

Stormwater – Overview, Goals, and Objectives

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 creates 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. (BOC Values 2, 3, 4 and 5)
- 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. (BOC Values 2, 3, 4 and 5)
- Continually improve customer service and communications. (BOC Values 2, 3 and 5)
- Establish an affordable long-range action plan for progressively improving the Town's stormwater drainage infrastructure. (BOC Values 1, 3 and 4)
- Maintain Town-wide visibility of the plan's progress and effectiveness. (BOC Value 2)

Stormwater – Budget Highlights

Highlights

- The Stormwater Capital Reserve is funded through a one cent ad valorem tax. Uses of that penny for Fiscal Year 2018-2019 include:
 - \$100,000 for the completion of the Stormwater Management Ten Year Master Plan
 - \$12,750 for floodwater pump rental
 - \$47,116 towards repairs, scheduled work, and emergencies
 - \$37,500 for capital outlay, including a ditcher head attachment (\$20,000) and a quickview zoom camera (\$17,500)
 - \$12,924 for a culvert cleaner debt payment
- A one cent tax increase in the Stormwater Capital Reserve is included to fund five projects identified as part of the initial phase recommended by the Stormwater Management Master Plan:
 - Gallery Row- Replace 75 linear feet of existing 30 inch corrugated metal pipe on South Virginia Dare Trail cross street pipe with 36 inch reinforced concrete pipe and lower upstream invert.
 - Nags Head Acres/ Vista Colony- Implement a groundwater lowering system and appurtenances to reduce floodwater depths near the southern portion of Bridge Lane and the eastern extents of Meekins Avenue.
 - Village at Nags Head South Virginia Dare Trail- Implement a groundwater lowering system and appurtenances for discharge to a subsurface dune infiltration system, OR Option B, which consists of downstream infrastructure improvements between Mall Drive and the north side of Nags Head's town hall.

These projects are budgeted through a debt payment totaling the one penny tax increase, or \$235,400.

Expenditures by Function

		FY 2017-2018		FY 2018-2019	Percent
		<u>Adopted</u>		<u>Adopted</u>	<u>Change</u>
Operations	\$	222,610	\$	184,976	-16.91%
Capital Outlay	\$	-	\$	37,500	100.00%
Debt Service	\$	12,924	\$	248,324	1,821.42%
Total	\$	235,534	\$	470,800	99.89%

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Stormwater – Overview, Goals, and Objectives

Objectives and Related Performance Indicators

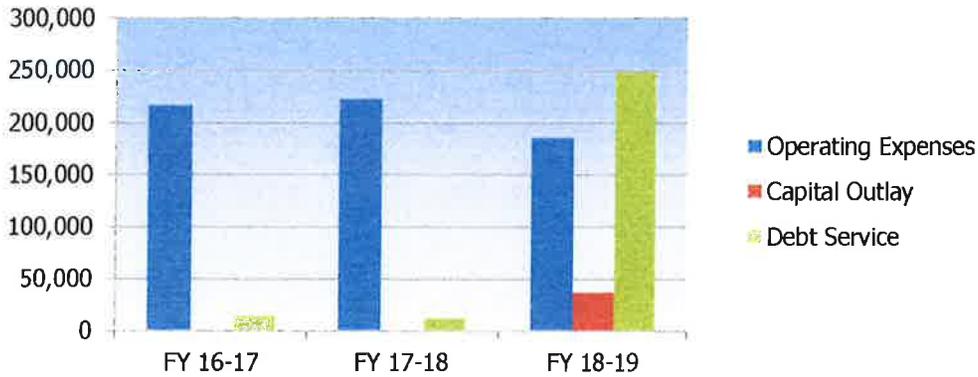
- **Objective** - Improve Town drainage infrastructure through planning, maintenance, or new construction, where appropriate.

Performance Indicators -

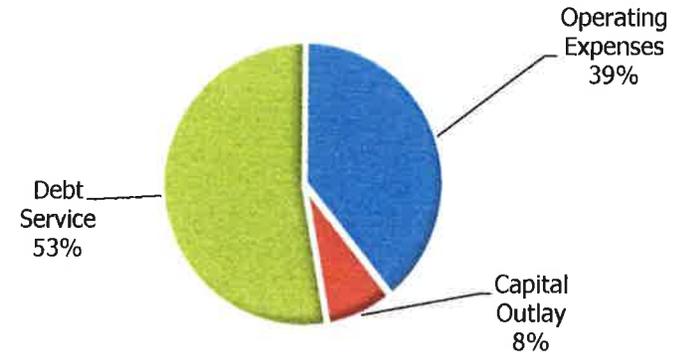
1. Continue to identify stormwater infrastructure and maintenance projects through on-the-ground observations by Town staff and citizen feedback.
2. Implement the second and third phase of a comprehensive Stormwater Management Plan update via the development of a multi-year Capital Improvement Program. The work scope will be conducted by an outside engineering consultant who will 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.
3. 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).
4. Continue coordination with NC Department of Transportation to provide temporary relief from roadway flooding on South Old Oregon Inlet Road (NCSR 1243) in the vicinity of Milepost 19 with supplemental drainage infrastructure improvements.
5. Continue coordination with NCDOT to reduce tailwater water surface elevations within the connecting upstream ditches along main drainageways.
6. Investigate, plan, and replace Town-owned critical drainage facilities, (i.e. Soundside Road., East Danube Street, East Barnes Street, etc.).
7. Maintain a high level of readiness and necessary preparations to address emergency floodwater conditions.
8. Purchase equipment to conduct systematic annual maintenance, on-demand maintenance, and post-storm maintenance.
9. Continue to explore opportunities for public education and outreach via social media, the Town's website, public forums, and other available media outlets.
10. Maintain an adequate fund reserve operation of equipment and materials to perform necessary maintenance on existing drainage infrastructure.
11. Seek additional funding opportunities from local, state, and federal agencies to assist with future stormwater planning and construction efforts.
12. Perform hydraulic and hydrologic analyses of identified areas of concern for appropriate infrastructure sizing, when required.
13. Continue to monitor and evaluate performance of existing drainage infrastructure.

Stormwater – Budget Highlights

Fiscal Year 2018-2019 Adopted Expenditures and Expenditure History



Fiscal Year 2018-2019 Adopted Expenditures by Function



**Town of Nags Head
Adopted Budget
For the Fiscal Year 2018-2019**

Department:

Stormwater

Account Description	Manager's Recommended 2018-2019	Adopted Budget 2018-2019	Financial Plan 2018-2019	Adopted Budget 2017-2018	Adjusted Budget 2017-2018	Estimated Actual Expenditures 2017-2018	Actual Expenditures 2016-2017	Actual Expenditures 2015-2016
OPERATIONS								
UTILITIES	\$ 2,250	\$ 2,250	\$ 2,250	\$ 2,250	\$ 2,250	\$ 751	\$ 1,110	\$ 1,086
FUEL COSTS	2,500	2,500	2,000	2,000	2,000	972	1,395	743
DEPARTMENT SUPPLIES	10,000	10,000	5,000	5,000	5,000	5,000	5,223	431
MAINT/REPAIR EQUIPMENT	6,000	6,000	6,000	6,000	6,000	2,000	2,275	9,068
PROFESSIONAL FEES	4,000	4,000	4,000	4,000	4,000	4,000	1,000	2,700
PROF FEE/WATER QUALITY TESTING	360	360	360	360	360	320	460	360
CONTRACTED SERVICES	159,866	159,866	245,000	203,000	373,192	373,192	120,000	-
DEPRECIATION EXPENSE	-	-	-	-	-	-	-	88,279
Subtotal Operations	\$ 184,976	\$ 184,976	\$ 264,610	\$ 222,610	\$ 392,802	\$ 386,235	\$ 131,463	\$ 102,667
CAPITAL OUTLAY								
CAPITAL OUTLAY OTHER	\$ -	\$ -	\$ -	\$ -	\$ -	-	\$ -	\$ 218,159
CAPITAL OUTLAY EQUIPMENT	37,500	37,500	-	-	-	-	52,079	-
Subtotal Capital Outlay	\$ 37,500	\$ 37,500	\$ -	\$ -	\$ -	\$ -	\$ 52,079	\$ 218,159
DEBT SERVICE								
L/P PRINCIPAL	\$ 247,945	\$ 247,945	\$ 12,545	\$ 12,360	\$ 12,360	\$ 12,360	\$ 12,924	\$ -
L/P INTEREST	379	379	379	564	564	564	-	-
Subtotal Debt Service	\$ 248,324	\$ 248,324	\$ 12,924	\$ 12,924	\$ 12,924	\$ 12,924	\$ 12,924	\$ -
TOTAL	\$ 470,800	\$ 470,800	\$ 277,534	\$ 235,534	\$ 405,726	\$ 399,159	\$ 196,466	\$ 320,826

**Town of Nags Head
Recommended Budget
For the Fiscal Year 2018-2019**

Stormwater Capital Reserve

Description of Capital Items	Manager's Recommended 2018-2019	Adopted 2018-2019	Financial Plan 2018-2019
Capital Outlay Equipment			
1. Ditcher head attachment	\$ 20,000	\$ 20,000	\$ -
2. Quickview zoom camera	17,500	17,500	-
Total Capital Outlay Equipment	\$ 37,500	\$ 37,500	\$ -
New Lease Payments			
1. WithersRavenel (capital projects 1-3A) at \$1,254,559 Recommendations include: Gallery Row/Red Drum Ocean Outfall, Nags Head Acres/Vista Colony, Village at Nags Head Subdivision/S. Virginia Dare Trail	\$ 235,400	\$ 235,400	\$ -
Total New Lease Payments	\$ 235,400	\$ 235,400	\$ -