

DRAFT

OAK ISLAND

Stormwater Management Plan



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Town of Oak Island Public Works Department

Acknowledgement: The following people and organizations made significant contributions to this management plan:

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1. BACKGROUND

In 1972, the National Pollutant Discharge Elimination System (NPDES) program was established under the authority of the Clean Water Act. Phase I of the NPDES stormwater program was established in 1990. It required NPDES permit coverage for large or medium municipalities that had populations of 100,000 or more.

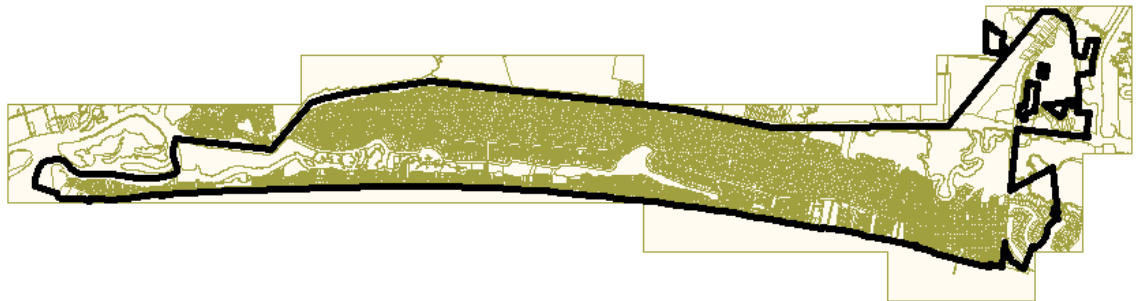
Phase II of the NPDES Stormwater program was signed into law in December 1999. This regulation builds upon the existing Phase I program by requiring smaller communities with municipal separate storm sewer systems (MS4s), to be permitted. In North Carolina, the NC Department of Environment and Natural Resources' (NCDENR) Division of Water Quality (DWQ) is responsible for implementing the permitting program.

DWQ issued to the Town of Oak Island an NPDES stormwater permit (Permit No. NCS000455) effective March 1, 2007 and expiring at midnight on February 28, 2012. This permit authorizes the discharge of stormwater from the Town MS4 to receiving waters of the State, within the Lumber and Cape Fear River Basins. The permit requires the development and proper implementation of a Stormwater Management Plan. The purpose of the Stormwater Management Plan is to reduce the discharge of pollutants from the MS4 to the maximum extent practicable, to protect water quality, and to satisfy the applicable water quality requirements of the Clean Water Act.

2. STORM DRAINAGE SYSTEM INFORMATION

The jurisdictional town boundaries currently encompass approximately 9 square miles. There are storm drainage features throughout the area, so the MS4 area coincides with the jurisdictional area. The town boundary is shown in Figure 2.1.

Figure 2.1 – Jurisdictional Boundary for Town of Oak Island



2.1.

There are 127 stormwater discharge locations identified within the Town of Oak Island, 59 of which discharge into the Davis Canal. A few of these are point discharges, but most are sheet flow discharges from the streets leading to the canal. The largest point discharge is located at the intersection of E. Pelican Drive and SE 40th Street. Stormwater that drains to the ditches on Pelican Drive discharges into the Davis Canal. There is a series of pipes and ditches leading to 10 discharges into ponds located between SE 59th Street and SE 71st Street. Pipes and ditches leading to the Intracoastal Waterway convey the remaining discharges. Most of these discharges are 100 to 200 feet short of the waterway, thus providing some vegetative filtering before discharging into the waterway.

There are 167 drop inlets, most of which are located at the eastern end of the Town, or what was the Town of Yaupon Beach. Also in the eastern part of the Town are two manholes located on McGlamery Street, which are for maintenance of an 18-inch HDPE pipe conveying stormwater to the marsh adjacent to the Intracoastal Waterway.

The Town has approximately 13.3 miles of storm drainage pipe, including road culverts, and 19.7 miles of designated storm drainage ditches. The maintenance of the conveyance system is to ensure that all BMPs are functioning as designed and the ditches, swales, and pipe remain free of debris.

3. RECEIVING STREAMS

The Town of Oak Island has Atlantic Ocean beachfront on the south side that runs in an east-west direction. On the north side is the Intracoastal Waterway and various areas with finger creeks and salt marshes. The major water bodies are listed in Table 3.1 below.

Table 3.1

RECEIVING WATER NAME	WATER QUALITY CLASSIFICATION	USE SUPPORT RATING	WATER QUALITY ISSUES
Davis Canal	SA/HQW	TO BE UPDATED	BASED ON 2008 303(D)
Davis Creek	SA/HQW		
Intracoastal Waterway	SA/HQW		
Montgomery Slough	SA/HQW		
Eastern Channel	SA/HQW		
Denis Creek	SA/HQW		
Elizabeth River	SA/HQW		
Atlantic Ocean	N/A		
Dutchman Creek Outlet Channel	SA/HQW		

The Tidal Salt Water Quality Classifications used by the NCDENR are as follows:

(1) Class SC: salt waters protected for secondary recreation, fishing, aquatic life including propagation and survival, and wildlife. All salt waters shall be classified to protect these uses at a minimum.

(2) Class SB: salt waters protected for primary recreation, which includes swimming on a frequent or organized basis, and all Class SC uses.

(3) Class SA: suitable for commercial shell fishing and all other tidal saltwater uses.

(4) Class SWL: waters that meet the definition of coastal wetlands as defined by 15A NCAC 2H .0205, and which are landward of the mean high water line, and wetlands contiguous to estuarine waters as defined by 15A NCAC 2H .0206.

All the receiving water bodies adjacent to Oak Island have an SA usage classification. Surface waters are classified according to their best intended uses. Determining how well a water body supports its uses (*use support status*) is an important method of interpreting water quality data and assessing water quality. Surface waters are rated *fully supporting* (FS), *partially supporting* (PS), or *not supporting* (NS). The ratings refer to whether the classified uses of the water (i.e., aquatic life protection, primary recreation, and water supply) are being met. For example, waters classified for fishing, aquatic life protection, and secondary recreation (Class C for freshwater or SC for saltwater) are rated FS if data used to determine use support meet certain criteria. However, if these criteria were not met, then the waters would be rated as PS or NS, depending on the degree of degradation. Waters rated PS or NS are considered to be impaired. Waters lacking data, or having inconclusive data, are listed as not rated (NR). The Town of Oak Island receiving waters have not been rated to date and, therefore, are given an NR designation.

Section 303(d)(1)(C) of the Clean Water Act and the U.S. Environmental Protection Agency's (EPA) implementing regulations (40 CFR Part 130) require the establishment of a Total Maximum Daily Load (TMDL) for the achievement of state water quality standards when a water body is water quality-limited. A TMDL identifies the degree of pollution control needed to maintain compliance with standards and includes an appropriate margin of safety. The TMDL focuses on reducing the pollutant inputs to a level (or "load") that fully supports the designated uses of a given water body. The mechanisms used to address water quality problems after the TMDL is developed can include a combination of best management practices and/or effluent limits and monitoring required through NPDES permits.

TMDL allocations have not been issued for any of the Town's receiving water bodies described in Section 3.0 below. **None of these water bodies are considered "water quality-limited". Monitoring conducted in Davis Canal in the fall of 2002 indicated low levels of fecal coliform, phosphorus, nitrate/nitrite, and oil and grease. To be updated based on 2008 303(d).**

4. ORGANIZATIONAL INFORMATION

The measurable goals for the Town stormwater management program are directly related to the six elements of the Phase II permitting process. The responsible positions are listed in table 4.1.

Table 4.1 – Responsible Positions

Program Elements	Department	Contact Position	Phone Voice / Fax
1. Public education and outreach on stormwater Impacts	Public Works	STORMWATER DIRECTOR	(910) 201-8008/ (910) 278-9558
2. Public involvement and participation	Public Works	STORMWATER DIRECTOR	(910) 201-8008/ (910) 278-9558
3. Illicit discharge detection and elimination	Public Works	STORMWATER DIRECTOR	(910) 201-8008/ (910) 278-9558
4. Construction site runoff control	Development Services	Chief Code Enforcement Official	(910) 201-8053/ (910) 278-1811
5. Post-construction stormwater management in new development and	Public Works	STORMWATER DIRECTOR	(910) 201-8008/ (910) 278-9558

redevelopment			
6. Pollution prevention / good housekeeping for municipal operations	Public Works	STORMWATER DIRECTOR	(910) 201-8008/ (910) 278-9558

5. RELIANCE ON OTHER GOVERNMENT ENTITIES

The North Carolina Department of Environment and Natural Resources (NCDENR) enforce erosion control and stormwater management. An erosion control plan for land disturbances larger than one acre must be filed with the state at least 30 days before beginning the land-disturbing activity and must be approved before work can begin. The Wilmington regional office of NCDENR is the enforcing agency for the Town of Oak Island for both erosion control and stormwater management.

6. STORMWATER MANAGEMENT PLAN

The Stormwater Management Plan (SWMP) is designed to reduce the discharge of pollutants from the Town of Oak Island to the maximum extent practicable (MEP), to protect water quality, and satisfy the appropriate water quality requirements of the Clean Water Act. The Town’s SWMP is based upon six elements, that when implemented together, are expected to achieve our goal of reducing the discharge of pollutants into receiving water bodies. The six elements are listed below and a table summarizing specific measures taken or planned to achieve the permit requirements is included in Appendix A-F.

- Public education and outreach
- Public involvement and participation
- Illicit discharge detection and elimination
- Construction site runoff control
- Post-construction stormwater management in new development and redevelopment
- Pollution prevention / good housekeeping for municipal operations