

Dowden Area Drainage Evaluation

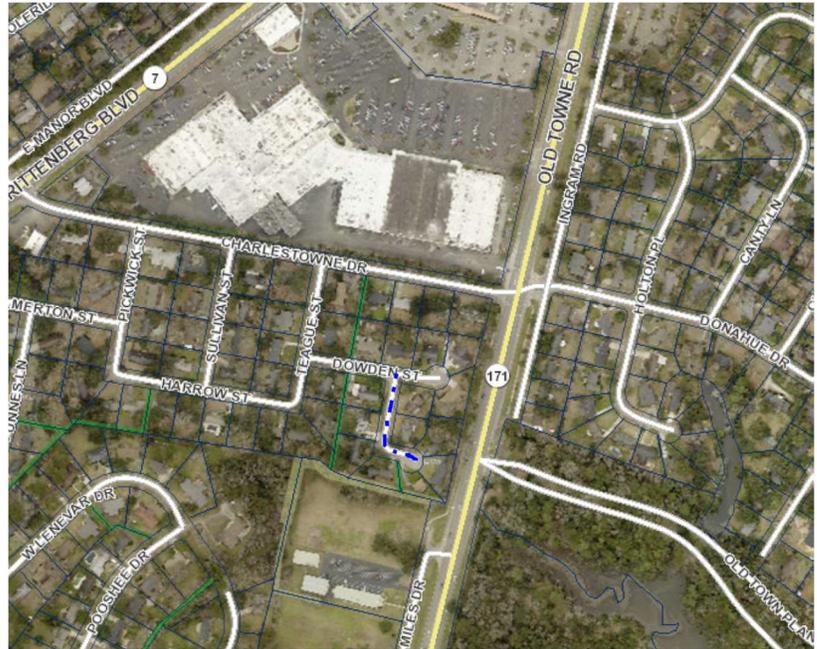
Council Districts 9

Phase Preliminary Engineering

Phase Budget Estimate \$75,000

Background

Water from this drainage basin flows into an existing major ditch system that begins at the shopping center to the north and continues under Old Towne Road to the marsh. The system is constricted under Old Towne Road which leads to flooding of multiple properties and roadways along the primary drainage channel. Old Towne Road is also a major corridor for existing underground utilities.



Phase Actions

This phase includes field survey, utility location, and stormwater modeling to evaluate options to improve flooding. These options are expected to include adding flow capacity under Old Towne Road, adding storage capacity within the basin, or reducing impervious area.

Future Actions

Following this phase, the selected plan would require design/permitting and construction funding.

Dupont Wappoo Drainage Design

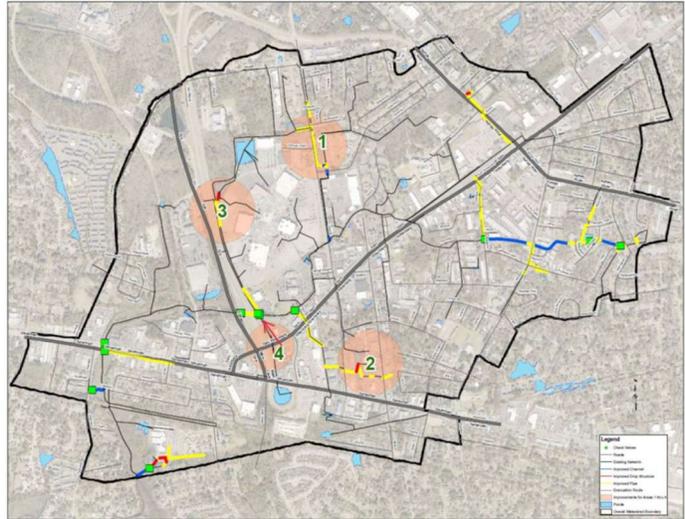
Council Districts 5,7,9,11

Phase Design/Permitting

Phase Budget Estimate \$225,000 City Share/\$90,000 County Share

Background

The City and Charleston County have collaboratively performed a drainage basin evaluation and plan for the Dupont/Wappoo Watershed from 2017 through 2019. This evaluation recommended a series of 10 projects for short term drainage improvements within the basin. This task is for the first 4 of these recommended improvements, focusing on: the drainage pathway from Orleans Road to the rear of the Citadel Mall; the storage of stormwater in the rear of the Citadel Mall; the drainage way from Dupont to the southern end of the Citadel Mall, and check valves along these systems.



Phase Actions

This phase includes utility location, design, permitting, completion of construction bid documents and project construction budgets.

Future Actions

Following this phase, the projects would require construction funding.

ARROW WIND AT EMERALD FOREST DRAINAGE

Council Districts 2

Phase Construction

Phase Budget Estimate \$20,000

Background

Intersection holds water into the travel lane following rain events

Phase Actions

Install a new roadside drainage inlet and modify existing pipe system to drain the low area of the intersection.

Future Actions

None.



CONCORD ST AT WATERFRONT PARK DRAINAGE

Council Districts 1

Phase Construction

Phase Budget Estimate \$40,000

Background

Handicap Parking Space and Access Ramp hold water following rain events.

Phase Actions

Install new inlets, modify roadside collection system and regrade parking space to mitigate ponding.

Future Actions

None.



WEIMS CT DRAINAGE

Council Districts 8

Phase Construction

Phase Budget Estimate \$30,000

Background

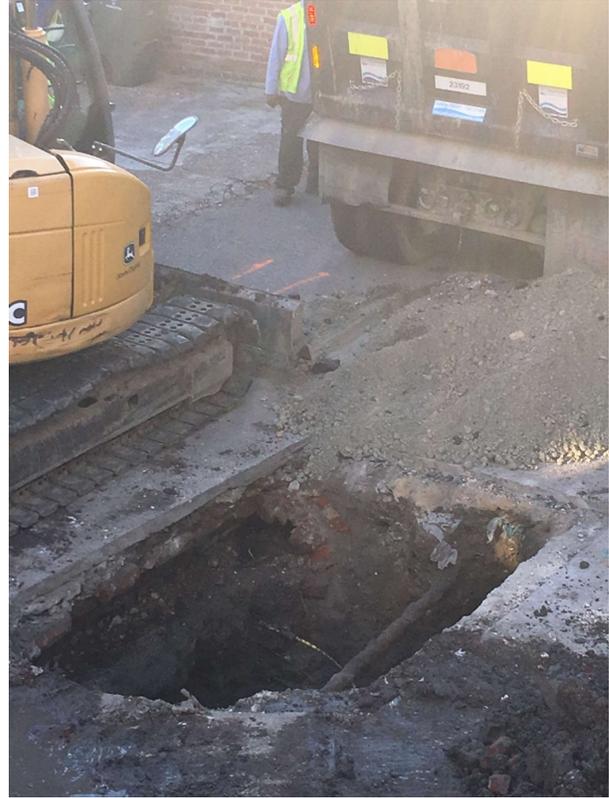
Road holds water following storm events. Road has a small brick arch system that has failed and needs to be restored to improve drainage.

Phase Actions

Install new inlet manhole and rehabilitate small brick arch lateral back to main arch.

Future Actions

None.



SHERWOOD FOREST DRAINAGE IMPROVEMENT

Council Districts 7

Phase Construction

Phase Budget Estimate \$50,000

Background

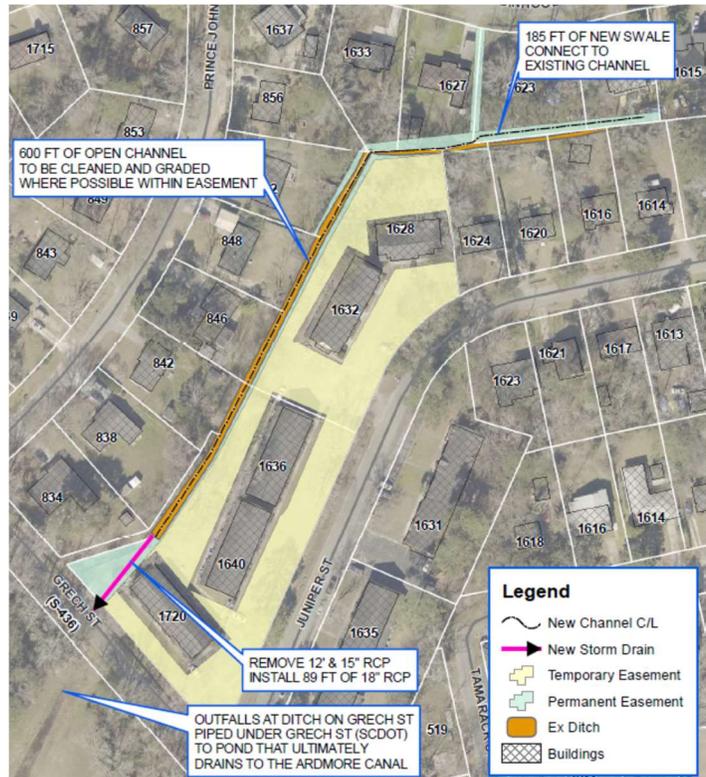
Rear yards hold water in the neighborhood. City has previously acquired drainage easement through the area and needs to reconstruct drainage system to improve flood conditions.

Phase Actions

Remove trees, remove fencing, install drainage swale and pipe.

Future Actions

None.



CONCORD ST PUMP STATION RETROFIT

Council Districts 1,4

Phase Design

Phase Budget Estimate

\$125,000

Background

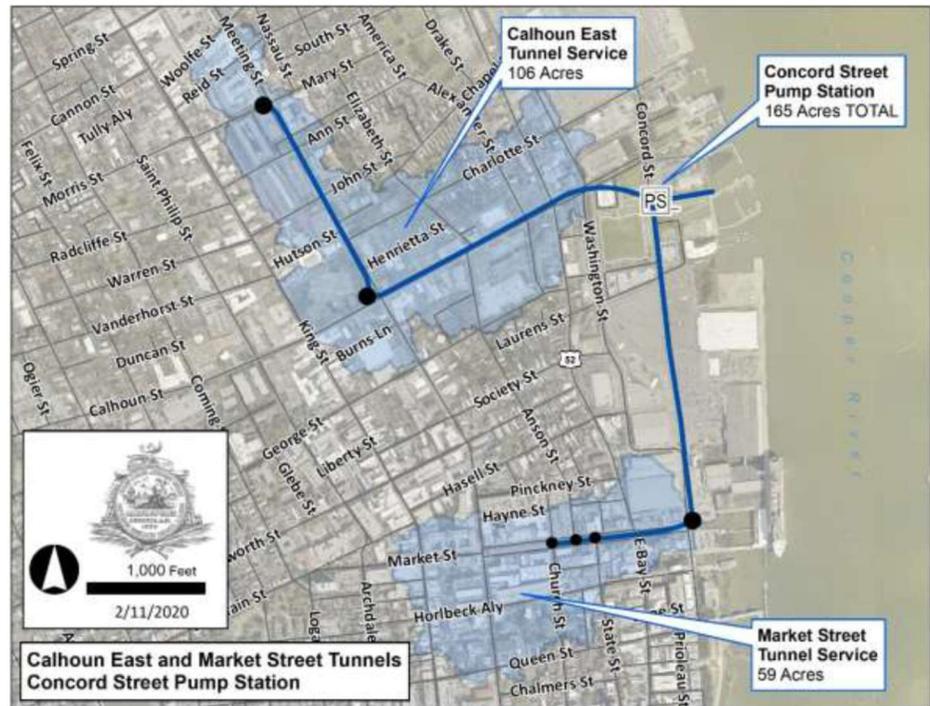
Pump station serving Calhoun East and Market St deep tunnel drainage projects requires updates and pump replacements due to expected service life coming to an end. The system was last updated in the early 2000s.

Phase Actions

Design, specify, and provide procurement assistance in primary pump, dewatering pump, electrical systems, pump control systems, and space conditioning.

Future Actions

Procurement Costs for Designed System Retrofits.



PAWPAW ST DRAINAGE

Council Districts 11

Phase Design

Phase Budget Estimate \$10,000

Background

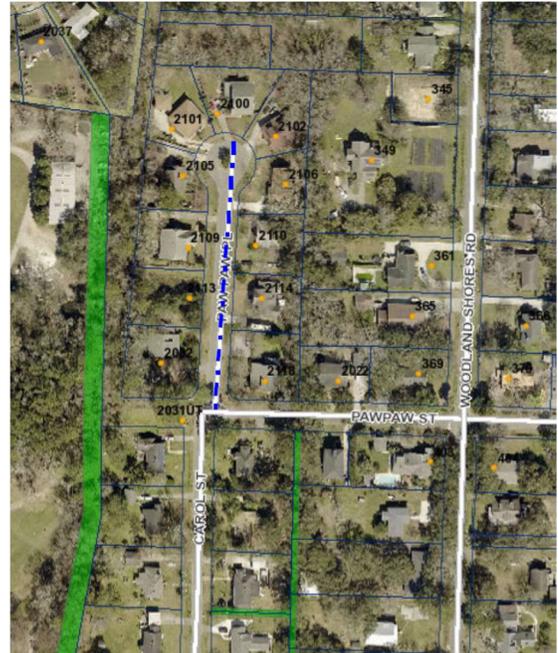
Woodland Shores area has a system of disconnected drainage pathways. The City and County are currently collaborating to improve the drainage outfall that runs through the Muni Golf Course and out to the Stono.

Phase Actions

Survey and plat drainage easements for dedication on the ditch system to the north of Pawpaw St to connect/maintain this component of the system into the improved outfall to improve neighborhood drainage.

Future Actions

None.



WAGNER TERRACE REHABILITATION

Council Districts 3,6

Phase Construction

Phase Budget Estimate \$50,000

Background

The Wagner Terrace neighborhood has a large network of older drainage pipes that are heavily impacted by tree root blockages that can create road flooding.

Phase Actions

Remove root blockages and clean pipe systems in the neighborhood.

Future Actions

None.



FORT ROYAL DRAINAGE IMPROVEMENT

Council Districts 9

Phase Construction

Phase Budget Estimate \$350,000

Background

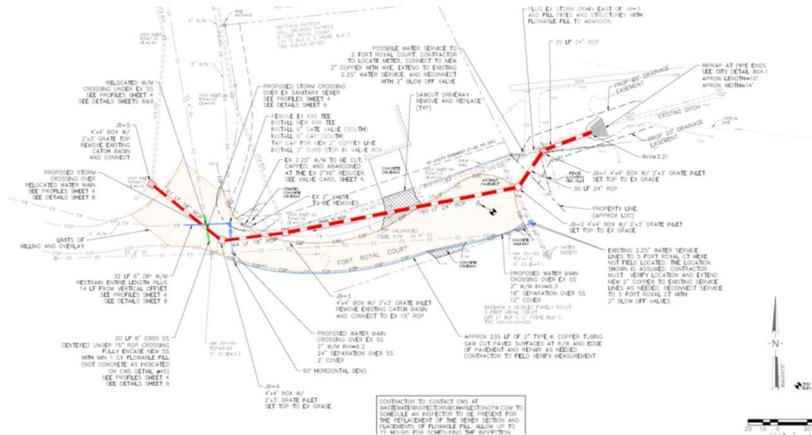
Wespanee experiences road and property flooding and has an undersized outfall system. The project has previously been surveyed and designed.

Phase Actions

Construct improvements to outfall system and improve upstream portion of neighborhood drainage system to connect and realize improvements from the outfall.

Future Actions

None.



MUELLER DRAINAGE IMPROVEMENT

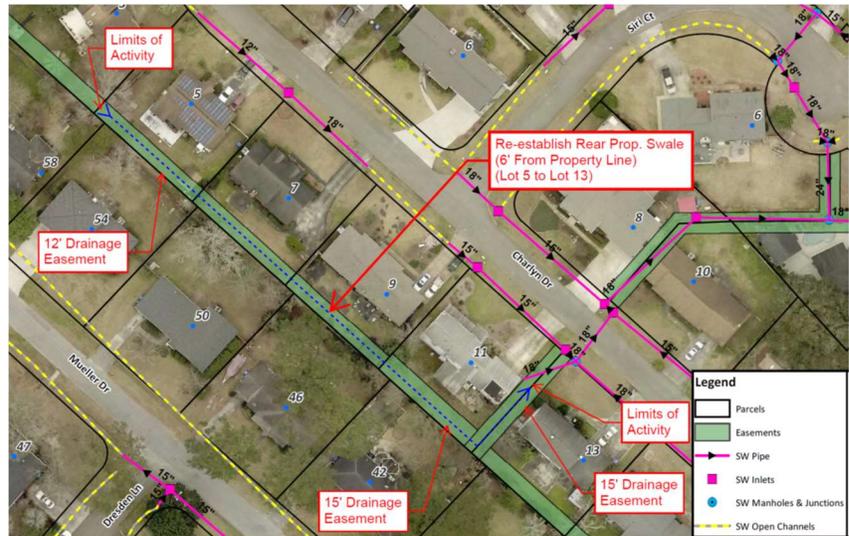
Council Districts 9

Phase Construction

Phase Budget Estimate \$20,000

Background

The Mueller/Charlyn area has rear yard flooding. A drainage easement exists in the neighborhood but does not have an existing drainage conveyance. This work would remove the sheds and other obstructions from the easement to create an open drainage swale.



Phase Actions

Remove sheds, fences, and other obstructions to drainage and install open drainage swale in the rear of properties.

Future Actions

None.

HARBORSUN DITCH STABILIZATION

Council Districts 6,12

Phase Design/Construction

Phase Budget Estimate \$100,000

Background

The outfall canal for the Westchester neighborhood including Folly Road and Secessionville Road flows under Harborsun Road. Past storm events have caused erosion of the canal toward a residential structure.

Phase Actions

Design bank stabilization; remove vegetation and install bank stabilization.

Future Actions

None.



SAVANNAH HIGHWAY SIDEWALK DRAINAGE IMPROVEMENT

Council Districts 11

Phase Construction

Phase Budget Estimate
\$150,000

Background

The sidewalk and properties along the south side of Savannah Highway in Byrnes Downs experience flooding following rain events and have erosion issues from the HWY 17 embankment.



Phase Actions

Install bank stabilization and level portions of the sidewalk to reduce ponding water issues along the sidewalk following storm events.

Future Actions

None.

Belfast Roadside Drainage Improvement

Council Districts 11

Phase Construction

Phase Budget Estimate \$10,000

Background

The roadside drainage is comprised of asphalt swales that do not connect to the outfall system at the back of Belfast Road until significant ponding exists on the road and properties.



Phase Actions

Driveway culverts and front yard ditches to convey water to the outfall system.

Future Actions

None.

Wespanee Drainage Evaluation

Council Districts 9

Phase Design

Phase Budget Estimate
\$50,000

Background

The area currently receives flooding on a low lying quadrant of properties. The local pipe networks need to be evaluated to determine if they can be modified to provide drainage of the area.



Phase Actions

Survey pipe network and develop stormwater model for potential capacity and grade improvements.

Future Actions

Following this phase the project would require construction funding.

Project	Budget	Description
Belfast Roadside Drainage Improvement	\$ 10,000	Installation of Driveway Pipes and Roadside Ditch to Connect Road Drainage to Existing Outfall to Relieve Road Flooding
Concord St at Waterfront Park Handicap Drainage	\$ 40,000	Modification to Paving and Inlets to Relieve Road/Ramp Ponding
Concord St Pump Station Retrofit Design	\$ 125,000	Design of Pumps/Electrical/Control Systems/Water Quality for Needed Pump Station Retrofit of 20+ Year Old Facility
Dowden Area Drainage Evaluation	\$ 75,000	Drainage Model and Improvement Option Evaluation for Property/Road Flooding
Dupont Wappoo Drainage Design	\$ 225,000	Design/Permitting of 4 Improvement Projects Identified in Dupont Wappoo Evaluation
Emerald Forest at Arrow Wind Box Installation	\$ 20,000	Installation of New Stormwater Inlet to Relieve Road/Sidewalk Ponding
Fort Royal Area Drainage Improvement	\$ 350,000	Installation of Modified Outfall System and Upgrade to Neighborhood Conveyance System to Relieve Property and Road Flooding
Harborsun Ditch Stabilization	\$ 100,000	Design and Construction to Repair and Stabilize a Drainage Canal Bank in Vicinity of a Residential Structure
Mueller Drainage Improvement	\$ 20,000	Installation of Rear Yard Drainage Swale on Existing Easement to Relieve Rear Yard Flooding
Pawpaw St Drainage Improvement	\$ 10,000	Survey for Dedication and Restoration of Drainage Easement for Neighborhood Rear Lot System
Savannah Hwy Sidewalk Drainage Improvement	\$ 150,000	Design/Permitting/Construction of Shoulder Stabilization and Sidewalk Drainage Improvements to Relieve Sidewalk and Front Yard Flooding
Sherwood Forest Drainage Improvement	\$ 50,000	Installation of Rear Yard Drainage Swale on Acquired Easements to Relieve Yard Flooding
Wagner Terrace Pipe Rehabilitation	\$ 50,000	Root Removal from Roadside Pipe System to Relieve Road Flooding
Weims Ct Drainage Improvement	\$ 30,000	Restoration of Short Brick Arch Segment and Addition of New Inlet to Relieve Road Flooding
Wespanee Drainage Evaluation	\$ 50,000	Evaluation of Improvement Options to Drainage System for Property Flooding
Rivers Point Row	\$ 43,220	Completed Project for Roadside Pipe Restoration from Structurally Failed Pipe
Lord Calvert CO #1	\$ 19,922	Roadside Drainage Improvement Project to Relieve Road and Property Flooding
Total	\$ 1,368,142	

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Ready to Construct	\$ 130,000
Ready to Design	\$ 350,000
Previously Allocated	\$ 63,142