

City of New Bern

Duffyfield Community Resilience Improvement Project



LOCATION

Craven County, NC

FUNDING SOURCE

N.C. Department of Environmental
Quality – Resilient Coastal
Communities Program (RCCP)
Phase 4

PROJECT TYPE

Stormwater Management
& Flood Mitigation

FUNDING AMOUNT

\$175,300

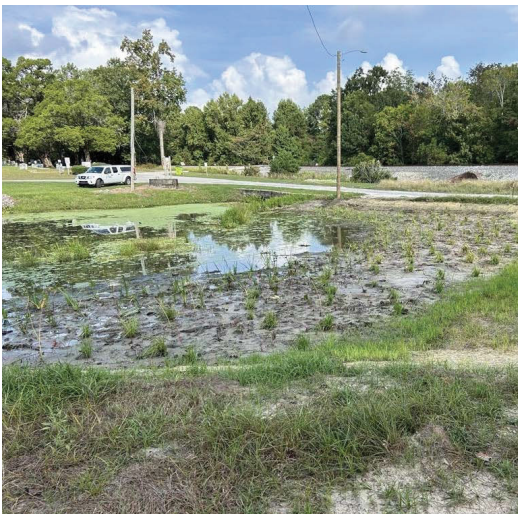
Community Context

The Duffyfield neighborhood in New Bern experiences frequent flooding due to heavy rainfall and limited drainage capacity. Flood mitigation in the area relies largely on the Duffyfield Canal, which drains a large watershed extending from Glenburnie Road to Jack Smith Creek and ultimately the Neuse River. Because this system serves a broad drainage area, localized stormwater improvements that increase storage capacity and slow runoff can help reduce flooding impacts. **Addressing flooding in the Duffyfield neighborhood is critical to protecting nearby homes, roadways, and public spaces.**

Although the City did not participate in the early planning phases of the RCCP, it developed its own resilience planning framework to address flooding and other climate-related risks. This prior planning effort made the City eligible to apply for implementation funding through RCCP. The project described below supports the City's broader Duffyfield Community Resilience initiatives.

Project Description

In 2023, the City of New Bern received a Phase 4 (Implementation) grant to support the construction of a floodplain reconnection and stormwater management project on a city-owned property located at the intersection of Rose Street and Garden Street. **The project restored the natural function of a previously altered floodplain area by excavating and grading the site to reconnect it with the surrounding drainage system.** This work created additional capacity to temporarily store, slow, and treat stormwater during heavy rainfall events. **In addition to flood storage benefits, the project incorporated nature-based design elements, including the installation of a vegetated littoral shelf planted with native species.** These plantings help stabilize soil, filter pollutants from runoff, and provide habitat for pollinators and other wildlife while enhancing the site's ecological and aesthetic value.



Project Metrics

**FLOODPLAIN
RESTORED:** 
APPROXIMATELY 8,700 SQUARE FEET
(0.2 ACRES)


**ADDITIONAL
FLOODWATER
STORAGE CAPACITY:**
APPROXIMATELY
0.5 ACRE-FEET


**LITTORAL
SHELF
INSTALLED:**
10 FEET WIDE
ALONG THE BASIN EDGE

VEGETATION:
NATIVE WETLAND 
PLANTINGS INSTALLED
TO STABILIZE SOILS, 
IMPROVE WATER QUALITY,
AND ENHANCE HABITAT

**PROJECT
MONITORING:** 
CITY STAFF WILL MONITOR
VEGETATION ESTABLISHMENT AND
BASIN PERFORMANCE OVER TIME



North Carolina
Coastal Resiliency

Resilience Benefits

- **Reduced localized flooding:** Increased on-site storage helps slow stormwater runoff and reduce pressure on the Duffyfield Canal drainage system during heavy rain events.
- **Improved water quality:** Native vegetation and floodplain storage help filter sediment and pollutants from stormwater before it moves downstream.
- **Habitat enhancement:** Native wetland plantings provide habitat for pollinators, birds, and other wildlife while strengthening ecosystem function.
- **Nature-based resilience:** The project demonstrates how small-scale floodplain restoration can provide cost-effective flood mitigation while improving environmental conditions in urban neighborhoods.

Duffyfield Canal Basin Before/After Improvements



Project Partners & Next Steps

The project was funded by the N.C. Department of Environmental Quality through RCCP Phase 4. The City of New Bern partnered with TRC and community stakeholders to design and implement the improvements. With construction complete, the City will monitor and maintain the basin to ensure long-term flood reduction, water quality benefits, and ecological performance.

