Evaluations and Recommendations for Stormwater Drainage Improvements within the Shell Point Drainage Basin Area

Client:
Beaufort County
120 Shanklin Road
Beaufort, SC 29906

Project/Site Name:
Beaufort County Shell Point Drainage Improvement Study

Project no.:
2020-0036

Prepared by:
Cranston Engineering Group, P.C.
14 Westbury Park Way, Suite 202
Bluffton, SC 29910

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Section 1 PROJECT OVERVIEW

1.1 Introduction

Cranston Engineering Group, P.C. (CEG) was contracted by the Beaufort County (BC) Public Works Department to provide an analysis of the existing stormwater infrastructure within the Shell Point area in Port Royal, SC. The identified study area, see Section 1.3 below, has experienced localized flooding and numerous citizen complaints, which may be due to insufficient stormwater infrastructure or the need for additional maintenance to the existing infrastructure. Citizen complaints have reflected these observations, with reports of flooding onto residential properties, overflowing ditches, and erosion.

1.2 Project Objectives

The primary focus of this assessment is to evaluate the current conditions, analyze the available capacity and provide recommended improvements to stormwater infrastructure within the Shell Point area in Port Royal, SC.

This study includes evaluation of existing drainage conditions during various rainfall intensities for the 2-, 10-, 25-, 50- and 100-year 24-hour storm events within the project area for the purpose of identifying potential drainage improvements. An average 24-hour diurnal tidal cycle, between Mean High High Water (MHHW) and Mean Low Low Water (MLLW) elevations observed at a nearby NOAA Tide Station was used in the analysis to simulate existing tailwater conditions. The effects of a projected sea level rise of 15 inches currently estimated to occur over the next 50 years was also analyzed to identify potential problem areas in the future.

A review of existing drainage easements was also conducted to determine the extents of available maintenance of the existing stormwater infrastructure, as well as determine potential easement acquisition areas for potential regional BMP planning and/or recommended infrastructure improvements.

1.3 Study Area

The study area is generally bounded to the north by Savannah Highway (SC-128) and the marshes of the Broad River, to the east by Parris Island Gateway (US-21) and the marshes of Battery Creek, and south and west by the marshes of the Broad River. The area of interest is approximately 835 acres (1.30 square miles). The extents of the drainage basin study area are shown in Figure 1 below. The drainage study and investigation include portions of state, county and private roads within the bounded area as shown on the exhibit. A majority of the roads in the study area are South Carolina Department of Transportation (SCDOT) owned roads. A complete list of roads within the study area is included in **Appendix A**.

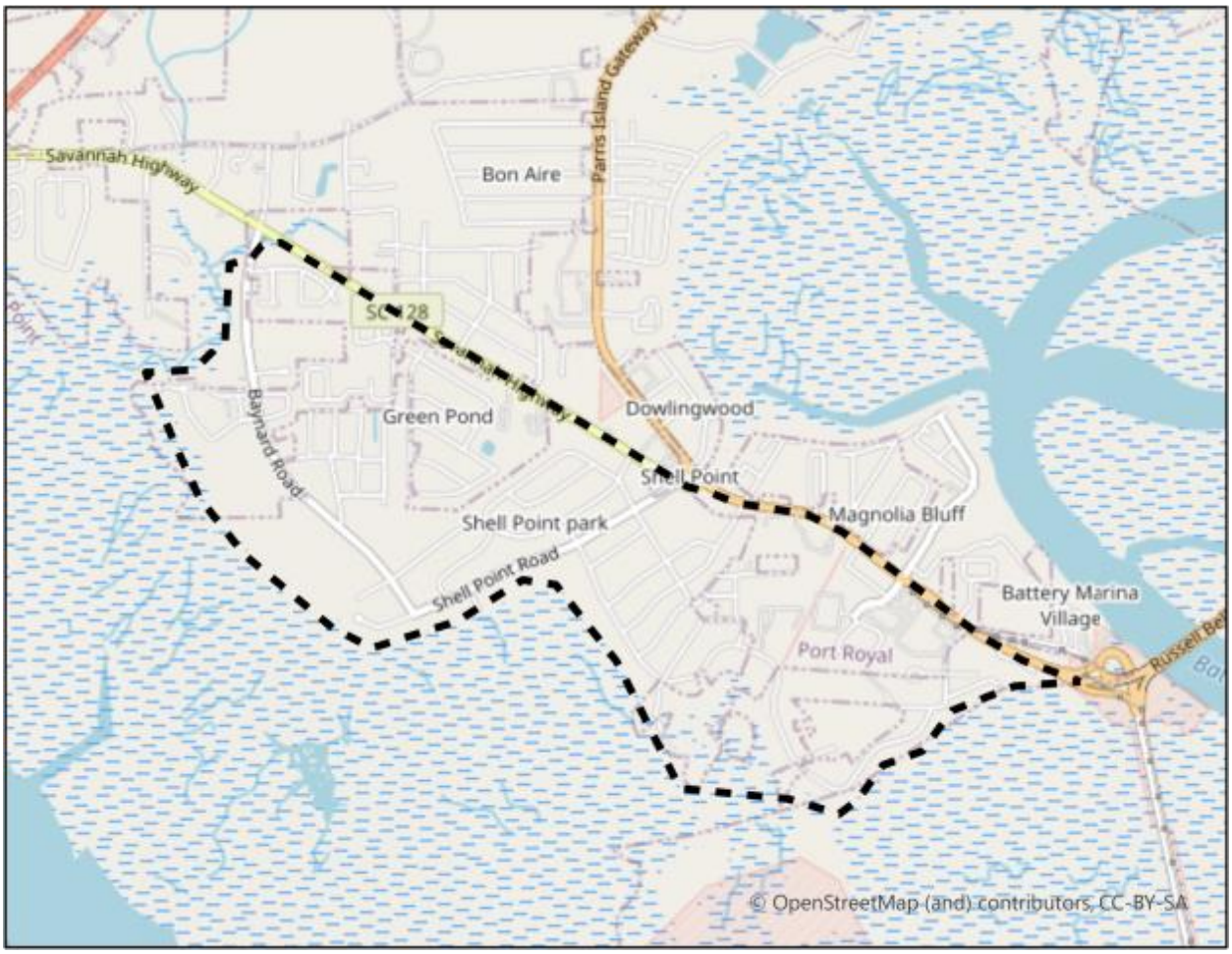


Figure 1: Study Area

A review of County provided LiDAR elevation data shows that the drainage basin is relatively flat with elevations ranging from 25+ to < 0 (NAVD88) toward the adjacent marshes of Battery Creek and the Broad River. The average watershed slope seen from the LiDAR data is approximately 3.9%. An exhibit showing the elevations in and around the study area is included in **Appendix A**.

Soils in the Shell Point area were evaluated using the USDA NRCS Web Soil Survey database. Soil types in the study area consisted of the full range of hydrologic soil groups (HSG) A though D, see exhibit located in **Appendix A**. A portion of the soils were designated HSG B/D and C/D which indicate they perform more like HSG D during wet conditions, meaning a high runoff potential and slow infiltration rates. To provide a conservative analysis as more than half of the soils found in the study area were designated HSG C, D, B/D or C/D, minimum infiltration rates of 0.5 in/hr to 3.0 in/hr were utilized during all modeled scenarios.

Properties in the study area are primarily zoned single-family residential uses with multi-family residential and commercial uses along the Savannah Highway and Parris Island Gateway corridors. The study area falls within both Beaufort County and Town of Port Royal, SC jurisdictions. The latest Beaufort County zoning map indicates the area is predominantly zoned

T3 Edge, T3HN and T4HC corresponding to the areas designated as Hamlet Neighborhood and Hamlet Center. The latest Port Royal zoning map indicates that a majority of the site is zoned as either T3N, T4NC, and T4UC corresponding to areas designated as Sub-Urban Neighborhood and Neighborhood Center.

According to the Port Royal Development Code, these are areas characterized as predominantly single-family areas (eg. carriage houses, detached houses of various sizes, duplexes, cottage court, mansion apartments and landmark buildings) or areas that integrate medium-density residential buildings (eg. duplexes, townhouses, courtyard housing) along with more areas available for retail and service uses. Buildings zoned for T4NC-O can include flex buildings, main street mixed use buildings, gas stations, and large footprint buildings. An exhibit showing zoning and municipal boundaries is included in **Appendix A**.

Section 2 DATA COLLECTION AND METHODOLOGY

2.1 Background Data Collection

The first step in the stormwater analysis was to compile all existing conditions data including but not limited to:

- Beaufort County GIS data
- Design & as-built data
  - Provided by SCDOT, the Town of Port Royal and Beaufort County
- FEMA flood data
- NOAA tide and rainfall data
- Beaufort County Connect complaint logs of known flooding
- Input from the community received during a public meeting hosted by the Town of Port Royal

This data was used to establish a comprehensive understanding of the existing infrastructure connectivity, onsite BMPs and outfall locations in order to prepare the initial GIS database for field data collection and determine the extents of the overall watershed area.

Coordination meetings with Beaufort County and the Town of Port Royal were done to ensure our approach to developing the Drainage Improvement Study targets the most critical areas within the project vicinity and is consistent with the desired outcomes to meet the level of service and expectations of the community. Public involvement was done through coordinated meetings between County and Town staff and local homeowners and/or business associations located within the area of the study.

Beaufort County initially provided GIS shapefiles containing the known drainage infrastructure in the study area including 222 individual drainage structures and 608 individual storm related

drainage lines equating to 95,075 linear feet of open channel and 19,310 linear feet of pipe. The drainage features include but are not limited to storm inlet and manhole structures, pipe ends, culverts, swales, ditches, tidal creeks and marshes. The preliminary infrastructure data is depicted in **Appendix A**.

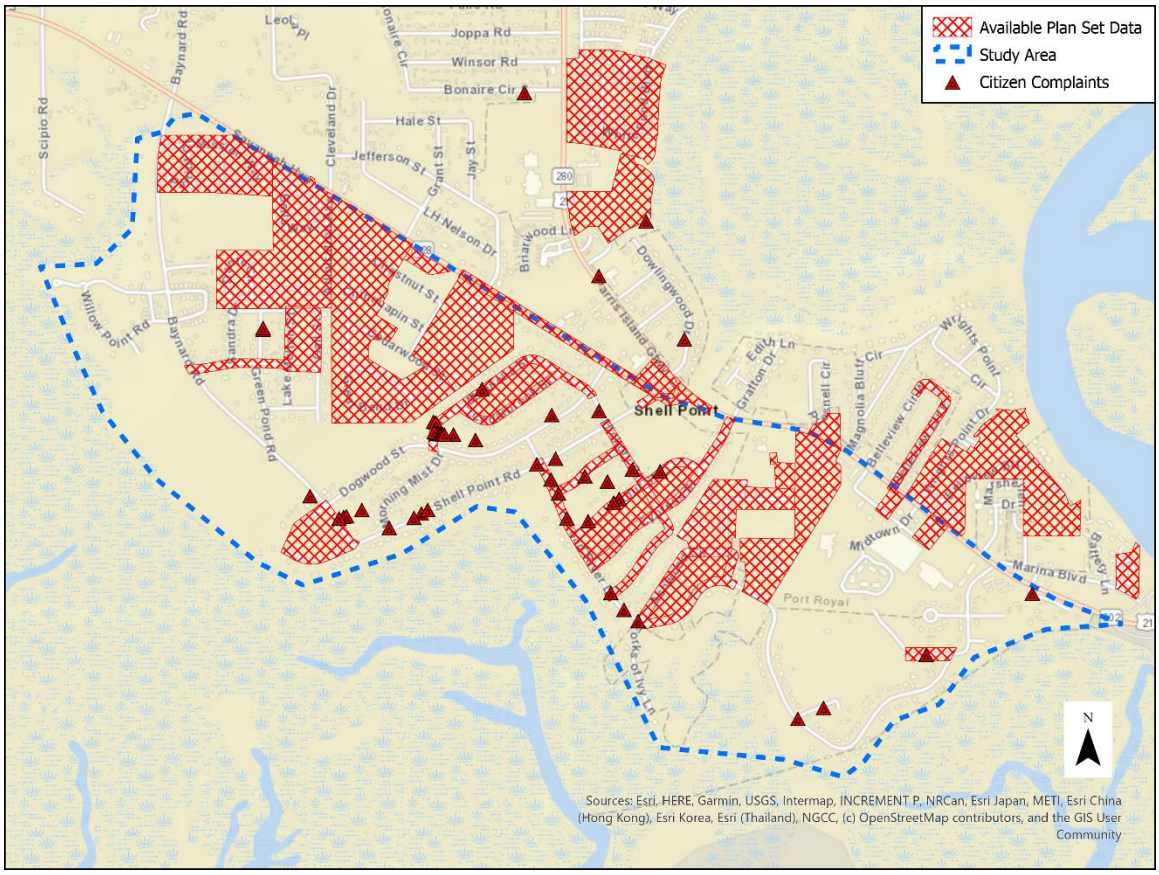


Figure 2: Available Plan Data & Citizen Complaints

2.2 Field Investigations

The GIS database of stormwater infrastructure created from all the existing information received was split into quadrants to utilize in the field. Field investigations were performed to verify the existing drainage features, confirm connectivity, assess existing condition, identify unknown features in areas where little information existed and clarify inconsistencies or differing field conditions.

The field investigations consisted of onsite inspections of the existing stormwater facilities, including field measurements of the feature (e.g., structure depth, pipe diameter and material, approximate invert based on height above sump, inlet size, et cetera), GPS location and condition assessments of critical drainage system nodes (e.g., storm structures, culvert ends, pipe inlets/outlets, et cetera). Existing condition assessment data provided by Beaufort County was verified and updated, as necessary during this process.

All field collection, survey collection and model scenarios we're completed using the following datum controls. The horizontal system will be based on South Carolina State Planes, International Foot, NAD83 and the vertical control will be based on The North American Vertical Datum 1988 (NAVD88) in feet.

2.3 Limited Survey Verification

Due to the extents of the watershed and the project schedule, it was not feasible to provide survey level data from the field investigations. The PCSWMM 2020 software, further discussed in Section 3, allows the ability to set invert elevations for all of the features based on a rim elevation, calculated from its position relative to a digital elevation model (DEM), minus the depth of the structure collected in the field.

To verify the calculated numbers, a survey was completed in select areas based on differing site conditions that may distort the DEM data. The areas were selected based on tree cover, proximity to buildings and available design or as-built data. The surveyed rim elevations were compared to the DEM calculated rim and the rim provided on any relevant plan set data.

The following areas were surveyed:

1. Medical University of South Carolina – Cardiology Eastern Parking Lot System
    a. 5 structures surveyed, no to minimum tree cover, no proximity to building, no available plan set data
2. Old Shell Point – Coquinas Lane
    a. 9 structure surveyed, minimal to some tree cover, no proximity to building, plan set provided
3. BILO Parking Lot System
    a. 3 structures surveyed, no tree cover, no proximity to building, no available plan set data
4. Riverview Charter School
    a. 6 structures surveyed, some tree cover, some proximity to building, plan set provided
5. Shell Point Farm – Great Bend Drive (Savannah Highway ROW to Chestnut Street)
    a. 11 structures surveyed, none to some tree cover, no proximity to building, plan set provided
6. Shell Point Park Pond Outfall
    a. 1 pipe end and 1 structure surveyed, heavy tree cover, no proximity to building, plan set available
7. Broad River Drive – Lowcountry Montessori to Hamrick Drive Outfall
    a. Not included in comparison, all modeled data used was from survey. This area was selected based on citizen complaints.

The results of the survey comparison in relation to tree cover and proximity to buildings is presented below. Survey and comparison data can be found in **Appendix B**.

Tree Cover	Average of ΔDEM (ft)	Average of %DEM	Average of ΔPLAN (ft)	Average of %PLAN
heavy	0.95	108%	-0.07	99%
some	0.11	99%	0.77	107%
minimal	-0.15	101%	0.26	102%
none	0.08	101%	0.62	105%
Grand Total	**0.25**	**102%**	**0.40**	**103%**

Near Building	Average of ΔDEM (ft)	Average of %DEM	Average of ΔPLAN (ft)	Average of %PLAN
Yes	1.04	106%	0.05	100%
No	-0.07	100%	0.62	105%
Grand Total	**0.49**	**103%**	**0.33**	**103%**

Table 1: Survey Comparison Results

Note: Shell Point Farms survey data was removed from the comparison with the DEM as the neighborhood was undeveloped at the time the LiDAR data was collected.

It can be seen that proximity to building and heavy tree cover skew the elevation in the DEM, therefore areas with heavy tree cover and structures located adjacent to buildings were thoroughly reviewed during the modeling process.

2.4 Additional Reference Materials

Other relevant sources included information from federal, state, and local government agencies including:

- Aerial imagery and Easement records from Beaufort County and the Town of Port Royal
- LOMA/LOMR studies
- NOAA – precipitation data
- SCDNR LiDAR data
- USACE wetland jurisdictional determination
- USDA NRCS (Urban Hydrology for Small Watersheds and Web Soil Survey)
- USGS – Topographic maps, rain gage data, stream flow data

Meetings with the Public Works Director for Beaufort County, the Town of Port Royal staff, and the general public, aided in the identification of high priority areas. These meetings also helped to clarify how this project could be phased to allow for funding distribution and ways to minimize the impact to affected communities. Separation and phasing of individual drainage networks was also discussed.

Section 3

EXISTING CONDITIONS WATERSHED ANALYSIS

This section includes the development of an existing conditions Stormwater Network Model with the SCS methodology used for hydrological analysis. We have based our recommendations on the desired level of service on a 25-year, 24-hour duration, Type III design storm and the latest available rainfall data from NOAA's website database. The 2-, 10-, 50- and 100-year 24-hour return period were also analyzed to evaluate the potential and severity of flooding.

The purpose of developing this model is to identify existing drainage deficiencies including current condition of drainage features and evaluate potential solutions ranging from cleaning and maintenance to upgrade replacements or additional infrastructure. By calibrating and validating the model, confidence in the analysis results are greatly improved. This model can be continuously updated as necessary and used for near-term and long-term use as a reliable planning and design tool for the future.

3.1 Existing Conditions Model Development

After compiling all existing data and updating the GIS database with the field results, an existing conditions model was created utilizing the PCSWMM 2020 software to study the existing drainage features in their current conditions. All inlets, swales, culverts and outlet structures were transferred into the model. Features that were observed to be silted in were modeled at the identified levels. The existing conditions modeled 404 individual structures and 1,103 individual storm related drainage lines equating to 62,133 linear feet of open channel and 50,149 linear feet of pipe compared to the 222 individual drainage structures and 608 individual storm related drainage lines equating to 95,075 linear feet of open channel and 19,310 linear feet of pipe.

The existing conditions stormwater analysis utilized fourteen (14) ultimate outfall locations into the surrounding tidal marshes to delineate watershed areas throughout the study area. These 14 watersheds, totaling 880 acres, were further broken down into 1,106 individual sub-catchment areas discharging into each existing condition feature in the model. These sub-catchment areas range in size from 0.004 acre to 94.025 acres with approximately 87.4% of the modeled areas being under 1 acre. Aerial imagery and zoning information were used to determine pervious and impervious percentages, along with manning n values for overland flow.

Approximately 223.4 acres of runoff enter they modeled system to the north of Savannah Highway, as seen in Figure 3 below. Field data was not collected for this system; therefore, assumptions were made to account for the runoff entering they system based on sub-catchment size. This area requires additional data collection for accurate modeling, and it should be noted that the results are somewhat skewed for the approximate 170 acres upstream.

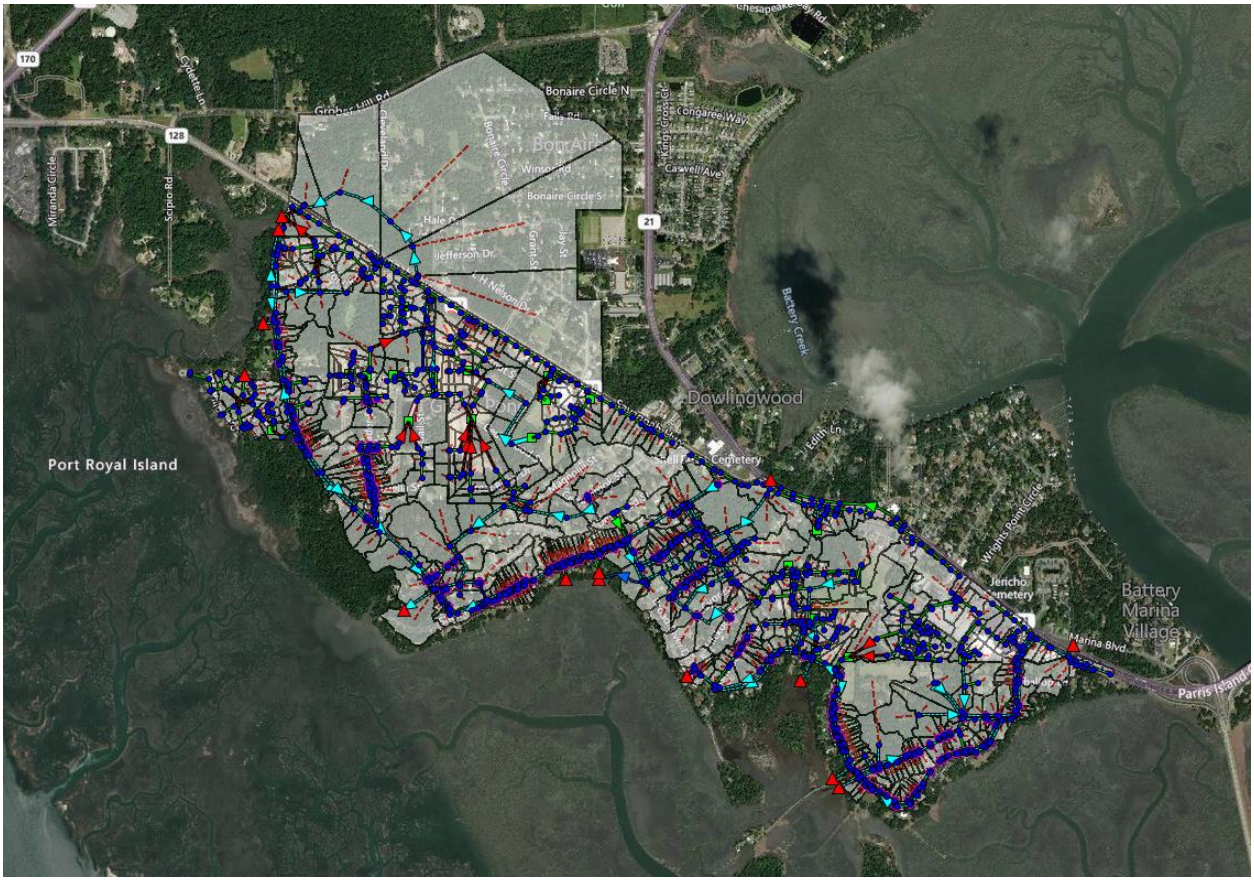


Figure 3: Existing Conditions Model

3.2 Rainfall Data

The Southern Lowcountry Stormwater Design Manual recommends that hydrologic and hydraulic analysis use 2-, 10-, 25-, 50- and 100-year 24-hour storm event values from Appendix F of the SCDHEC Stormwater Management BMP Handbook. Values for Beaufort County are shown in the table below.

Total Rainfall (inches)					
24-Hour Storm Event	**2-year**	**10-year**	**25-year**	**50-year**	**100-year**
Beaufort	4.5	6.9	8.4	9.7	11.0

Table 2: Rainfall Data

3.3 Tidal Data

Diurnal curves were developed to simulate tailwater conditions during an average 24-hour tidal cycle observed at the Broad River Bridge NOAA Tidal Station 8668223. Based on observed tides at the station throughout 2020, an average tidal flux of 7.35 feet was used with a low tide value of –4.15 feet (NAVD88) and a high tide value of 3.20 feet (NAVD88). These values closely

resemble the observed Mean Low Low Water elevation –4.39 feet (NAVD88) and Mean High High Water elevation of 3.53 feet (NAVD88) as seen in the chart below.

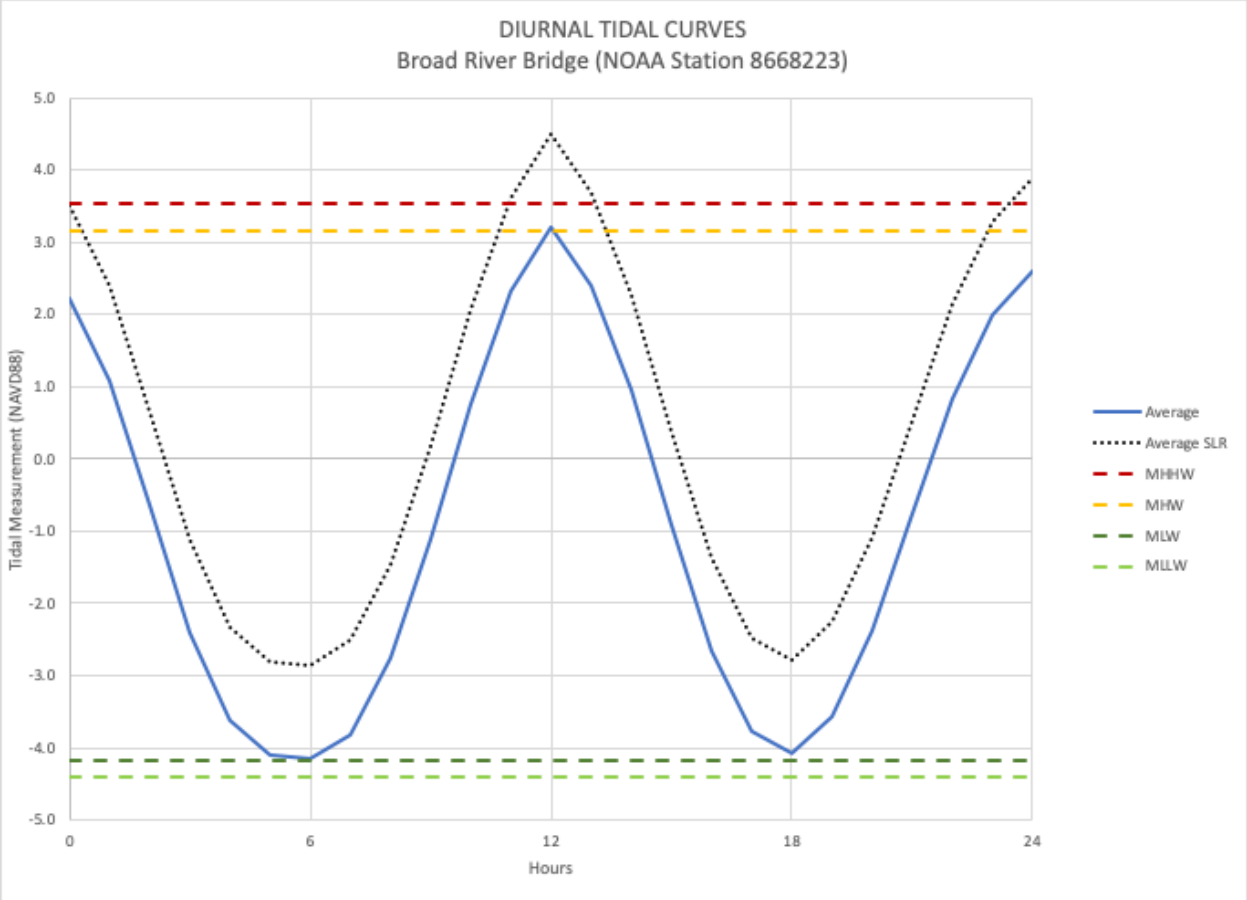


Figure 4: Diurnal Tide Curves

The effects of MHHW and MHHW with sea level rise (SLR) can be seen in the following figures. Any area shown in blue is submerged with tidal flows. Following the comparison of MHHW and MHHW with SLR is a depiction of the highest observed tide in 2020, which occurred on November 15, and reached an elevation of 6.14 feet (NAVD88). This is approximately 2.61 feet above MHHW. You can see, especially when sea level rise is taken into account, roads and adjacent properties begin to overtop, particularly portions of Baynard Road near Shell Point Road and Broad River Drive near Hamrick Drive. These areas were selected as priority areas to analyze during the proposed improvements modeling phase.

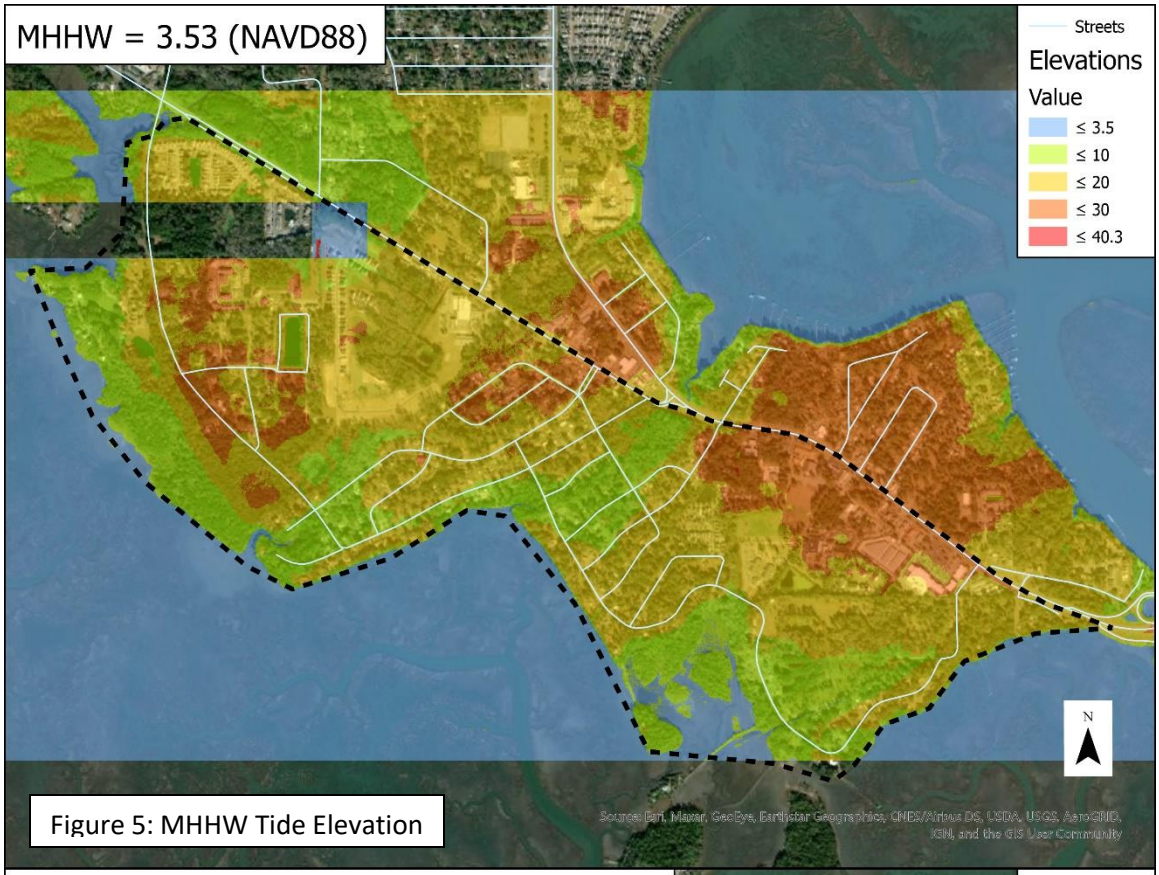


Figure 5: MHHW Tide Elevation

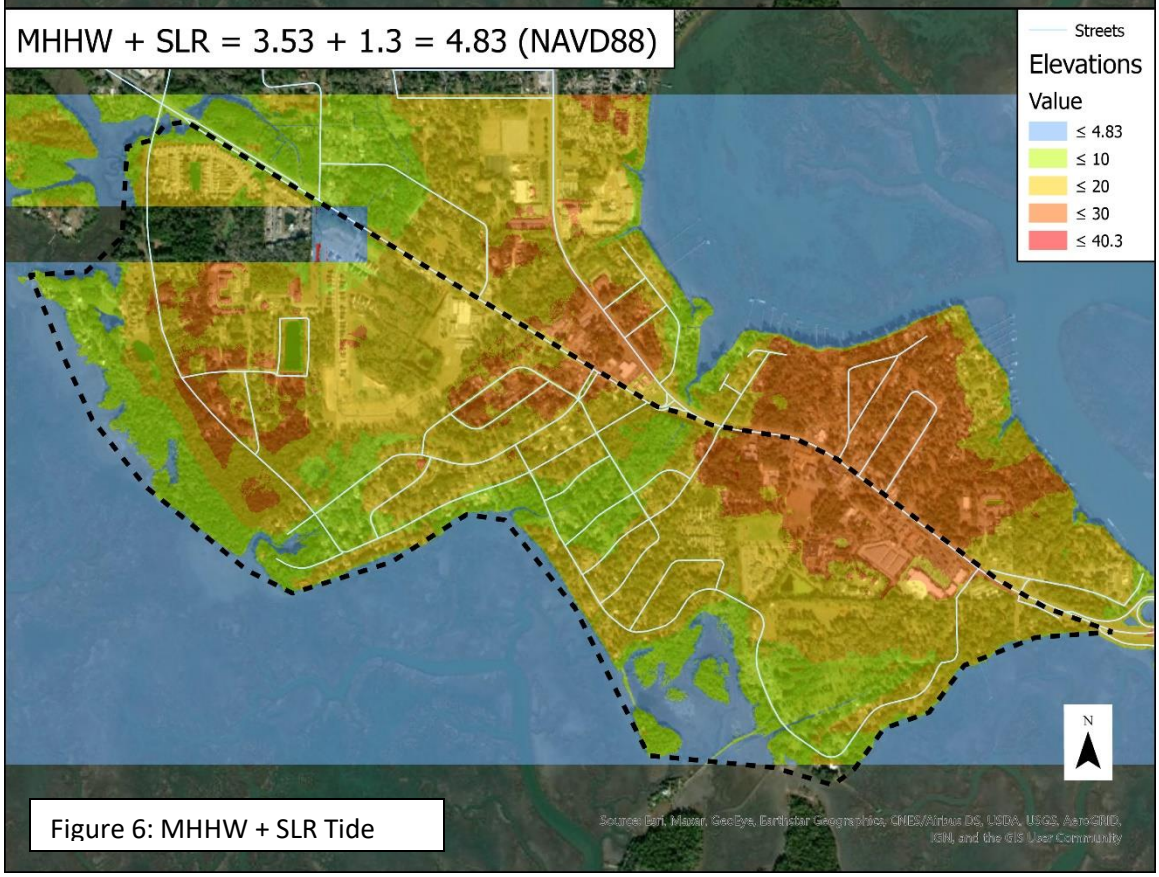


Figure 6: MHHW + SLR Tide

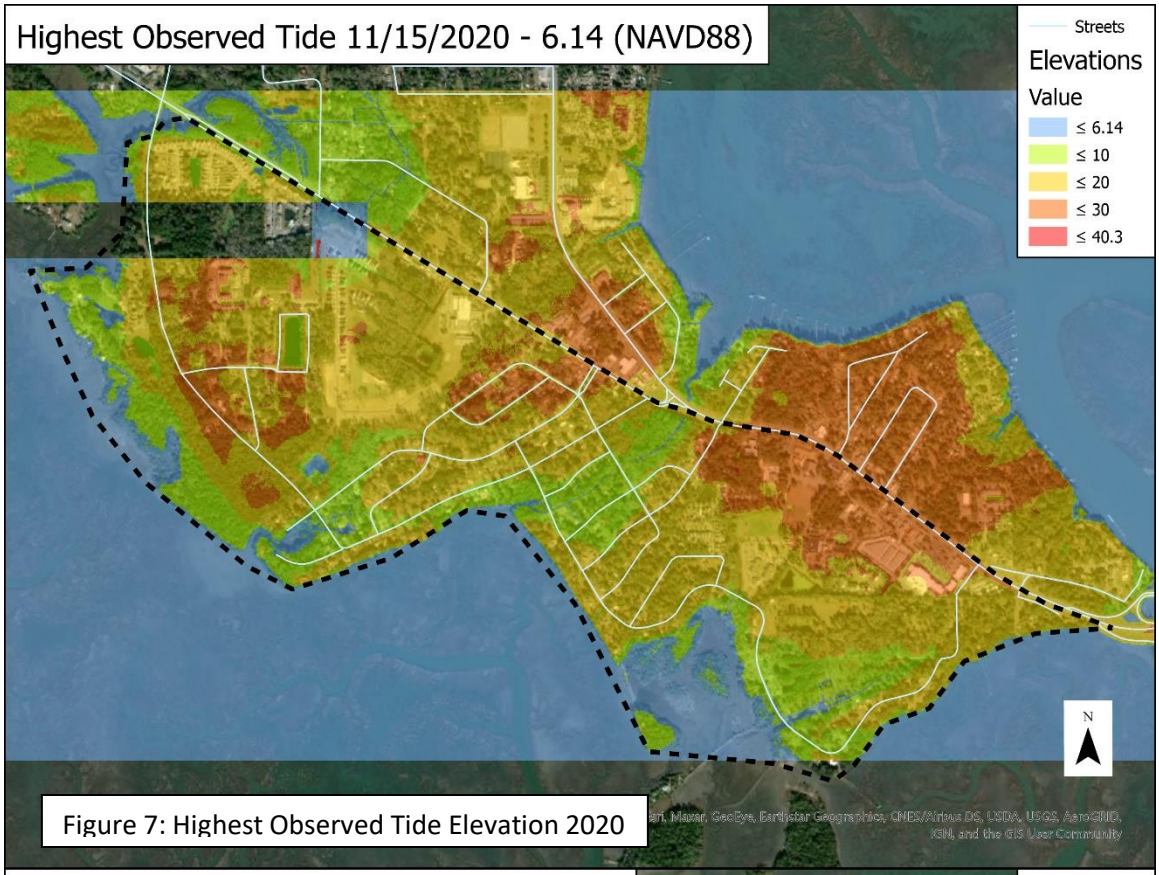


Figure 7: Highest Observed Tide Elevation 2020

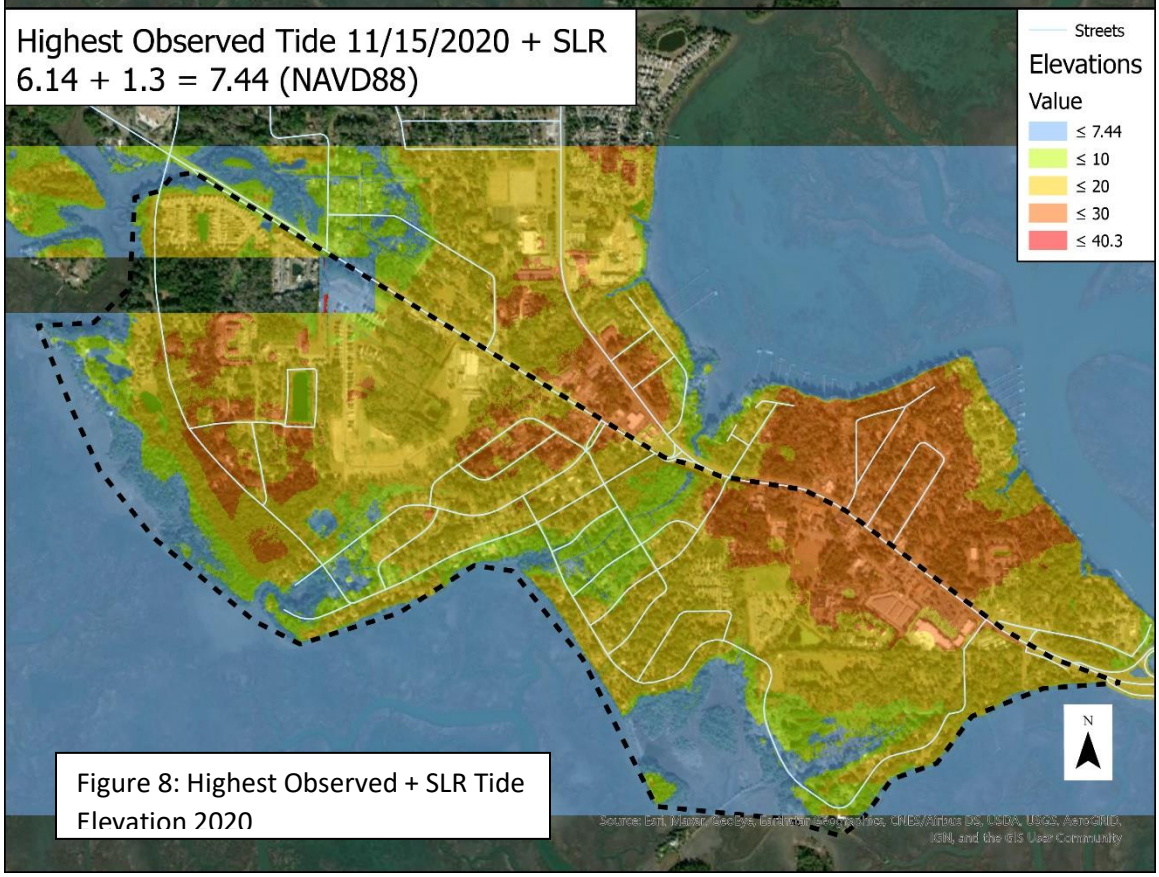


Figure 8: Highest Observed + SLR Tide Elevation 2020

3.4 Existing Conditions Results

The existing conditions model results are included in **Appendix C**. It can be seen in these results that the flooding shown in the model is in line with the known problem areas and citizen complaints. This existing condition model provided the base model for the proposed improvements discussed in Section 4 below.

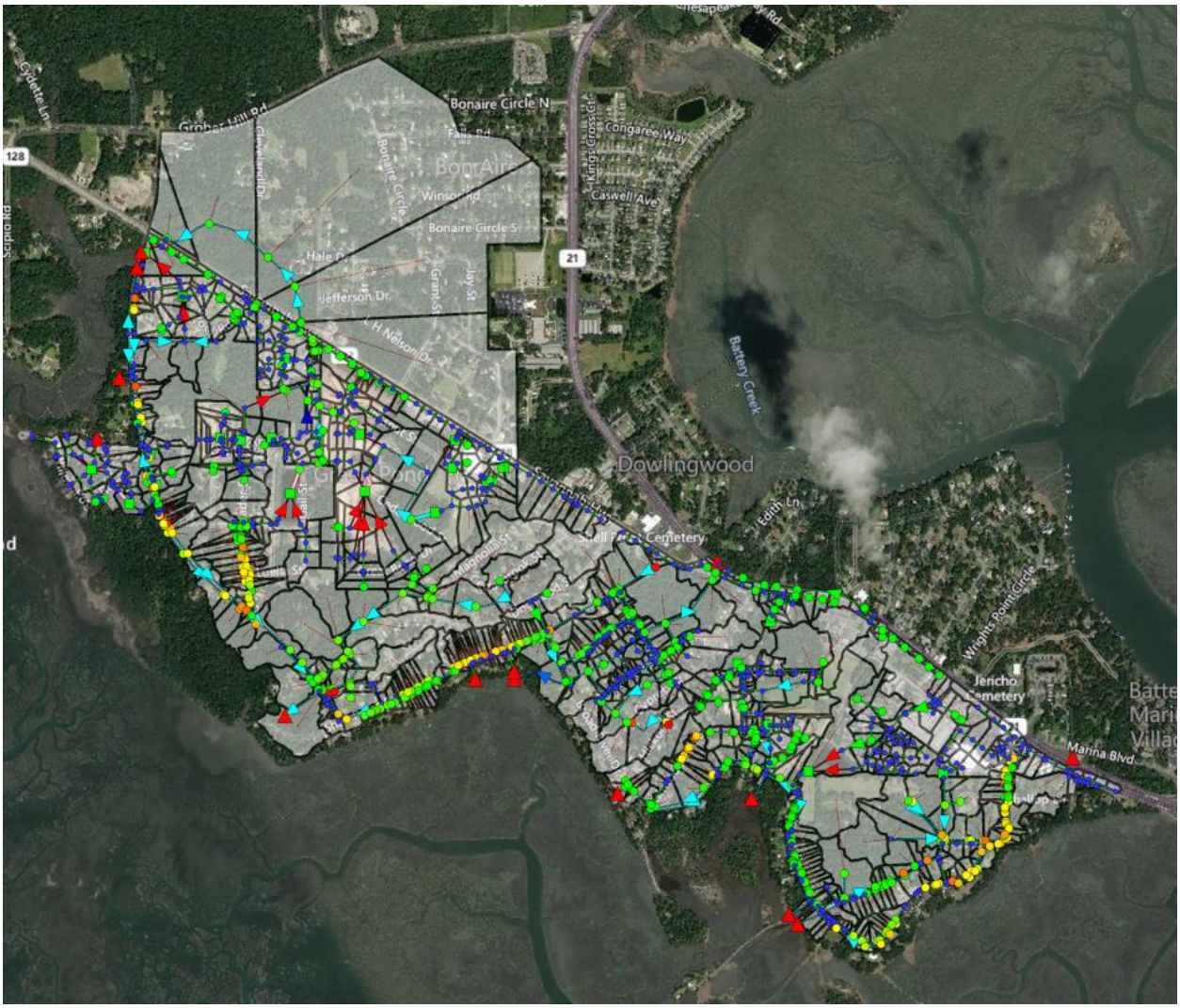


Figure 9: Existing Conditions 25-Year, 24-Hour Storm Results

In the figure above, the colored dots represent the hours a given structure, pipe end or ditch point is flooded during the 25-year, 24-hour storm event. The blue dots represent no flooding, the remaining colors represent a flooding period of 0 hours (green) – 24 hours (red). Looking back at Figure 2, the significant flooding is in line with the Beaufort County Connect Citizen Complaint data received at the beginning of the project. The existing conditions model produced approximately 510 structures, ditch points or pipe ends which flooded for an average of 4.77 hours during the 25-year event.

Section 4

KEY FINDINGS AND RECOMMENDATIONS

This conceptual improvement plan outlines alternatives for the study focus area(s) with the expectation that improvements will likely be implemented in phases. This plan provides the basis for how the project may be phased in a manner to allow for funding distribution, identifying of high priority areas, minimizing impacts to the affected community and separation, phasing of individual drainage networks.

4.1 Proposed Improvements Model Results

As seen in Figure 10 below, flooding during the 25-year storm event was significantly through improvements to the problem areas identified areas identified during the existing conditions modeling. Proposed improvements include right of way ditch and culvert cleaning/reshaping, significant channel improvements and stormwater infrastructure improvements, further discussed in Section 4.2. The proposed improvements model reduced the amount of flooded features to approximately 368 (decrease of 142) structures, ditch points or pipe ends which flooded for an average of 0.83 hours (3.94 hour decrease) during the 25-year event.

All proposed model results are included in **Appendix C**. Table 3 shows a summary of the identified improvement areas and the effects of the improvements have for the 2-, 10- and 25-year, 24-hour storm events, in hours flooded. Results for the 50- and 100-year can be seen in **Appendix C**.

Road/Area	Existing Hours Flooded (Max) - Average Tide			Proposed Hours Flooded (Max) - Average Tide		
	2 Year	10 Year	25 Year	2 Year	10 Year	25 Year
Broad River Drive (Parris Island Gateway to Shell Point Rec Park)	15.65	17.51	18.34	-	0.37	0.57
Broad River Drive (Shell Point Rec Park to Hamrick Drive)	15.33	17.24	18.17	0.98	1.46	1.75
Hamrick Drive (including dirt road)	0.51	1.58	2.33	-	0.67	0.97
Ashwood Circle	13.17	14.45	15.23	-	1.26	1.9
Hickory Street (Broad River Drive to Cypress Street)	23.28	23.5	23.58	-	0.17	0.55
Shell Point Road	21.65	22.62	22.87	-	0.55	0.87
Dogwood Street & Magnolia Street Ditch System	2.51	3.79	4.58	-	0.5	1.02
Green Pond Drive	14.74	16.57	17.46	1.17	2.65	3.34
Baynard Road (Dogwood Street to Willow Point Road)	17.57	18.27	20.7	-	0.78	1.29
Baynard Road (Willow Point Road to Savannah Hwy)	18.76	18.81	19.55	-	-	0.7

Table 3: Proposed Improvement Results

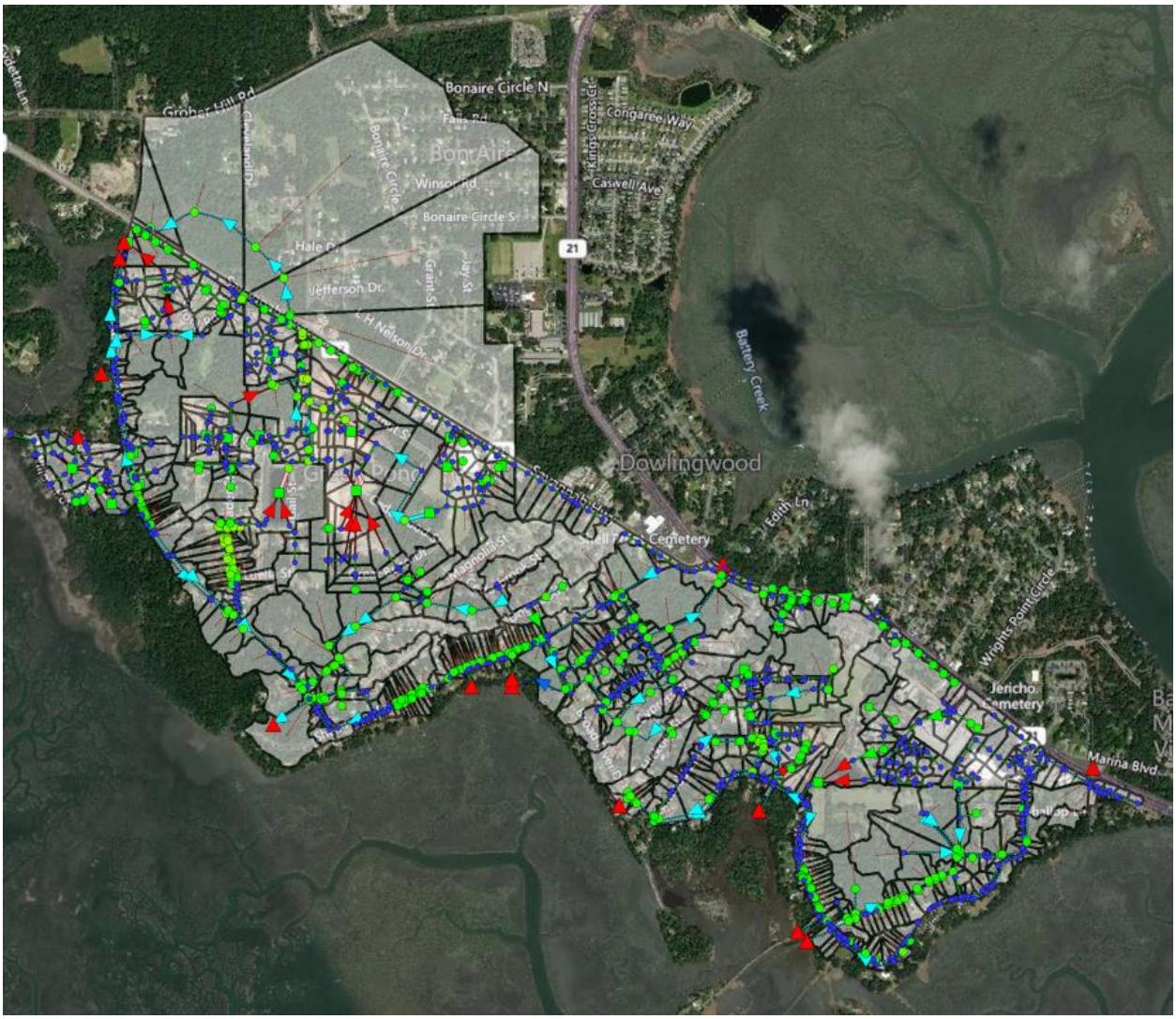


Figure 10: Proposed 25-Year, 24-Hour Storm Results

4.2 Proposed Shell Point Basin Area Improvements

The section provides a brief summary of the proposed improvements, detailed information can be found in **Appendix D**. Localized flooding primarily occurs along low areas of the roads and adjacent properties during large storm events at high tides. The following improvements are proposed to alleviate nuisance flooding in the Shell Point area. Figure 11 shows the areas of the proposed improvements. Following a meeting with Beaufort County Public works, improvement prioritization will be provided.

Improvements Summary
Right of way Ditch Cleaning – 41,163 LF
Right of way Culvert Cleaning – 4,372 LF
Channel Improvements – 6,990 LF
Storm Infrastructure Improvements – 985 LF

ROW Cleaning

1. Broad River Drive
2. Shell Point Road
3. Baynard Road
4. Green Pond Drive

Before and after exhibits for each area are presented in **Appendix D**. Only results for the 25-year, 24-hour storm event are presented.

Major Infrastructure Improvements:

1. Baynard Road to Cedarbrook Street Upsizing
    a. 3 Culvert Crossing replacements (Baynard Rd, Dogwood St, Magnolia St)
    b. Ditch reshaping (approx. 700 LF)
2. Ditch System reshaping
    a. Broad River Drive to Hickory Street, between Palmetto Ridge St and Walnut St (approx. 300 LF)
    b. Hickory St to Parris Island Gateway, between Shell Point Rd and Walnut St (approx. 300 LF)
        i. Potential WQ Regional BMP area
3. New ROW Ditches & Driveway Culverts
    a. Cypress Street (approx. 800 LF)
    b. Hickory Street (appox. 1,000 LF)
    c. Ashwood Circle (approx. 300 LF)
4. Hamrick Drive Outfall System Upsizing
    a. 1 Culvert Crossing replacement (Broad River Dr)
    b. Ditch reshaping (approx. 500 LF)
    c. Easement Acquisition required along Hamrick Drive
        i. Potential WQ Regional BMP area
5. Shell Point Rec. Park
    a. 4 Culvert Crossing replacements (Shell Point Rec Park Access, Broad River Drive, 2 private driveway culverts)
    b. Ditch reshaping (approx. 150 LF)

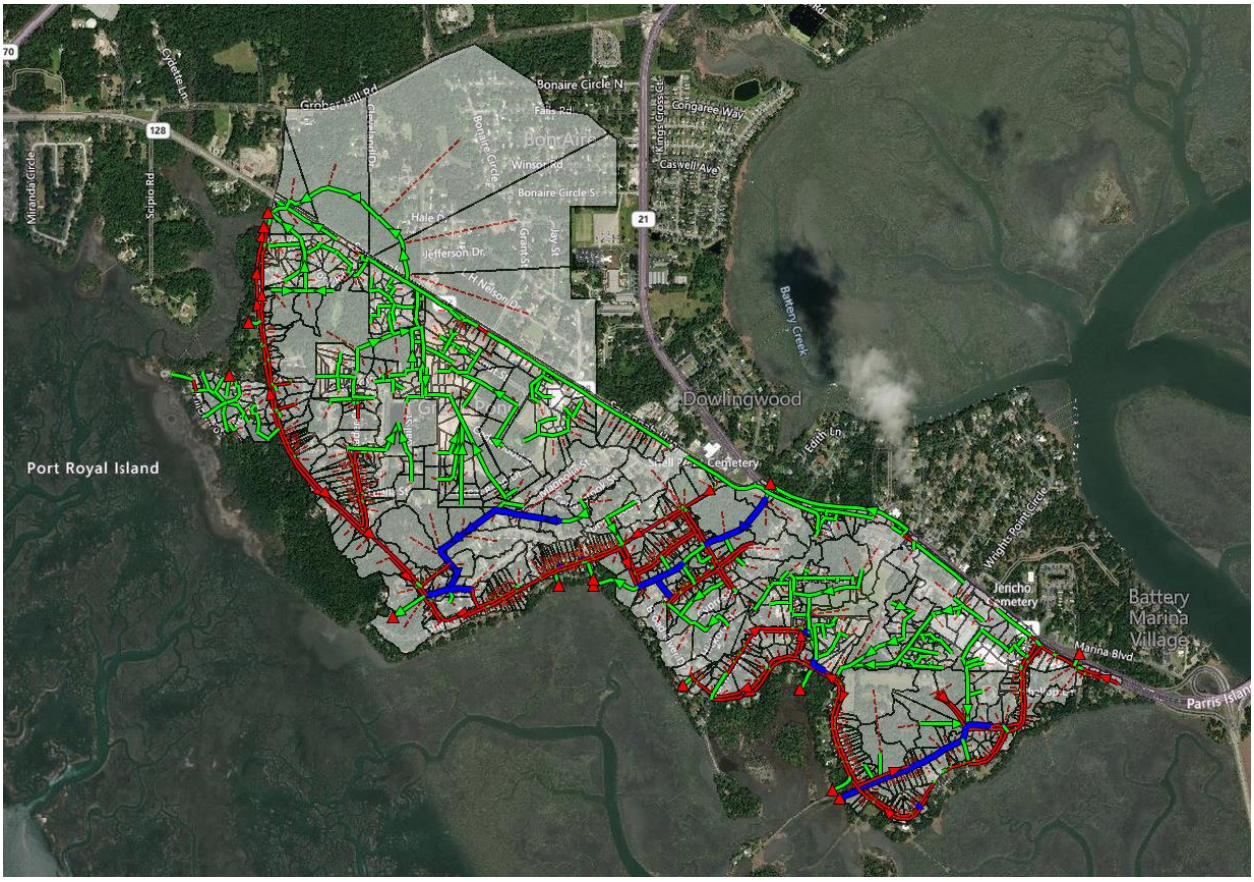


Figure 11: Proposed Improvements

In the figure above, the green represents existing infrastructure not being improved or maintained, the red signifies recommended ditch cleaning and infrastructure maintenance and the blue represents significant improvements. These significant improvements include major channel modifications and 8 road culvert crossings.

Appendix A

PRELIMINARY AND BACKGROUND DATA

Appendix B

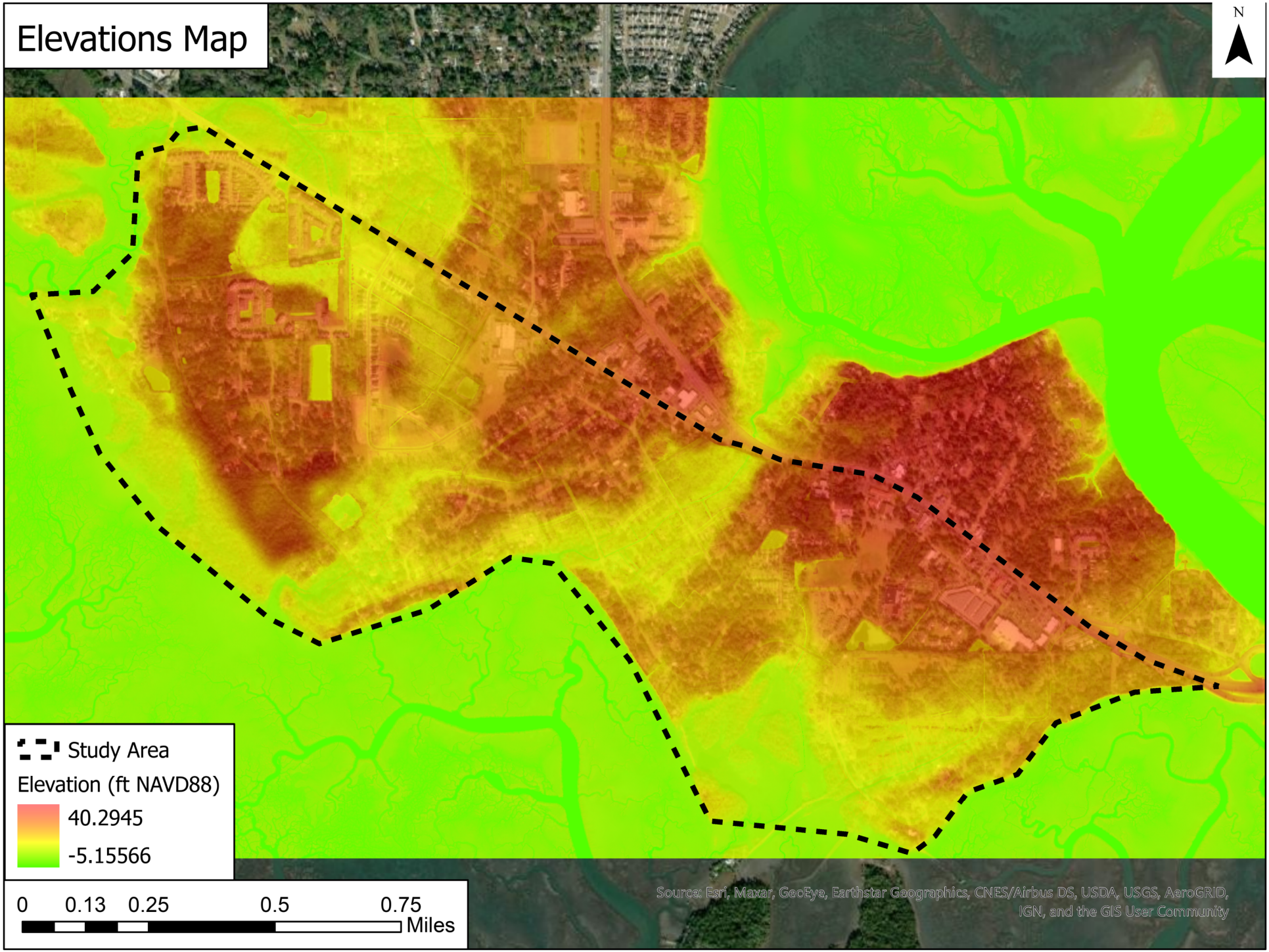
SURVEY RESULTS

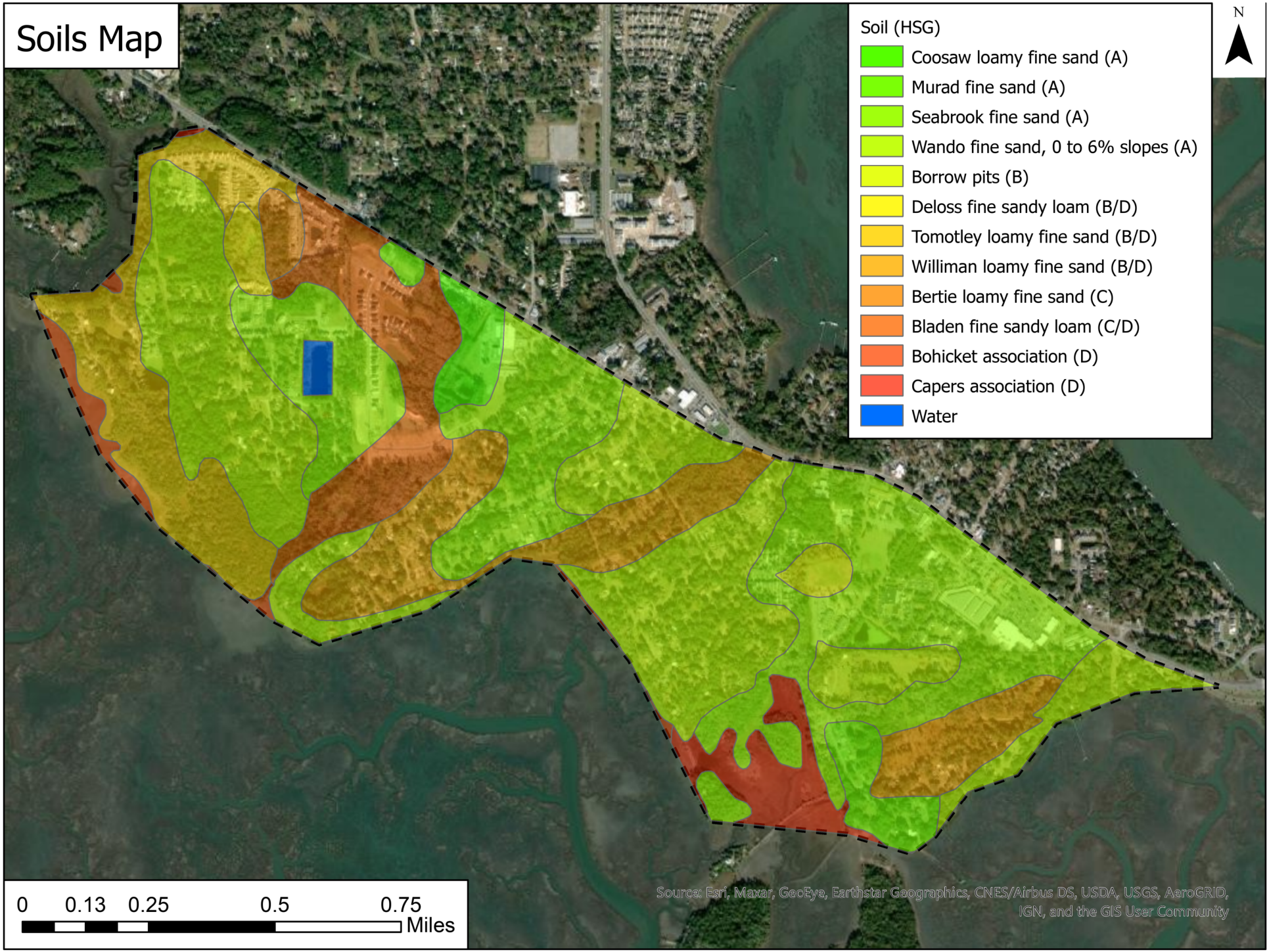
Appendix C

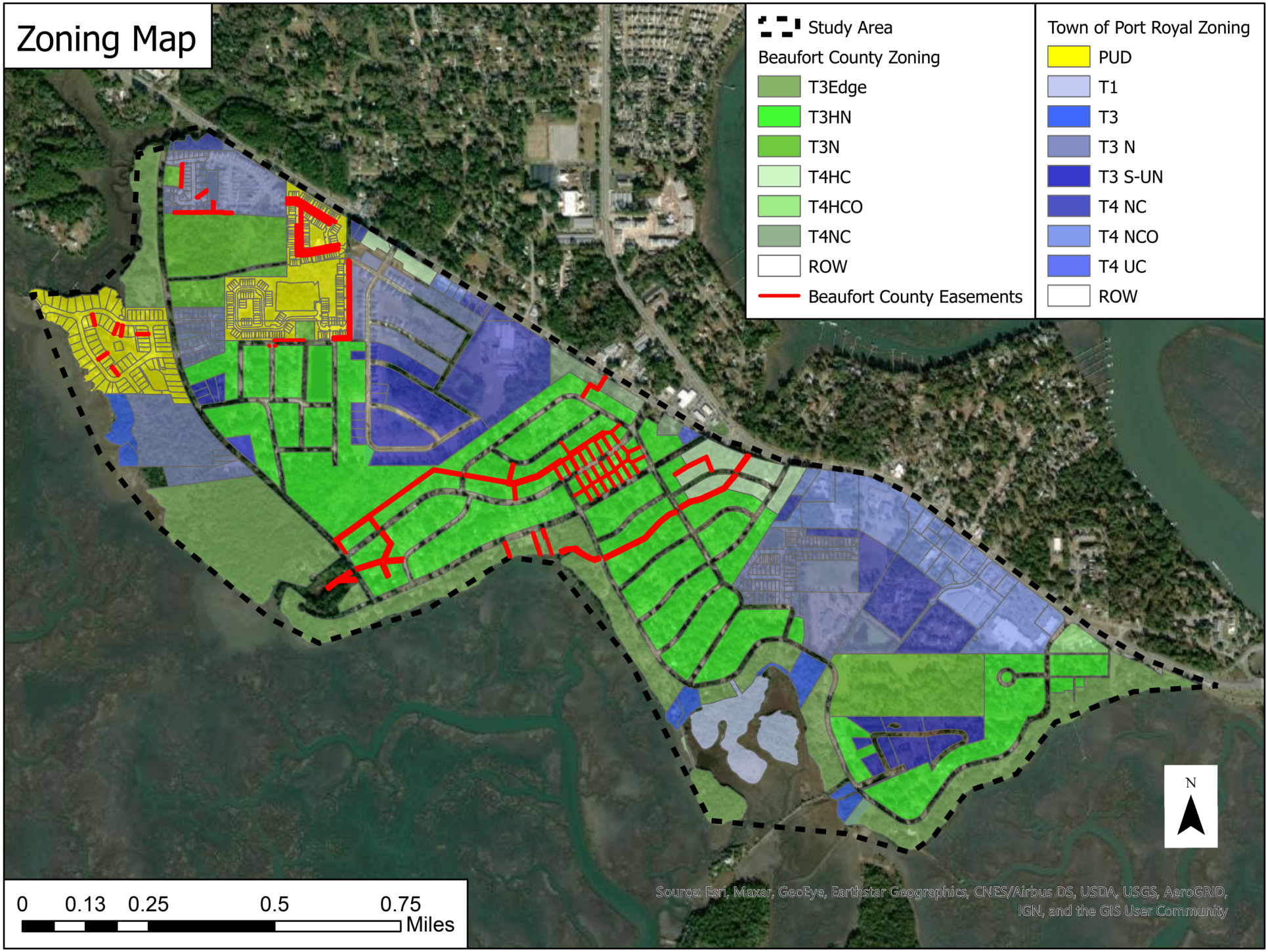
PRE- AND POST-DEVELOPMENT MODELING

Appendix D

IMPROVEMENT AREA DETAILS


Elevations Map
N
Study Area
Elevation (ft NAVD88)
40.2945
-5.15566
0
0.13
0.25
0.5
0.75
Miles
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community


Soils Map
Soil (HSG)
Coosaw loamy fine sand (A)
Murad fine sand (A)
Seabrook fine sand (A)
Wando fine sand, 0 to 6% slopes (A)
Borrow pits (B)
Deloss fine sandy loam (B/D)
Tomotley loamy fine sand (B/D)
Williman loamy fine sand (B/D)
Bertie loamy fine sand (C)
Bladen fine sandy loam (C/D)
Bohicket association (D)
Capers association (D)
Water
N
0 0.13 0.25 0.5 0.75
Miles
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community


Zoning Map
Study Area
Beaufort County Zoning
T3Edge
T3HN
T3N
T4HC
T4HCO
T4NC
ROW
Beaufort County Easements
Town of Port Royal Zoning
PUD
T1
T3
T3 N
T3 S-UN
T4 NC
T4 NCO
T4 UC
ROW
N
0 0.13 0.25 0.5 0.75
Miles
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

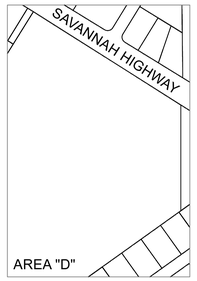
Data From Beaufort County Connect

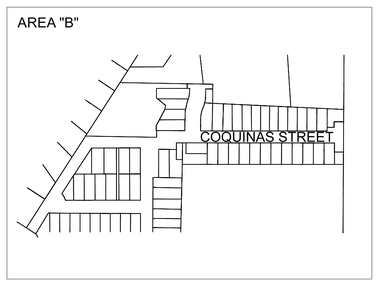
id	dateTime	lastUpdated	status	formName	assignedTo	locationAddress	deptID	muniAssignedTo	description	gpsLocation	userID	userName	fullName
1178	2018-03-09T14:02:24	2020-02-26T10:38:35	Open	Drainage Ditch Clogged	1153	2010 Walnut St	110	Beaufort County	Ditches with open land across the street need cleaned.	32.380353661757,-80.736542698687	1055	melissaa1055	Melissa Allen
1205	2020-02-05T13:00:48	2020-02-11T06:51:16	Open	Pipe/Culvert Clogged	1153	130 Shell Point Recreation Park	110	Beaufort County	Ditches clogged by overgrowth and culvert pipe clogged.	32.375403281732,-80.726834004677	1742	fox.lloyd.a1742	Lloyd Fox
1258	2019-11-19T21:21:08	2019-11-20T07:36:34	Closed	Drainage Ditch Clogged	1067	4 Green Family Dr	110	Beaufort County	Ditcches and culverts under drive way not maintanced.	32.37664199318,-80.723207544411	1689	strezmail1689	Robert Trezevant
1271	2019-09-17T19:23:45	2019-09-18T09:31:06	Closed	Pipe/Culvert Clogged	1067	703 Parris Island Gtwy	110	Beaufort County	Entire pi gateway. Majority of drainage clogged with debri then we wonder why flooding how about a	32.386627915739,-80.737999698227	1501	kmooresc1501	Kenneth Moore
1279	2019-08-25T12:24:29	2019-08-26T15:46:15	Open	Drainage Ditch Clogged	1153	3007 Walnut St	110	Beaufort County	This ditch runs beginnings our house. We have loved here 42 years. It was cleaned about 30 years ago. There is debris, limbs, leaves, pinestraw clogging it. It does not drain anymore. It was surveyed and	32.380179237396,-80.738363096945	1622	johnnieeverett2141622	Johnnie Everett
1369	2019-08-21T09:15:57	2019-08-26T15:43:13	Closed	Drainage Ditch Clogged	1153	3007 Walnut St	110	Beaufort County	Ditches are clogged and overgrown with vegetation	32.380179237396,-80.738363096945	1327	amcqueen1327	Alicia McQueen
1424	2019-06-12T09:58:29	2019-07-25T15:50:19	Closed	Drainage Ditch Clogged	1153	4013 Magnolia St	110	Beaufort County	The ditch is clogged causing water not to flow.	32.382544779532,-80.744926801166	1327	amcqueen1327	Alicia McQueen
1435	2019-07-15T11:14:20	2019-07-16T13:56:56	Closed	Yard/Street Flooded	1153	4011 Dogwood St	110	Beaufort County	Yard flooding	32.381685383245,-80.743159190534	1153	darona1153	Daron Allen
1477	2019-06-10T11:21:53	2019-06-19T12:21:34	Closed	Drainage Ditch Clogged	1153	6015 Morning Mist Dr	110	Beaufort County	Tree in ditch in bad shape, fallen limbs	32.379835129254,-80.747028649455	1055	melissaa1055	Melissa Allen
1545	2019-06-11T16:43:19	2019-06-12T16:37:48	Closed	Yard/Street Flooded	1153	225 Baynard Rd	110	Beaufort County	The ditch is clogged causing water to flood the yard.	32.379159356039,-80.747919672515	1327	amcqueen1327	Alicia McQueen
1648	2019-05-16T14:45:46	2019-05-20T07:56:29	Closed	Drainage Ditch Clogged	1153	6004 Dowlingwood Dr	110	Beaufort County	Ditch doesn't drain properly.	32.385095723414,-80.735792366292	1362	brian.atac1362	Brian Flewelling
330	2019-04-29T07:09:27	2019-04-29T14:01:22	Closed	Drainage Ditch Clogged	1160	4013 Magnolia St	110	Beaufort County	The homeowner is requesting a clean out of channel	32.382544779532,-80.744926801166	1153	darona1153	Daron Allen
355	2018-08-27T15:48:56	2018-08-31T14:45:31	Closed	Drainage Ditch Clogged	1050	4019 Dogwood St	110	Beaufort County	My last request was closed without resolution. The ditch is in terrible shape. One comment prior to the closing said it needed to be bushhoged. The final comment when it was closed today said it was	32.381883838763,-80.744489026477	1109	tcrooks1109	Tammy Crooks
356	2018-08-02T11:13:16	2018-08-31T07:13:50	Closed	Drainage Ditch Clogged	1050	4019 Dogwood St	110	Beaufort County	Ditch is overgrown which is interfering with drainage. The county cleared the drainage problem last year, its so overgrown you can't see the ditch. The banks of the ditch continue to erode to the point	32.381883838763,-80.744489026477	1109	tcrooks1109	Tammy Crooks
400	2017-09-18T11:16:51	2018-08-29T14:58:24	Closed	Drainage Ditch Clogged	1160	501 Hamrick Dr	110	Beaufort County	Roadside ditch in front of house is eroding	32.373238866938,-80.730125402836	1055	melissaa1055	Melissa Allen
416	2018-02-15T15:35:37	2018-08-02T12:52:40	Closed	Yard/Street Flooded	1160	225 Baynard Rd	110	Beaufort County	Customer states there is flooding and standing water in the area. Customer has pictures and has	32.379159356039,-80.747919672515	1327	amcqueen1327	Alicia McQueen
448	2018-07-24T15:45:28	2018-08-02T12:34:51	Closed	Yard/Street Flooded	1160	4029 Shell Point Rd	110	Beaufort County	Rain flows down street to our yard and backs up into yard. No where for water to flow. Ditch stops.	32.379798716097,-80.745361514706	1180	sabrafermin1180	Sabra Fermin
454	2018-07-24T15:47:40	2018-08-02T12:33:19	Closed	Pipe/Culvert Clogged	1160	4027 Shell Point Rd	110	Beaufort County	Rain flows down street and nowhere to drain except the yard. There is no ditch or covert.	32.379939902957,-80.745105233264	1180	sabrafermin1180	Sabra Fermin
455	2018-07-24T15:49:16	2018-08-02T12:32:12	Closed	Drainage Ditch Clogged	1160	4031 Shell Point Rd	110	Beaufort County	Ditch is completely blocked and over grown. Water flood ther front and side of yard to 4029.	32.379661895763,-80.745628315504	1180	sabrafermin1180	Sabra Fermin
457	2018-04-02T09:16:01	2018-06-05T07:34:45	Closed	Yard/Street Flooded	1160	14007 Kader St	110	Beaufort County	Homeowner states when it rains his yard and home is flooded.	32.385435182581,-80.750901871832	1327	amcqueen1327	Alicia McQueen
468	2018-04-05T13:38:09	2018-06-05T07:12:26	Closed	Yard/Street Flooded	1160	5027 Dogwood St	110	Beaufort County	Occasional flooding in back yard.	32.380181184011,-80.748729304155	1055	melissaa1055	Melissa Allen
479	2018-05-09T07:35:15	2018-05-09T07:40:08	Closed	Pipe/Culvert Clogged	1076	112 Bonaire Cir S	110	Beaufort County	Complaint about ditch being blocked off.	32.392618788341,-80.742213662247	1076	dpolk1076	Danny Polk
493	2018-01-29T10:48:42	2018-02-09T10:19:36	Closed	Other Issue/Request	1076	4014 Magnolia St	110	Beaufort County	Dirt piled up on lot, neighbor concerned about drainage ditch.	32.382157708446,-80.744308876777	1076	dpolk1076	Danny Polk
502	2017-10-02T11:34:21	2017-12-28T07:35:03	Closed	Drainage Ditch Clogged	1160	3009 Broad River Dr	110	Beaufort County	Address is for point of reference - ditch on broad river Dr between Palmetto Ridge and Walnut St needs	32.379493433388,-80.739476095215	1055	melissaa1055	Melissa Allen
534	2017-10-02T11:27:39	2017-12-28T07:34:14	Closed	Drainage Ditch Clogged	1160	3016 Palmetto Ridge St	110	Beaufort County	Address is for point of reference -southwest side of palmetto ridge ditch needs reworked from Broad	32.380024630341,-80.739922297602	1055	melissaa1055	Melissa Allen
535	2017-10-02T08:41:09	2017-12-22T08:10:10	Closed	Drainage Ditch Clogged	1160	1001 Broad River Dr	110	Beaufort County	Address is for point of reference- broad river Dr ditch that is midway between Ashwood and Hickory is	32.376685940882,-80.737567870257	1055	melissaa1055	Melissa Allen
536	2017-10-02T11:54:48	2017-12-22T08:09:33	Closed	Drainage Ditch Clogged	1160	4004 Hickory St	110	Beaufort County	Address is for point of reference - drainage ditch needs cleaned out	32.3808266969,-80.73759474881[illegible]	1055	melissaa1055	Melissa Allen
537	2017-10-26T14:25:18	2017-12-11T09:34:15	Closed	Yard/Street Flooded	1160	14007 Kader St	110	Beaufort County	Front Yard floods during heavy rain.	32.385435182581,-80.750901871832	1055	melissaa1055	Melissa Allen
538	2017-07-11T15:33:13	2017-11-03T14:45:44	Closed	Drainage Ditch Clogged	1160	4019 Dogwood St	110	Beaufort County	Problem previously reported was never addressed. Ditch is washing away my back yard. I'm unable to	32.381883838763,-80.744489026477	1109	tcrooks1109	Tammy Crooks
539	2017-10-02T08:33:27	2017-11-03T14:39:42	Closed	Pipe/Culvert Clogged	1160	2001 Broad River Dr	110	Beaufort County	Address is for point of reference only - corner of Broad River Dr and Hickory concrete drain cover	32.377293017662,-80.73813244212	1055	melissaa1055	Melissa Allen
540	2017-10-02T08:38:32	2017-11-03T14:38:30	Closed	Drainage Ditch Clogged	1160	991 Broad River Dr	110	Beaufort County	Address is for point of reference-Broad River Dr corner of Ashwood across from Forks of Ivy there is	32.37655063967,-80.73717880675[illegible]	1055	melissaa1055	Melissa Allen
541	2017-10-02T08:53:11	2017-11-03T14:36:17	Closed	Drainage Ditch Clogged	1160	225 Baynard Rd	110	Beaufort County	Address is for point of reference- Ditch between dogwood and shell point rd needs cleaned out	32.379159356039,-80.747919672515	1055	melissaa1055	Melissa Allen
542	2017-10-02T10:44:00	2017-11-03T14:34:52	Closed	Drainage Ditch Clogged	1160	3017 Broad River Dr	110	Beaufort County	Address is for point of reference - Broad River Dr from Shell Point to Palmetto Ridge needs cleaned out	32.380732144835,-80.740143685011	1055	melissaa1055	Melissa Allen
543	2017-10-02T10:36:52	2017-11-03T14:33:55	Closed	Drainage Ditch Clogged	1160	6016 Morning Mist Dr	110	Beaufort County	Address is for point of reference - Morning Mist (off of Shell Point Rd) ditch in both sides of road needs	32.379363239178,-80.746279798014	1055	melissaa1055	Melissa Allen
544	2017-10-02T10:41:24	2017-11-03T14:33:26	Closed	Drainage Ditch Clogged	1160	4002 Shell Point Rd	110	Beaufort County	Address is for point of reference - Shell Ppint Rd (west side) at Broad River Dr ditch needs cleaned and	32.380733267001,-80.740853825527	1055	melissaa1055	Melissa Allen
545	2017-10-02T11:44:39	2017-11-03T14:31:23	Closed	Yard/Street Flooded	1160	6002 Hickory St	110	Beaufort County	Address is for point of reference- hickory between shell point rd and dogwood needs drainage on both	32.382718906176,-80.738901301713	1055	melissaa1055	Melissa Allen
546	2017-10-02T12:48:13	2017-11-03T14:20:18	Closed	Drainage Ditch Clogged	1160	3013 Magnolia St	110	Beaufort County	Address is for point of reference - road undermined and a red line (gas?) unsupported	32.38364849512,-80.743062348333	1055	melissaa1055	Melissa Allen
558	2017-10-02T12:51:34	2017-11-03T14:19:39	Closed	Drainage Ditch Clogged	1160	3012 Shell Point Rd	110	Beaufort County	Address is for point of reference - drainage needs reviewed	32.381145094453,-80.740102783189	1055	melissaa1055	Melissa Allen
611	2017-09-22T14:23:35	2017-09-27T10:32:40	Closed	Drainage Ditch Clogged	1050	4010 Magnolia St	110	Beaufort County	Ditch between Dogwood and Cedarbrook St in shell point area, it is blocked where it passes under	32.382610888114,-80.743852468018	1055	melissaa1055	Melissa Allen
636	2017-08-10T23:48:15	2017-09-22T07:59:09	Closed	Drainage Ditch Clogged	1050	4019 Dogwood St	110	Beaufort County	4th REQUEST THIS YEAR.. NO ACTION HAS BEEN TAKEN. Please clear the ditch behind my house. My	32.381883838763,-80.744489026477	1109	tcrooks1109	Tammy Crooks
656	2017-09-11T11:29:38	2017-09-22T07:58:24	Closed	Drainage Ditch Clogged	1050	4019 Dogwood St	110	Beaufort County	Again, and in the beginning of this storm I want to make note of my repeated request for assistance. Being on "Your list" did not help my situation. Please note, by the end of Irma my shed foundation will	32.381883838763,-80.744489026477	1109	tcrooks1109	Tammy Crooks
674	2017-04-07T19:10:39	2017-09-22T07:58:10	Closed	Yard/Street Flooded		4019 Dogwood St	110	Beaufort County	Ditch overflowing in my yard. 6ft chain link fence is almost 3ft underwater. Looks like a pond. In level	32.381883838763,-80.744489026477	1109	tcrooks1109	Tammy Crooks
677	2017-04-07T16:29:27	2017-09-22T07:57:54	Closed	Yard/Street Flooded		4019 Dogwood St	110	Beaufort County	Ditch overflowing in my yard. 6ft chain link fence is almost 3ft underwater. Looks like a pond. In level	32.381883838763,-80.744489026477	1109	tcrooks1109	Tammy Crooks
698	2017-03-08T19:42:21	2017-09-20T09:36:19	Closed	Drainage Ditch Clogged	1050	6037 Dowlingwood Dr	110	Beaufort County	The picture submitted is of a drainage ditch/tidal ditch. Before "Matthew" I contacted the county and the DOT about this matter, and both said it was "not their responsibility". After Matthew, the problem	32.388549278441,-80.736950518402	1094	chrabanek1094	Charles Hrabanek
806	2017-06-26T11:01:09	2017-09-20T09:30:56	Closed	Drainage Ditch Clogged		3008 Palmetto Ridge St	110	Beaufort County	Ditch not draining. KAREN Wunderkind called DHEC about a ditch and OSWW on her property.	32.380604546113,-80.738878041569	1010	RebeccaB	Rebecca Baker
807	2017-09-13T10:36:07	2017-09-20T09:06:44	Closed	Drainage Ditch Clogged	1160	507 Broad River Dr	110	Beaufort County	Drainage ditches clogged, corner of Hamrick Dr and Broad River culvert backed up. Several yards	32.37300302114,-80.730889414975	1055	melissaa1055	Melissa Allen
808	2017-08-24T13:00:48	2017-08-30T11:24:56	Closed	Drainage Ditch Clogged	1160	3009 Walnut St	110	Beaufort County	Ditch it and pipe is clogged doesn't drain well needs to be dug out for better water displacement	32.379969712889,-80.738625271669	1162	tcaldwell051162	Trent Caldwell
830	2017-08-25T16:52:25	2017-08-30T11:23:12	Closed	Pipe/Culvert Clogged	1160	3013 Walnut St	110	Beaufort County	Culvert blocked and sides of ditch eroding. Needs to be cleared of debris and mud and sides need to be	32.3793968202,-80.739041152661	1164	k_wilson361164	Kathryn Campbell
885	2017-08-15T16:26:34	2017-08-22T10:45:57	Closed	Drainage Ditch Clogged	1085	3013 Dogwood St	110	Beaufort County	The ditch that runs in between 3013 and 3015 Dogwood street is not draining. This is causing septic issues and flooding. My septic tank was emptied and inspected last month with no issues. Now it will	32.38244672356,-80.741154848585	1152	beach.jason.m1152	Jason Beach

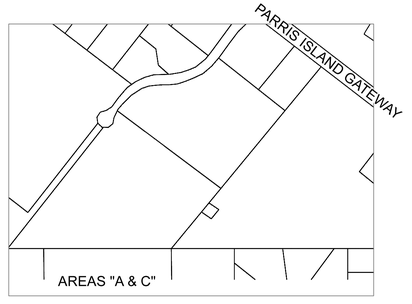
PLAN SET	SOURCE	LOCATION	PLAN FEATURES	NOTES
shell point pk.pdf	BC	Shell Point	Shell Point Park Access	In Ph.1 Limits
Baynard Street.pdf	SCDOT	St. Helena	S-470 (Ball Park Rd), S-456, S-471 (Storyteller Rd)	Out of Project Limits. Duplicate Broad River Drive.pdf
Broad River Drive.pdf	SCDOT	St. Helena	S-470 (Ball Park Rd), S-456, S-471 (Storyteller Rd)	Out of Project Limits. Duplicate Baynard Street.pdf
Cypress Street.pdf	SCDOT	Port Royal/Shell Point	S-274/S-280 (Parris Island Gtwy now US-21), S-286 (Cypress St), S-287 (Broad River Dr), S-288 (Walnut St), S-289 (Hickory St)	First three sheets Parris Island Gtwy Out of Project Limits. Duplicate Walnut Street.pdf
Green Pond Drive.pdf	SCDOT	Beaufort	S-825 (Marsh Hawk Dr)	Out of Project Limits
Melton Street.pdf	SCDOT	Beaufort/Shell Point	S-280 (Parris Isladn Gtwy now US-21), S-281 (Savannah Hwy now SC-128), S-289 (Hickory St), S-287 (Broad River Dr), S-538 (Magnolia Cir now Ashwood Cir), S-550 (Mink Point Blvd), S-552 (Melton St. now Green Pond Dr/Gollihugh Blvd), S-553 (Gail St), S-554 (Lake Melton St), S-555 (Roosevelt Ave)	S-550 Out of Project Limits
Shell Pont Road.pdf	SCDOT	Shell Point	S-289 (Magnolia St), S-512 (Cedarbrook St), S-488 (Shell Point Rd), S-488 (Dogwood St now S7-7488E), S-256 (Shell Point Rd now Baynard Rd), S-514 (Palmetto Ridge St), S-289 (Hickory St), S-503 (Belleview Cir)	S-503 In Ph.2 Limits
Walnut Street.pdf	SCDOT	Port Royal/Shell Point	S-274/S-280 (Parris Island Gtwy now US-21), S-286 (Cypress St), S-287 (Broad River Dr), S-288 (Walnut St), S-289 (Hickory St)	First three sheets Parris Island Gtwy Out of Project Limits. Duplicate Cypress Street.pdf
039-0721 Port Royal - Site Plan 09.16.15.pdf	TOPR	Shell Point	McDonalds. 850 Parris Island Gateway, SC 29935. Parcel R112 034 000 0158 0000	Plan set say 780 Parris Island Gateway
1540 Liberty Point Phase II 4 02 12 (1).pdf	TOPR	Shell Point	Liberty Point Subdivision Phase II. Includes Private Roads Mission Way, Glory Rd, Patriot Ct	Duplicate 1540 Liberty Point Phase II 04 02 12.pdf
1540 Liberty Point Phase II 4 02 12.pdf	TOPR	Shell Point	Liberty Point Subdivision Phase II. Includes Private Roads Mission Way, Glory Rd, Patriot Ct	Duplicate 1540 Liberty Point Phase II 04 02 12 (1).pdf
1837.Shell Point Frams.Ph.I.4-12-2016.pdf	TOPR	Shell Point	Shell Point Farms Phase I Lots 1-59. Includes Private Roads Great Bend Dr, Chestnut St, Chinquapin St	
2117-Site Development Plans 6-11-2018 Signed Shell Point Farms.pdf	TOPR	Shell Point	Shell Point Farms Phase II Lots 60-111. Includes Private Road Great Bend Dr	
24942.0000-Site%20Development%20Plans%202014-07-31[1]small.pdf	TOPR	Shell Point	Lowcountry Montessori School. Parcels R112 033 000 0012 0000 & R112 033 000 0114 0000. Includes a portion of S-287 (Broad River Dr)	
100019B-Riv-Chart-School-Port-Royal-Resub-2015-11-12.pdf	TOPR	Shell Point	River View Charter School. 19 Cedarwood St. Parcel R112 031 00B 0127 0000	
100048_TOPR Final Review Set_042511.pdf	TOPR	Shell Point	Port Royal Apartments. 41 Grober Hill Road. Parcel R112 031 000 0998 0000	Just outside Ph.2 Limits
150257-20160808-Site Plans.pdf	TOPR	Shell Point	Atlantic Climate Controlled Storage. 109 Savannah Hwy. Parcels R112 031 00B 0119 0000 & R112 031 00B 0121 0000	Plans have Parcels R100 031 00B 0119 0000 & R100 031 00B 0121 0000
180001_18-0928_TOPR Conditional Permit Request Plans.pdf	TOPR	Shell Point	Waterleaf At Battery Creek. Parcel R112 031 000 0102 0000	In Ph.2 Limits
20100480_C0_00_EXI.pdf	TOPR	Shell Point	Dialysis Clinic, Inc. 8 Presnell Circle. Parcel R112 034 000 0001 0000	In Ph.2 Limits
C-6.0.pdf	TOPR	Shell Point	Praise Assembly of God. 800 Parris Island Gateway. Parcel R112 034 000 0023 0000	
CIVIL.pdf	TOPR	Shell Point	Sunny Apple Day-Care. Parcel R112 033 000 0004 0000	
Old Shell Point.pdf	TOPR	Shell Point	Old Shell Point Subdivision. Includes Private Roads Coquinas Ln, Cockle Ln, Whelk Rd, Coquinas Ct	
Picket Fences Phase 2.pdf	TOPR	Shell Point	Picket Fences Phase 2. Includes Private Roads Caswell Ave, Kings Cross Ct, White Pond Blvd, Rockville Way, Hornsborough Ct, Lagaree Ct, Wateree Ct, Stono Ct	In Ph.2 Limits
scan215.pdf	TOPR	Shell Point	Palmetto Point Subdivision. Includes Private Roads Mission Way, Glory Rd, Patriot Ct	Development name changed to Liberty Point Subdivision. Also see 1540 Liberty Point Phase II 4 02 12.pdf

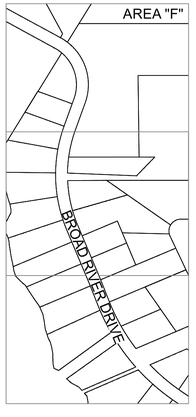
PLAN SET	SOURCE	LOCATION	PLAN FEATURES	NOTES
Site Development Plans.pdf	TOPR	Shell Point	Parkers Convenience Store. Intersection of SC-802 & SC-280. Parcels R112 033 00A 0249 0000 & R112 033 00A 249A 0000	Mostly in Ph.2 Limits
TR@BC-SITE DEVELOP PLANS-1ST SUBMITTAL SET 2-14-19.pdf	TOPR	Shell Point	The Reserve at Battery Creek. 106 Wrights Point Dr. Parcels R112 034 000 0003 0000, R112 034 000 0005 0000, R112 034 000 0248 0000 & R112 034 000 0251 0000. Includes Private Road Belleview Bluff	In Ph.2 Limits
Village at Battery Creek.pdf	TOPR	Shell Point	Village at Battery Creek. Parcel R110 034 000 014B 0000. Includes Private Roads Marina Village Ln & Battery Creek Club Dr	In Ph.2 Limits
Waffle House Site.pdf	TOPR	Shell Point	Waffle House. 116 High Tide Drive Parcel R112 034 000 0247 0000	
Azalea Square Complete.pdf	TOPR	Shell Point	Azalea Square Community	

Survey Area	Area	Structure	Description	Tree Cover	Near Building	Elevations (ft)						
						Survey	DEM	ΔDEM	%	PLAN SET	ΔPLAN	%
A	Medical University Of South Carolina - Cardiology	WCP-12007	Parkinglot, structure rim	minimal	No	19.91	19.74	(0.17)	99.1%			
A	Medical University Of South Carolina - Cardiology	WCP-12006	Parkinglot, structure rim	minimal	No	18.71	18.57	(0.14)	99.3%			
A	Medical University Of South Carolina - Cardiology	WCP-12008	Parkinglot, structure rim	minimal	No	18.04	18.36	0.32	101.8%			
A	Shell Point Apartments	WCP-20385	Parkinglot, structure rim	minimal	No	18.00	17.69	(0.31)	98.3%			
A	Shell Point Apartments	WCP-20384	Parkinglot, structure rim	minimal	No	17.61	17.41	(0.20)	98.9%			
B	Old Shell Point	WCP-9716	Coquinas Ln, 0.1 ac lots, structure rim	minimal	No	15.35	15.14	(0.21)	98.6%	16.00	0.65	104.2%
B	Old Shell Point	WCP-9715	Coquinas Ln, 0.1 ac lots, structure rim	minimal	No	13.87	13.96	0.09	100.6%	14.00	0.13	100.9%
B	Old Shell Point	WCP-9728	Coquinas Ln, 0.1 ac lots, structure rim	minimal	No	16.47	16.26	(0.21)	98.7%	17.50	1.03	106.3%
B	Old Shell Point	WCP-9720	Coquinas Ln, 0.1 ac lots, structure rim	minimal	No	19.45	19.27	(0.18)	99.1%	20.00	0.55	102.8%
B	Old Shell Point	WCP-9730	Coquinas Ln, 0.1 ac lots, structure rim	minimal	No	20.92	20.45	(0.47)	97.8%	19.87	(1.05)	95.0%
B	Old Shell Point	WCP-9731	Coquinas Ln, 0.1 ac lots, structure rim	some	No	20.99	20.64	(0.35)	98.3%	22.00	1.01	104.8%
B	Old Shell Point	WCP-9736	Coquinas Ln, 0.1 ac lots, structure rim	some	No	22.35	21.53	(0.82)	96.3%	23.00	0.65	102.9%
B	Old Shell Point	WCP-9734	Coquinas Ln, 0.1 ac lots, structure rim	some	No	22.40	22.05	(0.35)	98.4%	23.00	0.60	102.7%
B	Old Shell Point	WCP-9739	Coquinas Ln, 0.1 ac lots, structure rim	some	No	22.82	22.38	(0.44)	98.1%	23.37	0.55	102.4%
C	BILO Parkinglot	WCP-12003	Parkinglot, structure rim	none	No	19.14	19.13	(0.01)	99.9%			
C	BILO Parkinglot	WCP-12001	Parkinglot, structure rim	none	No	19.06	18.94	(0.12)	99.4%			
C	BILO Parkinglot	WCP-12002	Parkinglot, structure rim	none	No	19.27	19.08	(0.19)	99.0%			
D	Riverview Charter School	J1055	Drive asile, structure rim	none	Yes	15.75	15.87	0.12	100.8%	15.77	0.02	100.1%
D	Riverview Charter School	WCP-0069	Grassed area near drive asile, structure rim	some	No	16.37	15.85	(0.52)	96.8%	16.42	0.05	100.3%
D	Riverview Charter School	WCP-0070	Drive asile, structure rim	none	No	16.35	16.43	0.08	100.5%	16.49	0.14	100.9%
D	Riverview Charter School	WCP-0071	Grassed area, structure rim	some	Yes	16.63	18.11	1.48	108.9%	16.68	0.05	100.3%
D	Riverview Charter School	WCP-0072	Grassed area, structure rim	some	Yes	15.63	17.16	1.53	109.8%	15.71	0.08	100.5%
D	Riverview Charter School	WCP-0073	Grassed area, structure rim	none	No	15.59	16.38	0.79	105.1%	15.58	(0.01)	99.9%
E	Shell Point Farm	WCP-0108	Savannah Highway ROW, structure rim	some	No	10.18				11.01	0.83	108.2%
E	Shell Point Farm	WCP-0107	Savannah Highway ROW, structure rim	some	No	10.37				11.40	1.03	109.9%
E	Shell Point Farm	WCP-0084	Entrance (Great Bend Dr), structure rim	some	No	10.45				11.46	1.01	109.7%
E	Shell Point Farm	WCP-0083	Entrance (Great Bend Dr), structure rim	some	No	10.54				11.23	0.69	106.5%
E	Shell Point Farm	WCP-0082	Savannah Highway ROW, structure rim	some	No	11.32				12.24	0.92	108.1%
E	Shell Point Farm	WCP-0087	Grassed Area, 0.1 ac lots, structure rim	none	No	11.09				12.00	0.91	108.2%
E	Shell Point Farm	WCP-0086	Great Bend Dr, 0.1 ac lots, structure rim	none	No	11.65				12.57	0.92	107.9%
E	Shell Point Farm	WCP-0088	Great Bend Dr, 0.1 ac lots, structure rim	none	No	11.47				12.57	1.10	109.6%
E	Shell Point Farm	WCP-0089	Grassed Area, 0.1 ac lots, structure rim	none	No	11.10				12.00	0.90	108.1%
E	Shell Point Farm	WCP-0092	Great Bend Dr, 0.1 ac lots, structure rim	none	No	11.58				13.42	1.84	115.9%
E	Shell Point Farm	WCP-0095	Chestnut St, 0.1 ac lots, structure rim	none	No	11.39				12.47	1.08	109.5%
F	Shell Point Park		Northern Pond Outfall, pipe end	heavy	No	12.13	14.86	2.73	122.5%	12.04	(0.09)	99.3%
F	Shell Point Park		Northern Pond Outfall, structure rim	heavy	No	14.96	14.12	(0.84)	94.4%	14.92	(0.04)	99.7%



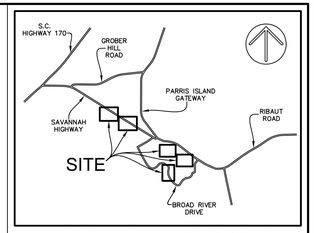






NORTH

SC GRID (NAD 83)



VICINITY MAP *NOT TO SCALE*

LEGEND

×12.9	SPOT ELEVATION
———	UNDERGROUND DRAINAGE LINE
IE	INVERT ELEVATION
BFP	BITUMINOUS FIBER PIPE
RCP	REINFORCED CONCRETE PIPE
⊠	CURB INLET
Ⓜ	STORM DRAIN MANHOLE

NOTES

1. VERTICAL DATUM IS NAVD 88.
2. HORIZONTAL DATUM IS SOUTH CAROLINA STATE PLAN COORDINATES NAD83.

REFERENCES

1. NO BOUNDARY WORK PERFORMED, PROPERTY LINES ARE PER BEAUFORT COUNTY GIS LINEWORK, FOR REFERENCE ONLY.

PREPARED FOR:
CRANSTON ENGINEERING

DRAINAGE EXHIBIT

COVER SHEET

THE CITY OF BEAUFORT
BEAUFORT COUNTY, SOUTH CAROLINA

FIELD WORK:	NCN
FIELD CHECK:	JWR
DRAWN BY:	TGJ
DATE:	12-01-2020
SCALE:	1"=300'
PROJECT No.:	BFT-20338
FILE:	BFT-20338 D1.DWG

ATLAS
SURVEYING, INC.
49 BROWN'S COVE ROAD, SUITE #5
RIDGELAND, SC 29936
PHONE: (843) 645-9277
WEBSITE: WWW.ATLASSURVEYING.COM

SOUTH CAROLINA — ATLAS SURVEYING BFT LLC No. C05928 — CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA — PROFESSIONAL LAND SURVEYOR — No. 28139 — JEREMY W. REEDER

I HEREBY STATE THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREIN WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN.

JEREMY W. REEDER
S.C.P.L.S. No. 28139
NOT VALID UNLESS CRIMPED WITH SEAL

300 150 0 300 600
GRAPHIC SCALE

TMS
R112 034 000 0250 0000

TMS
R112 034 000 0249 0000

TMS
R110 034 000 0150 0000

TMS
R112 034 000 0155 0000

TMS
R112 034 000 0174 0000

TMS
R112 034 000 0177 0000

PARRIS ISLAND GATEWAY

SC GRID (NAD 83)
NORTH

SDMH
RIM:19.91'

SDMH
RIM:18.71'

MIDTOWN DRIVE

TMS
R112 034 000 0158 0000

TMS
R112 034 000 0004 0000

TMS
R112 034 000 0143 0000

NAIL SET
N:198,363.39
E:2,083,473.87

NAIL SET
N:198,332.36
E:2,083,739.42

NAIL SET
N:198,448.18
E:2,084,457.05

SDMH
RIM:18.04'

CI
RIM:19.14'

CI
RIM:19.06'

CI
RIM:18.0'

TMS
R112 034 000 0157 0000

NAIL SET
N:198,126.34
E:2,083,569.77

TMS
R112 034 000 0148 0000

CI
RIM:19.27'

PK NAIL SET
N:198,125.42
E:2,084,796.81

TMS
R110 034 000
0147 0000

CI
RIM:17.61'

TMS
R100 034 000 020A 0000

TMS
R100 034 000 020B 0000

TMS
R100 034 000 020C 0000

TMS
R100 034 000 0131 0000

TMS
R100 034 000 0132 0000

TMS
R100 034 000 0114 0000

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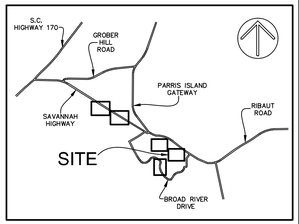
R100 034 000 0115 0000

50 25 0 50 100
GRAPHIC SCALE



VICINITY MAP *NOT TO SCALE*

LEGEND

X12.9	SPOT ELEVATION
SD	UNDERGROUND DRAINAGE LINE
IE	INVERT ELEVATION
BFP	BITUMINOUS FIBER PIPE
RCP	REINFORCED CONCRETE PIPE
⊠	CURB INLET
Ⓓ	STORM DRAIN MANHOLE

NOTES

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REFERENCES

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PREPARED FOR:
CRANSTON ENGINEERING

A DRAINAGE EXHIBIT OF A PORTION OF

AREAS "A & C"

THE CITY OF BEAUFORT
BEAUFORT COUNTY, SOUTH CAROLINA

FIELD WORK:	NCN
FIELD CHECK:	JWR
DRAWN BY:	TGJ
DATE:	12-01-2020
SCALE:	1"=50'
PROJECT No.:	BFT-20338
FILE:	BFT-20338 D1.DWG

ATLAS
SURVEYING, INC.
49 BROWN'S COVE ROAD, SUITE #5
RIDGELAND, SC 29936
PHONE: (843) 645-9277
WEBSITE: WWW.ATLASSURVEYING.COM

ATLAS SURVEYING BFT LLC No. C05928 CERTIFICATE OF AUTHORIZATION SOUTH CAROLINA

SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR No. 28139 JEREMY W. REEDER

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JEREMY W. REEDER
S.C.P.L.S. No. 28139
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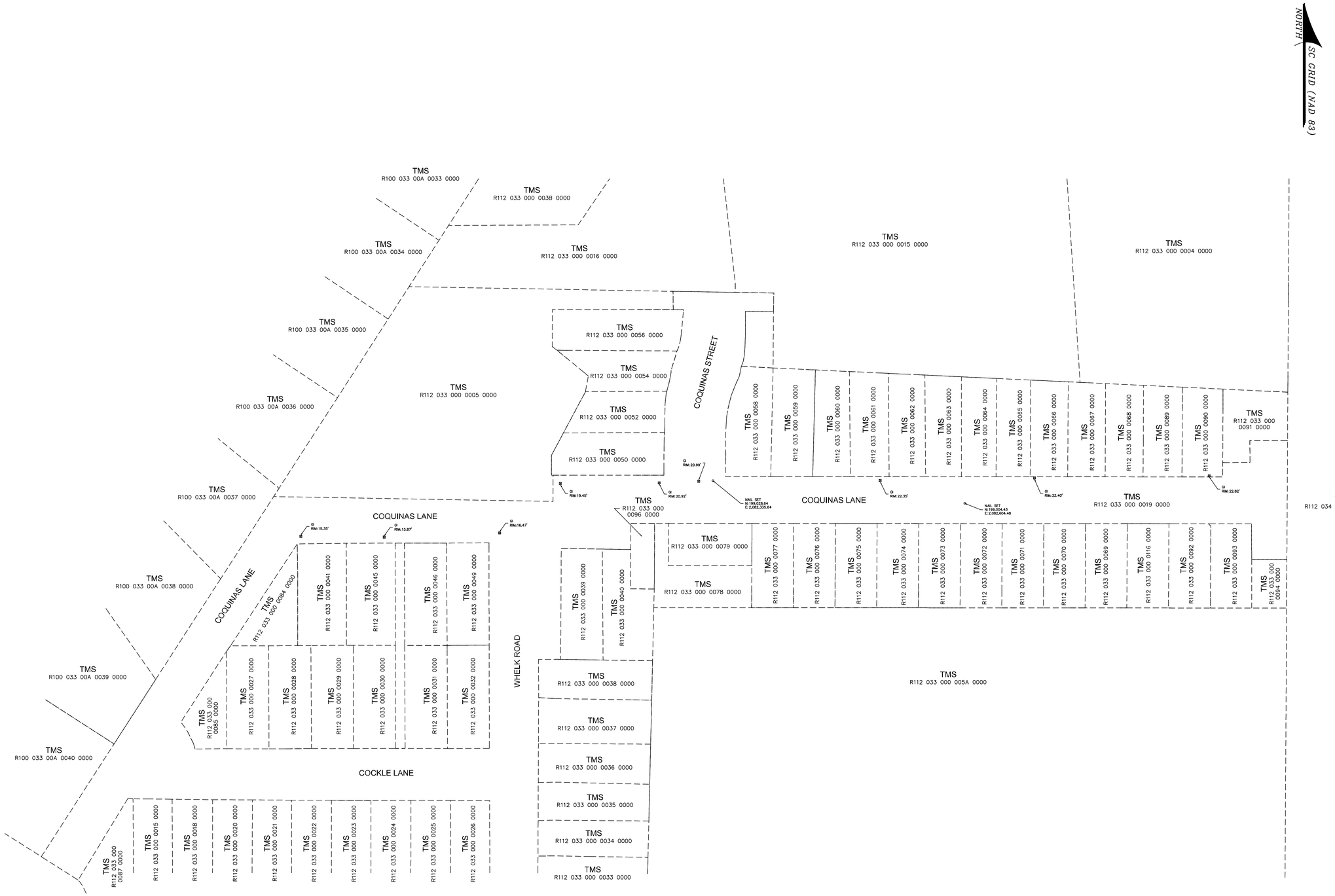

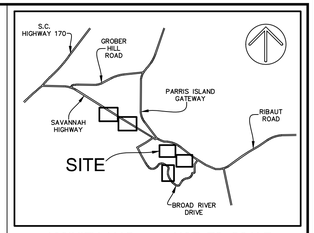

VICINITY MAP *NOT TO SCALE*

LEGEND

X12.9	SPOT ELEVATION
— SD —	UNDERGROUND DRAINAGE LINE
IE	INVERT ELEVATION
BFP	BITUMINOUS FIBER PIPE
RCP	REINFORCED CONCRETE PIPE
⊠	CURB INLET
Ⓜ	STORM DRAIN MANHOLE

NOTES

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PREPARED FOR:
CRANSTON ENGINEERING

A DRAINAGE EXHIBIT OF A PORTION OF

AREA "B"

THE CITY OF BEAUFORT
BEAUFORT COUNTY, SOUTH CAROLINA

FIELD WORK:	NCN
FIELD CHECK:	JWR
DRAWN BY:	TDJ
DATE:	12-01-2020
SCALE:	1"=50'
PROJECT No.:	BFT-20338
FILE:	BFT-20338 D1.DWG

ATLAS SURVEYING, INC.
49 BROWN'S COVE ROAD, SUITE #5
RIDGELAND, SC 29936
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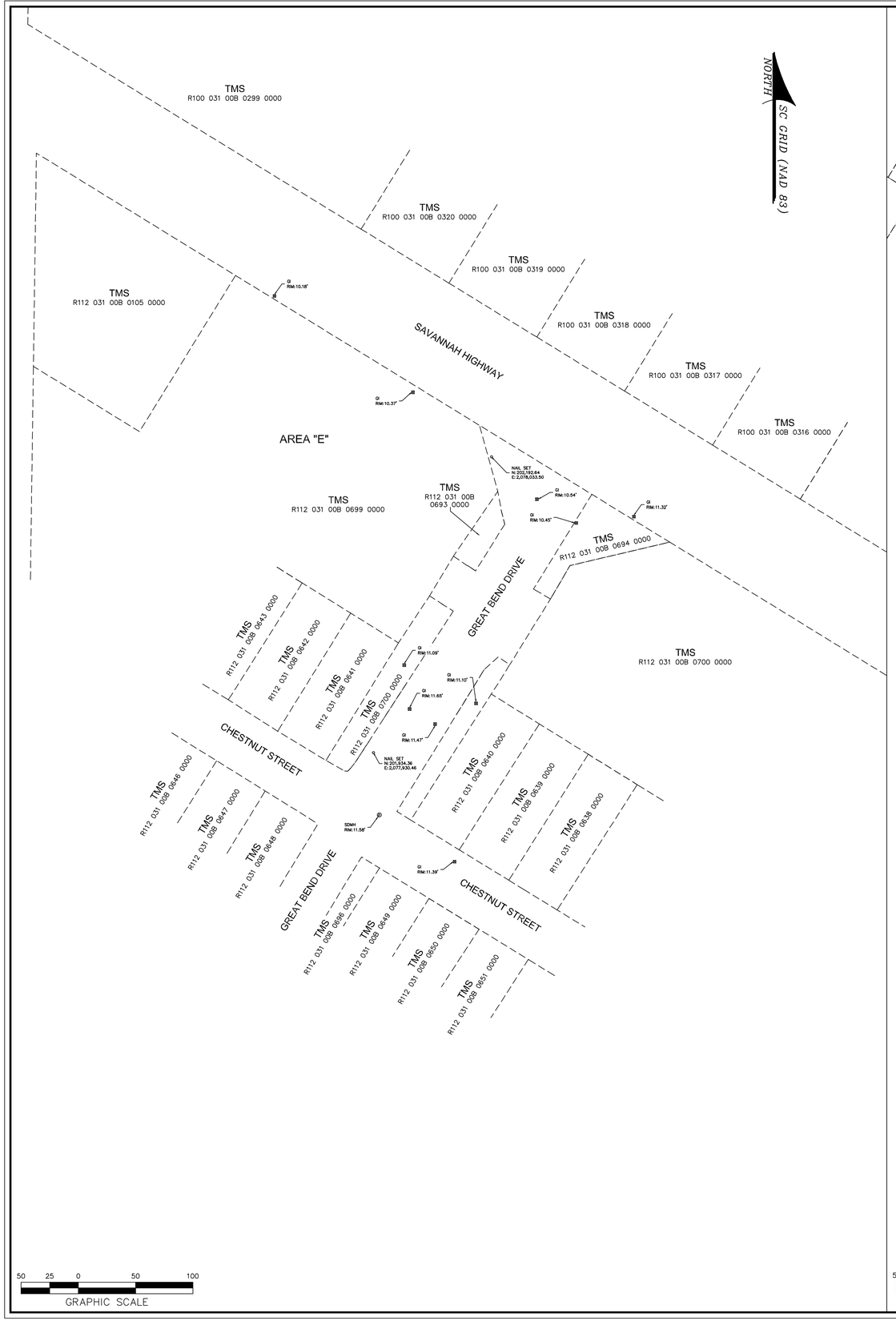

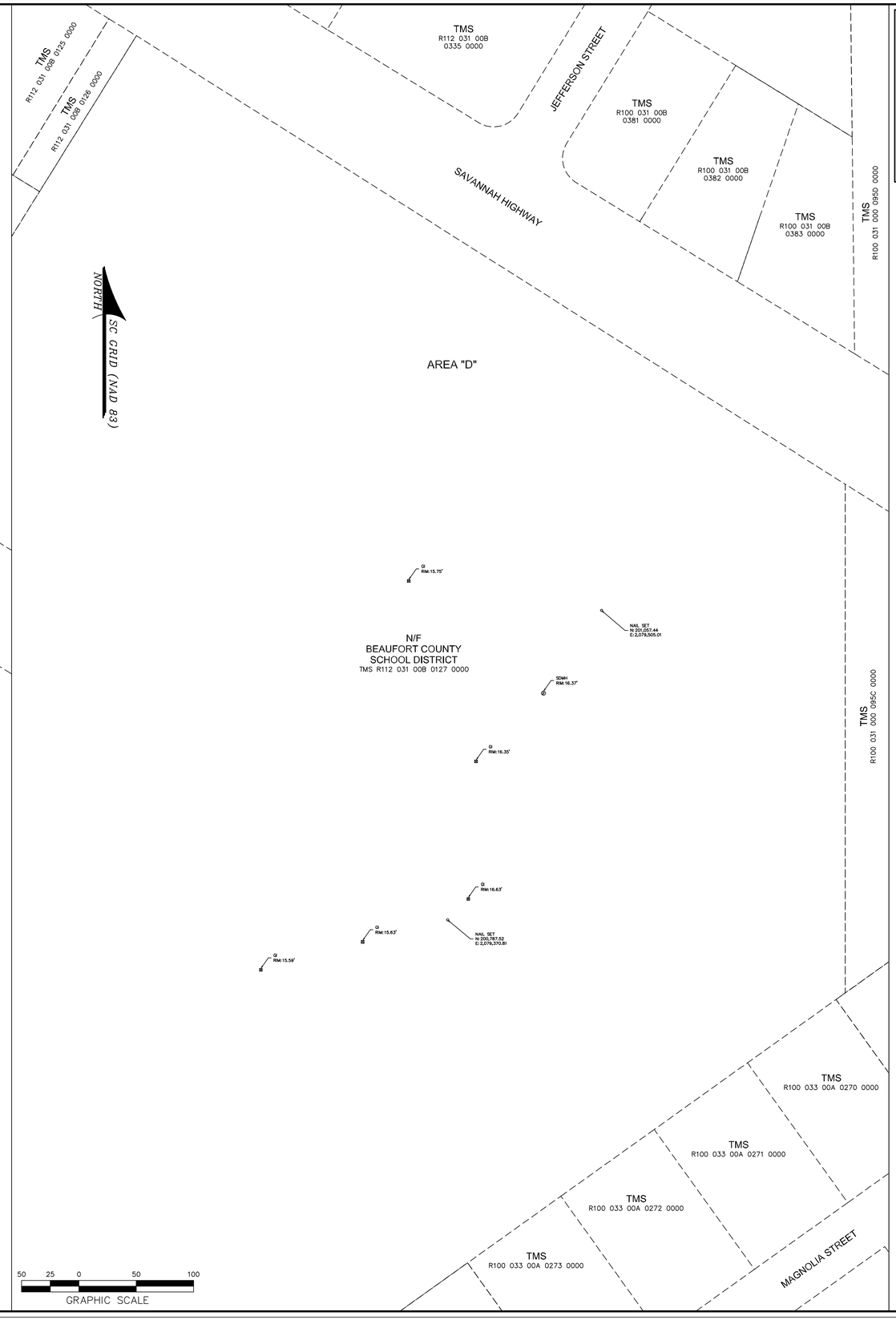

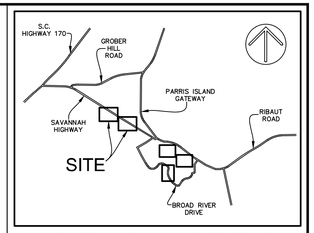

VICINITY MAP *NOT TO SCALE*

LEGEND

×12.9	SPOT ELEVATION
— SD —	UNDERGROUND DRAINAGE LINE
IE	INVERT ELEVATION
BFP	BITUMINOUS FIBER PIPE
RCP	REINFORCED CONCRETE PIPE
⊠	CURB INLET
Ⓜ	STORM DRAIN MANHOLE

NOTES

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PREPARED FOR:
CRANSTON ENGINEERING

A DRAINAGE EXHIBIT OF A PORTION OF

AREAS "D & E"

THE CITY OF BEAUFORT
BEAUFORT COUNTY, SOUTH CAROLINA

FIELD WORK:	NCN
FIELD CHECK:	JWR
DRAWN BY:	TGU
DATE:	12-01-2020
SCALE:	1"=50'
PROJECT No.:	BFT-20336
FILE:	BFT-20338 D1.DWG

ATLAS
SURVEYING, INC.
49 BROWN'S COVE ROAD, SUITE #5
RIDGELAND, SC 29936
PHONE: (843) 645-9277
WEBSITE: WWW.ATLASSURVEYING.COM

SOUTH CAROLINA
ATLAS SURVEYING BFT LLC
No. C05928
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
PROFESSIONAL LAND SURVEYOR
No. 28139
JEREMY W. REEDER

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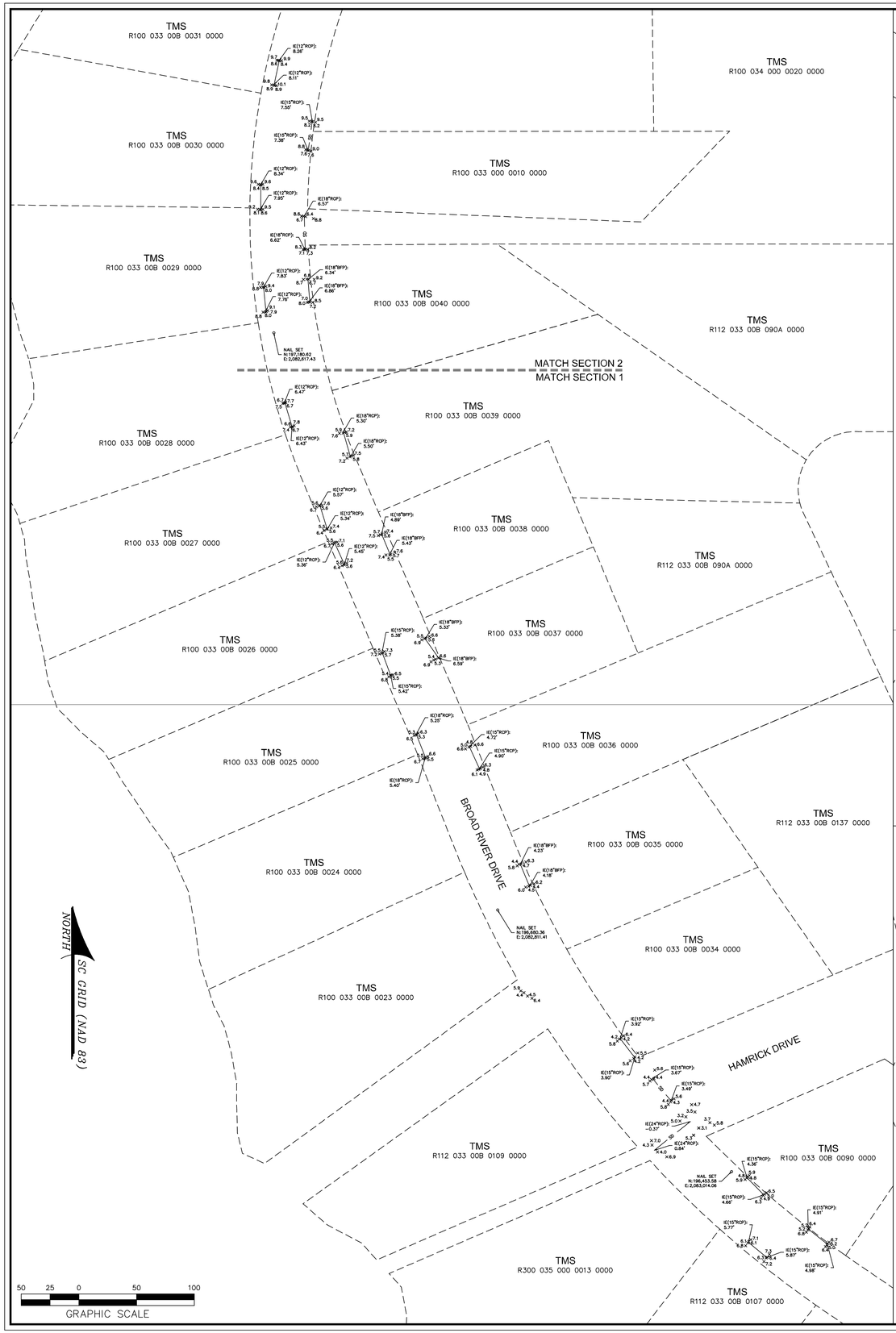

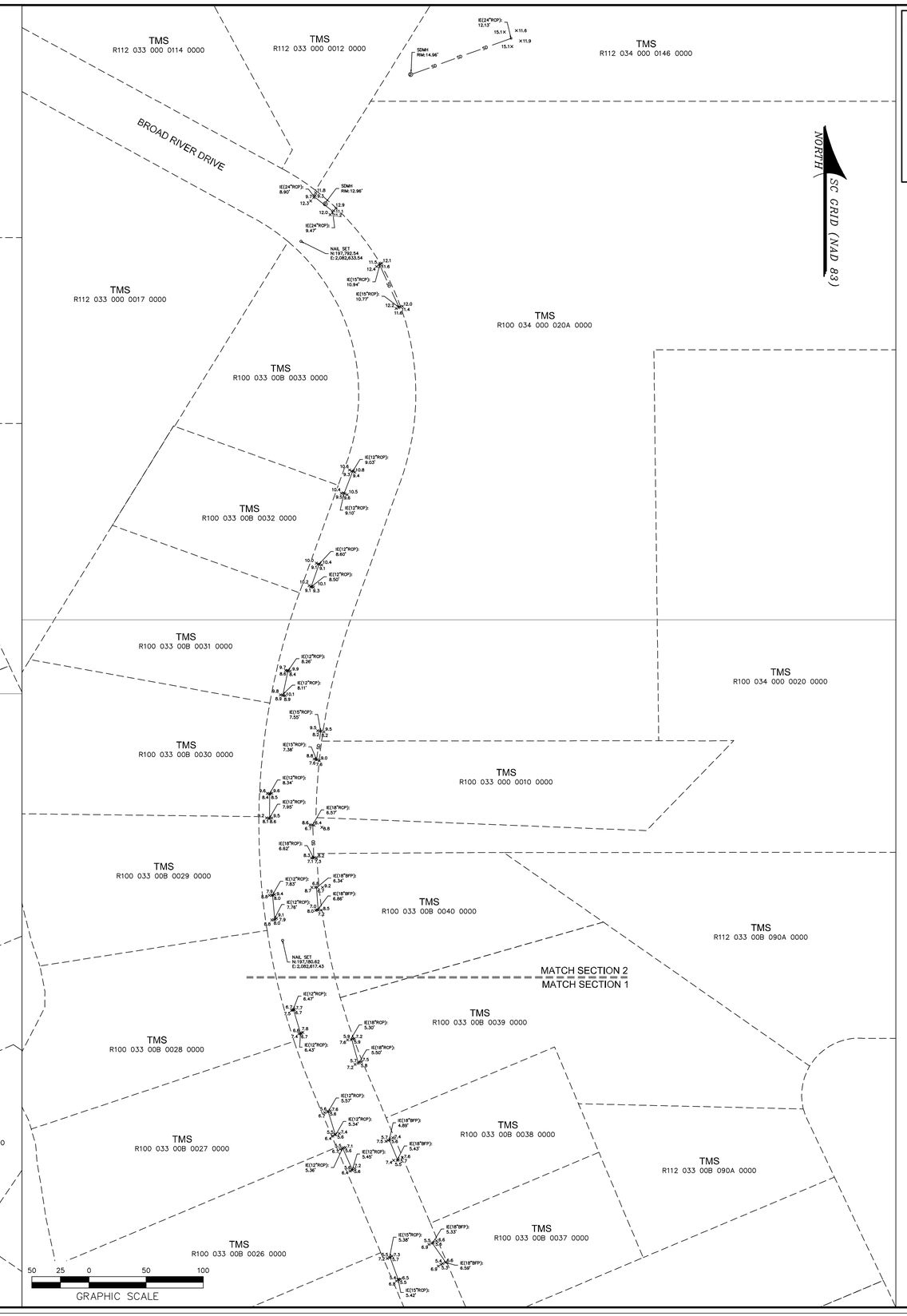

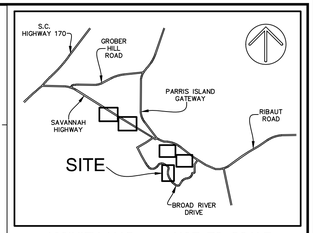

VICINITY MAP *NOT TO SCALE*

LEGEND

×12.9	SPOT ELEVATION
—— SD ——	UNDERGROUND DRAINAGE LINE
IE	INVERT ELEVATION
BFP	BITUMINOUS FIBER PIPE
RCP	REINFORCED CONCRETE PIPE
⊠	CURB INLET
Ⓓ	STORM DRAIN MANHOLE

NOTES

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PREPARED FOR:
CRANSTON ENGINEERING

A DRAINAGE EXHIBIT OF A PORTION OF
BROAD RIVER DRIVE
AREA "F"
THE CITY OF BEAUFORT
BEAUFORT COUNTY, SOUTH CAROLINA

FIELD WORK:	NCN
FIELD CHECK:	JWR
DRAWN BY:	TGU
DATE:	12-01-2020
SCALE:	1"=50'
PROJECT No.:	BFT-20338
FILE:	BFT-20338 01.DWG

ATLAS SURVEYING, INC.
49 BROWN'S COVE ROAD, SUITE #5
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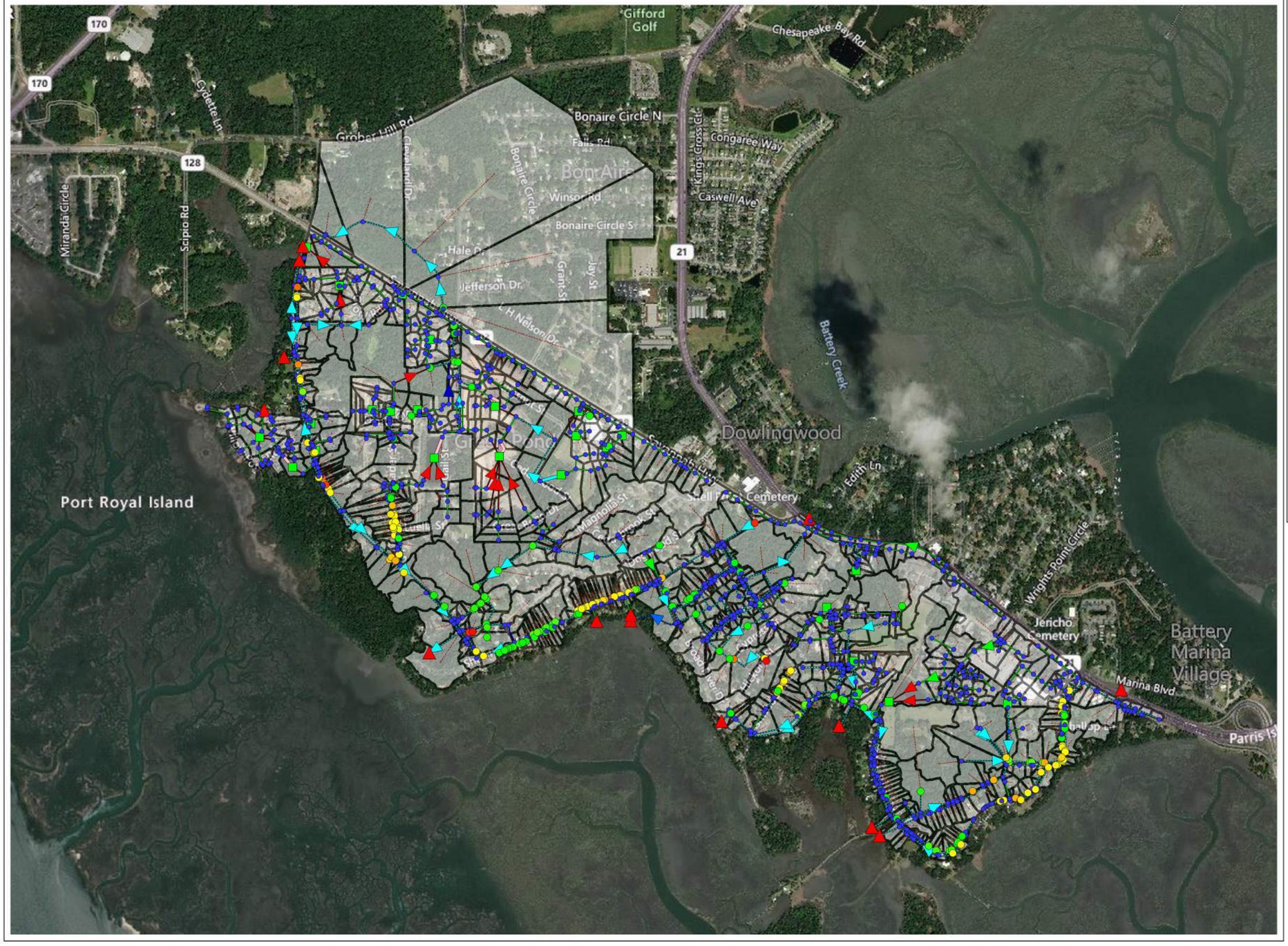
JEREMY W. REEDER
S.C.P.L.S. No. 28139
NOT VALID UNLESS CRIMPED WITH SEAL

EC - 2-Year, 24-Hour Average Tide



Junctions

- HoursFlood = 0
- HoursFlood > 0

- Outfalls
- Storages

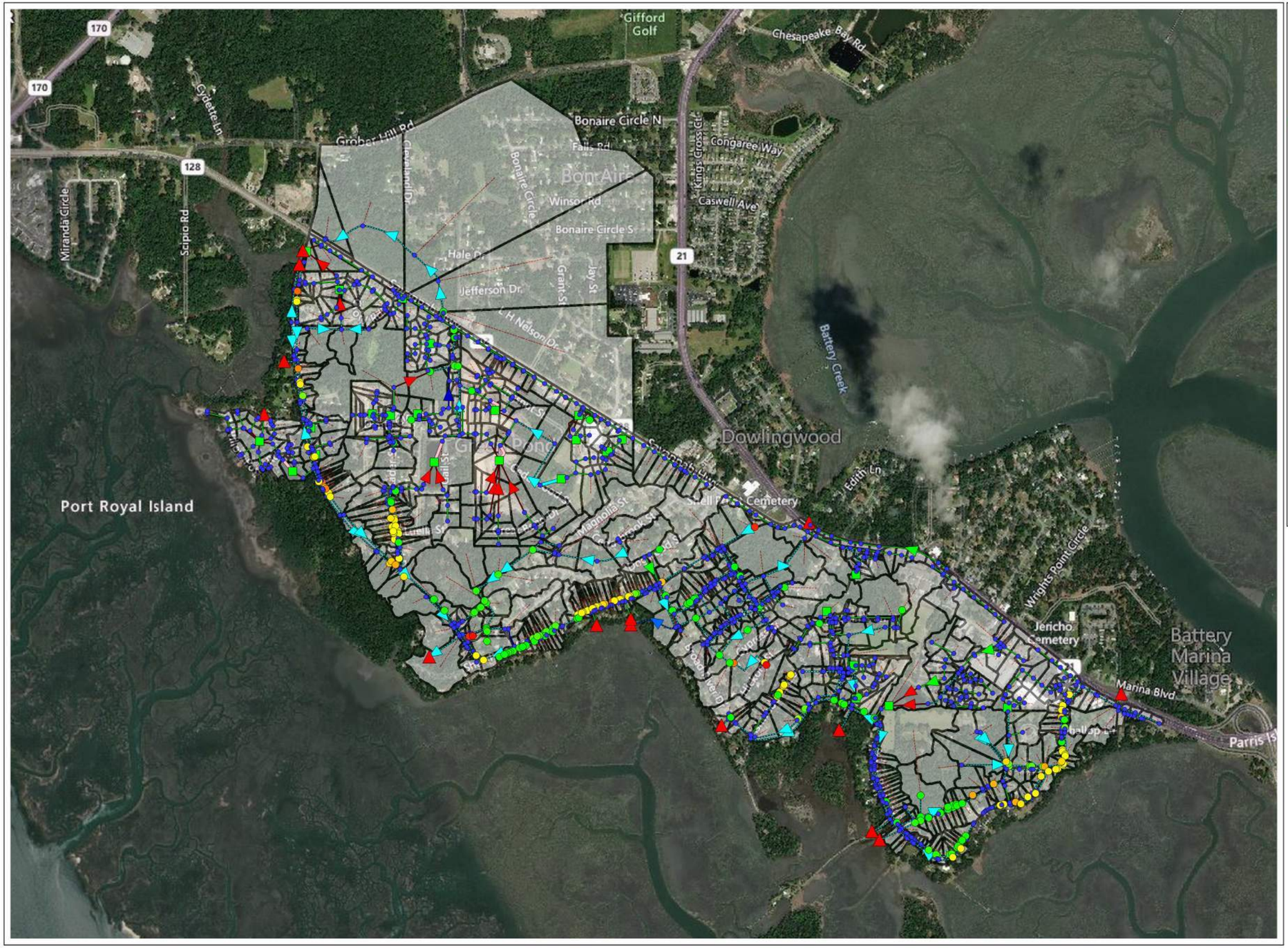
Conduits

- Other
- CIRCULAR
- HORIZ_ELLIPSE
- TRAPEZOIDAL
- FILLED_CIRCULAR
- RECT_OPEN
- TRIANGULAR
- DUMMY
- Other

- Orifices
- Weirs
- Subcatchments

N

2500 ft



EC - 2-Year, 24-Hour Average Tide + SLR

Junctions

- HoursFlood = 0
- HoursFlood > 0

- Outfalls
- Storages

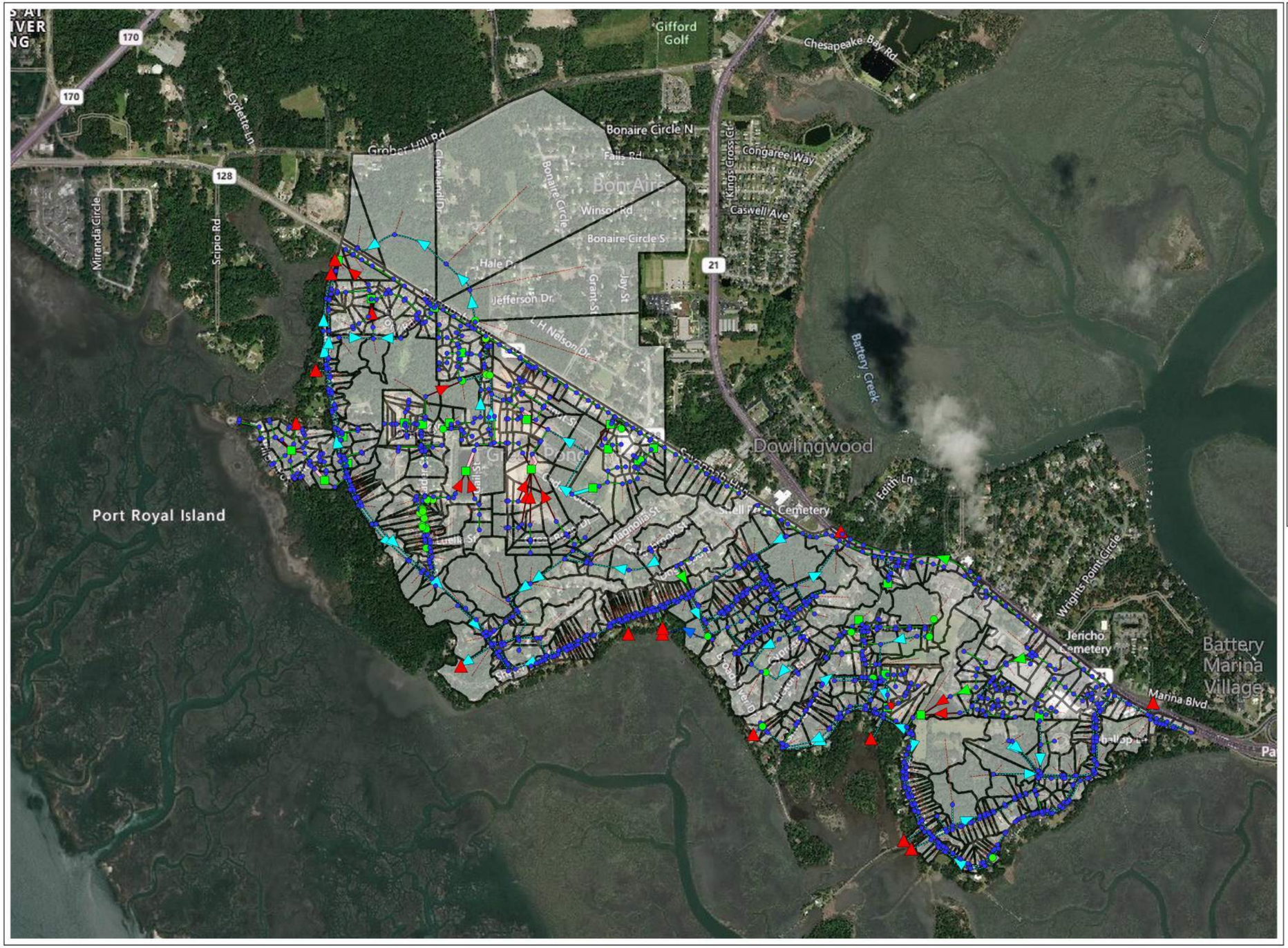
Conduits

- Other
- CIRCULAR
- HORIZ_ELLIPSE
- TRAPEZOIDAL
- FILLED_CIRCULAR
- RECT_OPEN
- TRIANGULAR
- DUMMY
- Other

- Orifices
- Weirs
- Subcatchments

N

2500 ft



PR - 2-Year, 24-Hour Average Tide

Junctions
- HoursFlood = 0
- HoursFlood > 0

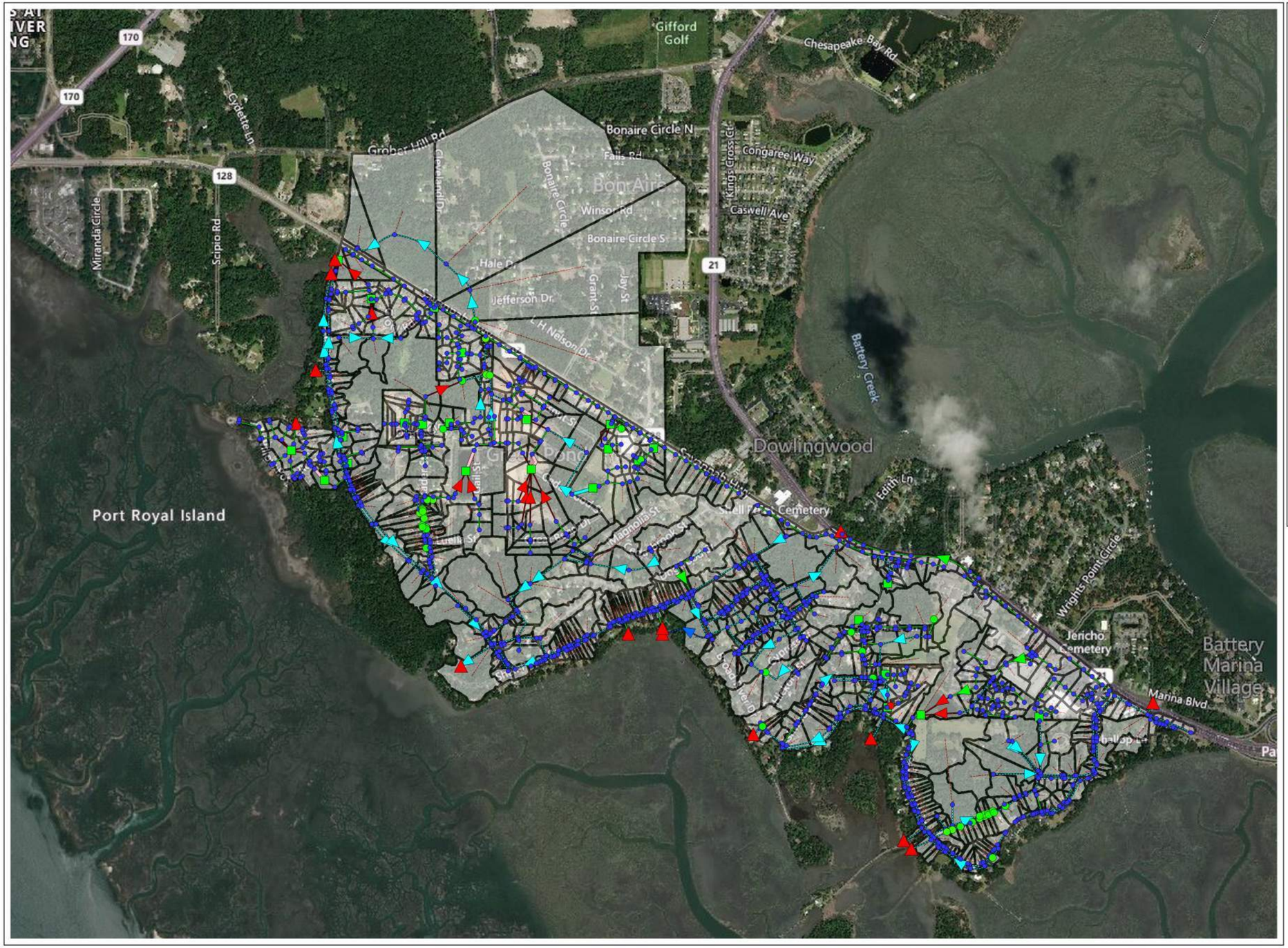
- Outfalls
- Storages

Conduits
- Other
- CIRCULAR
- HORIZ_ELLIPSE
- TRAPEZOIDAL
- FILLED_CIRCULAR
- RECT_OPEN
- TRIANGULAR
- DUMMY
- Other

- Orifices
- Weirs
- Subcatchments

N

2500 ft



PR - 2-Year, 24-Hour Average Tide + SLR

Junctions
- HoursFlood = 0
- HoursFlood > 0

- Outfalls
- Storages

Conduits
- Other
- CIRCULAR
- HORIZ_ELLIPSE
- TRAPEZOIDAL
- FILLED_CIRCULAR
- RECT_OPEN
- TRIANGULAR
- DUMMY
- Other

- Orifices
- Weirs
- Subcatchments

N

2500 ft

EC - 10-Year, 24-Hour Average Tide

Junctions
- HoursFlood = 0
- HoursFlood > 0
- Outfalls
- Storages

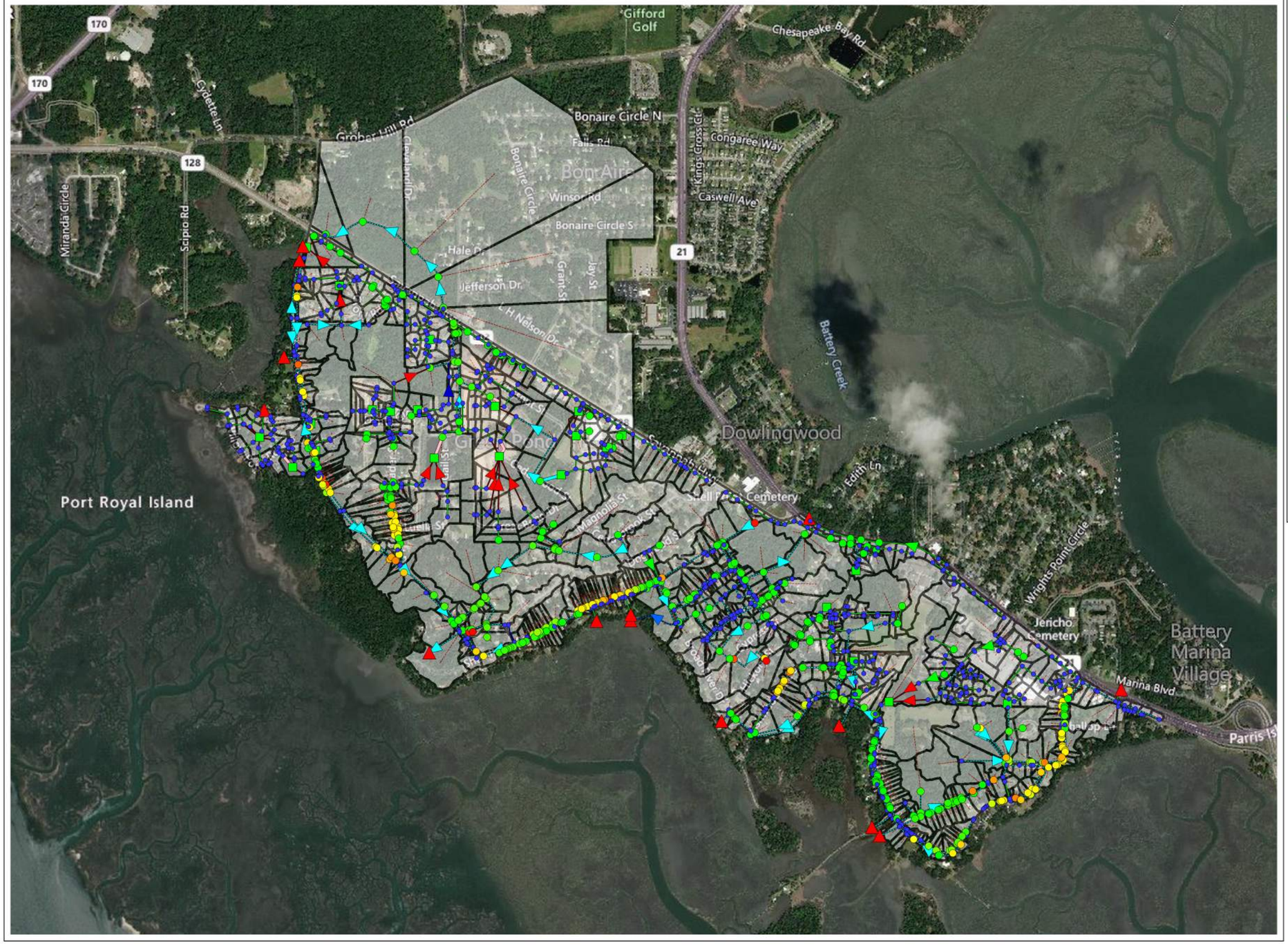
Conduits
- Other
- CIRCULAR
- HORIZ_ELLIPSE
- TRAPEZOIDAL
- FILLED_CIRCULAR
- RECT_OPEN
- TRIANGULAR
- DUMMY
- Other

- Orifices
- Weirs
- Subcatchments

N

2500 ft

EC - 10-Year, 24-Hour Average Tide + SLR



Junctions
- HoursFlood = 0
- HoursFlood > 0
- Outfalls
- Storages

Conduits
- Other
- CIRCULAR
- HORIZ_ELLIPSE
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- DUMMY
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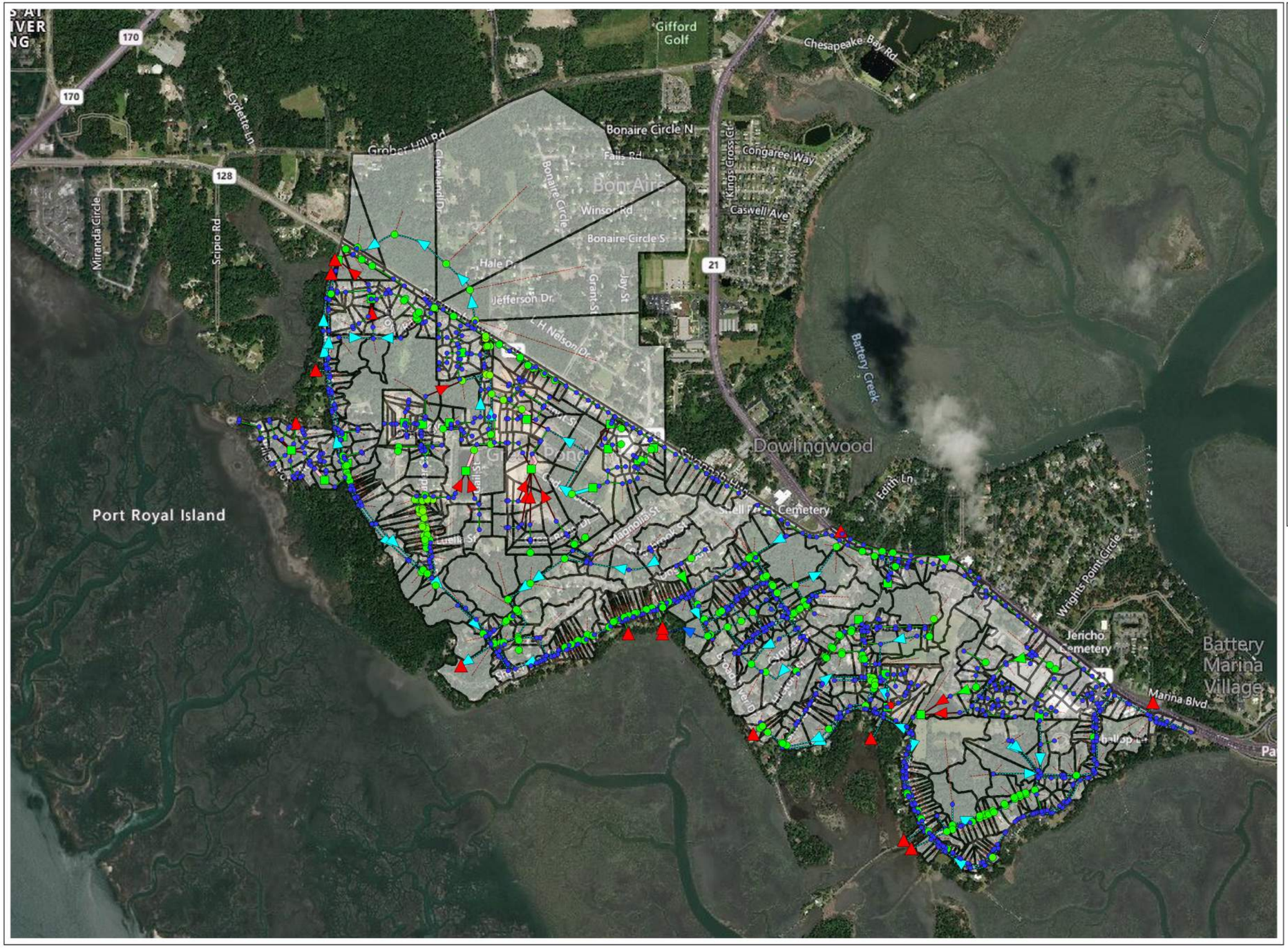
- Orifices
- Weirs
- Subcatchments

N

2500 ft



PR - 10-Year, 24-Hour Average Tide

Junctions
- HoursFlood = 0
- HoursFlood > 0
- Outfalls
- Storages

Conduits
- Other
- CIRCULAR
- HORIZ_ELLIPSE
- TRAPEZOIDAL
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- Weirs
- Subcatchments

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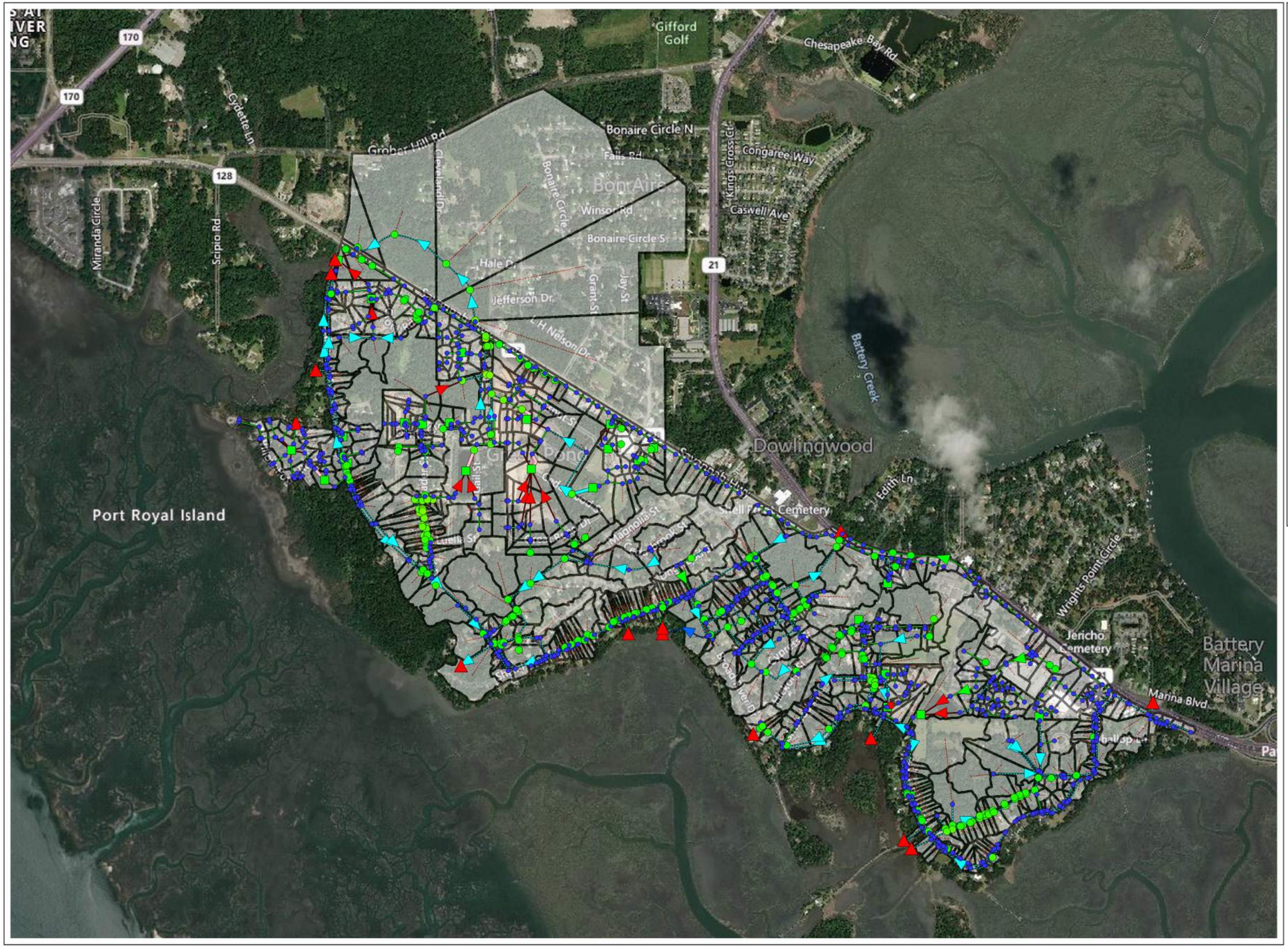
2500 ft



PR - 10-Year, 24-Hour Average Tide + SLR

Junctions
- HoursFlood = 0
- HoursFlood > 0

- Outfalls
- Storages

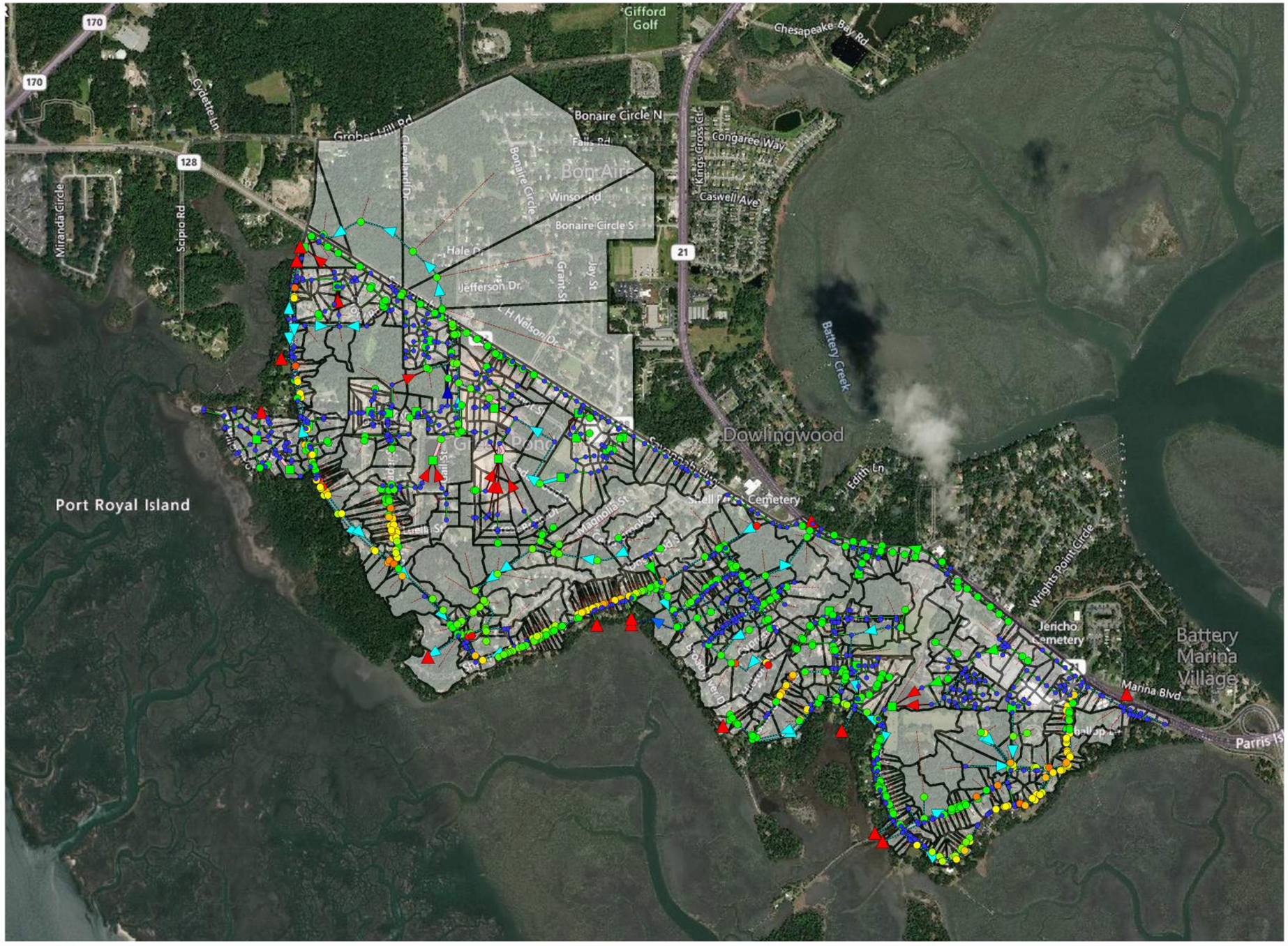
Conduits
- Other
- CIRCULAR
- HORIZ_ELLIPSE
- TRAPEZOIDAL
- FILLED_CIRCULAR
- RECT_OPEN
- TRIANGULAR
- DUMMY
- Other

- Orifices
- Weirs
- Subcatchments

N

2500 ft

EC - 25-Year, 24-Hour Average Tide



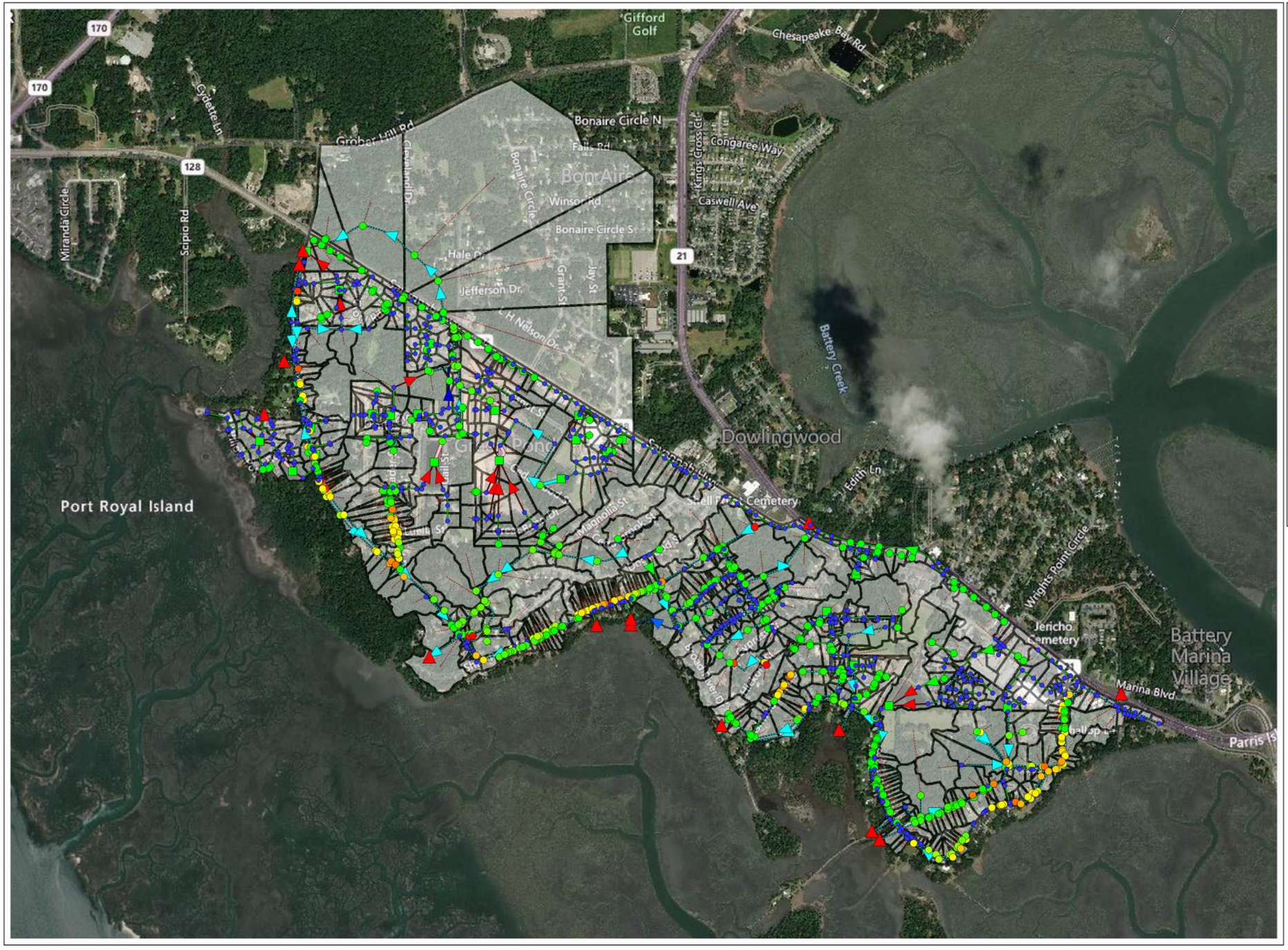
Junctions
- HoursFlood = 0
- HoursFlood > 0
- Outfalls
- Storages

Conduits
- Other
- CIRCULAR
- HORIZ_ELLIPSE
- TRAPEZOIDAL
- FILLED_CIRCULAR
- RECT_OPEN
- TRIANGULAR
- DUMMY
- Other

- Orifices
- Weirs
- Subcatchments

N

2500 ft



EC - 25-Year, 24-Hour Average Tide + SLR

Junctions

- HoursFlood = 0
- HoursFlood > 0
- Outfalls
- Storages

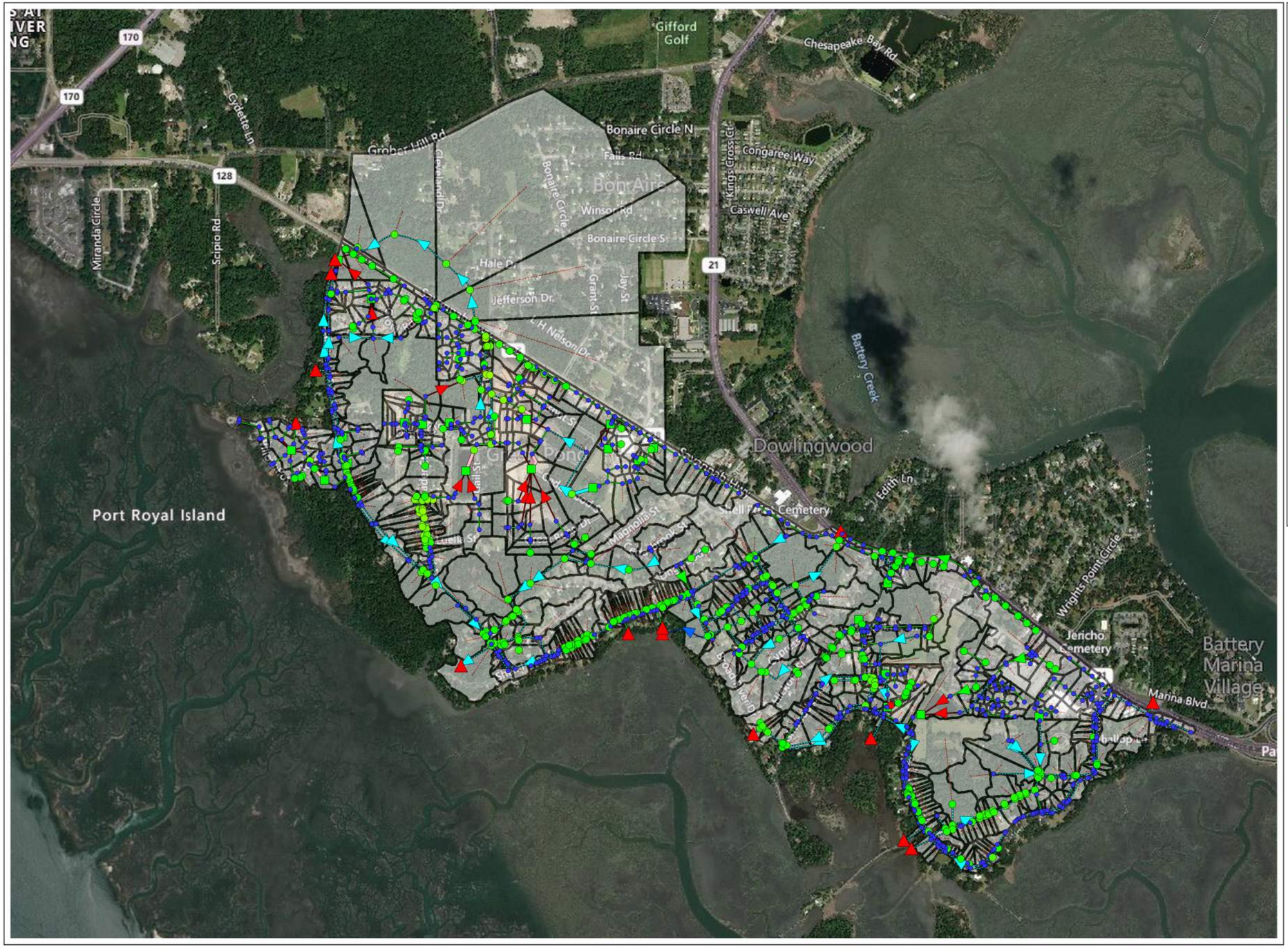
Conduits

- Other
- CIRCULAR
- HORIZ_ELLIPSE
- TRAPEZOIDAL
- FILLED_CIRCULAR
- RECT_OPEN
- TRIANGULAR
- DUMMY
- Other

- Orifices
- Weirs
- Subcatchments

N

2500 ft



PR - 25-Year, 24-Hour Average Tide

Junctions
- HoursFlood = 0
- HoursFlood > 0

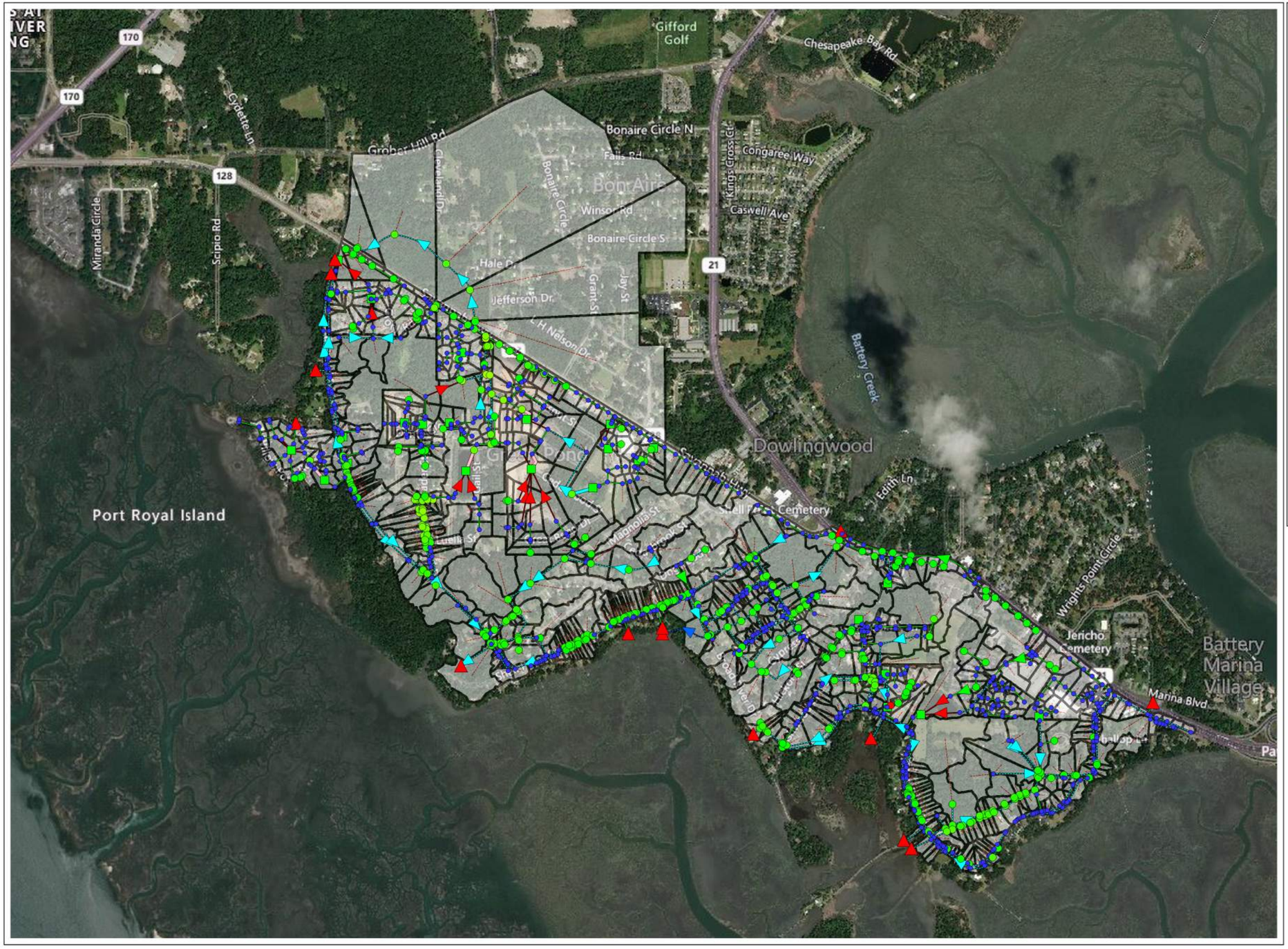
- Outfalls
- Storages

Conduits
- Other
- CIRCULAR
- HORIZ_ELLIPSE
- TRAPEZOIDAL
- FILLED_CIRCULAR
- RECT_OPEN
- TRIANGULAR
- DUMMY
- Other

- Orifices
- Weirs
- Subcatchments

N

2500 ft



PR - 25-Year, 24-Hour Average Tide + SLR

Junctions
- HoursFlood = 0
- HoursFlood > 0

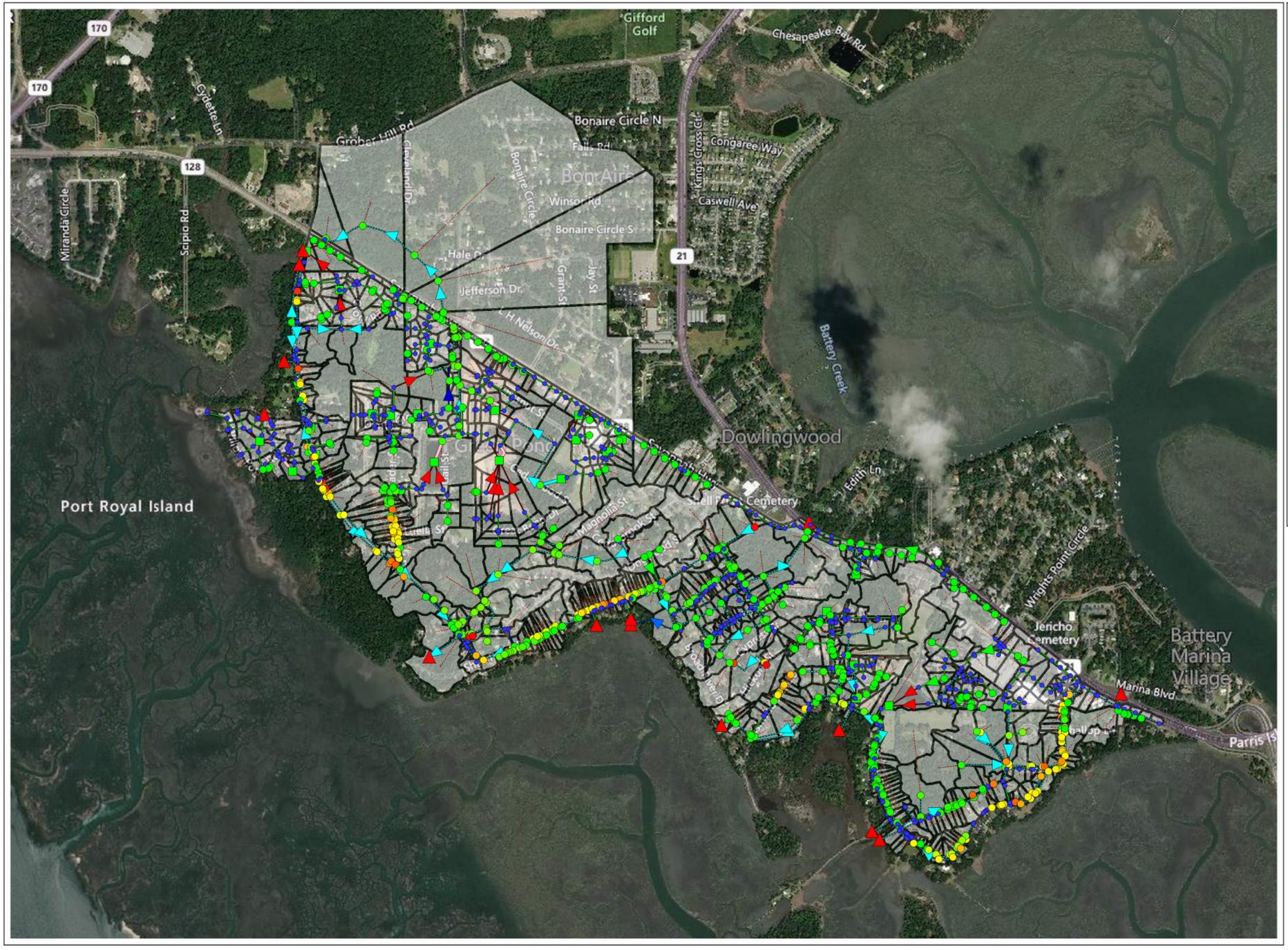
- Outfalls
- Storages

Conduits
- Other
- CIRCULAR
- HORIZ_ELLIPSE
- TRAPEZOIDAL
- FILLED_CIRCULAR
- RECT_OPEN
- TRIANGULAR
- DUMMY
- Other

- Orifices
- Weirs
- Subcatchments

N

2500 ft



EC - 50-Year, 24-Hour Average Tide

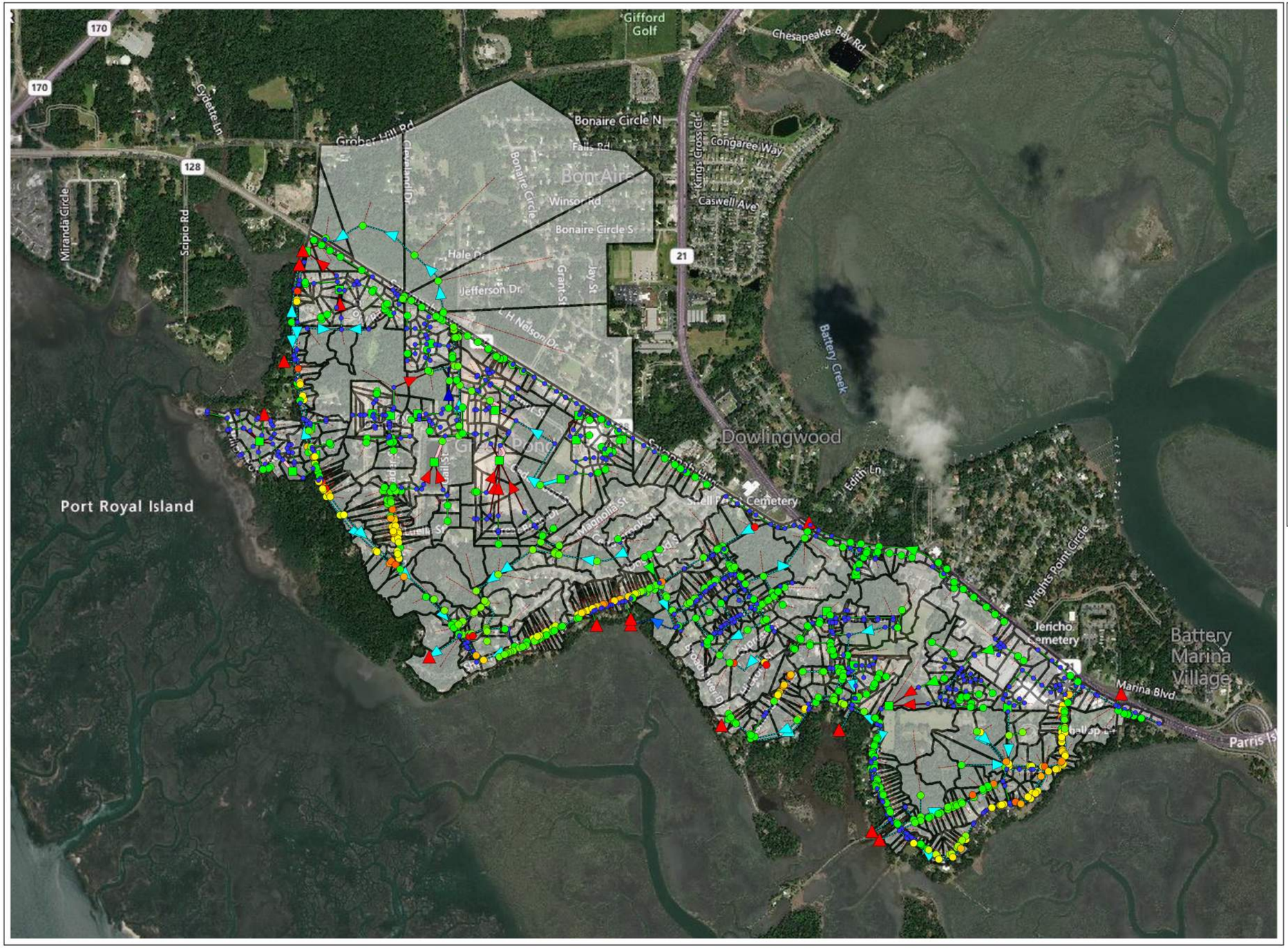
Junctions
- HoursFlood = 0
- HoursFlood > 0
- Outfalls
- Storages

Conduits
- Other
- CIRCULAR
- HORIZ_ELLIPSE
- TRAPEZOIDAL
- FILLED_CIRCULAR
- RECT_OPEN
- TRIANGULAR
- DUMMY
- Other

- Orifices
- Weirs
- Subcatchments

N

2500 ft



EC - 50-Year, 24-Hour Average Tide + SLR

Junctions
- HoursFlood = 0
- HoursFlood > 0

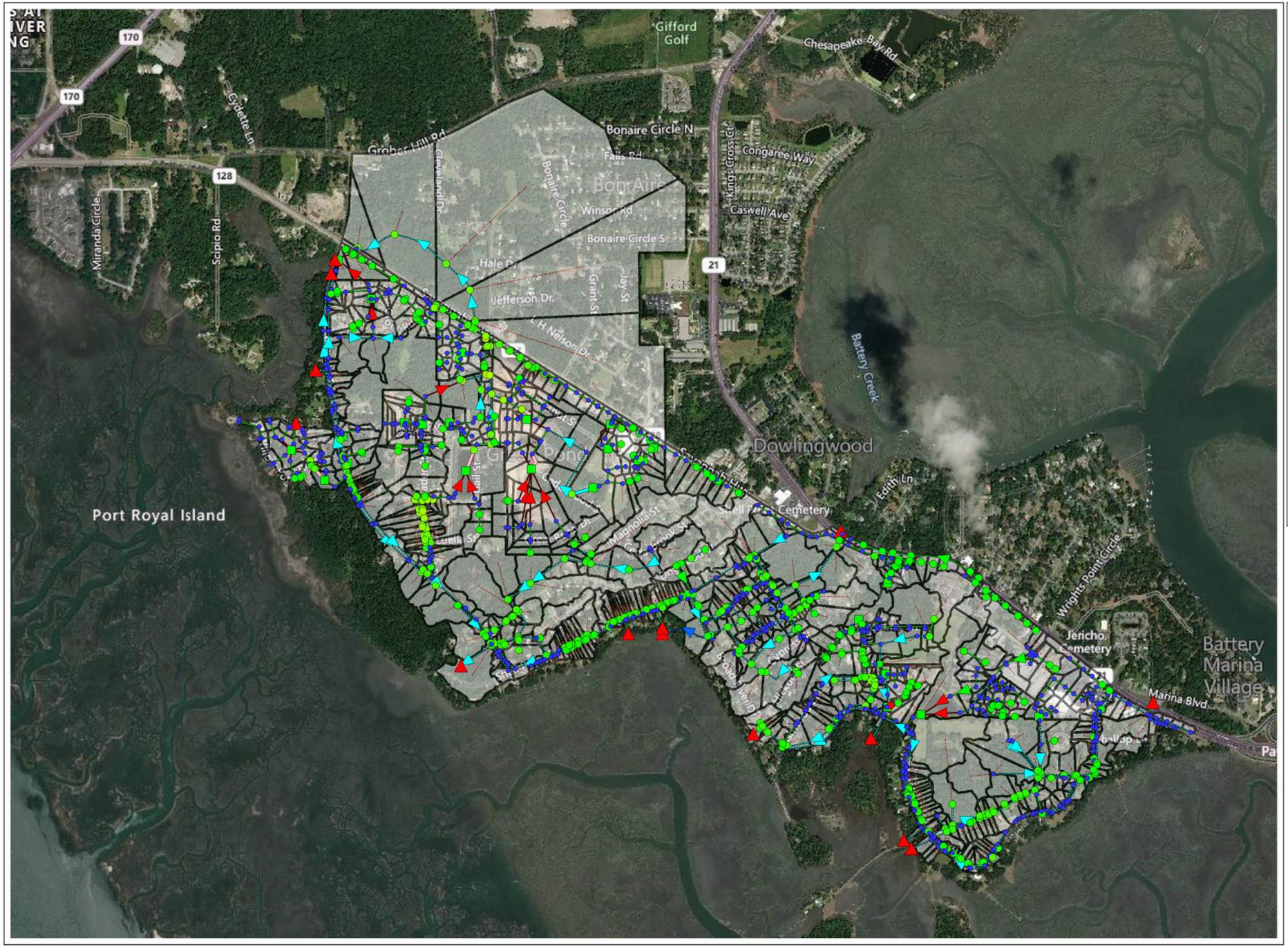
- Outfalls
- Storages

Conduits
- Other
- CIRCULAR
- HORIZ_ELLIPSE
- TRAPEZOIDAL
- FILLED_CIRCULAR
- RECT_OPEN
- TRIANGULAR
- DUMMY
- Other

- Orifices
- Weirs
- Subcatchments

N

2500 ft



PR - 50-Year, 24-Hour Average Tide

Junctions
- HoursFlood = 0
- HoursFlood > 0

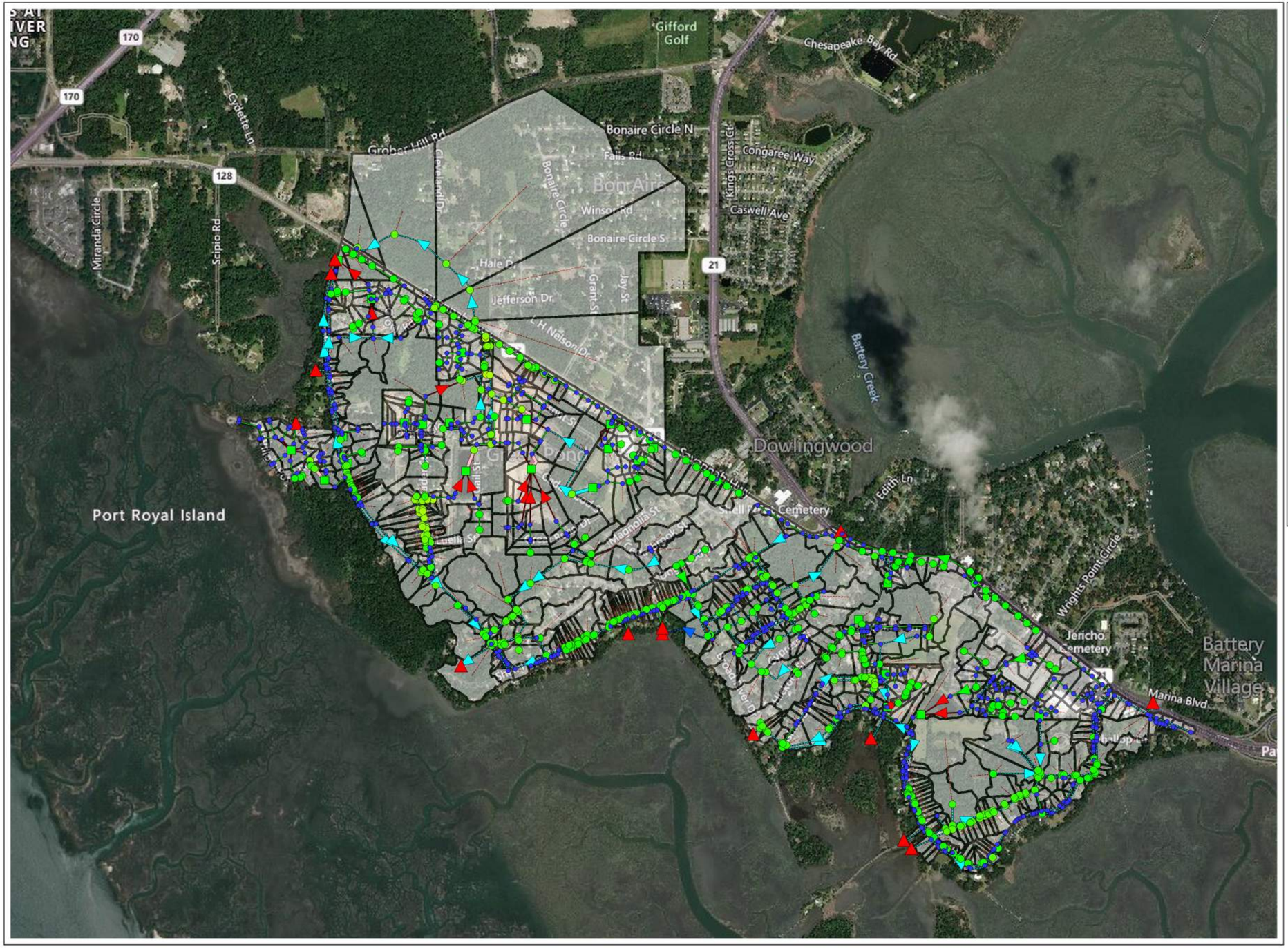
- Outfalls
- Storages

Conduits
- Other
- CIRCULAR
- HORIZ_ELLIPSE
- TRAPEZOIDAL
- FILLED_CIRCULAR
- RECT_OPEN
- TRIANGULAR
- DUMMY
- Other

- Orifices
- Weirs
- Subcatchments

N

2500 ft



PR - 50-Year, 24-Hour Average Tide + SLR

Junctions
- HoursFlood = 0
- HoursFlood > 0

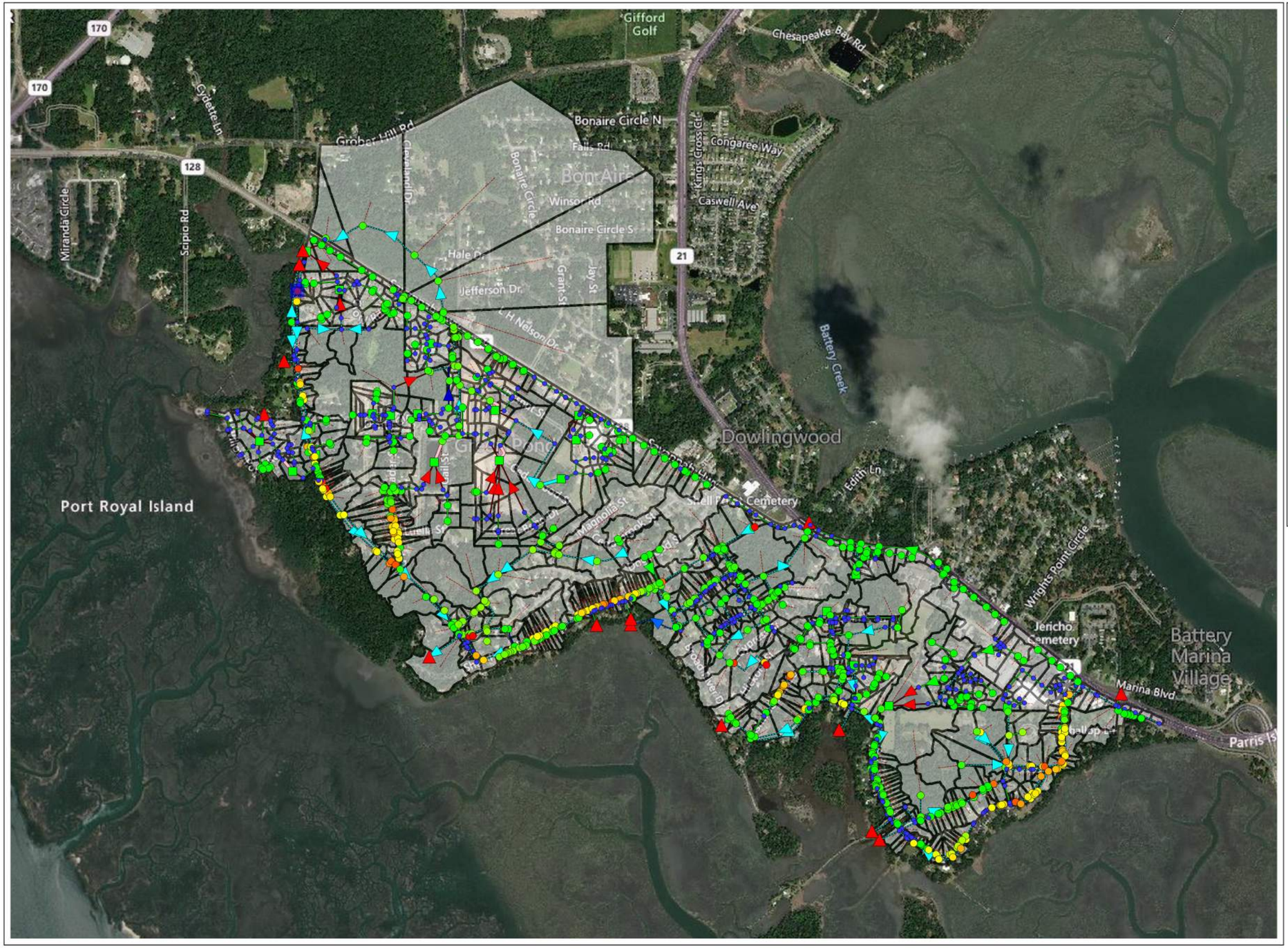
- Outfalls
- Storages

Conduits
- Other
- CIRCULAR
- HORIZ_ELLIPSE
- TRAPEZOIDAL
- FILLED_CIRCULAR
- RECT_OPEN
- TRIANGULAR
- DUMMY
- Other

- Orifices
- Weirs
- Subcatchments

N

2500 ft



EC - 100-Year, 24-Hour Average Tide

Junctions

- HoursFlood = 0
- HoursFlood > 0
- Outfalls
- Storages

Conduits

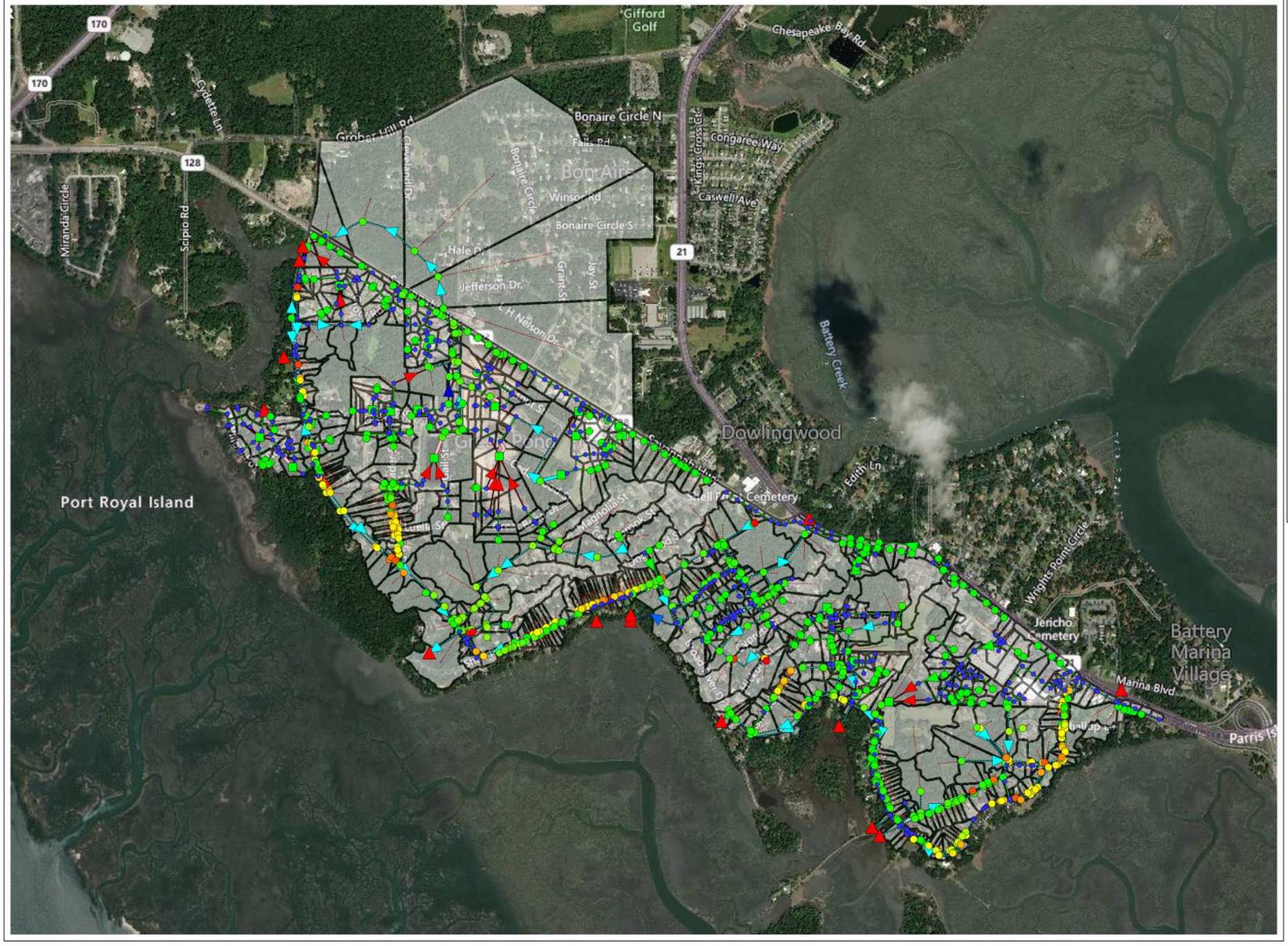
- Other
- CIRCULAR
- HORIZ_ELLIPSE
- TRAPEZOIDAL
- FILLED_CIRCULAR
- RECT_OPEN
- TRIANGULAR
- DUMMY
- Other

- Orifices
- Weirs
- Subcatchments

N

2500 ft

EC - 100-Year, 24-Hour Average Tide + SLR



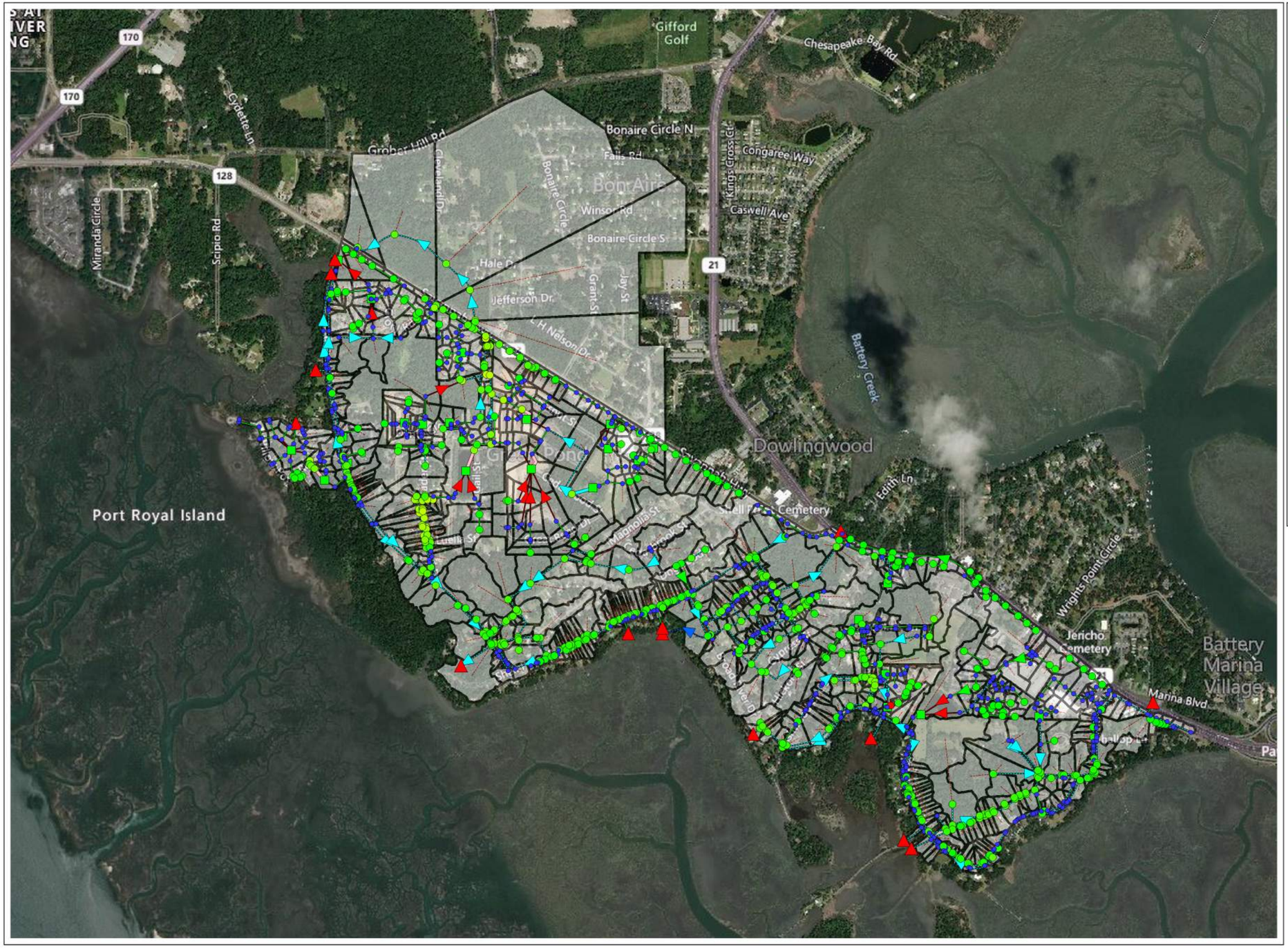
Junctions
- HoursFlood = 0
- HoursFlood > 0
- Outfalls
- Storages

Conduits
- Other
- CIRCULAR
- HORIZ_ELLIPSE
- TRAPEZOIDAL
- FILLED_CIRCULAR
- RECT_OPEN
- TRIANGULAR
- DUMMY
- Other

- Orifices
- Weirs
- Subcatchments

N

2500 ft



PR - 100-Year, 24-Hour Average Tide

Junctions
- HoursFlood = 0
- HoursFlood > 0

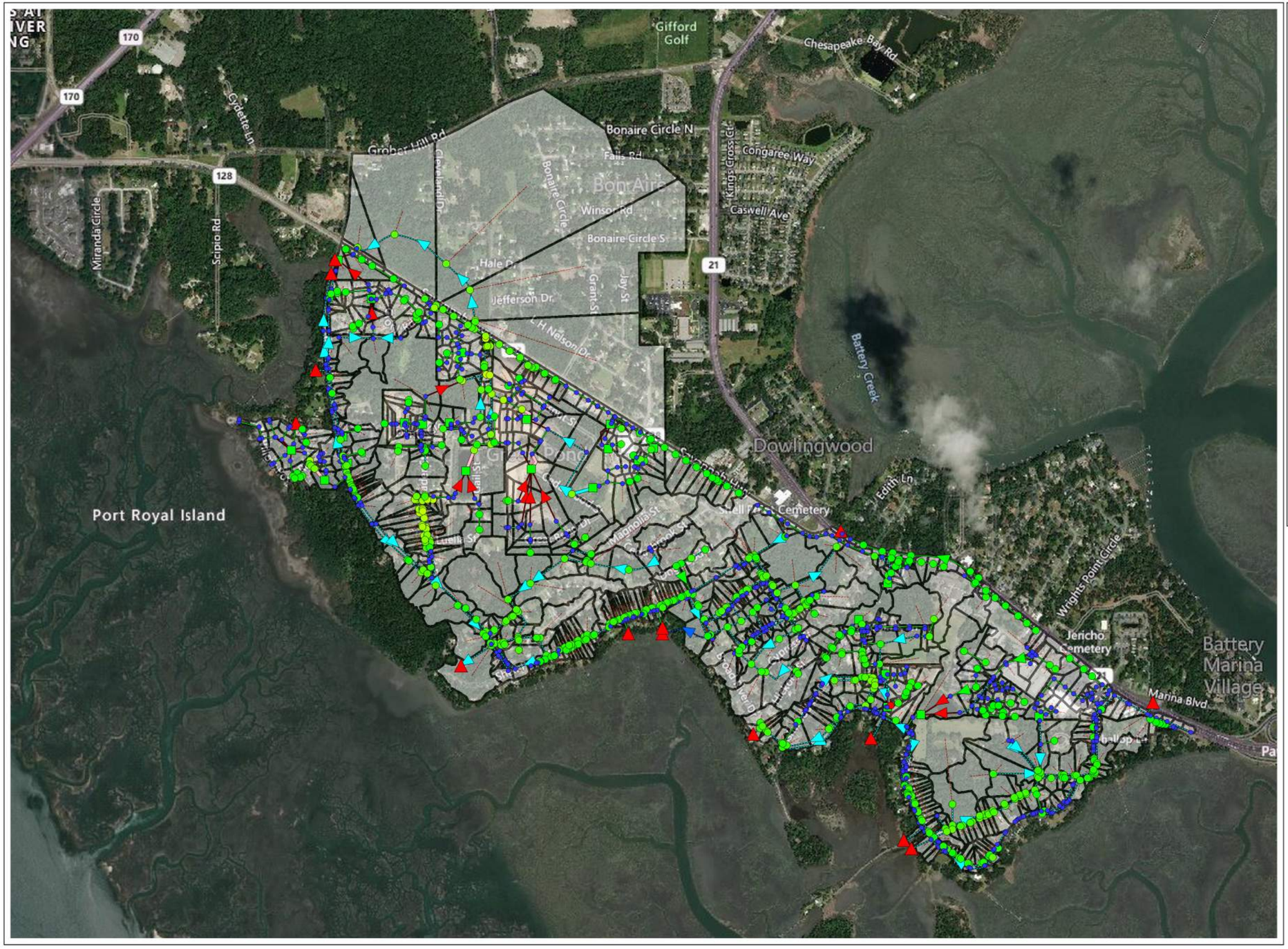
- Outfalls
- Storages

Conduits
- Other
- CIRCULAR
- HORIZ_ELLIPSE
- TRAPEZOIDAL
- FILLED_CIRCULAR
- RECT_OPEN
- TRIANGULAR
- DUMMY
- Other

- Orifices
- Weirs
- Subcatchments

N

2500 ft



PR - 100-Year, 24-Hour Average Tide + SLR

Junctions
- HoursFlood = 0
- HoursFlood > 0

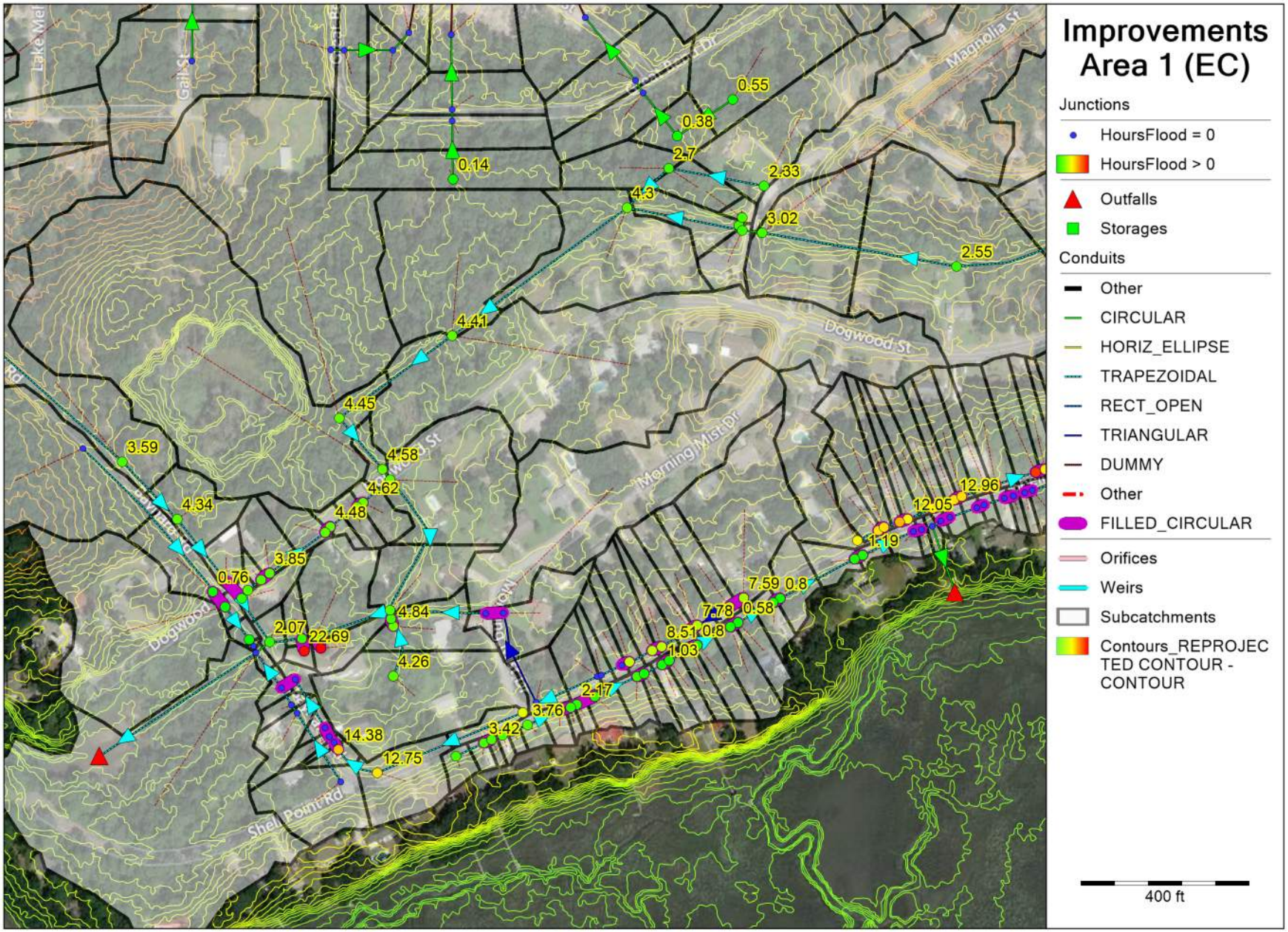
- Outfalls
- Storages

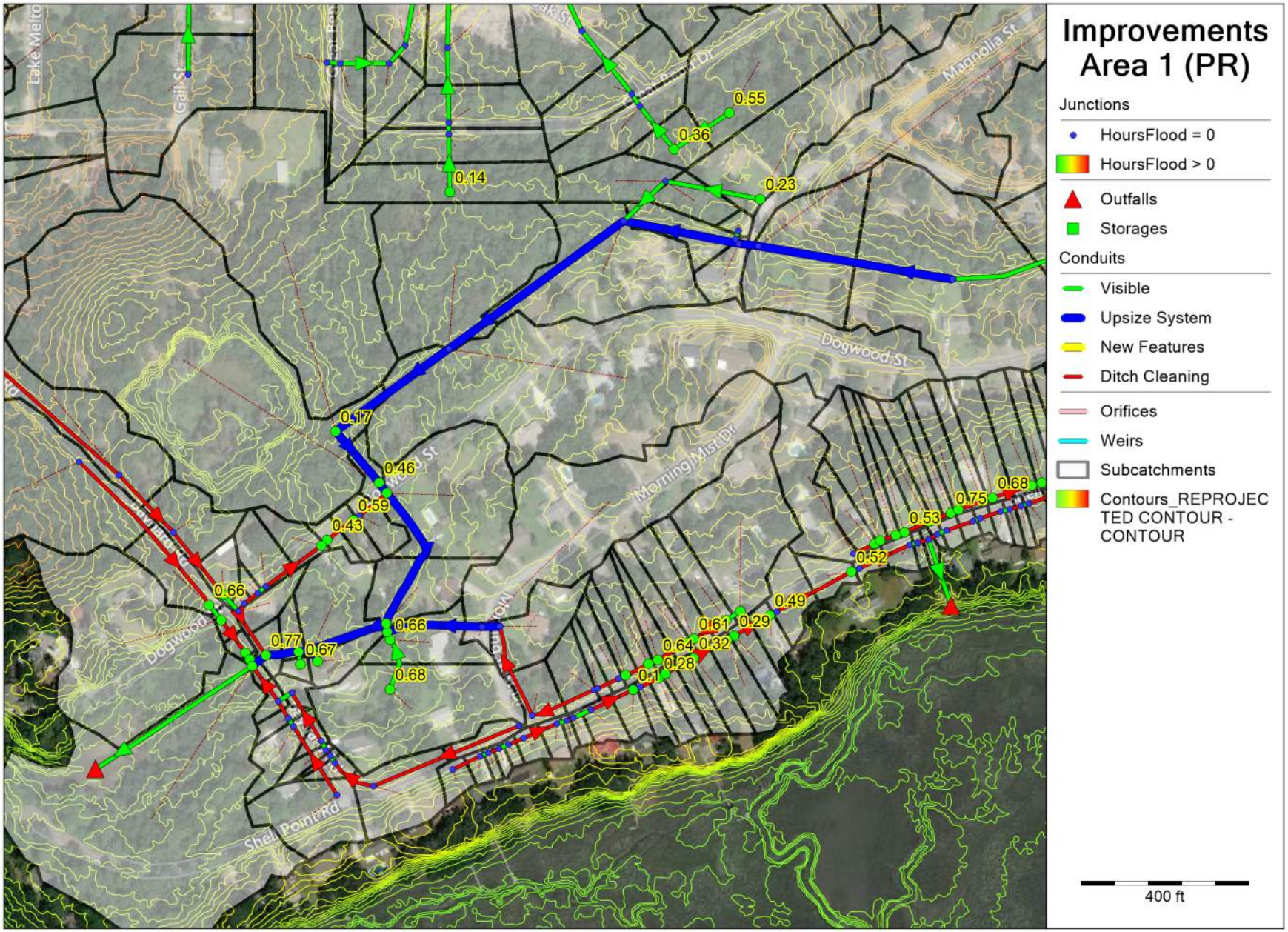
Conduits
- Other
- CIRCULAR
- HORIZ_ELLIPSE
- TRAPEZOIDAL
- FILLED_CIRCULAR
- RECT_OPEN
- TRIANGULAR
- DUMMY
- Other

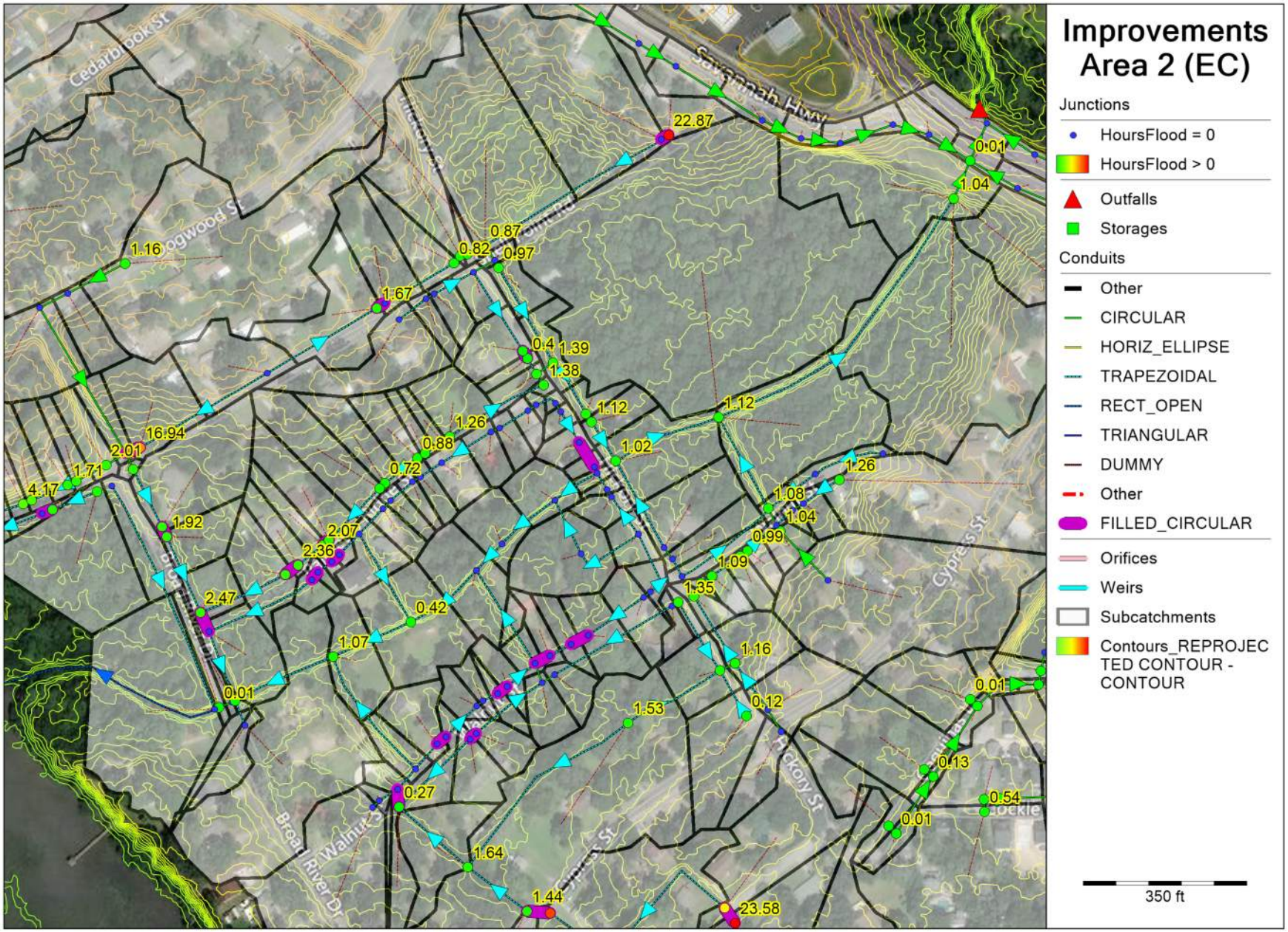
- Orifices
- Weirs
- Subcatchments

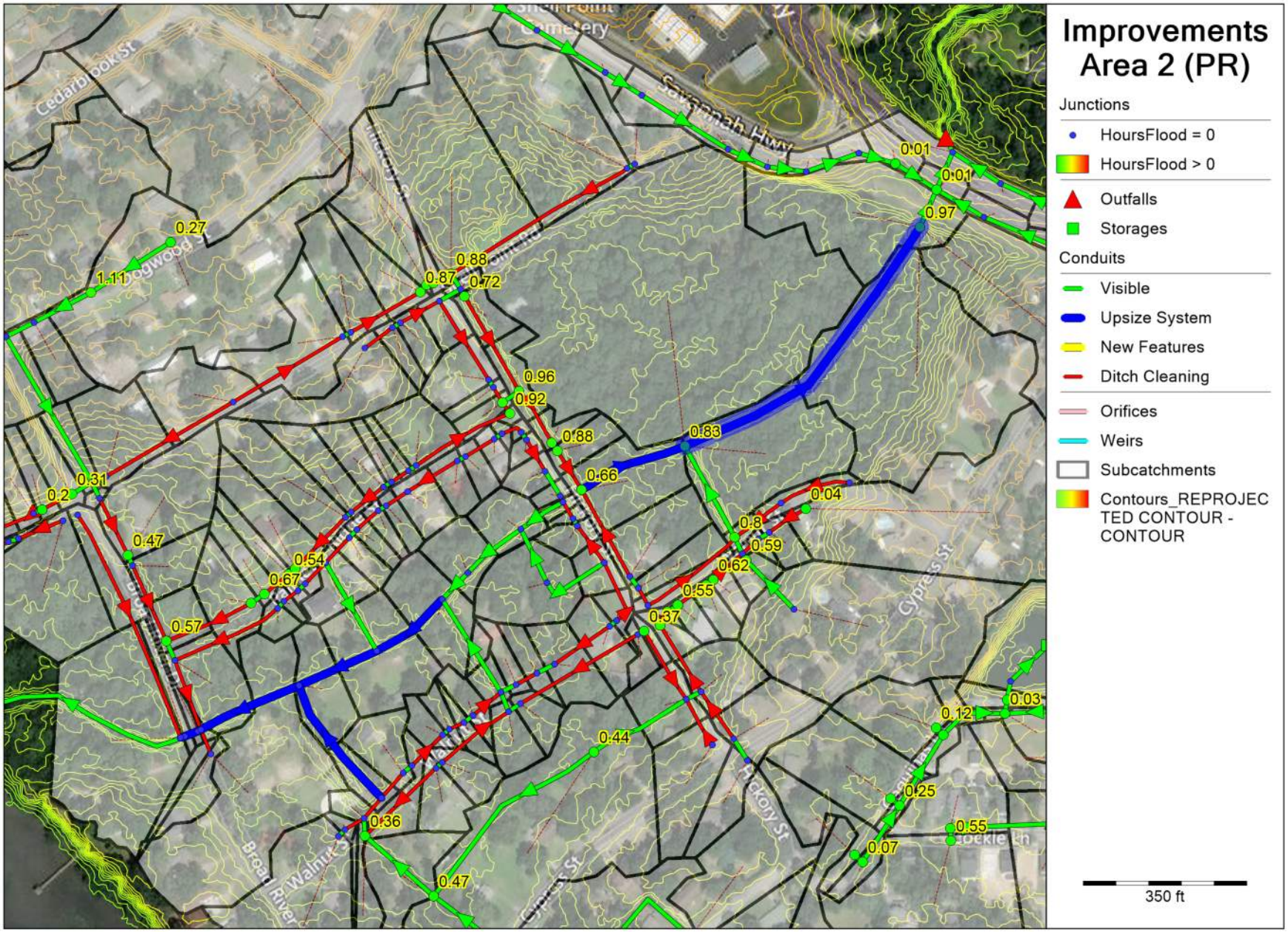
N

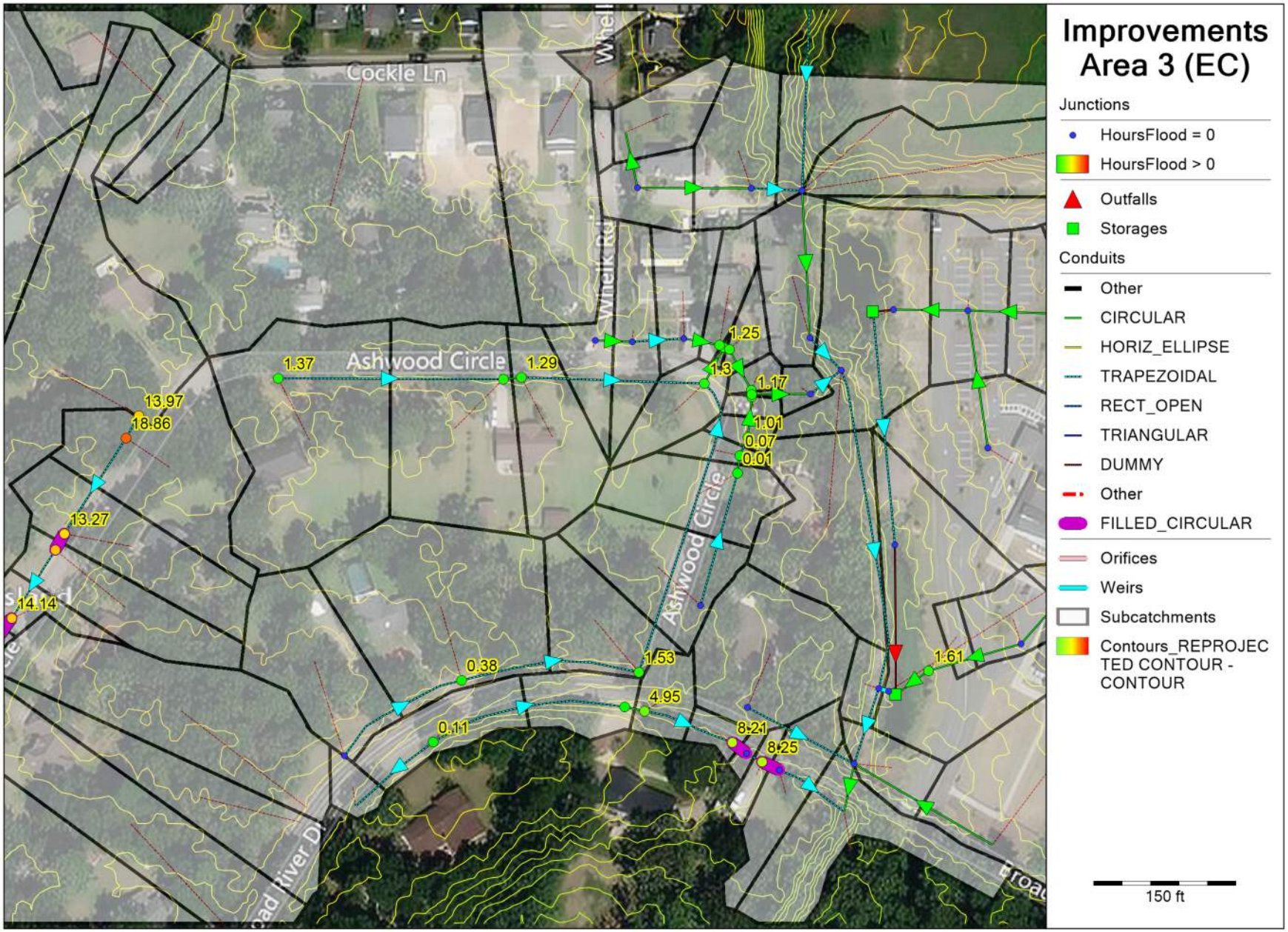
2500 ft

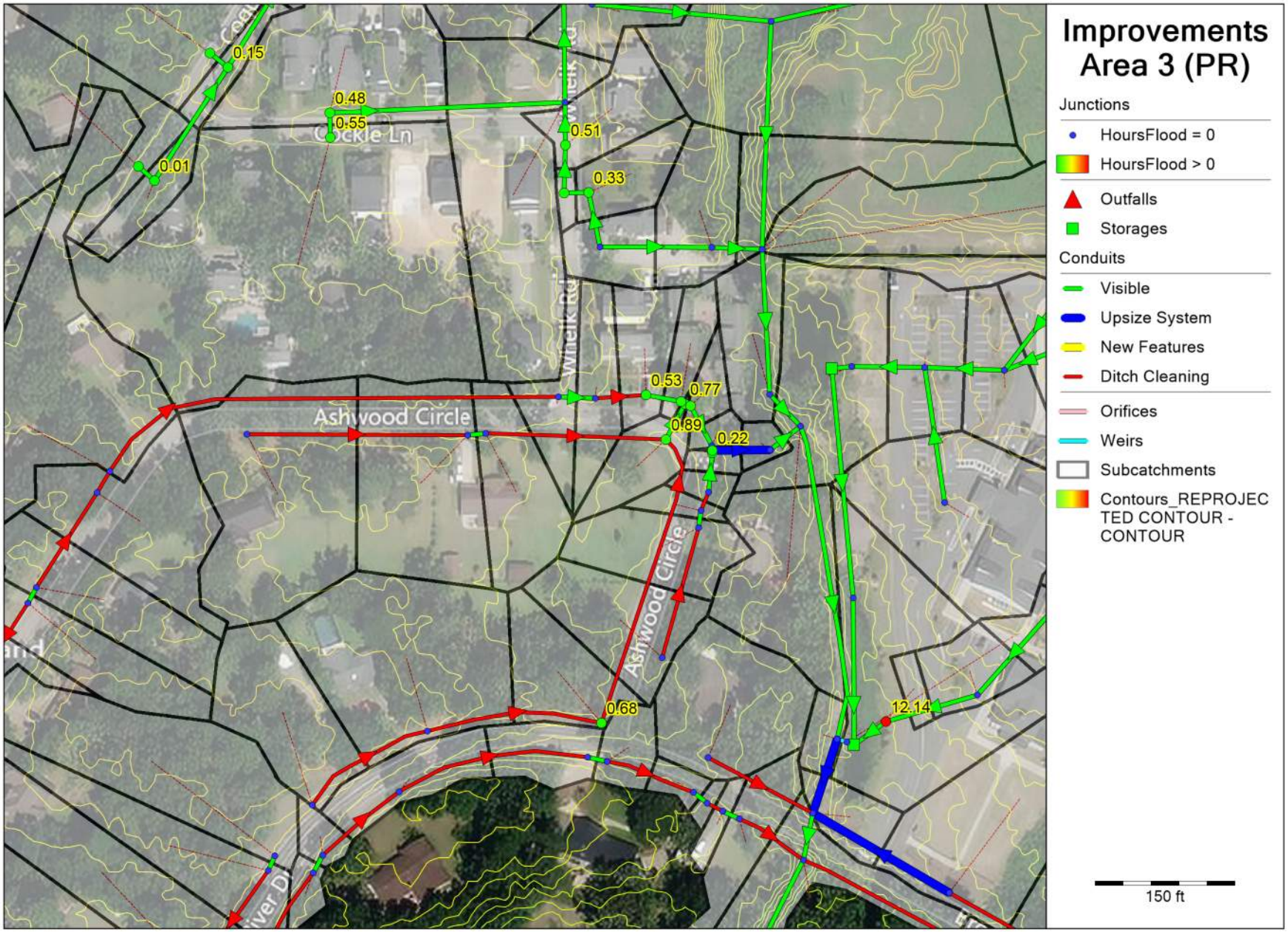

Improvements Area 1 (EC)
Junctions
HoursFlood = 0
HoursFlood > 0
Outfalls
Storages
Conduits
Other
CIRCULAR
HORIZ_ELLIPSE
TRAPEZOIDAL
RECT_OPEN
TRIANGULAR
DUMMY
Other
FILLED_CIRCULAR
Orifices
Weirs
Subcatchments
Contours_REPROJECTED CONTOUR - CONTOUR
400 ft
Dogwood St
Morning Mist Dr
Shell Point Rd
Magnolia St
0.55
0.38
2.7
0.14
2.33
4.3
3.02
2.55
4.41
4.45
4.58
4.62
4.48
4.34
3.59
3.85
0.76
2.07
22.69
4.84
4.26
14.38
12.75
3.42
3.76
2.17
1.03
8.51
0.8
7.78
0.58
7.59
0.8
1.19
12.05
12.96

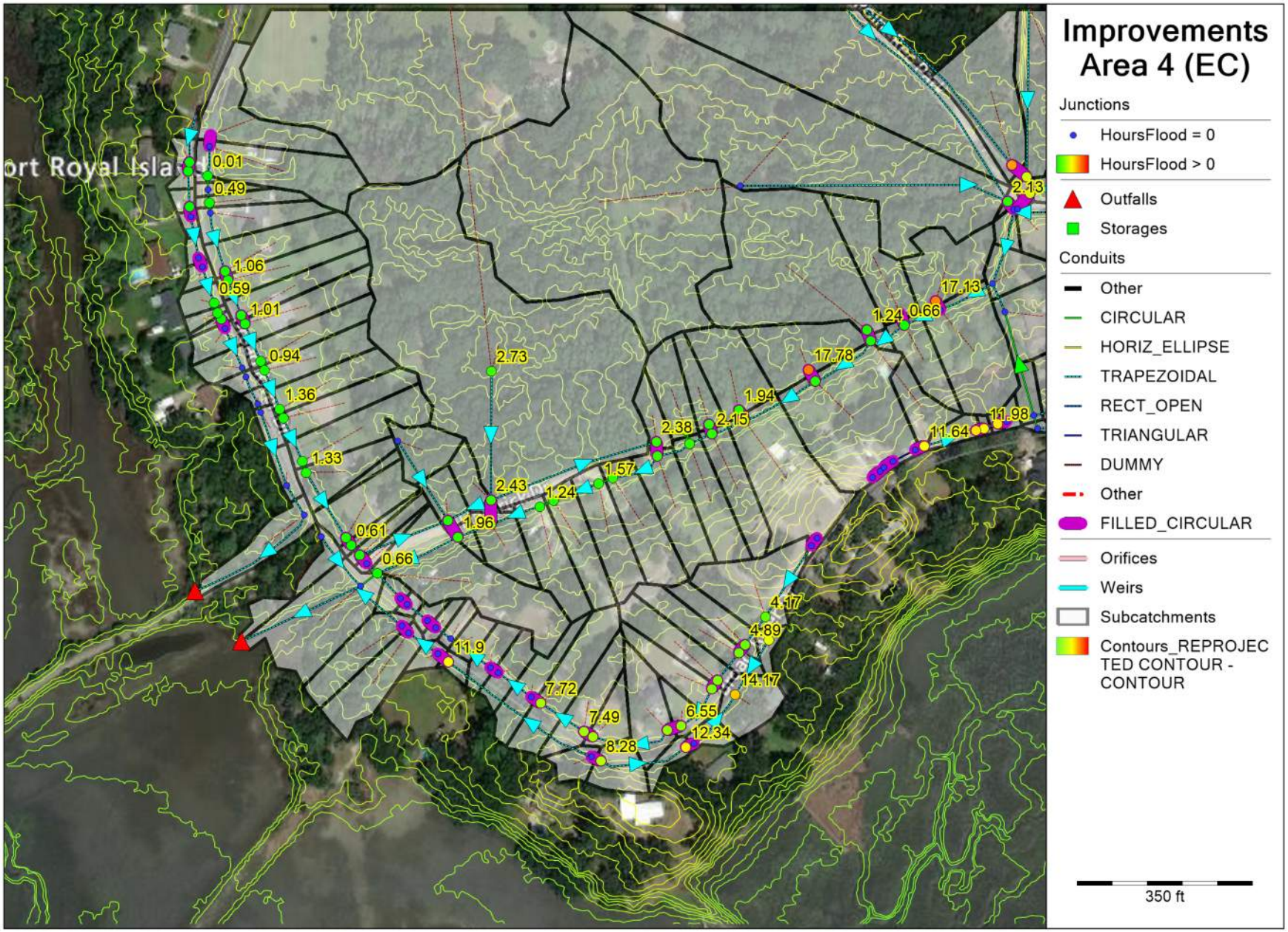

Improvements Area 1 (PR)
Junctions
HoursFlood = 0
HoursFlood > 0
Outfalls
Storages
Conduits
Visible
Upsize System
New Features
Ditch Cleaning
Orifices
Weirs
Subcatchments
Contours_REPROJECTED CONTOUR - CONTOUR
400 ft
Dogwood St
Morning Mist Dr
Shell Point Rd
Magnolia St
Gail St
0.55
0.36
0.14
0.23
0.17
0.46
0.59
0.43
0.66
0.77
0.67
0.66
0.68
0.75
0.53
0.52
0.49
0.61
0.29
0.64
0.32
0.28
0.1

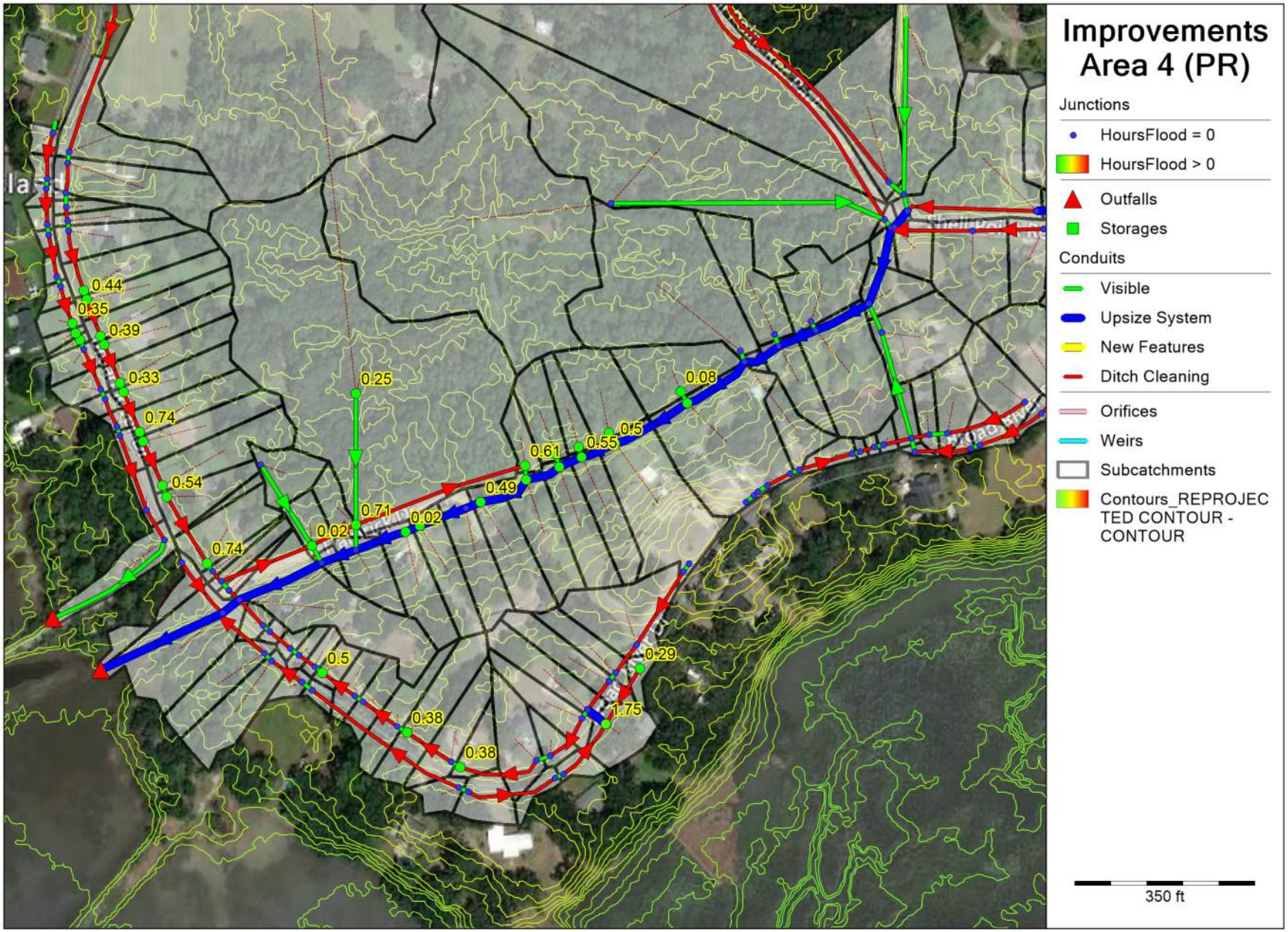

Improvements Area 2 (EC)
Junctions
HoursFlood = 0
HoursFlood > 0
Outfalls
Storages
Conduits
Other
CIRCULAR
HORIZ_ELLIPSE
TRAPEZOIDAL
RECT_OPEN
TRIANGULAR
DUMMY
Other
FILLED_CIRCULAR
Orifices
Weirs
Subcatchments
Contours_REPROJECTED CONTOUR - CONTOUR
350 ft
Savannah Hwy
Cypress St
Hickory St
Bread River Dr
22.87
0.01
1.04
0.87
0.82
0.97
1.16
1.67
0.4
1.39
1.38
1.12
1.12
1.26
16.94
0.88
2.01
0.72
1.02
1.71
4.17
1.26
1.08
1.04
1.92
2.07
0.99
2.36
1.09
1.35
2.47
0.42
1.07
1.16
0.01
1.53
0.12
0.01
0.13
0.54
0.27
0.01
1.64
1.44
23.58

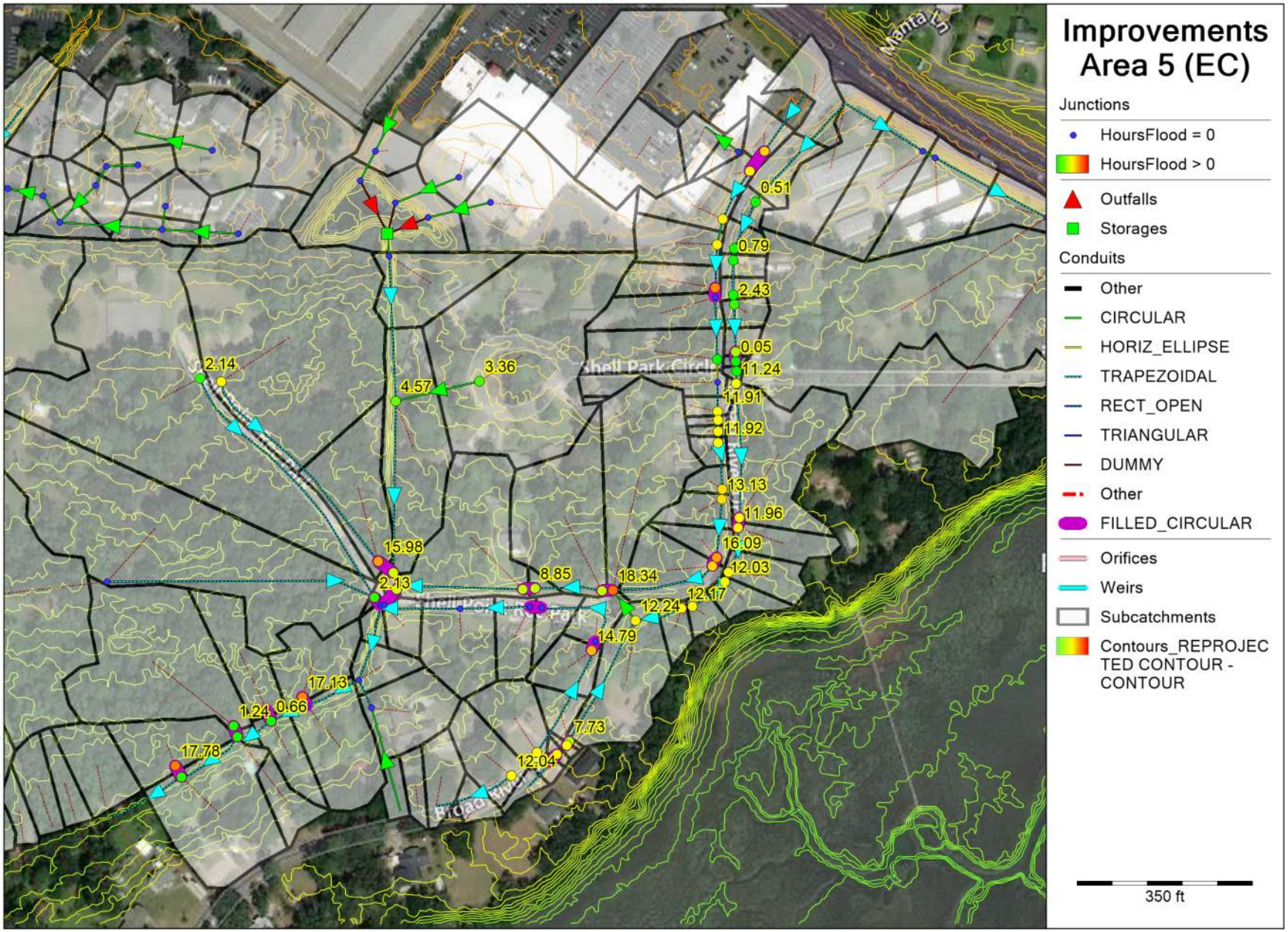

Improvements Area 2 (PR)
Junctions
HoursFlood = 0
HoursFlood > 0
Outfalls
Storages
Conduits
Visible
Upsize System
New Features
Ditch Cleaning
Orifices
Weirs
Subcatchments
Contours_REPROJECTED CONTOUR - CONTOUR
350 ft
Cedarbrook St
Savannah Hwy
Cypress St
Hickory St
Walnut St
Bread River
0.27
1.11
0.88
0.87
0.72
0.96
0.92
0.88
0.83
0.66
0.31
0.2
0.47
0.54
0.67
0.57
0.01
0.01
0.97
0.04
0.8
0.59
0.62
0.55
0.37
0.03
0.12
0.44
0.25
0.55
0.07
0.36
0.47

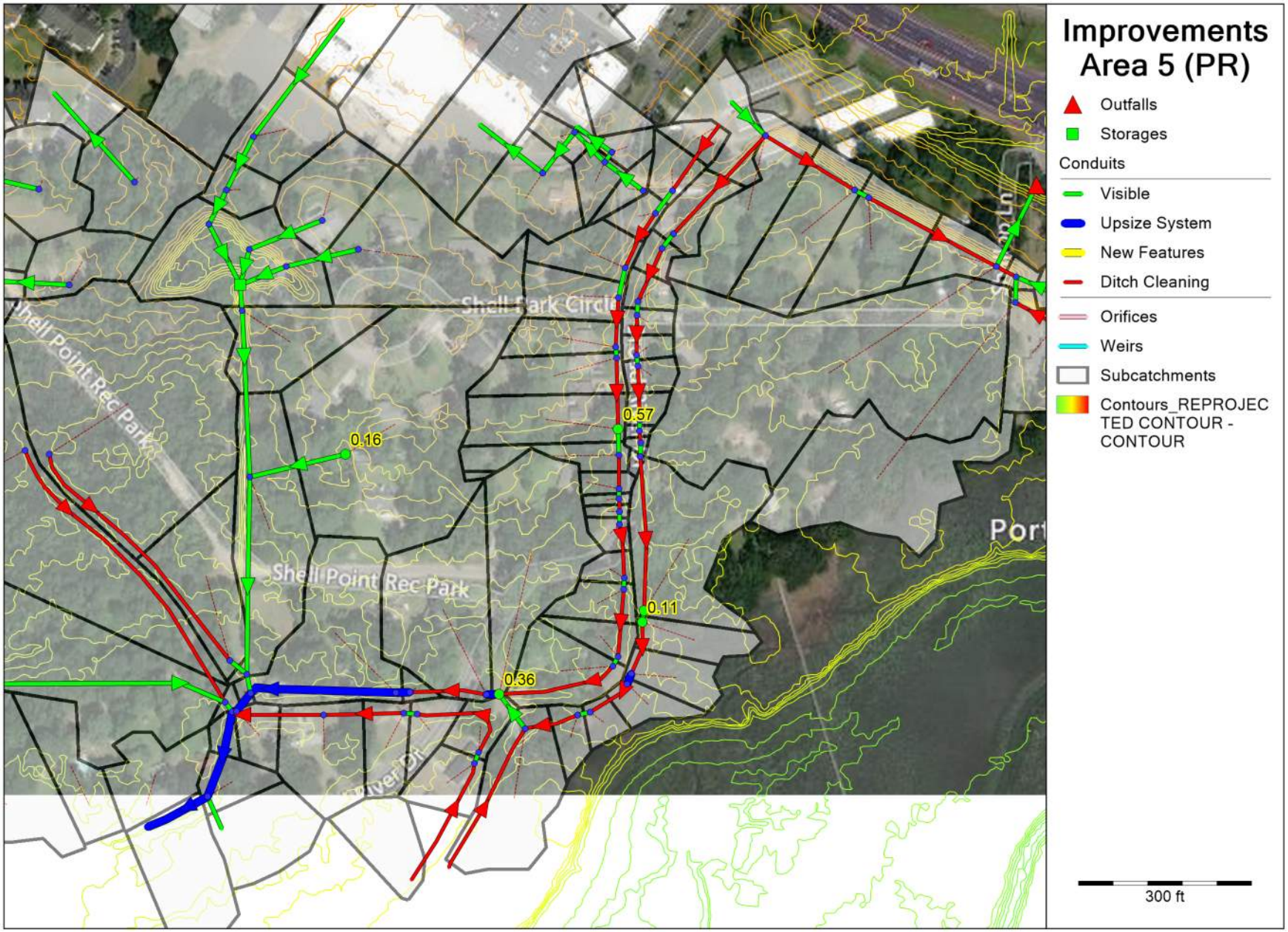

Improvements Area 3 (EC)
Junctions
HoursFlood = 0
HoursFlood > 0
Outfalls
Storages
Conduits
Other
CIRCULAR
HORIZ_ELLIPSE
TRAPEZOIDAL
RECT_OPEN
TRIANGULAR
DUMMY
Other
FILLED_CIRCULAR
Orifices
Weirs
Subcatchments
Contours_REPROJECTED CONTOUR - CONTOUR
150 ft
Cockle Ln
Ashwood Circle
Ashwood Circle
1.37
1.29
1.25
1.3
1.17
1.01
0.07
0.01
13.97
18.86
13.27
14.14
0.38
1.53
4.95
0.11
8.21
8.25
1.61


Improvements Area 3 (PR)
Junctions
HoursFlood = 0
HoursFlood > 0
Outfalls
Storages
Conduits
Visible
Upsize System
New Features
Ditch Cleaning
Orifices
Weirs
Subcatchments
Contours_REPROJECTED CONTOUR - CONTOUR
150 ft
0.15
0.48
0.55
0.01
0.51
0.33
0.53
0.77
0.89
0.22
0.68
12.14
Ashwood Circle
Ashwood Circle
Cockle Ln


Improvements Area 4 (EC)
Junctions
HoursFlood = 0
HoursFlood > 0
Outfalls
Storages
Conduits
Other
CIRCULAR
HORIZ_ELLIPSE
TRAPEZOIDAL
RECT_OPEN
TRIANGULAR
DUMMY
Other
FILLED_CIRCULAR
Orifices
Weirs
Subcatchments
Contours_REPROJECTED CONTOUR - CONTOUR
350 ft
0.01
0.49
1.06
0.59
1.01
0.94
1.36
1.33
0.61
0.66
1.96
2.43
1.24
1.57
2.38
2.15
1.94
2.73
17.78
1.24
0.66
17.13
2.13
11.64
11.98
4.17
4.89
14.17
11.9
7.72
7.49
8.28
6.55
12.34


Improvements Area 4 (PR)
Junctions
HoursFlood = 0
HoursFlood > 0
Outfalls
Storages
Conduits
Visible
Upsize System
New Features
Ditch Cleaning
Orifices
Weirs
Subcatchments
Contours_REPROJECTED CONTOUR - CONTOUR
350 ft
0.44
0.35
0.39
0.33
0.74
0.54
0.74
0.25
0.71
0.02
0.02
0.49
0.61
0.55
0.5
0.08
0.5
0.38
0.38
0.29
1.75


Improvements Area 5 (EC)
Junctions
HoursFlood = 0
HoursFlood > 0
Outfalls
Storages
Conduits
Other
CIRCULAR
HORIZ_ELLIPSE
TRAPEZOIDAL
RECT_OPEN
TRIANGULAR
DUMMY
Other
FILLED_CIRCULAR
Orifices
Weirs
Subcatchments
Contours_REPROJECTED CONTOUR - CONTOUR
350 ft
0.51
0.79
2.43
0.05
11.24
11.91
11.92
13.13
11.96
16.09
12.03
12.17
12.24
14.79
18.34
8.85
15.98
2.13
2.14
3.36
4.57
17.13
1.24
0.66
17.78
7.73
12.04
Shell Park Circle


Improvements
Area 5 (PR)
Outfalls
Storages
Conduits
Visible
Upsize System
New Features
Ditch Cleaning
Orifices
Weirs
Subcatchments
Contours_REPROJECTED CONTOUR - CONTOUR
0.16
0.57
0.11
0.36
Shell Point Rec Park
300 ft