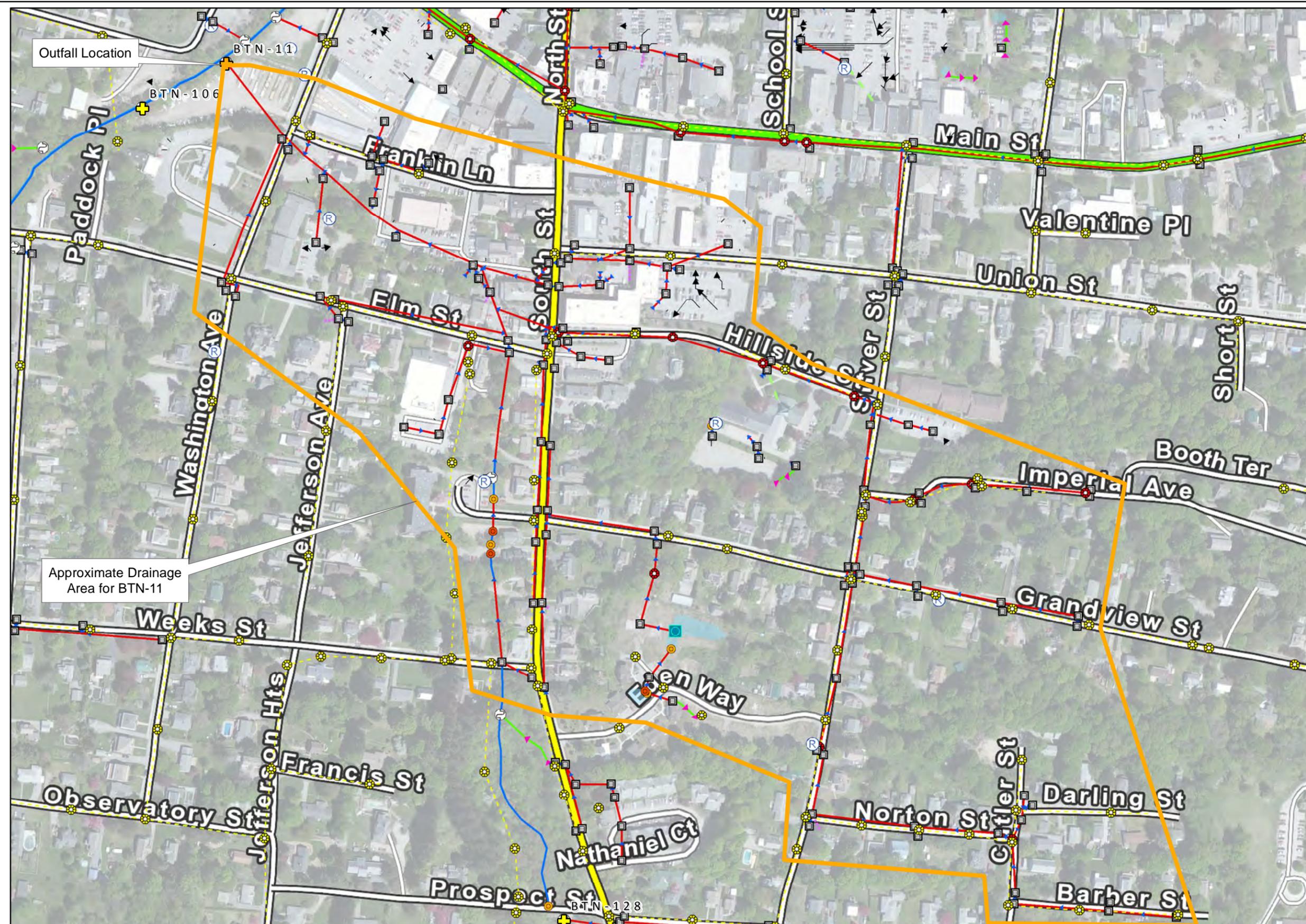
- + Possible
- + Suspect

Stormwater Infrastructure

- Catchbasin
- Dry Well
- Junction Box
- Stormwater Manhole
- Sanitary Manhole
- Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow
- BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC



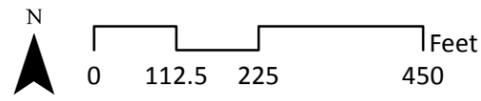


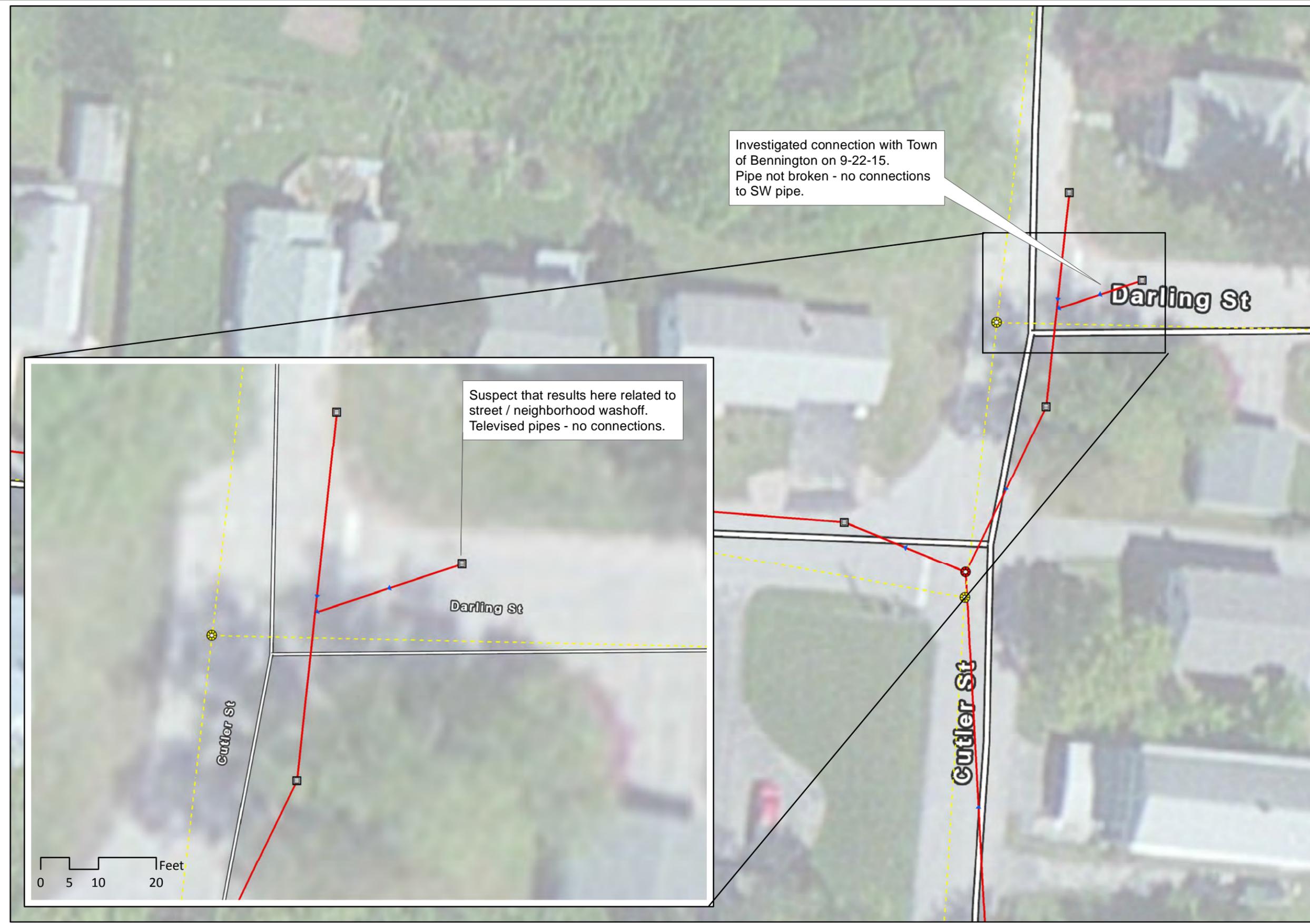
Bennington IDDE
 Outfall Code: BTN-11

Overall Map

- Bennington Outfalls**
- Overall Characterization**
- ⊕ Possible
 - ⊕ Suspect
- Stormwater Infrastructure**
- ▣ Catchbasin
 - ▣ Dry Well
 - ▣ Junction Box
 - Stormwater Manhole
 - Sanitary Manhole
 - ⊙ Outfall
 - Culvert inlet
 - Culvert outlet
 - ▣ Pond outlet structure
 - Ⓡ Retrofit
 - Storm line
 - Storm line (old Sanitary line)
 - Sanitary line
 - ↔ Swale
 - Footing drain
 - Under drain
 - Roof drain
 - Stream
 - Overland flow
 - ▣ BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC





Investigated connection with Town of Bennington on 9-22-15.
Pipe not broken - no connections to SW pipe.

Suspect that results here related to street / neighborhood washoff.
Televised pipes - no connections.

Bennington IDDE
Outfall Code: BTN-11
Infrastructure Code: CB-1081

Results:
9-2-15
pH: Not Tested
Conductivity (uS/cm): Not Tested
Temperature (C): Not Tested
Ammonia (mg/L): 2.77
E. coli (MPN/100ml): 199
Detergents (MBAS, ppm): 0.75
Chlorine (mg/L): Not Tested
Potassium (ppm): Not Tested
ECS Alert: 2x (both canines)

Pooled water in CB sump. Sampled from sump for lab analysis. Found high detergent and bacteria 9-3-15.
Televised pipes 9-22-15. No suspect connections found.
Do not suspect chronic illicit discharge.

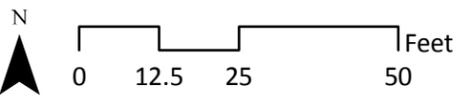
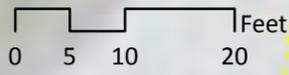
Bennington Outfalls

Overall Characterization

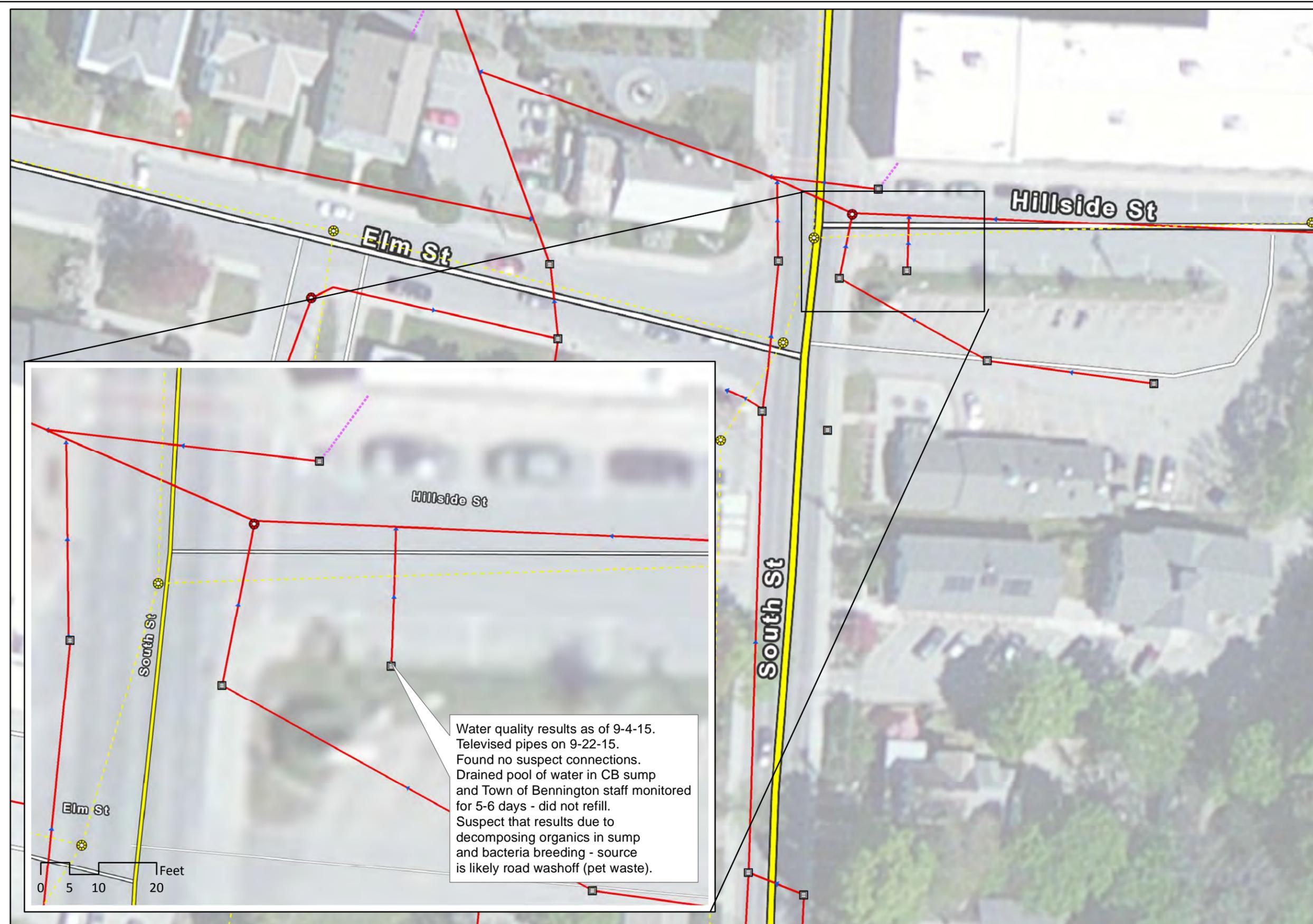
- ⊕ Possible
- ⊕ Suspect

Stormwater Infrastructure

- ☐ Catchbasin
- ☐ Dry Well
- ☐ Junction Box
- ⊕ Stormwater Manhole
- ⊕ Sanitary Manhole
- ⊕ Outfall
- ⊕ Culvert inlet
- ⊕ Culvert outlet
- ☐ Pond outlet structure
- Ⓡ Retrofit
- ➡ Storm line
- ➡ Storm line (old Sanitary line)
- Sanitary line
- ➡ Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- ➡ Overland flow
- BMP Areas



Data: Imagery - Esri. Basemap - VCGI.
Stormwater Infrastructure - VT DEC



Bennington IDDE
 Outfall Code: BTN-11
 Infrastructure Code: CB-1384

Results:
 9-2-15
 pH: Not Tested
 Conductivity (uS/cm): 280
 Temperature (C): Not Tested
 Ammonia (mg/L): 1.56
 E. coli (MPN/100ml): >2400
 Detergents (MBAS, ppm): 0.75
 Chlorine (mg/L): Not Tested
 Potassium (ppm): Not Tested
 ECS Alert: 1x (one canine)

Pooled water in CB sump on 9-4-15. Sampled for lab (results above).
 Televised pipes and drained sump on 9-22-15. Found no suspect connections. Sump remained dry over next 5-6 days (observed by Town of Bennington). Suspect that bacteria result due to breeding in anaerobic and temperature conditions in sump. Ammonia reading likely due to decomposing organics. Detergents possibly road washoff.

Bennington Outfalls

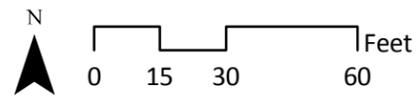
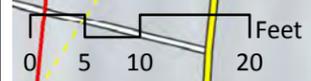
Overall Characterization

- + Possible
- + Suspect

Stormwater Infrastructure

- Catchbasin
- Dry Well
- Junction Box
- + Stormwater Manhole
- + Sanitary Manhole
- ⊖ Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- ▶ Storm line
- ▶▶ Storm line (old Sanitary line)
- - - Sanitary line
- ▶▶▶ Swale
- - - Footing drain
- - - Under drain
- - - Roof drain
- Stream
- ▶ Overland flow
- BMP Areas

Water quality results as of 9-4-15. Televised pipes on 9-22-15. Found no suspect connections. Drained pool of water in CB sump and Town of Bennington staff monitored for 5-6 days - did not refill. Suspect that results due to decomposing organics in sump and bacteria breeding - source is likely road washoff (pet waste).



Data: Imagery - Esri. Basemap - VCGI. Stormwater Infrastructure - VT DEC

Results obtained are from this stormwater manhole. Water was not flowing but was pooled.

Bennington IDDE
Outfall Code: BTN-11
Infrastructure Code: SMH-1386

Results:
9-2-15
pH: Not Tested
Conductivity (uS/cm): 435
Temperature (C): Not Tested
Ammonia (mg/L): N/A
E. coli (MPN/100ml): 5
Detergents (MBAS, ppm): 0.25
Chlorine (mg/L): Not Tested
Potassium (ppm): Not Tested
ECS Alert: 2x (both canines)

Opened stormwater manhole - found pool of water during dry weather. 1 canine alert - suspect canine was alerting on residual smell from SMH-1450 (higher up in same line). Bacteria low - detergents low - do not suspect chronic illicit discharge.

Televised these lines on 9-22-15. Found no suspect connections. Sanitary lines (capped here) are in good condition - not leaking.

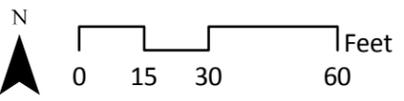
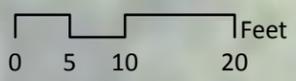
Bennington Outfalls

Overall Characterization

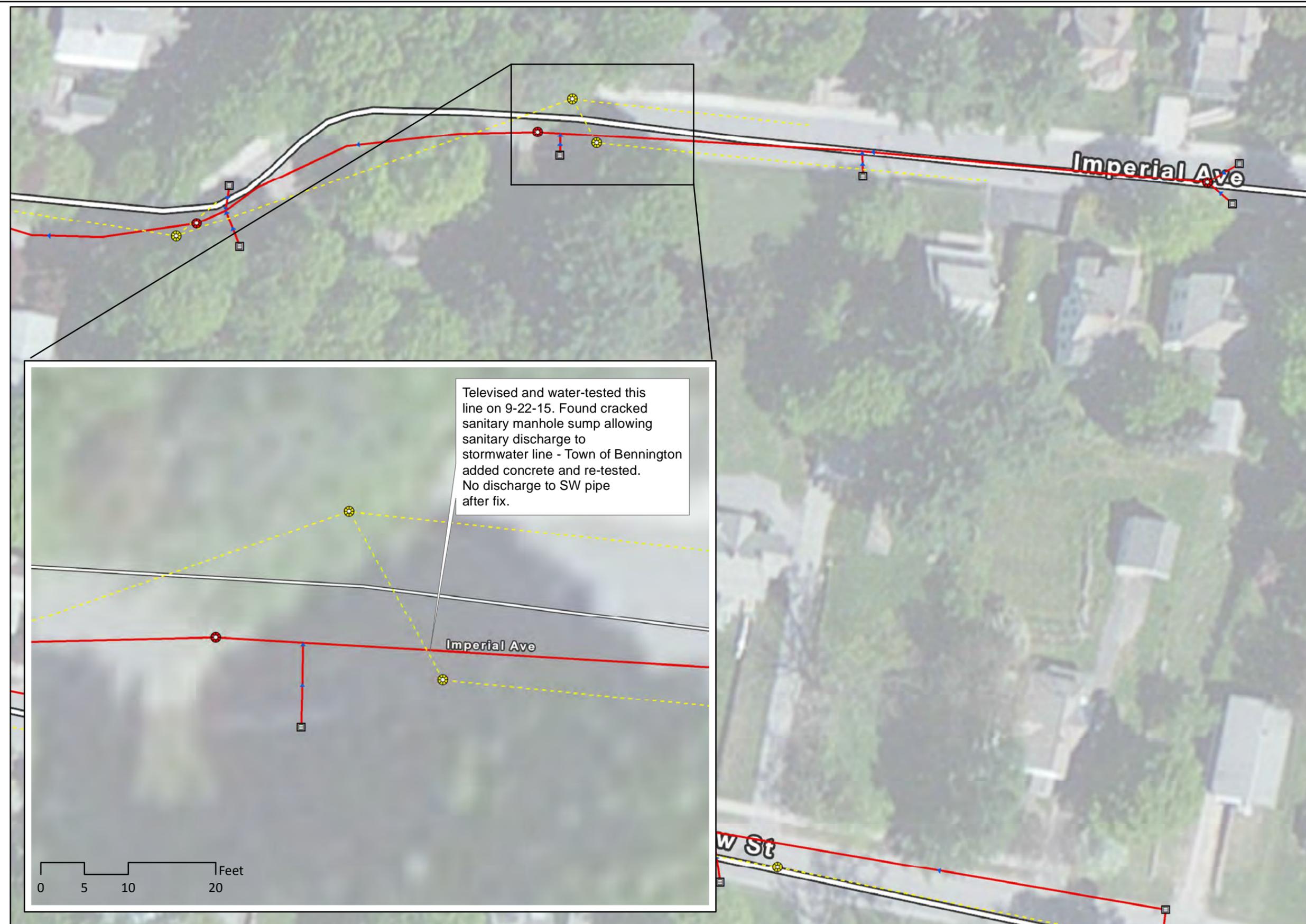
- ⊕ Possible
- ⊕ Suspect

Stormwater Infrastructure

- ☐ Catchbasin
- ☐ Dry Well
- ☐ Junction Box
- ⊕ Stormwater Manhole
- ⊕ Sanitary Manhole
- ⊕ Outfall
- ⊕ Culvert inlet
- ⊕ Culvert outlet
- ☐ Pond outlet structure
- Ⓡ Retrofit
- Storm line
- Storm line (old Sanitary line)
- - - Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow
- BMP Areas



Data: Imagery - Esri. Basemap - VCGI.
Stormwater Infrastructure - VT DEC



Televised and water-tested this line on 9-22-15. Found cracked sanitary manhole sump allowing sanitary discharge to stormwater line - Town of Bennington added concrete and re-tested. No discharge to SW pipe after fix.

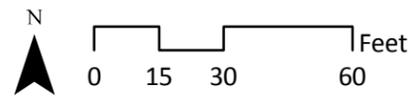
Bennington IDDE
 Outfall Code: BTN-11
 Infrastructure Code: SMH-1450

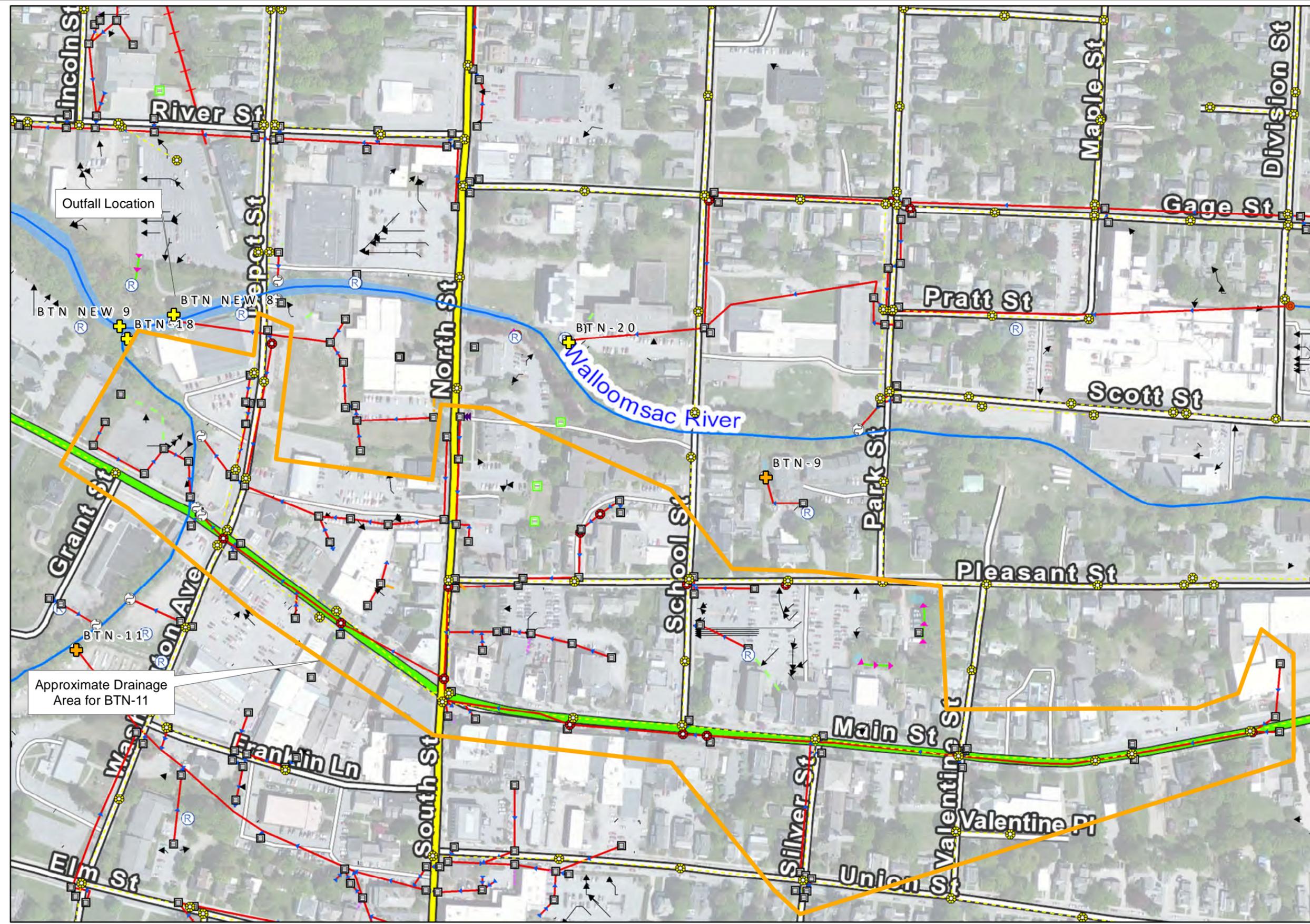
Results:
 9-2-15
 pH: Not Tested
 Conductivity (uS/cm): 615
 Temperature (C): Not Tested
 Ammonia (mg/L): >5 (without dilution)
 E. coli (MPN/100ml): >2400
 Detergents (MBAS, ppm): 2.0
 Chlorine (mg/L): Not Tested
 Potassium (ppm): Not Tested
 ECS Alert: 2x (both canines)

Televised pipe on 9-22-15. Found cracks in sanitary manhole sump. Town of Bennington added concrete to sump and re-tested. Found no discharges after fix. Issue considered resolved.

- Bennington Outfalls**
- Overall Characterization**
- ⊕ Possible
 - ⊕ Suspect
- Stormwater Infrastructure**
- ☐ Catchbasin
 - ☐ Dry Well
 - ☐ Junction Box
 - ⊕ Stormwater Manhole
 - ⊕ Sanitary Manhole
 - ⊕ Outfall
 - ⊕ Culvert inlet
 - ⊕ Culvert outlet
 - ☐ Pond outlet structure
 - Ⓡ Retrofit
 - ➡ Storm line
 - ➡ Storm line (old Sanitary line)
 - - - Sanitary line
 - ➡ Swale
 - ⋯ Footing drain
 - ⋯ Under drain
 - ⋯ Roof drain
 - Stream
 - ➡ Overland flow
 - BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC

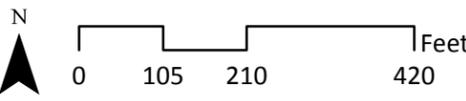


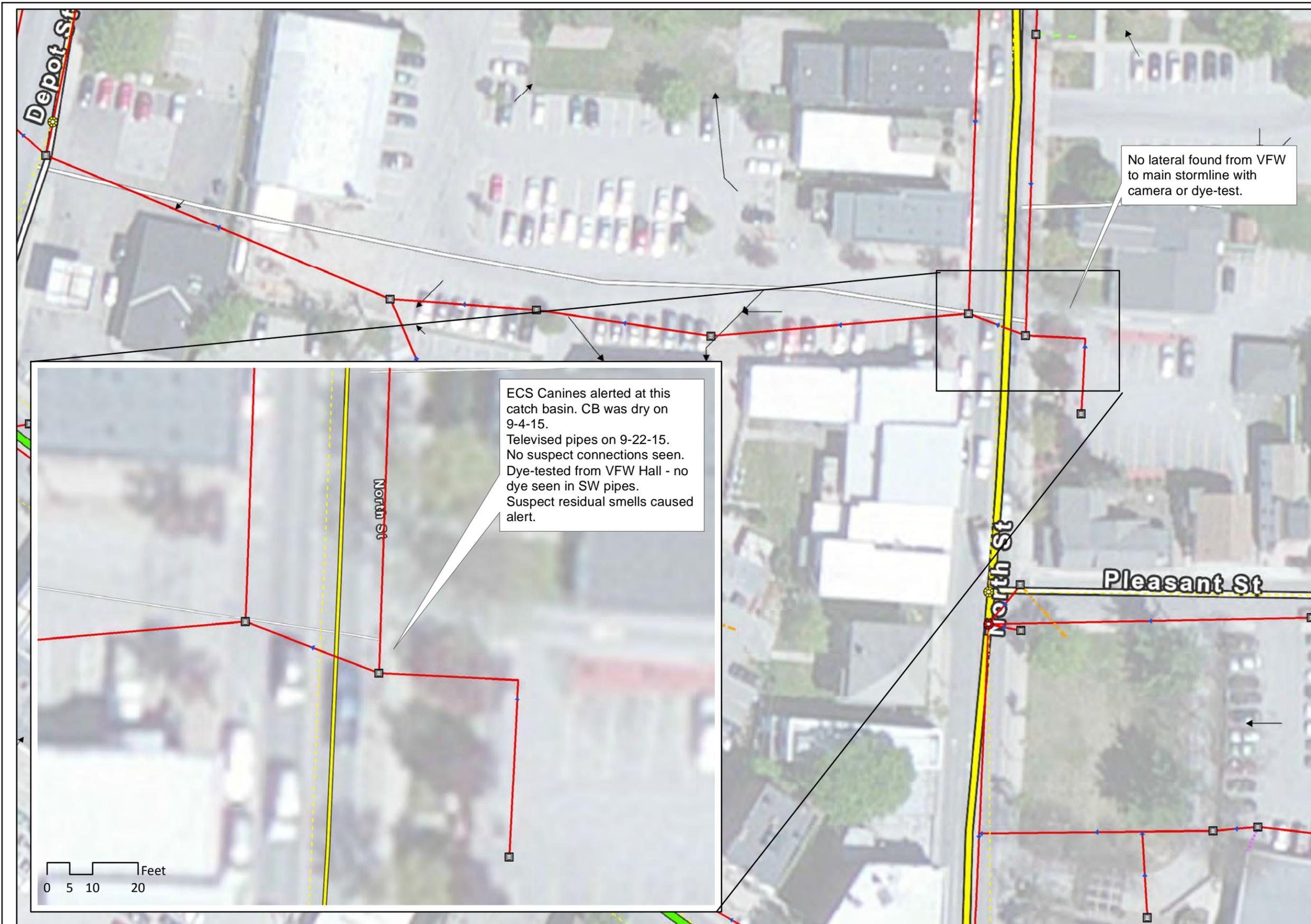


Bennington IDDE
 Outfall Code: BTN-18
 Overall Map

- Bennington Outfalls**
- Overall Characterization**
- ⊕ Possible
 - ⊕ Suspect
- Stormwater Infrastructure**
- ☐ Catchbasin
 - ☐ Dry Well
 - ☐ Junction Box
 - ⊙ Stormwater Manhole
 - ⊙ Sanitary Manhole
 - ⊙ Outfall
 - ⊙ Culvert inlet
 - ⊙ Culvert outlet
 - ☐ Pond outlet structure
 - Ⓡ Retrofit
 - Storm line
 - Storm line (old Sanitary line)
 - Sanitary line
 - ↔ Swale
 - Footing drain
 - Under drain
 - Roof drain
 - Stream
 - Overland flow
 - BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC





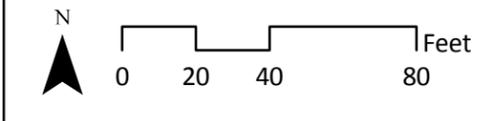
Bennington IDDE
 Outfall Code: BTN-18
 Infrastructure Code: CB-42

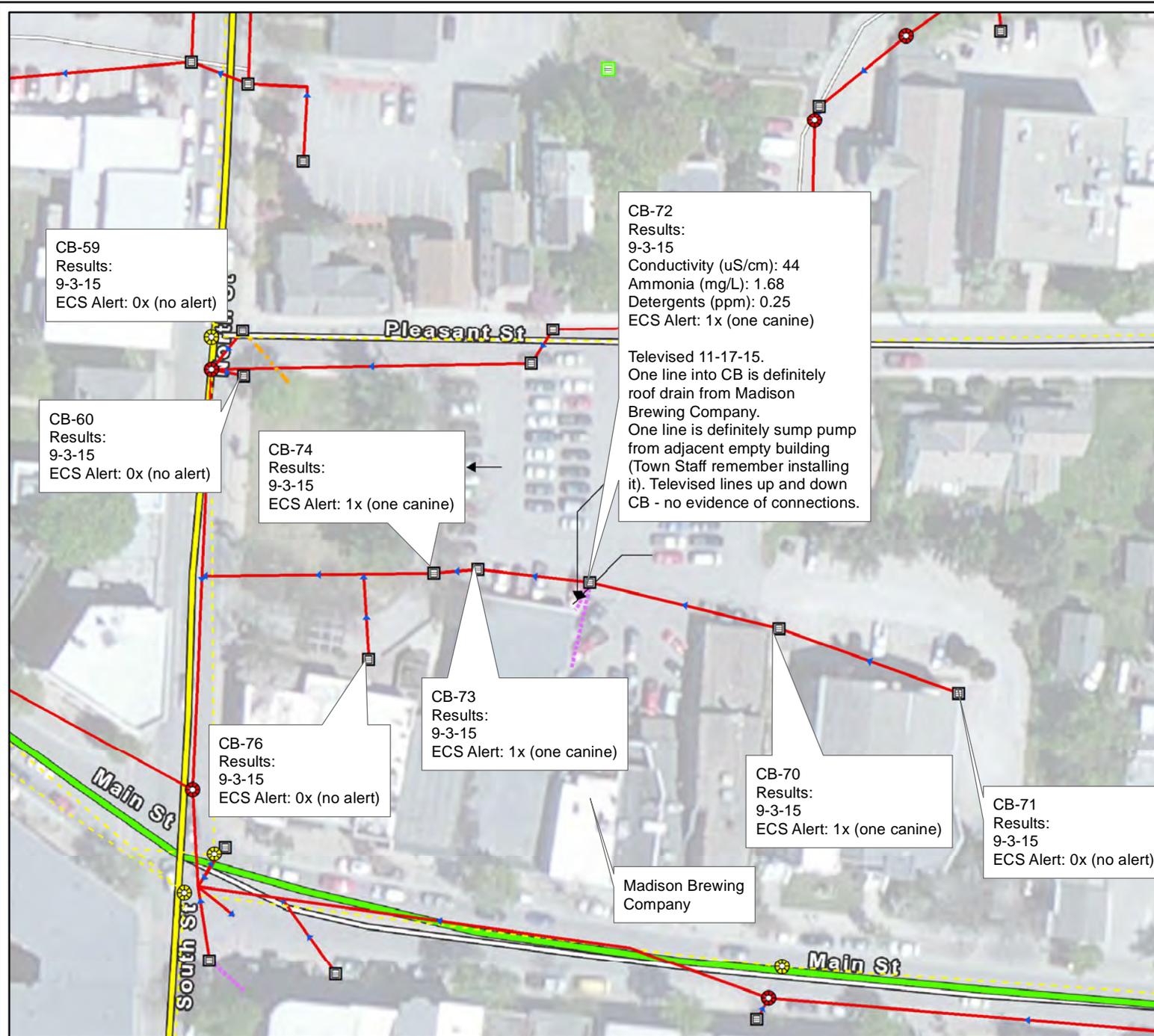
Results:
 9-2-15
 pH: Not Tested
 Conductivity (uS/cm): Not Tested
 Temperature (C): Not Tested
 Ammonia (mg/L): Not Tested
 E. coli (MPN/100ml): Not Tested
 Detergents (MBAS, ppm): Not Tested
 Chlorine (mg/L): Not Tested
 Potassium (ppm): Not Tested
 ECS Alert: 2x (both canines)

Televising pipes and dye-testing showed no suspect connections. No alerts upstream - no water flowing or pooled. Do no suspect chronic illicit discharge.

- Bennington Outfalls**
- Overall Characterization**
- ⊕ Possible
 - ⊕ Suspect
- Stormwater Infrastructure**
- Catchbasin
 - Dry Well
 - Junction Box
 - ⊕ Stormwater Manhole
 - ⊕ Sanitary Manhole
 - ⊕ Outfall
 - ⊕ Culvert inlet
 - ⊕ Culvert outlet
 - Pond outlet structure
 - Ⓡ Retrofit
 - Storm line
 - Storm line (old Sanitary line)
 - - - Sanitary line
 - Swale
 - Footing drain
 - Under drain
 - Roof drain
 - Stream
 - Overland flow
 - BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC





Bennington IDDE
 Outfall Code: BTN-18
 Infrastructure Code: CB-72

Result:
 9-3-15
 pH: Not Tested
 Conductivity (uS/cm): 44
 Temperature (C): Not Tested
 Ammonia (mg/L): 1.68
 E. coli (MPN/100ml): Not Tested
 Detergents (MBAS, ppm): 0.25
 Chlorine (mg/L): Not Tested
 Potassium (ppm): Not Tested
 ECS Alert: 2x (both canines)

Both canines alerted here 9-3-15.
 Televised line 11-17-15 with Town of Bennington. No evidence of possible connections. Do not suspect chronic illicit discharge.

CB-72
 Results:
 9-3-15
 Conductivity (uS/cm): 44
 Ammonia (mg/L): 1.68
 Detergents (ppm): 0.25
 ECS Alert: 1x (one canine)

Televised 11-17-15.
 One line into CB is definitely roof drain from Madison Brewing Company.
 One line is definitely sump pump from adjacent empty building (Town Staff remember installing it). Televised lines up and down CB - no evidence of connections.

CB-59
 Results:
 9-3-15
 ECS Alert: 0x (no alert)

CB-60
 Results:
 9-3-15
 ECS Alert: 0x (no alert)

CB-74
 Results:
 9-3-15
 ECS Alert: 1x (one canine)

CB-73
 Results:
 9-3-15
 ECS Alert: 1x (one canine)

CB-76
 Results:
 9-3-15
 ECS Alert: 0x (no alert)

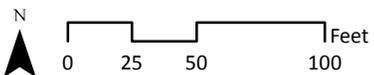
CB-70
 Results:
 9-3-15
 ECS Alert: 1x (one canine)

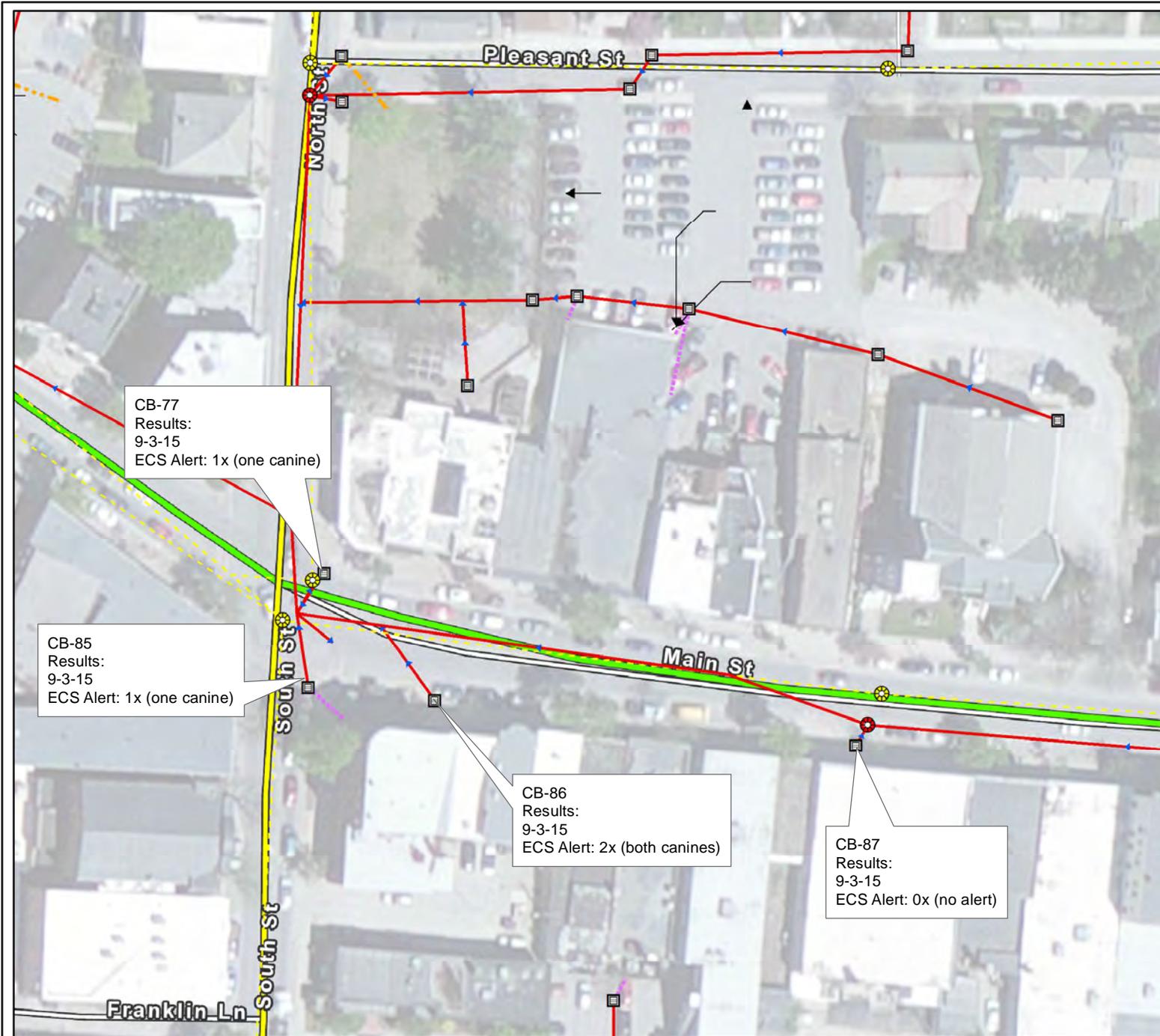
CB-71
 Results:
 9-3-15
 ECS Alert: 0x (no alert)

Madison Brewing Company

- Bennington Outfalls**
- Overall Characterization**
- + Possible
 - + Suspect
- Stormwater Infrastructure**
- Catchbasin
 - Dry Well
 - Junction Box
 - Stormwater Manhole
 - Sanitary Manhole
 - Outfall
 - Culvert inlet
 - Culvert outlet
 - Pond outlet structure
 - Retrofit
 - Storm line
 - Storm line (old Sanitary line)
 - Sanitary line
 - Swale
 - Footing drain
 - Under drain
 - Roof drain
 - Stream
 - Overland flow
 - BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC





Bennington IDDE
 Outfall Code: BTN-18
 Infrastructure Code: CB-86

Result:
 9-3-15
 pH: Not Tested
 Conductivity (uS/cm): Not Tested
 Temperature (C): Not Tested
 Ammonia (mg/L): 0.42
 E. coli (MPN/100ml): 63
 Detergents (MBAS, ppm): 0.75
 Chlorine (mg/L): Not Tested
 Potassium (ppm): Not Tested
 ECS Alert: 2x (both canines)

Both canines alerted here 9-3-15. Televised line 11-17-15 with Town of Bennington. No evidence of possible connections. Pipe drains back towards CB. May be reason that ammonia, detergents, somewhat elevated. Do not suspect chronic illicit discharge.

Bennington Outfalls
Overall Characterization

- + Possible
- + Suspect

Stormwater Infrastructure

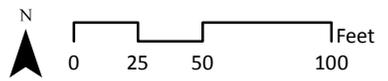
- Catchbasin
- Dry Well
- Junction Box
- ⊗ Stormwater Manhole
- ⊗ Sanitary Manhole
- ⊗ Outfall
- ⊗ Culvert inlet
- ⊗ Culvert outlet
- ⊗ Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- ▶ Overland flow
- BMP Areas

CB-77
 Results:
 9-3-15
 ECS Alert: 1x (one canine)

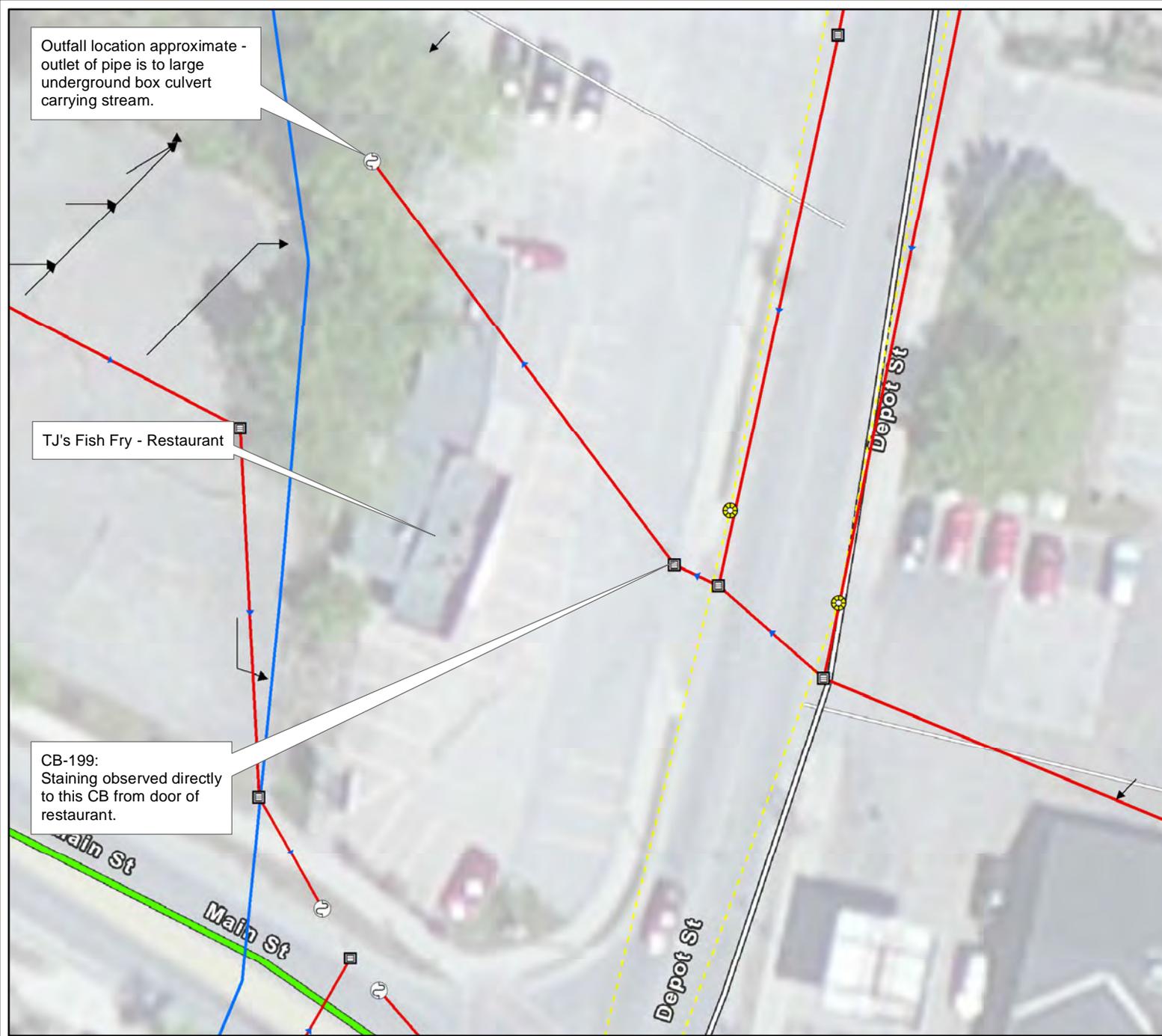
CB-85
 Results:
 9-3-15
 ECS Alert: 1x (one canine)

CB-86
 Results:
 9-3-15
 ECS Alert: 2x (both canines)

CB-87
 Results:
 9-3-15
 ECS Alert: 0x (no alert)



Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC



Bennington IDDE
 Outfall Code: BTN-18
 Infrastructure Code: CB-199

Results:
 9-3-15
 pH: Not Tested
 Conductivity (uS/cm): 3999
 Temperature (C): Not Tested
 Ammonia (mg/L): 2.6
 E. coli (MPN/100ml): Could not sample
 Detergents (MBAS, ppm): >3.0
 Chlorine (mg/L): Not Tested
 Potassium (ppm): Not Tested
 ECS Alert: 2x (both canines)

Observed staining on parking lot from door of restaurant to CB. Suspect dumping of mop bucket wash water. Town of Bennington indicated that site has on-going sanitary sewer failure issue. Referred follow-up to State of VT Wastewater.

Bennington Outfalls

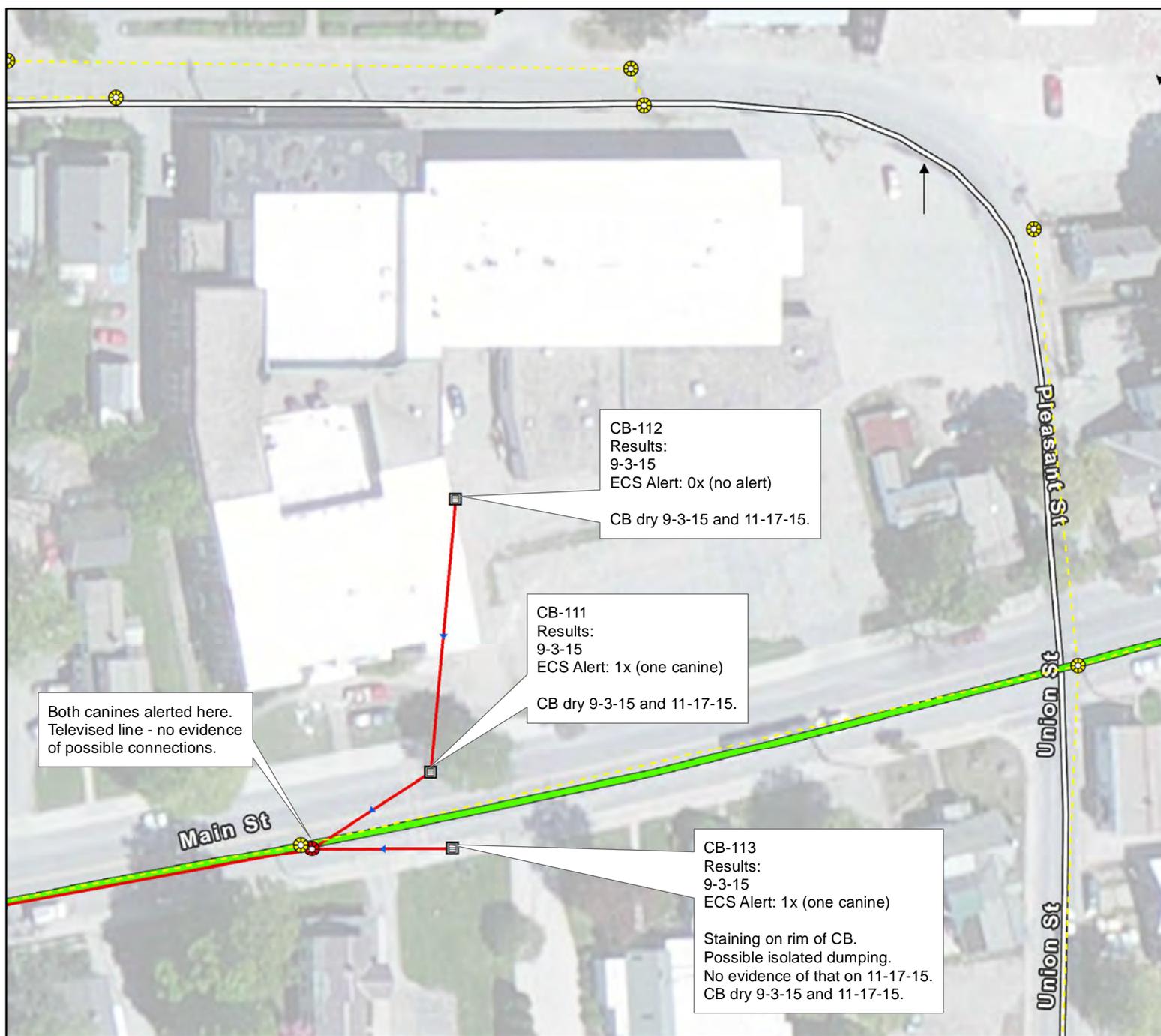
Overall Characterization

- + Possible
- + Suspect

Stormwater Infrastructure

- Catchbasin
- Dry Well
- Junction Box
- Stormwater Manhole
- Sanitary Manhole
- Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow
- BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC



Bennington IDDE
 Outfall Code: BTN-18
 Infrastructure Code: SMH-114

Results:
 Dry - no water tests conducted.

9-3-15:
 Followed entire line up Main St. Both canines alerted at this manhole.

11-17-15:
 Conducted camera investigation with Town of Bennington. Found no possible connections.

Bennington Outfalls

Overall Characterization

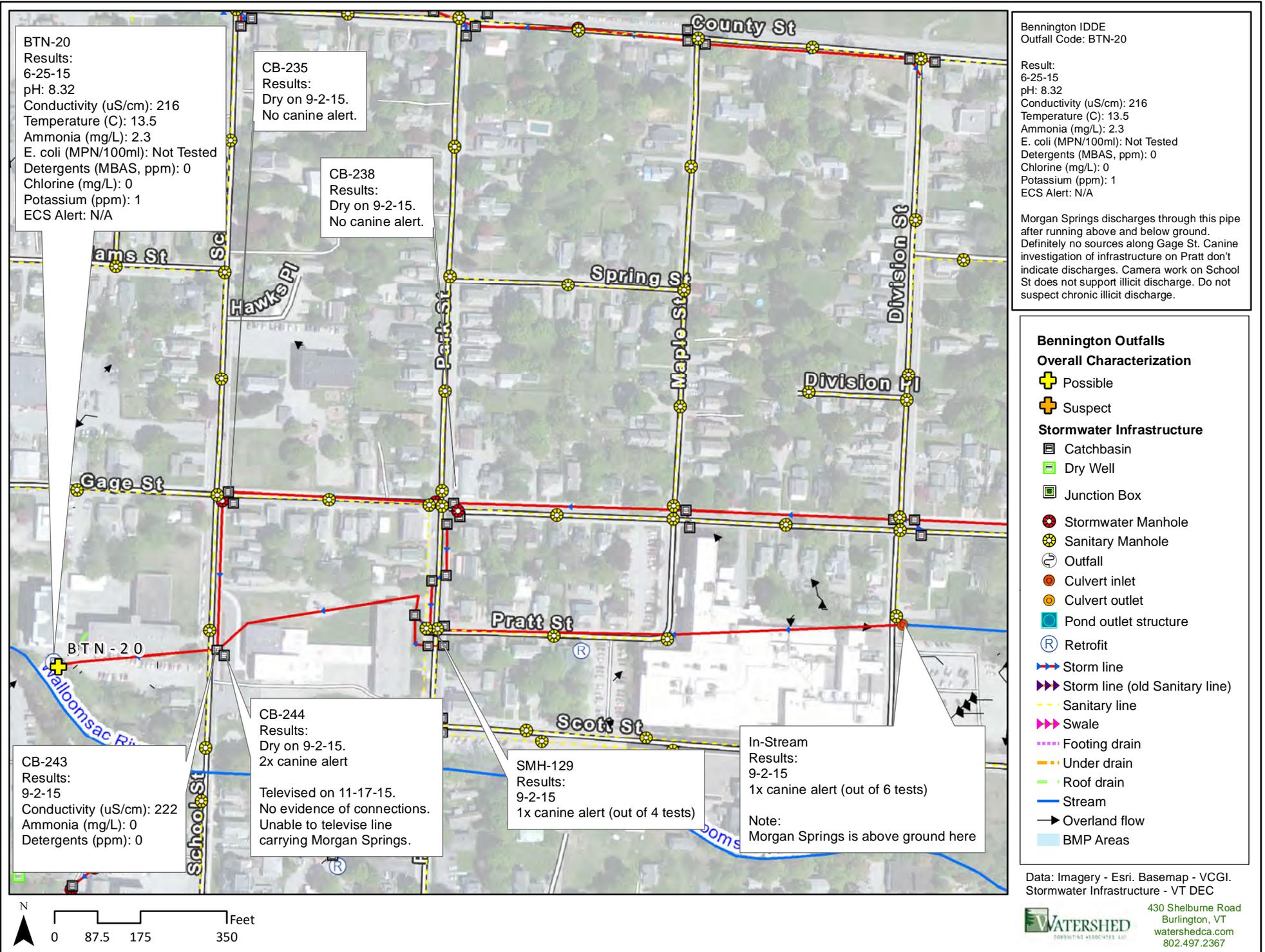
- + Possible
- + Suspect

Stormwater Infrastructure

- Catchbasin
- Dry Well
- Junction Box
- + Stormwater Manhole
- + Sanitary Manhole
- ↻ Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- R Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow
- BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC

WATERSHED
CONSULTING ASSOCIATES, LLC
 430 Shelburne Road
 Burlington, VT
 watershedca.com
 802.497.2367



BTN-20
 Results:
 6-25-15
 pH: 8.32
 Conductivity (uS/cm): 216
 Temperature (C): 13.5
 Ammonia (mg/L): 2.3
 E. coli (MPN/100ml): Not Tested
 Detergents (MBAS, ppm): 0
 Chlorine (mg/L): 0
 Potassium (ppm): 1
 ECS Alert: N/A

CB-235
 Results:
 Dry on 9-2-15.
 No canine alert.

CB-238
 Results:
 Dry on 9-2-15.
 No canine alert.

Bennington IDDE
 Outfall Code: BTN-20

 Result:
 6-25-15
 pH: 8.32
 Conductivity (uS/cm): 216
 Temperature (C): 13.5
 Ammonia (mg/L): 2.3
 E. coli (MPN/100ml): Not Tested
 Detergents (MBAS, ppm): 0
 Chlorine (mg/L): 0
 Potassium (ppm): 1
 ECS Alert: N/A

Morgan Springs discharges through this pipe after running above and below ground. Definitely no sources along Gage St. Canine investigation of infrastructure on Pratt don't indicate discharges. Camera work on School St does not support illicit discharge. Do not suspect chronic illicit discharge.

- Bennington Outfalls**
- Overall Characterization**
- + Possible
 - + Suspect
- Stormwater Infrastructure**
- Catchbasin
 - Dry Well
 - Junction Box
 - + Stormwater Manhole
 - + Sanitary Manhole
 - Outfall
 - Culvert inlet
 - Culvert outlet
 - Pond outlet structure
 - Retrofit
 - Storm line
 - Storm line (old Sanitary line)
 - Sanitary line
 - Swale
 - Footing drain
 - Under drain
 - Roof drain
 - Stream
 - Overland flow
 - BMP Areas

CB-243
 Results:
 9-2-15
 Conductivity (uS/cm): 222
 Ammonia (mg/L): 0
 Detergents (ppm): 0

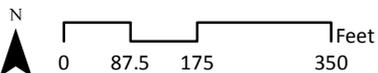
CB-244
 Results:
 Dry on 9-2-15.
 2x canine alert

 Televised on 11-17-15.
 No evidence of connections.
 Unable to televise line carrying Morgan Springs.

SMH-129
 Results:
 9-2-15
 1x canine alert (out of 4 tests)

In-Stream
 Results:
 9-2-15
 1x canine alert (out of 6 tests)

 Note:
 Morgan Springs is above ground here



BTN NEW 202:
 Results:
 7-2-15
 pH: 7.1
 Conductivity (uS/cm): 1820
 Temperature (C): 17.8
 Ammonia (mg/L): 0.25
 E. coli (MPN/100ml): N/A
 Detergents (MBAS, ppm): 0.25
 Chlorine (mg/L): 0.1
 Potassium (ppm): 5
 ECS Alert: 1x (one canine)
 OB Test: Negative

Initial visit on 7-2-15. 0.39" rain in past 24 hours. On return visit on 9-1-15 - no flow. Placed OB pad on 9-4-15 - no florescence. Reddish stains and sheen likely iron-philic bacteria - sheen breaks into chunks. Suspect this is underdrain pipe outlet from Rescue Squad parking lot.

Bennington IDDE
 Outfall Code: BTN-33

Results:
 7-2-15
 pH: 7.45
 Conductivity (uS/cm): 1560
 Temperature (C): 17.2
 Ammonia (mg/L): 0.25
 E. coli (MPN/100ml): Not Tested
 Detergents (MBAS, ppm): 0.25
 Chlorine (mg/L): 0.1
 Potassium (ppm): 2
 ECS Alert: 1x (one canine)

Initial visit on 7-2-15. 0.39" rain in past 24 hours. On return visit on 9-1-15 - no flow. Reddish stains and sheen near pipe due to outflow from BTN NEW 202. Don't suspect chronic illicit discharge.

Bennington Outfalls

Overall Characterization

- + Possible
- + Suspect

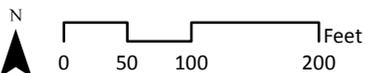
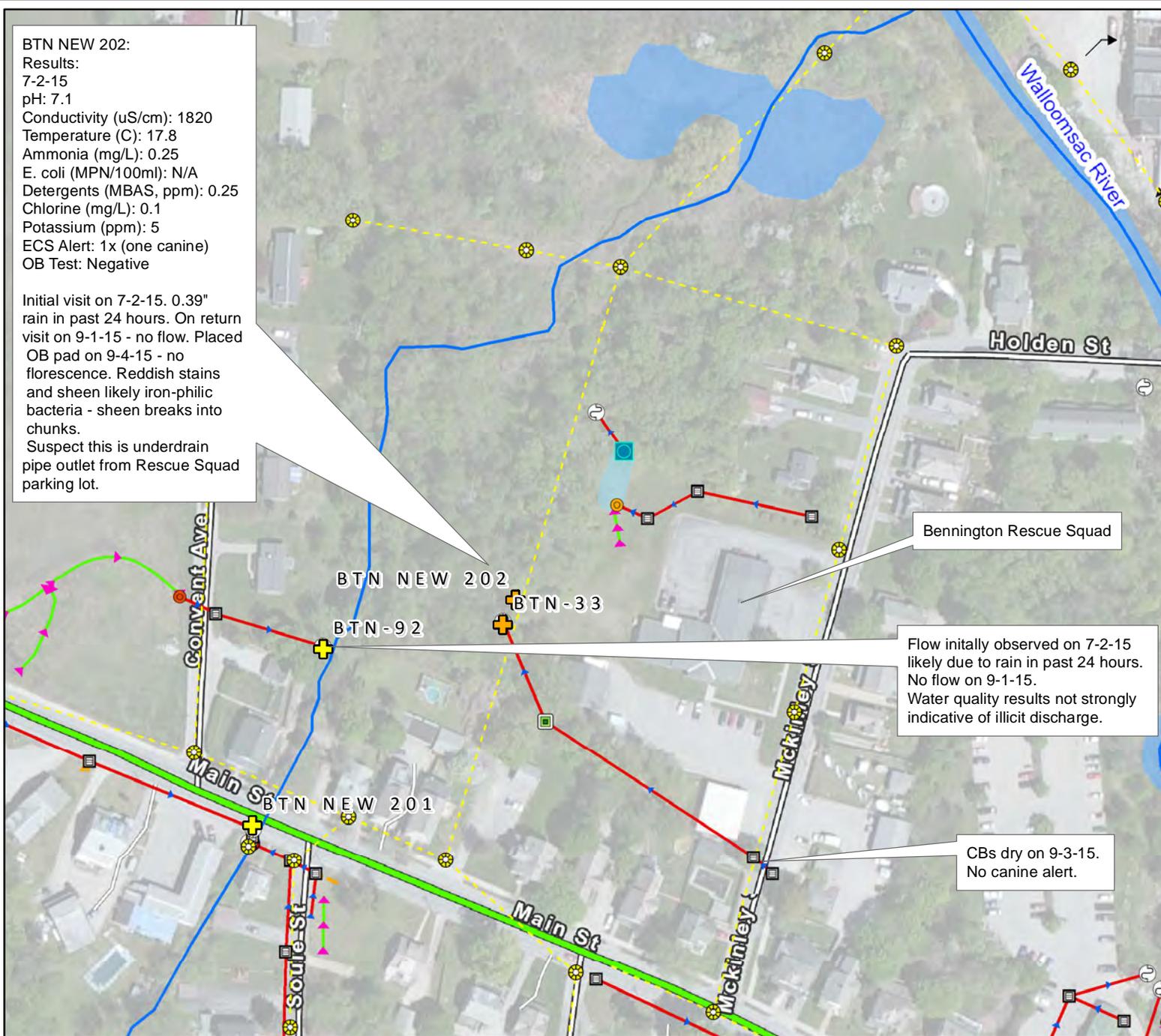
Stormwater Infrastructure

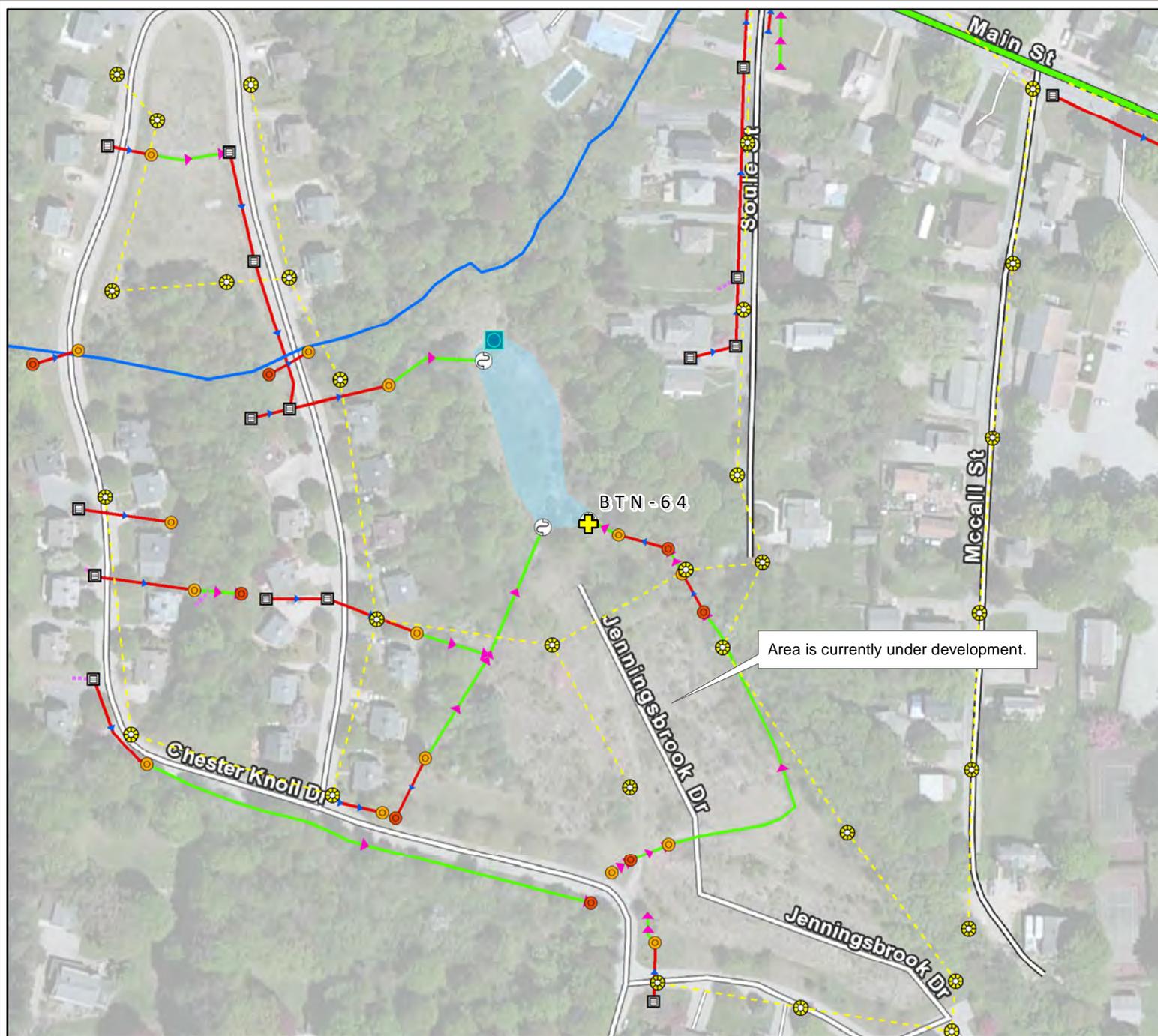
- Catchbasin
- Dry Well
- Junction Box
- Stormwater Manhole
- Sanitary Manhole
- Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow
- BMP Areas

Bennington Rescue Squad

Flow initially observed on 7-2-15 likely due to rain in past 24 hours. No flow on 9-1-15. Water quality results not strongly indicative of illicit discharge.

CBs dry on 9-3-15. No canine alert.





Bennington IDDE
 Outfall Code: BTN-64

Results:
 7-2-15
 pH: 7.6
 Conductivity (uS/cm): 885
 Temperature (C): 11.5
 Ammonia (mg/L): 0.19
 E. coli (MPN/100ml): Not Tested
 Detergents (MBAS, ppm): Not Tested
 Chlorine (mg/L): Not Tested
 Potassium (ppm): Not Tested
 ECS Alert: N/A

Initial testing on 7-2-15. 0.39" rain in previous 24 hours. Flagged for follow-up. Returned on 9-1-15 - no flow at that time. Do not suspect chronic illicit discharge.

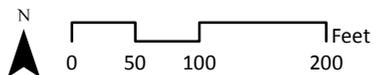
Bennington Outfalls
Overall Characterization

- + Possible
- + Suspect

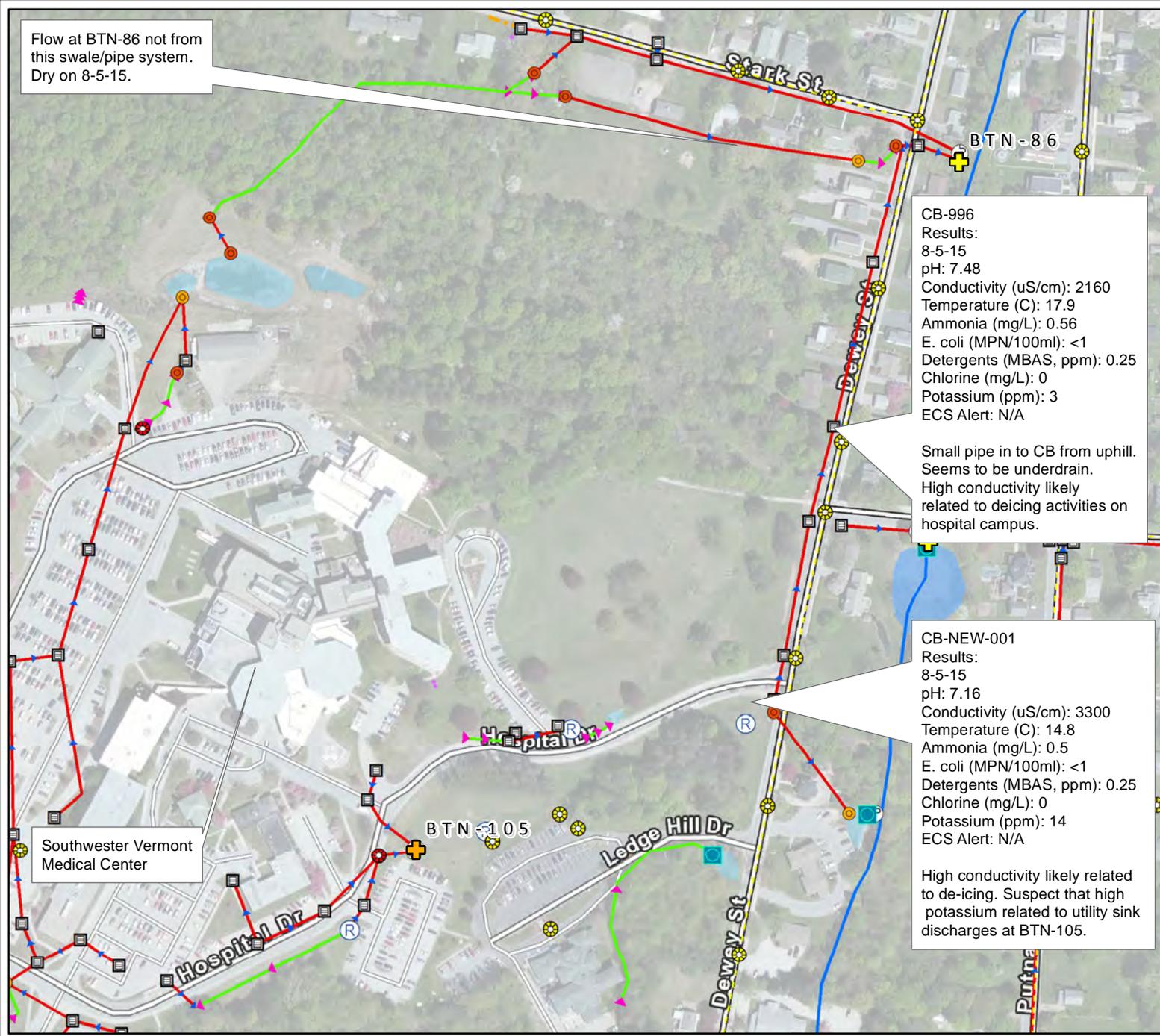
Stormwater Infrastructure

- Catchbasin
- Dry Well
- Junction Box
- + Stormwater Manhole
- + Sanitary Manhole
- ↻ Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow
- BMP Areas

Area is currently under development.



Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC



Flow at BTN-86 not from this swale/pipe system. Dry on 8-5-15.

CB-996
 Results:
 8-5-15
 pH: 7.48
 Conductivity (uS/cm): 2160
 Temperature (C): 17.9
 Ammonia (mg/L): 0.56
 E. coli (MPN/100ml): <1
 Detergents (MBAS, ppm): 0.25
 Chlorine (mg/L): 0
 Potassium (ppm): 3
 ECS Alert: N/A

Small pipe in to CB from uphill. Seems to be underdrain. High conductivity likely related to deicing activities on hospital campus.

CB-NEW-001
 Results:
 8-5-15
 pH: 7.16
 Conductivity (uS/cm): 3300
 Temperature (C): 14.8
 Ammonia (mg/L): 0.5
 E. coli (MPN/100ml): <1
 Detergents (MBAS, ppm): 0.25
 Chlorine (mg/L): 0
 Potassium (ppm): 14
 ECS Alert: N/A

High conductivity likely related to de-icing. Suspect that high potassium related to utility sink discharges at BTN-105.

Bennington IDDE
 Outfall Code: BTN-86

Results:
 6-25-15
 pH: 7.61
 Conductivity (uS/cm): 3400
 Temperature (C): 15.1
 Ammonia (mg/L): 0.21
 E. coli (MPN/100ml): Not Tested
 Detergents (MBAS, ppm): 0.25
 Chlorine (mg/L): 0
 Potassium (ppm): 3
 ECS Alert: N/A

Initial testing on 6-25-15. Follow-up on 8-5-15 found trickle flows in two upstream CBs. Don't suspect sanitary discharge. Likely conductivity results related to deicing activities on hospital. Outflow from BTN-105 may affect BTN-86.

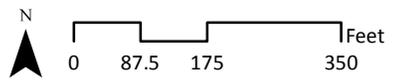
Bennington Outfalls

Overall Characterization

- + Possible
- + Suspect

Stormwater Infrastructure

- Catchbasin
- Dry Well
- Junction Box
- + Stormwater Manhole
- + Sanitary Manhole
- ↻ Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow
- BMP Areas

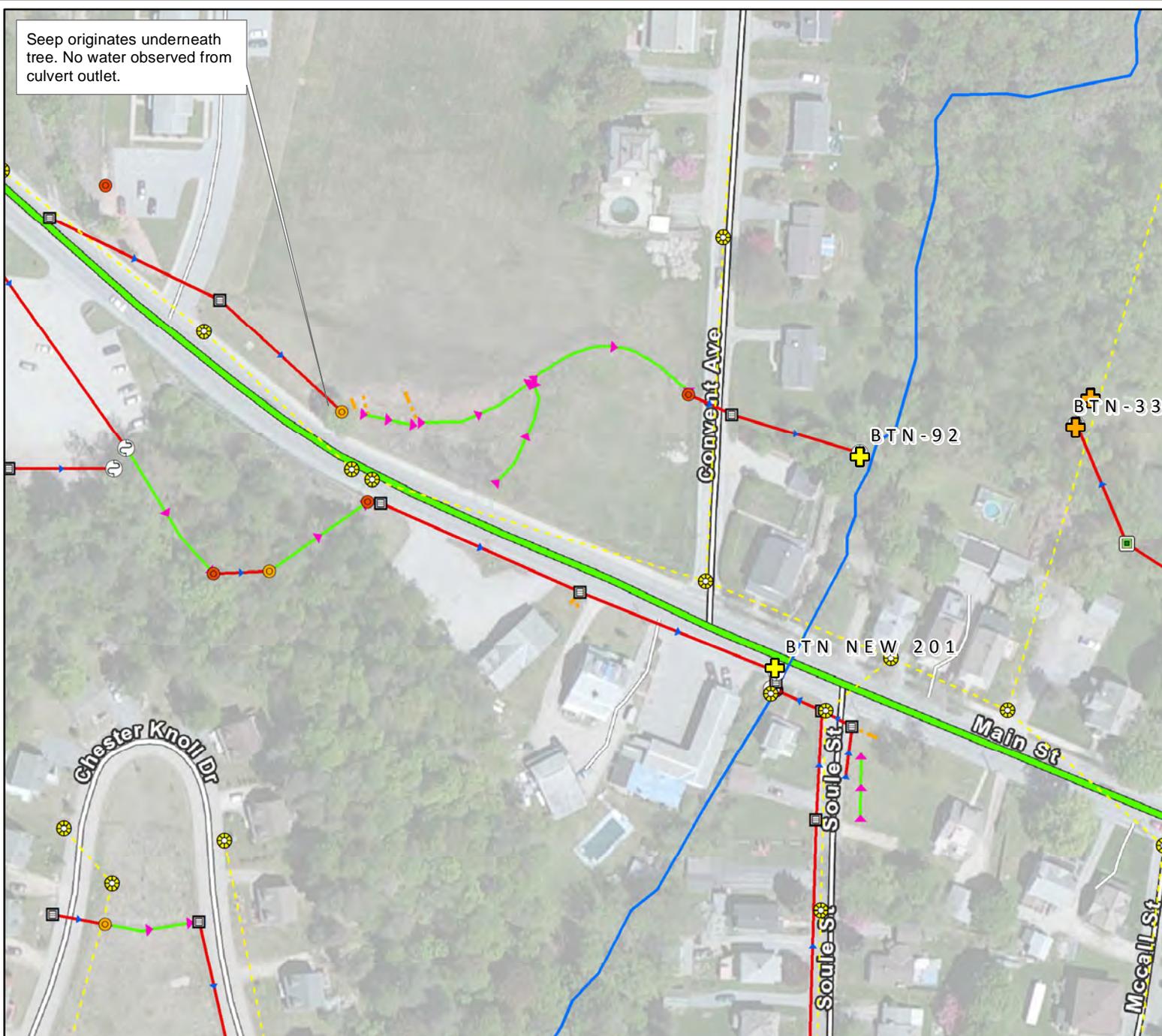


Seep originates underneath tree. No water observed from culvert outlet.

Bennington IDDE
 Outfall Code: BTN-92

Results:
 7-2-15
 pH: 7.93
 Conductivity (uS/cm): 1325
 Temperature (C): 20.5
 Ammonia (mg/L): 0.11
 E. coli (MPN/100ml): Not Tested
 Detergents (MBAS, ppm): 0
 Chlorine (mg/L): 0.1
 Potassium (ppm): 2
 ECS Alert: 0x (no alert)

Initial visit on 7-2-15. 0.39" rain in previous 24 hours. Follow-up visit on 9-1-15 - source is small seep. ECS tested - no alerts recorded. Suspect flow is due to seep and also saturated groundwater flow above outfall. Do no suspect chronic illicit discharge.



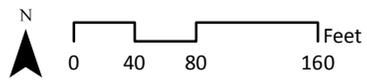
Bennington Outfalls
Overall Characterization

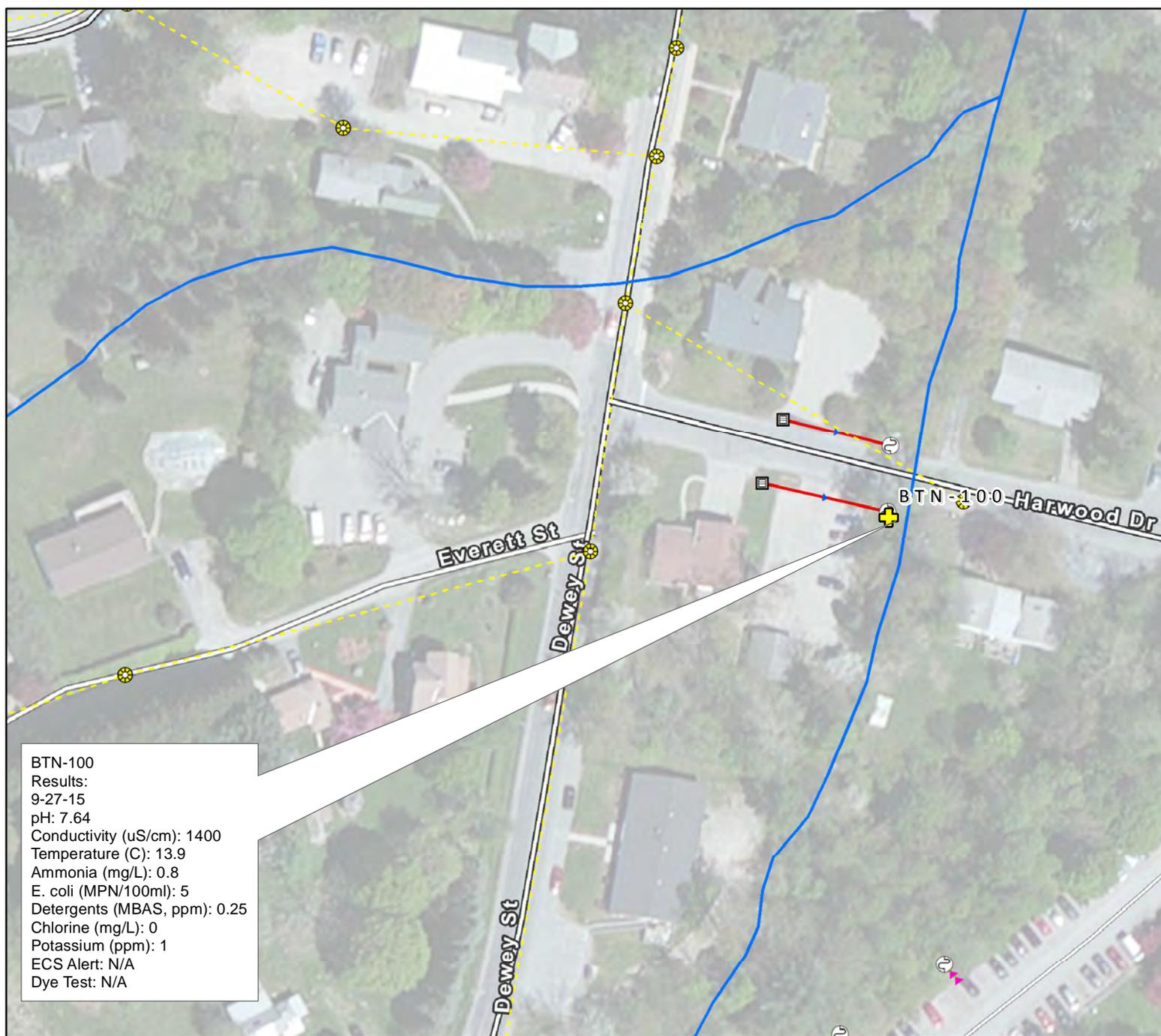
- + Possible
- + Suspect

Stormwater Infrastructure

- Catchbasin
- Dry Well
- Junction Box
- Stormwater Manhole
- + Sanitary Manhole
- O Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- R Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow
- BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC





Bennington IDDE
 Outfall Code: BTN-100

Results:
 6-24-15
 pH: 7.38
 Conductivity (uS/cm): 1520
 Temperature (C): 18.5
 Ammonia (mg/L): 0.44
 E. coli (MPN/100ml): Not Tested
 Detergents (MBAS, ppm): 0.15
 Chlorine (mg/L): 0
 Potassium (ppm): 1
 ECS Alert: N/A

Visited on 6-24-15 - 0.48" rain in past 24 hours. Return visit on 9-27-15. No rain past 48 hours. Trickle flow at that time. Collected sample for lab tests. While ammonia still somewhat elevated, detergents don't support possibility of chronic illicit discharge. Single CB also makes likelihood low.

BTN-100
 Results:
 9-27-15
 pH: 7.64
 Conductivity (uS/cm): 1400
 Temperature (C): 13.9
 Ammonia (mg/L): 0.8
 E. coli (MPN/100ml): 5
 Detergents (MBAS, ppm): 0.25
 Chlorine (mg/L): 0
 Potassium (ppm): 1
 ECS Alert: N/A
 Dye Test: N/A

Bennington Outfalls
Overall Characterization

- + Possible
- + Suspect

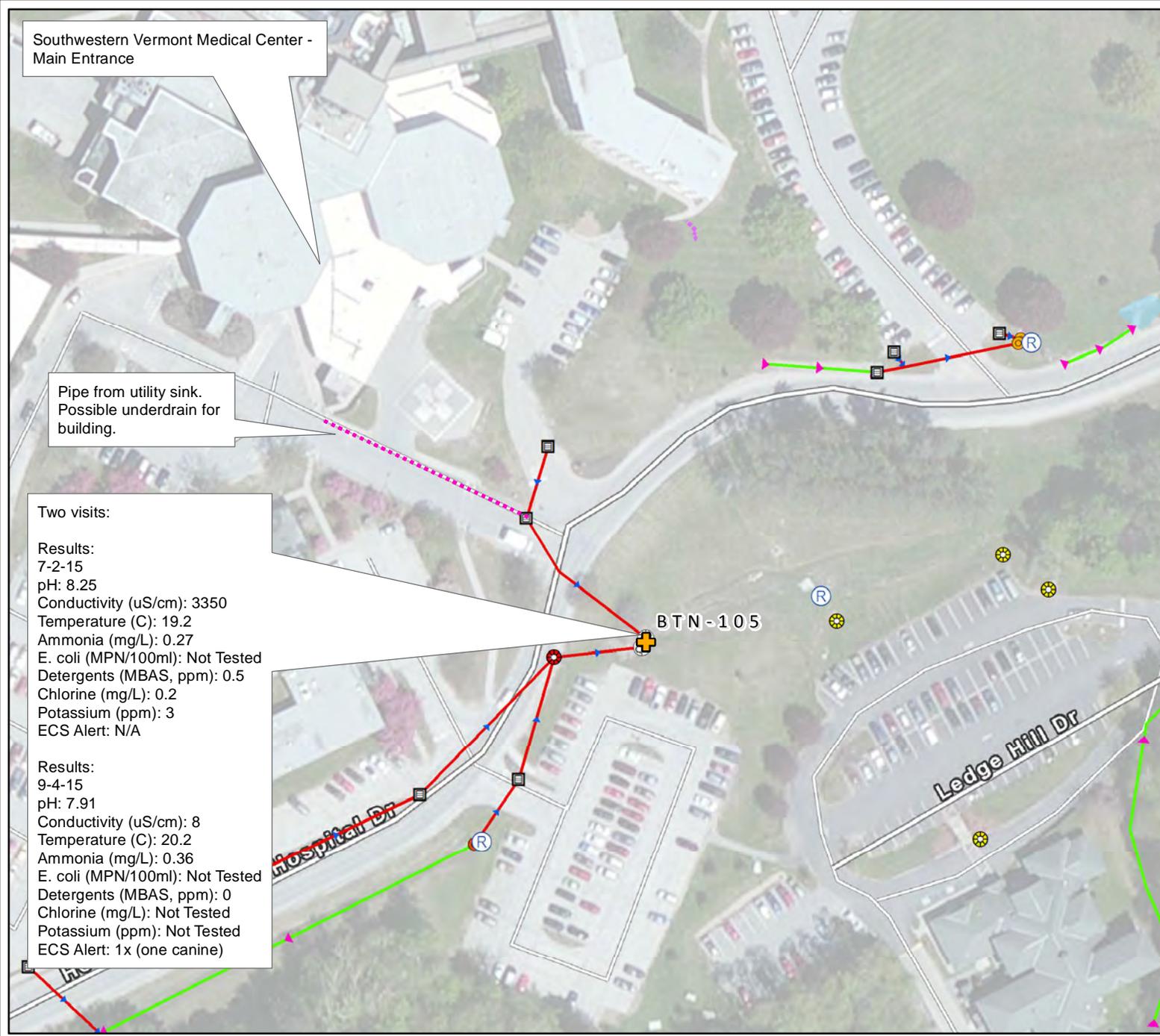
Stormwater Infrastructure

- Catchbasin
- Dry Well
- Junction Box
- Stormwater Manhole
- Sanitary Manhole
- Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow
- BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC

WATERSHED
CONSULTING ASSOCIATES, LLC
 430 Shelburne Road
 Burlington, VT
 watershedca.com
 802.497.2367





Southwestern Vermont Medical Center - Main Entrance

Pipe from utility sink. Possible underdrain for building.

Two visits:

Results:
 7-2-15
 pH: 8.25
 Conductivity (uS/cm): 3350
 Temperature (C): 19.2
 Ammonia (mg/L): 0.27
 E. coli (MPN/100ml): Not Tested
 Detergents (MBAS, ppm): 0.5
 Chlorine (mg/L): 0.2
 Potassium (ppm): 3
 ECS Alert: N/A

Results:
 9-4-15
 pH: 7.91
 Conductivity (uS/cm): 8
 Temperature (C): 20.2
 Ammonia (mg/L): 0.36
 E. coli (MPN/100ml): Not Tested
 Detergents (MBAS, ppm): 0
 Chlorine (mg/L): Not Tested
 Potassium (ppm): Not Tested
 ECS Alert: 1x (one canine)

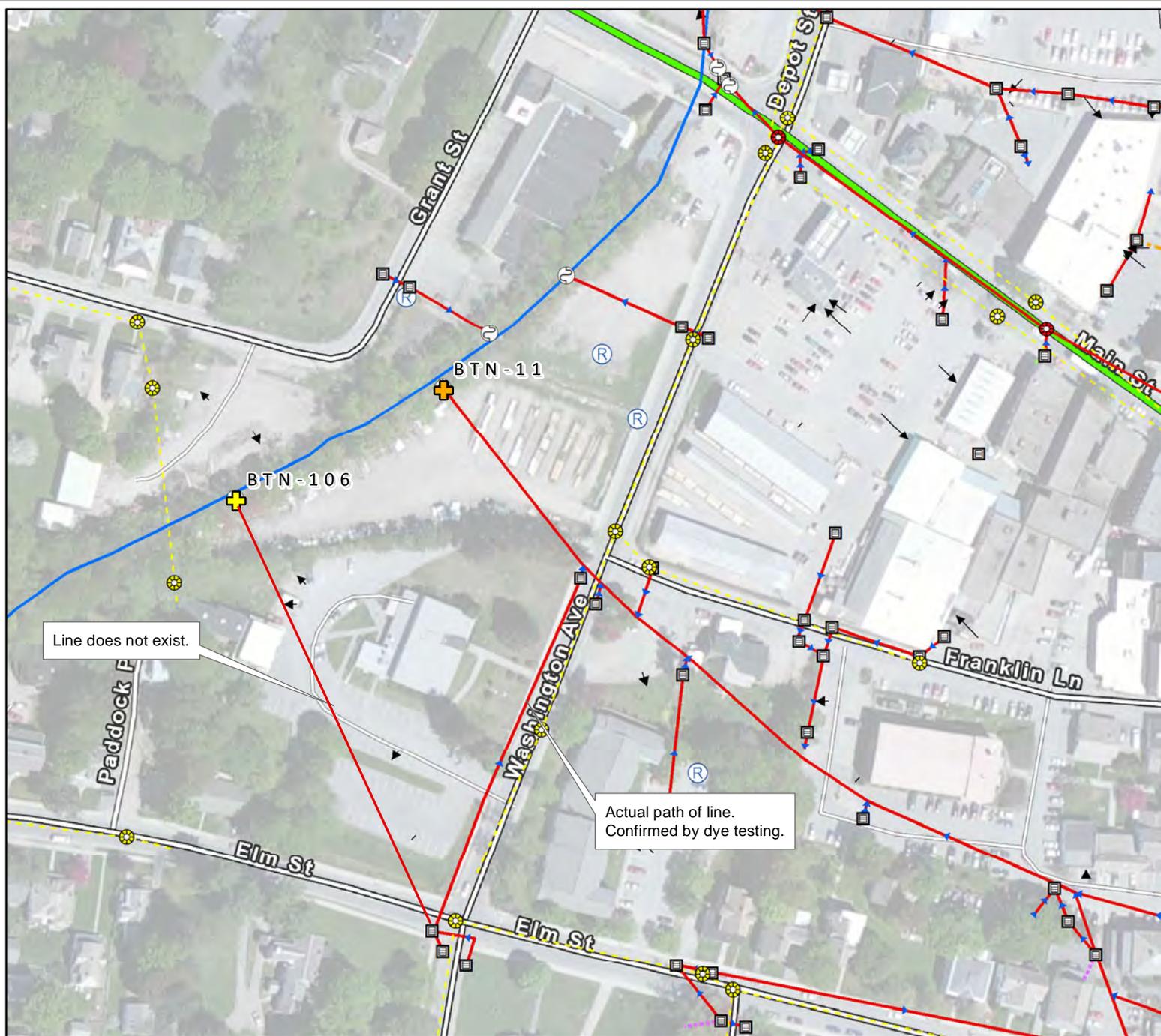
Bennington IDDE
 Outfall Code: BTN-105

Results:
 See Callouts.

Noticed issue on 7-2-15. On return visit on 9-4-15, water was somewhat cleaner - not as turbid. On follow-up visit on 9-22-15, spoke with Willy Hall, facilities manager. Pointed out issue - he followed up and found an improperly connected paint sink. Issued fixed on 10-13-15.

- Bennington Outfalls**
- Overall Characterization**
- + Possible
 - + Suspect
- Stormwater Infrastructure**
- Catchbasin
 - Dry Well
 - Junction Box
 - Stormwater Manhole
 - Sanitary Manhole
 - Outfall
 - Culvert inlet
 - Culvert outlet
 - Pond outlet structure
 - Retrofit
 - Storm line
 - Storm line (old Sanitary line)
 - Sanitary line
 - Swale
 - Footing drain
 - Under drain
 - Roof drain
 - Stream
 - Overland flow
 - BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC



Bennington IDDE
 Outfall Code: BTN-106

Result:
 6-25-15
 Dry - no tests conducted.

Outfall initially categorized as possible due to lack of understanding of infrastructure draining to it. Dye-tested with Town of Bennington on 11-17-15. Confirmed that CBs drain down Washington St - not to BTN-106. Do not suspect chronic illicit discharge.

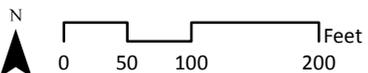
Bennington Outfalls
Overall Characterization

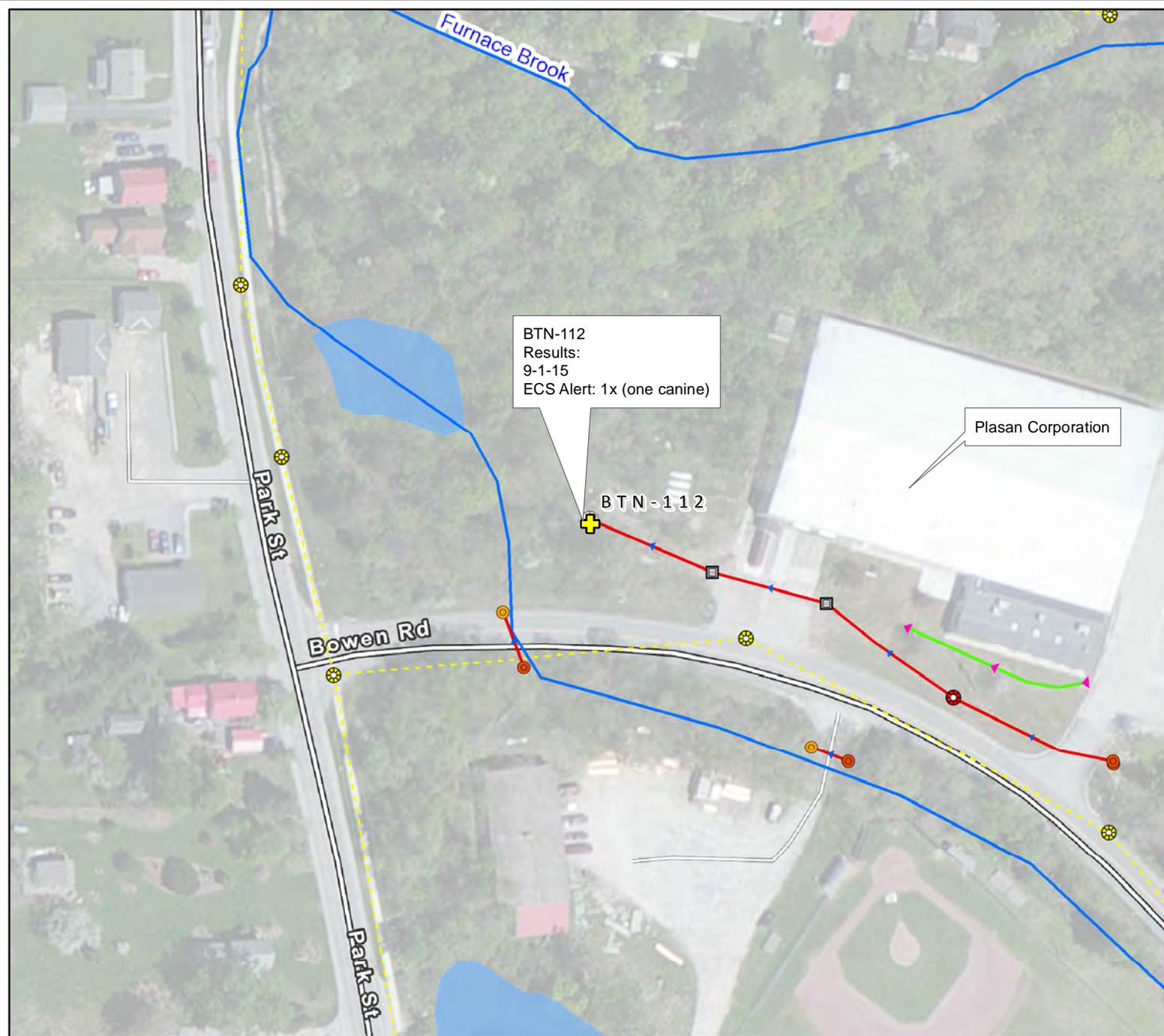
- + Possible
- + Suspect

Stormwater Infrastructure

- Catchbasin
- Dry Well
- Junction Box
- Stormwater Manhole
- Sanitary Manhole
- Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow
- BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC





BTN-112
 Results:
 9-1-15
 ECS Alert: 1x (one canine)

Plasan Corporation

Bennington IDDE
 Outfall Code: BTN-112

Results:
 6-5-15
 pH: 6.92
 Conductivity (uS/cm): 121
 Temperature (C): 8.2
 Ammonia (mg/L): 0.09
 E. coli (MPN/100ml): Not Tested
 Detergents (MBAS, ppm): Not Tested
 Chlorine (mg/L): Not Tested
 Potassium (ppm): Not Tested
 ECS Alert: N/A
 OB Test: N/A

Initial visit on 6-5-15. Brownish stains noted. Follow-up on 9-1-15 to sample for ECS - flow still consistent. Final follow-up on 9-27-15. Flow clearly from a small stream flowing through this area. Do not suspect chronic illicit discharge.

Bennington Outfalls

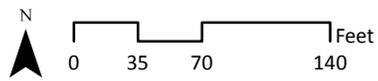
Overall Characterization

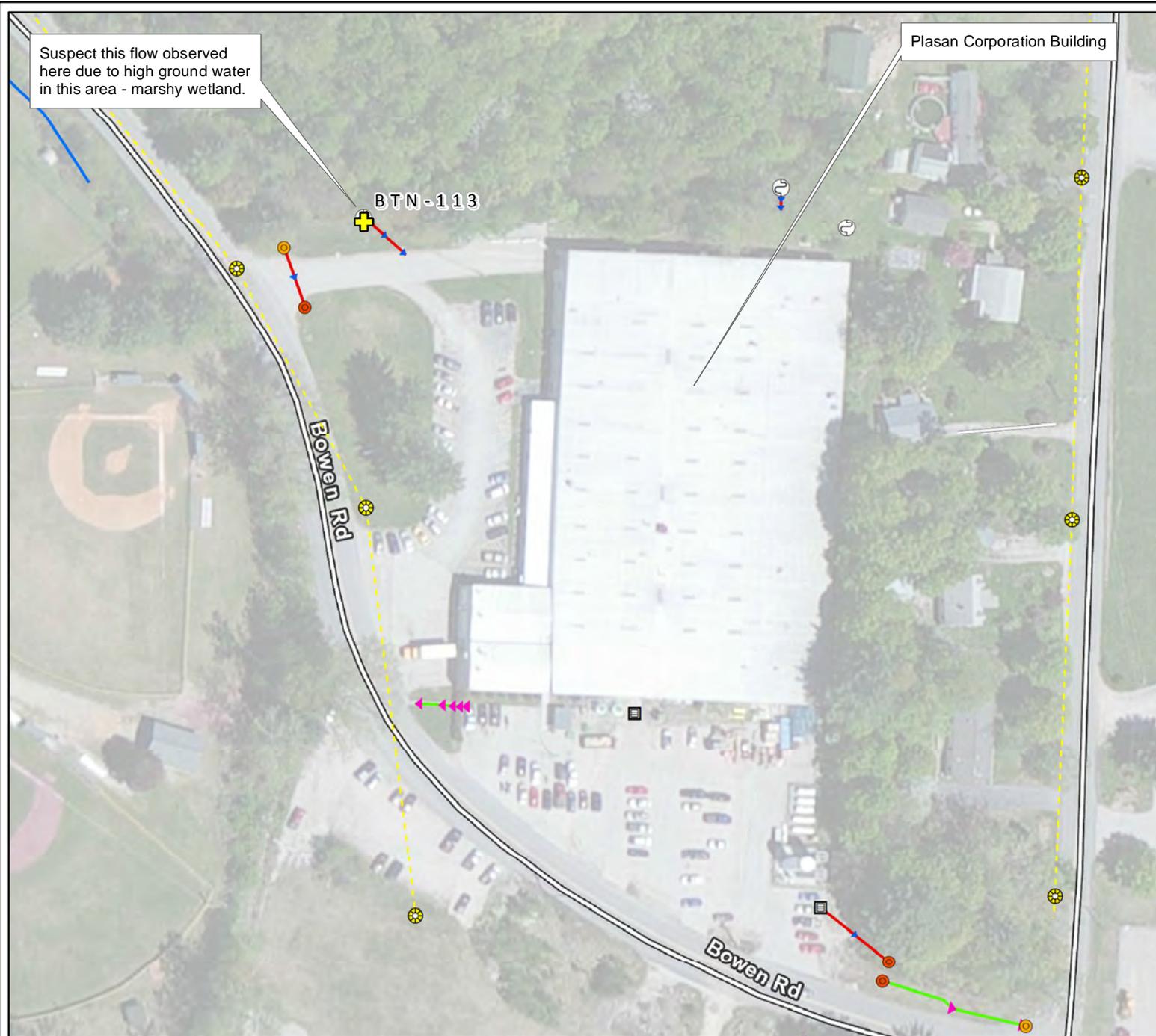
- + Possible
- + Suspect

Stormwater Infrastructure

- Catchbasin
- Dry Well
- Junction Box
- + Stormwater Manhole
- + Sanitary Manhole
- ⊖ Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- R Retrofit
- ↔ Storm line
- ↔ Storm line (old Sanitary line)
- Sanitary line
- ↔ Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow
- BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC





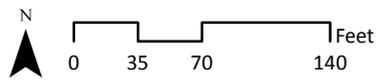
Bennington IDDE
 Outfall Code: BTN-113

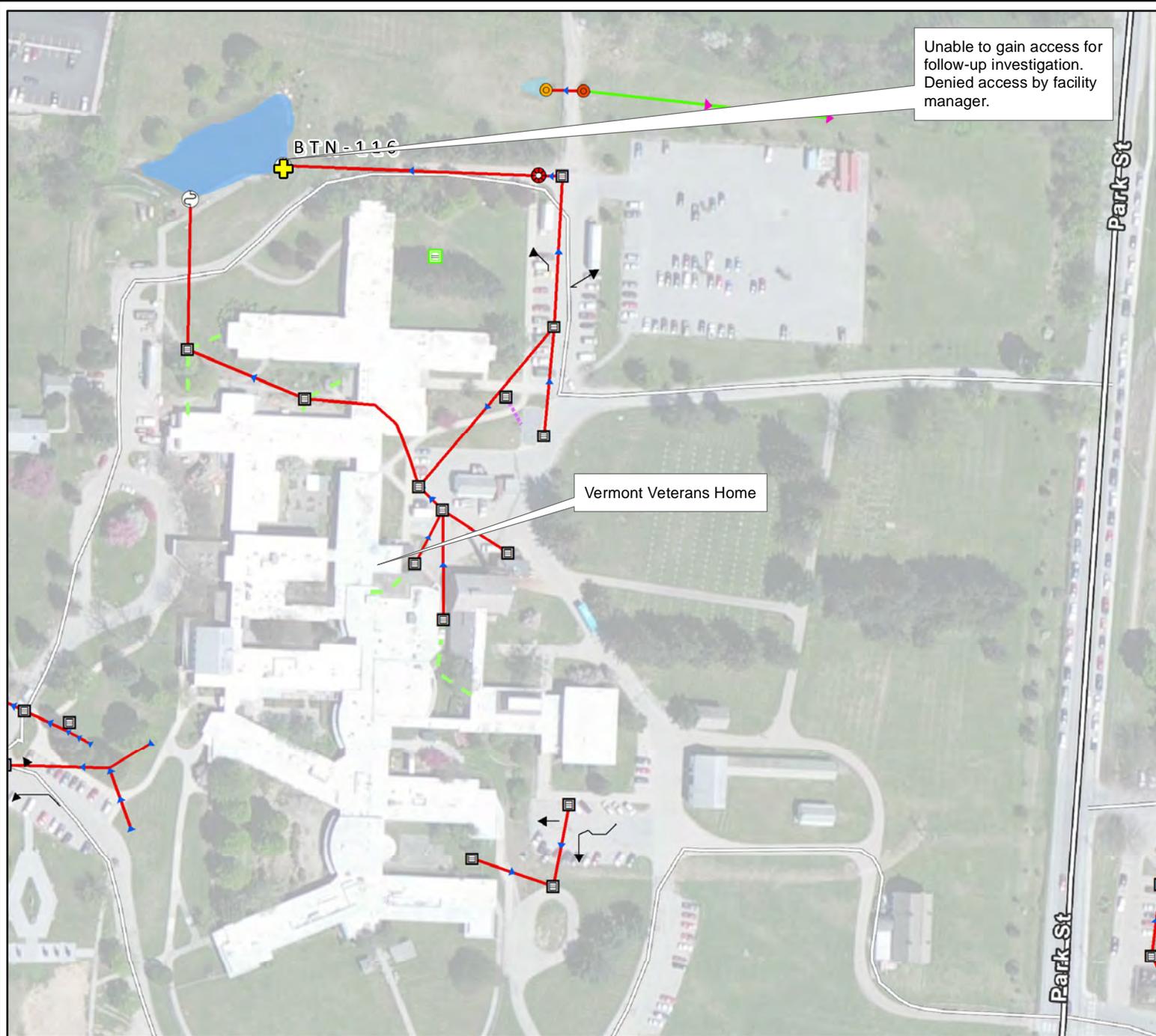
Results:
 6-5-15
 pH: 6.77
 Conductivity (uS/cm): 191
 Temperature (C): 8.1
 Ammonia (mg/L): 0.36
 E. coli (MPN/100ml): 10
 Detergents (MBAS, ppm): <0.25
 Chlorine (mg/L): 0
 Potassium (ppm): 0
 ECS Alert: 0x (no alert)

Staining and sheen on surface of water - believed to be due to iron bacteria. Do not suspect chronic illicit discharge.

- Bennington Outfalls**
- Overall Characterization**
- + Possible
 - + Suspect
- Stormwater Infrastructure**
- Catchbasin
 - Dry Well
 - Junction Box
 - + Stormwater Manhole
 - + Sanitary Manhole
 - ↻ Outfall
 - Culvert inlet
 - Culvert outlet
 - Pond outlet structure
 - R Retrofit
 - Storm line
 - Storm line (old Sanitary line)
 - Sanitary line
 - Swale
 - Footing drain
 - Under drain
 - Roof drain
 - Stream
 - Overland flow
 - BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC





Bennington IDDE
 Outfall Code: BTN-116

Results:
 6-11-15
 pH: 7.21
 Conductivity (uS/cm): 390
 Temperature (C): 10.6
 Ammonia (mg/L): 0.22
 E. coli (MPN/100ml): Not Tested
 Detergents (MBAS, ppm): 0
 Chlorine (mg/L): 0
 Potassium (ppm): 0
 ECS Alert: N/A

Denied access to site for follow-up visit.
 Despite inability to test, do not suspect
 this site for chronic illicit discharge -
 results not strongly indicative.

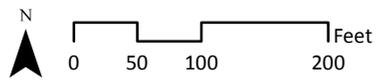
Bennington Outfalls
Overall Characterization

- + Possible
- + Suspect

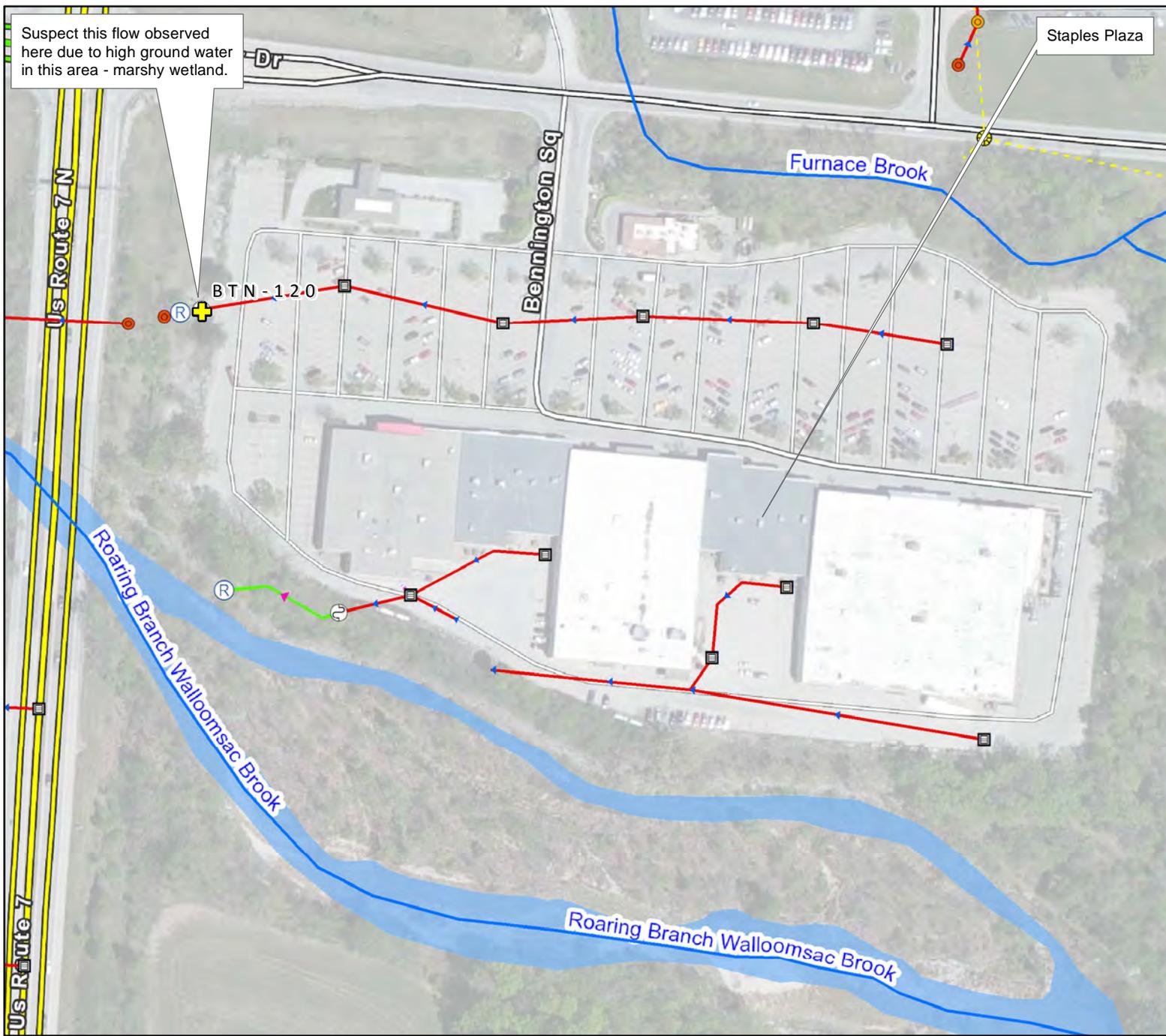
Stormwater Infrastructure

- Catchbasin
- Dry Well
- Junction Box
- Stormwater Manhole
- Sanitary Manhole
- Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- ▶▶ Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow
- BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC



Suspect this flow observed here due to high ground water in this area - marshy wetland.



Bennington IDDE
Outfall Code: BTN-120

Results:
6-11-15
pH: 7.23
Conductivity (uS/cm): 648
Temperature (C): 16.1
Ammonia (mg/L): 0.14
E. coli (MPN/100ml): Not Tested
Detergents (MBAS, ppm): 0
Chlorine (mg/L): 0
Potassium (ppm): 2
ECS Alert: 0x (no alert)

Suspect that flow observed is from groundwater intrusion into catch basins and pipes. Observed values don't indicate chronic illicit discharge.

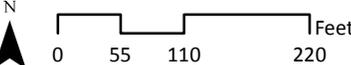
Bennington Outfalls
Overall Characterization

- + Possible
- + Suspect

Stormwater Infrastructure

- Catchbasin
- Dry Well
- Junction Box
- Stormwater Manhole
- Sanitary Manhole
- Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- ↗↗↗ Swale
- Footing drain
- .-.- Under drain
- .-.- Roof drain
- Stream
- Overland flow
- BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
Stormwater Infrastructure - VT DEC



WATERSHED
CONSULTING ASSOCIATES, LLC
430 Shelburne Road
Burlington, VT
watershedca.com
802.497.2367

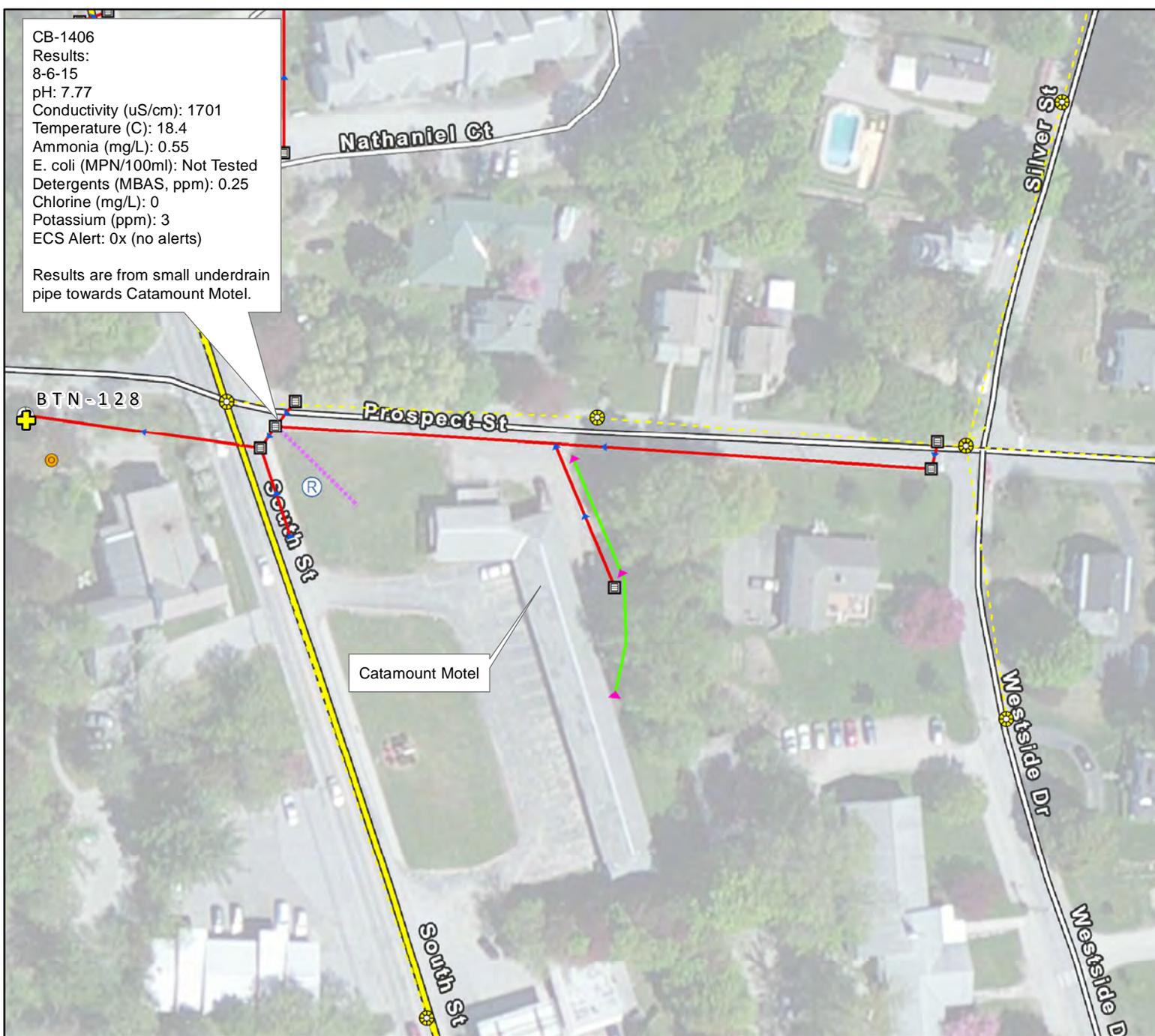
CB-1406
 Results:
 8-6-15
 pH: 7.77
 Conductivity (uS/cm): 1701
 Temperature (C): 18.4
 Ammonia (mg/L): 0.55
 E. coli (MPN/100ml): Not Tested
 Detergents (MBAS, ppm): 0.25
 Chlorine (mg/L): 0
 Potassium (ppm): 3
 ECS Alert: 0x (no alerts)

Results are from small underdrain pipe towards Catamount Motel.

Bennington IDDE
 Outfall Code: BTN-128 - CB-1406

Results:
 8-6-15
 pH: 8.91
 Conductivity (uS/cm): 1640
 Temperature (C): 7.5
 Ammonia (mg/L): 0.12
 E. coli (MPN/100ml): Not Tested
 Detergents (MBAS, ppm): 0
 Chlorine (mg/L): 0
 Potassium (ppm): 0
 ECS Alert: N/A

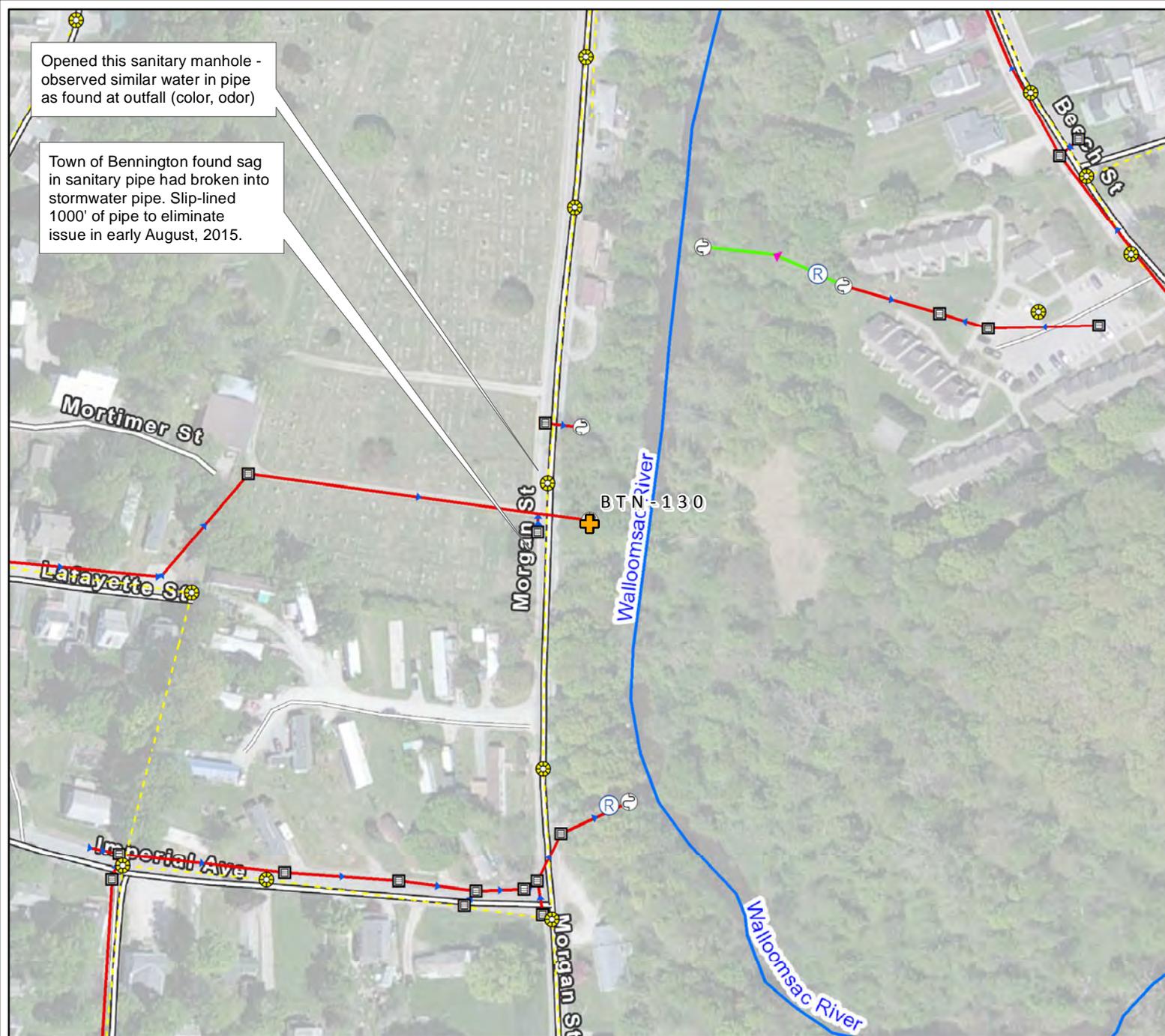
Initial visit on 6-24-15. 0.48" rain in past 24 hours. Follow-up visit on 8-6-15. Sampled water from underdrain pipe at CB-1406. Sampled water again on 9-1-15 for ECS - no alerts. Do not suspect chronic illicit discharge.



- Bennington Outfalls**
- Overall Characterization**
- + Possible
 - + Suspect
- Stormwater Infrastructure**
- Catchbasin
 - Dry Well
 - Junction Box
 - + Stormwater Manhole
 - + Sanitary Manhole
 - Outfall
 - Culvert inlet
 - Culvert outlet
 - Pond outlet structure
 - R Retrofit
 - Storm line
 - Storm line (old Sanitary line)
 - - - Sanitary line
 - Swale
 - - - Footing drain
 - - - Under drain
 - - - Roof drain
 - Stream
 - Overland flow
 - BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC





Opened this sanitary manhole - observed similar water in pipe as found at outfall (color, odor)

Town of Bennington found sag in sanitary pipe had broken into stormwater pipe. Slip-lined 1000' of pipe to eliminate issue in early August, 2015.

Bennington IDDE
Outfall Code: BTN-130

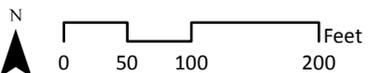
Results:
6-12-15
pH: 7.93
Conductivity (uS/cm): 790
Temperature (C): 14.4
Ammonia (mg/L): 7.8
E. coli (MPN/100ml): >2400
TP (mg/L): 3.9
Detergents (MBAS, ppm): Not Tested
Chlorine (mg/L): Not Tested
Potassium (ppm): 10
ECS Alert: N/A (already fixed at time of canine work)

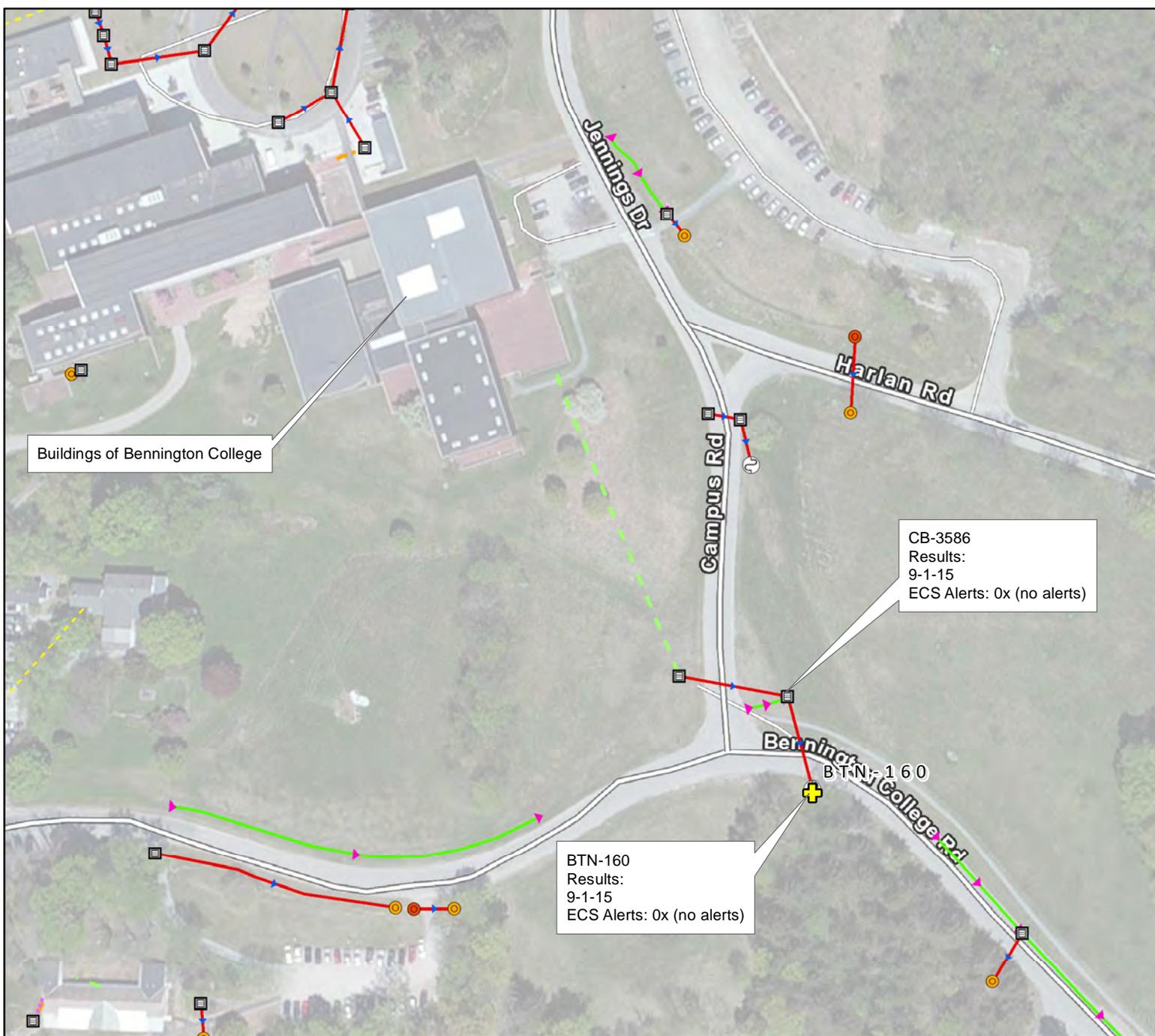
Found very high ammonia on 6-12-15. Returned on 7-27-15 to obtain e. coli and phosphorus sample. Suspect illicit discharge at that time - opened sanitary manhole and saw similar water. Called Town of Bennington - they fixed the issue by slip-lining 1000' of pipe.

Bennington Outfalls
Overall Characterization

- + Possible
- + Suspect
- Stormwater Infrastructure**
- Catchbasin
- Dry Well
- Junction Box
- + Stormwater Manhole
- + Sanitary Manhole
- Outfall
- o Culvert inlet
- o Culvert outlet
- o Pond outlet structure
- R Retrofit
- >> Storm line
- >> Storm line (old Sanitary line)
- Sanitary line
- >> Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow
- BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
Stormwater Infrastructure - VT DEC





Buildings of Bennington College

CB-3586
Results:
9-1-15
ECS Alerts: 0x (no alerts)

BTN-160
Results:
9-1-15
ECS Alerts: 0x (no alerts)

Bennington IDDE
Outfall Code: BTN-160

Results:
7-3-15
pH: 8.04
Conductivity (uS/cm): 2498
Temperature (C): 15.2
Ammonia (mg/L): 0.13
E. coli (MPN/100ml): Not Tested
Detergents (MBAS, ppm): 0
Chlorine (mg/L): 0
Potassium (ppm): 1
ECS Alert: 0x (no alerts)

Initial visit on 7-3-15. Follow-up visit on 9-1-15 to obtain sample for ECS. Also sampled water from CB-3586. No alerts on either. Do not suspect chronic illicit discharge. Conductivity likely related to de-icing on campus.

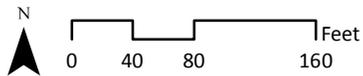
Bennington Outfalls

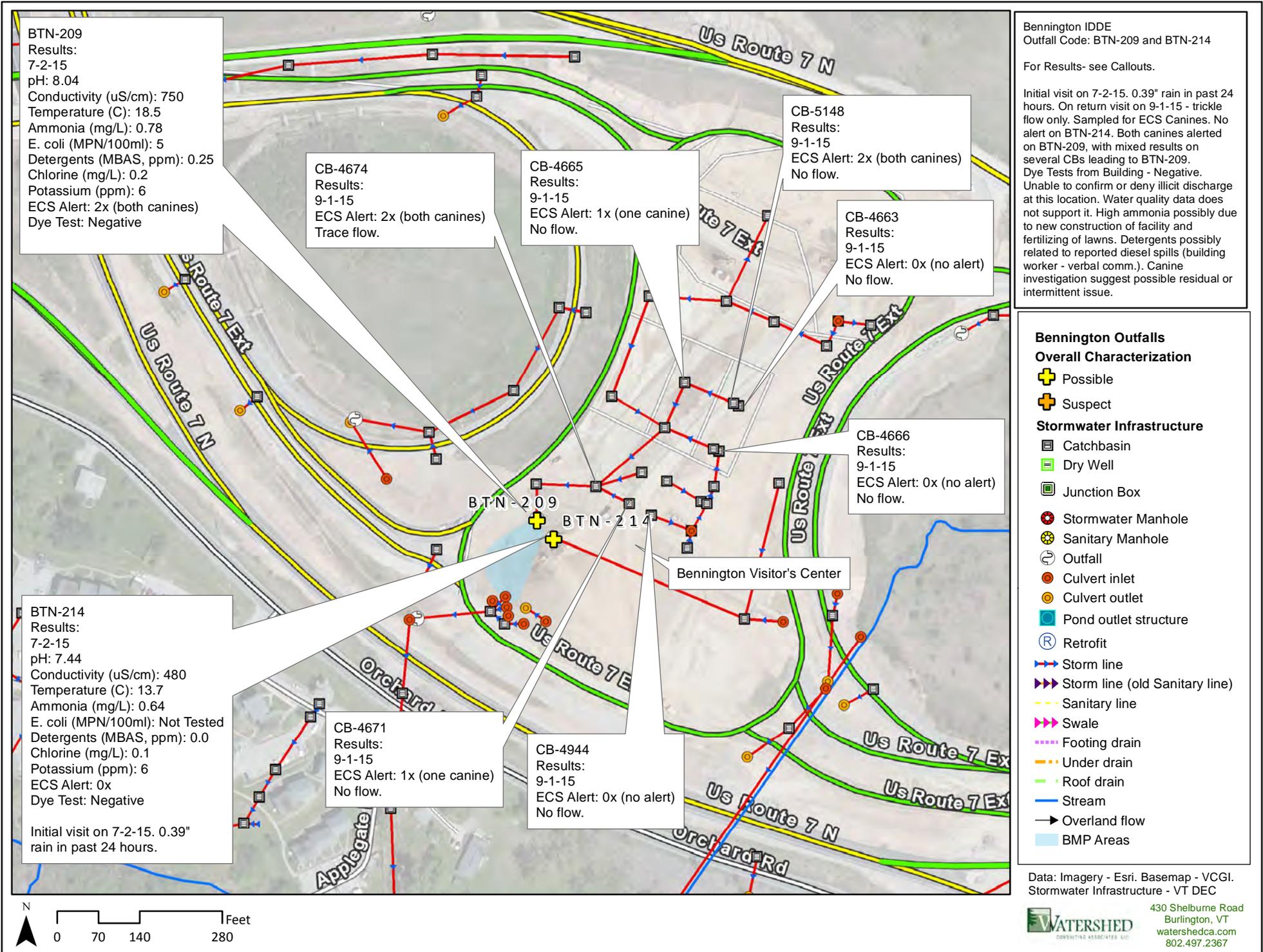
Overall Characterization

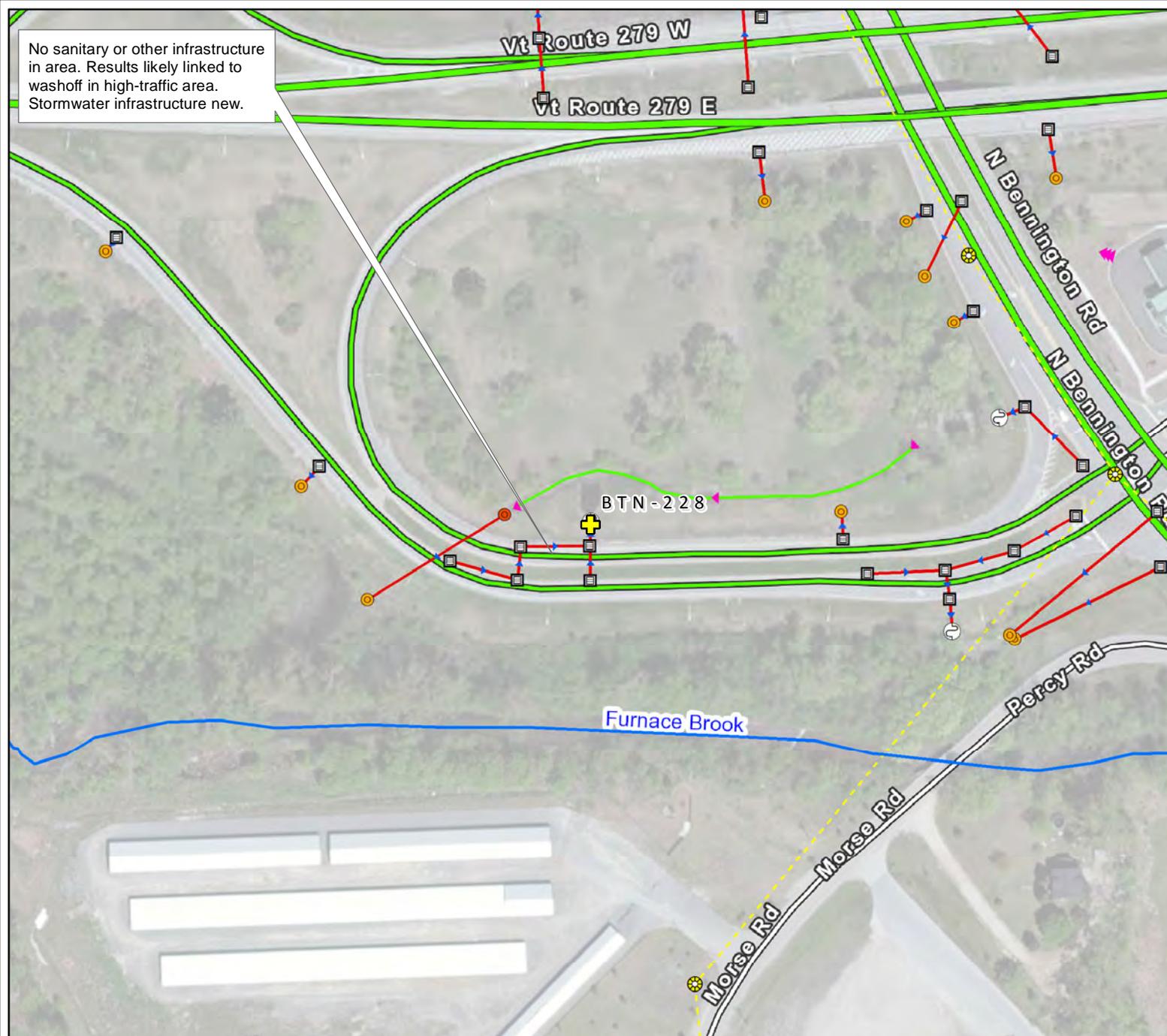
- + Possible
- + Suspect

Stormwater Infrastructure

- Catchbasin
- Dry Well
- Junction Box
- Stormwater Manhole
- Sanitary Manhole
- Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- ▶ Storm line
- ▶▶ Storm line (old Sanitary line)
- - - Sanitary line
- ▶▶ Swale
- - - Footing drain
- - - Under drain
- - - Roof drain
- Stream
- ▶ Overland flow
- BMP Areas







No sanitary or other infrastructure in area. Results likely linked to washoff in high-traffic area. Stormwater infrastructure new.

Bennington IDDE
 Outfall Code: BTN-228

Results:
 7-2-15
 pH: 8.87
 Conductivity (uS/cm): 1260
 Temperature (C): 19
 Ammonia (mg/L): 0.83
 E. coli (MPN/100ml): Not Tested
 Detergents (MBAS, ppm): 0.5
 Chlorine (mg/L): 0.2
 Potassium (ppm): 4
 ECS Alert: N/A

Initial results from 7-2-15. 0.39" rain in past 24 hours - flagged for follow-up. Returned on 9-1-15 - no rain in previous 24 hours - no flow at that time. No sanitary near site. Do not suspect chronic illicit discharge.

Bennington Outfalls

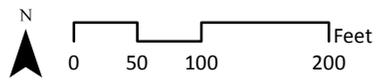
Overall Characterization

- + Possible
- + Suspect

Stormwater Infrastructure

- Catchbasin
- Dry Well
- Junction Box
- Stormwater Manhole
- Sanitary Manhole
- Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow
- BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC



No sanitary or other infrastructure in area. Results likely linked to washoff in high-traffic area. Stormwater infrastructure new.

Bennington IDDE
 Outfall Code: BTN-235

Results:
 7-2-15
 pH: 8.41
 Conductivity (uS/cm): 1210
 Temperature (C): 16.1
 Ammonia (mg/L): 0.78
 E. coli (MPN/100ml): Not Tested
 Detergents (MBAS, ppm): 0
 Chlorine (mg/L): 0
 Potassium (ppm): 1
 ECS Alert: N/A

Initial results from 7-2-15. 0.39" rain in past 24 hours - flagged for follow-up. Returned on 9-1-15 - no rain in previous 24 hours - no flow at that time. No sanitary near site. Do not suspect chronic illicit discharge.

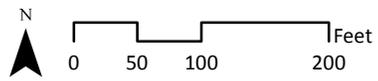
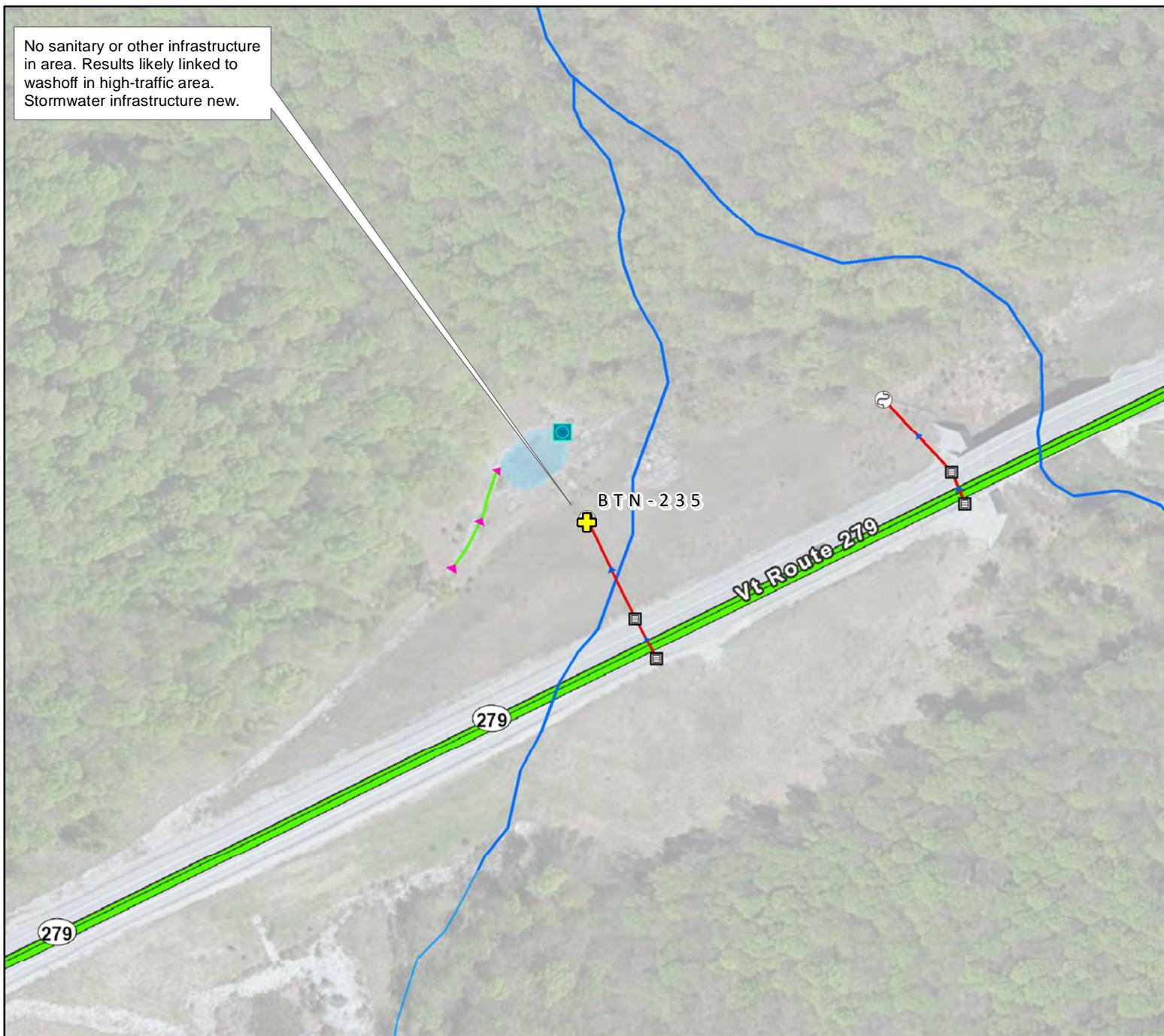
Bennington Outfalls

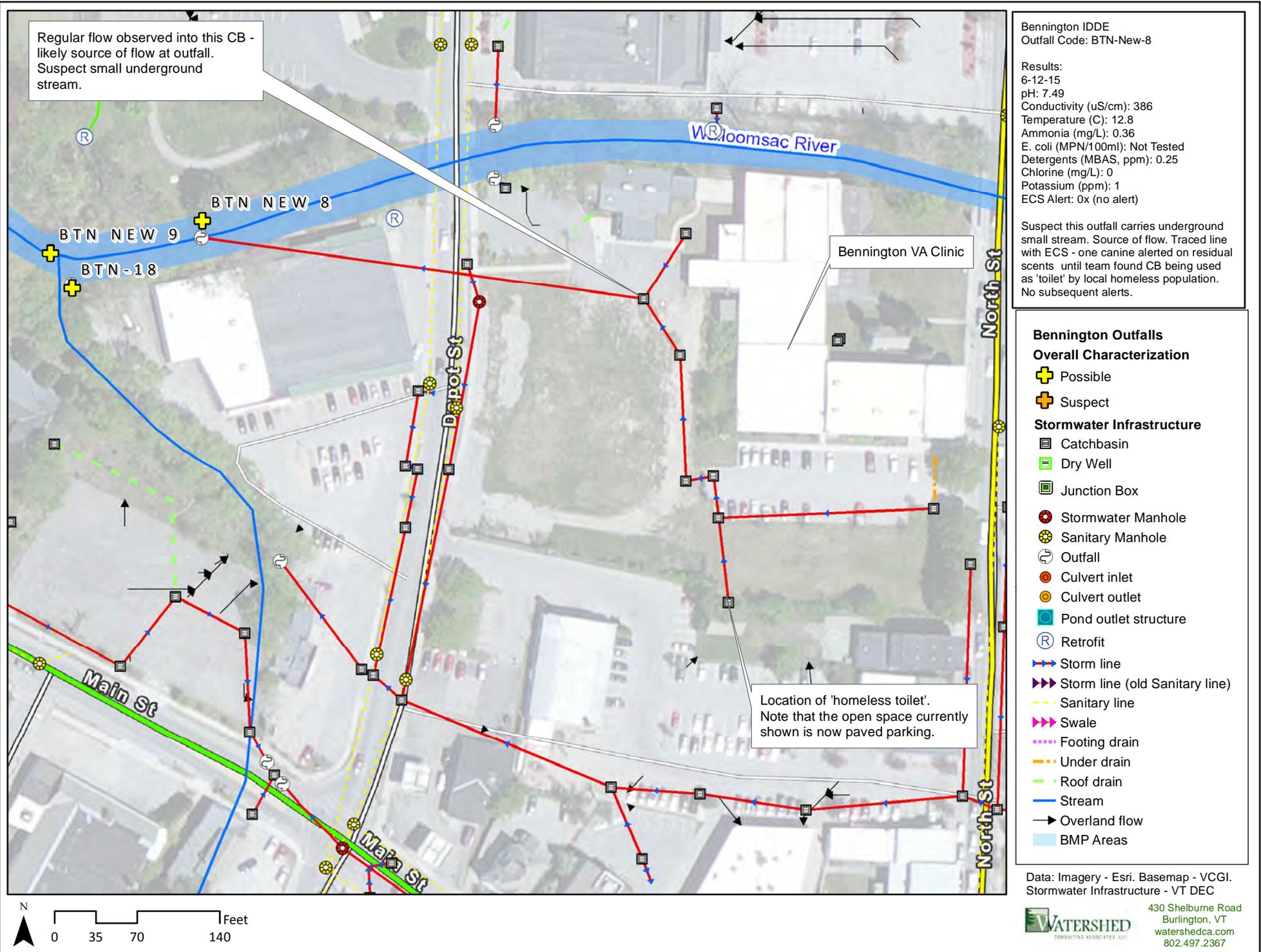
Overall Characterization

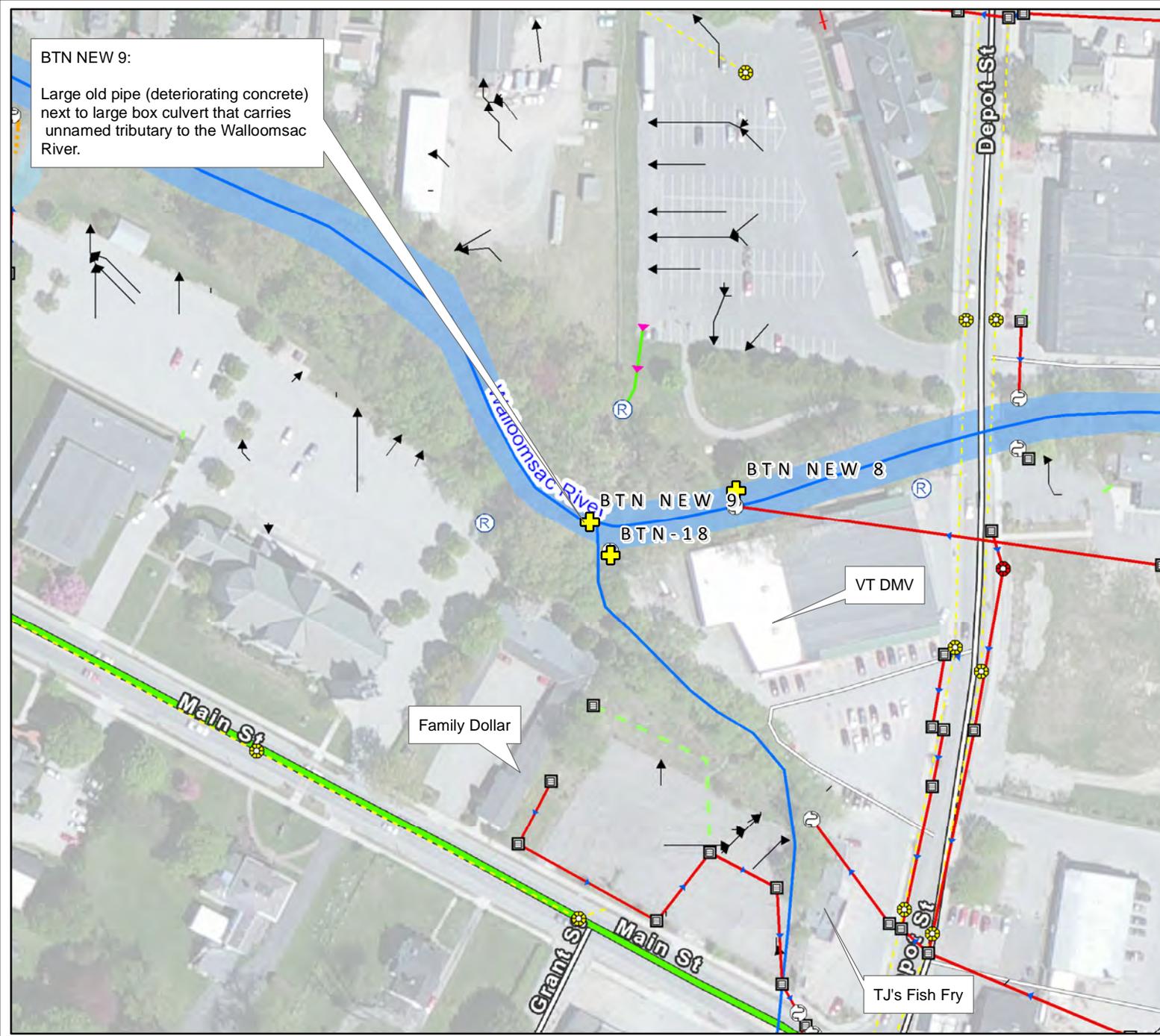
- + Possible
- + Suspect

Stormwater Infrastructure

- Catchbasin
- Dry Well
- Junction Box
- Stormwater Manhole
- Sanitary Manhole
- Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow
- BMP Areas







BTN NEW 9:
 Large old pipe (deteriorating concrete) next to large box culvert that carries unnamed tributary to the Walloomsac River.

Bennington IDDE
 Outfall Code: BTN-NEW-9

Not able to obtain flow results on any visits. Did not visit with ECS canines due to proximity of other outfalls with known alerts (proximity negates results at outfall).

Infrastructure unknown here. No plans and mapping efforts unable to ascertain exact connections. Possibly connected to CBs along Depot and Main Street.

Inspected CBs along those streets with ECS canines - any potential issues determined by those investigations.

Bennington Outfalls

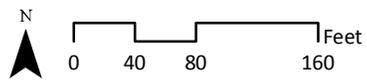
Overall Characterization

- + Possible
- + Suspect

Stormwater Infrastructure

- Catchbasin
- Dry Well
- Junction Box
- + Stormwater Manhole
- + Sanitary Manhole
- Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow
- BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC

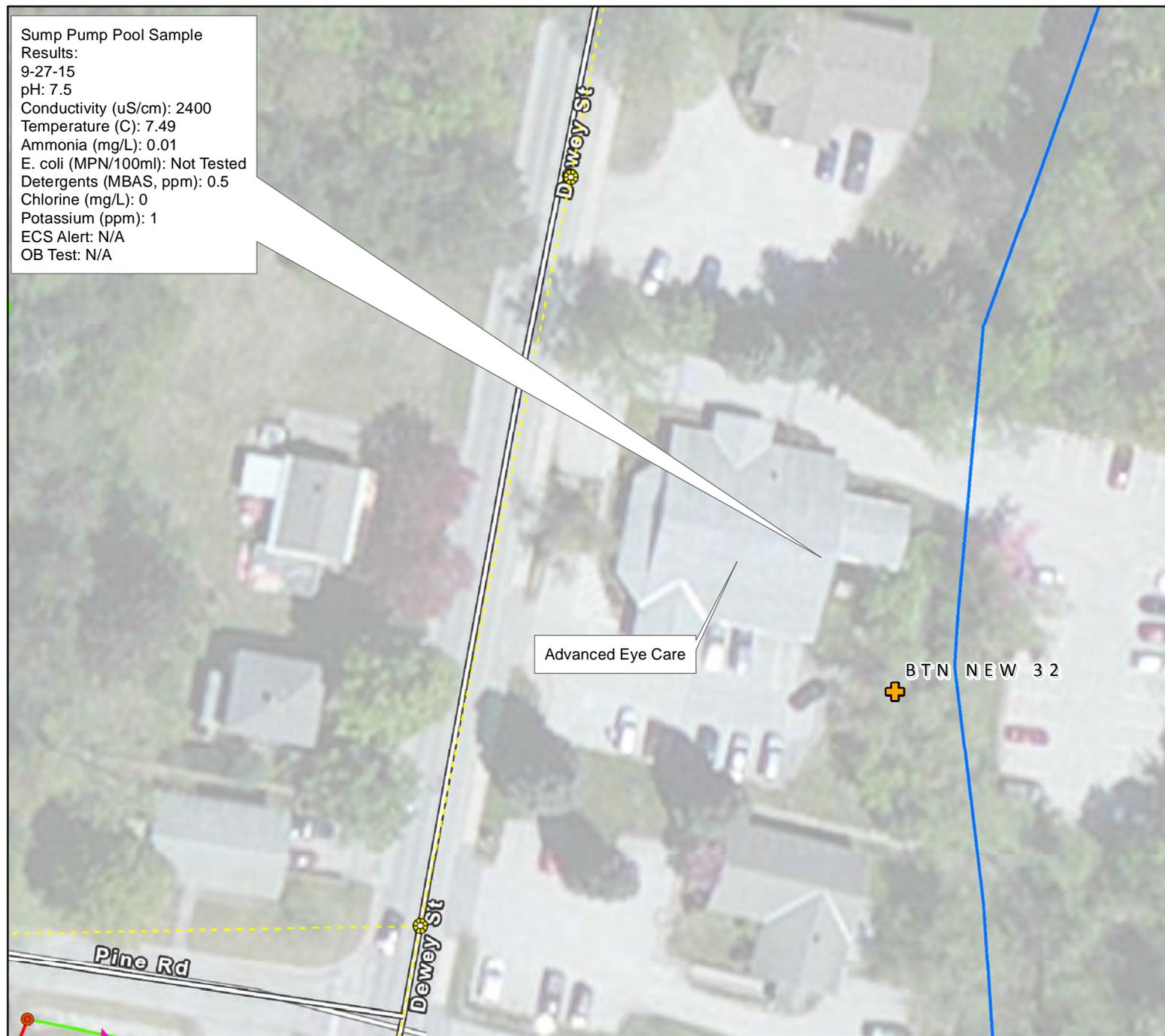


Sump Pump Pool Sample
 Results:
 9-27-15
 pH: 7.5
 Conductivity (uS/cm): 2400
 Temperature (C): 7.49
 Ammonia (mg/L): 0.01
 E. coli (MPN/100ml): Not Tested
 Detergents (MBAS, ppm): 0.5
 Chlorine (mg/L): 0
 Potassium (ppm): 1
 ECS Alert: N/A
 OB Test: N/A

Bennington IDDE
 Outfall Code: BTN-NEW-32

Results:
 6-24-15
 pH: 7.49
 Conductivity (uS/cm): >2400
 Temperature (C): 7.49
 Ammonia (mg/L): 0.14
 E. coli (MPN/100ml): Not Tested
 Detergents (MBAS, ppm): 0.25
 Chlorine (mg/L): 0
 Potassium (ppm): 0
 ECS Alert: N/A
 OB Test: Negative

Initial visit on 6-24-15 - 0.48" rain in past 24 hours. Observed intermittent flow - like pumped flow. Returned on 9-27-15. Observed sump pump arrangement in basement of business. Sampled pool of sump for lab. Results consistent. Don't suspect chronic illicit discharge.



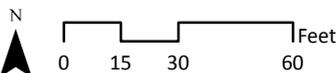
Advanced Eye Care

BTN NEW 32

Bennington Outfalls
Overall Characterization

- + Possible
 - + Suspect
- Stormwater Infrastructure**
- Catchbasin
 - Dry Well
 - Junction Box
 - Stormwater Manhole
 - Sanitary Manhole
 - Outfall
 - Culvert inlet
 - Culvert outlet
 - Pond outlet structure
 - Retrofit
 - Storm line
 - Storm line (old Sanitary line)
 - Sanitary line
 - Swale
 - Footing drain
 - Under drain
 - Roof drain
 - Stream
 - Overland flow
 - BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC





Bennington IDDE
 Outfall Code: BTN-NEW-53

Results:
 6-24-15
 pH: 7.16
 Conductivity (uS/cm): 57
 Temperature (C): 18.89
 Ammonia (mg/L): 0.2
 E. coli (MPN/100ml): <1
 Detergents (MBAS, ppm): 0
 Chlorine (mg/L): 0.6
 Potassium (ppm): 0
 ECS Alert: N/A

Water discharging from pressure-relief holes in bridge buttress. Town confirms that there is broken water line. Initial repair made 7-2015. Final repair in progress as of 11-2015.

BTN NEW 53 and 54:
 Town confirmed broken water line and fixed it as of 11-2015.

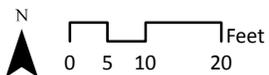
Bennington Outfalls
Overall Characterization

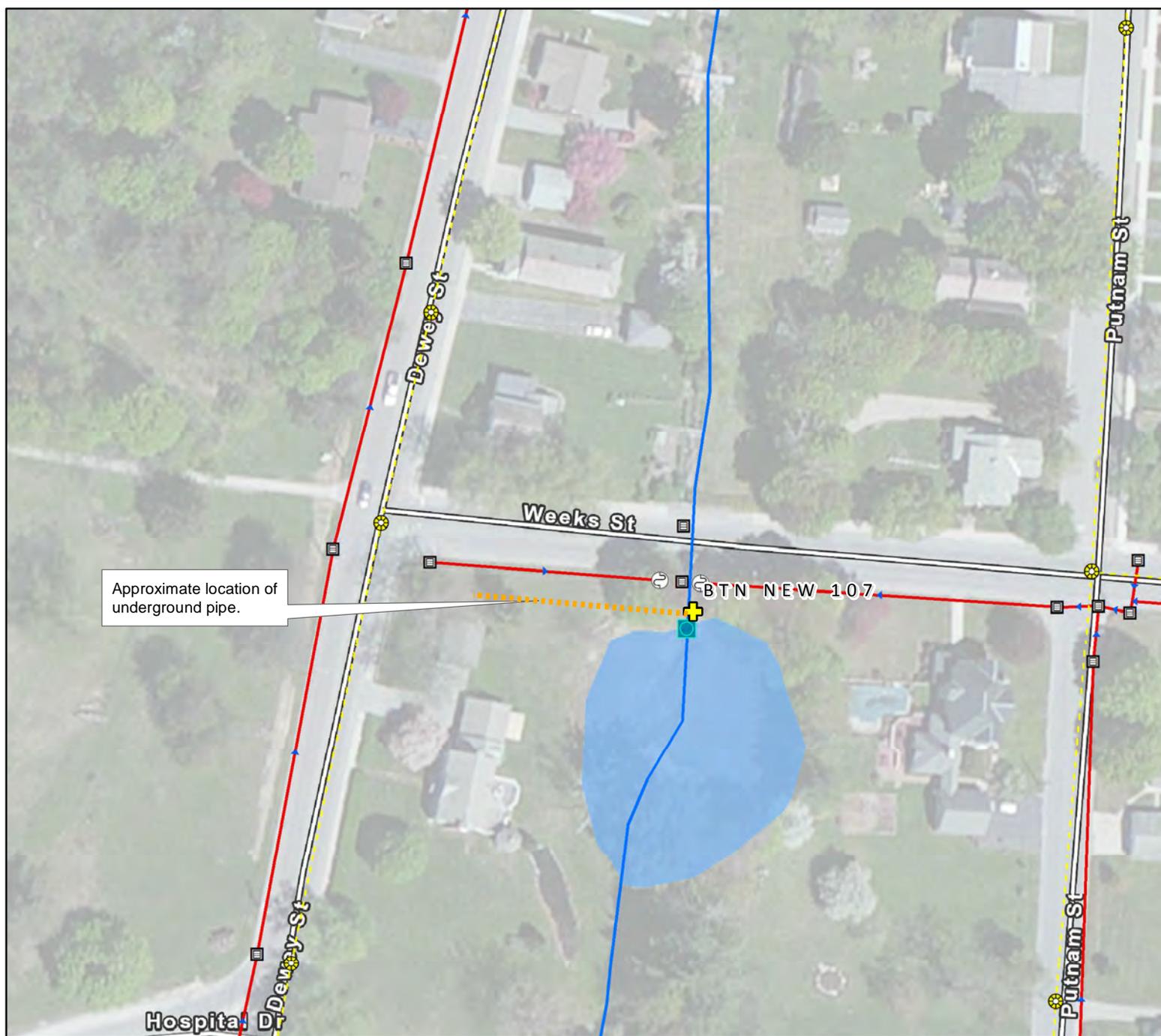
- Possible
- Suspect

Stormwater Infrastructure

- Catchbasin
- Dry Well
- Junction Box
- Stormwater Manhole
- Sanitary Manhole
- Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow
- BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC





Bennington IDDE
Outfall Code: BTN-NEW-107

Results:
6-25-15
pH: 8.45
Conductivity (uS/cm): 970
Temperature (C): 16.0
Ammonia (mg/L): 0.33
E. coli (MPN/100ml): Not Tested
Detergents (MBAS, ppm): 0
Chlorine (mg/L): 0
Potassium (ppm): 0
ECS Alert: N/A

Initial visit on 6-25-15 - 0.48" rain in past 48 hours. Observed trickle flow from 6" concrete pipe. Re-visited on 9-27-15 - trickle flow. Unable to conduct dye test - residence is low-use. Do not suspect chronic illicit discharge based on water quality results.

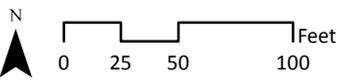
Bennington Outfalls
Overall Characterization

- + Possible
- + Suspect

Stormwater Infrastructure

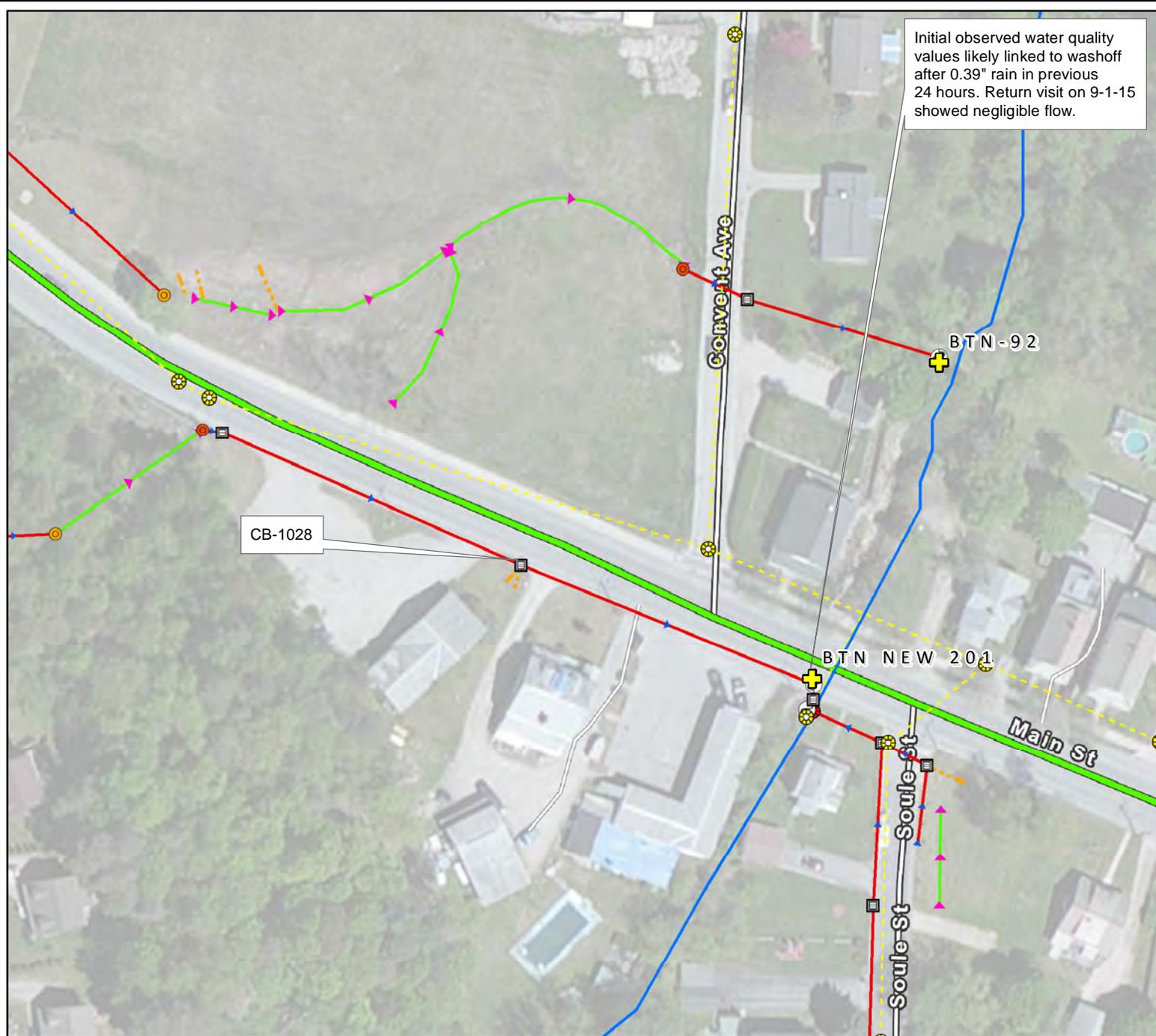
- Catchbasin
- Dry Well
- Junction Box
- Stormwater Manhole
- Sanitary Manhole
- Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow
- BMP Areas

Approximate location of underground pipe.



Data: Imagery - Esri. Basemap - VCGI.
Stormwater Infrastructure - VT DEC

WATERSHED
CONSULTING ASSOCIATES, LLC
430 Shelburne Road
Burlington, VT
watershedca.com
802.497.2367



Bennington IDDE
Outfall Code: BTN-New-201

Results:
pH: 7.96
Conductivity (uS/cm): 1876
Temperature (C): 16.1
Ammonia (mg/L): 0.13
E. coli (MPN/100ml): Not Tested
Detergents (MBAS, ppm): 0.25
Chlorine (mg/L): 0.2
Potassium (ppm): 4
ECS Alert: 0x (no alert)

Initial visit on 7-2-15. 0.39\" rain in past 24 hours. On return visit on 9-1-15 to sample for ECS only small trickle flow visible - coming from CB-1028. No alert. Pollutant values don't indicate chronic illicit discharge.

Bennington Outfalls

Overall Characterization

- + Possible
- + Suspect

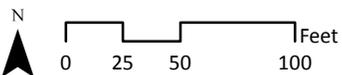
Stormwater Infrastructure

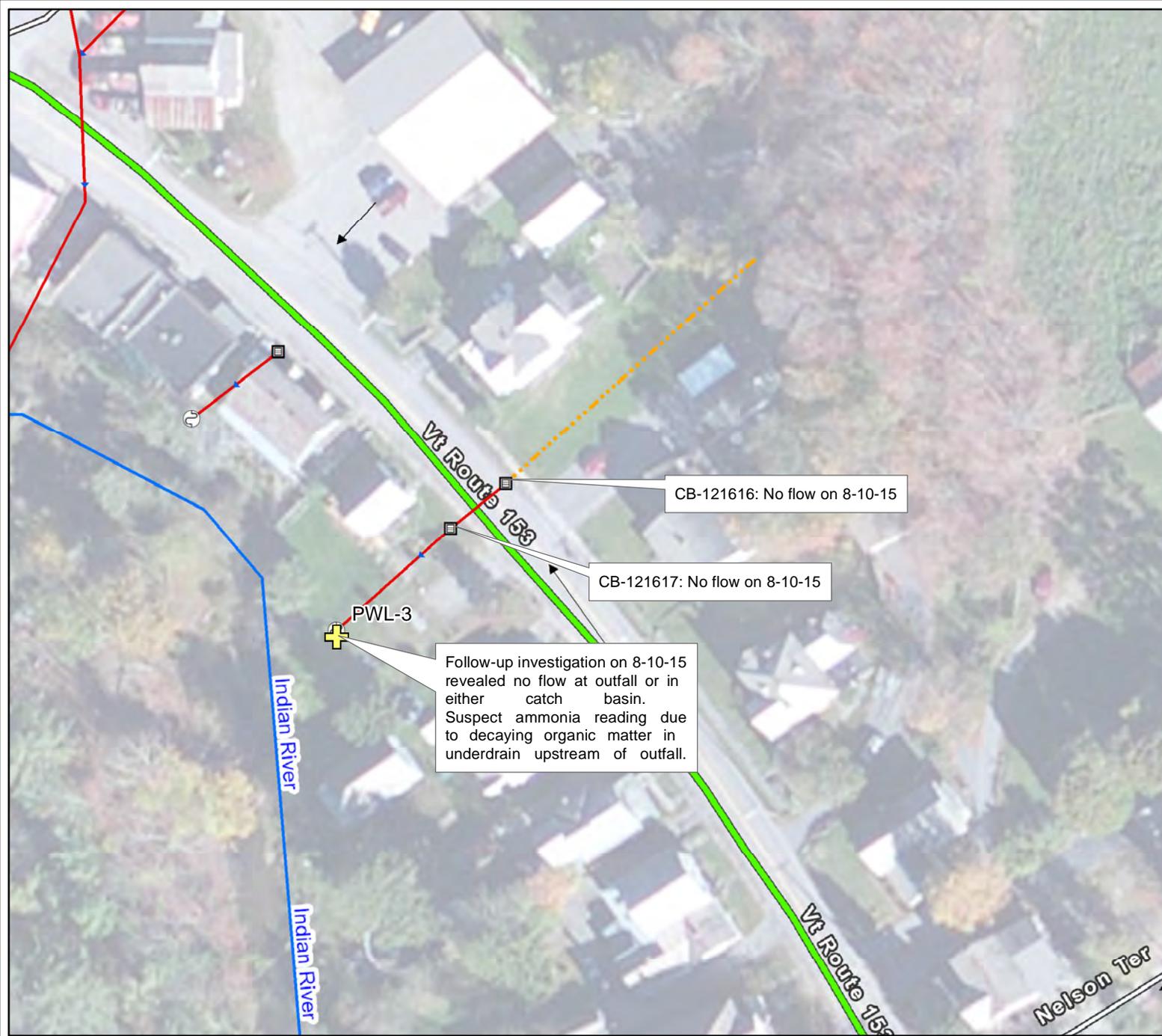
- Catchbasin
- Dry Well
- Junction Box
- Stormwater Manhole
- Sanitary Manhole
- Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow
- BMP Areas

Data: Imagery - Esri. Basemap - VCGI.
Stormwater Infrastructure - VT DEC



430 Shelburne Road
Burlington, VT
watershedca.com
802.497.2367





Pawlet IDDE
Outfall Code: PWL-3

Results:
7-9-15
pH: 7.46
Conductivity (uS/cm): 390
Temperature (C): 14.3
Ammonia (mg/L): 0.45
E. coli (MPN/100ml): Not Tested
Detergents (MBAS, ppm): 0
Chlorine (mg/L): 0
Potassium (ppm): 3
ECS Alert: N/A
TP (mg/L): Not Tested

Some pipe growth present on initial survey on 7-9-15. No flow present on return investigation on 8-10-15. Do not suspect chronic illicit discharge.

Pawlet Outfalls
Overall Characterization

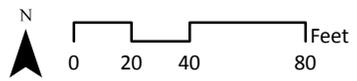
- + Possible
- + Suspect
- Catchbasin
- Dry Well
- Junction Box
- ⊗ Stormwater Manhole
- ⊗ Sanitary Manhole
- Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- - - Sanitary line
- Swale
- - - Footing drain
- - - Under drain
- - - Roof drain
- Stream
- ➔ Overland flow

Follow-up investigation on 8-10-15 revealed no flow at outfall or in either catch basin. Suspect ammonia reading due to decaying organic matter in underdrain upstream of outfall.

CB-121616: No flow on 8-10-15

CB-121617: No flow on 8-10-15

PWL-3



Data: Imagery - Esri. Basemap - VCGI.
Stormwater Infrastructure - VT DEC



Pawlet IDDE
Outfall Code: PWL-11

Flow not observed at this outfall on initial visit (7-9-15).
Working with canines on 9-1-15 (no flow observed on that date), one canine alerted at outfall.

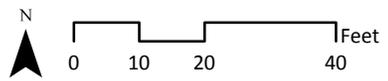
Conducted dye testing 10-26 to 10-30-15.
No dye or optical brightener observed at outfall.

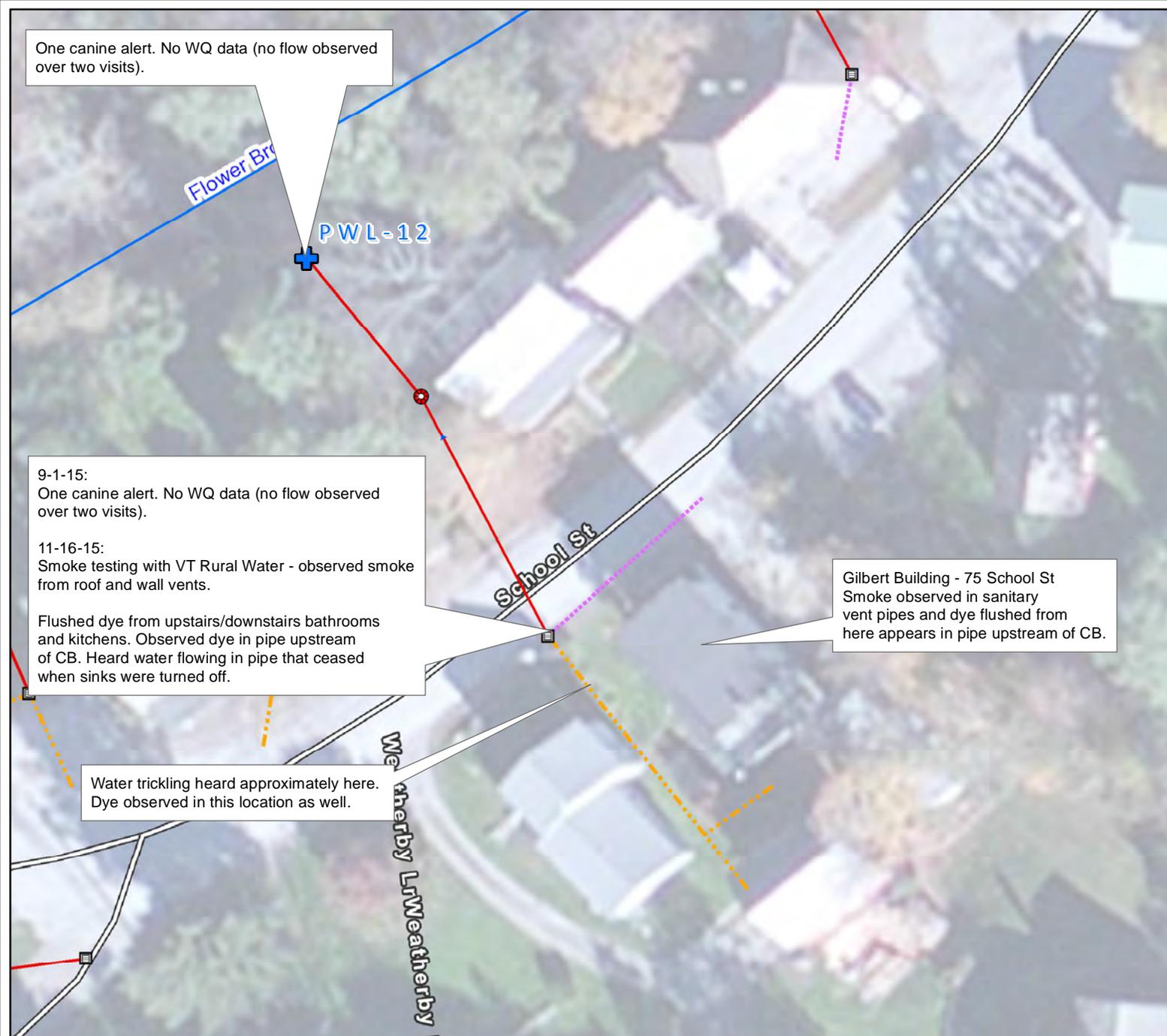
Suspect canines alerting on nearby septic tank vent pipe.

Do not suspect chronic illicit discharge.

- Pawlet_Outfalls
- Catchbasin
- Dry Well
- Junction Box
- Stormwater Manhole
- Sanitary Manhole
- Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow

Data: Imagery - Esri. Basemap - VCGI.
Stormwater Infrastructure - VT DEC





One canine alert. No WQ data (no flow observed over two visits).

9-1-15:
One canine alert. No WQ data (no flow observed over two visits).

11-16-15:
Smoke testing with VT Rural Water - observed smoke from roof and wall vents.

Flushed dye from upstairs/downstairs bathrooms and kitchens. Observed dye in pipe upstream of CB. Heard water flowing in pipe that ceased when sinks were turned off.

Water trickling heard approximately here. Dye observed in this location as well.

Gilbert Building - 75 School St
Smoke observed in sanitary vent pipes and dye flushed from here appears in pipe upstream of CB.

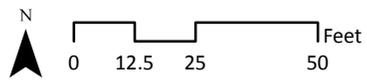
Pawlet IDDE
Outfall Code: PWL-12

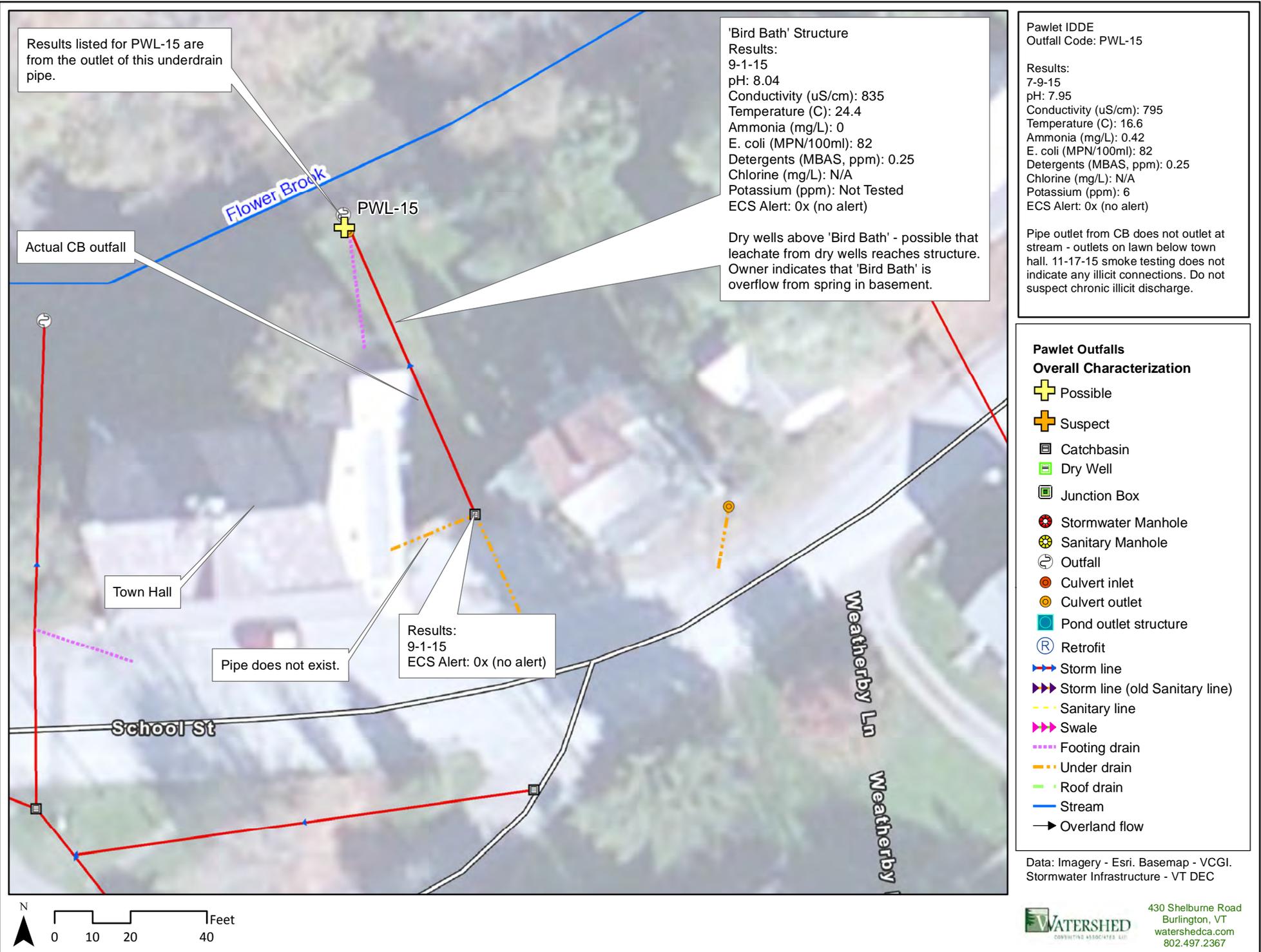
Flow not observed at this outfall on initial visit (7-9-15). Pipe mostly sediment clogged.
Working with canines on 9-1-15 (no flow observed on that date), one canine alerted on both outfall and upstream CB.

11-16-15:
Observed smoke and flushed dye later seen in pipe upstream of CB from Gilbert building. Confirmed illicit discharge.

- Pawlet_Outfalls
- Catchbasin
- Dry Well
- Junction Box
- Stormwater Manhole
- Sanitary Manhole
- Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow

Data: Imagery - Esri. Basemap - VCGI.
Stormwater Infrastructure - VT DEC





Results listed for PWL-15 are from the outlet of this underdrain pipe.

'Bird Bath' Structure
 Results:
 9-1-15
 pH: 8.04
 Conductivity (uS/cm): 835
 Temperature (C): 24.4
 Ammonia (mg/L): 0
 E. coli (MPN/100ml): 82
 Detergents (MBAS, ppm): 0.25
 Chlorine (mg/L): N/A
 Potassium (ppm): Not Tested
 ECS Alert: 0x (no alert)

Dry wells above 'Bird Bath' - possible that leachate from dry wells reaches structure. Owner indicates that 'Bird Bath' is overflow from spring in basement.

Pawlet IDDE
 Outfall Code: PWL-15

Results:
 7-9-15
 pH: 7.95
 Conductivity (uS/cm): 795
 Temperature (C): 16.6
 Ammonia (mg/L): 0.42
 E. coli (MPN/100ml): 82
 Detergents (MBAS, ppm): 0.25
 Chlorine (mg/L): N/A
 Potassium (ppm): 6
 ECS Alert: 0x (no alert)

Pipe outlet from CB does not outlet at stream - outlets on lawn below town hall. 11-17-15 smoke testing does not indicate any illicit connections. Do not suspect chronic illicit discharge.

Pawlet Outfalls
Overall Characterization

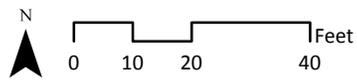
- + Possible
- + Suspect
- Catchbasin
- Dry Well
- Junction Box
- ⊗ Stormwater Manhole
- ⊗ Sanitary Manhole
- ⊗ Outfall
- ⊗ Culvert inlet
- ⊗ Culvert outlet
- ⊗ Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow

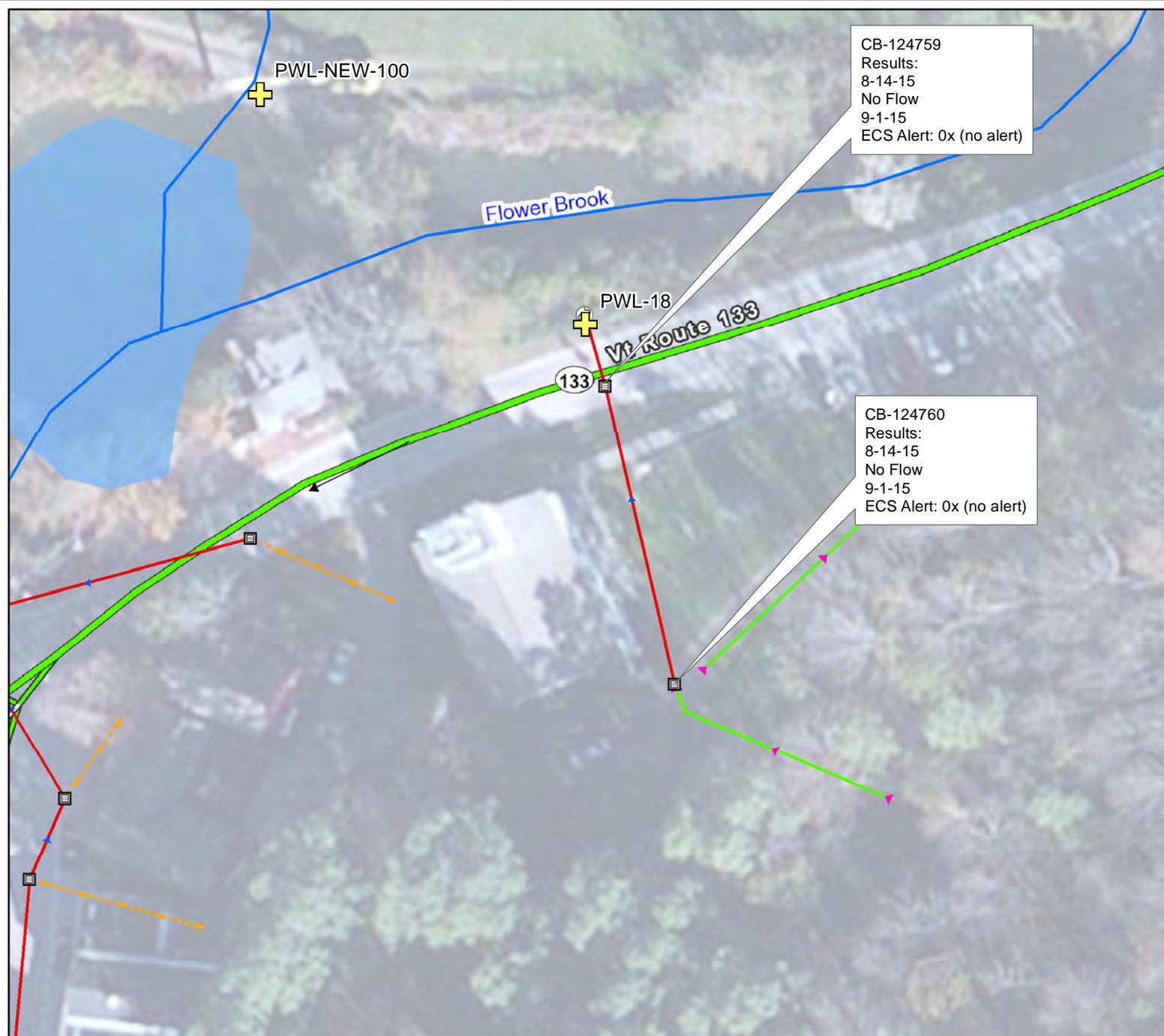
Results:
 9-1-15
 ECS Alert: 0x (no alert)

Pipe does not exist.

Town Hall

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC





CB-124759
 Results:
 8-14-15
 No Flow
 9-1-15
 ECS Alert: 0x (no alert)

CB-124760
 Results:
 8-14-15
 No Flow
 9-1-15
 ECS Alert: 0x (no alert)

Pawlet IDDE
 Outfall Code: PWL-18
 Results:
 7-9-15
 pH: 9.01
 Conductivity (uS/cm): 349
 Temperature (C): 17.1
 Ammonia (mg/L): 0.59
 E. coli (MPN/100ml): Not Tested
 Detergents (MBAS, ppm): 0
 Chlorine (mg/L): N/A
 Potassium (ppm): 1
 ECS Alert: N/A

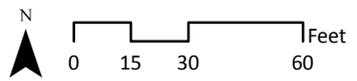
Trickle flow observed at first visit on 7-9-15. No flow on follow-up on 8-14-15. No canine alert on 9-1-15. Do not suspect illicit discharge.

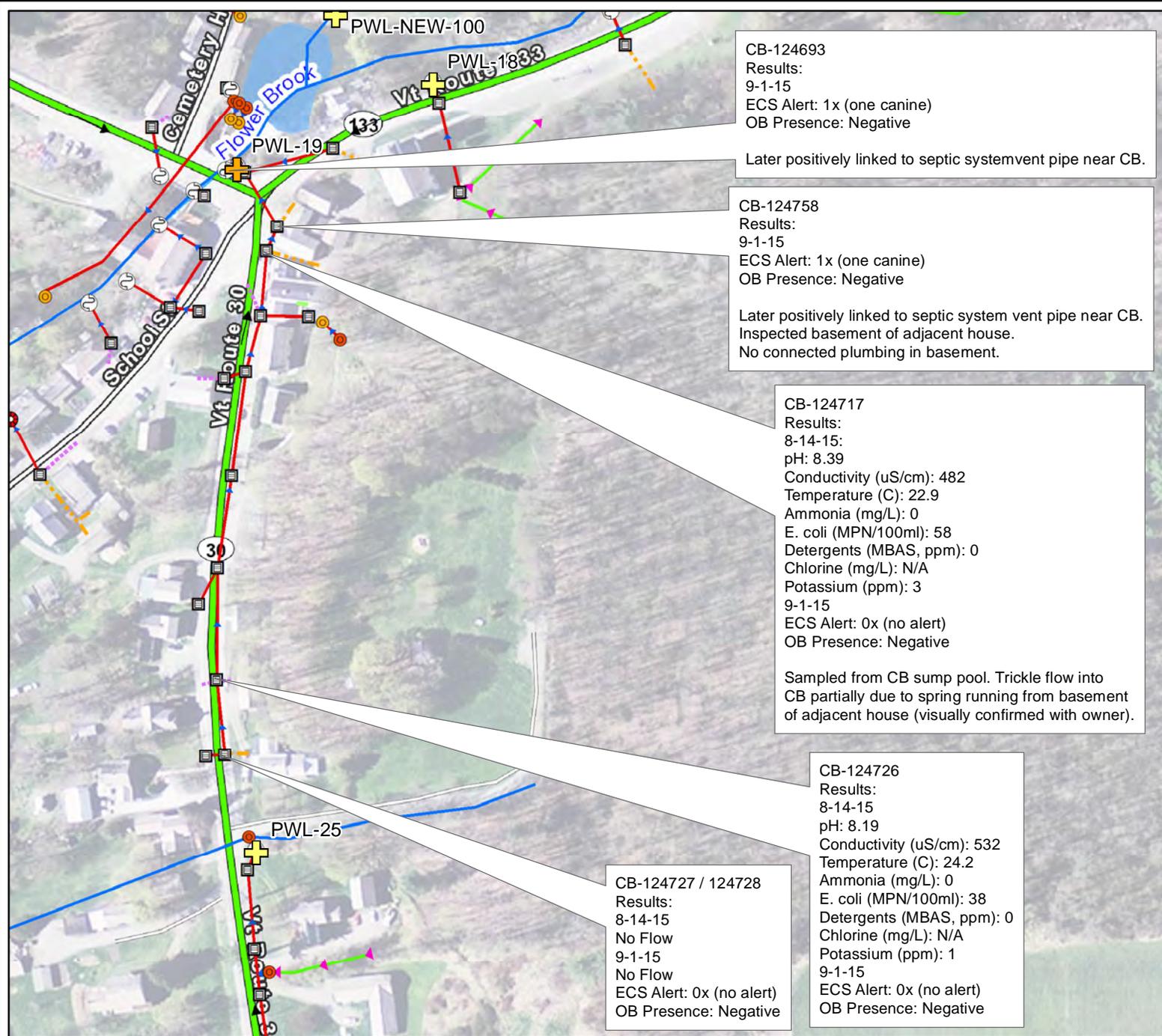
Pawlet Outfalls

Overall Characterization

- + Possible
- + Suspect
- Catchbasin
- Dry Well
- Junction Box
- Stormwater Manhole
- Sanitary Manhole
- ↻ Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- ▶▶▶ Storm line
- ▶▶▶ Storm line (old Sanitary line)
- Sanitary line
- ▶▶▶ Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- ▶ Overland flow

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC





CB-124693
 Results:
 9-1-15
 ECS Alert: 1x (one canine)
 OB Presence: Negative
 Later positively linked to septic system vent pipe near CB.

CB-124758
 Results:
 9-1-15
 ECS Alert: 1x (one canine)
 OB Presence: Negative
 Later positively linked to septic system vent pipe near CB. Inspected basement of adjacent house. No connected plumbing in basement.

CB-124717
 Results:
 8-14-15:
 pH: 8.39
 Conductivity (uS/cm): 482
 Temperature (C): 22.9
 Ammonia (mg/L): 0
 E. coli (MPN/100ml): 58
 Detergents (MBAS, ppm): 0
 Chlorine (mg/L): N/A
 Potassium (ppm): 3
 9-1-15
 ECS Alert: 0x (no alert)
 OB Presence: Negative
 Sampled from CB sump pool. Trickle flow into CB partially due to spring running from basement of adjacent house (visually confirmed with owner).

CB-124726
 Results:
 8-14-15
 pH: 8.19
 Conductivity (uS/cm): 532
 Temperature (C): 24.2
 Ammonia (mg/L): 0
 E. coli (MPN/100ml): 38
 Detergents (MBAS, ppm): 0
 Chlorine (mg/L): N/A
 Potassium (ppm): 1
 9-1-15
 ECS Alert: 0x (no alert)
 OB Presence: Negative

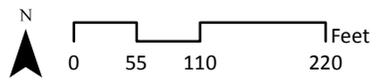
CB-124727 / 124728
 Results:
 8-14-15
 No Flow
 9-1-15
 No Flow
 ECS Alert: 0x (no alert)
 OB Presence: Negative

Pawlet IDDE
 Outfall Code: PWL-19
 Results:
 Could not reach outfall to obtain sample on 7-9-15. Later returned and sampled from upstream CB-124717 on 8-14-15. Results on map.
 No evidence of optical brighteners anywhere in line.
 Smoke tested this line 11-17-15. No evidence of illicit connections from smoke testing.
 Do not suspect chronic illicit discharge.

Pawlet Outfalls
Overall Characterization

- + Possible
- + Suspect
- Catchbasin
- Dry Well
- Junction Box
- ⊗ Stormwater Manhole
- ⊗ Sanitary Manhole
- ↻ Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- ↗↗↗ Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow

Data: Imagery - Esri. Basemap - VCGI. Stormwater Infrastructure - VT DEC





Pawlet IDDE
 Outfall Code: PWL-22

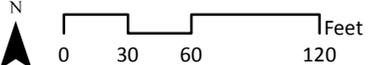
Results:
 7-9-15
 pH: 8.56
 Conductivity (uS/cm): 525
 Temperature (C): 18.1
 Ammonia (mg/L): 0.71
 E. coli (MPN/100ml): Not Tested
 Detergents (MBAS, ppm): 0
 Chlorine (mg/L): N/A
 Potassium (ppm): 2
 ECS Alert: N/A

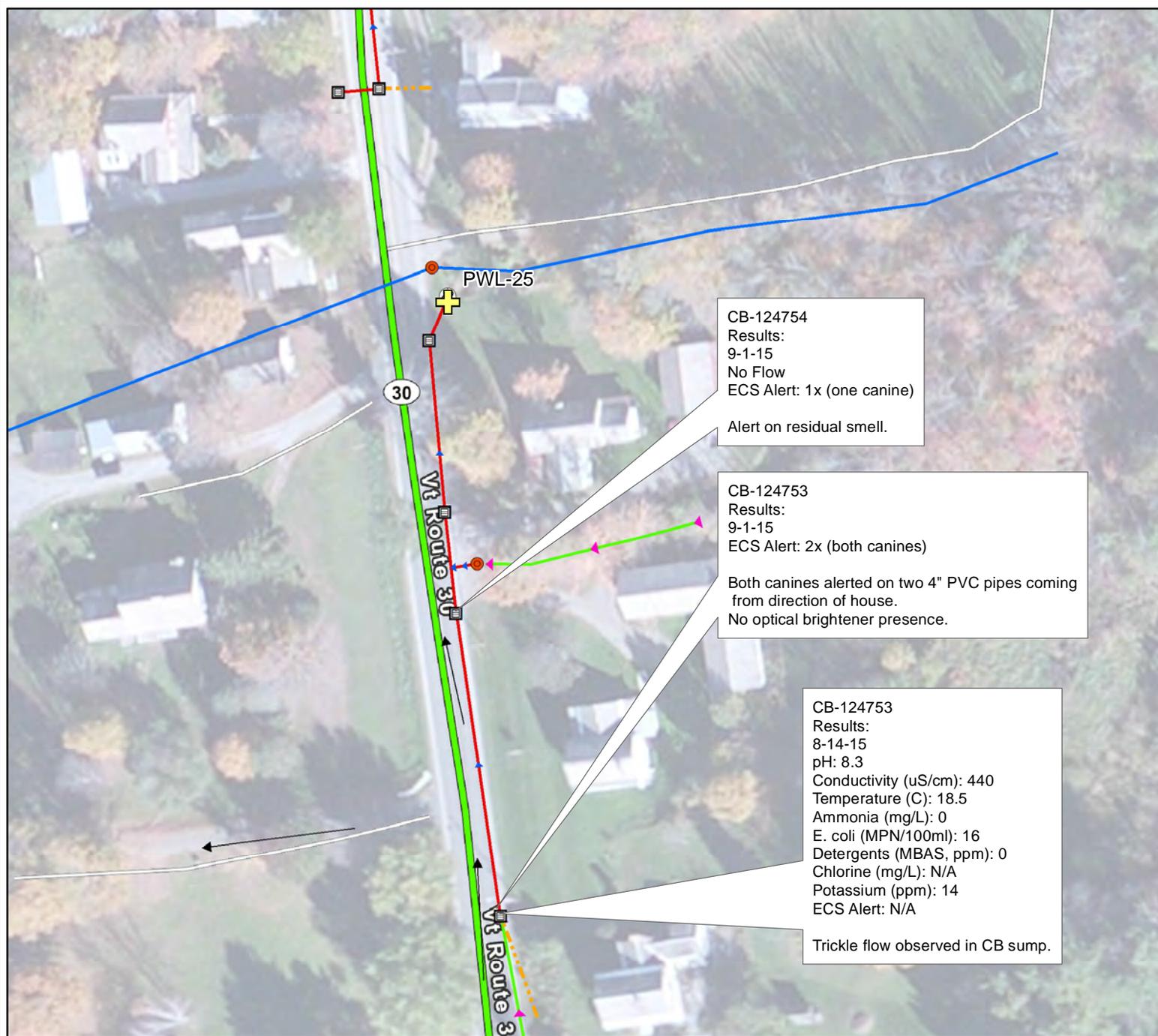
Trickle flow observed on 6-16-15. No flow observed on follow-up visit on 8-10-15. Canines did not alert on 9-1-15. Do not suspect illicit discharge.

Pawlet Outfalls
Overall Characterization

- + Possible
- + Suspect
- Catchbasin
- Dry Well
- Junction Box
- ⊗ Stormwater Manhole
- ⊗ Sanitary Manhole
- ⊗ Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- ▶▶▶ Storm line
- ▶▶▶ Storm line (old Sanitary line)
- - - Sanitary line
- ▶▶▶ Swale
- - - Footing drain
- - - Under drain
- - - Roof drain
- Stream
- Overland flow

CB-124750
 Results:
 8-10-15
 No Flow
 9-1-15
 ECS Alert: 0x (no alert)





Pawlet IDDE
Outfall Code: PWL-25

Results:
7-9-15
pH: 8.54
Conductivity (uS/cm): 443
Temperature (C): 16.3
Ammonia (mg/L): 0.60
E. coli (MPN/100ml): Not Tested
Detergents (MBAS, ppm): 0
Chlorine (mg/L): N/A
Potassium (ppm): 2
ECS Alert: N/A

Trickle flow observed on 7-9-15.
Unable to smoke test (pipes too small).
Optical Brighteners - No Presence.
Do not suspect chronic illicit discharge.

CB-124754
Results:
9-1-15
No Flow
ECS Alert: 1x (one canine)

Alert on residual smell.

CB-124753
Results:
9-1-15
ECS Alert: 2x (both canines)

Both canines alerted on two 4" PVC pipes coming from direction of house.
No optical brightener presence.

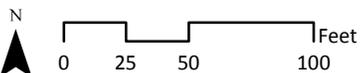
CB-124753
Results:
8-14-15
pH: 8.3
Conductivity (uS/cm): 440
Temperature (C): 18.5
Ammonia (mg/L): 0
E. coli (MPN/100ml): 16
Detergents (MBAS, ppm): 0
Chlorine (mg/L): N/A
Potassium (ppm): 14
ECS Alert: N/A

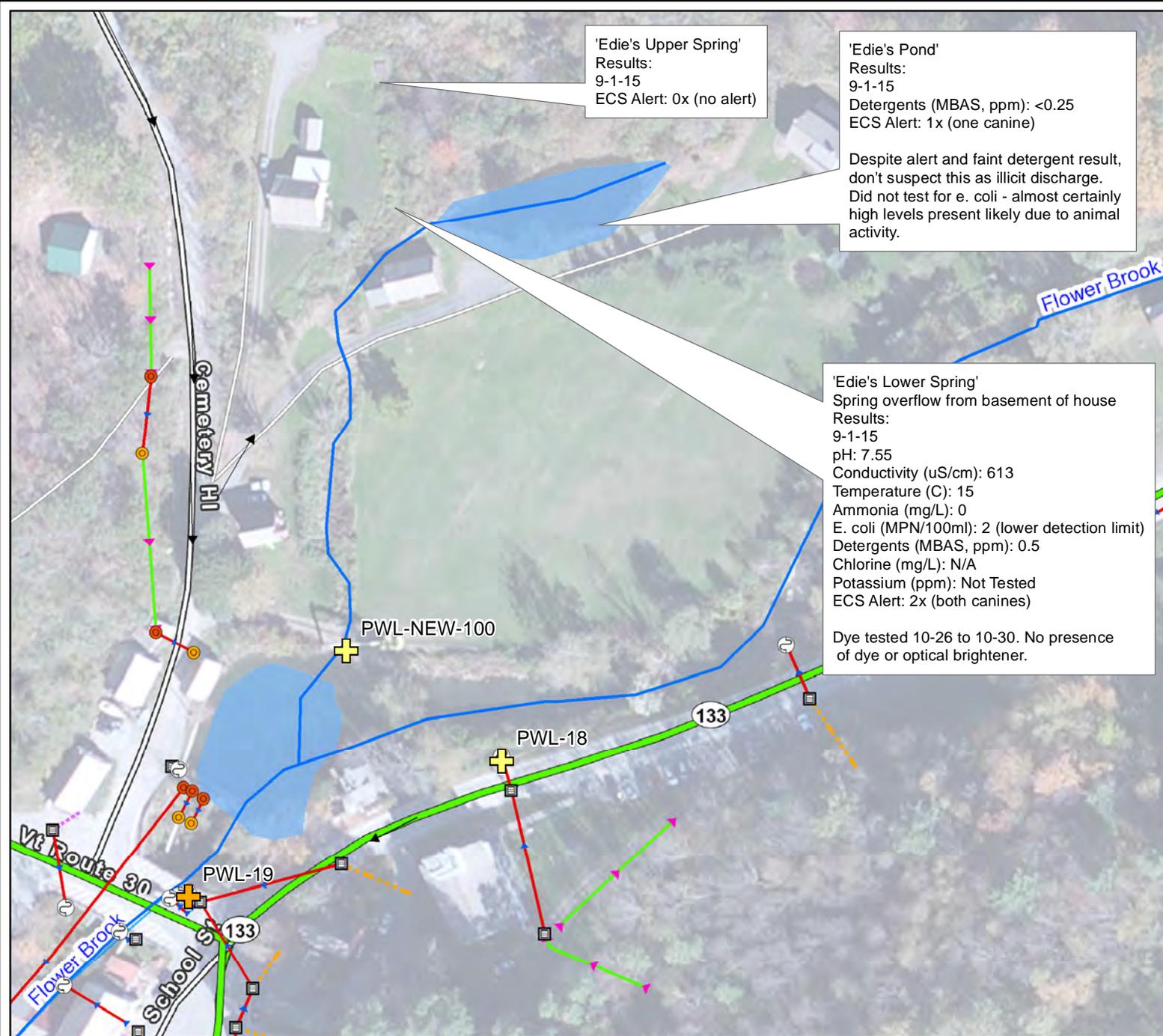
Trickle flow observed in CB sump.

Pawlet Outfalls
Overall Characterization

- + Possible
- + Suspect
- Catchbasin
- Dry Well
- Junction Box
- ⊗ Stormwater Manhole
- ⊗ Sanitary Manhole
- ↻ Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- ▶▶▶ Storm line
- ▶▶▶ Storm line (old Sanitary line)
- Sanitary line
- ▶▶ Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow

Data: Imagery - Esri. Basemap - VCGI.
Stormwater Infrastructure - VT DEC





'Edie's Upper Spring'
Results:
9-1-15
ECS Alert: 0x (no alert)

'Edie's Pond'
Results:
9-1-15
Detergents (MBAS, ppm): <0.25
ECS Alert: 1x (one canine)

Despite alert and faint detergent result, don't suspect this as illicit discharge. Did not test for e. coli - almost certainly high levels present likely due to animal activity.

'Edie's Lower Spring'
Spring overflow from basement of house
Results:
9-1-15
pH: 7.55
Conductivity (uS/cm): 613
Temperature (C): 15
Ammonia (mg/L): 0
E. coli (MPN/100ml): 2 (lower detection limit)
Detergents (MBAS, ppm): 0.5
Chlorine (mg/L): N/A
Potassium (ppm): Not Tested
ECS Alert: 2x (both canines)

Dye tested 10-26 to 10-30. No presence of dye or optical brightener.

Pawlet IDDE
Outfall Code: PWL-New-100

Results:
pH: 8.09
Conductivity (uS/cm): 510
Temperature (C): 19.5
Ammonia (mg/L): 0.94
E. coli (MPN/100ml): 120
Detergents (MBAS, ppm): 0.25
Chlorine (mg/L): N/A
Potassium (ppm): 10
ECS Alert: N/A

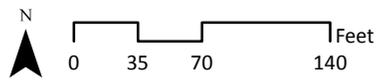
Outfall is culvert from channel below pond. Flow observed on 7-9-15 and 8-14-15 (follow-up sample for bacteria). Do not suspect chronic illicit discharge.

Pawlet Outfalls

Overall Characterization

- + Possible
- + Suspect
- Catchbasin
- Dry Well
- Junction Box
- ⊗ Stormwater Manhole
- ⊗ Sanitary Manhole
- Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- ▶▶▶ Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow

Data: Imagery - Esri. Basemap - VCGI.
Stormwater Infrastructure - VT DEC



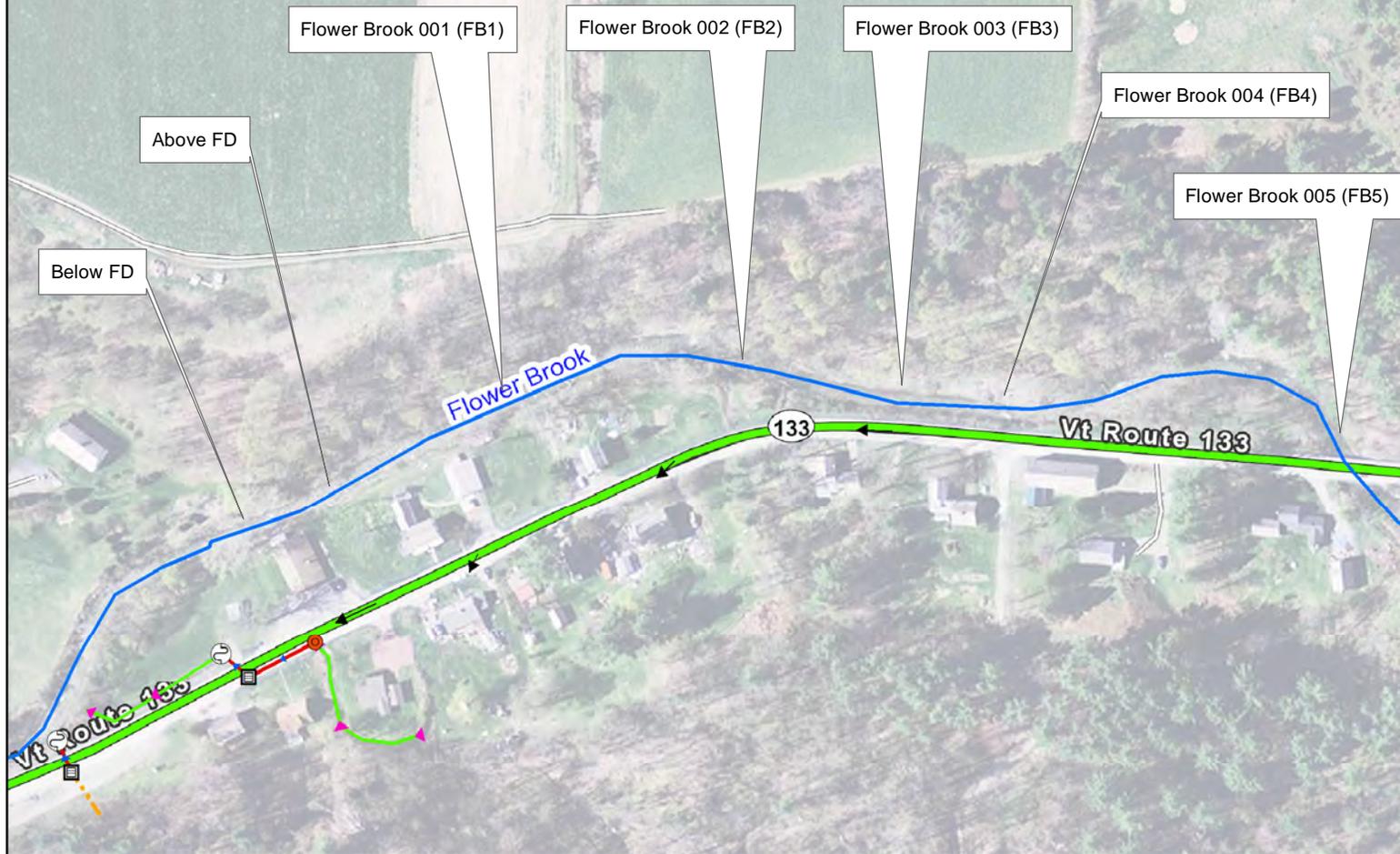
Type of Infrastructure	ID/Description	K9 Logan Response	K9 Sable Response	K9 Logan Response 2nd Time	K9 Sable Response 2nd Time
WS	Field blank	N	N	N	N
WS	FB1	N	Y	N	N
WS	FB2	Y	N	N	Y
WS	FB3	Y	N	Y	N
WS	FB4	N	N	Y	N
WS	Field blank	N	N	N	N
WS	FB5	Y	N	Y	N
WS	Below FD	N	Y	N	Y
WS	Above FD	Y	Y	Y	N

Pawlet IDDE
 Outfall Code: Flower Brook Sampling
 9-1-15

In an attempt to bracket possible septic input to Flower Brook, samples were obtained by a stream walk. Samples were then brought back to the canine team for analysis. Samples were tested twice.

The only sample to obtain a hit in full agreement was the 'Above FD' sample.

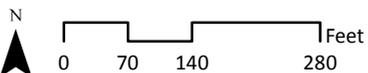
Canines alerted independently on other samples, but rarely agreed.



Pawlet Outfalls Overall Characterization

- + Possible
- + Suspect
- Catchbasin
- Dry Well
- Junction Box
- Stormwater Manhole
- Sanitary Manhole
- Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Retrofit
- Storm line
- Storm line (old Sanitary line)
- Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- Overland flow

Data: Imagery - Esri. Basemap - VCGI.
 Stormwater Infrastructure - VT DEC





Pawlet IDDE
Outfall Code: Mill Pond

Results:
7-9-15

WCA performed a preliminary bracketing of the Mill Pond in Pawlet for E. coli bacteria.

The results show a small increase from upstream to downstream. This may indicate that the Mill Pond harbors indigenous populations of bacteria in the accumulated sediment. There is some literature which supports this but without further sampling, this conclusion is very preliminary.

**Pawlet Outfalls
Overall Characterization**

- + Possible
- + Suspect
- Catchbasin
- Dry Well
- Junction Box
- ⊗ Stormwater Manhole
- ⊗ Sanitary Manhole
- ⊗ Outfall
- Culvert inlet
- Culvert outlet
- ⊗ Pond outlet structure
- Retrofit
- ▶▶▶ Storm line
- ▶▶▶ Storm line (old Sanitary line)
- Sanitary line
- ▶▶▶ Swale
- Footing drain
- Under drain
- Roof drain
- Stream
- ▶ Overland flow

Data: Imagery - Esri. Basemap - VCGI.
Stormwater Infrastructure - VT DEC

