STORMWATER PHASE II PROGRAM
FOR
DESOTO COUNTY

PREPARED FOR:

Mississippi Department of Environmental Quality
Jackson, Mississippi

PREPARED BY:

Eco-Systems, Inc.
And
Neel-Schaffer, Inc.

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SECTION 1 EXECUTIVE SUMMARY

On behalf of DeSoto County, the Eco-Systems, Inc./Neel-Schaffer, Inc. team is pleased to provide the Stormwater Phase II Program to the Mississippi Department of Environmental Quality (MDEQ). This program is a result of a collaborative effort between the cities and county. This program is tailored for DeSoto County and has been developed to address water quality impairment due to polluted stormwater runoff. The program has been developed as an issue-specific Stormwater Phase II Program. The specific issues to be addressed via program are as follows:

1. Illegal Dumping and Improper Disposal of Household Hazardous Wastes, Automobile Wastes and Disposal of Litter and Debris
2. Erosion and Sedimentation Associated with Construction and Development
3. Leaking Septic Tanks and Sewage Pollution
4. Impaired Waterbodies and TMDL Programs
5. General Urban Stormwater Runoff from Streets, Parking Lots, Driveways, Industrial Sites, Commercial Sites, Agricultural Fields, etc.

The Program components include Public Education, Public Involvement, Illicit Discharges Detection and Elimination, Construction Site Runoff Controls, Post-Construction Runoff Controls, and Pollution Prevention/Good Housekeeping.

There are nine sections in the Stormwater Phase II Program. The nine sections are as follows: Section 1 - Executive Summary; Section 2 - Summary of Research Findings; Section 3 - Public Education; Section 4 - Public Involvement; Section 5 - Illicit Discharge Identification and Elimination; Section 6 - Construction Site Runoff Controls; Section 7 - Post-Construction Site Runoff Controls; Section 8 - Pollution Prevention, and Section 9 - Impaired Waterbodies and TMDL.

The stormwater contact person is Mr. Jimmy Bearden, Director Operation/Solid Waste/Stormwater. Mr. Bearden may be reached by telephone at 662/429-5593 or by postal service at 365 Losher Suite 330, Hernando, Ms. 38632

SECTION 2 SUMMARY OF RESEARCH FINDINGS

Issues of concern in DeSoto County and the Cities of Hernando, Horn Lake, Olive Branch, and Southaven are listed below:

Section 2.1 1998 and 2000 Water Quality Assessment Reports from MDEQ to NOAA

According to the Water Quality Assessment Reports, the issues of concern for the Yazoo River and North Independent Streams Basins are Sediment and Erosion, Urban Runoff, and Impacts of Nutrients and Pesticides from Agricultural Fields.

Section 2.2 Basin Management Team Priorities

The highest priorities identified by the Yazoo River Basin and North Independent Streams Basin Management Teams were as follows:

- Turbidity, Suspended Sediment, Habitat Loss, Drainage from Agricultural Lands, Low Base Flows, Management of Erosion, Sediment Control, Stormwater in Urban Areas, and Impacts of Pesticide and Nutrients.

Other priorities identified by the Yazoo River Basin and North Independent Streams Basin Management Teams were as follows:

- Unsewered Areas and Failing Septic Tanks, Channelization, Illegal Dumping, Moon Lake Restoration, Impact of Trace Metals, Effects of Pathogens, Impacts of Discharges from Gravel Mines, Impacts of Improperly Abandoned Water Wells, Effects of High Chlorides at Tinsley Oil Field, Effects of Catfish Pond Discharges, Impacts of Irrigation Return Flows, and Effects of Stream Bank Erosion.

Section 2.4 MDEQ Water Quality Complaint Database

The Most Common Public Complaints identified through the research of the MDEQ's water quality complaint database, in no particular order, are (1) Sediment and Lack of Erosion and Sediment Controls, (2) Illegal Dumping of Solid Wastes, (3) Illegal Disposal, and (4) Sewage.

Section 2.5 Stormwater Runoff Management Survey Results

Eco-Systems, Inc. and Neel-Schaffer, Inc. developed a survey to be completed by representatives from each of the cities and the county. The surveys were used to identify key water quality issues and concerns at the local level.

2.5.1 Concerns Identified by Stakeholders in Survey

- Sediment and Erosion from Construction,
- Runoff from Streets,
- Industrial and Commercial Sites,
- Sewage, and

- General Pollution

2.5.2 Major Sources Identified by Stakeholders in Survey

- Construction
- Streets and/or Parking Lots
- Sewer Systems and/or Septic Systems
- Agricultural Fields
- Grease from Commercial Operations

2.5.3 Common Pollutants

- Sediment
- Bacteria
- Oils
- Litter and Debris

2.5.4 Illicit Discharges Identified by Stakeholders in Survey

- Oil and/or Household Hazardous Waste Disposal
- Sanitary WW and Septic Tanks

2.5.5 Desired Best Management Practices?

Education and Public Involvement

- Brochures
- Posters
- Website
- School Curricula
- Library of Education Materials
- Advertisements
- Public Meetings
- Task Force for Special Events and Programs
- Volunteer Monitoring and Adopt-A-Stream
- Community Clean-ups
- Economic Incentives
- Volunteer Educators

Illicit Discharge Detection and Pollution Prevention:

- Preventative Maintenance
- Employee Training
- Contractor/Developer Training
- Visual Inspections
- Non-stormwater Detection
- Catch Basin Cleaning

- Materials Inventory
- Pollution Prevention
- Recordkeeping
- Handling and Disposal of Residual

Structural BMPs

- Detention Ponds and Levees
- Infiltration Trenches and Drainfields
- Porous Pavement
- Retention Basins
- Dust Control
- Wetland Treatment
- Vegetative Filter Strips
- Turf Reinforcement Mats
- Wet Detention Ponds
- Diversions
- Temporary Cover
- Soil Retention Blankets
- Vegetative Swales, Cover, and Filter Strips
- Infiltration Drainfeilds and Trenches

2.5.6 What are the best management practices currently employed?

- Community Clean-ups
- Student Education Programs (NRCS)
- Permitting and Planning for Development
- Street Sweeping
- Cleaning Storm Grates after Rain
- Detention Required for new Construction
- Sediment and Erosion Plans
- MDEQ Permits
- Grading
- Drainage Plans

SECTION 3 PUBLIC EDUCATION AND OUTREACH ON STORMWATER IMPACTS

General:

DeSoto County will develop and implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce the pollutants.

DeSoto County will utilize existing materials available through the MS Non-Point Source Management Program, Natural Resources Conservation Service, Mississippi Association of Conservation Districts, Mississippi Soil and Water Association Commission, MS Department of Environmental Quality, MS Department of Marine Resources, United States Geological Survey, MS State University Cooperative Extension Program, etc. **See Attachment A** for examples of education materials available.

DeSoto County will utilize the Non-Point Education for Municipal Officials Project (NEMO) to educate county officials on managing land use in order "to protect natural resources, community character and long-term economic well-being." The program will target political officials and educate them on management and prevention of non-point source pollution. **See Attachment B** for details on NEMO.

Rationale Statement:

The selected issues to be addressed, the targeted audiences, the best management practices, and the associated measurable goals were determined via extensive research of local, state and federal resources. Improper disposal of other household hazardous wastes, illegal dumping, water quality impacts from failing septic systems, improper disposal of oil and grease, improper disposal of automotive wastes, improper disposal of paint wastes, and improper disposal of construction debris and waste have been identified as water quality concerns through review of public complaint databases, MS Department of Environmental Quality 305b reports, MS Department of Environmental Quality Basin Committee Reports, and attitude surveys completed by government officials and stakeholders. Raising public awareness regarding water quality impairment and providing education to the public are essential to changing the behavior of private homeowners and the general public. Using education materials in conjunction with school education programs, websites, and presentations to community groups and civic clubs will assist in educating a wide range of the population. Also, educating restaurants, automotive businesses, paint shops, contractors, and developers and involving them in the process is vital to raise awareness and ultimately improve water quality. The Education Program should utilize existing resources and volunteer educators in the area.

1. Who are the targeted audiences? General Public, Classrooms, Restaurants, Automotive Businesses, Paint Shops, Junkyards and Salvage Yards, Contractors, and Developers, etc.

2. How will the regulated entity inform the targeted audiences? The public will be informed via brochures or factsheets made available at public buildings, public meetings or distributed via mail. The public will also be informed via school education programs, website links, and presentations to community groups and civic clubs classroom education. The targeted businesses will be informed via brochures or factsheets handed door to door or distributed via mail and through workshops.

3. What are the targeted pollutants? General stormwater runoff pollution, household hazardous wastes, raw sewage, oil and grease from restaurants, oils and other automobile wastes, paints and paint related wastes, sediment, and silt.

4. What is the outreach strategy? Distribute materials, utilize classroom education, develop website links, hold stakeholder meetings and education workshops. Detailed implementation schedule is provided below.

5. How were the BMPs and measurable goals selected? BMPs and measurable goals were selected via research of materials available via Environmental Protection Agency, MS Department of Environmental Quality, MS Department of Marine Resources, and Center for Watershed Protection. Also BMPs were recommended by representatives from each of the cities and the county via a stormwater runoff management survey.

6. How will the regulated entity evaluate success? Success will be determined based on if measurable goals and schedule of implementation are met.

7. Who is the responsible person or persons? Mr. David Armstrong and Mr. Jimmy Bearden

PE Objective 1: Educate General Public and Children

Develop an Educational Program to Address Stormwater Impacts Associated with General Urban Runoff, Fertilizer and Pesticide Use, Illegal Dumping and Improper Disposal of Household Hazardous Wastes (HHW), and Failing Septic Systems.

BMP	Measurable Goals	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Distribute Educational Materials	Research available education and/or waste management grants. Identify mechanisms for securing funding for public education programs.	**X**				
	Identify and gather current educational materials and apply for funding to develop program.	**X**	**X**			
	Develop or obtain educational materials for distribution that address harmful impacts of illegal dumping, improper disposal of HHW and proper disposal methods, proper installation, operation, and maintenance of septic systems, etc..		**X**	**X**		
	Distribute educational materials to 12,000 homeowners. Educational materials regarding failing septic systems issues will be initially focused in the rural areas.			**X**	**X**	**X**
Establish Website Links	Establish links to MDEQ and EPA Stormwater Phase II Program websites and provide a description of what the county is doing to better manage stormwater runoff. Utilize existing websites to educate people regarding water quality and stormwater management. Special attention will be given to issues associated with pesticide/fertilizer overuse, household hazardous wastes and failing septic systems.	**X**	**X**	**X**		

	Have website links and program description available.			**X**	**X**	**X**
Continue to Support the Student Education Programs Sponsored by NRCS	Coordinate with Natural Resource Conservation Service, Soil and Water Conservation District, and the School Board to develop classroom curricula and activities.	**X**	**X**	**X**		
	Implement program in the majority of county schools. Meet in final year of permit with teachers and school administrators to evaluate program.			**X**	**X**	**X**
Provide Presentations at Town Meetings and to Community and Civic Groups	Twice per year provide water quality management presentation at a town meeting or to community or civic groups			**X**	**X**	**X**

PE Objective 2: Develop Stormwater Education Program for Targeted Audiences

Develop an Educational Program Targeted to Restaurant Owners, Automotive Repair and Maintenance Businesses, Junkyards and Salvage Yards, and Paint Shops Regarding Impacts of Improper Waste Disposal

BMP	Measurable Goals	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Develop and Distribute Educational Materials	Research available education and/or waste management grants. Identify mechanisms for providing funding of public education programs.	**X**				
	Identify and gather current educational materials.	**X**	**X**			
	Develop or utilize existing educational materials to distribute.			**X**		
	Distribute brochures to 430 automotive service facilities, parts stores, paint shops, and restaurants.				**X**	**X**

Develop Recognition Program	Develop recognition program to encourage restaurants, auto shops, and paint shops to participate.				**X**	**X**
Workshops	Work with Natural Resources Conservation Service to hold annual workshop.				**X**	**X**

PE Objective 3: Develop Stormwater Education Program for Contractors, Developers, Engineers, and Other Design Professionals

Develop an Educational Program Targeted to Contractors and Developers on Reducing Site Runoff Erosion and Sediment Transport from Construction Site Runoff and Proper Disposal of Construction Wastes.

BMP	Measurable Goals	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Conduct Educational Workshops Conduct Workshops for Contractors, Developers, Engineers, and Other Design Professionals	Identify local Contractors, Developers, Engineers, and Other Design Professionals.	**X**				
	Collaborate with MS Department of Environmental Quality, Natural Resources Conservation Service, Soil and Water Conservation Districts, and/or Environmental Protection Agency to develop an educational program geared towards green development, reduction of impervious site cover, vegetative practices, the use of structural and nonstructural practices, and smart growth.		**X**	**X**		

Conduct Educational Workshops ***Conduct Workshops for Contractors, Developers, Engineers, and Other Design Professionals***	Implement Educational Program with one workshop annually. Facilitate workshop to provide training on proper use and maintenance of erosion control techniques and proper disposal of construction site waste. Utilize the MDEQ Planning and Design Manual for Erosion, Sediment and Stormwater Management. This best management practice and associated measurable goal will meet two minimum measures (public education and public involvement) and will be repeated in the Public Involvement section to follow.			**X**	**X**	**X**

SECTION 4 PUBLIC INVOLVEMENT/PARTICIPATION

General:

DeSoto County will notify the public of opportunities to provide input to the process of implementing a SWMP by (1) posting a notification of opportunities to participate at the courthouse of the county in which the regulated entity exists, at the main post office serving the area of the regulated entity, an in at least one library serving the area of the regulated entity. (2) publishing once a week for three weeks a notification of opportunities to participate in at least one newspaper of general circulation in the county that includes the regulated entity or, if the regulated entity is a municipality, in at least one newspaper of general circulation in that municipality.

DeSoto County will utilize existing public involvement programs promoted via the MS Non-Point Source Management Program. **See Attachment C** for program examples.

DeSoto County will encourage participation in programs such as the Storm Drain Stenciling or Adopt-A-Stream Programs. Details regarding these programs are located in **Attachment D and Attachment E, respectively**.

Rationale Statement:

The selected issues to be addressed, the targeted audiences, the best management practices, and the associated measurable goals were determined via extensive research of local, state and federal resources. Improper disposal of automotive fluids and other HHW have been identified as water quality concerns in DeSoto County through review of public complaint databases and attitude surveys completed by government officials and stakeholders in DeSoto County. Public awareness of water quality issues and a sense of civic pride can be raised by encouraging public participation and involvement in HHW collections events, monitoring programs, community cleanups, and special events and programs.

Through researching water quality complaints, basin reports, stakeholder priorities, and attitude surveys, it is evident that construction site runoff is also a water quality concern in DeSoto County. Involving stakeholders, developers and contractors in town meetings and workshops will help raise awareness and improve water quality. Stakeholder meetings and educational workshops provide a useful format where targeted audiences share information, learn from each other, and are allowed to provide feedback into the process.

1. How have the targeted audiences been involved? Stakeholder meetings and educational workshops were held.

2. How will the targeted audiences be involved? The targeted audiences will be invited to participate in special events, volunteer programs, and complaint hotlines or hotline website links. The general public will also be encouraged to participate in town meetings/stakeholder meetings and educational workshops.

3. Who are the targeted audiences? General Public and Affected Stakeholders such as targeted businesses, contractors, developers, etc. (all races, sexes, religions, and economic groups invited to participate)

4. What are the activities to include the targeted audiences? Special Events such as countywide cleanup days, HHW Collection Day Events, Stormdrain Stenciling, Adopt-A-Stream, or Tributary Signage Programs, community cleanup events, and complaint hotline or website link. Stakeholder meetings and educational workshops will also be activities.

5. How were the BMPs and measurable goals selected? BMPs and measurable goals were selected via research of materials available via Environmental Protection Agency, MS Department Quality, MS Department of Marine Resources, and Center for Watershed Protection. Also BMPs were recommended by representatives from each of the cities and the county via a stormwater management survey.

6. How will the regulated entity evaluate success? Success will be determined based on if measurable goals and schedule of implementation are met.

7. Who is the responsible person or persons? Mr. David Armstrong and Mr. Jimmy Bearden

PI Objective 1: Public Involvement and Participation for General Public

Raise Public Awareness by Encouraging Public Participation and Involvement in Activities Related to Protection of Water Quality and Stormwater Runoff.

BMP	Measurable Goals	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Continue Collection Programs and Cleanup Events	Identify existing resources in the County, identify location and dates of existing collection events, and identify methods of funding – See **Appendix 1** for Collection Programs and Cleanup Events	**X**	**X**			

	Organize and publicize drop-off locations and collection days and events.			**X**	**X**	**X**
	Evaluate types and amounts of wastes collected or dropped-off to assess program effectiveness.					**X**
Adopt-A-Stream Program or Stormdrain Stenciling Program	Identify potential volunteers in the local communities, schools, colleges, community groups, businesses, and non-profit organizations. Develop and collect necessary resource materials.	**X**	**X**			
	Identify sponsors and team leaders. Identify streams to monitor.		**X**	**X**		
	Receive Training for activity. Organize volunteer groups to conduct monitoring of identified streams or stenciling of storm drains.				**X**	**X**
Continue Participation in Cleanup Events	Identify organizers of event, location and date of cleanup events. Consider sponsoring, exhibiting, publicizing, or participating.	**X**	**X**	**X**	**X**	**X**
Community Hotline Link	Establish and publicize a community hotline link for citizens to report illegal dumping, illicit discharges, and erosion from constructions sites. Review number and types of complaints received to assess program effectiveness and identify problem areas at the end of the permit period.			**X**	**X**	**X**

PI Objective 2: Public Involvement and Participation for Targeted Audiences

Raise Awareness Regarding County Stormwater Management for Key Stakeholders, Selected Businesses and Targeted Audiences Such as Contractors and Developers.

BMP	Measurable Goals	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
	Identify key stakeholders, selected businesses and targeted audiences in the county.	**X**				
Stakeholder Meetings	Facilitate public stakeholder meetings and invite targeted audiences. The stakeholder meetings will provide the opportunity to voice concerns and provide education on the Countywide Stormwater Management Plan. Meetings should be held at least annually. May consider teaming with MDEQ Basin Management Meetings.		**X**	**X**	**X**	**X**
Conduct Educational Workshops for Contractors, Developers, Engineers, etc.	Identify local contractors, developers, engineers, and other design professionals.	**X**	**X**			
Conduct Educational Workshops for Contractors, Developers, Engineers, etc.	Work with MS Department of Environmental Quality, Natural Resources Conservation Service, Soil and Water Conservation Districts, and Environmental Protection Agency to develop an educational program geared towards green development, reduction of impervious surfaces, vegetative practices, the use of structural and nonstructural practices, and smart growth.		**X**	**X**	**X**	

	Hold annual workshop to provide training on design methods for reduction of impervious surfaces, proper use and maintenance of erosion control techniques and proper disposal of construction site waste. This best management practice and associated measurable goal will meet two minimum measures (public education and public involvement) and was listed in the Public Education section previously presented.				**X**	**X**

SECTION 5 ILLICIT DISCHARGES IDENTIFICATION AND ELIMINATION

General:

DeSoto County will

- Develop, implement and enforce a program to detect and eliminate illicit discharges.
- Develop a storm sewer system map showing the location of all outfalls and the names and location of all waters of the United States that receive discharges from those outfalls.
- Effectively prohibit, through ordinance or other regulatory mechanism, non-stormwater discharges into your storm sewer system and implement appropriate enforcement procedures and actions.
- Develop and implement a plan to detect and address non-stormwater discharges including illegal dumping to your system.
- Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.

Rationale Statement:

The selected issues to be addressed, the targeted audiences, the best management practices, and the associated measurable goals were determined via extensive research of local, state and federal resources. Illicit discharges and failing septic systems have been identified through MS Department of Environmental Quality 305b reports, MS Department of Environmental Quality 303d lists, Total Maximum Daily Load (TMDL) reports, MS Department of Environmental Quality Basin Committee reports, public complaints databases, and attitude surveys completed by government officials and stakeholders as issues of concern in DeSoto County. The proper identification of unsewered areas of concern depicted on maps, the development of new ordinances or regulations to prevent the installation of septic systems at new developments until proper site inspections have been conducted, and the development of inspection programs and training programs will help in the detection of current illicit discharges and prevention of future potential illicit discharges.

1. What is the plan to detect non-stormwater discharges?
    a. Procedures for locating priority areas – Map area. Depict areas that are sewered verses areas that are unsewered. Unsewered areas are potential problem areas. Also identify receiving waterbodies and major outfalls. Also identify sewer systems and location of collection centers and treatment centers. Also identify area of industrial use and heavy commercial sites.
    b. Procedures for tracing/locating the source of an illicit discharge – Conduct periodic visual inspections and dry weather field screening to identify non-stormwater discharges and support Department of Public Health in its efforts to educate homeowners and develop an inspection program for

individual on-site sewage disposal systems. Targeted audiences will be educated on the importance of proper disposal of wastes and proper operation and maintenance of septic systems via written materials, website links, and pubic service announcements. Public employees will be trained on proper inspection and reporting procedures.

c. Procedures for removing the source of the illicit discharge – Ordinance will prohibit all illicit discharges and establish authority for regulated entity to issue penalties if necessary. Public employees will be trained on proper inspection and reporting procedures.
d. Procedures for program evaluation and assessment – Records will be kept of visual inspections and illicit discharges if detected. A summary will be presented to MS Department of Environmental Quality in annual report.

2. How will the regulated entity inform public employees, businesses, and general public? How will this be coordinated with pubic education and pollution prevention minimum measures program? Who are the targeted audiences? The general public and businesses will be informed via the education program (PE-01 and PE-02) as previously mentioned in Section 3 and through the volunteer self inspection program promoted via the Public Health Department. Public employees will be informed via training (ID-03 and PP-01) discussed in this section and again in Section 8.

3. How were the BMPs and measurable goals selected? BMPs and measurable goals were selected via research of materials available via Environmental Protection Agency, MS Department Quality, MS Department of Marine Resources, and Center for Watershed Protection. Also BMPs were recommended by representatives from each of the cities and the county via a stormwater management survey.

4. How will the regulated entity evaluate success? Success will be determined based on if measurable goals and schedule of implementation are met.

5. Who is the responsible person or persons? Mr. David Armstrong and Mr. Jimmy Bearden

ID Objective 1: Map Storm Sewer Systems and Unsewered Areas

Develop a Map Depicting Storm Sewers, Outfalls, and Names and Locations of all Waters of the United States that Receive Discharges from those Outfalls.

BMP	Measurable Goals	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Map Storm Sewers and Map Unsewered Communities	Gather existing information to be utilized in creating maps. Develop a map of the storm sewer system and a map of all unsewered communities in DeSoto County to be used as a resource for targeting education and inspection campaigns for failing individual on-site wastewater treatment systems. Also identify receiving waterbodies and major outfalls. Also identify sewer systems and location of collection centers and treatment centers. Also map industrial areas and heavy commercial areas.	**X**	**X**			

ID Objective 2 Address Failing Individual On-Site Wastewater Treatment Systems

Support the Mississippi Department of Public Health in their Effort to Identify and Eliminate Failing Individual On-site Wastewater Treatment Systems

Volunteer Self Inspection Program for Individual on-site wastewater treatment systems	Support local, state and Federal agencies to gather materials or how-to guides for self inspections of individual on-site wastewater treatment systems and for business owners to conduct self inspections of business connections.	**X**	**X**	**X**		
	As previously identified in the Public Education section, educational materials will be distributed to homeowners and business owners in unsewered communities.				**X**	**X**

Visual Inspections for Failing Individual on-site wastewater treatment systems	Support local, state and Federal agencies in efforts to organize and identify existing resources, available funding sources, and various responsibilities for developing and implementing visual inspection program.	**X**	**X**			
	Support local, state and Federal agencies in developing and implementing a visual inspection program that clearly defines roles & responsibilities of involved agencies (Department of Environmental Quality, Department of Public Health, etc.) Support other agencies in efforts to establish protocol for conducting visual inspections and reporting results.			**X**	**X**	**X**
	Work with the Department of Environmental Quality and Department of Public Health in efforts to develop and implement program that sets priorities for impaired waterbodies. Review results of inspections at end of permit period to assess effectiveness.			**X**	**X**	**X**

ID Objective 3 Identify and Eliminate Illicit Discharges

Develop a program to identify and eliminate illicit discharges such as illegal dumping, illegal cross connections, etc.

Develop an Inspection and Enforcement Program	Work with local, state and Federal agencies to develop and implement a program for inspection and elimination of non-stormwater discharges. Dry weather screening will be utilized.	**X**	**X**			

Implement an Inspection and Enforcement Program	Work with local, state and Federal agencies to implement a program for inspection and elimination of non-stormwater discharges. Dry weather screening will be utilized.			**X**	**X**	**X**
Train County Employees	Develop Training Program	**X**	**X**			
	Train county employees on how to identify illicit discharges such as oil and grease from restaurants, oil and automotive fluids from auto shops, swimming pool water, illegal cross connections, and improper disposal of household hazardous wastes. Train county employees on proper response to complaints and proper procedures of notification of violation and action required. Training should be provided to all new county employees and a refresher training course should be provided once per year.			**X**	**X**	**X**

ID Objective 4 Ordinance

Review and revise as necessary current ordinances regarding illicit discharges. Revise or develop an ordinance that prohibits all illicit discharges.

Ordinance to Allow Inspections and Penalize Violations	Review existing ordinances. Develop Countywide ordinance (if one does not exist) to outlaw all illicit discharges and establish penalties.	**X**	**X**	**X**		

Ordinance to Allow Inspections and Penalize Violations	Implement ordinance and enforce regulations with penalties to include repair of problems, monetary fines, restitution, and publishing names of violators.				**X**	**X**
Construction Plan Review and Construction Site Inspection in Ordinance	Develop process for conducting site plan review and construction site inspections to assure proper sewer and storm drain connections.		**X**	**X**	**X**	
	Implement program.					**X**

SECTION 6 CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

General:

DeSoto County will

- Develop, implement and enforce a program to reduce pollutants in land disturbance activities of greater than or equal to one acre. Reduction of stormwater discharges from construction activities disturbing less than one acre must be included in your program if that construction activity is part of a larger common plan of development of sale that would disturb one acre or more.
- Develop and implement an ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under state, tribal, or local law.
- Develop and implement requirements for construction site operators to implement appropriate erosion and sediment control BMPs.
- Develop and implement 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.
- Develop and implement procedures for site plan review that incorporates consideration of potential water quality impacts.
- Develop and implement procedures for receipt and consideration of information submitted by the public.
- Develop and implement procedures for site inspection and enforcement of control measures.

CS Objective 1 Control Erosion and Sedimentation Associated with Construction Sties

Develop and Implement a Construction Site Runoff Control Program to Reduce Erosion and Sedimentation at Construction Sites Greater than One Acre.

Rationale Statement:

The selected issues to be addressed, the targeted audiences, the best management practices, and the associated measurable goals were determined via extensive research of local, state and federal resources. Runoff from construction sites has been identified through MS Department of Environmental Quality 305b reports, MS Department of Environmental Quality 303d lists, Total Maximum Daily Load reports, MS Department of Environmental Quality Basin Committee reports, public complaints databases, and attitude surveys completed by government officials and stakeholders as major issues concerning stormwater runoff and water quality in DeSoto County. Along with an available training program, requiring review and approval of written Erosion and Sediment Control plans and self-inspection and reporting will raise awareness of

construction site stormwater runoff management. Establishing and enforcing Erosion and Sediment Control standards will provide contractors and developers with the incentive to effectively manage stormwater runoff.

1. Procedures for site plan review, including the review of pre-construction site plans, which incorporate consideration of potential water quality impacts and consistency with local sediment and erosion control requirements. Building enforcement officials will ask contractor to complete an application with a series of questions, will ask for a copy of the site plan, and will issue a permit to proceed if plan is adequate and proper BMPs are to be implemented at the site based on consideration of potential water quality impacts.

2. Procedures for receipt and consideration of information submitted by the public. All stakeholder meetings are open to the public and comments are encouraged.

3. Procedures for site inspection and enforcement of control measures (how will they prioritize sites for inspection – Activity? Topography? Soil characteristics? Receiving water quality?) A building code enforcement officer will conduct periodic inspections of construction sites to ensure proper BMPs have been implemented and properly maintained. Those sites in sensitive areas and those sites where complaints have been reported will be high priority. Citations and penalties can be issued if non-compliance is noted.

4. Procedures to provide education materials and training to construction site operators. Education materials and training are provided to contractors and developers via educational workshops previously mentioned as PE-03 and PI-02 located in Section 3 and Section 4, respectively.

5. How were the BMPs and measurable goals selected? BMPs and measurable goals were selected via research of materials available via Environmental Protection Agency, MS Department Quality, MS Department of Marine Resources, and Center for Watershed Protection. Also BMPs were recommended by representatives from each of the cities and the county via a stormwater management survey.

6. How will the regulated entity evaluate success? Success will be determined based on if measurable goals and schedule of implementation are met.

7. Who is the responsible person or persons? Mr. David Armstrong and Mr. Jimmy Bearden

BMP	Measurable Goals	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Request MDEQ to continue permitting construction activities of 5 + acres	Send written request to MDEQ to continue permitting 1 + acres construction sites	**X**				
Continue Current Practices	Continue construction site runoff management practices such as in DeSoto County. DeSoto County requires all SWPPP plans be submitted and reviewed by county engineer and the developer is responsible for erosion. Common measures include silt fences and hay bales. Sediment basins are often required by county engineer. Dumped rock and berms are used but less frequently. Stabilized construction entrances are installed for larger developments.	**X**	**X**	**X**	**X**	**X**
Develop Standards for ESC	Use existing information to develop standards and guidance for ESC at construction sites of 1 or more acres.	**X**	**X**			
Construction Site ESC Ordinances	Review current ordinances, review as necessary or draft new ordinance – See **Appendix 2**.	**X**	**X**			

Construction Site ESC Ordinances	Adopt and implement ordinances including fill ordinances and additions to subdivision regulations to enforce ESC standards and allow for construction site inspections. The ordinances will also require proper handling and disposal of all construction debris. Consider adopting a strict land development code that requires a public works permit for all land disturbance activities. Penalties will be used for enforcement.			**X**	**X**	**X**
Develop Program to Require ESC Plan	Develop program to require submittal of a written ESC plan for 1 or more acres construction sites. Plan should outline site drainage patterns, plans for proper handling and disposal of all construction debris, and proposed controls.		**X**	**X**		
	Implement program.				**X**	**X**
Self-Inspection and Reporting	Develop standard form and schedule and guidance document for self inspection at construction sites.		**X**	**X**		
	Implement program as a part of the ESC plan requirement.			**X**	**X**	**X**
Construction Site Inspections	Develop program for construction site inspections including subdivision improvements that defines responsible MS4 departments, identifies format for reporting results, and sets a schedule to allow frequent inspections of all construction sites. Enforcement measures will also be identified in program.		**X**	**X**		

	Implement program.			**X**	**X**	**X**

SECTION 7 POST CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

General:

DeSoto County will

- Develop, implement, and enforce a program to address stormwater 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 MS4. Your program must ensure that controls are in place that would prevent or minimize water quality impacts.
- Develop and implement strategies that include a combination of structural and/or nonstructural BMPs appropriate for your community.
- Use an ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under state, tribal, or local law.
- Ensure adequate long-term operation and maintenance of BMPs.

PC Objective 1: Control Stormwater Runoff Post-Construction Areas and Re-Developed Areas.

Develop a Program that Addresses Stormwater Management for Redevelopment and Post-Construction Designs

Rationale Statement:

The selected issues to be addressed, the targeted audiences, the best management practices, and the associated measurable goals were determined via extensive research of local, state and federal resources. Increased runoff from impervious areas associated with development has been identified as a water quality concern and stormwater runoff management issue through MS Department of Environmental Quality 305b reports, MS Department of Environmental Quality Basin Committee reports, numerous special studies by groups such as US Environmental Protection Agency and the Center for Watershed Protection, and through attitude surveys completed by local government officials and stakeholders. Developing standards and guidance documents in conjunction with providing training and education will allow the County to promote measures that will directly address pertinent stormwater related issues. Requiring a review process for written stormwater management plans will encourage contractors and developers to focus on stormwater runoff management prior to beginning construction and give the County the opportunity to promote the appropriate measures on a case-by-case basis. What is the program? Will it address any priority areas? The program includes the use of greener practices, development and adoption of an ordinance, development of stormwater management plan review, development of standards for post-construction stormwater

runoff management, and development of schedules, locations, and responsible parties for conducting inspections of stormwater runoff measures. All areas are considered priority – special attention in special management areas, wetlands, sensitive waterbodies, and impaired waterbodies.

1. How will the program be specifically tailored for the regulated entity, minimize water quality impacts, and attempt to maintain pre-development runoff conditions? Each area is unique within DeSoto County but a similar ordinance will be adopted in all regulated entities to encourage post development stormwater management practices to minimize water quality impacts. Standards, resource guides and a checklist will also be developed for developers and contractors.

2. Are there any non-structural BMPs in the program? An ordinance will be adopted to require submittal and review of post-construction stormwater management plans prior to construction for all new construction and redevelopment. The ordinance should establish a protocol for determining responsibility for maintenance of control measures. Promote vegetative practices. Educational workshops will be provided to developers and contractors as previously mentioned in PE-03 and PI-02, Section 3 and 4, respectively.

3. Are there any structural BMPs in the program? A variety of best management practices (including storage practices, infiltration practices, and filtration practices) will be recommended and a guidance manual will be developed and a list of recommended BMPs will be provided in a checklist format on a document to be completed by the developer or contractor after the project is complete. The document will also have a place for the developer or contractor to identify who will be responsible for maintenance.

4. What will the entity do to ensure appropriate implementation? Pre-construction review of site plans and identification of BMPs to be used. Periodic inspections will be conducted during construction. A checklist will be completed post construction identifying BMPs and responsible parties for maintaining BMPs. Penalties for non-compliance will be established via the ordinance.

5. How were the BMPs and measurable goals selected? BMPs and measurable goals were selected via research of materials available via Environmental Protection Agency, MS Department Quality, MS Department of Marine Resources, and Center for Watershed Protection. Also BMPs were recommended by representatives from each of the cities and the county via a stormwater management survey.

6. How will the regulated entity evaluate success? Success will be determined based on if measurable goals and schedule of implementation is met.

7. Who is the responsible person or persons? Mr. David Armstrong and Mr. Jimmy Bearden

BMP	Measurable Goals	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Promote Greener Vegetative Practices	Continue promoting the use of vegetative cover and vegetative practices.	**X**	**X**	**X**	**X**	**X**
Review Existing Ordinances	Conduct a review of existing ordinances and codes including zoning and subdivision regulations to assess uses for stormwater runoff management. Revise and adopt new requirements as appropriate to establish authority for enforcement of stormwater.	**X**	**X**			
Ordinance to Require Submittal and Review of Stormwater Management Plan	Review existing ordinances and revise as necessary or draft new ordinances including zoning subdivision and public improvements regulations to require submittal and review of post-construction stormwater management plans prior to construction for all new construction and redevelopment. The ordinance should establish a protocol for determining responsibility for maintenance of control measures.	**X**	**X**			
Ordinance to Require Submittal and Review of Stormwater Management Plan	Adopt and implement ordinance.			**X**	**X**	**X**

Stormwater Management Plan Review	Develop a program to review the required post-construction stormwater management plan that identifies the responsible department, the standard review process and schedule, and emphasizes the use of vegetative measures, minimization of impervious area, and low-impact development. Develop a final checklist for developers to complete as to what post-construction best management practices are to be used. Also, the developer must identify who will be responsible for the operation and maintenance of stormwater runoff management.		**X**	**X**		
	Implement program.			**X**	**X**	**X**
Stormwater Runoff Management Standards for Post-Construction	Identify and compile existing information on post-construction stormwater runoff management.	**X**				
	Develop standards for post-construction stormwater runoff management that will be most effective for the County. Produce a guidance manual with resources for developers and contractors to use in developing, implementing, and maintaining stormwater management plans.		**X**	**X**		
	Make standards and resource guides available to developers and contractors.			**X**	**X**	**X**

Scheduled Inspections	Research current examples of programs. Develop a program that establishes schedules, locations, and responsible parties for conducting inspections of all stormwater runoff measures in the County.	**X**	**X**	**X**		
	Implement inspection program to conduct at least semi-annual inspections and reporting of observations and recommendations.			**X**	**X**	**X**

SECTION 8 POLLUTION PREVENTION & GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

General:

DeSoto County will

- 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. Using training materials that are available from EPA, your state, tribe, or other organizations, your program must include employee training to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance.

  1. List of municipal operations that are impacted by this operation and maintenance program:

     See DeSoto County: rubbish landfills, gravel pits, pipe and inlet replacement, and ditch repairs. List of parks and fields is provided in **Appendix 3.**

  2. List of industrial facilities that the regulated entity owns or operates which are covered by General SW permits or have individual NPDES stormwater permits. Include facility's coverage number and/or permit number.

     Rubbish Landfill

  3. What are the proposed activities, schedules, and long-term inspection procedures to control or reduce floatables and other pollutants? Continue pollution prevention practices, train employees, conduct routine inspections, establish procedures for internal reporting and reporting to MS Department of Environmental Quality once per year, etc. Long-term inspection procedures will be established and inspection form developed to document findings.

  4. What are the controls for reducing or eliminating discharge of pollutants from streets, roads, highways, municipal parking lots, maintenance and storage yards, waste transfer stations, fleet or maintenance shops with outdoor storage areas, sand storage locations, and marinas? Provide proper education and training to employees, continue to street sweep, inspect inlets and gutters, maintain ditches, inspect outfalls, store potential hazardous materials or pollutants under water resistant shelters in containers that do not leak, keep facilities, grounds, and buildings clean and orderly, properly dispose of wastes, etc.

5. What are procedures for the proper disposal of waste removed from regulated entity operations, including dredge spill, accumulated sediments, floatables and other debris?

   Dredging material is carried to storage location and dyed to be used for fill at later date. Trees that have been blown down or broken limbs are carried to rubbish pit. Road side maintenance debris is run through a chipper. Roadside litter is bagged and hauled to Subtitle D landfill in Shelby County.

6. What procedures are in place to ensure flood management projects are assessed for impacts on water quality?

   Flood management projects in Desoto County historically involve participation by the US Army Corps of Engineers, Memphis District. The National Environmental Policy Act (NEPA) requires the District to consider the environmental impact, including water quality, of the proposed flood control project. Prior to issuing a permit, the Corps must prepare either an Environmental Assessment and a "Finding of No Significant Impact" (FONSI) or, determine that an Environmental Impact Statement is necessary.

   DeSoto County – detention basins are to be installed as per plans. Violations are brought to the developer and DEQ as necessary.

7. How will the regulated entity evaluate success? Success will be determined based on if measurable goals and schedule of implementation is met.

8. Who is the responsible person or persons? Mr. David Armstrong and Mr. Jimmy Bearden

PP Objective 1: Good Housekeeping

Develop and Implement Programs to Reduce Stormwater Runoff Impacts from Municipal Operations and Encourage Proper Operation and Maintenance of Stormwater Controls.

BMP	Measurable Goals	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Employee Training	Develop a training program using available materials to provide education to municipal employees on installation, operation, inspection, and maintenance of all stormwater management practices in the County. The program should include development of inspection forms and schedules.	**X**	**X**			
	Implement program by training all appropriate county personnel annually.		**X**	**X**	**X**	**X**
Recordkeeping, Internal Reporting and Materials Inventory	Develop a program for recordkeeping and reporting results on facility inspections, storm drain system inspections, and maintenance activities to include development of inspection forms and schedules.	**X**	**X**			
	Develop a Materials Inventory for all appropriate county facilities. Implement program for all appropriate county divisions and personnel.		**X**	**X**	**X**	**X**
Storm Drain Cleaning	Develop a map of all storm drains and conveyances showing major outfalls and structural controls to be used as a resource for scheduling and conducting routine inspections and identifying problem areas.	**X**	**X**			
	Develop and implement scheduled inspections and cleaning of all storm systems conveyances as well as reporting results of inspections and maintenance activities.			**X**	**X**	**X**

Stormwater Inspections	Develop a program for conducting regular inspections of stormwater runoff management at all municipal facilities. Dry weather screening should also be conducted. Program should include responsibilities of involved parties and protocol for conducting and reporting results.	**X**	**X**			
	Implement program			**X**	**X**	**X**

SECTION 9 IMPAIRED WATERBODIES AND TOTAL MAXIMUM DAILY LOADS

Several waterbodies that receive stormwater runoff from MS4s in DeSoto County have been identified by the MDEQ as impaired. At this time, none of these impaired waterbodies have TMDLs established. A list of impaired streams segments in DeSoto County is included below. Of the causes of impairment listed for the various waterbodies, pollution related to growing areas of development, runoff from residential lawns and golf courses, and failing septic systems are viewed as potentially contributing to non-point pollution. The BMPs proposed in this stormwater management program have been strategically selected to provide management of stormwater discharges to those impaired waterbodies within the permittees' areas. BMPs intended to control the discharge of pollutants of concern and ensure that discharges will not cause exceedance of water quality standards have been selected. A discussion of those BMPs is to follow.

The BMPs proposed to meet the public education component requirements of the permit have been selected to address the lack of public awareness regarding harmful impacts to water quality caused by failing septic systems and improper use and disposal of lawn and garden chemicals. Areas within the watershed of impaired waterbodies will be targeted first for the intensive distribution of educational materials. Public education efforts related to failing septic systems are to be focused in areas of unsewered residences within the Coldwater River watershed. A map will be developed to identify the unsewered communities and associated major stormwater outfalls. Education efforts related to proper use and disposal of lawn and garden chemicals (pesticides and fertilizers) will be focused in residential areas within Hurricane Creek, Mussacuna Creek, and the Coldwater River watersheds.

The BMPs proposed to meet requirements of the public involvement/participation component have been selected to encourage public participation in identifying and eliminating failing septic systems, illicit discharges, and erosion of sediments from construction projects. Hotlines or hotline links to provide the public a means of reporting failing septic systems, illicit discharges, and erosion problems will be established. Collection of household hazardous wastes will involve the public in the proper disposal of lawn and garden chemicals. Stakeholder meetings and educational workshops to include developers and contractors will be conducted to increase awareness of the impacts caused by loss of vegetation, alteration of hydrology, and increasing impervious area associated with many common development practices. Education efforts will focus on proper selection, implementation, and maintenance of erosion and sediment control measures. Education efforts will also promote alternative methods for construction and post-construction stormwater runoff management encouraging low-impact development practices such as vegetative measures, reduced impervious area, reversed elevation for parking lot landscaping, etc.

The BMPs proposed to meet the requirements of the illicit discharge detection and elimination component of the stormwater management program have been selected to

develop a comprehensive program for addressing failing septic systems. Ordinances and regulations will be reviewed and modified or developed as needed in order to establish authority for conducting site inspections and set standards and penalties for violation, while increasing public awareness of the issue. Programs that deal with failing septic systems will be focused within the watersheds of impaired stream segments such as the Coldwater River watershed. MDEQ basin monitoring reports and TMDL development will be monitored during the permit period as a means of evaluating the success of these measures.

The BMPs proposed to meet the requirements of the construction site and post-construction stormwater management components of the storm water management program have been selected to address problems associated with urban non-point source runoff such as increased impervious area and loss of vegetation. Measures such as site plan reviews requiring a written stormwater management plan for construction and post-construction will allow the municipalities to guide development and encourage the use of structural and non-structural controls on a case-by-case basis. This case-by-case consideration will involve evaluation of the potential pollutants and the quality of the receiving waterbody. More stringent standards for managing stormwater runoff will be applied to those development projects that have the potential to contribute pollutants of concern to an impaired waterbody.

The BMPs proposed to meet the requirements of the good housekeeping/pollution prevention component of the stormwater management program have been selected to address employee training and inspection and maintenance of BMPs. It is important for municipal employees to be well educated on the proper function of the BMPs employed throughout the county in order to implement a meaningful and effective inspection and maintenance program. Inspection and maintenance of BMPs is paramount to the effective function of the BMPs. Inspection and maintenance programs will initially be focused within the watersheds of impaired waterbodies. Training will be provided to those municipal employees involved in the use of pesticides and fertilizers, inspection of construction site sediment and erosion control measures, and maintenance stormwater controls and conveyances.

TABLE 1
SUMMARY OF 303(d) LIST FOR DESOTO COUNTY

Monitored Waterbodies

Waterbody Name	Location	Impaired Use	Cause
Coldwater River	At Prichard from confluence with Cub Lake Bayou to split with Pompey Ditch above Sara (below Savage)	Secondary contact recreation	Pathogens
Hurricane Creek	Near Eudora from watershed 307 boundary to north of station to Arkabutla Lake normal pool including all tribs in flood pool	Aquatic life support	pH, nutrients, organic enrichment-low DO
Mussacuna Creek segment 1	Near Hernando from Hernando South POTW discharge to Arkabutla Lake flood pool at watershed 303 boundary	Aquatic life support	Salinity-TDS-chlorides, pH
Mussacuna Creek segment 2	Near Hernando from 303/306 watershed boundary (edge of Arkabutla Lake flood pool) to confluence with unnamed tributary	Aquatic life support	Salinity-TDS-chlorides, pH

[1]Evaluated Waterbodies

Waterbody Name	Location	Impaired Use	Cause
[2]Horn Lake Creek drainage area	Drainage area near Southhaven	Aquatic life support	Pesticides, nutrients, siltation, organic enrichment-low DO
Cane-Mussacuna Creek drainage area	Drainage area near Pleasant Hill	Aquatic life support	Pesticides, nutrients, siltation, organic enrichment-low DO
Coldwater River	At Prichard from confluence with Cub Lake Bayou to split with Pompey Ditch above Sara (below Savage)	Aquatic life support	Pesticides, siltation, organic enrichment-low DO, pH

Evaluated Waterbodies (continued)

Waterbody Name	Location	Impaired Use	Cause
Coldwater River drainage area	Drainage area near Alphaba	Aquatic life support Secondary contact recreation	Pesticides, nutrients, siltation, organic enrichment-low DO Pathogens
Hurricane Creek portion of drainage area	Drainage area near Deans Corner	Aquatic life support	Pesticides, nutrients, siltation, organic enrichment-low DO
Hurricane Creek portion of drainage area	Drainage area near Frees Corner	Aquatic life support	Pesticides, nutrients, siltation, organic enrichment-low DO
Hurricane Creek drainage area	Near Eudora from watershed 307 boundary to the north of station to Arkabutla Lake normal pool including all tributaries in flood pool	Aquatic life support	Nutrients, pH, organic enrichment-low DO
Johnson, Jackson, & White Creeks drainage area	Drainage area near Banks	Aquatic life support	Pesticides, nutrients, siltation, organic enrichment-low DO
Lower Camp Creek drainage area	Drainage area near Alphaba	Aquatic life support	Pesticides, nutrients, siltation, organic enrichment-low DO
Pigeon Roost Creek drainage area	Drainage area near Cockrum	Aquatic life support	Pesticides, nutrients, siltation, organic enrichment-low DO
Rock Creek drainage area	Drainage area near Prichard	Aquatic life support	Pesticides, nutrients, siltation, organic enrichment-low DO
Short Fork Creek drainage area	Drainage area near Alphaba	Aquatic life support	Pesticides, nutrients, siltation, organic enrichment-low DO
Upper Camp Creek drainage area	Drainage area near Pleasant Hill	Aquatic life support	Pesticides, nutrients, siltation, organic enrichment-low DO

[1] The evaluated designation indicates a lack of monitoring data. MDEQ intends to release a revised 303(d) list by the end of this year that will do away with the monitored versus evaluated classifications.
[2] Horn Lake Creek is listed in the Northern Independent Streams Basin.

Stormwater Program Attachments

Attachment A

Mississippi Non-Point Source Management Program Education Materials

The Mississippi Non-Point Source Management Program establishes a statewide strategic plan to address current and future non-point source pollution. The program encourages a watershed approach and has the following mission: "to conserve and improve state waters, for man's use and the sustainment and propagation of wildlife and aquatic life, through focused research, responsible regulation, widespread education, and cooperation with other agencies and the public."

Examples of Education Materials are as follows:

- *Non-Point Source Pollution, Problems and Solutions* brochure.
- *Planning and Design Manual for the Control of Erosion, Sediment and Stormwater*
- *Its Up to Us* video on erosion, stormwater and sediment control
- *Oh Give Me a Home* a lesson plan package and video for grades K-6
- *The Unclear Future of Clear Creek* a video for grades 7-12
- *Silviculture Best Management Practices for Mississippi Manual* (for layman)
- *Silviculture Best Management Practices for Mississippi Manual* (for technical people)
- *How to Conduct a Storm Drain Stenciling Program* brochure
- *Mississippi Environment* magazine
- *Mississippi Wellhead Protection Program* brochure
- *Or Little River* (video only)
- *A Citizen's Guide to Reducing Urban NPS Pollution* brochure
- *H2O Facts – What You Can Do to Help Reduce Non-Point Source Pollution* (fact sheet)
- *Agriculture NPS Problems and Solutions* (fact sheet)
- *Farmers Improving Water Quality* brochure
- *Animal Waste Control Facility Improving Water Quality*
- *Urban Non-Point Source Pollution* Poster
- *Urban Non-Point Source Pollution, Causes and Solutions.* A Citizen's Guide (video only)
- *Non-Point Source News, The Urban NPS Pollution Newsletter.*
- *Procedure for Plugging Shallow Agriculture Wells in the Delta* brochure

Contact:

Mississippi Department of Environmental Quality
Office of Pollution Control
State NPS Coordinator
(601) 961-5171

Attachment B
NEMO – Non-Point Education for Municipal Officials Project

NEMO is a program dedicated to the protection of natural resources. The key focus of the program is to educate municipalities and counties on managing land use in order to protect natural resources, community character, and long-term economic well-being. The NEMO program targets political officials making decisions on land use within county and municipal governments and provides an education of prevention regarding non-point source pollution.

The original program began in Connecticut, and the group consisted of professionals such as biologist, GIS specialist, water quality specialist, marine specialist, and other scientific specialties from the University of Connecticut. NEMO was originally the pilot program to assist the coastal towns of Connecticut in managing the issue of non-point source pollution. Today NEMO has assisted nearly all the 169 municipalities in the state of Connecticut and has received numerous awards for their activities.

NEMO began in the state of Connecticut; however, the USDA Cooperative State Research, Education, and Extension service as well as the EPA Office of Water support it. NEMO offers an advisory panel to help provide solutions and ideas for other groups nationally. The Mississippi Department of Environmental Quality is promoting the NEMO Program and will work with counties throughout the state

NEMO provides decision-making groups a source of information that is non-partisan and is influenced by sound scientific practices as opposed to political, advocacy, or budgetary persuasions.

Contact:

Non-Point Education for Municipal Officials
Jim Gibbons, Project Director
jgibbons@canr.cag.uconn.edu
http://www.nemo.uconn.edu

Mississippi Department of Environmental Quality
Office of Pollution Control
James MacClellan, Environmental Engineer
(601) 961-5376

Attachment C

Mississippi Non-Point Source Management Program (2000 Update)

The **Mississippi Non-Point Source Management Program** establishes a statewide strategic plan to address current and future non-point source pollution. The program encourages a watershed approach and has the following mission: "to conserve and improve state waters, for man's use and the sustainment and propagation of wildlife and aquatic life, through focused research, responsible regulation, widespread education, and cooperation with other agencies and the public." Partners involved in the Mississippi Non-point Source Management Program are MS Forestry Commission, MS Economic and Community Development, MS Department of Archives and History, MS Emergency Management Agency, MS Soil and Water Conservation Commission, Institute of Higher Learning/MARIS/MS Educational and Research Center, MSU Cooperative Extension Service, MS Department of Marine Resources, MS Department of Health, MS Department of Agriculture and Commerce, MSU Water Resources Research Institute, MS Department of Transportation, MS Oil and Gas Board, Pat DeSoto Waterway District, Pearl River Water Supply District, Pearl River Basin Development District, and the Yazoo-MS Joint Water Management District. Examples of education programs and other activities to reduce non-point sources included in the program are as follows:

- *Conservation Reserve Program*
- *Environmental Quality Incentives Program*
- *Wetlands Reserve Program*
- *Operation FUEL*
- *Delta Farmers Advocating Resources Management*
- *Nutrient Management and Water Quality Initiatives*
- *Animal Waste Management Initiatives*
- *Mississippi Waste Pesticide Disposal Program*
- *Mississippi Pesticide Container Recycling Program*
- *Farm-A-Syst/Home-A-Syst Education Programs*
- *Water Quality Education Programs for Youth*
- *In-Service Training Programs*
- *Recycling Initiatives*
- *Special Water Quality Programs*
- *State and Regional Water Quality Linkages*
- *Well Water Testing and Education Program*
- *Programs for Aerial Applicators*
- *AgChem Monitoring Program*
- *Mississippi Delta Management Systems Evaluation Areas Project*

Contact:

Mississippi Department of Environmental Quality
Office of Pollution Control
State NPS Coordinator
(601) 961-5171

Attachment D

Storm Drain Stenciling Program

Storm drain stenciling programs involve labeling storm drain inlets with painted message. Messages heed warning to citizens not to dump pollutants into the drains. Such programs should be focused in areas where sensitive waters or high pollutant loading from storm drains has been identified. The benefits of a storm drain stenciling programs are that they are effective, inexpensive, and easy to implement. Volunteer groups are often enlisted to assist with the stenciling activities. Several sources exist for stenciling resources, such as sources for materials and example projects from different areas.

There are many benefits of the storm drain stenciling programs. They are Effective, inexpensive, and easy to implement. Costs are generally low and depend on the type of signage used.

There are a few limitations. There is safety concern. If spray painting – make sure standards are met for air quality. Another limitation is that the drains must repainted after years of weather and traffic.

Contact:

Adopt-A-Stormdrain
(310) 374-8212
adoptastormdrain.com

Attachment E

Adopt-A-Stream Program

The **Adopt-A-Stream** foundation teaches people to be stewards of their watersheds through environmental education programs and habitat restoration. The Mississippi Adopt-A-Stream is a program to involve citizens in stream stewardship and water quality monitoring. The goal of the program is stimulate a sense of ownership and pride in Mississippi's streams along with educating the public, collecting date, and preparing people for water quality enhancement action.

The program is sponsored by the Mississippi Department of Environmental Quality and supported by the Mississippi State University Coastal Research and Extension Center, Mississippi Wildlife Federation, ChevronTexaco, and the Mississippi Museum of Natural Science. The Mississippi Department of Environmental Quality provides workshops for volunteers adopting streams. Groups such as educators, industry representatives, government representatives, and civic organizations all can participate in the program. The Adopt-A-Stream program includes many different types of volunteer groups, and it provides valuable research date through volunteered monitoring.

Contact:

Mississippi Department of Environmental Quality
Office of Pollution Control
Adopt-A-Stream Coordinator
(601) 961-5394

STORMWATER PROGRAM APPENDICES

APPENDIX 1

COLLECTION PROGRAMS AND CLEAN-UP EVENTS

DeSoto County

- Cleanup along roads and ditches occur perpetually with seven inmates supervised by one deputy.
- A Cleanup event sponsored by DeSoto County with DEQ participation is held on a yearly basis
- Recycling Facilities for motor oil , tires, appliances, aluminum, metal, plastic and paper are as follows:

    1. Central Maintenance at 2339 Gwynn Road in Nesbit, MS - motor oil, tires, appliances, and paper
    2. Getwell Methodist Church on Getwell Road in Southaven, MS – paper, aluminum, metal, and plastic
    3. Oak Grove Elementary on Oak Grove Road in Hernando, MS – paper, aluminum, metal, and plastic
    4. District Barn #1 at 10947 Old Highway 78 in Olive Branch, MS – motor oil
    5. District Barn #3 at 5700 Delta View in Lake Cormorant, MS – motor oil
    6. District Barn #4 at 8155 Bogan Lane in Hernando, MS – motor oil
    7. 21 Paper Recycling Receptacle Locations in DeSoto County

APPENDIX 2

EROSION CONTROL ORDINANCES

DeSoto County

Article VI Section E Item 9 of Subdivision Ordinance

APPENDIX 3

MUNICIPAL OPERATIONS THAT IMPACT STORMWATER

DeSoto County

- Rubbish Landfills, pipe and inlet replacements, ditch repair, maintenance shops, rubbish pits, and gravel pits.

- List of athletic fields

  Eudora softball field 9341 Hwy 304 Hernando, Ms.

  301 Park & Ball Park 301 & Goodman.

  Fairview ball park at 13000 Red Banks Rd. Byhalia, Ms.

  Softball field at 3300 Old Highway 61