Dewberry

APPENDIX D

COMMUNITY PROJECT PORTFOLIO

APRIL 2025

COMMUNITY PROJECT PORTFOLIO

A critical component of the Resilient Coastal Communities Program is the identification and prioritization of a series of projects that are intended to address community vulnerabilities to coastal hazards. The enclosed list of projects, which includes infrastructure improvements (structural, non-structural, natural or nature-based solutions, or hybrid options), policy and planning efforts, and asset management actions, has been synthesized from previous local and regional planning efforts, input from the Community Action Team, and feedback from the public.

Included in this Appendix is a summary list of the proposed projects, followed by an individual sheet for each project. Each project sheet summarizes the factors that were considered in the project identification and prioritization process, including:

Project Name	Brief descriptive title for each given project.
Project Description	Description of strategy being proposed and the scope of the work.
Location	The geographic location of the project.
Hazard(s) addressed by project	A summary of the community-specific coastal hazards that impact the project location. This can include flooding, storm surge, wind damage, or other coastal hazards.
Type of Solution	A description of whether the project represents infrastructure improvements, policy and planning effort, or an asset management/mapping program.
Natural and Nature Based Solution Opportunity?	A symbol is used to denote whether the project includes a natural or nature-based solution (NNBS) component.
Project Estimated Cost	A qualitative analysis of the total project cost, including initial engineering and construction as well as future maintenance (as available). Project cost is shown symbolically ranging from $ to $$$$.
Potential Implementation Funding Sources	Recommendations on potential sources to construct or otherwise implement the project, including the Resilient Coastal Communities Program and other federal and state funding sources.
Project Estimated Timeline	An estimated timeline to complete the project, including notes on any expected delays in the timeline.
Preliminary Tasks/ Data Required	A description of tasks and information that should be complete before starting the listed project.
Advantages/Disadvantages	An analysis of the benefits and drawbacks of the proposed solution
Similar Project Examples	Examples of similar projects completed and identification of where information on the projects can be found.
Priority Rating	A qualitative ranking of the project's priority in the context of the entire Project Portfolio. Rankings of **High**, **Medium**, or **Low** are provided for each project.

Proposed Project Summary

Project Priority	Project Title	Description	Location	Anticipated Cost	NNBS Opportunity	Potential Funding Sources	Timeline	Needs Addressed	Pro/Con Assessment	Notes
1	Stormwater Facility Improvements	Improve stormwater facilities (ditches, storm drains) on multiple Town streets.	Prioritize improvements on the West End, including Knollwood Dr, Dogwood St, Pelican Dr, and Fairview St. Additional focus area should be the Bayview community.	Cost varies based on solution implemented and location needs. Cost estimated to be between $30,000 and $125,000 per site.	Yes	Federal sources may include EDA - Investment for Public Works, National Wildlife Federation, and Economic Development Facilities. State sources may include the Rural Grant Programs, EPA – Clean Water State Revolving Fund	Timeline varies based on solution implemented and location needs. Design and construction timeline expected to vary between 3 months and 1 year per site. This is an ongoing program, to be implemented at individual sites as needs are identified.	Stormwater Management, Flooding	Implementation of these improvements will address recurring flooding spots throughout the Town. However, some of these improvements will likely require acquisition of private property or permanent utility easements; the extent of private property needs will vary by location and improvement type.	Future phases of this project would require private property easements. The Fairview project is recommended for Phase 3 of the RCCP, but private property easements will be an issue.
2	Pump Stations	Install pumps at new locations or make improvements at existing pump locations.	Henderson Blvd/Asbury Ave, 100 Ocean Ridge Blvd/Tom Doe Beach Access, 208 Dunes Ave, 202 Glenn St, 312 East Boardwalk Blvd, 216 East Boardwalk Blvd/Greenville Ave Beach Access, 314 East Terminal Blvd/Wilson Ave, 314/315 Old Causeway, 301 West Boardwalk Blvd, 506 West Atlantic Blvd (507 W. Terminal Blvd), 105 South Durham Ave, 136 Hoop Pole Creek Dr, Forest Knoll Dr.	Cost varies based on amount of pump stations and location needs. Cost estimated to be between $500,000 and $1 million per site.	No	Federal sources may include EDA - Investment for Public Works, National Wildlife Federation, and Economic Development Facilities. State sources may include the Rural Grant Programs, EPA – Clean Water State Revolving Fund	There is currently no proposed timeline for this project. It is considered a long-term need and a high priority project.	Stormwater Management, Flooding	Continued maintenance and expansion of the current pump system will help alleviate the worst flooding that occurs during extreme weather events and other events that cause excess flooding. However, private property acquisition or permanent easements may be required for new pump stations; in addition, these facilities require continued maintenance.	This project can be combined with other improvements on the list as a part of comprehensive localized area improvements.

3	Dune Infiltration	System would act as sand filter for stormwater diverted to ocean outfalls. May include pumps or catch basins to move stormwater from roadways into the system.	Existing public beach access points.	Cost varies based on solution implemented and location needs. Cost estimated to be between $50,000 and $250,000 per site.	Yes	Potential funding sources: Federal sources may include NOAA – National Coastal Resilience Fund (NCRF), National Wildlife Federation, DOI National Coastal Wetlands Conservation, and USFWS National Coastal Wetlands Conservation Grants. State sources may include NCDCM Planning and Management Grants, NCDEQ Clean Water State Revolving Fund	There is currently no proposed timeline for this project. It is considered a long-term need and a high priority project.	Stormwater Management	Dune infiltration systems can help reduce stormwater runoff and protect beaches from polluted water. Construction of these systems will need to consider appropriate siting in order to minimize the extent of new easement or property needed, utilizing existing public infrastructure right-of-way (beach access points, etc.) where possible.	Atlantic Beach has several successful dune infiltration systems in place, including Lift Stations 5 and 6.
4	Stormwater Pre-treatment	Construct stormwater treatment facilities (bioswales, infiltration systems, other green infrastructure) to minimize water quality impacts at multiple locations.	Recommended location is the Shore Drive area.	Cost varies based on solution implemented and location needs. Costs are expected to be $30,000 to $150,000 per site.	Yes	Federal sources may include EDA - Investment for Public Works, National Wildlife Federation, and Economic Development Facilities and FEMA – BRIC. State sources may include Rural Grant Programs, EPA – Clean Water State Revolving Fund	Timeline varies based on solution implemented and location needs. Design and construction timeline expected to vary between 3 months and 1 year per site. This is an ongoing program, to be implemented at individual sites as needs are identified.	Stormwater Management, Flooding	Stormwater pretreatment reduces the number of pollutants entering waterways by filtering sediment and debris before it reaches larger stormwater systems, potentially mitigating flooding risks by slowing down runoff, and improving water quality in receiving bodies of water. However, these options can have high installation costs, ongoing maintenance needs, and limitations in treating certain types of pollutants depending on the chosen pretreatment method.	Stormwater is currently pretreated before it is released into the sound via the pump system. Pretreating the water before it enters the pump system may not be warranted.

5	Stormwater Infrastructure Mapping	Map all stormwater infrastructure within Town limits to determine service gaps and needs.	Townwide	Mapping effort is expected to be low cost, depending on the level of survey effort. Cost is expected to be between $75,000 and $300,000.	No	Federal sources may include EDA - Investment for Public Works and Economic Development Facilities and FEMA – BRIC. State sources may include the Rural Grant Programs, EPA – Clean Water State Revolving Fund, NCDEQ Asset Inventory and Assessment Grant Program	No proposed timeframe; may take between six months to a year to complete.	Stormwater Management, Flooding	Infrastructure mapping offers several advantages such as improved visibility into system dependencies, efficient planning for maintenance and upgrades, risk mitigation by identifying vulnerabilities, and better decision-making capabilities. However, the cons include the initial cost of data collection, ongoing maintenance to keep the map updated, potential inaccuracies due to incomplete information, and the need for specialized expertise to interpret the data effectively.	This project would provide very beneficial information to understand where to expand and/or improve stormwater facilities. The Town currently has maps of all stormwater infrastructure, but it has not been mapped in GIS.
6	Education Materials	Materials for homeowners and business owners on what can be done to address flooding on private property.	Townwide	Primary costs are expected to include the publication/ distribution of online and printed education materials. Expected cost would be between $10,000 and $50,000.	No	Partnerships with non-governmental organizations may provide opportunities to fund the education effort. The NC Office of Environmental Education website provides information on potential education grants.	Intended as ongoing program as funding is available.	Stormwater Management, Flooding, Infrastructure Deficiency or Capacity, Increased Extreme Weather	Community outreach can give members a sense of purpose and empowerment. This is an opportunity for open discussion and identification of community needs and resources that could help with future discussions of infrastructure improvements and future emergency scenarios.	Educational materials are recommended on emergency preparedness topics, reasons why stormwater problems are increasing (results of increase in impervious surface, etc.). Any outreach materials should be written in layman's terms.

Project Name	**Stormwater Facility Improvements**
Project Description	Improve stormwater facilities (ditches, storm drains, etc.) on multiple Town streets.
Location	Prioritize improvements on the West End, including Knollwood Dr, Dogwood St, Pelican Dr, and Fairview St. Additional focus area should be the Bayview community.
Hazard(s) addressed by project	Stormwater Management/ Flooding.
Type of Solution	Infrastructure improvements. Construction/replacement of stormwater infrastructure at key locations throughout the Town. Natural and nature-based solutions (NNBS) options will be implemented as practicable.
Natural and Nature Based Solution Opportunity? 	**Yes**
Project Estimated Cost	Cost varies based on solution implemented and location needs. **Cost Level: $**
Potential Implementation Funding Sources	Federal sources may include EDA - Investment for Public Works, National Wildlife Federation, and Economic Development Facilities. State sources may include the Rural Grant Programs, EPA – Clean Water State Revolving Fund.
Project Estimated Timeline	Timeline varies based on solution implemented and location needs. Design and construction timeline expected to vary between 3 months and 1 year per site. This is an ongoing program, to be implemented at individual sites as needs are identified.
Preliminary Tasks/ Data Required	While a comprehensive stormwater mapping and assessment can inform a prioritized approach and schedule, an initial priority list of improvement locations can be generated from public feedback and the 2021 Watershed Restoration and Stormwater Resilience Plan.
Advantages/Disadvantages	Implementation of these improvements will address recurring flooding spots throughout the Town. However, some of these improvements will likely require acquisition of private property or permanent utility easements; the extent of private property needs will vary by location and improvement type.

Similar Project Examples	Stormwater Facility Improvements - Cape Carteret Resilience Strategy (2022).
Priority Rating	**High**. The project was identified as top priority by the Resilient Coastal Communities Program CAT.

Stormwater Pipes After Restoration Project in New Hanover County

Source: Coastal Review (https://coastalreview.org/2017/04/tournament-puts-spotlight-on-conservation/)

Project Name	**Pump Station Construction**
Project Description	Install pumps at new locations or make improvements at existing pump locations.
Location	Henderson Blvd/Asbury Ave, 100 Ocean Ridge Blvd/Tom Doe Beach Access, 208 Dunes Ave, 202 Glenn St, 312 East Boardwalk Blvd, 216 East Boardwalk Blvd/Greenville Ave Beach Access, 314 East Terminal Blvd/Wilson, 314/315 Old Causeway, 301 West Boardwalk Blvd, 506 West Atlantic Blvd (507 W. Terminal Blvd), 105 South Durham Ave, 136 Hoop Pole Creek Dr, Forest Knoll Dr.
Hazard(s) addressed by project	Stormwater Management/ Flooding.
Type of Solution	Infrastructure improvements. Construction/replacement of stormwater infrastructure at key locations throughout the Town.
Natural and Nature Based Solution Opportunity?	No
Project Estimated Cost	Cost varies based on amount of pump stations and location needs. **Cost Level: $$$**
Potential Implementation Funding Sources	Federal sources may include EDA - Investment for Public Works, National Wildlife Federation, and Economic Development Facilities. State sources may include the Rural Grant Programs, EPA – Clean Water State Revolving Fund
Project Estimated Timeline	There is currently no proposed timeline for this project. It is considered a long-term need and a high priority project.
Preliminary Tasks/ Data Required	Drainage inventory and assessment will inform a prioritized approach and schedule.
Advantages/Disadvantages	Continued maintenance and expansion of the current pump system will help alleviate the worst flooding that occurs during extreme weather events and other events that cause excess flooding. However, private property acquisition or permanent easements may be required for new pump stations; in addition, pumps require continued maintenance.
Similar Project Examples	Stormwater Pump Stations – 2022 Currituck County Resilience Strategy
Priority Rating	**High**

Cape Canaveral Center Street Pump Station

Source: Cape Canaveral Town X Account (City of Cape Canaveral - Government on X: "On August 19, 2024, the Center Street Pump Station (the City's first-ever permanent pump station) was successfully activated/tested by Staff, engineers, and contractors for the first time. Learn more about this major flood mitigation project via the link: https://t.co/Z7Gr6jdSiW https://t.co/bVcUE7hQZ4" / X)

Project Name	**Dune Infiltration**
Project Description	System would act as sand filter for stormwater diverted to ocean outfalls. May include pumps or catch basins to move stormwater from roadways into the system.
Location	Existing public beach access points.
Hazard(s) addressed by project	Stormwater Management.
Type of Solution	Infrastructure improvements. Construction/replacement of stormwater infrastructure at key locations throughout the Town. NNBS options will be implemented as practicable.
Natural and Nature Based Solution Opportunity? 	**Yes**
Project Estimated Cost	Cost varies based on solution implemented and location needs. **Cost Level: $$**
Potential Implementation Funding Sources	Potential funding sources: Federal sources may include NOAA – National Coastal Resilience Fund (NCRF), National Wildlife Federation, DOI National Coastal Wetlands Conservation, and USFWS National Coastal Wetlands Conservation Grants. State sources may include NCDCM Planning and Management Grants, NCDEQ Clean Water State Revolving Fund.
Project Estimated Timeline	There is currently no proposed timeline for this project. It is considered a long-term need and a high priority project. Dune infiltration systems can be installed in about a week.
Preliminary Tasks/ Data Required	Mapping and preliminary research to get information on areas of concern. Preliminary design.
Advantages/Disadvantages	Dune infiltration systems can help reduce stormwater runoff and protect beaches from polluted water. Construction of these systems will need to consider appropriate siting in order to minimize the extent of new easement or property needed, utilizing existing public infrastructure right-of-way (beach access points, etc.) where possible.
Similar Project Examples	Proactive Dune Stabilization and Protection Program – 2022 Pine Knoll Shores Resilience Strategy.
Priority Rating	**High**

Dune Infiltration System at Kure Beach

Source: https://content.ces.ncsu.edu/dune-infiltration-systems-for-reducing-stormwater-discharge-to-coastal-recreational-beaches

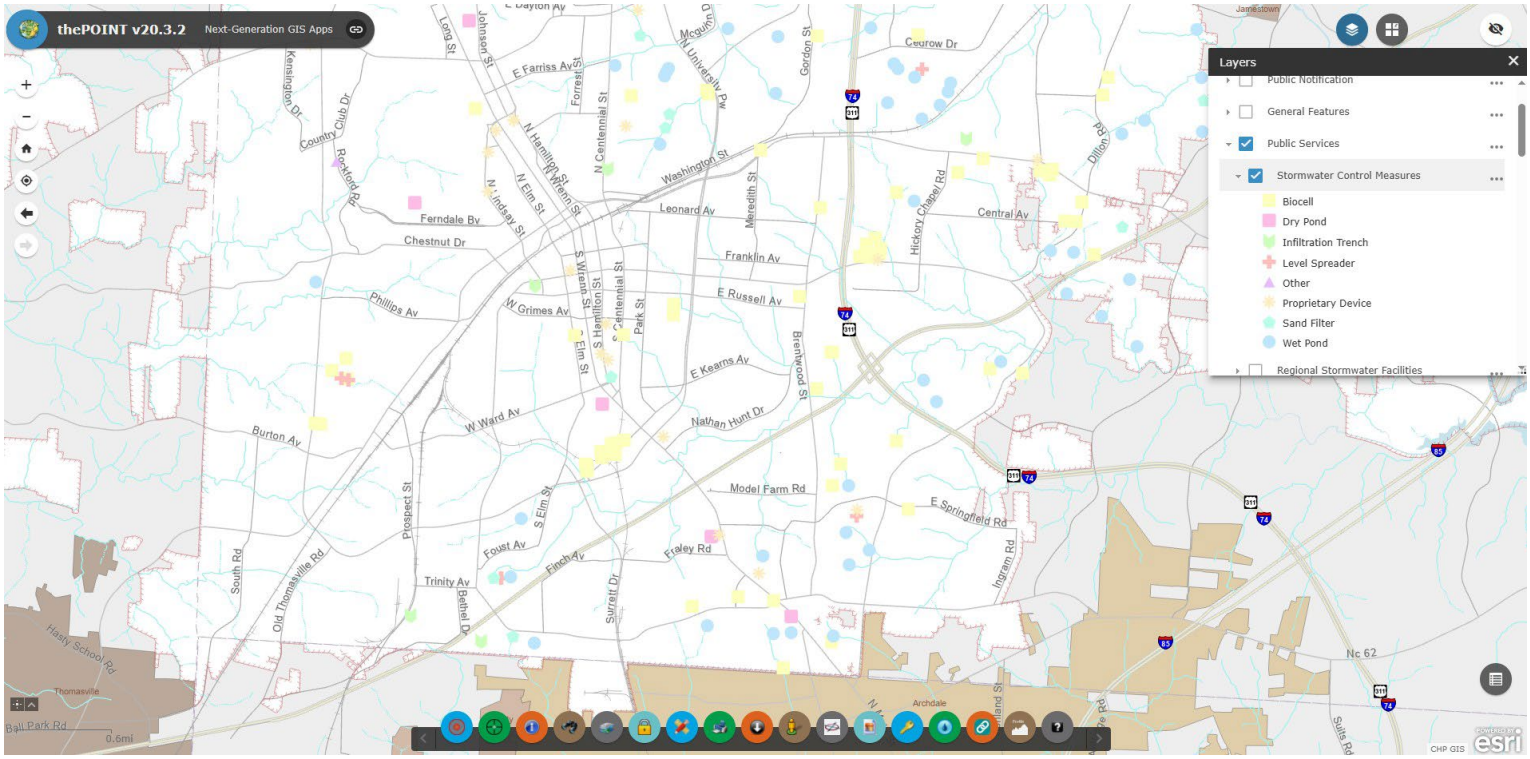
Project Name	**Stormwater Pre-treatment**
Project Description	Construct stormwater treatment facilities (bioswales, infiltration systems, other green infrastructure) to minimize water quality impacts at multiple locations.
Location	Recommended location is the Shore Drive area. More locations are desired but more public feedback and mapping is needed.
Hazard(s) addressed by project	Stormwater management, flooding.
Type of Solution	Infrastructure improvements. Construction/replacement of stormwater treatment infrastructure at key locations throughout the Town. NNBS options will be implemented as practicable.
Natural and Nature Based Solution Opportunity? 	**Yes**
Project Estimated Cost	Cost varies based on solution implemented and location needs. **Cost Level: $$**
Potential Implementation Funding Sources	Federal sources may include EDA - Investment for Public Works, National Wildlife Federation, and Economic Development Facilities and FEMA – BRIC. State sources may include Rural Grant Programs, EPA – Clean Water State Revolving Fund, NCDEQ American Rescue Plan Act, and Golden Leaf Foundation Flood Mitigation Program
Project Estimated Timeline	Timeline varies based on solution implemented and location needs. Design and construction timeline expected to vary between 3 months and 1 year per site. This is an ongoing program, to be implemented at individual sites as needs are identified.
Preliminary Tasks/ Data Required	Preliminary design.
Advantages/Disadvantages	Stormwater pretreatment reduces the number of pollutants entering waterways by filtering sediment and debris before it reaches larger stormwater systems, potentially mitigating flooding risks by slowing down runoff, and improving water quality in receiving bodies of water. However, these options can have high installation costs, ongoing maintenance needs, and limitations in treating certain types of pollutants depending on the chosen pretreatment method.

Similar Project Examples	Stormwater Pretreatment – 2022 Cape Carteret Resilience Strategy
Priority Rating	**Medium**

Town of Duck Bioretention Cell

Source: Dare County 'Community Projects' Webpage (https://www.darenc.gov/departments/planning/soil-and-water/community-projects)

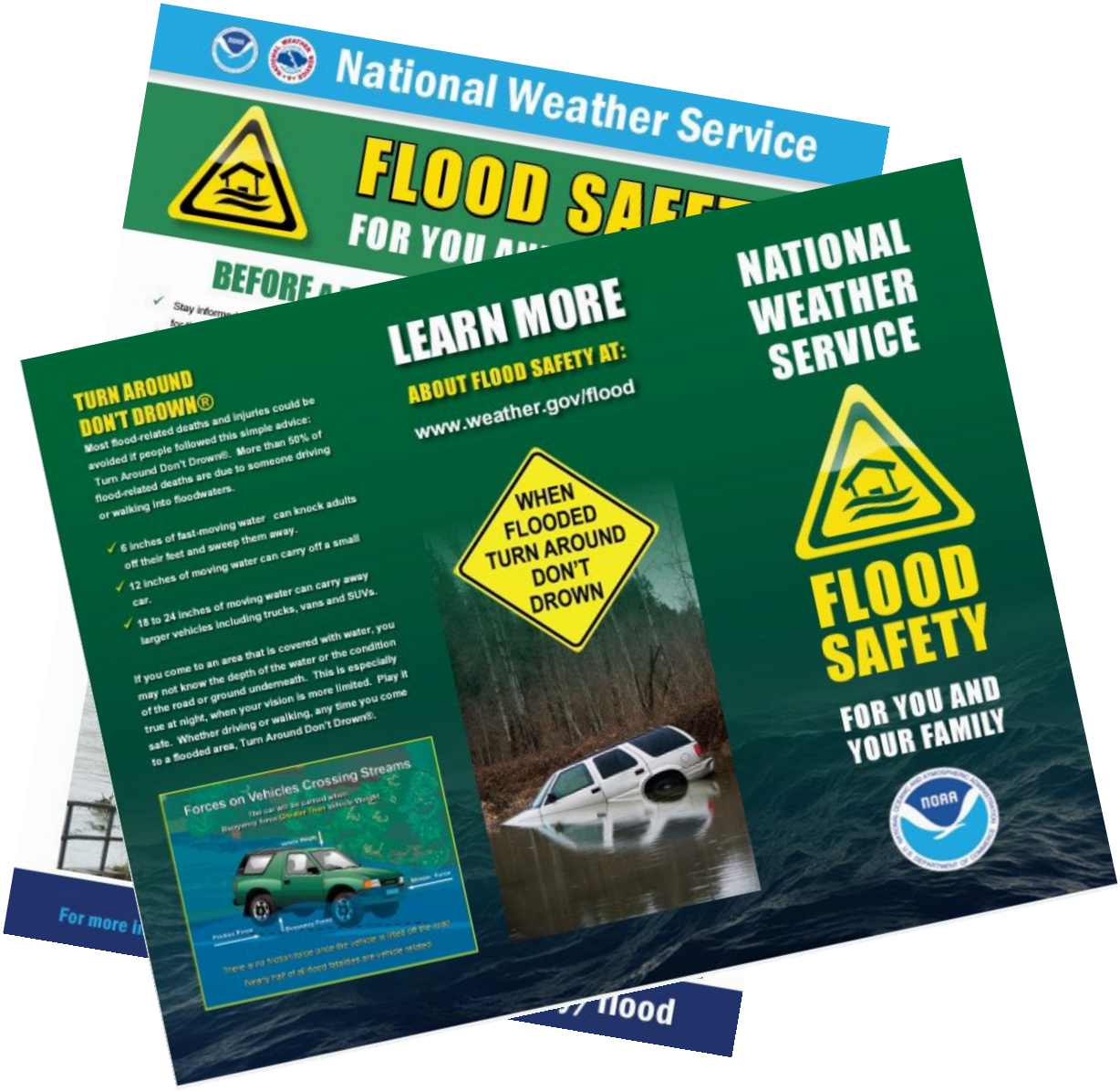
Project Name	**Stormwater Infrastructure Mapping**
Project Description	Map all stormwater infrastructure within Town limits to determine service gaps and needs.
Location	Townwide.
Hazard(s) addressed by project	Stormwater Management/ Flooding.
Type of Solution	Mapping effort that is intended to lead to future infrastructure improvements.
Natural and Nature Based Solution Opportunity?	No
Project Estimated Cost	Mapping effort is expected to be low cost, depending on the level of survey effort. **Cost Level: $**
Potential Implementation Funding Sources	Federal sources may include EDA - Investment for Public Works and Economic Development Facilities and FEMA – BRIC. State sources may include the Rural Grant Programs, EPA – Clean Water State Revolving Fund, NCDEQ Asset Inventory and Assessment Grant Program.
Project Estimated Timeline	There is currently no proposed timeframe for this plan. Depending upon the level of detail to be provided, this mapping effort is expected to take between six months to a year to complete.
Preliminary Tasks/ Data Required	CAT and community feedback are needed to get preliminary information on areas of concern.
Advantages/Disadvantages	Infrastructure mapping offers several advantages such as improved visibility into system dependencies, efficient planning for maintenance and upgrades, risk mitigation by identifying vulnerabilities, and better decision-making capabilities. However, the cons include the initial cost of data collection, ongoing maintenance to keep the map updated, potential inaccuracies due to incomplete information, and the need for specialized expertise to interpret the data effectively.
Similar Project Examples	Stormwater Infrastructure Mapping – 2022 Cape Carteret Resilience Strategy
Priority Rating	**Medium**



City of High Point GIS Stormwater Control Measures

Source: https://gisweb10.highpointnc.gov/JS/ThePoint/?_gl=1*19s9cbe*_gcl_au*MzA1NjU3ODU4LjE3NDE5Nzg1MTk.

Project Name	**Education Materials**
Project Description	Materials for homeowners and business owners on what can be done to address flooding on private property.
Location	Townwide
Hazard(s) addressed by project	Stormwater Management, Flooding, Infrastructure Deficiency or Capacity, Extreme Weather Preparation.
Type of Solution	Non-regulatory program, specifically an ongoing public engagement and education program for community residents and business owners.
Natural and Nature Based Solution Opportunity?	No
Project Estimated Cost	Primary costs are expected to include the publication/ distribution of online and printed education materials. **Cost Level: $**
Potential Implementation Funding Sources	Partnerships with non-governmental organizations may provide opportunities to fund the education effort. The NC Office of Environmental Education website provides information on potential education grants.
Project Estimated Timeline	There is currently no proposed timeframe for this effort but is recommended to begin in the next year to encourage continued engagement. The program would be an ongoing effort.
Preliminary Tasks/ Data Required	Public involvement planning and design of materials.
Advantages/Disadvantages	Community outreach can give members a sense of purpose and empowerment. This is an opportunity for open discussion and identification of community needs and resources that could help with future discussions of infrastructure improvements and future emergency scenarios.
Similar Project Examples	Public Engagement and Education Campaign - Cape Carteret Resilience Strategy
Priority Rating	**Low**



Source: NOAA Flood Brochures (https://www.weather.gov/owlie/publication_brochures#floods)