

# **GEORGIA NOTICE OF INTENT (GaNOI)**

**General NPDES Permit No. GAG610000 for  
Small Municipal Separate Storm Sewer Systems  
(MS4)**

**For the  
City of Brunswick**

**January 2005**

PREPARED BY:



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**Stantec**

Phone: 478-474-6100  
Fax: 478-474-8933

STANTEC Project No. 76600312

Stantec Consulting Services Inc.  
4875 Riverside Drive  
Macon GA 31210-1117  
Tel: (478) 474-6100 Fax: (478) 474-8933  
stantec.com



**Stantec**

January 21, 2005

Barbara Seal  
Nonpoint Source Program  
Georgia Environmental Protection Division  
4220 International Parkway  
Suite 101  
Atlanta, Georgia 30354

Re: Revised City of Brunswick Notice of Intent  
Storm Water Permit  
Project No. 76600312

Dear Ms. Seal:

Enclosed in a revised City of Brunswick notice of intent to be covered by general NPDES permit # GAG610000. The report has been reformatted so that every BMP is on a separate page, titles have been added to the BMPs, and, and Appendix E narrative is now contained on the standard BMP form. No substantive changes have been made.

Please contact me if you have any questions about the enclosed.

Sincerely,

**STANTEC CONSULTING SERVICES INC.**

*Kathy Stege*  
Kathy Stege, C.E.A.  
Associate

c: John Butts, City of Brunswick (with enclosure)

Buildings

Environment

Industrial

Transportation

Urban Land

STATE OF GEORGIA DEPARTMENT OF NATURAL RESOURCES  
ENVIRONMENTAL PROTECTION DIVISION

GEORGIA NOTICE OF INTENT (GaNOI)  
General NPDES Permit No. GAG610000 for  
Small Municipal Separate Storm Sewer Systems (MS4)

I. General Information

- A. Ownership Status (Please check one):  
 Municipal Separate Storm Sewer System  
 Federal Facility  
 State Facility
- B. Name of small MS4: City of Brunswick
- C. Name of responsible official Roosevelt Harris  
Title: City Manager  
Mailing Address: P O Box 550  
City: Brunswick State: GA Zip Code: 31521-0550  
Telephone Number: (912) 267-5500
- D. Designated storm water management program contact:  
Name: John Butts  
Title: Public Works Director  
Mailing Address: P O Box 550  
City: Brunswick State: GA Zip Code: 31521-0550  
Telephone Number: (912) 267-5570  
Email Address: jbutts@brunswickga.org

The Georgia Environmental Protection Division (EPD) identified the City of Brunswick, Georgia as needing to obtain a Phase II Storm Water NPDES Permit by March 10, 2003 because it is defined as an "Urbanized Area" by the 2000 census. General NPDES Permit No. GAG610000 for small municipal separate storm sewer systems (MS4) was issued to Brunswick by EPD in March 2003 as a result of Brunswick's submittal of a Notice of Intent (NOI) in February 2003. EPD provided review comments to the NOI, which was revised and resubmitted. This revised NOI elaborates upon the items in the original NOI.

Brunswick has identified any storm water problems known to exist within its city limits. Brunswick has selected best management practices (BMPs) and set measurable goals to address each problem. Included in this plan are actions to be taken to implement the BMPs, what the anticipated outcome of the BMPs will be, and a schedule for implementing the BMPs.

The easily accomplished BMPs are being adopted immediately. Brunswick may

revise proposed BMPs, choose different or additional BMPs, and adjust measurable goals throughout the first four years of the permit. In the final year of the permit (2006), Brunswick will be fully implementing this program.

The City of Brunswick has a population of 15,600. It is located in Glynn County, which has a population of 67,800. The County population for the year 2004 is expected to reach 71,960. Brunswick is not expected to have any population growth as full-time residents that would be counted in a census. However, significant development is occurring in the city limits in the form of restaurants, hotels, and vacation homes to serve non-resident tourists.

Glynn County is also required under the Georgia NPDES Storm Water Phase II regulations to develop a storm water management plan. Both governments are developing their own plans. Coordination will occur through their joint funding of and participation in the Greenspace committee and the Keep Brunswick-Golden Isles Beautiful Commission.

The storm water outfalls are below the high tide level, so brackish water enters Brunswick's drainage system twice a day. Due to age and disrepair of the drains, water often becomes stagnant in the drains and creates odors and breeding grounds for mosquitoes. The land is relatively flat and just a few feet above sea level, so heavy rains lead to flooding. Brunswick is beginning a drainage improvement program to alleviate these problems.

When Brunswick was developed, much of the commercial movement of goods was conducted on artificial canals that riddled the Brunswick peninsula. Over the years, most of these canals have been piped as storm drains, and roads have been constructed either beside or on top of them.

Only about 45% of the area encompassed by the city limits is developed or developable land. The city limits extend into the marshes and intercoastal waterway and there are many jurisdictional wetlands on the Brunswick peninsula, so much of the city area is "waters of the state". There are many parks along the shoreline and in the historic squares. About 55% of Brunswick is water or greenspace. Most of the dry land is used for private dwellings, industries, parking lots, streets, shopping centers, commercial buildings, schools, and churches.

There are four major types of soil in Brunswick. Ma-Mandarin fine sand, Mb-Mandarin-Urban land complex, Bo-Bohicket-Capers association and Ru-Rutlege fine sand. Mandarin is best described as poorly drained, nearly level and typically fine sand throughout. Mandarin-Urban is also poorly drained with water table depths at 18 to 40 inches during summer

and spring. Bohicket is another poorly drained soil in a regular and repeating pattern. Bohicket soils are in broad marshes. Bohicket soils have very slow permeability. Available water capacity is very low. Capers soils are in narrow marshes that interfinger the mainland. Capers soils also have very slow

permeability and very low water capacity. Capers soils are flooded by spring tides and in some places, daily tides. Bohicket soils suffer from frequent but brief flooding usually from January – December. Capers also suffer from frequent but very long flooding during the months of January through December. Mandarin and Mandarin-Urban do not have problems with flooding.

The City will pay for the storm water program through the general fund. The public works director is responsible for the program. Several important storm water tasks have been assigned to City departments (information technology, engineering, water and wastewater, billing) that the public works director does not supervise. The public works director will coordinate with these departments, and will track and document their compliance. Any coordination or compliance problems identified by the public works director will be resolved by the City Manager.

## II. Sharing Responsibility

- A. Has another entity agreed to implement a control measure on your behalf? Yes  
No  X  (If no, skip to Part III)
- B. Attach an additional page if necessary to list additional shared responsibilities. **It is mandatory that you submit a copy of a written agreement between your MS4 and the other entity demonstrating written acceptance of responsibility.**

**III. For Federal or State-Owned MS4s**

(If you are a municipally owned MS4, skip to Part IV)

The City of Brunswick has a municipally owned MS4. Go to Part IV.

A. Location of MS4:

1. Name of Urbanized Area or municipality where your MS4 is located: \_\_\_\_\_  
\_\_\_\_\_
2. Name of your organization \_\_\_\_\_
3. The latitude and longitude of the approximate center of your MS4:  
Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

#### IV. Known or Suspected Water Quality Problems

- A. The name(s) of the receiving waters to which your MS4 discharges (attach a separate list if necessary):  
Back River, Brunswick River, Atlantic Ocean, Dupree Terry Creek, Clubbs Creek, East River, Academy Creek, Gibson Creek, Purvis Creek, St. Simons Sound, Terry Creek, Turtle Creek.
- B. Indicate any receiving water stream segments to which your MS4 discharges, which are included on the 303(d) list:  
The following estuarine waters: Back River, Gibson Creek, Purvis Creek, St. Simons Sound, Terry and Dupree Creeks, Terry Creek, Turtle River System (Turtle River, Buffalo River, and South Brunswick River)
- C. Describe any known or suspected water quality concerns within your jurisdictional area (e.g. stream siltation, 303(d) listed streams, habitat degradation, elevated levels of pollutants, etc.), including location (attach additional page(s) if necessary):  
None other than 303(d) known. Note that 303(d) listing for the Turtle River System for dissolved oxygen may be due to natural causes. The segments listed for toxaphene-like chlorinated camphenes, PCBs, and mercury are due to pollutants released from industries in the past.



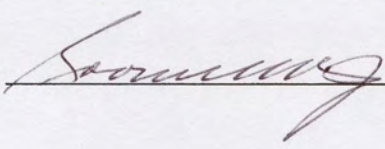
**V. Minimum Control Measures**

- A. Public Education and Outreach - (complete Appendix A)
- B. Public Involvement/Participation - (complete Appendix B)
- C. Illicit Discharge Detection and Elimination – (complete Appendix C)
- D. Construction Site Stormwater Runoff Control – (complete Appendix D)
- E. Post-construction Stormwater Management in New Development and Redevelopment – (complete Appendix E)
- F. Pollution Prevention/Good Housekeeping – (complete Appendix F)

**VI. Certification Statement**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name: Roosevelt Harris Date: 1/19/05

Signature:  Title: City Manager

## Appendix A

### Public Education and Outreach on Stormwater Impacts

40 CFR Part 122.34(b)(1) Requirement: You must implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and the steps that the public can take to reduce pollutants in storm water runoff.

A. Appendix A: BMP #1  
Speakers Bureau

1. Target audience: Civic organizations and schools in City
2. Description of BMP: The city engineer and/or public works director will be available to speak, present presentations and educational materials. Each talk will include information about the impacts of stormwater and the steps they can take.  
\_\_\_\_\_  
\_\_\_\_\_
3. Measurable Goal(s): Speaking engagements will take place once a month in 2004.
4. Schedule:
  - a. Interim Milestone Dates (if applicable): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  - b. Implementation Date (if applicable): July 2004
  - c. Frequency of actions (if applicable): Once each month
  - d. Month/Year of each action (if applicable) 1 ea month 2004  
1 ea quarter 2005  
1 ea quarter 2006
5. Person (position) responsible for overall management and implementation of the BMP: John Butts, Public Works Director
6. Rationale for choosing BMP and setting measurable goal(s): \_\_\_\_\_  
Many groups and schools in area already turn to city to provide speakers for meetings

Both the city engineer and public works director will be available for the city speaker's bureau. They will speak to various civic organizations such as the Historical Society, Kiwanis, Rotary, Garden Club, etc. The city receives frequent requests to supply a speaker. If a request is not forthcoming, the Public Works Department will call to find an engagement.

The city engineer and public works director will coordinate with the city's computer staff in developing a PowerPoint presentation to be shown as educational material while speaking at the various civic organizations. It will be

updated annually. It will rely heavily upon presentation material available for free on EPA's web site.

The speaking engagements will take place once a month for the first year beginning July 2004, and once a quarter the second year and thereafter.

B. Appendix A: BMP #2  
Billing Message

1. Target audience: Utility customers
2. Description of BMP: Printed message on utility bill concerning stormwater quality and the steps each person can take to improve and protect it.
3. Measurable Goal(s): Printed message on utility bill twice a year.
4. Schedule:
  - a. Interim Milestone Dates (if applicable): \_\_\_\_\_  
\_\_\_\_\_
  - b. Implementation Date (if applicable): April 2005
  - c. Frequency of actions (if applicable): Twice per year in April and October  
\_\_\_\_\_
  - d. Month/Year of each action (if applicable):
5. Person (position) responsible for overall management and implementation of the BMP: Public Works Director
6. Rationale for choosing BMP and setting measurable goal(s): Computer already set up to add messages to utility bills, so this is low cost with wide readership

An average of 12,500 citizens will receive a printed message (short paragraph) on their utility bill concerning storm water quality. The citizens will receive the printed message on their bill two times each year in April and October. The public works director and the city engineer will prepare the message that will be displayed on the bill.

C. Appendix A: BMP #3  
Educational Handouts

1. Target audience: Public
2. Description of BMP: Flyers will be placed in the city bill payment area and at the Chamber of Commerce to be picked up by the public. Also, they will be handed out during speaking engagements to schools, civic groups and at KBGIB functions.
3. Measurable Goal(s): Stock of hand-outs will be replenished quarterly. New hand-outs will be generated every six months. Minimum of 1,000 flyers distributed per year.
4. Schedule:
  - a. Interim Milestone Dates (if applicable): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  - b. Implementation Date (if applicable): April 2005
  - c. Frequency of actions (if applicable): Twice a year in April and October  
\_\_\_\_\_
  - d. Month/Year of each action (if applicable):
5. Person (position) responsible for overall management and implementation of the BMP: Public Works Director  
\_\_\_\_\_
6. Rationale for choosing BMP and setting measurable goal(s): Already prepared brochures exist on the web and can be ordered or used as prototypes. Only minor customization with city specific data will be needed.

1,000 copies will be printed initially. Once demand is known, the proper amount can be printed.

D. Appendix A: BMP #4  
Public Service Announcements

1. Target audience : Public
2. Description of BMP: 30 second radio announcement once a month. Public access television station will play videos, typed ordinance summary and news releases; City website will include specific information about the City program and activities links to websites re: watershed, storm water protection.
3. Measurable Goal(s): 30 second radio announcement once a month, public access television announcement and website update twice each year. All will be about storm water quality protection.
4. Schedule:
  - a. Interim Milestone Dates (if applicable): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  - b. Implementation Date (if applicable): October 2004
  - c. Frequency of actions (if applicable): Once a month - radio  
Twice per year - television  
Website in April and  
October
  - d. Month/Year of each action (if applicable):
5. Person (position) responsible for overall management and implementation of the BMP: Public Works Director
6. Rationale for choosing BMP and setting measurable goal(s): City has a good relationship with local media and can get their support at little to no cost. Messages reach a large audience. City already has a good web site (www.Brunswickga.org).

Beginning October 2004, the City will issue a 30 second radio announcement once a month. The public works director's assistant will write a different announcement each month and a trained radio announcer will read the material. There is no charge by the radio company for these announcements.

Aldelphia is the public access television station for Brunswick. The public works director will provide Aldelphia EPA videos, a typed ordinance summary, and news



releases. The announcement will run ten times each event. This will take place twice a year beginning in October 2004.

Storm water information will be placed on the City website. It will include specific information about the City program and activities. Also, the City will establish links on their website to other websites that have information about watershed and storm water protection. The website will be updated annually in July each year, and will include the following information.

- EPA, Georgia EPD, and environmental group websites

[www.cleanwatercampaign.com](http://www.cleanwatercampaign.com)

The Clean Water Campaign website has solutions to water pollution topics, how to help with water pollutions, types of water pollution, etc. This website also has a bookstore where maps, publications and videos are either free or range in price from \$1.00 - \$15.00.

[www.riversalive.com/aas.htm](http://www.riversalive.com/aas.htm)

This is the Adopt-A-Stream site. This web site also offers Staff Development Unit (SDU) credits. The Georgia Department of Natural Resources has an Adopt-A-Stream coordinator. Some of the resources available from Georgia Adopt-A-Stream are manuals, teacher's guides, videos, workshops, posters, brochures, database, and newsletters. Citizens and clubs will be encouraged on the web site to adopt a stream segment in the city limits.

[www.gabuffers.org](http://www.gabuffers.org)

This site provides access to technical information and assistance to citizens interested in preserving and restoring the banks and vegetation along their waterways.

[www.epa.gov/owow/nps/](http://www.epa.gov/owow/nps/)

USEPA site has information on water pollution sources and solution, public education, funding opportunities, and publications.

[www.epa.gov/owow/watershed/](http://www.epa.gov/owow/watershed/)

USEPA site provides information on funding, databases, publications, and the excellent watershed academy training modules.

- News releases

This information will be updated more frequently as new information is available.

- Design criteria

A link to the "Georgia Stormwater Management Manual, Volume 2 Technical Handbook" at [www.georgiastormwater.com](http://www.georgiastormwater.com) will be made.

- Stream and littler clean-up announcements

Activities for volunteers arranged by the Keep Brunswick-Golden Isles Beautiful Commission will be posted and a link made to [www.kbgib.org](http://www.kbgib.org).

- Storm water contact name and phone number

The current dispatcher number is 267-5578.

Field Day College Camp  
January 11th  
Sports Park Field Day  
Golf/Athletic Fields  
Budgeting  
John Deere  
Tractors Lawn Tractors

E. Appendix A: BMP #5  
Landscaping Training

1. Target audience: Landscapers, general public, city grounds maintenance staff
2. Description of BMP: Public works department will have classes in xeriscaping, safe landscaping, lawn care, and pest management techniques to minimize use of herbicides, pesticides, water, and fertilizer.
3. Measurable Goal(s): One class per year in landscaping care and installation with 30 people trained.
4. Schedule:
  - a. Interim Milestone Dates (if applicable): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  - b. Implementation Date (if applicable): 4/05
  - c. Frequency of actions (if applicable): 1/yr in April  
\_\_\_\_\_  
\_\_\_\_\_
  - d. Month/Year of each action (if applicable):
5. Person (position) responsible for overall management and implementation of the BMP: Public Works Director
6. Rationale for choosing BMP and setting measurable goal(s): Training is needed for City grounds maintenance staff, and classes can be opened to general public. City's water supply is the Floridan Aquifer that is experiencing salt water intrusion due to overpumping by local industries. The City has a strict water conservation plan that requires public education to minimize water use. This BMP will address the public education needs of both programs. The radio, television, and web site will be good ways to advertise the training.

The annual class will address xeriscaping, lawn care, and chemical management techniques to minimize use of herbicides, pesticides, water, and fertilizer. The class will be open to professional landscapers, plant nursery staff, commercial facility owners and operators, and residents. The class will be free. The training will be held each spring.

**Appendix B**

**Public Involvement / Participation**

40 CFR Part 122.34(b)(2) Requirement: You must, at a minimum, comply with State, Tribal, and local public notice requirements when implementing a public involvement/participation program.

A. Appendix B: BMP #1  
Greenspace Citizens Committee

1. Target audience/ stakeholder group: Greenspace citizens committee
2. Description of BMP: Citizens provide advice, recommendations and assistance to the Glynn County Board of Commissioners as well as the City Commission of Brunswick with respect to policies, operations, administration and finances pertaining to the development and operation of the Greenspace Program.
3. Measurable Goal(s): meet monthly, meeting notes posted on City web site monthly, one meeting per year to investigate various greenspace/watershed grants
4. Schedule:
  - a. Interim Milestone Dates (if applicable): Stormwater focus meeting 06/04
  - b. Implementation Date (if applicable): Already ongoing
  - c. Frequency of actions (if applicable): Monthly meeting
  - d. Month/Year of each action (if applicable): 10/04 grant meeting  
10/05 grant & ordinances meeting
5. Person (position) responsible for overall management and implementation of the BMP: Public Works Director

Rationale for choosing BMP and setting measurable goal(s): Committee already active, will build upon momentum already generated. Critical land adjoining estuaries being developed at accelerated rate.

The Greenspace committee provides recommendations to the Glynn County Board of Commissioners as well as the City Commission of Brunswick with respect to policies, operations, administration and finances pertaining to the development and operation of the Greenspace Program. The Glynn County Board of Commissioners appoints seven members to the Committee with the City Commission of Brunswick appointing the remaining three members. One of the city's appointees is a City Community and Economic Development staff member. Members are from education, retirement, development, and landscaping sectors.

The Committee holds a regular meeting each month. Committee members make recommendations in areas such as policies and planning, revenue sources, budget,

protection policies, and program attainment goals.

The Glynn County Grants Coordinator attends the Committee meeting to provide advice and assistance in the conduct of business. An effort is made to acquire and/or preserve land that adjoins a waterway.

Action by the Committee concerning the unincorporated portions of Glynn County requires approval by the Glynn County Board of Commissioners and action concerning the City of Brunswick requires approval by the City Commission of Brunswick.

Since the Greenspace Committee is an existing activity, there is no additional expense. The City will not fund greenspace acquisition above the EPD grant amount. However, conservation easements, tax rewards, and other funding sources will be investigated.

The committee will be trained about the illicit connection, post development storm water control, and erosion/sediment control ordinances by October 2005, and about their implementation annually thereafter.

B. Appendix B: BMP #2  
Litter Pick Up

1. Target audience : Litterers
2. Description of BMP: Litterers are sentenced by the courts to perform community service picking up trash and litter along streets.
3. Measurable Goal(s): 100 man-hours per year of unpaid labor and 100 man-hours of city employee labor
4. Schedule:
  - a. Interim Milestone Dates (if applicable): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  - b. Implementation Date (if applicable): \_\_\_\_\_
  - c. Frequency of actions (if applicable): Ongoing  
\_\_\_\_\_  
\_\_\_\_\_
  - d. Month/Year of each action (if applicable): \_\_\_\_\_
5. Person (position) responsible for overall management and implementation of the BMP: Public Works Director  
\_\_\_\_\_
6. Rationale for choosing BMP and setting measurable goal(s): free assistance to city, educates litterers.

Litterers are sentenced by the courts to perform community service picking up trash and litter along streets. This keeps the trash from washing into the marshes. It is expected that 100 manhours/year of unpaid labor will be available for litter pick up. A city laborer will work with the litterers. The efforts are focused along side streets that are not adopted by KBGIBC volunteers. The streets are selected in the historic in-town area based on the amount of litter visible.

Appendix C

Illicit Discharge Detection and Elimination

40 CFR Part 122.34(b)(3) Requirement: You must develop, implement and enforce a program to detect and eliminate illicit discharges into your small MS4. You must:

- A) Develop, if not already completed, a storm sewer system map, showing the location of all outfalls and the names and location of all waters of the State that receive discharges from those outfalls;
- B) Effectively prohibit, through ordinance, or other regulatory mechanism, non-storm water discharges into your storm sewer system and implement appropriate enforcement procedures and actions;
- C) Develop and implement a plan to detect and address non-storm water discharges, including illegal dumping, to your system; and
- D) Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.

**A. Appendix C: Storm Sewer Map**

1. Does the MS4 have a completed storm sewer map showing the location of all outfalls and the names and location of all waters of the State that receive discharges from those outfalls?

Yes X No     

If yes, submit the storm sewer system map as an addendum to this form.  
Attached

2. If the storm sewer system map must be developed, provide a schedule for completion (e.g. 30% of system to be mapped each year):

Task	Interim Date
_____	_____
_____	_____
_____	_____

Final completion date/ date for submittal to EPD (No later than December 9, 2006):

The City has 27 storm water outfalls (see map, Attachment B). Approximately 5% of the drainage system is ditches with 95% being sewers.

Storm water site numbers 1-3 flow east into Back River that is a tributary of Brunswick



River that in turn flows into the Atlantic Ocean. Numbers 4 and 5 flow into Dupree Terry Creek, which is a branch of Back River. Numbers 6-13 flow into Clubbs Creek then flow into East River then into Brunswick River. Numbers 14-24 flow into the East River and then into the Brunswick River. Site numbers 25-27 flow into Academy Creek, which is a tributary of the East River.

Existing drawings are incomplete. They currently are sufficient to show the location of all outfalls and the names and locations of all waters of the state that receive discharge from those outfalls. They have recently been compiled and reviewed, and a general base map tied to GIS has been developed. At the time of this plan development, 30% of the storm drain system has been mapped. The watershed and sub-basins have been delineated. An inventory of existing storm sewer infrastructure has been performed and documented from actual field investigations.

The first year only areas with known problems (another 20% of the system) will be mapped. The remaining 50% of the system will be mapped over the subsequent two years, with 25% to be completed each year. Mapping will be complete by 2007. The map will be updated thereafter as changes are made to the storm drain system.

**B. Appendix C: Ordinance/ Regulatory Mechanism Evaluation**

1. Does the MS4 have an ordinance or regulatory mechanism that effectively prohibits illicit discharges? Yes \_\_\_ No  X

If yes, submit a copy as an addendum to this form.

2. If an evaluation of the ordinance/regulatory mechanism must be completed, or the MS4 is aware that the ordinance/regulatory mechanism will require revision, then a schedule for development of the document should be provided:

Task	Interim Date
<u>Draft ordinance to Greenspace Committee</u>	<u>01/06</u>
<u>Attorney review</u>	<u>06/06</u>
<u>Submit to council</u>	<u>09/06</u>

Final completion date/ date for submittal to EPD (No later than December 9, 2006): December 1, 2006

The City already has an ordinance prohibiting littering or dumping (Section 16-7 of the Brunswick Code). The Public Works Department enforces this. The water and sewerage department enforces the sewer use ordinance, which has language prohibiting discharging sewage into the storm water drainage system. Excerpts are included as Appendix B. However, the two existing ordinances are not sufficient. A specific ordinance prohibiting illicit discharges will be prepared following Metropolitan North Georgia Water Planning District model ordinance available on the web at [www.northgeorgiawater.com](http://www.northgeorgiawater.com). The ordinance will be prepared in a coordinated

schedule with the post-development storm water control ordinance (discussed elsewhere in this plan). The draft will be submitted to the Greenspace committee for input and support. The final adopted ordinance with a letter from the attorney stating that it is enforceable will be submitted to EPD in the December 2006 annual storm water report.

C. Appendix C: BMP #1  
Field Inspections

1. Description of BMP: The city is purchasing sewer video and truck equipment. The equipment and staff will be used as needed by the public works department to inspect storm sewers. All 27 outfalls will be visually inspected initially and biannually thereafter at low tide to check for dry weather flows. Public works staff will look for dry weather flow and visually apparent pollution as they clear ditches and respond to flooding. Suspect sources will be dye traced.
  
2. Measurable Goal(s): Video 1 mile per year of the approximately 4.5 miles of storm drains. Visually inspect 100% of the 27 outfalls every two years. Visually inspect 1 mile of approximately 0.5 miles of ditches annually.
  
3. Schedule:
  - a. Interim Milestone Dates (if applicable): purchase video equipment 6/04\_\_\_\_\_
  
  - b. Implementation Date (if applicable): 01/04\_\_\_\_\_
  
  - c. Frequency of actions (if applicable): Continuous\_\_\_\_\_
  
  - d. Month/Year of each action (if applicable): Throughout year\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  
4. Person (position) responsible for overall management and implementation of the BMP: Public Works Director\_\_\_\_\_
  
5. Rationale for choosing BMP and setting measurable goal(s):  
Suspect many illicit connections, which can be positively identified by the video camera. Storm drains are tidally influenced and checking for dry weather flow is difficult because the pipes are filled twice per day by the tides. Any pollutants are highly diluted by tides, and the high salinity of estuarine water renders many simple analytical tests invalid. Almost all of the storm drains are very old and are equally susceptible to having illicit connections. The many outfalls lend themselves to visual inspections.

The storm water video inspections will be limited to emergency response and puzzling problem areas.

Once an illicit connection is found, public works staff will determine the source and require the owner to remove it under the illicit discharge ordinance.

Approximately 200 manhours per year will be dedicated to this task.

**D. Appendix C: BMP #2**  
**Storm Drain System Map**

1. Description of BMP: Existing drawings currently are sufficient to show the location of all outfalls and the names and locations of all waters of the state that receive discharges from those outfalls. 30% of the system is already mapped. Entire system, including inlets, pipes, and ditches, and their elevations, will be surveyed and mapped. The system will be visually inspected during surveying to identify obvious problems.
  
2. Measurable Goal(s): The first year (2004), only areas with known problems (20% more of the system) will be mapped. The remaining 50% of the system will be mapped over the subsequent two years, with 25% to be completed each year. The map will be updated there after as changes are made to the storm drain system.
  
3. Schedule:
  - a. Interim Milestone Dates (if applicable): system 50%  
mapped by 01/05,  
75% by 01/06  
100% by 12/06
  
  - b. Implementation Date (if applicable): Current
  
  - c. Frequency of actions (if applicable): Continuous for 3 yrs
  
  - d. Month/Year of each action (if applicable): Complete by 12/9/06  
\_\_\_\_\_  
\_\_\_\_\_
  
4. Person (position) responsible for overall management and implementation of the BMP: City Engineer
  
5. Rationale for choosing BMP and setting measurable goal(s): Flooding and stagnant water with resulting mosquitos are also a problem. Map part of larger drainage project with wide public support.

E. Appendix C: BMP #3  
Sampling and Testing

1. Description of BMP: sample and test any dry weather flows found during field inspections to determine presence and type of pollutants as a tool to pinpoint source and take corrective action
2. Measurable Goal(s): sample 100% of dry weather flows at least once per year
3. Schedule:
  - a. Interim Milestone Dates (if applicable): \_\_\_\_\_
  - b. Implementation Date (if applicable): 1/05
  - c. Frequency of actions (if applicable): ongoing
  - d. Month/Year of each action (if applicable): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. Person (position) responsible for overall management and implementation of the BMP: Public Works Director
5. Rationale for choosing BMP and setting measurable goal(s): Very old storm and sanitary sewer systems likely have numerous cross connections that have not been apparent since storm drains have dry weather flows due to tidal influences. Drains become empty around low tide and can be sampled at that time.

Approximately 200 manhours per year will be spent on this task. The most useful tests will be pH, temperature, chlorine, ammonia, and phosphate. Handheld test kits will be used. Visible foam, visible sheen, turbidity, and odor will be noted. The wastewater treatment facility laboratory can run COD if needed. Rhodamine dye may be used to confirm a source. Additional laboratory tests can be run once the possible source is identified, which narrows the list of pollutants to test for. The following values will be used as triggers to additional investigation:

PH	<5.8 or >7.5
Temperature	>4 C difference from marsh water at that time
Chlorine	>0.2 mg/L
Ammonia	>1 mg/L
Phosphate	>1 mg/L
COD	>40 mg/L

F. Appendix C: BMP #4  
Storm Drain Stenciling

1. Description of BMP: 40% of the storm drain inlets will be labeled with painted messages by city staff warning citizens not to dump pollutants into the drains. Location will be chosen in higher outdoor activity areas so more people will see the message.
  
2. Measurable Goal(s): 10% will be stenciled each year for four years until 40% are stenciled.
  
3. Schedule:
  - a. Interim Milestone Dates (if applicable):  
10% 01/04  
20% 01/05  
30% 01/06  
40% 01/07
  
  - b. Implementation Date (if applicable): November 2003
  
  - c. Frequency of actions (if applicable): Ongoing as staff time becomes available
  
  - d. Month/Year of each action (if applicable): ongoing
  
4. Person (position) responsible for overall management and implementation of the BMP: Public Works Director
  
5. Rationale for choosing BMP and setting measurable goal(s): Many inlets in city, people use sidewalks and will see message. 40% will be sufficient to raise public's awareness. Sensitive marshland surrounds City

## Appendix D

### Construction Site Storm Water Runoff Control

40 CFR Part 122.34(b)(4) Requirement: You must develop, implement, and enforce a program to reduce pollutants in any storm water runoff to your small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of storm water discharges from construction activity disturbing less than one acre must be included in your program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more. Your program must include:

- A) An ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance;
- B) Requirements for construction site operators to implement appropriate erosion and sediment control best management practices;
- C) Requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality;
- D) Procedures for site plan review which incorporate consideration of potential water quality impacts;
- E) Procedures for receipt and consideration of information submitted by the public; and
- F) Procedures for site inspection and enforcement of control measures.

#### **A. Appendix D: Ordinance Evaluation**

1. Does the MS4 have an ordinance, which is adequate to require erosion and sediment controls at construction sites? Yes  No  If no, see item #3.

2. Does the ordinance include sanctions for failure to comply with erosion and sediment control requirements? Yes  No  If no, see item #3.

3. If an evaluation of the ordinance must be completed, or the MS4 is aware that the ordinance will require revision, then a schedule for development of the document should be provided:

The City uses the Georgia NPDES Construction Permit Program to meet this permit requirement.



**B. Appendix D: BMP #1**  
**Establish Erosion and Sedimentation Control/Stormwater Program**

1. Description of BMP: Georgia NPDES Construction Permit program is an erosion and sedimentation control/storm water program. The city engineer is familiar with "Georgia Stormwater Management Manual, Volume 2 Technical Handbook", and "Manual for Erosion and Sediment Control in Georgia" (most recent editions).
  
2. Measurable Goal(s): City engineer will issue building permits only after applicable projects have an NPDES construction permit
  
3. Schedule:
  - a. Interim Milestone Dates (if applicable) \_\_\_\_\_
  - b. Implementation Date (if applicable): ongoing
  - c. Frequency of actions (if applicable): \_\_\_\_\_
  - d. Month/Year of each action (if applicable): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  
4. Person (position) responsible for overall management and implementation of the BMP: Georgia EPD
  
5. Rationale for choosing BMP and setting measurable goal(s): EPD program already in place.

The City does not have the erosion and sedimentation control (E&S) program delegated to it, and does not wasn't to pursue delegation.

The City currently has a weekly work group meeting composed of the public works director, city engineer, water and wastewater director, building official, and fire department chief or their designees to review all construction plans for subdivisions and commercial development, and all residential plans for >5000 square feet site disturbance. The group will determine if any projects warrant closer coordination with EPD on storm water quality.

C. Appendix D: BMP #2  
Implementation

1. Description of BMP: The City Engineer will review all construction plans to determine if an NPDES construction permit is required, and if so, not recommend issuance of a building permit until the NPDES permit is in place. EPD will review NOI's, issue permits, and inspect.
2. Measurable Goal(s): Review 100% of building permit applications for NPDES applicability
3. Schedule:
  - a. Interim Milestone Dates (if applicable): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  - b. Implementation Date (if applicable): ongoing
  - c. Frequency of actions (if applicable): Throughout year
  - d. Month/Year of each action (if applicable): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. Person (position) responsible for overall management and implementation of the BMP: EPD
5. Rationale for choosing BMP and setting measurable goal(s): \_\_\_\_\_  
Program already in place and working well.

Any construction that requires a NPDES construction permit and does not have one will be reported to EPD. The city building inspector will report any suspected storm water violations observed during inspections or reported by the public to the EPD. EPD will be responsible for any further follow-up with the public or the permittee.

**Appendix E  
Post-Construction Storm Water Management in  
New Development and Redevelopment**

40 CFR Part 122.34(b)(5) Requirement: You must develop, implement, and enforce a program to address storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into your small MS4. You must:

- A) Develop and implement strategies which include a combination of structural and/or non-structural BMPs appropriate for your community;
- B) Use an ordinance or other regulatory mechanism to address post construction runoff from new development or redevelopment projects; and
- C) Ensure adequate long-term operation and maintenance of BMPs.

**A. Appendix E: Ordinance Evaluation**

1. Does the MS4 have an ordinance that effectively controls runoff from new development or redevelopment construction sites?

Yes \_\_\_\_\_ No X

If yes, submit a copy as an addendum to this form.

2. If an evaluation of the ordinance must be completed, or the MS4 is aware that the ordinance will require revision, then a schedule for development of the document should be provided:

Develop in conjunction with illicit discharge ordinance.

Task	Interim Date
<u>Draft ordinance to Greenspace Committee</u>	<u>01/06</u>
<u>Attorney review</u>	<u>06/06</u>
<u>Submit to council</u>	<u>09/06</u>

Final completion date/ date for submittal to EPD (No later than December 9, 2006): 12/01/06

**B. Appendix E: BMP #1  
Educate Regulated Community**

1. Description of BMP:  
Educate regulated community about post-construction runoff requirements.
2. Measurable Goal(s):  
Post a copy of the post-construction runoff control ordinance on the city web page Provide a copy of ordinance to parties meeting with the city about proposed construction projects.
3. Schedule:
  - a. Interim Milestone Dates (if applicable): N/A
  - b. Implementation Date (if applicable): 6/07
  - c. Frequency of actions (if applicable): N/A
  - d. Month/Year of each action (if applicable): N/A
4. Person (position) responsible for overall management and implementation:  
Public Works Director
5. Rationale for choosing BMP and setting measurable goal(s):  
Little construction occurring in City, so one-on-one education is feasible.

C. Appendix E: BMP #2  
Inspect and Maintain Constructed Controls

1. Description of BMP:

The City will require any BMP that requires maintenance to be under the control of the City. The City will charge the owner an up-front one-time fee for long-term maintenance as part of the building permit application process. Once construction is complete, the City public works department will inspect each BMP annually to determine if they are still in place, and to determine if maintenance is required. Public works staff will perform maintenance as needed. Since there currently are no BMP's in the City, the first year costs will largely be for training and program development. The amount of inspections and maintenance per year will slowly increase as BMP's are constructed.

2. Measurable Goal(s):

Establish fee schedule for BMP maintenance  
Inspect 100% of BMPs annually

3. Schedule:

a. Interim Milestone Dates (if applicable):

Develop fee schedule 9/06

b. Implementation Date (if applicable):

Fee schedule 6/07

Inspections 6/08

c. Frequency of actions (if applicable):

Annual inspections

d. Month/Year of each action (if applicable):

Fees charged and inspections ongoing throughout year

4. Person (position) responsible for overall management and implementation of the BMP:

Public Works Director

5. Rationale for choosing BMP and setting measurable goal(s):

Less conflict if City does not require maintenance to be performed by owner (enforcement action avoided). If City has control of BMP care, can be coordinated with inspections, and use existing staff and equipment.

D. **Appendix E: BMP #3**  
**Building Plan Review and Construction Inspection**

1. Description of BMP:

The City Engineer will review all plans requiring a building permit to determine if appropriate post-construction runoff controls are included in the design.

The city building inspector will verify that controls are being installed as shown on the approved plans. The ordinance will include penalties for sites that do not follow the approved plans for installing post-construction runoff control.

2. Measurable Goal(s):

City engineer review 100% of plans for post-construction runoff controls

Building inspector verify that 100% of controls are installed as shown on plans

Enforcement of 100% of significant ordinance violations

3. Schedule:

a. Interim Milestone Dates (if applicable): N/A

b. Implementation Date (if applicable): 6/07

c. Frequency of actions (if applicable): Ongoing

d. Month/Year of each action (if applicable): ongoing

4. Person (position) responsible for overall management and implementation of the BMP: Public Works Director

5. Rationale for choosing BMP and setting measurable goal(s):

All plans are currently reviewed by City Engineer, so this will only be another detail to evaluate. City Engineer has the training and expertise to evaluate likely effectiveness of BMP. Building inspector already visits site during construction, so this will only be another detail to evaluate.

**Note:** The MS4 is not limited to implementing only 2 BMPs for each minimum control measure. If additional BMPs are chosen, then you should attach additional sheets as needed.

**Appendix F**  
**Pollution Prevention/ Good Housekeeping for Municipal Operations**

40 CFR Part 122.34(b)(6) Requirement: You must develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations.

A. Appendix F: BMP #1  
Training Program for City Employees

1. Description of BMP: City will hold a pollution prevention workshop once each year to train all municipal employees responsible for grounds maintenance and landscaping at public facilities, wastewater collection and treatment, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance.
2. Measurable Goal(s):  
At least 80 people trained by 12/06 (make-up classes will be held (if necessary)).
3. Schedule:
  - a. Interim Milestone Dates (if applicable): develop training course by April 2005
  - b. Implementation Date (if applicable): April 2005
  - c. Frequency of actions (if applicable): Once each year
  - d. Month/Year of each action (if applicable) 04/05 workshop  
04/06 workshop  
Annually thereafter
4. Person (position) responsible for overall management and implementation of the BMP: Public Works Director
5. Rationale for choosing BMP and setting measurable goal(s): City government needs to be good example for rest of Brunswick citizens. City performs vehicle maintenance, construction, sludge management, street cleaning, and garbage pick up; all of these are possible storm water pollution sources.

By April 2005, the public works department will hold a pollution prevention workshop for all public works and wastewater/water department municipal employees. Once per year thereafter in April, the City will hold an additional workshop for all employees.

Storm Water Pollution Prevention Plans will be written for the City wastewater treatment facility (WWTF) and for the two City shops by March 2005.



B. Appendix F: BMP #2  
Flood Management Project Assessments for Water Quality Impacts

1. Description of BMP: Water quality improvements considered in design of drainage improvements
2. Measurable Goal(s): One water quality improvement design included in each \$1 Million spent on drainage improvements.
3. Schedule:
  - a. Interim Milestone Dates (if applicable):  
\_\_\_\_\_
  - b. Implementation Date (if applicable): initial planning already begun
  - c. Frequency of actions (if applicable): ongoing
  - d. Month/Year of each action (if applicable): n/a
5. Person (position) responsible for overall management and implementation of the BMP: Public Works Director
6. Rationale for choosing BMP and setting measurable goal(s): Severe drainage problems have city support for improvement. Storm water quality improvements can be included in some of the designs.

There are no current flood management projects. The city is discussing total replacement of storm drains from coast to coast between M and P streets, with a second phase between M and I streets. These storm drains are collapsing, and the roads over them have collapsed in places. Some of the storm sewers are 2/3 full of sand from infiltration, and cannot handle the flows. These projects are expected to total over \$22 Million. The city does not have the funds to begin these projects, and will likely not begin them until after 2006. Water quality will be considered in the design. However, the City is urbanized on the dry land of the peninsula, and there is no undeveloped space between I and P streets for any type of natural treatment such as vegetated swales, retention ponds, or constructed wetlands. Due to the flat topography, tidal influences, and sea level elevation of the Brunswick Peninsula, hydraulics are not suitable for passive inline treatment units. Screens will be considered to remove floatables, though with the vigorous litter pickup program and street sweeping, very little litter enters the storm drains.

Maintenance and improvements to the storm ditches are minimal and non-intrusive because the tidal backwater has made many of them within the city limits into marshes, which are protected and monitored by the Georgia Department of Natural Resources, Coastal Resources Division.

C. Appendix F: BMP #3  
Clean Storm Drainage System

1. Description of BMP: Drainage ditches are cleaned of excessive sediment and litter, which will prevent their washing into marshes and rivers. Citizens instructed not to place yard waste in and over drainage system.
2. Measurable Goal(s): 3,000 manhours per year to clean drains
3. Schedule:
  - a. Interim Milestone Dates (if applicable): 

<u>Hire 1 laborer</u>	<u>06/04</u>
<u>Hire 1 laborer</u>	<u>06/05</u>
<u>Buy truck</u>	<u>01/05</u>
  - b. Implementation Date (if applicable): currently ongoing with minimal staff and equipment
  - c. Frequency of actions (if applicable): Continuous
  - d. Month/Year of each action (if applicable): \_\_\_\_\_
4. Person (position) responsible for overall management and implementation of the BMP: Public Works Director
5. Rationale for choosing BMP and setting measurable goal(s): Drainage and water quality issues complement each other, and drainage improvements already have wide support.

All the drainage ditches will be cleaned of excessive vegetation, sediment, and litter at least once per year. Currently, most of the ditches get cleaned on an irregular schedule due to insufficient equipment and manpower. A new cleaning truck will be purchased. Two additional laborers will be assigned full time to cleaning the storm drains. Initially, they will address the drains that are clogged and impeding storm flows. It is expected that it will take a year for the worst areas to be addressed. After that, the drains will be placed in 12 zones, and all the major drains in a zone will be cleaned in a certain month each year on a schedule.

Litter and waste removed from the storm drains will be disposed of properly in a permitted solid waste landfill. Uncontaminated soils and sediment will be used as needed as fill material; it will not be left unsecured to erode back into the storm drainage system.

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