

# STORMWATER

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## OVERVIEW

Nags Head's Stormwater Management Program improves the collection and transport of stormwater through publicly owned infrastructure and, where feasible, treats stormwater prior to discharging to receiving waters. Elements of the program include maintenance and repair of existing facilities, construction of new facilities where warranted, public education, and stormwater studies. These studies include, but are not limited to, quantity determinations and water quality analyses during various times of the year. The program is implemented by using Town personnel and equipment, contractors when necessary, engineering and scientific consultants, and by working with other local governments and appropriate state agencies.

Stormwater Management in Nags Head is a complex balancing act between several competing factors, such as: economic development, natural resource preservation, flood control, and water quality. Development and redevelopment create a loop with respect to stormwater runoff. As development occurs, stormwater runoff increases from the additional impervious surfaces, reducing the amount of pervious surfaces available for infiltration. Evapotranspiration decreases as vegetation is removed and trees are cleared. Furthermore, groundwater elevations tend to increase when vegetation and trees are removed. As groundwater elevations increase, developers are more likely to fill lots to make them buildable, thereby eliminating natural drainage features and infiltration areas. More stormwater runoff then enters the system, thus continuing the cycle.

Frequent flooding can curtail investment and tourism where tourism is a critical part of the economy. The desire to limit flooding must be tempered by the need to limit pollutant loads to critical waterbodies such as the Roanoke Sound and Atlantic Ocean. Degradation of the waterways can lead to beach closures and shellfish harvesting closures, causing impacts to tourism and economies. The Stormwater Management Program provides the Town with a prioritized list of flood control and water quality capital improvement projects that will help balance competing stormwater management issues and respond to an increasingly strict regulatory environment.

## GOALS

- Develop environmentally sensitive solutions to drainage infrastructure improvements and maintenance, while maintaining fiscal responsibility.
- Involve the public in decision making, which balances residential, tourism, and business needs, is fiscally responsible, and results in projects that are supportive of community needs.
- Continually improve customer service and communications.

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- Establish an affordable long-range action plan for progressively improving the Town's stormwater drainage infrastructure.
- Maintain Town-wide visibility of the plan's progress and effectiveness.

## OBJECTIVES AND PERFORMANCE INDICATORS

### **Objective - Improve Town drainage infrastructure through planning, maintenance, or new construction, where appropriate.**

#### Performance Indicators -

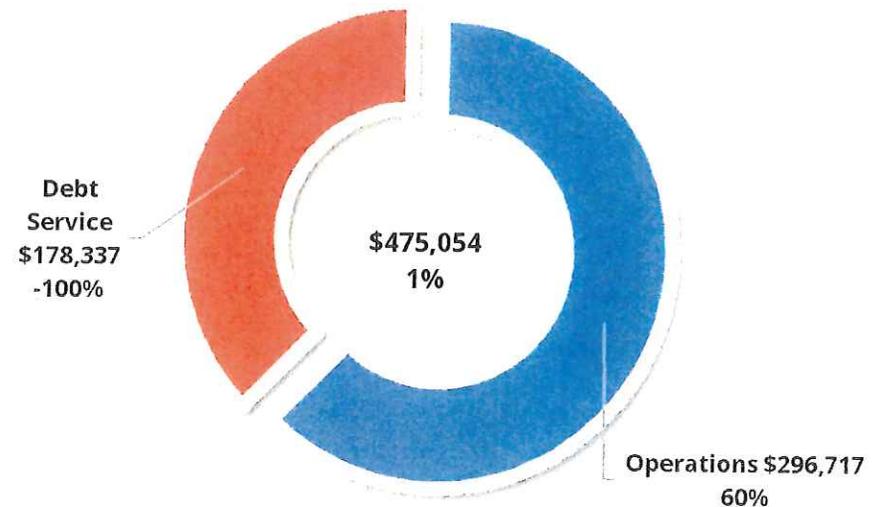
- Continue to identify stormwater infrastructure and maintenance projects through on-the-ground observations by Town staff and citizen feedback.
- Implementation of a comprehensive Stormwater Management Plan via the development of a multi-year Capital Improvement Program. The focus is to develop a strategic basin-wide multi-objective plan to assist in prioritizing stormwater maintenance and capital projects based upon select criteria (i.e. frequency of flooding, system condition, water quality, etc.). The CIP deliverable is meant to serve as a "living document" so that the Town can update it as projects are completed and new ones are added.
- Continue to pursue assistance and support from NCDOT to address areas of nuisance flooding along South Virginia Dare Trail (NC 12), South Old Oregon Inlet Road, (NCSR 1243) and South Croatan Highway (US Hwy 158) (i.e. Red Drum Ocean Outfall).
- Investigate, plan, and replace Town-owned critical drainage facilities
- Maintain a high level of readiness and necessary preparations to address emergency floodwater conditions.
- Purchase equipment to conduct systematic annual maintenance, on-demand maintenance, and post-storm maintenance.
- Continue to explore opportunities for public education and outreach via social media, the Town's website, public forums, and other available media outlets.
- Maintain an adequate fund reserve operation of equipment and materials to perform necessary maintenance on existing drainage infrastructure.
- Seek additional funding opportunities from local, state, and federal agencies to assist with future stormwater planning and construction efforts.
- Perform hydraulic and hydrologic analyses of identified areas of concern for appropriate infrastructure sizing, when required.
- Continue to monitor and evaluate performance of existing drainage infrastructure.

# STORMWATER - BUDGET HIGHLIGHTS

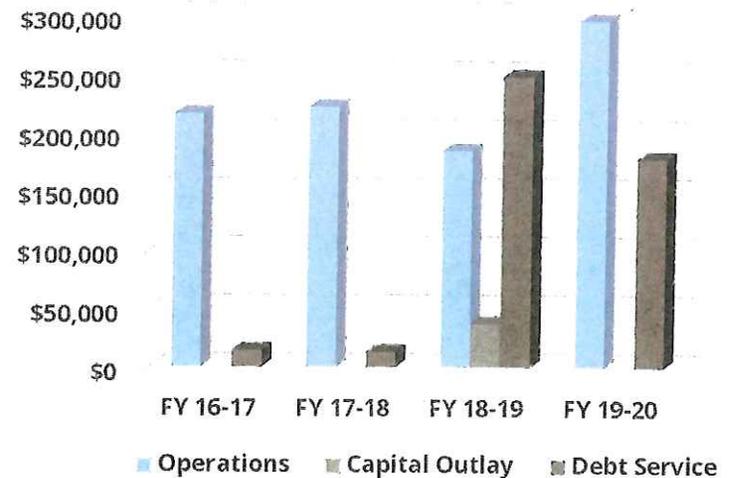
## HIGHLIGHTS

- The Stormwater Capital Reserve is funded through a two-cent ad valorem tax. Uses of those pennies for fiscal year 2019-2020 include:
  - \$12,750 for floodwater pump rental
  - \$89,000 for pipe replacements at East Danube Street, Wrightsville Avenue, and East Baltic Street
  - A Culvert cleaner debt payment of \$12,924
  - The second of five annual debt payments at \$139,426 for stormwater project improvements for areas around the Red Drum Ocean Outfall, Nags Head Acres/Vista Colony Subdivision, and the Village at Nags Head-South Virginia Dare Trail-Mall Drive to Epstein Street
- A hydroseeder is a recommended addition to the fleet at \$75,000, financed over 3 years at 4%, resulting in a new debt payment of \$25,987.
- Stormwater Master Plan Phase IV survey, design, permitting, bidding, construction administration and costs are being considered for portions of Wrightsville Avenue, and subdivisions including Nags Head Pond and Nags Head Cove.

**Recommended Expenditures by Function  
2019-2020/Percentage Change From FY 2018-2019**



**FY 2019-2020 Recommended Expenditures and Adopted Expenditure History**



**Town of Nags Head  
Recommended Budget  
For the Fiscal Year 2019-2020**

Department:

*Stormwater*

Account Description	Departmental Requested 2019-2020	Manager's Recommended 2019-2020	Financial Plan 2020-2021	Adopted Budget 2018-2019	Adjusted Budget 2018-2019	Estimated Actual Expenditures 2018-2019	Actual Expenditures 2017-2018	Actual Expenditures 2016-2017
<b>OPERATIONS</b>								
UTILITIES	\$ 2,600	\$ 2,600	\$ 2,600	\$ 2,250	\$ 2,250	\$ 1,729	\$ 972	\$ 1,110
FUEL COSTS	2,500	2,500	2,000	2,500	2,500	1,549	1,389	1,395
DEPARTMENT SUPPLIES	12,000	12,000	12,500	10,000	8,600	3,931	4,118	5,223
MAINT/REPAIR EQUIPMENT	6,250	6,250	6,600	6,000	6,000	666	2,017	2,275
PROFESSIONAL FEES	4,000	4,000	4,000	4,000	5,400	5,400	3,000	1,000
PROF FEE/WATER QUALITY TESTING	1,800	1,800	2,000	360	360	160	360	460
CONTRACTED SERVICES	267,567	267,567	288,548	159,866	58,781	58,781	36,672	120,000
<b>Subtotal Operations</b>	<b>\$ 296,717</b>	<b>\$ 296,717</b>	<b>\$ 318,248</b>	<b>\$ 184,976</b>	<b>\$ 83,891</b>	<b>\$ 72,217</b>	<b>\$ 48,528</b>	<b>\$ 131,463</b>
<b>CAPITAL OUTLAY</b>								
CAPITAL OUTLAY EQUIPMENT	\$ -	\$ -	\$ -	\$ 37,500	\$ 37,500	\$ 37,500	\$ -	\$ 52,079
CAPITAL OUTLAY INFRASTRUCTURE	-	-	-	-	903,500	903,500	274,768	-
<b>Subtotal Capital Outlay</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 37,500</b>	<b>\$ 941,000</b>	<b>\$ 941,000</b>	<b>\$ 274,768</b>	<b>\$ 52,079</b>
<b>DEBT SERVICE</b>								
L/P PRINCIPAL	\$ 162,720	\$ 162,720	\$ 148,026	\$ 247,945	\$ 155,530	\$ 136,545	\$ 12,360	\$ 12,924
L/P INTEREST	15,617	15,617	13,530	379	379	379	565	-
<b>Subtotal Debt Service</b>	<b>\$ 178,337</b>	<b>\$ 178,337</b>	<b>\$ 161,556</b>	<b>\$ 248,324</b>	<b>\$ 155,909</b>	<b>\$ 136,924</b>	<b>\$ 12,925</b>	<b>\$ 12,924</b>
<b>TOTAL</b>	<b>\$ 475,054</b>	<b>\$ 475,054</b>	<b>\$ 479,804</b>	<b>\$ 470,800</b>	<b>\$ 1,180,800</b>	<b>\$ 1,150,141</b>	<b>\$ 336,221</b>	<b>\$ 196,466</b>

**Town of Nags Head  
Recommended Budget  
For the Fiscal Year 2019-2020**

**Stormwater Capital Reserve**

Description of Capital Items	Departmental Requested 2019-2020	Manager's Recommended 2019 - 2020	Financial Plan 2020-2021
<b><i>New Lease Payments</i></b>			
1. Hydroseeding machine at a cost of \$75,000**	25,987	25,987	25,987
<b><i>Total New Lease Payments</i></b>	<b>\$ 25,988</b>	<b>\$ 25,987</b>	<b>\$ 25,987</b>

\*\* new addition to fleet