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**TOWN OF CALABASH**

**AMENDMENT TO THE TOWN CODE OF ORDINANCES**

**TITLE V: PUBLIC WORKS**

**CHAPTER 53: STORMWATER MANAGEMENT**

**ADOPTED AUGUST 10, 2004**

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## **TOWN OF CALABASH STORMWATER MANAGEMENT ORDINANCE**

### **SECTION 1 TITLE**

This Ordinance may be cited as the Town of Calabash Stormwater Management Ordinance.

### **SECTION 2 GOALS AND PURPOSES**

The central environmental goal of the Town of Calabash is to restore and preserve water quality and the natural ecological functions of the surface waters that are included in its planning area. In order to meet this important goal, the Town of Calabash Stormwater Ordinance will be adopted for the following purposes:

1. To regulate existing developments, future developments, and construction activities in accordance with the State of North Carolina requirements and to institute additional mandatory requirements to prevent careless pollution of surface waters, damage to property due to excessive flooding and surface water runoff that causes damage to adjacent property.
2. To establish the authority of the Town of Calabash to administer and enforce stormwater regulations.
3. To provide educational materials to the citizens of Calabash so they will have knowledge of how to reduce and prevent pollution from their homes and businesses.

### **SECTION 3 DEFINITIONS**

1. "Area of Environmental Concern" means an area identified by the North Carolina Coastal Resources Commission as environmentally fragile and economically important where uncontrolled or incompatible development could result in irreversible damage.
2. "Built-upon Area" means that portion of an individual development project that is covered by impervious or partially impervious cover including buildings, pavement, compacted soil (including coquina and marl), recreation facilities, gravel roads and parking areas, etc. Wood slatted decks and the water area of a swimming pool and new types of pervious paving material are not considered to be built-upon areas.
3. "CAMA" means Coastal Area Management Act which was adopted by North Carolina in 1974. The Act established a comprehensive regional resource management program for the state's twenty county coastal area. The management program that has evolved since 1974 in North Carolina has land

use planning, regulatory, land acquisition, and policy development components.

4. "CAMA Major Development Permit" means the permit required by the Coastal Resources Commission for developments that infringe on Areas of Environmental Concern.
5. "CAMA Minimum Development Permit" The permit required by the Coastal Resource Commission for developments not meeting the conditions required for a major permit. Minor permits are administered by the town under authority granted by the Coastal Area Management Act using standards adopted by the Coastal Resource Commission.
6. "Coastal Wetland" means any salt marsh or other marsh subject to regular or occasional flooding by tides, including wind tides (whether or not the tide waters reach the marshland area through natural or artificial watercourses), provided this shall not include hurricanes or tropical storm tides. Coastal wetlands contain some, but not necessarily all, of ten indigenous wetland plant species. Included in this definition of coastal wetlands is "such contiguous land as the Secretary of DEHNR reasonable deems necessary to affect any such order in carrying out the purposes (of the regulations." (G.S. 113-230(a)).
7. "Development" means any land disturbing activity which increases the amount of built-upon area or which otherwise decreases the infiltration of precipitation into the soil. A "future development" means any land which is utilized for a land-disturbing activity after the effective date of this chapter.
8. "Erosion" means the wearing away of land surface by the action of wind, water, gravity, or any combination thereof.
9. "Drainage Structure" Any natural or manmade terrain condition which manages or directs the flow of surface or subsurface water. Examples are open or covered drainage ditches, retention ponds, grass swales and catch basins.
10. "Erosion and Sediment Control Plan" means a written plan, including drawings or other graphic representations, for the control of soil erosion and sedimentation resulting from a land disturbing activity.
11. "Estuarine Shoreline" means a non-ocean shoreline connected to the estuarine water which are especially vulnerable to erosion flooding and other adverse effects of wind and water. Estuarine shorelines extend from the mean high water level (in areas of tidal influence) or normal water level (in areas without tidal influence) along the estuaries, sounds, bays, and brackish waters for a distance of 75 feet landward unless otherwise set by the Coastal Resources Commission.

12. "Estuarine Waters" means all the water of the Atlantic Ocean within the boundary of North Carolina and all the waters of the bays, sounds, rivers, and tributaries thereto seaward of the dividing line between coastal fishing waters, as set forth in the most recent official published agreement adopted by the Wildlife Resources Commission and the Department of Environment, Health, and Natural Resources.
13. "Existing Development" means any land which has been utilized for a land-disturbing activity as of the effective date of this ordinance.
14. "Infiltration System" means a stormwater treatment system designed to allow runoff to pass or move (infiltrate) into the soil.
15. "Land Disturbing Activity" means any use of the land by any person in residential, industrial, educational, institutional or commercial development, highway and road construction and maintenance that results in a change in the natural cover to topography and that it may cause or contribute to sedimentation. This includes placing fill material on a lot to raise the lot above the adjacent property of the roadways (i.e. mounding).
16. "Future Development" means any land which is utilized for a land-disturbing activity after the effective date of this ordinance.
17. "High Density Developments" A development that has a built-upon area greater than 25% of the lot area.
18. "Low Density Developments" A development with a built-upon area of 25% or less per lot.
19. "NCAC" means North Carolina Administrative Code.
20. "North Carolina Coastal Resources Commission" means the state policy-making organization with responsibility for the coastal region.
21. "Ocean Hazard Area" means an area where there exists a substantial possibility of excessive erosion and shoreline fluctuation. The seaward limit of this boundary is the mean low water line.
22. "Redevelopment" means any rebuilding activity which has no net increase in built-upon area or which provides equal or greater stormwater controls than the previous development.
23. "Retaining Wall" A vertical wall, constructed of pressure treated lumber or other approved building materials with a height above adjacent grades no greater than 30 inches. In cases where the slope of the land is more than 30 inches it may be approved by the Building Inspector. The purpose of the wall

is to assist in the control of stormwater run-off onto adjacent property as a result of (for example) fill soil requirements determined by the County Health Department for the installation of a septic system.

24. "SA Waters" means tidal salt-waters of the highest quality which are suitable for commercial shell fishing, swimming, and all other tidal saltwater uses. The chloride concentration of SA waters must be a least 500 parts per million.
25. "Sedimentation" means the deposition of solid material, both mineral and organic, that has been transported from its site or origin by air or water.
26. "Sedimentation/Erosion Control Plan" means a plan required by the Division of Land Resources in which developers must describe the sedimentation and erosion control devices they will use for land disturbing activities that are one acre or greater.
27. "State Best Management Practices (BMPs)" Guidelines published by the NC Department of Environment and Natural Resources (DENR), Division of Water Quality (DWQ) for design, operation and maintenance, and inspections of engineered solutions to stormwater runoff. These guidelines supplement the stormwater management rules adopted by the State of North Carolina.
28. "Stormwater" means the flow of water which results from precipitation and which occurs immediately following rainfall or a snowmelt.
29. "State Certification" means one or more of the following documents: a CAMA permit application and accompanying CAMA permit for the Division of Coastal Management, a Stormwater certification or permit, as required, from the Division of Environmental Management, and/or a Sedimentation and Erosion Control Plan that has been approved from the Division of Land Quality.
30. "Surface Waters" means rivers, streams, creeks, channels, lakes, reservoirs, ponds, drainage systems, springs, wetlands, wells, the Atlantic Ocean, and other bodies of surface or subsurface water, natural or artificial, lying within or forming part of the boundaries of Calabash. This term excludes privately owned ponds which have no entry or exit of water to or from water of public domain.
31. "25-year, 24 hour Storm" means the storm of the largest intensity expected to occur, on the average, once every 25 years and of 24-hour duration.
32. "Vegetative Filter" means an area of natural or planted vegetation through which storm water flows in a diffuse manner so that runoff does not become channelized and which provides for control of stormwater runoff through

infiltration of runoff and filtering of pollutants. The defined length of the filter shall be provided for the direction of stormwater flow.

33. "Wet Detention Pond" A structure that provides for storage and treatment of runoff and includes a permanent pool of water.

#### **SECTION 4 SCOPE**

This ordinance shall apply to the following entities within the jurisdiction of the Town of Calabash:

1. All property owners regardless of their previous practices, shall be subject to the regulations of this ordinance.
2. All future developments shall be subject to the regulations of this ordinance.
3. All construction activities, whether for future development or improvements on existing development, shall be subject to the regulations of this ordinance.
4. The Town of Calabash shall be responsible for meeting the requirements of this ordinance.

#### **SECTION 5 GENERAL REQUIREMENTS**

1. All visitors, residents, business owners, developers, and others who utilize the resources of Calabash shall take all reasonable measures to protect surface water from damage resulting from their activities.
2. Whenever conflicts exist between federal, state, or local laws and this ordinance, the more restrictive provision shall apply.
3. Any penalties imposed by the Town of Calabash shall be in addition to the penalties imposed by the state or county.

#### **SECTION 6 SUMMARY OF STATE REGULATIONS**

1. The Division of Environmental Management (DEM) administers the requirements set forth in 15A NCAC 2H.1003. This section of the administrative code regulates the density of developments and mandates standards for engineered stormwater controls. DEM recommends maintaining low-density developments as the best means for managing stormwater. Low-density developments limit built-upon surfaces areas to 25% or less so that grass, trees and other vegetation may serve as filters for stormwater. This development option minimizes the need for costly engineered stormwater controls.

High density developments must have engineered stormwater controls that are designed, constructed, and maintained according to state standards. These controls capture the stormwater runoff and hold it for a period of time. During the detention process, pollutants are removed by infiltration and/or sedimentation.

2. The Division of Coastal Management administers the Coastal Area Management Act (CAMA). CAMA's goal is to protect Areas of Environmental Concern (AEC), which are fragile areas where incompatible development may result in reversible damage. CAMA identifies four broad categories of AECs: Estuarine systems, Ocean Hazard Areas, Public Water Supplies and Natural and Cultural Resources Areas. Within these broad categories, there are 14 subcategories. The subcategories that are most applicable to Calabash are: Coastal Wetlands, Estuarine Waters, Estuaries Shorelines, Public Trust Areas, Ocean Erodible Areas, High Hazard Flood Areas, Inlet Hazard Flood Areas, and Un-vegetated Beach Areas.

Any structure to be built in an AEC must be permitted by the Division of Coastal Management and must meet General Use Standards which are listed in CAMA (15A NCAC 7H.0208). For a development in an AEC to be approved, it must be water-dependent and must minimize impacts to the area's soil and ecology. Some examples of water-dependent uses include bulkheads, piers, and marinas.

3. The Division of Land Resources administers the Sedimentation Pollution Control Act. This Act requires developers to prepare Erosion and Sedimentation Control Plans for developments that are one acre or larger. The Plan must describe the temporary and permanent control measures the developer will use to prevent accelerated erosion and off-site sedimentation.

Sedimentation and erosion control plans must meet certain site performance standards, including re-stabilization of construction sites within a reasonable time period, maintenance of a buffer along any natural watercourse or lake, and protection in the 10-year storm. This act gives local agencies the authority to inspect land-disturbing activities and to prosecute violators.

## **SECTION 7 MANDATORY STANDARDS FOR EXISTING DEVELOPMENT**

Persons who fail to comply with the below listed standards shall be subject to a fine of \$200 for each violation of this section, after notification by the town.

1. Landscape Easements. Owners, of property that is identified by the town as having special topographic/drainage characteristics, shall be asked by the town to consider granting a five-foot easement along property lines, where grass swales could be constructed (by the town) to direct the flow of surface water runoff. Grass swales shall be designed in accordance with the State Best

Management Practices (BMPs). If such easements are granted, thus granting the town access to work on private property, the town would maintain the drainage pattern as it so determines.

2. No landscaping using impervious materials such as solid plastic and vinyl will be permitted. Property owners must remove any such materials that were installed prior to the effective date of this ordinance.
3. Yard wastes, including dredge spoil, leaves, and yard trimmings, may not be deposited into surface waters. Acceptable management practices for yard wastes include composting and land filling.
4. Septic systems must be pumped and maintained on a regular basis according to local regulations to prevent contaminated wastewater from discharging to surface waters. Owners of systems that are found to be discharging to surface water will be given seven calendar days to correct such conditions.
5. Hazardous compounds must not be discharged to a septic system. Such compounds include but are not limited to paint, paint thinner, solvents, pesticides, and petroleum products.
6. All label directions must be followed so that fertilizers and pesticides are mixed and applied correctly and at the proper time. The label is a legal document. Persons who incorrectly mix or apply chemicals are subject to a fine of \$200 for each incident of violation as well as any and all costs of removal, cleanup, and remediation.
7. Chemicals on both commercial and residential property must be stored in properly built and maintained storage facilities. Persons who do not store chemicals safely will be given seven calendar days to correct such conditions. Failure to comply following this seven-day period will be subject to a fine of \$200 for each incident and day of violation as well as any and all costs of removal, cleanup, and remediation.
8. Illegal discharges degrade water quality and are strictly prohibited. The following direct discharges resulting from the improper disposal of such materials into surface waters are unlawful. Violators will be subject to a fine of \$200 for each incident and day of violation as well as any and all costs of removal, cleanup, and remediation.
  - a. Sewage or biosolids.
  - b. Polluted household wastewater, including but not limited to laundry wash water and dishwater.

- c. Leaking sanitary sewers and connections, which have remained uncorrected for three days or more after seven days notice.
- d. Leaking water lines with flows sufficient to cause sod erosion which have remained uncorrected for three days or more after seven days notice.
- e. Commercial, industrial, or public vehicle, vessel, or equipment with discharge.
- f. Solid, chemical, or sanitary waste.

## **SECTION 8 MANDATORY STANDARDS FOR FUTURE DEVELOPMENTS**

Persons who fail to comply with these regulations after they have received notice from the Town will be subject to a \$500 fine for each violation and other actions or penalties as may be authorized by the Town of Calabash.

### **SECTION 8.1 DEVELOPMENTS THAT REQUIRE STATE CERTIFICIATION**

1. For developments that are one acre or larger, the State will require a stormwater certification or permit from the Division of Environmental Management. The developer must submit a copy of the DEM stormwater certification or permit to the Town Administrator.
2. The Department of Environmental Management may also require a Wetland 401 Water Quality Certification and/or a Dredge and Fill Permit. If so, the developer must submit copies of the permit application 5 business days prior to the acting on the permit to the Town Administrator.
3. Developments that infringe upon State-defined Areas of Environmental Concern (AEC) will require either a CAMA major from the Division of Coastal Management or a CAMA minor permit from the Town's Local Permit Officer (LPO). If a CAMA major permit is required then the developer must submit a copy of the permit application and the approved permit to the Town Administrator five (5) business days prior to acting on the permit.
4. The Town Administrator and the Town Building Inspector shall monitor development projects to ensure that developers comply with the above mentioned State permits. The Town shall also have the authority to levy fines when the above mentioned permits have been violated.

5. The developer must submit a signed and notarized operation and maintenance plan (OMP), or manual for stormwater systems, indicating what operation and maintenance actions are needed for the proper and continual operation of the DEM Certification or permit per Section 8.1, #1, including what specific quantitative criteria will be used for determining when those actions are to be taken, and who is responsible for those actions to the Town Administrator.
6. Roadway drainage systems and stormwater systems must be designed by a professional engineer licensed in the state of North Carolina. The town may require re-certification if the property is transferred prior to actual development.
7. All future subdivisions will require a ten-foot landscape drainage easement around perimeter of development.

## **SECTION 8.2 DEVELOPMENTS THAT DO NOT REQUIRE STATE CERTIFICATION**

A Storm Water Permit is required for land that is one acre or less.

Residential – Greater than 25% of impervious surface requires an engineered stormwater plan.

Commercial – All projects require an engineered plan.

Land that is over one acre is state regulated.

No residence Certificate of Occupancy (CO) shall be issued until the Building Inspector has inspected and certified the satisfactory completion of those criteria specified in the approved Stormwater permit pertaining to the location upon which the home was constructed.

In those instances where a Stormwater Permit is denied by the Building Inspector, the applicant may appeal the case to the Planning Board. The appellate authority higher than the Planning Board shall be the Town Council of Calabash.

## **SECTION 9 MANDATORY STANDARDS FOR CONSTRUCTION ACTIVITIES**

Persons who fail to comply with these regulations after they have received notice from the Town will be subject to a \$500 fine for each violation and other actions or penalties as may be authorized by the Town of Calabash.

1. For construction activities that are one acre or larger, or lots less than an acre but part of a larger development, the State will require a Sedimentation and Erosion Control Plan from the Division of Land

Quality. The developer must submit a copy of the approved Sedimentation and Erosion Control Plan to the Town Administrator. For construction activities that do not require state certification, all requirements of 8.2 are applicable.

2. The Town Administrator and the Town Building Inspector shall monitor construction activities to ensure that developers comply with the Sedimentation and Erosion Control Plan. The Town shall also have the authority to levy fines when the Sedimentation and Erosion Plan has been violated.
3. Construction activities that are under one acre and infringe upon a State-defined Area of Environmental Concern will require a CAMA minor permit from the Town LPO.
4. No area outside of a subdivision shall have any change of the terrain, drainage (and the like) without prior approval from the town.
5. All debris and trash must be contained on-site during construction. All garbage receptacles must have high sides or covers to prevent the airborne transport of debris such as plastic and paper. In addition, hazardous materials used during the construction process must be sorted and disposed of properly to ensure that they do not enter surface waters.

#### **SECTION 10 MANDATORY STANDARDS FOR PUBLIC EDUCATION**

1. The Town of Calabash will provide education information of stormwater management to the public
2. The public must be informed of how to identify and report pollution violations and water quality problems. Such actions and conditions shall be reported to the Town Administrator. Serious violations may be reported to the Department of Health and Natural Resources in Wilmington. (See Appendix A for a suggested format for public distribution materials on this topic).
3. The public must be informed on how to minimize water pollution in their homes and businesses. Some of the issues that shall be addressed are lawn and garden care, use of household chemicals, motor vehicle care, septic tank maintenance, and pet care.  
(See Appendix B for a suggested format for public distribution materials on this topic).

## SECTION 11 INSPECTION AND NOTIFICATION

1. The Town of Calabash shall have the power and authority to conduct inspections as may be reasonably necessary to carry out its duties hereunder and to enforce the terms of this ordinance. When necessary to carry out the Town's duties hereunder or to enforce the terms of this ordinance the designated representatives of the Town may enter at reasonable times upon public or private property for the purpose of inspection. All person, firms, or corporations owning real estate within the Town of Calabash shall allow the designated representative of the Town to inspect such real estate to determine compliance with the terms and provisions of this ordinance. No person shall refuse access to the designated representative of the Town nor shall any person interfere with any such representative while in the process of carrying out his or her duties for the Town at reasonable times. Any person, firm, or corporation which obtains a building permit, zoning permit, approval of a land use plan, subdivision approval or other development approval or permit, or which discharges into the Town's stormwater system or surface waters, hereby consents to and give permission to the designated representatives of the Town to inspect their premises for compliance with the terms of this ordinance.
2. If it is determined that a person has failed to comply with this ordinance, a notice of violation shall be served upon that person by registered or certified mail or other reasonable means to give actual notice. The notice shall set forth the measures necessary to achieve compliance with the plan and specify a reasonable time period within which such measures must be completed. The notice will warn that failure to correct the violations within the time period will result in the assessment of a civil penalty or other enforcement action. If the person in violation of this ordinance fails to comply within the time specified, enforcement action will be initiated.

## SECTION 12 APPEALS

1. Any person who is found in violation of the requirements listed under Section 7, Section 8.2, or Section 9 may appeal by submitting a written explanation of the appeal to the Storm Water Appeals Board within thirty (30) days of the date of the notification of the fee. The Appeals Board shall consist of the current members of the Town Planning Board. This Board shall render a decision on the appeal in writing within thirty (30) days after the receipt of the written appeal. Any person aggrieved by any decision of the Storm Water Appeals Board, or any taxpayer, officer, department or board of the Town may present to a court of competent jurisdiction a petition, duly verified, setting forth that the decision is illegal and requesting review.
2. Any citizen or developer who is found in violation of the requirements listed under Section 8.1, or Section 9, may appeal by filing a written explanation of

the appeal with the appropriate State agency within thirty (30) days of the date of the notification of the fee.

**SECTION 13 PENALTIES**

Violation of this ordinance is a misdemeanor punishable as provided by G.S. 14-4. In addition, violation of this ordinance shall subject the offender to a civil penalty as determined by the Town Council to be recovered by the Town in a civil action in the nature of debt if the offender does not pay the civil penalty within thirty (30) days after being cited for violation of the ordinance. Each days' continuing violation shall be a separate and distinct offense.

**SECTION 14 INJUNCTIVE RELIEF**

This ordinance may also be enforced by appropriate equitable remedy issuing from a court of competent jurisdiction. The General Court of Justice shall have jurisdiction to issue such orders as may be appropriate to enforce the terms of this ordinance. Upon a finding by the court of competent jurisdiction that a violation is occurring or is threatened, it shall enter such orders or judgments as are necessary to abate the violations or to prevent the threatened violations of this ordinance. The institution of an action for injunctive relief under this section shall not relieve any party from any civil or criminal penalty prescribed for violations of this ordinance.

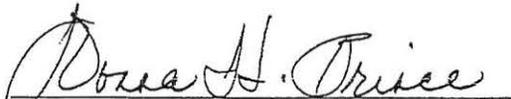
**SECTION 15 SEVERABILITY**

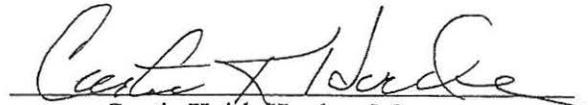
If any section or sections of this ordinance is/are held to be invalid or unenforceable, all other sections shall nevertheless continue in full force and effect.

**SECTION 16 EFFECTIVE DATE**

This ordinance shall be in effect at the time of passage by the Town Council.

(seal)

  
Donna H. Prince, Town Clerk

  
Curtis Keith Hardee, Mayor

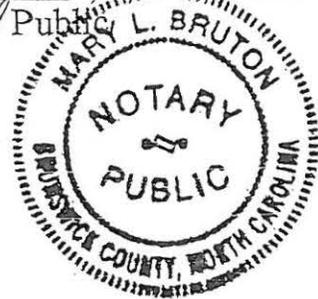


STATE OF NORTH CAROLINA  
COUNTY OF BRUNSWICK

I, Mary L. Bruton, a Notary Public in and for the  
aforementioned State and County do hereby certify that Donna H. Prince,  
personally came before me this day and acknowledged that she is the Clerk  
of the Town of Calabash, a municipal corporation, and that by authority duly  
given and as the act of the corporation, the foregoing instrument was signed  
in its name by its Mayor, Curtis Keith Hardee, sealed with its corporate seal,  
and attested by herself as Town Clerk.

Witness my hand and notary seal, this the 10<sup>th</sup> day of  
August, 2004.

Mary L. Bruton  
Notary Public



My Commission Expires: 8/14/07

STATE OF NORTH CAROLINA  
COUNTY OF BRUNSWICK

MARY L. BRUTON

The Foregoing (or annexed) Certificate(s) of \_\_\_\_\_  
\_\_\_\_\_

Notary(ies) Public is (are) Certified to be Correct. \_\_\_\_\_ 21st \_\_\_\_\_ Day of \_\_\_\_\_ September \_\_\_\_\_, 2004  
This Instrument was filed for Registration on this \_\_\_\_\_ Day of \_\_\_\_\_, \_\_\_\_\_  
in the Book and page shown on the First Page hereof.

Robert J. Robinson RA  
ROBERT J. ROBINSON, Register of Deeds

## APPENDIX A: A CITIZEN'S GUIDE TO IDENTIFYING AND REPORTING POLLUTION PROBLEMS

It is very important for you, as a citizen of the Town of Calabash, to report problems when observed so that the appropriate government agency can take immediate action. Public reporting of pollution problems allows us to more efficiently keep our community clean and environmentally safe.

Be on the lookout for these common pollution problems:

1. Unprotected areas of bare soil on a construction site or on any other site. Construction sites must have erosion control structures such as siltation fences and vegetated filters. In addition, no construction site should be left without vegetation for longer than 30 working days after work on the site has been completed. Under no circumstances should bare soil be left within 50 feet of a wetland or waterway.
2. Illegal dumping and illegal dump sites. Look for debris dumped in creeks and along roadsides by companies and individuals trying to avoid landfill fees.
3. Discharges to creeks, wetland, or the ocean. Look for channels running directly from a home or business to a wetland or a natural waterway. In addition, look for pipes that discharge directly to a natural waterway.
4. Oil and other chemical spills. Oil appears as a shiny slick on the surface of natural waters. Other chemical spills may be identified when water has an unusual color or odor.
5. Sewer and septic system leaks from pipes and manholes. Usually, the best way to identify sewer and septic problems is the odor! If you sense a problem, try to identify the source.
6. Degraded water. Some things to look for include bright green algal growth, unusual odors, and dead aquatic life.

To report pollution problems:

1. If you see a pollution violation such as illegal dumping in progress, write down important information such as license plate numbers and company names. If possible, you should take photographs as evidence. This information will be used to hold polluters accountable.
2. Report pollution violations and water pollution problems to the Code Enforcement Official at (910)579-0500. At your request, the Code Enforcement Official will maintain your confidentiality.

3. If the violation is of a very serious nature, you may report problems directly to the NC Department of Environment, Health, and Natural Resources in Wilmington at (910)395-3900. Once you describe the nature of the problem, you will be directed to the appropriate person or agency.

## APPENDIX B: A CITIZEN'S GUIDE TO IMPROVING WATER QUALITY AT CALABASH

Clean water and a healthy environment start with you and your neighbors. This list offers many easy and inexpensive ideas that will benefit water quality at Calabash. By practicing these suggestions, you will be doing your part for a cleaner and healthier environment.

### Lawn and Garden Care:

Well-maintained lawns and gardens can be a real benefit to water quality and the local community. They add beauty, control erosion, filter runoff from adjacent hard surfaces, reduce dust, and help moderate summer heat. However, lawns and gardens are often the reason for excessive water use and unnecessary applications of fertilizer. To help:

- Reduce soil erosion by planting appropriate plant cover on bare patches of ground.
- Do not apply pesticides or fertilizer if heavy rain is expected.
- Use only fertilizers that are really needed, based on soil tests and specific needs of your plants. The Agricultural Extension Center will test soils for free, and some nurseries may also offer this service.
- Keep fertilizer off driveways and sidewalks where it will be washed into storm drains.
- Remember that it is illegal to dump yard waste into creeks, ponds, wetlands, and the ocean. Yard waste may be either composted or landfilled.
- When removing mildew from your house or roof, use the most dilute solution of cleaner that will do the job. If possible, use biodegradable products.
- Contact your County Extension Agent at (910)253-4425 for information on plant and integrated pest management (reducing the application of chemicals by using natural controls).

### Household Chemicals:

Most households contain numerous chemicals that can be dangerous if released into the environment, such as: spot remover, furniture polish, deodorizers, drain cleaner, oven cleaner, disinfectants, ammonia, paint and other finishes, thinners and solvents, batteries, and swimming pool chemicals. These chemicals can become pollutants if residues are poured down home drains or onto the land surface. To help:

- Select the least toxic products that will do the job, and use only when necessary.
- Use only recommended amounts and do not mix chemicals.
- Do not apply chemicals near creeks, wetlands, or the ocean.
- Stuff used cans of paint with newspapers and allow to dry before putting the cans into the trash.
- Never pour household chemicals down the drain or onto the ground.

#### Motor Vehicles:

The oil from a single automobile can produce an eight-acre oil slick, and a single quart of motor oil can contaminate as much as two million gallons of drinking water. Used oil, antifreeze, and other motor vehicle fluids are often dumped on land or into roadside ditches. To help:

- Maintain motor vehicles and repair leaks promptly.
- Dispose of used motor oil in oil recycling centers. Advance Auto Parts in Shallotte will take used oil and car batteries.
- Arrange with local service stations or recycling centers to take your used antifreeze. Sommerset's Radiator and Body Shop in Shallotte will take used antifreeze.
- Avoid gas tank overflows during refueling.
- Take your car to a commercial car wash where the cleaning water is discharged to a treatment plant. If you do wash your car at home, use a non-toxic and biodegradable detergent.

#### Septic Tanks:

Septic systems depend upon bacterial action and soils to absorb the outflow of household wastewater. If the drain field is damaged or the soil becomes saturated, nearby surface waters may become contaminated with sewage products.

- Do not overload the system by allowing an inappropriately large number of people to share a single dwelling.
- Avoid putting household chemicals down the drain that could destroy bacteria.
- Consider giving up garbage disposals that add unnecessary solids and grease to the system.
- Do not flush or pour down the drain: grease, coffee grounds, cigarettes, facial tissues and paper towels, sanitary products, and disposable diapers.
- Keep automobiles and heavy equipment off the system.
- Maintain adequate vegetative cover over the drain field.
- Follow the guideline below to determine how frequently to have your septic tank pumped.

### Estimating Septic Tank Inspection and Pumping Frequency in Years

Tank Size (gallons)	Number of People Using the System				
	1	2	4	6	8
900	11	5	2	1	<1
1,000	12	6	3	2	1
1,250	16	8	3	2	1
1,500	19	9	4	3	2

Source: Adapted from "Estimated Septic Tank Pumping Frequency"  
by Karen Mand, 1984, *Journal of Environmental Engineering*. Volume 110.

#### Hard Surfaces:

Hard surfaces such as paved roads, driveways, rooftops, and parking lots cause rapid runoff of rain water. As water flows from hard surfaces, it captures pollutants before it is discharged into our waterways. On the other hand, natural, vegetated areas improve water quality by soaking up and cleansing rain. To help:

- On your property, try to limit the area of impervious surfaces such as concrete, brick, highly compacted gravel, crushed shell, coquina, and covered decks.

#### Boats:

Recreational boaters use a variety of cleaners, finishes, and antifouling compounds, and are often responsible for discharging garbage, sewage, and petroleum products into our waterways. Boats that create excessive wakes contribute to shoreline erosion and increase sediment loads to adjacent waterways. To help:

- Avoid producing wakes within 500 feet of shore.
- Scrub boats with brush and water instead of routinely using soap or detergent. If cleaners are needed to remove stains, use phosphate-free detergents.
- Do not discharge boat sewage or trash into waterways.
- Use a drop cloth when scraping boat hulls to catch toxic chips of paint or antifouling.

#### Animal Waste:

Animal wastes are high in nutrients and bacteria which can contribute to excessive plant growth in waterways as well as closure of shell fishing beds and swimming areas. To help:

- Clean up after pets and dispose of waste in the trash or toilet.

### Summary of State Stormwater Regulations for Calabash

