

**The Buzzards Bay Stormwater Collaborative
Illicit Discharge Investigation Trailer**



Town of Wareham Report

November 2nd, 2022

MassDEP MS4 Municipal Assistance Grant Program 2020-2021

MassDEP MS4 Municipal Assistance Grant Program 2021-2022

FY23 Stormwater Contract IDDE Trailer

Collaborative Partners: Massachusetts Maritime Academy, Buzzards Bay National Estuary Program and the municipalities of Bourne, Wareham, Marion, Mattapoisett, Fairhaven, Acushnet, Dartmouth, and Westport.

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Wareham IDDE Report

Illicit Discharge Detection and Elimination Field Work during June 7th- 10th of 2021, March 21st- 24th, August 15th- 17th, September 26th-28th, October 24th-26th, and November 28th-30th of 2023, March 20th-23rd of 2023, April 18th- 20th of 2023, and May 15th-18th of 2023.

This report summarizes the findings from the Buzzards Bay Stormwater Collaborative discharge investigation under the 2021 MassDEP Stormwater Investigation Trailer grant, the 2022 MassDEP Stormwater Investigation Trailer grant, and a contract between the town of Wareham and Massachusetts Maritime Academy for the fiscal year of 2023. A total of 121 storm drain networks were examined for illicit connections. Each storm drain network is a collection of connected structures that discharge to one point and is referred to by the facility ID of the outfall pipe. Each network is a reflection of the stormwater catchment in which the structures collect stormwater and runoff. The purpose of an IDDE is to detect illicit connections that do not comply with the MS4 permit for stormwater discharges. There were no illicit connections detected in the observed storm drain networks. The stormdrain issues found are minor and itemized in this report with recommendations of possible actions to address.

Within the networks surveyed, each structure was opened by the DPW and inspected for evidence of illicit connections. Any indications of odors, unusual colors, excessive trash or debris, sheens, suds, or structural issues were recorded. Each pipe entering the structure was recorded for size, material type, and invert from the rim. Dry weather flow and standing water in the structure were also recorded. Direction to adjacent structures were verified and pipes with no apparent connection were checked with a camera or other method to best determine the situation. In areas with potential for a sewer cross connection the camera was used to inspect the pipe.

Some general observations for all the catchments visited: catchbasins are poorly maintained and several had debris accumulate to the rim; roadways and sidewalks were clean of pet waste in most areas; and there were few sump pump and yard drain connections to catchbasins. In addition, there were several stormwater structures in need of repair.

The data collected was used to update the Buzzards Bay National Estuary Program stormwater GIS. Despite the extensive mapping of the Wareham drain network that the team started with before the investigation, there were opportunities for many corrections and additions while going through the investigation process. Updated maps depicting the inspected networks are included below. Red stars indicate outfall pipes, light blue squares show catchbasins, brown circles show drain manholes, and blue lines show connecting pipes. Drainage interconnections, if present, are shown as red circles filled with yellow. Issues found within the network are annotated. Issues and recommendations are included in the text below each map.

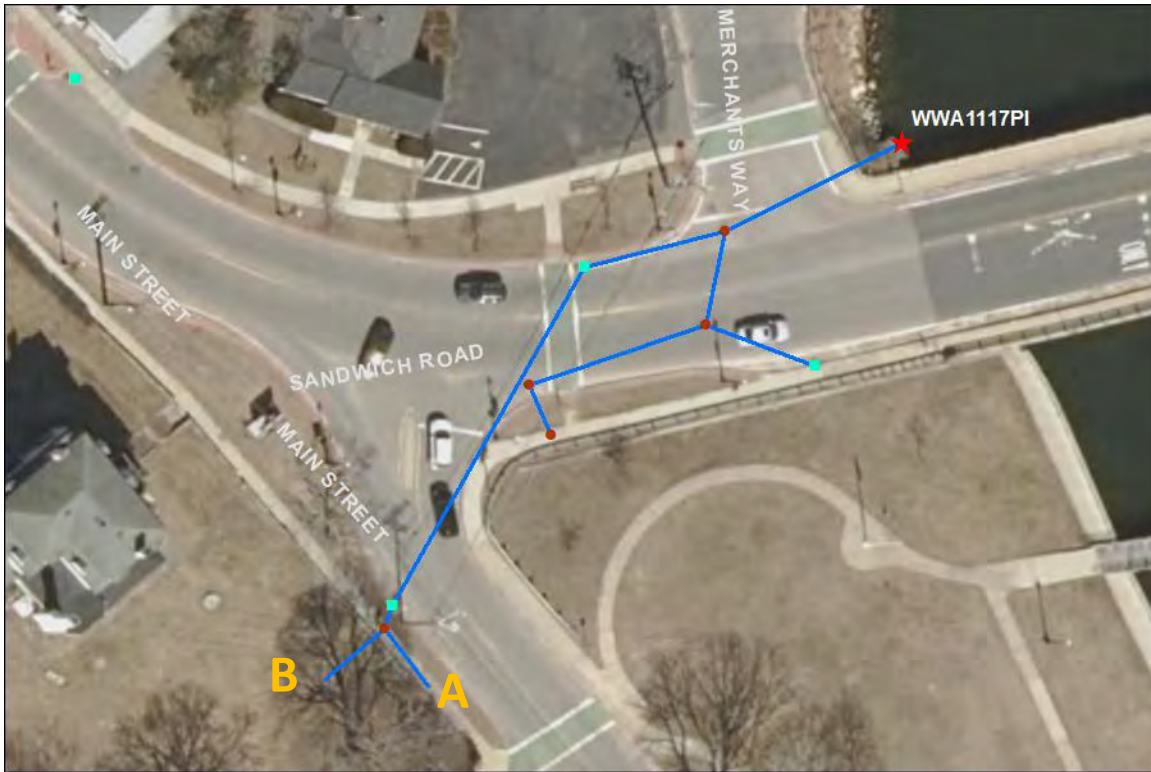
The areas inspected were the drain networks flowing into the Wareham River in Wareham Village from British Landing to Center Park and the Parkwood neighborhood. Portions of some networks flowing West to Broad Marsh were also inspected. The second round focused on the neighborhoods North of Onset Avenue in Onset. The third round included the Jefferson Shore neighborhood as well as the neighborhoods adjacent to Main Avenue. The final round of FY23 focused on the Swifts Beach area. Below are the observations made for each of the 121 stormdrain systems. Each drain system is referenced by the facility ID of the outfall pipe and/or street name.



WWA1087PI, WWA1094PI, and WWA1103PI – Church Avenue and Warr Avenue: No issues found; the outfall for WWA1094PI could not be located.



WWA1114PI and WWA1351PI – Main Street: No issues found; trash was observed in several catch basins; catch basin at Besse Park was full to rim; WWA1108PI network on private property, not inspected.



WWA1117PI – Main Street: No issues found; pipe at location A was connected to structures now removed with hospital construction; pipe at location B comes from hospital property under new parking area.



WWA1121PI – Merchants Way: No issues found; manhole at location A appears to be an unused interface with the sewage pump station; area at location B connectivity to network not determined; requires follow-up.



WWA1124PI and WWA1122PI – Merchants Way: No issues found; excessive trash in many of the catchbasins; pipe at location A in front of the Jugg Shop may have a connection or a crack with groundwater flowing; recommend sampling at manhole to the East; Center Street requires further investigation; manhole at location B could not be easily opened; recommend follow-up inspection; most catchbasins on Merchants Way are rusted to the frames causing the frames to come up with the grate. Further maintenance is strongly recommended.



WWA1133PI – Main Street: No issues found but most structures too full to inspect; unresolved connectivity; recommend follow-up. Further maintenance is strongly recommended.



WWA1135PI and WWA1136PI – Main Street: No issues found but most structures too full to inspect; it's suspected that WWA1136PI is an inlet instead of an outfall.



WWA1141PI – Main Street: No issues found but most structures were too full to inspect. Further maintenance is strongly recommended.



High Street: No issues found; partial network inspection; this area drains to Broad Marsh; new asphalt on road – seen observed in structures; wildlife intrusion detected but no action required.



High Street: No issues found; partial network inspection; new asphalt on road – seen observed in structures; this area drains to Broad Marsh.



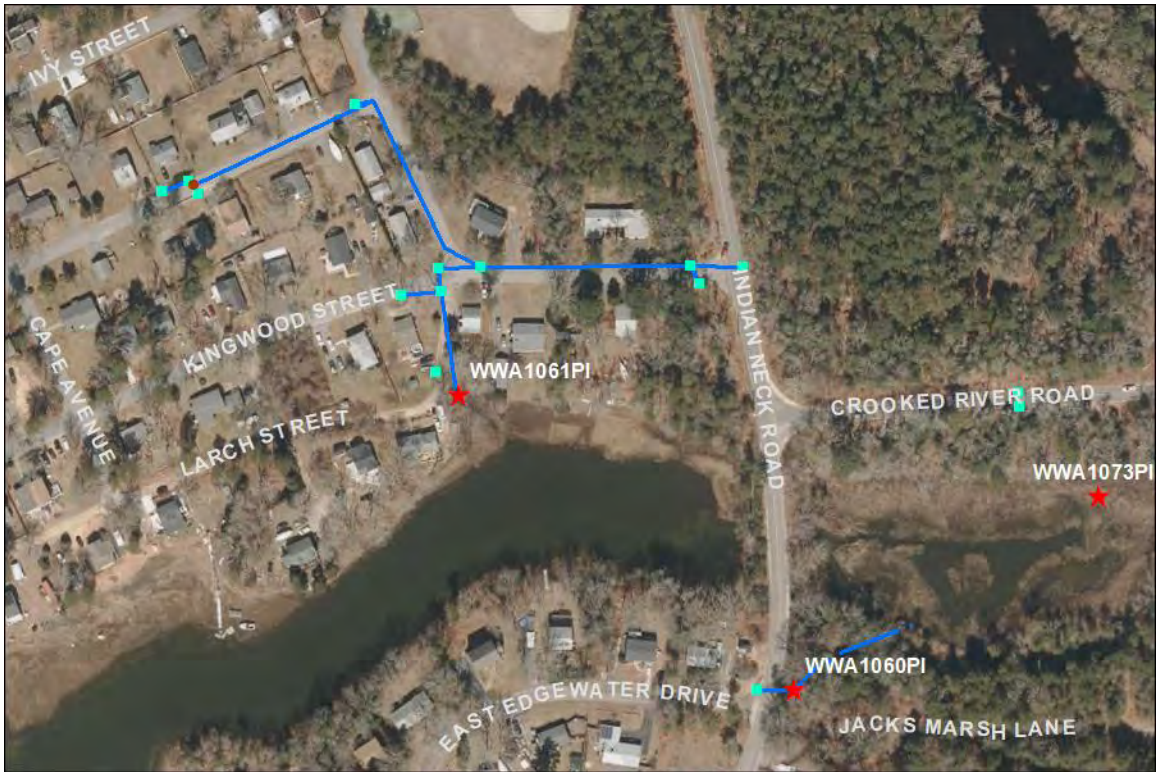
High Street: No issues found; partial network inspection; new asphalt on road – seen observed in structures; this area drains to Broad Marsh.



WWA1020PI, WWA1026PI, WWA1040PI, WWA1352PI, and WWA1029PI – Edgewater Drive and Alden Road: No issues found; at location A homeowner stacked bricks on catch basin preventing access.



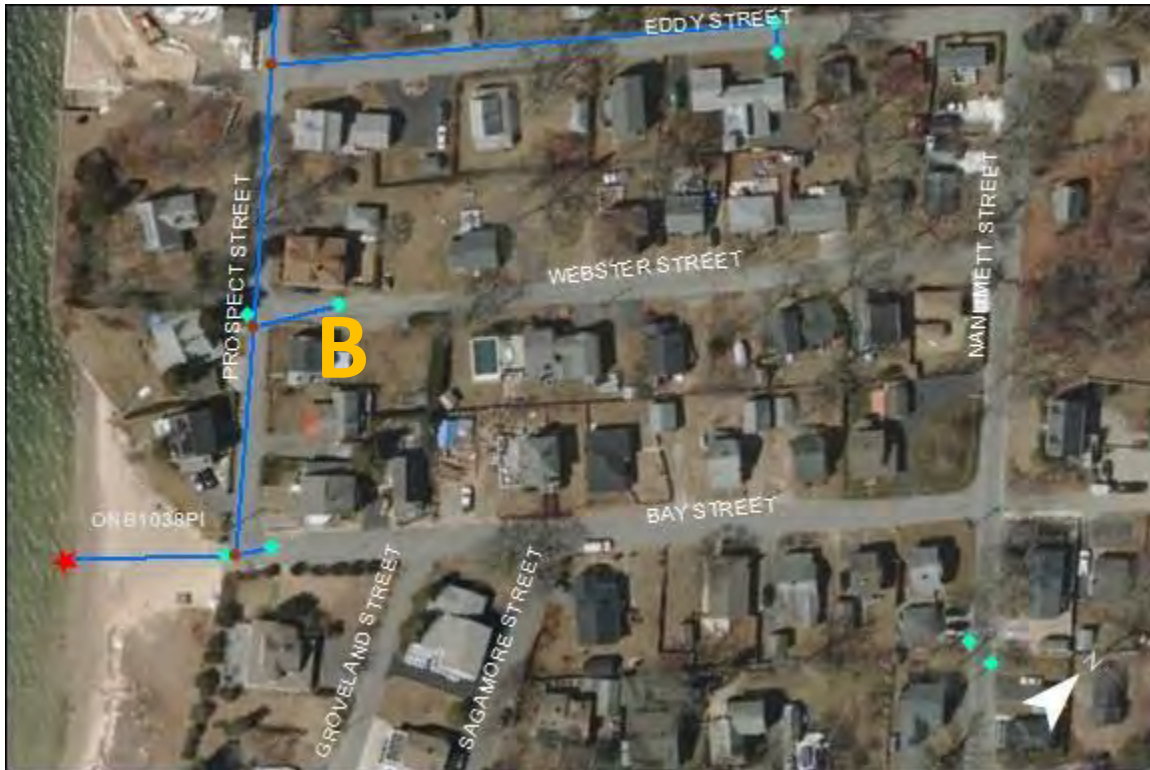
WWA1038PI and WWA1039PI – Indian Neck Road and Alden Road: No issues found.



WWA1060PI and WWA1061PI – Indian Neck Road and Larch Street: No issues found; catchbasins at Kingwood were too full to inspect.



WWA1054PI, WWA1058PI, WWA1354PI, and WWA1353PI – Parkwood Drive: Minor issue found; at location A an odor was detected; recommend sampling outfall pipe during rain.



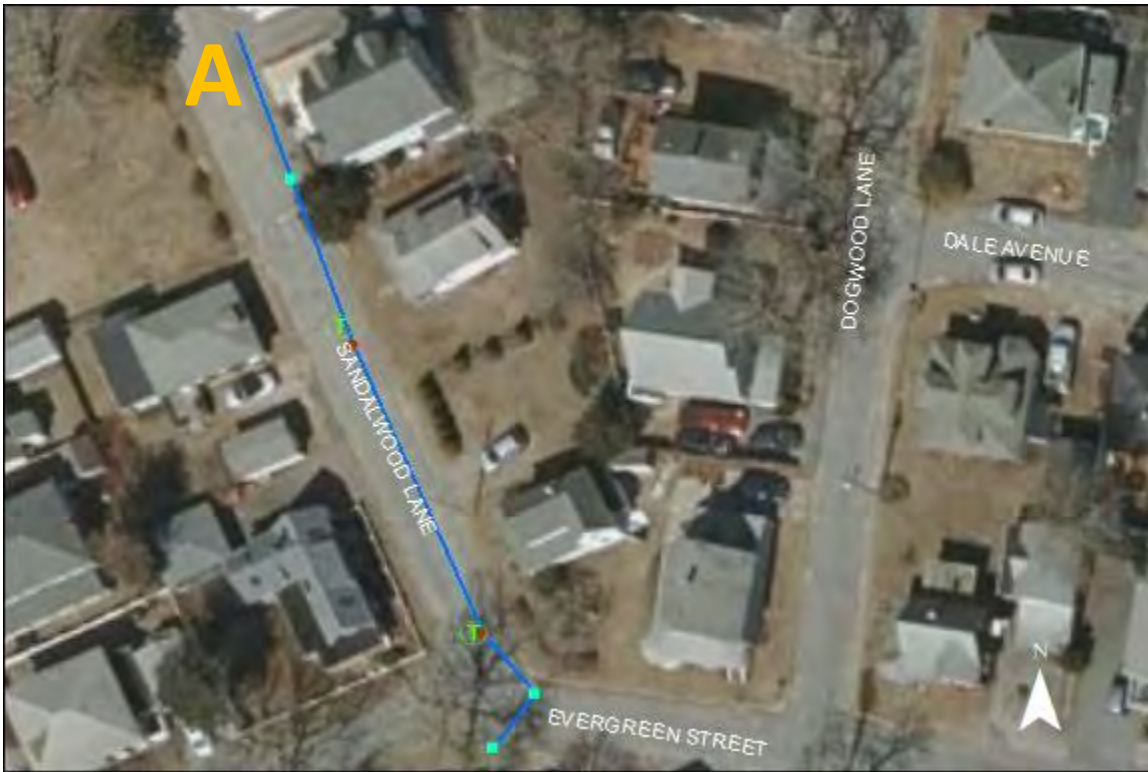
ONB1038PI- Prospect Street, Bay Street, Webster Street, Eddy Street, Mason Street, and Andrews Street: The catch basins at point A and B have begun to sink. Structures need to be repaired.



ONB1058PI- Mason Street Extension, Andrews Street, Odysseys Drive, and Charlie Avenue: No issues found.
ONB1056PI does not exist. Entire catchment drains to ONB1058PI.



ONB1040PI- Gray Street and Maple Street: Pipe shown at point A is extremely blocked, most likely collapsed. Flooding occurs in the boat yard and at the Northwest catch basins shown at point B. Blockage of pipe needs to be repaired.



Sandalwood Lane: No issues found. Catchment drains into underground treatment structures. At point A there is an incoming pipe. Its origin is unknown. Further investigation is suggested.



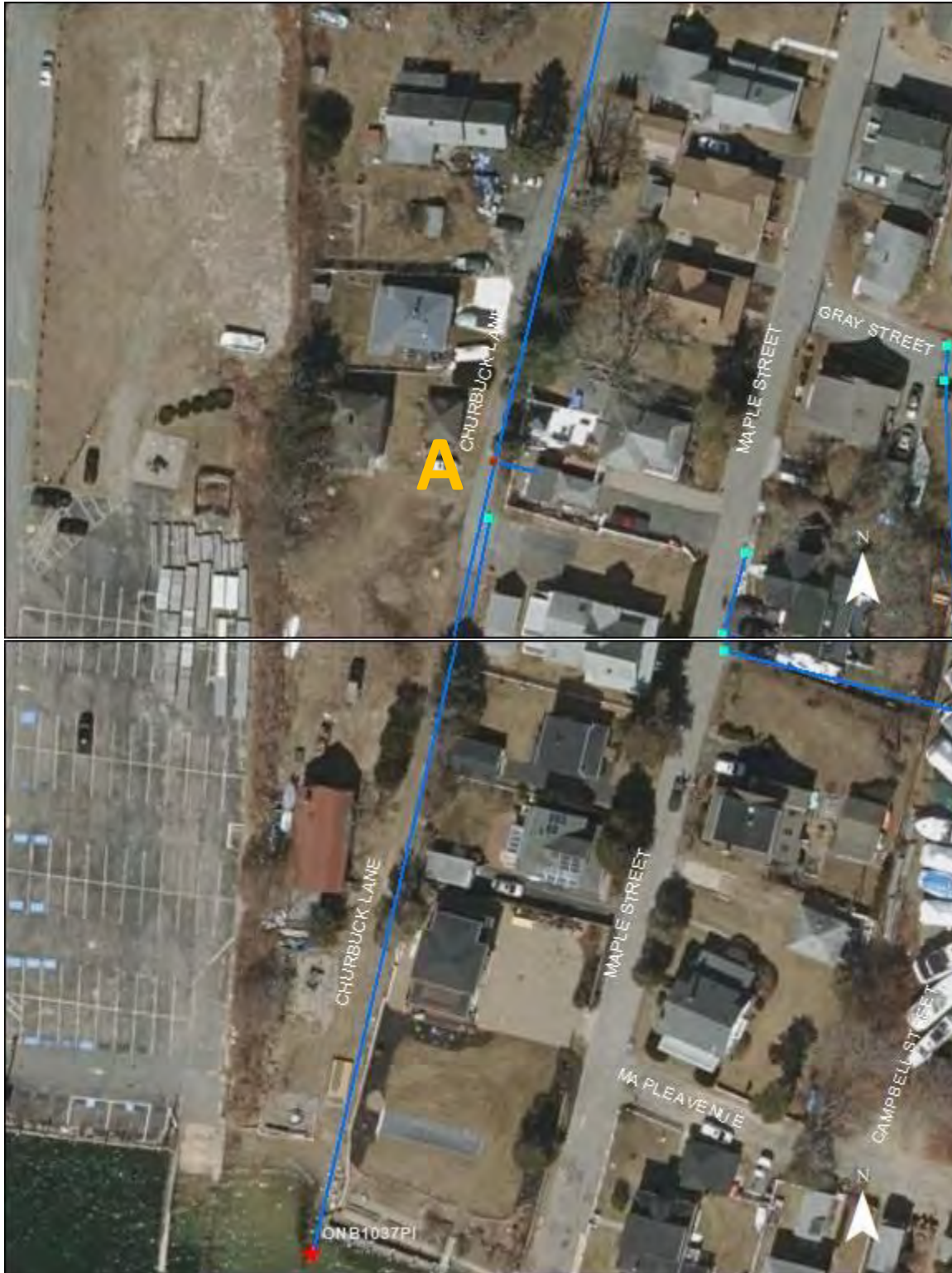
Sandalwood Lane and Cottonwood Avenue: No issues found. Both catchments drain to underground treatment structures.



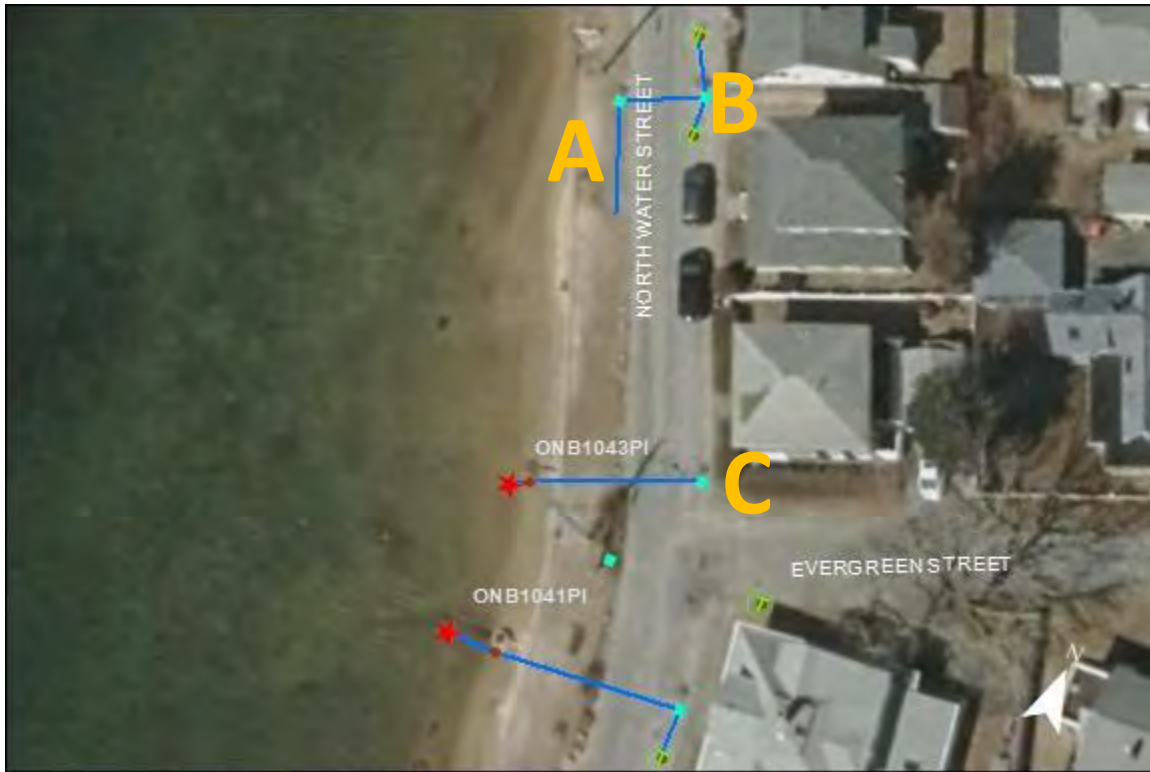
ONB1068PI- Grandview Avenue at Pleasantview Road: Catch Basins were full of sand. They need to be cleaned out and reinspected. At point A, a pipe enters and exits the catch basin. The origin and destination of these pipes are unknown. At point B the catch basin has begun to sink. Preventative measures are suggested. Further maintenance and investigation is strongly encouraged.



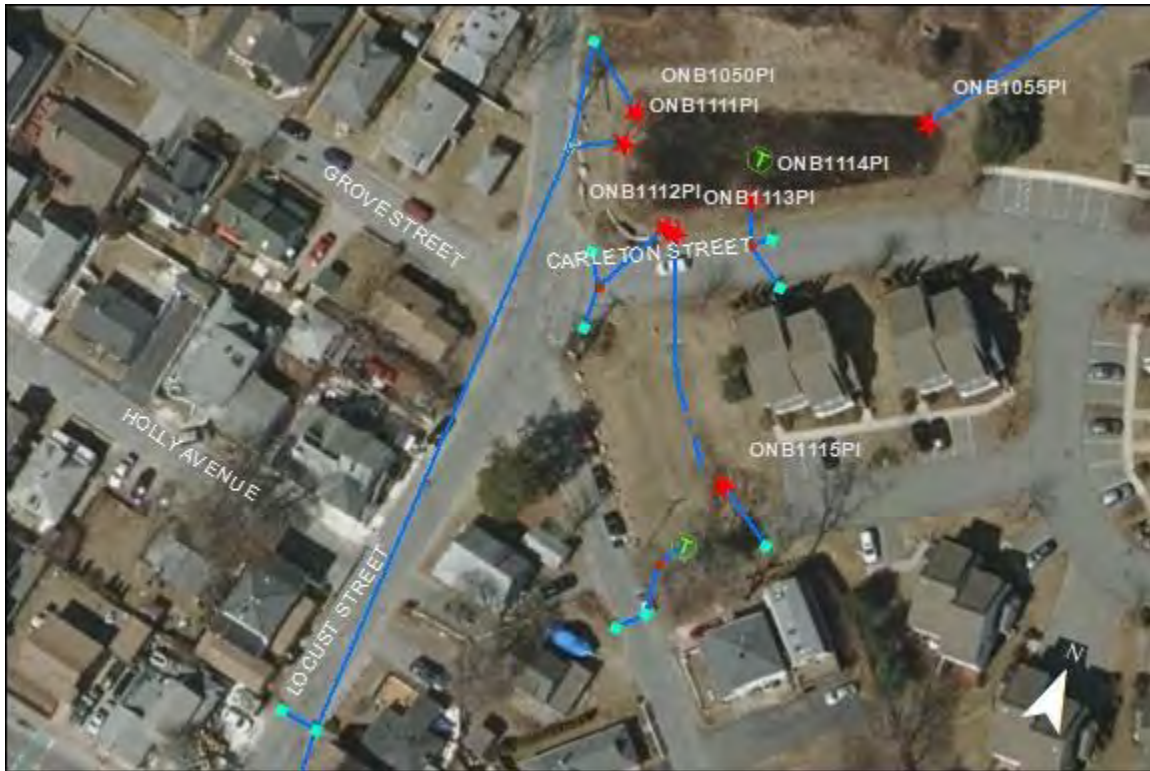
ONB1063PI- Grandview Avenue at Fairmount Road: Structures were full of sand. They need to be cleaned out and reinspected. A pipe enters the catch basin at point A. Its origin is unknown. Further maintenance and investigation is strongly encouraged.



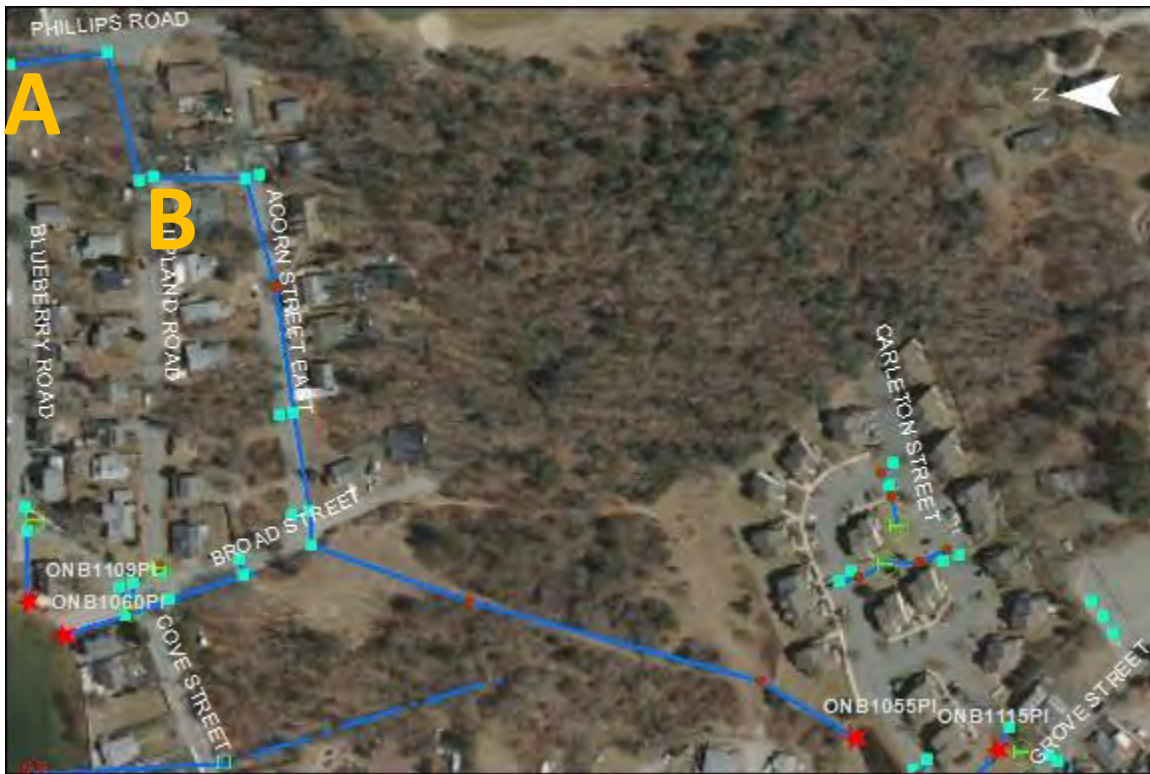
ONB1037PI- Churbeck Lane: No significant issues found. At point A, a pipe enters the manhole. Its origin is unknown. Further investigation is suggested. The catchment continues onto Onset Avenue. A police detail is needed to complete the investigation of the entire catchment.



ONB1043PI and ONB1041PI- North Water Street: Manholes just before both outfalls are extremely debilitated and pose a risk to unsuspected persons. Immediate attention is recommended. At point A, a pipe enters the catchbasin. Its origin is unknown. Further investigation is recommended. At point B and C, the catchbasins have begun to sink. Preventative measures are recommended.



ONB1050PI, ONB1111PI, ONB1112PI, ONB1113PI, ONB1114PI, ONB1115PI- Locust Street and Carleton Street: No issues found.



ONB1055PI- Acorn Street East, Upland Road, and Phillips Road: At point A the catch basin is extremely clogged and in need of cleaning. At point B the catch basin is in need of repair. Further attention is recommended.



ONB1109PI- Grandview Avenue at Blueberry Road: Manhole at point A is full of sand. Catchment is in need of cleaning and reinspection. Further action is recommended.



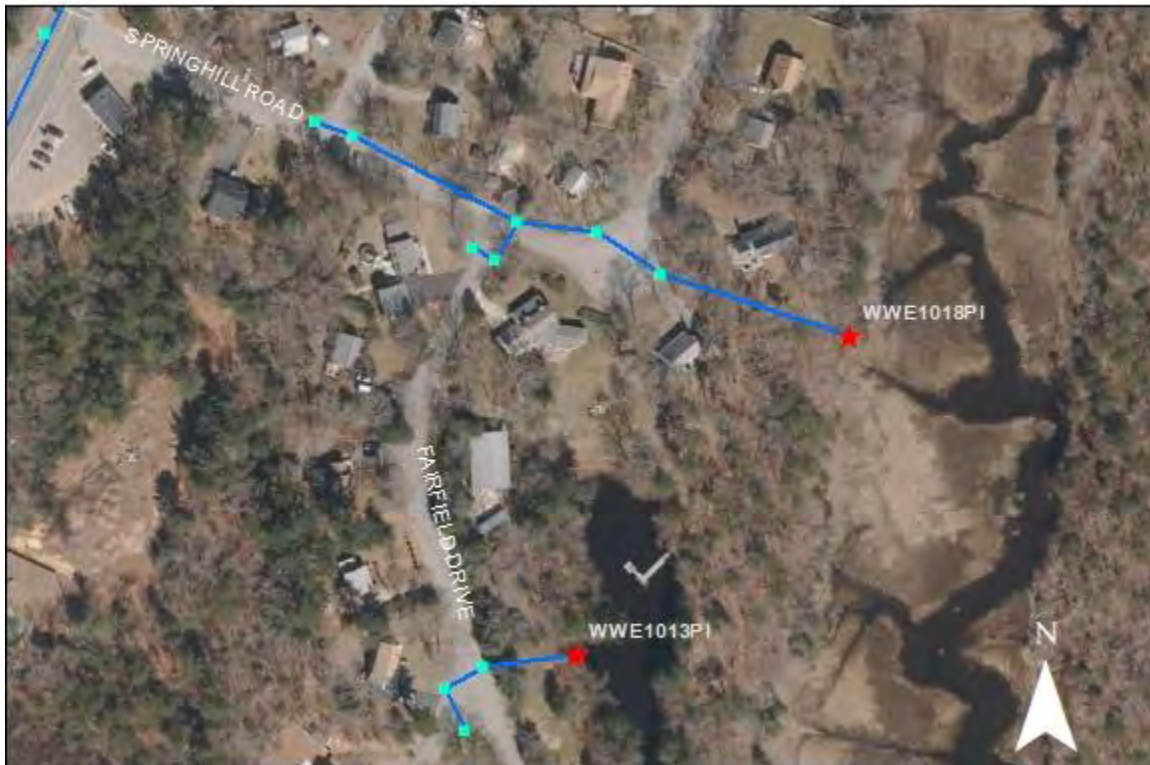
ONB1062PI- Grandview Avenue at Wellington Road: No issues found. At point A, a pipe enters the manhole; its origin is unknown. Further investigation is recommended.



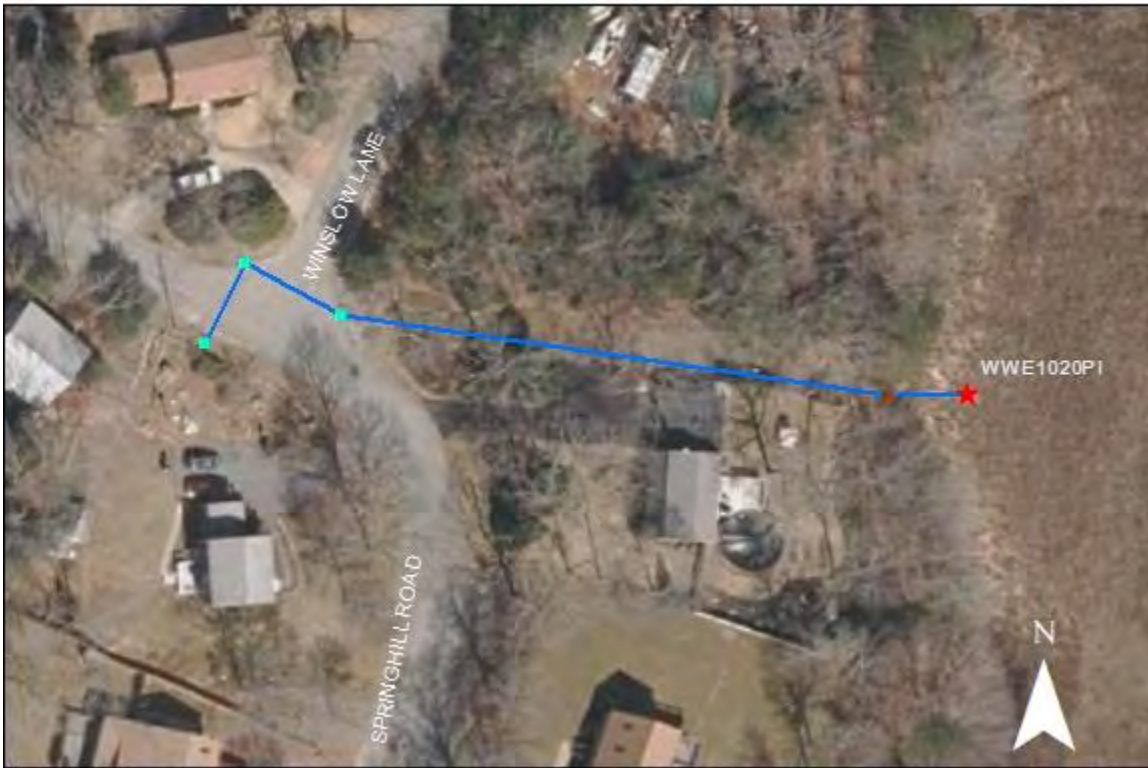
ONB1060PI- Grandview Avenue at Broad Street: No issues found. At point A, a pipe enters the catch basin. Its origin is unknown. Further investigation is recommended.



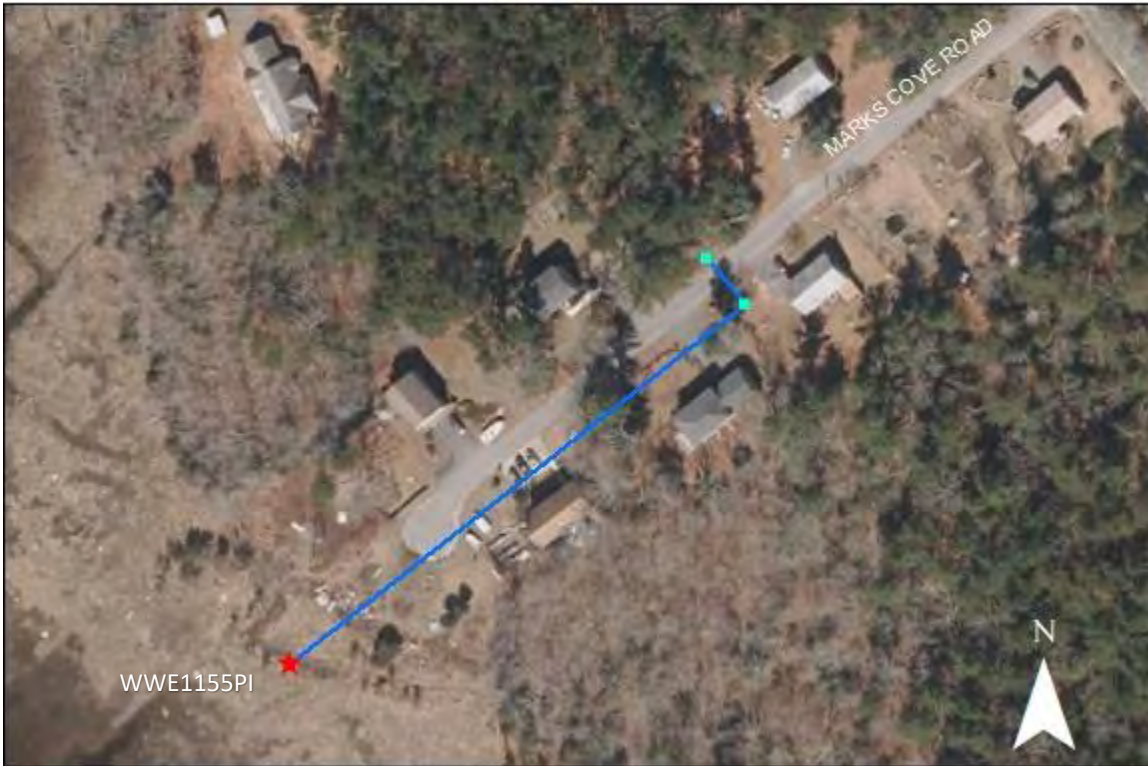
WWE1002PI and WWE1001PI- Briarwood Drive and Roosevelt Street: No issues found.



WWE1018PI and WWE1013PI- Springhill Road and Fairfield Drive: No issues found.



WWE1020PI- Winslow Lane: No issues found.



WWE1155PI- Marks Cove Road: No issues found. Newly discovered outfall.



WWA1001PI- Marks Cove Road: No issues found.



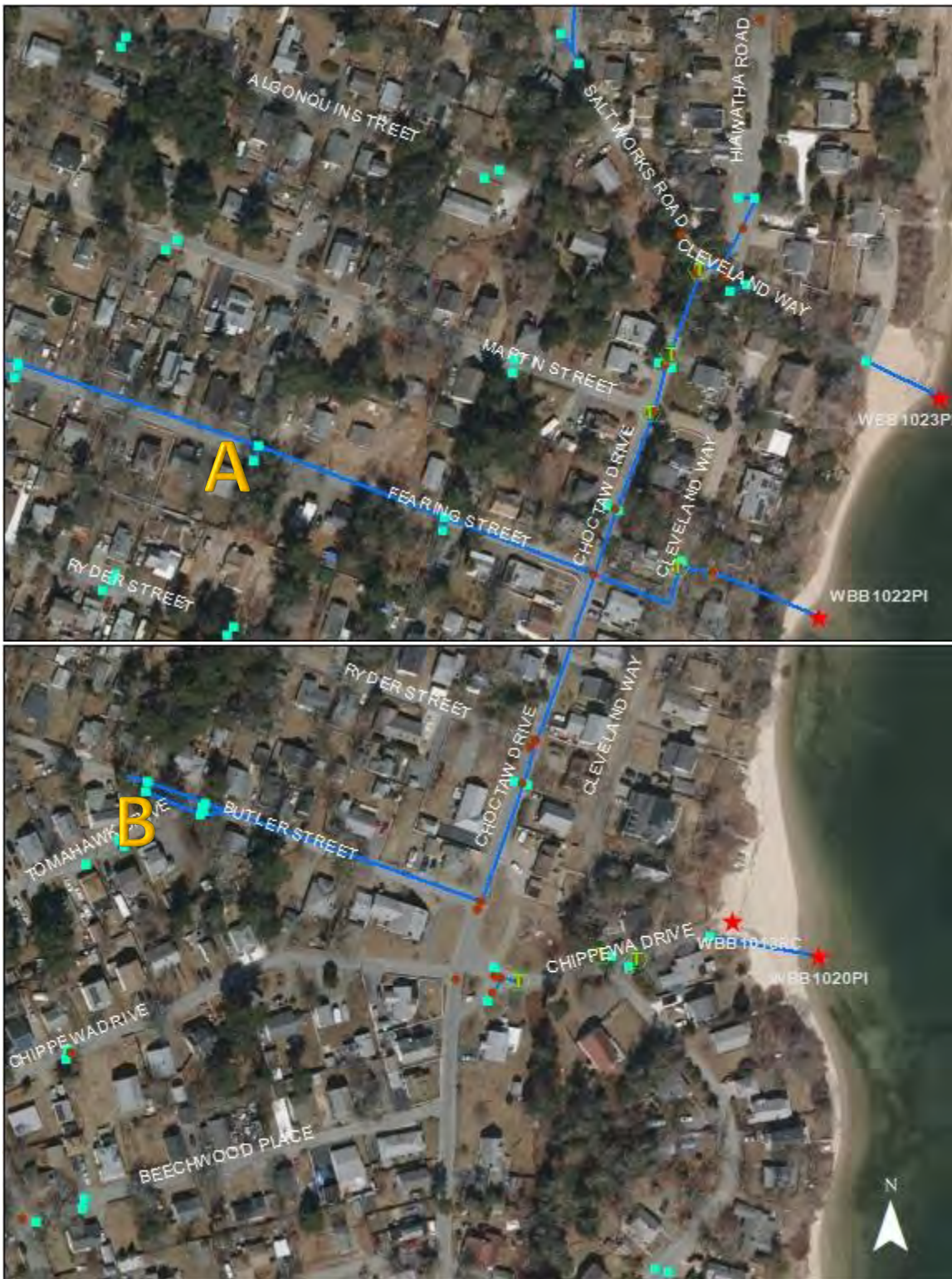
WWA1002PI- Sippican Road, Cedar Island Road, and Mattapoissett Road: At point A there is a very large sink hole. Further attention is necessary.



WWE1029PI- Terry Lane West: At point A and B catchbasins have begun to sink. Further preventative action is strongly recommended.



WWA1012PI and WWA1011PI- Parker Drive and Camardo Drive: At point A, B, C, and D the catchbasins are sinking. The inside of the basins are missing bricks. Preventative maintenance is recommended. Overall, this area is need of cleaning. Basins contain large amounts of debris, and many pipes are clogged especially on Camardo Drive. Further attention is strongly recommended.



WBB1023PI, WBB1022PI, WBB1013RC, and WBB1020PI- Cleveland Way, Choctaw Drive, Butler Street, and Chippewa Drive: At point A the basin is completely full of water. All other surrounding basins were dry. Extremely likely there is a clogged pipe. Maintenance is recommended. At point B on Butler Street the catchbasin is collapsing. Further maintenance is recommended.



Cleveland Way: At point A the catchbasin is full of water. All other basins were dry. Highly likely the pipe exiting the basin is clogged. Neighbors reported major flooding during rain events. Maintenance is recommended.



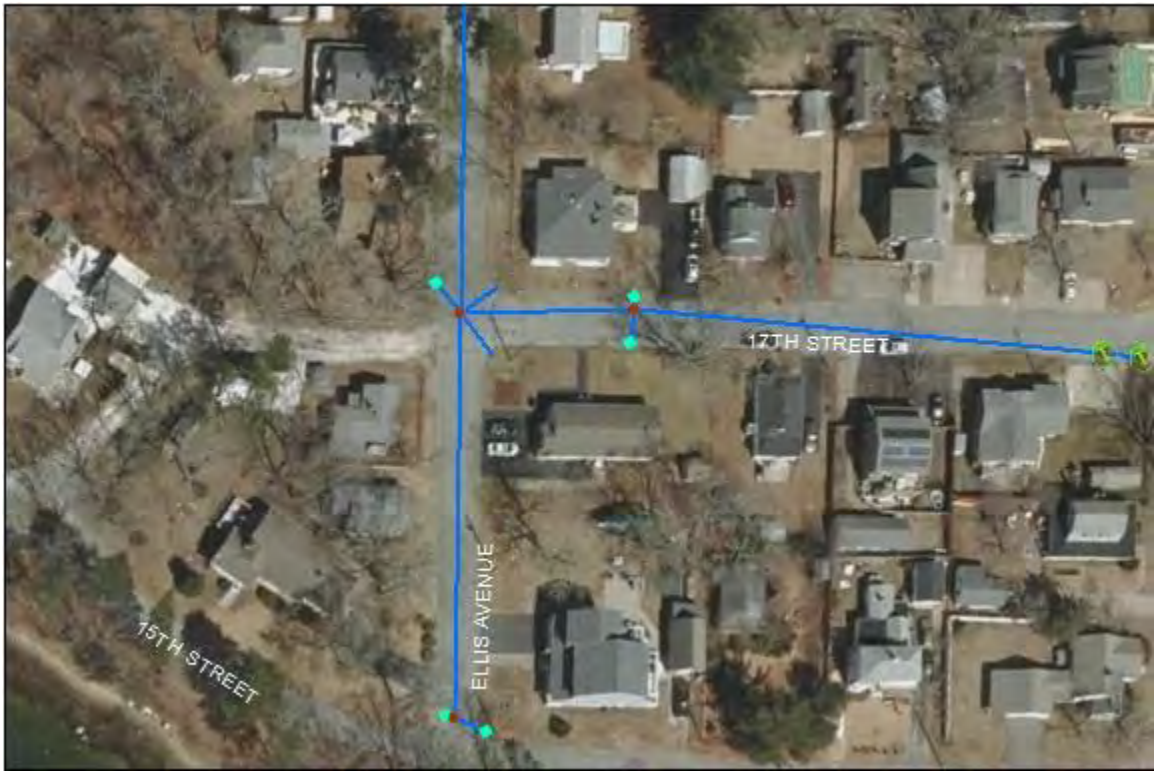
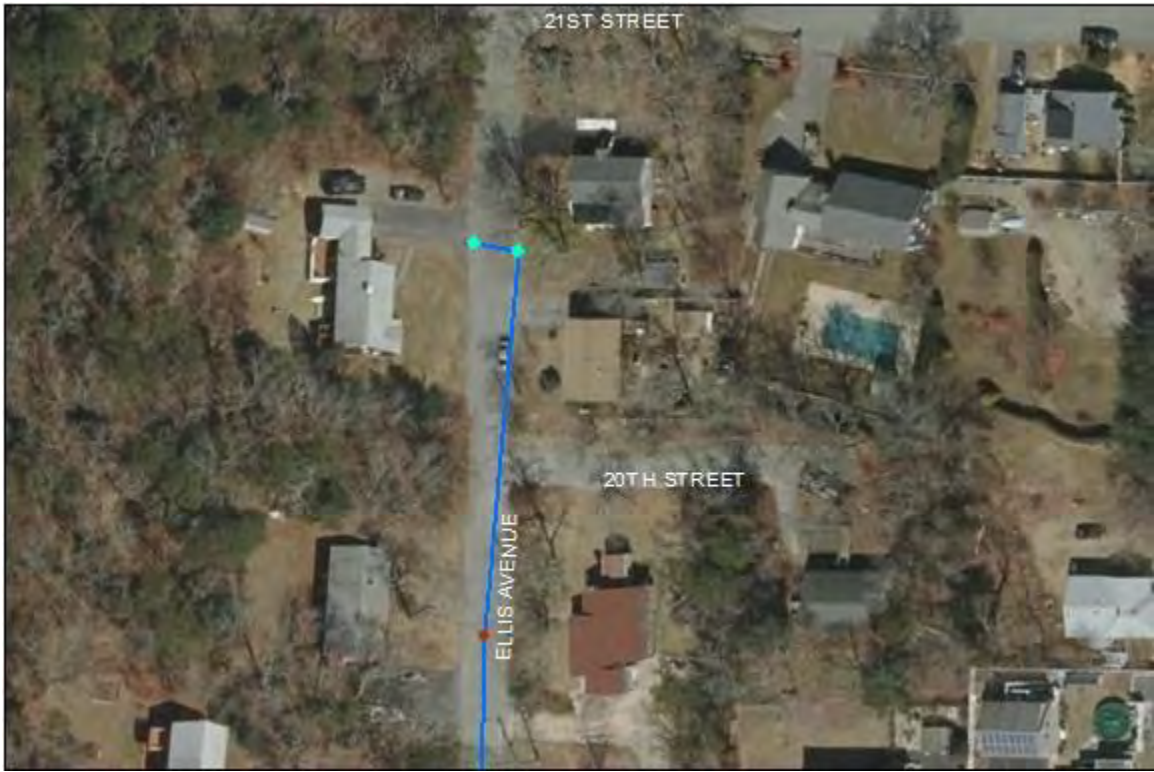
WBB1019PI and WBB1014PI- Jefferson Road: No issues found.

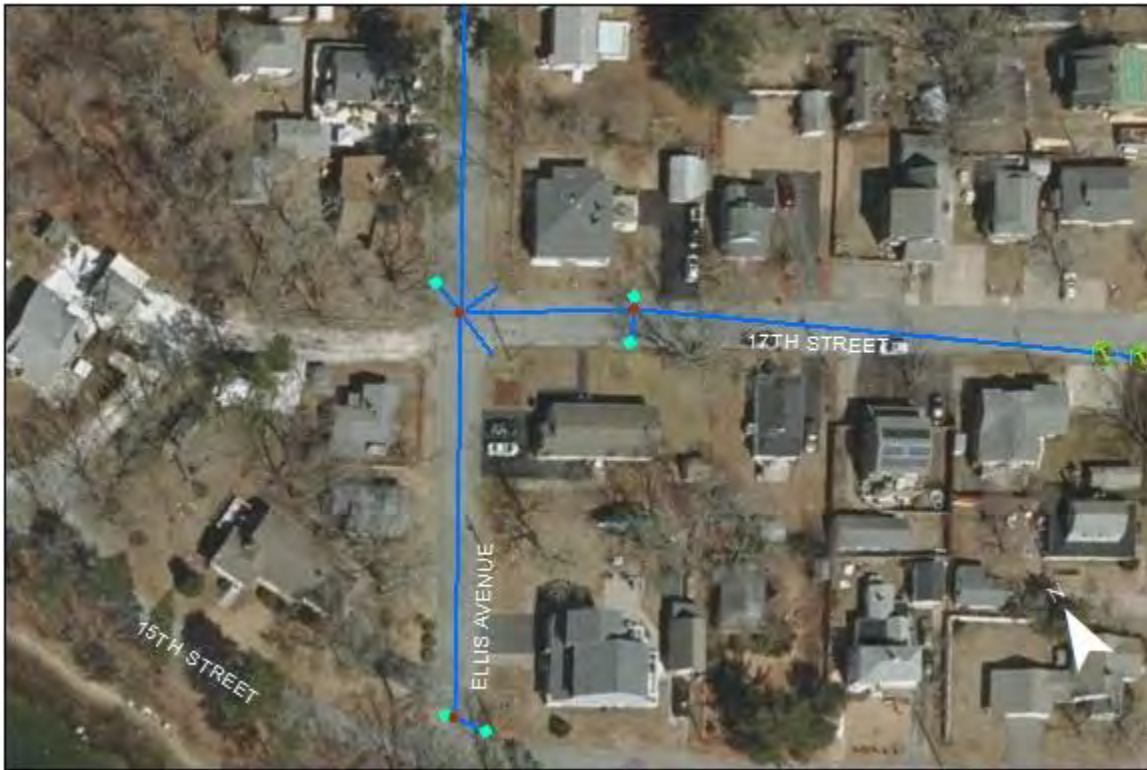


WBB1013PI and WBB1016PI- Jefferson Road and Woodside Avenue: No issues found.



WBB1024PI- Wychunas Avenue, Gitche Gumee Road, Wenonah Road, Monack Road, Nokomis Road and Hawatha Road: No issues found.

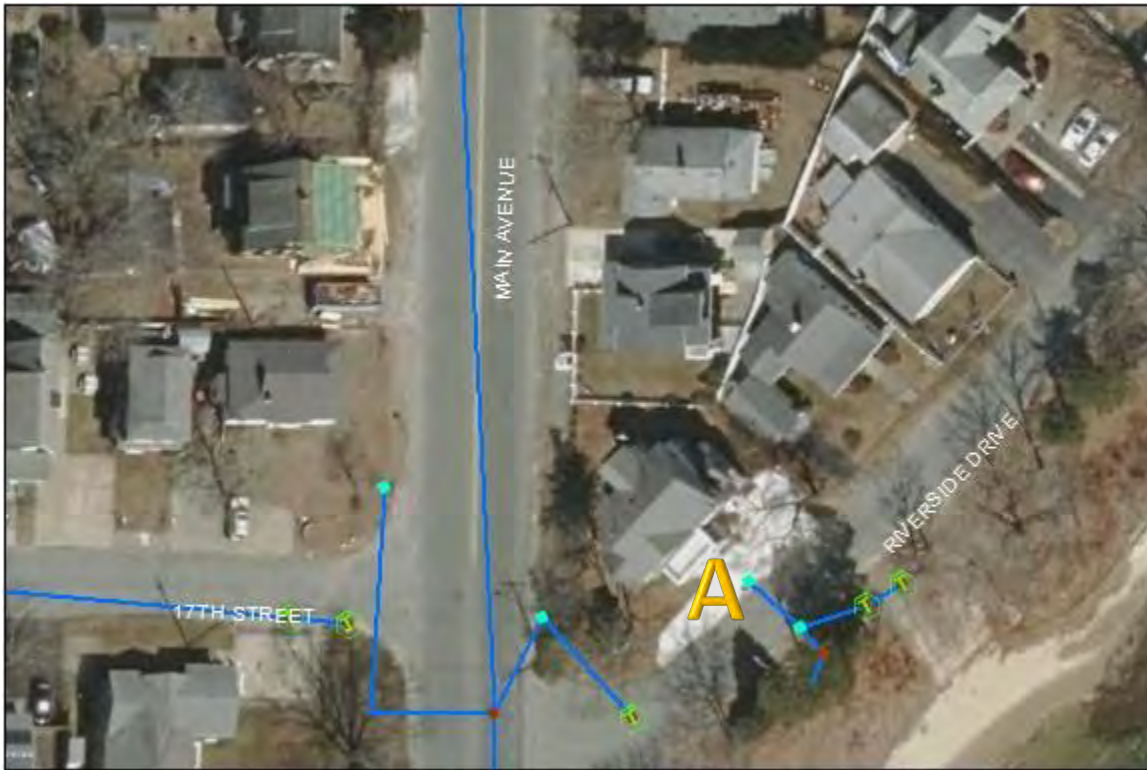




Ellis Avenue: No major issues found. The catchbasins and manholes in the Southern half of the catchment are full of sand. Maintenance is strongly suggested.







ONB1057PI- Main Avenue: Catchbasins and manholes at points A, B, C, D, E, and F are all sinking. Most of them are missing bricks inside. At point F there is a sinkhole between the catchbasin and the sidewalk and poses risk to pedestrians. Point F needs immediate attention. Additional maintenance to all other points is recommended.



ONB1053PI- Maine Avenue: No issues found.





ONB1084PI- Main Avenue: Manhole covers at point A and C and the catchbasin cover at point D are all broken. The catchbasin at point B is sinking. Maintenance on all is suggested.



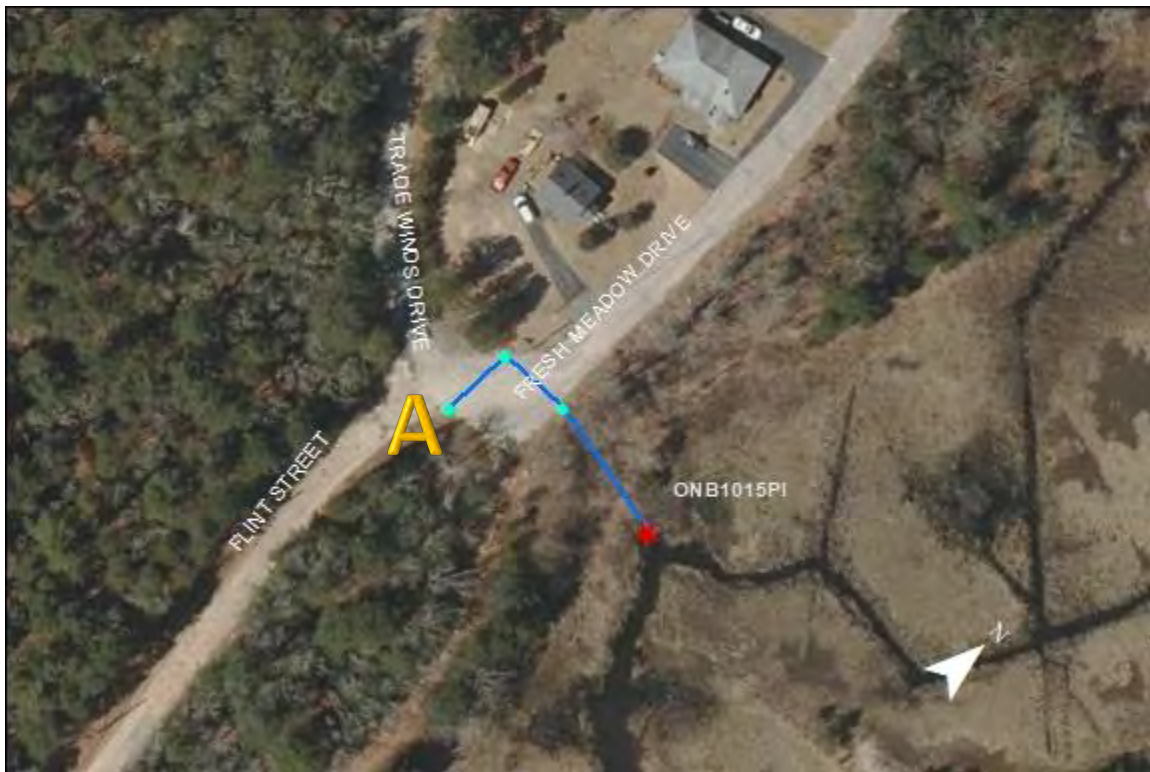
ONB1061PI- Riverside Drive: No issues found.



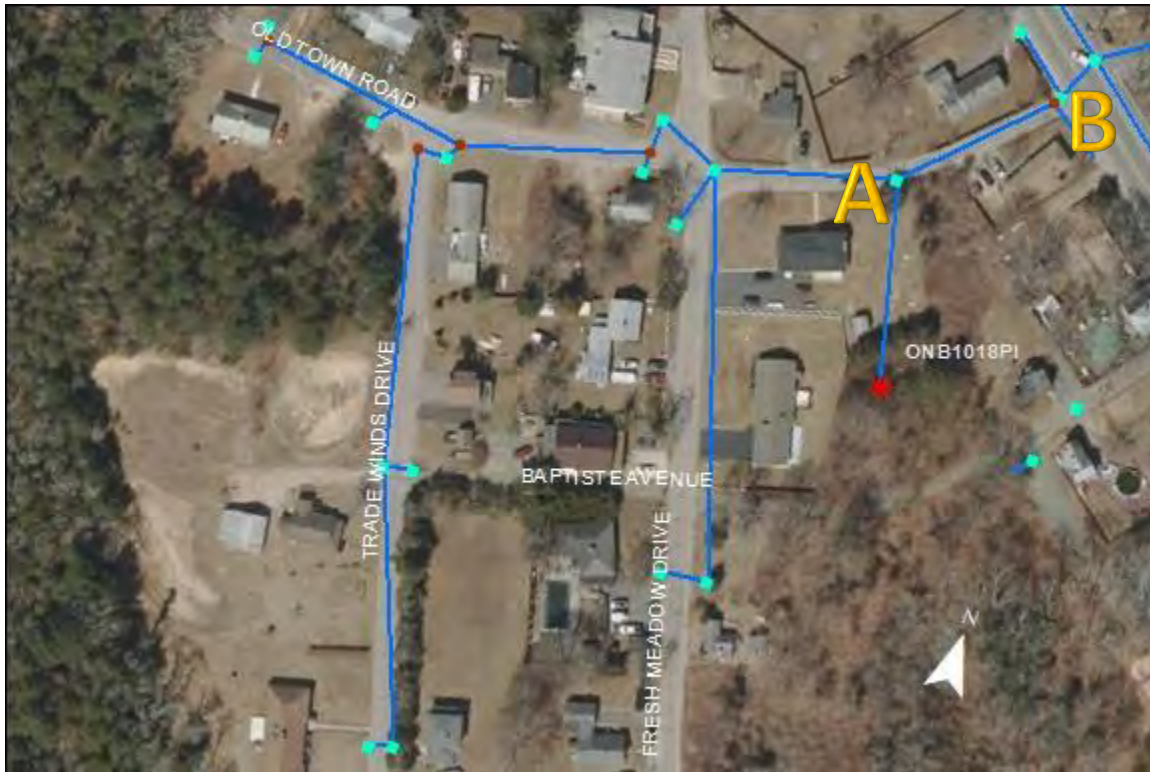
ONB1022PI- Bertino Street, Midway Street, Doherty Street, and Old Onset Road: At point A there is a large sink hole. It is covered with a traffic barrel. Maintenance is strongly recommended. At points B and A the catchbasin covers appear to be the wrong size for their frames, thickness wise. At point D there appeared to be cooking grease dumped down the drain. Thanksgiving fell on the week prior to the inspection. Community outreach and education is suggested for matters like this. This catchment connects to Onset Avenue and continues. Police detail needed for further investigation.



ONB1031PI- Aunt Hannahs Lane: No issues found. At point A here is an incoming pipe. Its origin is unknown. Further inspection is suggested.



ONB1015PI- Fresh Meadow Drive: No significant issues. At point A the catchbasin is full of dirt. Further maintenance is suggested.



ONB1018PI- Trade Winds Drive, Old Town Road, and Fresh Meadow Drive: No significant issues. At point A and B the catchbasin covers are very light and may not meet weight requirements for structure covers. A follow-up on this matter is suggested. Catchment continues onto Onset Avenue. Due to high traffic a police detail is needed to complete the investigation.



ONB1009PI- West Boulevard and Fourth Street: No issues found. Additional basins shown on Third Street and Longwood Avenue are stand alone basins. No issues found.



ONB1006PI- South Boulevard: No issues found.



ONB1008PI- South Boulevard: No issues found so far. Catchment is not complete. Continues down 2nd Street.



ONB1007PI- West Boulevard: No issues found. Basins on Longwood at Third Street are stand alone basins.



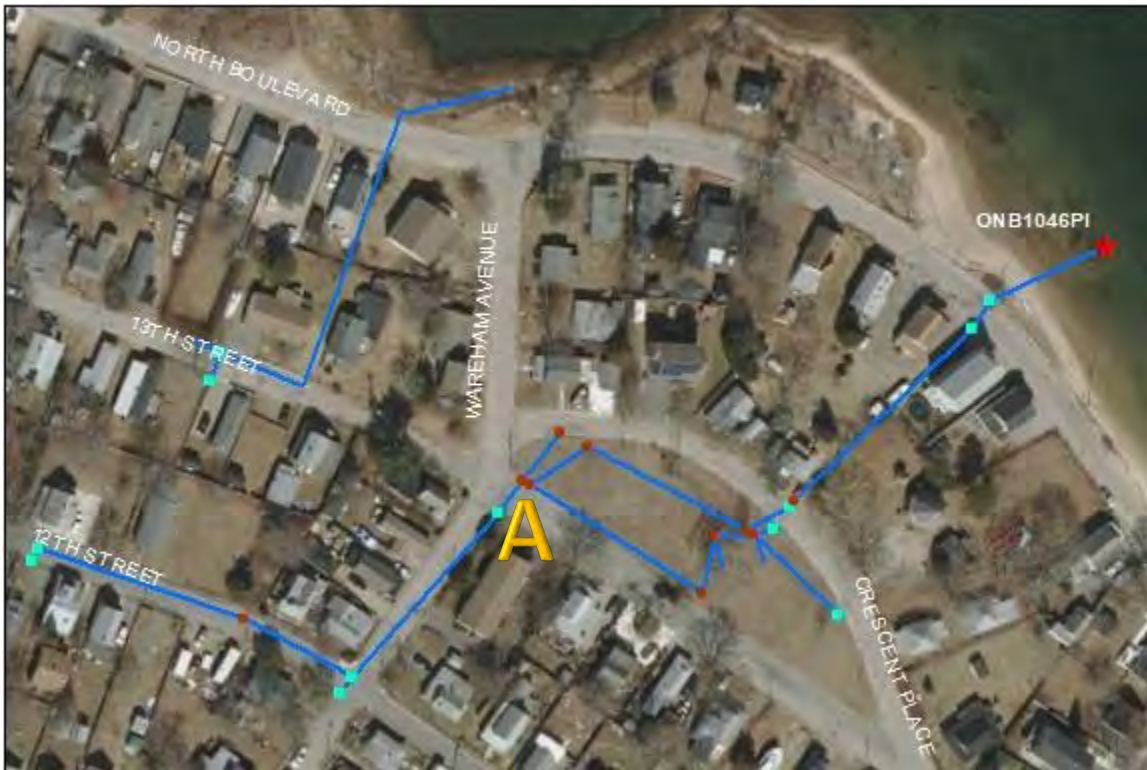
ONB1049PI- North boulevard and East Boulevard: No significant issues found.



ONB1034PI and ONB1034PI- Union Avenue, 11th Street, East Boulevard, and Waban Avenue: No issues found.



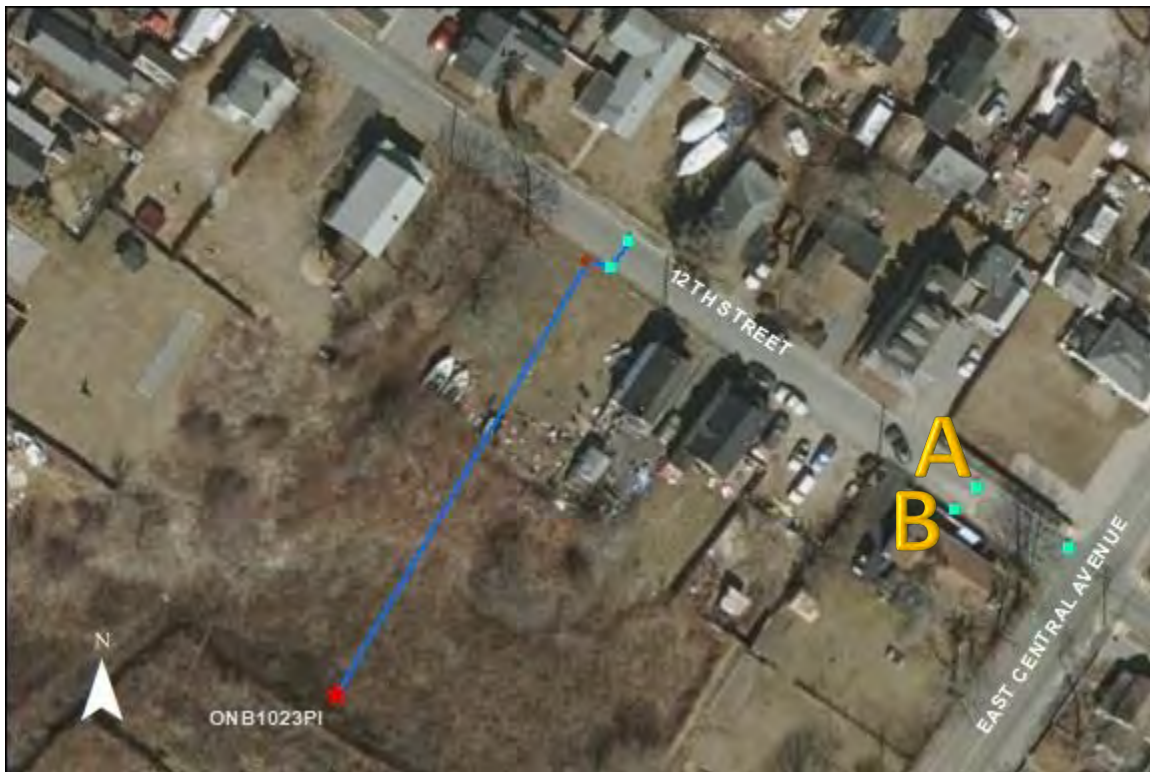
ONB1047PI- East Boulevard: No issues found.



ONB1046PI- North Boulevard, Crescent Place, and 12th Street: No significant issues found. Catchbasin at point A contains a lot of trash. Maintenance is suggested.



ONB1044PI and ONB1045PI- North Boulevard, East Central Avenue, and Whittemore Avenue: No significant issues found. Manhole at point A is completely full of dirt. Maintenance is suggested.



ONB1023PI- 12th Street: The catchbasins at point A and B are completely packed with dirt and have begun growing vegetation. Further maintenance is strongly recommended.



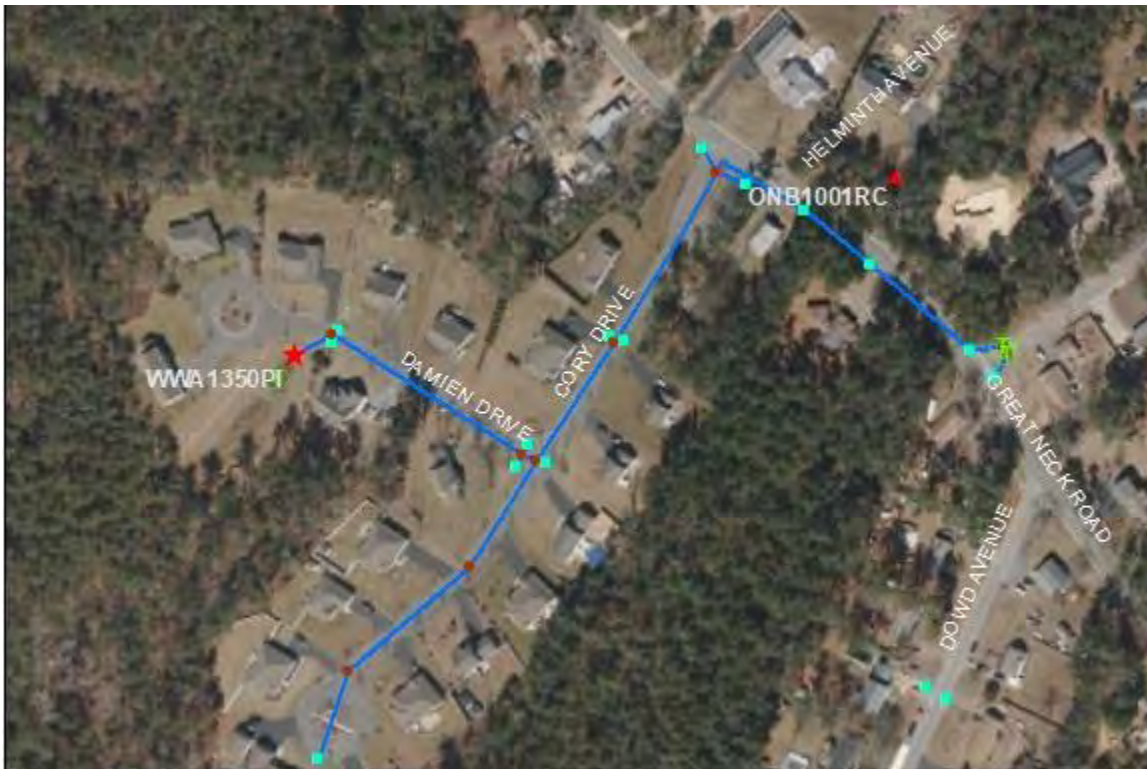
ONB1117PI and ONB1014PI- West Boulevard: No significant issues found. At point A the catchbasins flood. There appears to be a lot of blockages in the pipes at that location. Further maintenance is suggested.



WWA1075PI- Great Neck Road: No issues found.



WWA1083PI- Great Neck Road: No issues found.



WWA1350PI and ONB1001RC- Great Neck Road: No issues found. Cory Drive and Damien Drive are private and were not investigated. Drainage on Great Neck Road connects to the drainage on these private roads.



WWA1098PI- Great Neck Road: No significant issues found. There was a strong nature gas odor.



WWA1111PI- Great Neck Road: No issues found.



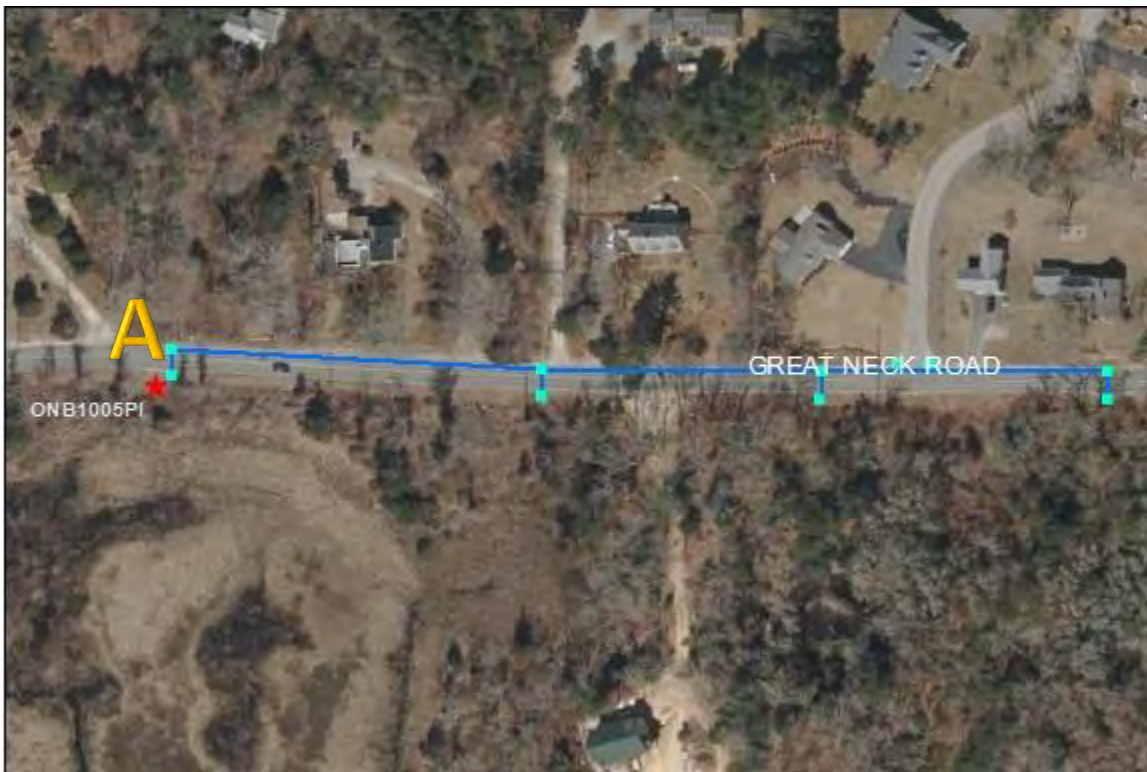
WWA1105PI- Great Neck Road: The catchbasin frame has begun to rot. Preventative maintenance is suggested.



Great Neck Road: The frame at catchbasin at point A has begun to sink. Preventative maintenance is recommended.



ONB1118PI and ONB1002PI- Great Neck Road: No significant issues found. At point A the catchbasin frame began to sink. Preventative maintenance is suggested.



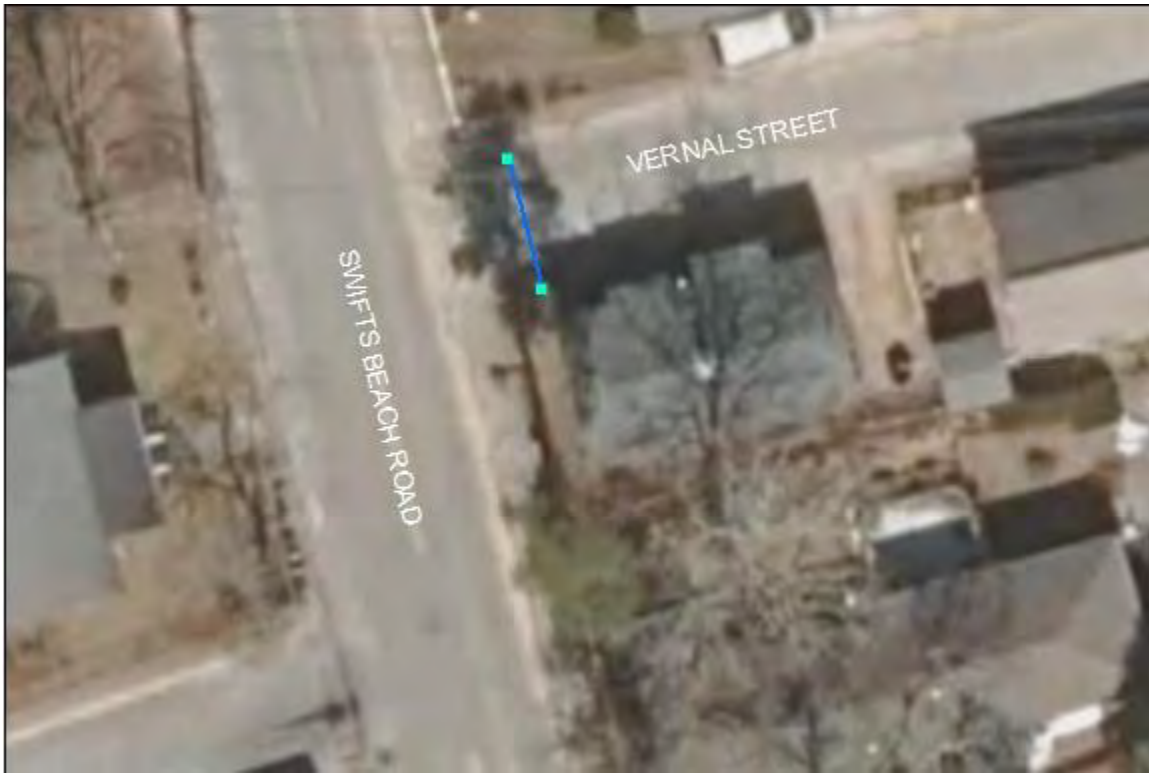
ONB1005PI- Great Neck Road: At point A the catchbasin began to sink. Preventative maintenance is suggested.



ONB1011PI- Great Neck Road: No significant issues found. At point A the catchbasin cover is broken. Further attention is recommended.



Great Neck Road: Catchbasins along this part of Great Neck Road are in need of repair. Basin frames are rusted or broken, brick work on the inside of certain structures is crumbling, and certain basins have begun to sink. Evaluation and remediation are strongly recommended. For further investigation of catchment a police detail is needed. The intersection of Onset Ave and Great Neck Road can have heavy traffic.



Vernal Street: No issues found.



Bayview Street: No significant issues found. At point A the catchbasin has begun to sink. Preventative maintenance is suggested.



WWA1035pi- Stephens Avenue and Broadmarsh Avenue: No significant issues found. All catchbasins on Broadmarsh Avenue have 12" metal pipes that are clogged. Residents informed that it floods in this area often. Further maintenance is strongly suggested.



WWA1361PI- Pleasant Street: No significant issues found. At point A the catchbasin had a lot of trash and leaf debris. Further maintenance is suggested.



WWA1362PI- Shady Lane: No issues found.



WWA1009PI- Ruggles Street and Wankinquoah Avenue: No issues found.



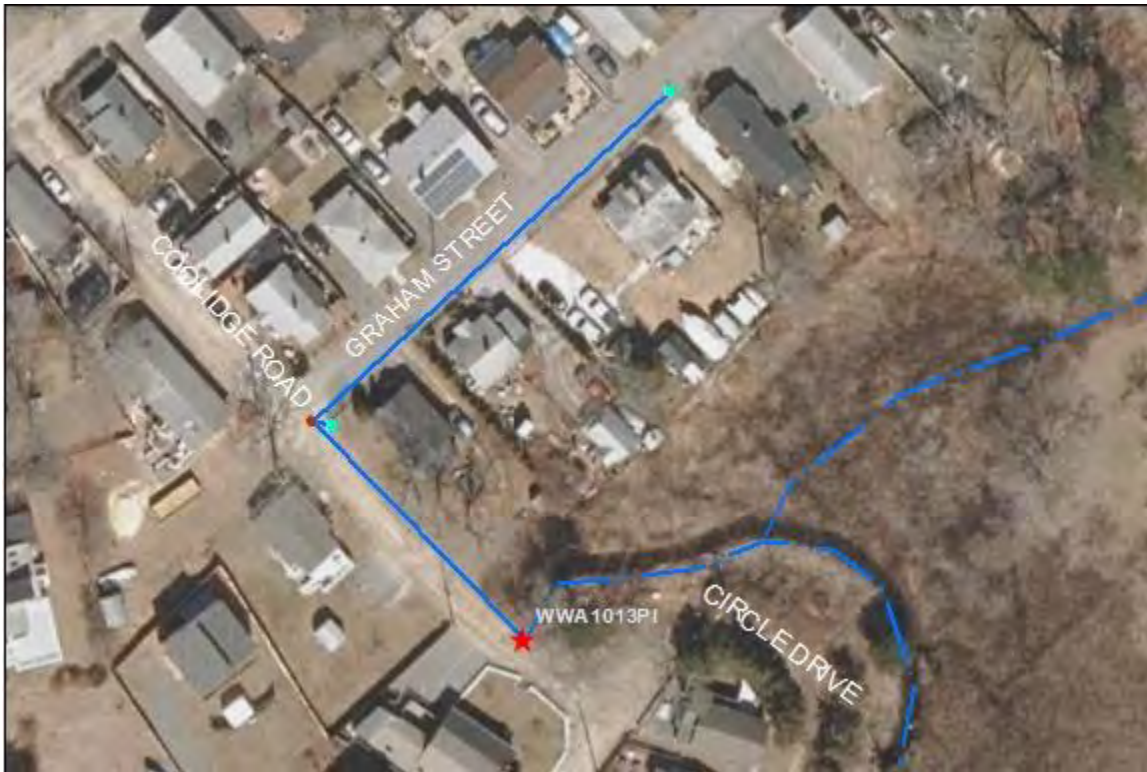
Everett Avenue-. Catchbasins are infiltration basins. The road is dirt and basins are full of sand. Further maintenance is recommended to prevent flooding during rain events.



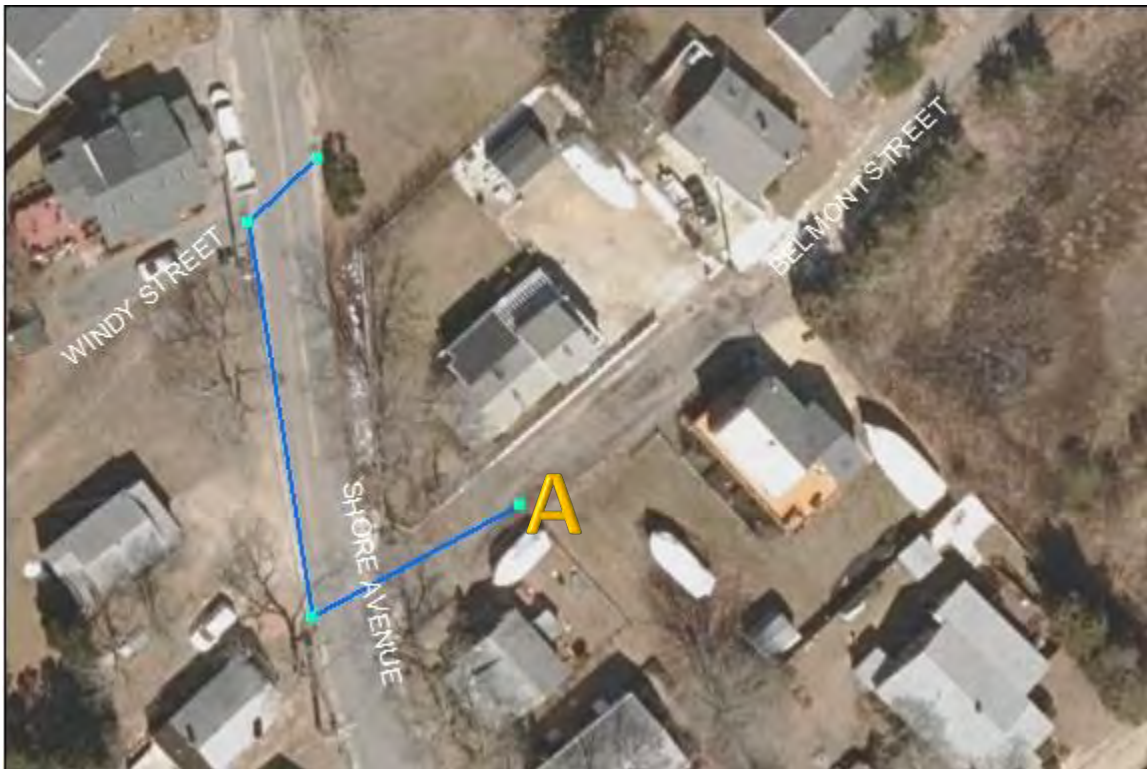
WWA1006PI- Murphy Street: No issues found.



Grant Street: No issues found. Further investigation required.



WWA1013PI- Graham Street and Coolidge Road: No issues found.



Shore Avenue: Catchbasin at point A on Belmont Street is completely buried. Unable to investigate incoming or outgoing pipes.



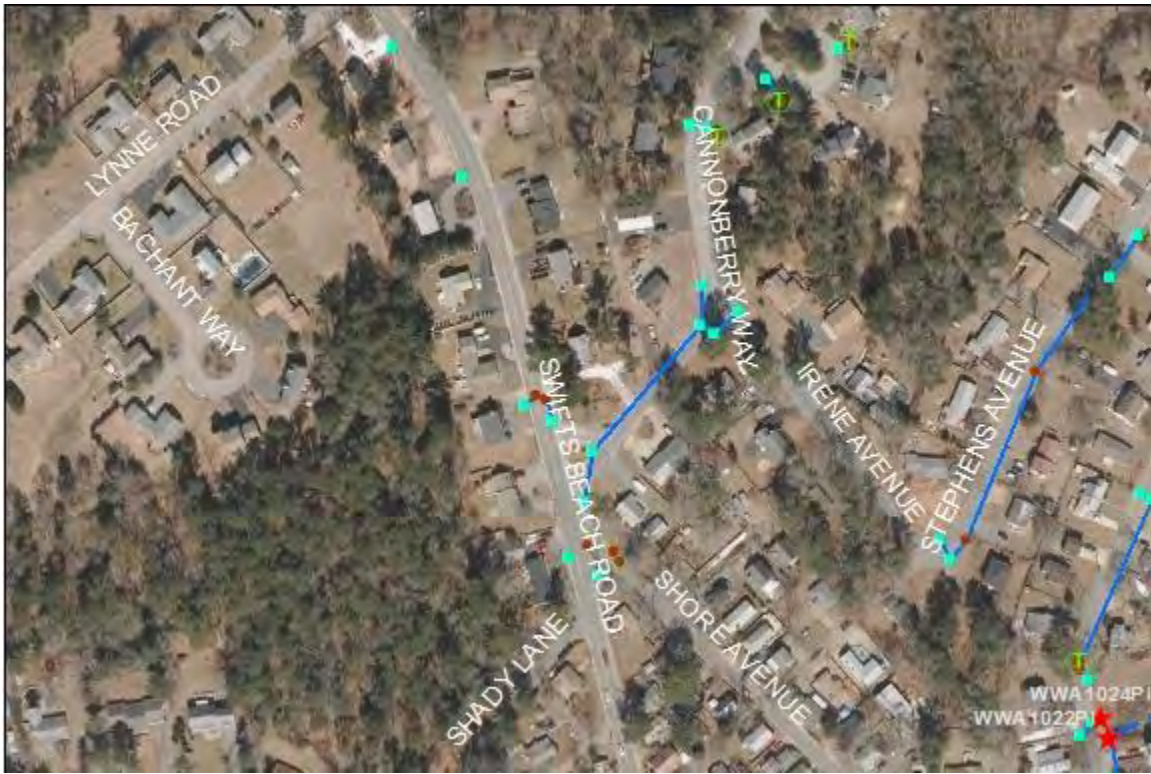
WWA1010PI- Circle Drive, Galavotti Avenue, and Bayview Street: No issues found.



WWA1356PI and WWA1055PI- Swifts Beach Road (1/3): No issues found.



WWA1042PI- Swifts Beach Road (2/3): No issues found.





Swifts Beach Road (3/3): No issues found. There is still a lot more catchment investigation work to be completed on Swifts Beach Road and neighboring streets.