

# STATE OF TENNESSEE



## NPDES PERMIT

**No. TNS068276**

Authorization to discharge under the  
National Pollutant Discharge Elimination System (NPDES)

Issued By

**Tennessee Department of Environment and Conservation  
Division of Water Pollution Control  
401 Church Street  
6th Floor, L & C Annex  
Nashville, Tennessee 37243-1534**

Under authority of the Tennessee Water Quality Control Act of 1977 (T.C.A. 69-3-101 et seq.) and the delegation of authority from the United States Environmental Protection Agency under the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977 (33 U.S.C. 1251, et seq.)

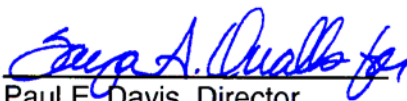
Discharger: **City of Memphis Municipal Separate Storm Sewer System**

is authorized to discharge storm water runoff, in accordance with the following storm water quality management program(s), effluent limitations, monitoring requirements and other provisions as set forth in Parts I through IX herein, from all portions of the MS4, owned or operated by any permittee listed above, to Waters of the State of Tennessee.

This permit shall become effective on: **August 1, 2003**

This permit shall expire on: **June 30, 2008**

Issuance date: **June 30, 2003**

  
Paul E. Davis, Director  
Division of Water Pollution Control

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**PART I**

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**DISCHARGES AUTHORIZED UNDER THIS PERMIT**

**A. PERMIT AREA**

This permit covers all areas located within the corporate boundary of The City of Memphis, located in Shelby County, Tennessee.

**B. AUTHORIZED DISCHARGES**

Except for discharges prohibited under Part I(E), this permit authorizes existing or new storm water point source discharges to Waters of the State of Tennessee from those portions of the Municipal Separate Storm Sewer System (MS4) owned or operated by The City of Memphis.

**C. PERMITTEES**

The following parties are permittees subject to the limits and conditions of this permit:

**The City of Memphis, Shelby County, Tennessee**

Note: References to "permittee" in this permit include each of the parties cited above.

**D. RESPONSIBILITIES OF PERMITTEES**

1. Each permittee is individually responsible for the following:
  - a. compliance with permit conditions relating to discharges from portions of the MS4 where they are the operator;
  - b. implementing the Storm Water Management Program (SWMP) on portions of the MS4 where they are the operator;
  - c. where permit conditions are established for specific portions of the MS4, the permittee need only comply with the permit conditions relating to those portions of the MS4 for which they are the operator; and,
  - d. a plan of action to assume responsibility for implementation of storm water management and monitoring programs on their portions of the MS4 should inter-

jurisdictional agreements allocating responsibility between permittees be dissolved or in default.

2. Each permittee is jointly responsible for:
  - a. submission of annual reporting requirements as specified in Part VI(A);
  - b. collection of monitoring data as required by Part V, and according to such agreements as may be established between the permittees; and,
  - c. insuring implementation of system-wide management program elements, including any system-wide public education efforts.
3. Specific permittees are jointly responsible for compliance with the permit on portions of the MS4 where:
  - a. operational authority or authority to implement SWMPs over portions of the MS4 have been transferred from one permittee to another in accordance with legally binding interagency or inter-jurisdictional agreements. Both the owner and operator are jointly responsible for permit compliance on those portions of the MS4 referenced in such agreements unless specific responsibility provisions have been otherwise outlined in the agreements.

## **E. LIMITATIONS ON COVERAGE**

The following discharges are not authorized by this permit:

1. Discharges of non-storm water, except where such discharges are as follows:
  - a. in compliance with a separate NPDES permit (or the discharger has applied for such a permit); or,
  - b. identified by and in compliance with 40 CFR 122.26(d)(2)(iv)(B)(1); and,
2. Discharges of materials resulting from a spill, except emergency discharges required to prevent imminent threat to human health or to prevent severe property damage, provided reasonable and prudent measures have been taken to minimize the impact of the discharges.

**PART II**

**DEFINITIONS**

**A. A THROUGH DD**

Definitions contained in the Tennessee Water Quality Control Act and Federal NPDES rules apply where one is not specified below. Unless otherwise specified in this permit, additional definitions of words or phrases used in this permit are as follows:

**A.** “Best Management Practices”, or “BMPs” means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control storm water runoff.

**B.** “CWA” means Clean Water Act, also referred to as “the Act” (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub.L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. 6-483 and Pub. L. 97-117, 33 U.S.C. 1251, et.seq., as amended by the WQA of 1987, P.L. 100-4, the “Act.”

**C.** “Director” means the Director of the Tennessee Division of Water Pollution Control, or an authorized representative of that position.

**D.** “Discharge” for the purpose of this permit, unless indicated otherwise, refers to discharges from the Municipal Separate Storm Sewer System (MS4).

**E.** “Flow-weighted composite sample” means a composite sample consisting of a mixture of aliquots collected at a constant time interval, where the volume of each aliquot is proportional to the flow rate of the discharge at the time of sampling.

**F.** “Hot spot” means an area where land use or activities generate highly contaminated runoff, with concentrations of pollutants in excess of those typically found in storm water. Examples might include operations producing concrete or asphalt, auto repair shops, auto supply shops, large commercial parking areas, restaurants, **automobile salvage yards, both active and abandoned, metal recycling operations, both active and abandoned, and active or abandoned landfills.**

**G.** “Illicit connection” means any man-made conveyance connecting a non-storm water discharge directly to a municipal separate storm sewer system.

**H.** “Illicit discharge” means any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and other discharges referenced in 40 CFR 122.26(d)(2)(iv)(B)(1).



- I.** “Industrial Land Use” means land utilized in connection with manufacturing, processing, or raw materials storage at facilities identified under 40 CFR 122.26(b)(14).
- J.** “Landfill” means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit, surface impoundment, injection well, or waste pile.
- K.** “Large Municipal Separate Storm Sewer System” means all municipal separate storm sewers that are either:
- (i)** located in an incorporated place (city) with a population of 250,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and G of 40 CFR Part 122); or,
  - (ii)** located in the counties with unincorporated urbanized populations of 250,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties (these counties are listed in Appendices H and I of 40 CFR Part 122); or,
  - (iii)** owned or operated by a municipality other than those described in paragraph (i) or (ii) and that are designated by the Director as part of the large municipal separate storm sewer system.
- L.** “Maintenance” on the municipal separate storm sewer system and associated structural storm water controls includes activities such as inspections of basins and ponds; mowing grass filter strips; regular removal of litter and debris from dry ponds, fore bays and water quality inlets; periodic stabilization and revegetation of eroded areas; periodic removal and replacement of **filter** media from infiltration trenches and filtration ponds; deep tilling of infiltration basins to maintain capacity; vacuuming or jet hosing of porous pavement or concrete grid pavements; removal of litter and debris from wet weather conveyances and catch basins.
- M.** “Medium Municipal Separate Storm Sewer System” means all municipal separate storm sewers that are either:
- (i)** located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and G of 40 CFR Part 122); or,
  - (ii)** located in the counties with unincorporated urbanized populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties (these counties are listed in Appendices H and I of 40 CFR Part 122); or,
  - (iii)** owned or operated by a municipality other than those described in paragraph (i) or (ii) and that are designated by the Director as part of the medium municipal separate storm sewer system.
- N.** “MEP” is an acronym for “Maximum Extent Practicable”, the technology-based discharge standard for Municipal Separate Storm Sewer Systems established by CWA §402(p). MEP is achieved, in part, by selecting and implementing effective BMPs and rejecting applicable BMPs only when the BMPs would not be technically feasible, or the cost would be prohibitive and unreasonable.

**O.** “MS4” is an acronym for “municipal separate storm sewer system” and is used to refer to either a Large or Medium Municipal Separate Storm Sewer System (e.g. “The City of Memphis - MS4”).

**P.** “Municipal Separate Storm Sewer” means a conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, and storm drains):

**(i)** owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State Law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State Law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian Tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;

**(ii)** designed or used for collecting or conveying storm water;

**(iii)** which is not a combined sewer; and

**(iv)** which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

**Q.** “Permittee” means each individual co-applicant for an NPDES permit who is only responsible for permit conditions relating to the discharge that they own or operate. (Also, See 40 CFR 122.2)

**R.** “Priority construction activity” shall be defined by the MS4, but shall include, at a minimum, construction sites of **one** acre or more, discharging directly into, or immediately upstream of, waters the state recognizes as impaired (for siltation) or high quality waters.

**S.** “Outfall” means a *point source*, as defined in subpart Q below, at the point where a municipal separate storm sewer discharges to waters of the State of Tennessee and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels or other conveyances which connect segments of the same stream or other waters of the State and are used to convey waters of the State.

**T.** “Point Source” means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

**U.** “Severe property damage” means substantial physical damage to property, damage to the treatment facility which causes it to become inoperable, or substantial and permanent loss of natural resources.

**V.** “Storm Sewer”, unless otherwise indicated, refers to a municipal separate storm sewer.

**W.** “Storm Water” means storm water runoff, snowmelt runoff, surface runoff and drainage.

**X.** “Storm Water Discharge Associated with Industrial Activity” is defined at 40 CFR 122.26(b)(14).

**Y.** “Storm Water Management Program,” or “SWMP,” refers to a comprehensive program to manage the quality of storm water discharged from the municipal separate storm sewer system. For the purposes of this permit, the Storm Water Management Program is considered a single document, but may actually consist of separate programs (e.g. “chapters”) for each permittee.

**Z.** “Storm Water Management Manual,” is a set of local guidelines, requirements, or design criteria applicable to new development or redevelopment as defined by the permittee.

**AA.** “Time-weighted composite” means a composite sample consisting of a mixture of equal volume aliquots collected at a constant time interval.

**BB.** “Waters of the state” or simply “waters” is defined in the Tennessee Water Quality Control Act and means any and all water, public or private, on or beneath the surface of the ground, which are contained within, flow through or border upon Tennessee or any portion thereof except those bodies of water confined to and retained within the limits of private property in single ownership which do not combine with or effect a junction with natural surface or underground waters.

**CC.** “Water priority chemicals” means chemicals or chemical categories that are listed at 40 CFR 372.65 pursuant to EPCRA Section 313; and meet at least one of the following three criteria: i. are listed in Appendix D of 40 CFR Part 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols), or Table V (certain toxic pollutants and hazardous substances); ii. are listed as a hazardous substance pursuant to Section 311 (b)(2)(A) of the CWA at 40 CFR 116.4; or iii. are pollutants for which EPA has published acute or chronic toxicity criteria. This list of substances is available from the Division of Water Pollution Control, and is printed in the Federal Register on September 29, 1995, in Addendum F to the EPA’s Notice of NPDES Storm Water Multi-Sector General Permit for Industrial Activities.

**DD.** “Wet weather conveyances” are man made or natural watercourses, including natural watercourses that have been modified by channelization, that flow only in direct response to precipitation runoff in their immediate locality and whose channels are above the groundwater table and which do not support fish and aquatic life and are not suitable for drinking water supplies. (Taken from State Water Quality Control Board Rule 1200-4-3-.04 (4)).

**PART III**

**PERMIT CONDITIONS**

**A. AUTHORIZATION**

The permittee is authorized to discharge storm water runoff, in accordance with the following storm water quality management program(s), effluent limitations, monitoring requirements and other provisions as set forth in Parts I through VIII herein, from all portions of the MS4, owned or operated by any permittee listed above, to Waters of the State of Tennessee.

**B. STORM WATER MANAGEMENT PROGRAM (SWMP) ELEMENTS, 40 CFR 122.26(D)(2)(IV)**

The following activities, programs, and goals are required according to the implementation schedule shown. This SWMP shall reduce the discharge of pollutants to the Maximum Extent Practicable (MEP) and shall not cause or contribute to violations of State water quality standards of the receiving streams.

In the tables below, the “unit of measure” refers to the parameter by which the permittee shall measure whether or not a BMP is being implemented and/or to what extent. The “annual goal” represents the value that must be achieved in order for the permittee fully to meet the permit requirement with respect to that BMP.

**Section 1: Public Education and Outreach**

DESCRIPTION	UNIT OF MEASURE	ANNUAL GOAL	IMPLEMENTATION SCHEDULE
<p>The permittee shall continue a public education program, <b>that may include</b>: making educational materials available to the community; public service announcements; promotion in the news media; outreach activities about the impacts of storm water discharges on water bodies; and steps that the public can take to reduce pollutants in storm water runoff. The education <b>may</b> include proper storage, disposal, and possible harmful effects of pesticides, herbicides, and fertilizers on local streams.</p>			
<p>Brochure or fact sheet distribution.</p> <ul style="list-style-type: none"> <li>• Identify <b>types of</b> hot spots.</li> <li>• Develop materials focused on types of hot spots (e.g. restaurants, auto repair shops, etc) and watershed specific</li> </ul>	<p>Are adequate references available?</p> <p>Have materials been developed?</p>	<p>Yes</p>	<p>Identify needs annually and develop materials as needed.</p>

<p>situations.</p> <ul style="list-style-type: none"> <li>• Including information for used oil turn-in locations.</li> </ul>			
Speaking engagements and event participation.	Number of engagements and events.	12	Annually
<p>Student Education Programs.</p> <ul style="list-style-type: none"> <li>• Copies of materials will be made available to the school system for use in classroom settings or to schoolchildren in other settings.</li> </ul>	Are materials available to students?	Yes	<ul style="list-style-type: none"> <li>• Develop materials within one year.</li> </ul>
<p>Storm Drain Stenciling.</p> <ul style="list-style-type: none"> <li>• The city will examine the possibility of requiring the use of metal inlet covers for the installation of new inlets and the repair of existing inlets.</li> <li>• Painted and plastic disc storm drain stencils not favored due to the potential for pollution.</li> </ul>	Was research into appropriate storm drain markings conducted?	NA	Within 1 year
<p>Watershed Cleanups.</p> <ul style="list-style-type: none"> <li>• The city will participate in litter or other cleanups throughout the city.</li> <li>• Participation may include such activities as organizing, advertising, staffing, or providing supplies for the cleanups.</li> </ul>	Cleanups participated.	2	Annually
Distribute press releases to TV, radio, and printed media. Press releases will be targeted to specific media at specific times of the year to maximize public outreach opportunities.	Number of different releases distributed.	10	Annually
Maintain public awareness of hot line and/or other systems for reporting illicit discharges and spills.	Are public awareness efforts followed? E.g., PSAs, signs, hotline, printed material, etc.	Yes	Immediately

**Section 2: Public Participation/ Involvement**

DESCRIPTION	UNIT OF MEASURE	ANNUAL GOAL	IMPLEMENTATION SCHEDULE
Storm water public meetings. <ul style="list-style-type: none"> <li>Hold storm water public meetings. Allow residents to discuss various viewpoints and provide input concerning appropriate storm water management policies and BMPs.</li> </ul>	Number of meetings	2	Annually
Provide notice of public meeting in several different media.	Number of meetings publicized	2	Annually
Organize a citizen's task force to address a specific storm water issue, such as illegal dumping. Actual accomplishments depend on public's involvement.	Was a task force organized?	Yes	As needed

**Section 3: Illicit Discharge Detection and Elimination**

DESCRIPTION	UNIT OF MEASURE	ANNUAL GOAL	IMPLEMENTATION SCHEDULE
<p>The city shall continue a program to detect and eliminate illicit discharges (as defined in 40 CFR §122.26(b)(2)) into the MS4. This program shall promote, publicize and facilitate public reporting of the presence of illicit discharges and water quality impacts associated with discharges into or from the MS4. The program <b>may</b> include a system of field screening in priority areas. The program shall effectively prohibit, through ordinance, or other regulatory mechanism, non-storm water discharges into the storm sewer system and shall provide for appropriate enforcement procedures and actions.</p>			
Illicit discharge detection. <ul style="list-style-type: none"> <li>Develop and describe a field-screening program, <b>based on problem-oriented priorities.</b></li> <li>Include at a minimum commercial and industrial areas on impaired waters, <b>based on problem-oriented priorities.</b></li> <li>Implement field screen</li> </ul>	Program described; resources available to implement the program.	Yes	As warranted
	Priority areas identified.	Yes	As warranted
		Yes	Beginning second year <b>as warranted</b>

program, <b>based on problem-oriented priorities.</b>			
Illicit discharge tracking.	Did the city attempt to track down releases?	Yes	Annually
Illicit discharge elimination.	Percentage of illicit discharges eliminated or under enforcement.	75% of detected discharges.	Annually
Storm Water Pollution Complaints. <ul style="list-style-type: none"> <li>Public education concerning reporting complaints.</li> <li>Resolve complaints by correcting water quality problems.</li> <li>Track complaints and report to TDEC.</li> </ul>	NA  Percentage of complaints resolved.  Number of complaints	75%  NA	Annually
Storm system mapped in annexed areas.	Percent of system mapped.	50%	Mapping of available data completed within two years of annexation.
Infiltration of seepage from <b>private</b> sanitary sewers to the MS4 <ul style="list-style-type: none"> <li><b>Enforce prohibition of discharge from private sanitary sewers to the MS4</b></li> </ul>	Yes/No	<b>Enforcement implemented</b>	<b>Immediately begin prohibition enforcement.</b>
Inspection of industrial and commercial facilities. <ul style="list-style-type: none"> <li>Maintain procedures and authority to prohibit contamination of storm water runoff from hot spots.</li> <li>Perform site inspections based on problem-oriented priorities.</li> </ul>	Yes/No  Yes/No	Yes  Keep records.	Immediately

**Section 4: Construction Site Runoff Control**

DESCRIPTION	UNIT OF MEASURE	ANNUAL GOAL	IMPLEMENTATION SCHEDULE
<p>The city must continue to implement and enforce a program to reduce pollutants in any storm water runoff to your small MS4 from construction activities, including 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. The program must include, at a minimum:</p>			
<p>Ordinance or other regulatory mechanism to <b>require erosion prevention and sediment controls</b> on above-described construction activities, <b>or other appropriate measures.</b></p>	<p>Ordinance in place</p>	<p>Yes</p>	<p><b>1 year</b></p>
<p>Maintain existing erosion prevention and sediment control guide, containing standards and design details for BMP plans; <b>or adopt TDEC guide.</b></p>	<p>Guide in place, available</p>	<p>Yes</p>	<p>Immediately</p>
<p>Training for construction site operators</p> <ul style="list-style-type: none"> <li>• Develop program to ensure that operators of construction sites within the city are trained in EPSC.</li> </ul>	<p>Program developed. Procedures implemented.</p>	<p>Yes</p>	<p>Within 18 months.</p>
<p>Plans review.</p> <ul style="list-style-type: none"> <li>• Describe procedure for plans review; including activities of 1 acre or more.</li> <li>• <b>Include developed procedure in first year annual report.</b></li> <li>• Review plans.</li> <li>• <b>The plans review must require that any state/NPDES permits have been obtained.</b></li> </ul>	<p>Written procedure.</p> <p>Procedure and standards included</p> <p>Percentage of plans reviewed.</p>	<p>Yes</p> <p>Yes</p> <p>90%</p>	<p>Within first year</p> <p>Within first year</p> <p>Annually</p>



<p>Conduct inspections of construction activities.</p> <ul style="list-style-type: none"> <li>• Define and recognize priority construction activity.</li> <li>• Conduct inspections of priority construction activities at least quarterly</li> <li>• Perform inspections in response to complaints</li> </ul>	<p>Definition and priorities described.</p> <p>% of inspections of priority construction activities</p> <p>% of inspections on sites for which complaint is received</p>	<p>Yes</p> <p>75%</p> <p>90%</p>	<p>Within one year</p> <p>Quarterly, beginning year two</p> <p>Annually</p>
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**Section 5: Post- Construction Runoff Control**

DESCRIPTION	UNIT OF MEASURE	ANNUAL GOAL	IMPLEMENTATION SCHEDULE
<p>The permittee 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 the city's MS4. The program must ensure that controls are in place that would prevent or minimize water quality impacts. The program must include:</p>			
<p>A regulatory mechanism to require structural and/or non-structural best management practices (BMPs); e.g., site-specific BMPs to be installed in areas based on problem oriented priorities as determined by the permittee.</p>	<p>Program defined and included in regulatory procedures</p>	<p>By end of second year.</p>	<p>Report progress in 1<sup>st</sup> year annual report; complete plan by the end of Year 2 of the permit.</p> <p>Begin implementation in first half of third year of permit</p>
<p>Development of technical standards for structural and/or non-structural best management practices (BMPs)</p>	<p>Manual developed</p>	<p>By end of second year</p>	<p>Report progress in 1<sup>st</sup> year annual report; complete plan by the end of Year 2 of the permit.</p>
<p>Site-specific BMP plan review.</p> <p>The city shall review plans submitted to the city to ensure that the BMPs are installed, which are designed to minimize water quality</p>	<p>Percent of submitted plans that are reviewed.</p>	<p>100%</p>	<p>Begin implementation in first half of third year of permit</p>

impacts of post construction runoff.			
The city must establish requirements that privately owned or operated <b>BMPs are</b> maintained. <ul style="list-style-type: none"> <li>• Including the necessary legal and enforcement authorities</li> <li>• Including maintenance criteria and detention policy</li> </ul>	Yes/No Requirements are developed, promulgated and made readily available.	Yes	By end of 2 <sup>nd</sup> year of permit term.
Issue letters to owners of BMPs requiring regular maintenance.	Percent of <b>known</b> structures for which letters were sent.	25%/year	Letters to be sent after the BMP inspection.
The city shall inspect installed structural BMPs.	Percent of <b>known</b> structures inspected.	25%/year	Each structure should be inspected for proper maintenance approximately once every four years.
Investigate the feasibility of regional BMPs.  The plan would investigate possible locations and the feasibility of using regional BMPs for water quality benefits.	Yes/No Report prepared.	Yes	By end of 2 <sup>nd</sup> year of permit term.
<b>Encourage</b> requirements to establish, protect and maintain water quality buffers in areas of new development and redevelopment.	Yes/No Requirements are developed, promulgated and made readily available.	Yes	By end of third year of permit

**Section 6: Pollution Prevention/ Good Housekeeping**

DESCRIPTION	UNIT OF MEASURE	ANNUAL GOAL	IMPLEMENTATION SCHEDULE
The city shall continue an operation and maintenance program, including training of municipal staff and contractors, that has the ultimate goal of preventing or reducing pollutant runoff from municipal operations.			
Develop pollution prevention plans for all applicable divisions of city government. All appropriate divisions will have pollution prevention plans.  Including plans for construction and maintenance of roads.	Percent of applicable divisions with pollution prevention plans.	50%/year	By the end of two years.
Water quality aspects of road construction and maintenance	These procedures are in place.  Review in the third year of the permit term.	Yes	By the end of year three.
Storm water training for applicable existing employees. All applicable employees will be trained. <ul style="list-style-type: none"> <li>• Training must include park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance.</li> </ul>	Percent of existing employees trained.	33%/year  100% new employees annually thereafter	By the end of the third year of permit term. Annually
Inspect city facilities for proper procedures to minimize storm water pollution. (Some critical facilities may be inspected more often and less critical facilities less often.)	Percent of facilities inspected.	25%/year	Inspection of all city operational facilities will be completed in approximately a four-year cycle.
Infrastructure inspection and maintenance procedures. <ul style="list-style-type: none"> <li>• Maintain and apply these procedures for maintenance of public infrastructure.</li> <li>• Review infrastructure</li> </ul>	Inspection and maintenance activities in place. Review completed;	Yes  Yes	According to schedule.  As needed; at least

inspection and maintenance procedures, for water quality benefits; and train staff on updates.	training completed.		once in year three and in year five.
<p>The permittee must consider the following activities in developing and implementing this program: maintenance activities, maintenance schedules, and long-term inspection procedures for structural and non-structural storm water controls to reduce floatables and other pollutants discharged from your separate storm sewers; controls for reducing or eliminating the discharge of pollutants from streets, roads, highways, municipal parking lots, maintenance and storage yards, fleet or maintenance shops with outdoor storage areas, salt/sand storage locations and snow disposal areas operated by the city, and waste transfer stations; procedures for properly disposing of waste removed from the separate storm sewers and areas listed above (such as dredge spoil, accumulated sediments, floatables, and other debris); and ways to ensure that new flood management projects assess the impacts on water quality and examine existing projects for incorporating additional water quality protection devices or practices. Operation and maintenance must be an integral component of all storm water management programs. This measure is intended to improve the efficiency of these programs and require new programs where necessary. Properly developed and implemented operation and maintenance programs reduce the risk of water quality problems.</p>			

**C. AREA-SPECIFIC SWMP REQUIREMENTS**

**Watersheds for which fecal coliform TMDLs have been promulgated**

The permittee shall incorporate the following into its storm water quality management program, with respect to these watersheds:

- i. Monitoring to identify the nature of the fecal coliform contamination;
- ii. Field screening or other methods of surveillance and assessment to identify sources of pathogens; and specifically,
- iii. An **evaluation** of the integrity of private infrastructure and estimate of scope of seepage and loading to the MS4 as a result of such seepage (see III. B. 3.);
- iv. A system whereby **owners of** leaking privately-owned sewer lines are **notified based on problem oriented priorities** and repaired, including guidance for owners of private property sewer lines;
- v. Taking actions to remedy **identified** sources; and
- vi. A program of discharge and stream monitoring to verify the effectiveness of pollution reduction measures.

**D. RECEIVING WATER LIMITATIONS**

This SWMP shall reduce the discharge of pollutants to the Maximum Extent Practicable (MEP) and shall not cause or contribute to violations of State water quality standards of the receiving streams. If exceedance(s) of water quality objectives or water quality standards

(collectively, WQS) persist notwithstanding implementation of the SWMP and other requirements of this permit, the permittees shall comply with the following procedure:

a. Upon a determination by either the permittees or the Division of Water Pollution Control that discharges are causing or contributing to an exceedance of an applicable WQS, the permittees shall promptly notify and thereafter submit a report to the division that describes BMPs that are currently being implemented and additional BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedance of WQSs. The report may be incorporated in the annual update to the SWMP unless the division directs an earlier submittal. The report shall include an implementation schedule. The division may require modifications to the report.

b. Submit any modifications to the report required by the division within 60 days of notification.

c. Within 60 days following approval of the report described above by the division, the permittees shall revise the SWMP and monitoring program to incorporate the approved modified BMPs that have been and will be implemented, implementation schedule, and any additional monitoring required.

d. Implement the revised SWMP and monitoring program in accordance with the approved schedule. So long as the permittees have complied with the procedures set forth above and are implementing the revised SWMP, the permittees do not have to repeat the same procedure where continuing or recurring exceedances of the same water quality standards unless directed by the division to develop additional BMPs.

## **E. ROLES AND RESPONSIBILITIES OF PERMITTEE**

The storm water management program, together with any attached interagency agreements or interagency agreements developed subsequent to the effective date of the permit, shall clearly identify the roles and responsibilities of each permittee. Following the effective date of the permit, interagency agreements developed and implemented must be included in the Annual Report that covers the permit year in which the agreement became effective.

## **F. LEGAL AUTHORITY**

To the extent allowed by law, each permittee shall ensure legal authority to control discharges to and from those portions of the MS4 over which it has jurisdiction. This legal authority may be a combination of statute, ordinance, permit, contract, order or inter-jurisdictional agreements between permittees with adequate existing legal authority to accomplish items i.-vi. below:

- i. to control the contribution of pollutants to the MS4 by storm water discharges associated with industrial activity and the quality of storm water discharged from sites of industrial activity;

- ii. to prohibit illicit discharges to the MS4;
- iii. to control the discharge of spills and the dumping or disposal of materials other than storm water (e.g. industrial and commercial wastes, trash, used motor vehicle fluids, leaf litter, grass clippings, animal wastes, etc.) into the MS4;
- iv. to control through interagency or inter-jurisdictional agreements between the City of Memphis and related MS4 permittees, if any, the contribution of pollutants from one portion of the MS4 to another;
- v. to require compliance with conditions in ordinances, permits, contracts or orders; and
- vi. to carry out all inspection, surveillance and monitoring procedures necessary to determine compliance with permit conditions.

## **G. SWMP RESOURCES**

Each permittee shall provide adequate finances to implement their activities under the Storm Water Management Program. Each permittee shall also have a source of funding for implementing all other requirements included within this NPDES storm water permit.

## **H. SWMP REVIEW AND MODIFICATION**

### **1. *Program Review***

Each permittee shall participate in an annual review of the current Storm Water Management Program (SWMP) in conjunction with preparation of the Annual Report required under subparts VII(A), (B), and (C) of this permit.

### **2. *Program Modification***

The permittee(s) may modify the SWMP during the life of the permit in accordance with the following procedures:

- a. Modifications that add, but neither subtract nor replace, components, controls, or requirements to the approved SWMP may be made by the permittee(s) at any time. A description of the modification shall be included in the subsequent Annual Report.
- b. Modifications that replace an ineffective or infeasible BMP, which is specifically identified in the SWMP along with an alternate BMP, may be made by the permittee(s) at any time. A description of the replacement BMP shall be included in the subsequent Annual Report along with the following information:



of the program in any new area shall consider the plans in the SWMP of the previous MS4 ownership.

Prior to annexation of land, the permittee shall include a schedule for extending the SWMP to the annexed areas. At least 30 days prior to transfer of operational authority or responsibility for implementing the SWMP, all parties shall prepare a single schedule for transfer of responsibility for implementing the SWMP on the affected portions of the MS4. This schedule shall be included in the Annual Report.

## **PART IV**

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### **SCHEDULES FOR IMPLEMENTATION AND COMPLIANCE**

#### **A. IMPLEMENTATION OF SWMP**

The SWMP shall be implemented on the schedule presented in Part III.B.

Except as noted otherwise in Part III.B., activities shall be implemented immediately.



**PART V**

**MONITORING REQUIREMENTS**

**A. WET WEATHER MONITORING**

**1. Purpose**

The permittee shall perform wet weather monitoring, as it determines necessary, to evaluate program compliance, the effectiveness of BMPs, and improvements to impaired waters.

**2. Monitoring parameters**

Monitoring parameters may be site-specific, but in the absence of a site-specific rationale, shall include the following parameters.

<b>TABLE V(1)</b>	
<b>PARAMETERS FOR WET WEATHER MONITORING</b>	
PH	biochemical oxygen demand (BOD <sub>5</sub> )
total suspended solids (TSS)	chemical oxygen demand (COD)
total dissolved solids (TDS)	total recoverable cyanide
total ammonia nitrogen (as N)	total recoverable lead
total ammonia plus organic nitrogen	total recoverable zinc
nitrate plus nitrite nitrogen (as N)	dissolved phosphorus
total nitrogen	total phosphorus
<b>SPECIAL ANALYSES</b>	
fecal coliform (1 storm/year)	<i>E. Coli</i> (1 storm/year)

**3. Sites**

Sites are to be determined according to the purpose statement above.

## **B. IN-STREAM AMBIENT MONITORING**

### **1. Development of Program**

The permittees shall maintain its existing ambient monitoring program or submit to the division a revised program for review within six months of the effective date of this permit. The division will have 30 days to review the proposed program before permittees begin sampling.

### **2. Monitoring locations and frequencies**

a. Monitoring sites shall be as follows, unless the division specifies other sites:

- Nine sites, as recorded in the fifth year annual report of 2001, in the Nonconnah Creek watershed
- Seven sites, as recorded in the fifth year annual report of 2001, in the Wolf River watershed
- Six sites, as recorded in the fifth year annual report of 2001, in the Loosahatchie River watershed
- One site, as recorded in the fifth year annual report of 2001, in the South Cypress Creek watershed

b. Monitoring frequency is monthly at all sites.

c. Monitoring sites may be temporarily moved due to access or flow issues, which will be indicated in the annual reports

d. Sampling methodology shall be according to the EPA storm water application regulations at 40 CFR 122.26 (November 16, 1990).

### **3. Monitoring Parameters**

a. Monitoring parameters shall include *E. Coli*, TSS, nitrate plus nitrite nitrogen, total phosphorous, total recoverable copper, and total recoverable lead.

### **4. Biological Sampling**

The City of Memphis shall continue a program of biological assessments of at least two urban streams. The city shall obtain approval from the division of the streams selected.

Sampling shall be performed **once during the permit term**, during the period August to October. The protocol for sampling shall be that found in EPA's Rapid Bioassessment protocols. The level of protocol for each sampling must be approved by the Director of the division.

**PART VI**

**REPORTING REQUIREMENTS**

**A. ANNUAL REPORTING**

**1. Preparation of annual report required**

**a.** Each permittee shall contribute to the preparation of an annual system-wide report to be submitted by no later than six months following the period covered by the report. The Annual Report shall cover the 12 month period beginning on the effective date of this permit and annually thereafter.

**b.** **The** permittee shall be responsible for providing information on the MS4 for which they are the operator and for providing information for the system-wide report in a timely manner. **The** permittee shall sign and certify the Annual Report in accordance with subpart VIII(K) of this permit, and shall include a statement or resolution that the permittee's governing body or agency (or delegated representative) has reviewed or has been appraised of the content of the Annual Report.

**c.** The Annual Report shall include the following sections:

- Contacts List
- SWMP Evaluation
- Summary Table
- Narrative Report
- Monitoring Section
- Summary of SWMP and Monitoring Modifications
- Fiscal Analysis
- Appendices

**2.** The following items describe in more detail the specific requirements for the Annual Report.

**a.** Provide a list of contacts and responsible parties (e.g.: agency, name, phone number) who had input to and are responsible for the preparation of the Annual Report.

**b.** Provide an overall evaluation of the Storm Water Management Program including: Objective of Program; Major Findings (e.g.: water quality improvements or degradation); Major Accomplishments; Overall Program Strengths / Weaknesses; and Future Direction of Program.

**c.** Provide a Summary Table of Storm Water Management Program Elements.

i. A Summary Table of appropriate SWMP annual activities for each permittee shall be provided. The purpose of the Summary Table is to document in a concise form the program activities and permittees' compliance status with quantifiable permit requirements. Program elements that are administrative (e.g.: planning procedures, program development and pilot studies) are inappropriate for the summary table and shall be discussed in the narrative section of the Annual Report. The following are examples of SWMP activities to be included in the Summary Table:

- (1) Structural Controls- maintenance and/or inspection activities of existing structural controls
- (2) Roadway Maintenance- street sweeping, litter control activities, and maintenance on storm water structures & roadside ditches
- (3) Municipal Waste Treatment, Storage, and Disposal (TSD) Facilities- inspections, monitoring, and implementation of control measures
- (4) Pesticide, Herbicide, and Fertilizer Application -certification training and public education
- (5) Illicits- facility inspections, investigations, enforcement actions, illicit (dry weather) screening, illicit public reporting, oil/household hazardous waste collection, and storm sewer inlet stenciling
- (6) High Risk Industrial Facilities- inspection activities and monitoring
- (7) Construction- training of inspectors, inspections, and enforcement actions
- (8) Storm Water Treatment Projects- description of municipal storm water treatment projects that have been completed, including a brief description of the affected drainage basin

ii. The Summary Table shall indicate each permittee's SWMP activities and accomplishments. The content of this information shall adhere to the example shown in Table VI(1) contained herein. Formatting of the table may vary. Items to be reported include:

- (1) Activity description;
- (2) Number of activities (with frequency) that were scheduled for implementation and/or accomplishment in program element discussion (i.e., once/6 months, 100%/5 years, 5 sites monitored once/year, all sites inspected/permit term). Enter "Not Applicable" (N/A) if no specific schedule was specified;

- (3) Status of schedule for year ("yes" for schedule was adhered to, or "no" for schedule was not adhered to);
- (4) Number of activities which were accomplished; and
- (5) The availability of documentation (i.e., inspection reports) for those activities which were accomplished and comments describing the reason(s) for any non-compliance.

**SAMPLE SUMMARY TABLE FOR STORM WATER MANAGEMENT  
 PROGRAM ELEMENT STATUS & COMPLIANCE (EXAMPLE ONLY)**  
**TABLE VI(I)**

PROGRAM ELEMENT	TASK	ACTIVITY SCHEDULE			Comments
		Activities Required by SWMP	Complied With?	Activities Accomplished During Calendar Year	
STRUCTURAL CONTROLS	Major channels inspected	15 channels, once/6 months	YES	15 channels, once/6 months	Copies of inspection report forms available upon request.
	Major channels maintained	As needed	N/A	7 channels maintained	
	Grate inlets inspected	1500 inlets, once/year	NO	1000 inlets	Ambitious projection. Reducing to 1000 next year due to resources.
	Detention ponds maintained	1 pond once/month	YES	1 pond once/month	Sediment removed after spring rains.
	Storm drain inlets inspected	35 inlets, once/6 months	YES	35 inlets, once/6 months	Copies of inspection report forms available upon request.
MONITORING	Municipal landfills	2 facilities, once/6 months	YES	2 facilities, once/6 months	Copies of inspection report forms available upon request.
	POTW's	3 facilities, once/year	NO	2 facilities	Copies of inspection report forms available upon request.
	Industrial - Hazardous	5 facilities, once/6 months	YES	5 facilities, once/6 months	Copies of inspection report forms available upon request.
	SARA Title III	3 facilities, once/6 months	YES	3 facilities, once/6 months	Copies of inspection report forms available upon request.
	Others	2 facilities, once/year	YES	2 facilities,	Copies of inspection report forms available upon request.
	Dry weather screening	100% system, once/5 years	YES	20% system	Copies of screening field reports - Appendix B.
	Floatable assessment	100 sections surveyed/year	YES	140 section surveyed	Copies of field survey available upon request.

d. The Annual Report shall contain a Narrative Report that succinctly discusses the SWMP Elements which were not included within the SWMP Summary Table. Those SWMP elements required to be developed under Parts III and IV of the permit shall be discussed within this section of the Annual Report following development.

i. The permittees shall include a brief discussion of the following applicable SWMP Elements:

- (1) Structural Controls Maintenance
- (2) Development Planning Procedures
- (3) Roadway Maintenance

- (4)** Flood Management
- (5)** Municipal Facilities
- (6)** Pesticides, Herbicides, and Fertilizers
- (7)** Illicits Inspection/Investigation/Enforcement
- (8)** Field Screening
- (9)** Investigation of illicit discharges where reasonable potential exists
- (10)** Spill Response
- (11)** Public Reporting of Illicit Discharges
- (12)** Oil and Household Hazardous Waste
- (13)** Sanitary Sewer Seepage
- (14)** High Risk Industrial Facility Inspection
- (15)** Monitoring program for high risk facilities
- (16)** Construction Planning Procedures
- (17)** Structural and non-structural BMPs
- (18)** Prioritizing of site inspections
- (19)** Educational activities

**ii.** The format for the Narrative Report section of the Annual Report shall be a brief discussion of the SWMP element. It may be in table form or a combination of a table and corresponding narrative to facilitate concise conveyance of the information. The aspects of each permittee's activities concerning a SWMP Element shall be succinctly discussed in the section of the Narrative Report dedicated to that element. The discussion shall include the following:

- (1)** Objective of SWMP Element;
- (2)** SWMP Element activities completed and those in progress;
- (3)** General discussion of element. Explanation of all Element activity deficiencies (e.g.: activities described in the program that have not been fully implemented or completed). Results of activities shall be summarized and discussed (e.g.: maintenance caused by inspection, pollutants detected by monitoring, investigations as a result of dry and wet weather screening, number and nature of enforcement items, education activities participation);
- (4)** Status of SWMP Element with compliance, implementation, and augmentation schedules in Part IV of the permit;
- (5)** SWMP Element strengths and weaknesses;
- (6)** Assessment of controls; including assessment of accuracy in recording and following up on investigations, in recording results of follow-up; and in providing estimates of pollutant loading, with a view toward setting up the system to report by program and at least by watershed, if not by outfall;

**(7)** Discussion of Element revisions that are summarized elsewhere in the Annual Report.

**e.** The Annual Report shall contain a Monitoring Section which discusses the progress and results of the monitoring programs required under Part V (Wet weather monitoring) of the permit.

**i.** If the default monitoring applies, the Monitoring Section of the Annual Report shall include the following information as required in subpart VI(A) of the permit:

**(1)** Inventory of all *known* major outfalls, with updates describing additionally identified major outfalls in each subsequent Annual Report;

**(2)** Estimates of seasonal pollutant loadings and event mean concentrations (EMC) for each major watershed required by Item V(A)(3) of the permit; the basis for estimates shall be clearly given; and

**(3)** Based on total rainfall for the year, imperviousness of different land uses, etc., an estimate of the total volume of urban runoff discharged in the City of Memphis for the year.

**ii.** The Monitoring Section of the Annual Report shall include a summary of the monitoring program developed and implemented under subpart V(B) (Ambient monitoring) of the permit. The details to be discussed include:

**(1)** For each of the Annual Reports, an explanation and rationale for the type of ambient monitoring program the permittee(s) conducted during the reporting period;

**(2)** Summary chart of the data from any monitoring completed;

**(3)** Discussion of any results or conclusions derived from the monitoring completed;

**(4)** For **one** of the Annual Reports, an explanation and rationale for a program of biological assessments of at least two urban streams during this **permit** period, the report shall include as appendices, the results of the assessments; and

**(5)** Discussion of monitoring program revisions that are summarized elsewhere in the Annual Report.

**f.** Provide a summary of the SWMP and modifications in the monitoring program made during the permit year.

**g.** List and discuss any changes that the permittee(s) is expected to make to the storm water management programs for the year following the report year.

- h.** Provide a fiscal analysis for each permittee's program implementation, both for the past calendar year and the next. The analysis shall indicate budgets and funding sources.
- i.** The following information shall be included as Appendices within the Annual Report:
  - i.** Analytical data collected from the monitoring program;
  - ii.** Results of illicit connections screening or dry weather screening; and
  - iii.** Any other data specifically requested by the division to substantiate statements and conclusions reached in the Annual Reports.

## **B. CERTIFICATION AND SIGNATURE REPORTS**

All reports required by the permit and other information requested by the Director shall be signed and certified in accordance with subpart VII(K) of the permit.

## **C. TIME AND PLACE OF REPORT SUBMITTAL**

- 1.** As required by subpart VI(A), monitoring results obtained during each annual reporting period beginning on the effective date of this permit and annually thereafter shall be submitted as a part of the Annual Report immediately following gathering of the results of the monitoring.
- 2.** Signed copies of the Annual Report required by subpart VI(A) and all other reports required herein, shall be submitted to:

Division of Water Pollution Control  
Attention: Compliance Review  
L & C Annex, 6th Floor  
401 Church Street  
Nashville, Tennessee 37243-1534

## **D. RETENTION OF RECORDS**

The permittees shall retain the latest version of the Storm Water Management Program developed in accordance with Part III of this permit for at least three years after the expiration date of this permit. The permittees shall retain all records of all monitoring information, copies of all reports required by this permit, and records of all other data required by or used to demonstrate compliance with this permit, until at least three years after the expiration date of



this permit. This period may be explicitly modified by alternative provisions of this permit or extended by request of the Director at any time.

## **PART VII**

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### **STANDARD PERMIT CONDITIONS**

#### **A. DUTY TO COMPLY**

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of applicable State and Federal laws and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

#### **B. DUTY TO REAPPLY**

The permittee is not authorized to discharge after the expiration date of this permit. If the permittee wishes to continue discharges after the expiration date, the permittee must reapply, with necessary information and forms, for reissuance of the permit, at least 180 days prior to the expiration date.

#### **C. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE**

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

#### **D. DUTY TO MITIGATE**

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

## **E. PROPER OPERATION AND MAINTENANCE**

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

## **F. PERMIT ACTIONS**

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

## **G. PROPERTY RIGHTS**

This permit does not convey any property rights of any sort in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

## **H. DUTY TO PROVIDE INFORMATION**

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Director upon request, copies of records required to be kept by this permit.

## **I. INSPECTION AND ENTRY**

The permittee shall allow the Director, or an authorized representative of the EPA, including a contractor acting as a representative of the EPA Administrator, upon presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by State law or the Clean Water Act, any substances or parameters at any location.

## **J. MONITORING AND RECORDS**

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
2. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.
3. Records of monitoring information shall include:
  - a. The date, place, and time of sampling or measurements;
  - b. The individual(s) who performed the sampling or measurements;
  - c. The date(s) analyses were performed;
  - d. The individual(s) who performed the analyses;
  - e. The analytical techniques or methods used; and
  - f. The results of such analyses.
4. Monitoring results must be conducted according to test procedures approved under 40 CFR part 136, unless other test procedures have been specified in the permit.
5. The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by fines and imprisonment described in Section 309 of the Clean Water Act.

## **K. SIGNATORY REQUIREMENTS**

1. All applications, reports, or information submitted to the Director shall be signed and certified.

**a. Applications**

All permit applications shall be signed (for a municipality, State, Federal, or other public agency) by either a principal executive officer or ranking elected official.

**b. Reports and other information**

All reports required by this permit, and other information requested by the Director shall be signed by a person described in subitem a of this section, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

**i.** The authorization is made in writing by a person described in subitem a of this section;

**ii.** The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of director or assistant director, manager or superintendent, or position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and

**iii.** The written authorization is submitted to the Director.

**c.** If an authorization under subitem b above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of sub-item b of this section must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

**d. Certification**

Any person signing a document under subitem a or b of this section shall make the following certification: 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 gather and evaluate the information submitted. Based on 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.

2. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

## **L. REPORTING REQUIREMENTS**

### **1. Planned changes**

The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in § 122.29(b); or

b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under § 122.42(a)(1).

c. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;

### **2. Anticipated noncompliance**

The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

### **3. Transfers**

This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the State law and the Federal Clean Water Act.

### **4. Monitoring reports**

Monitoring results shall be reported at the intervals specified elsewhere in this permit.

a. Monitoring results must be reported in an organized fashion in Annual Reports.

b. If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR part 136, or as specified in the

permit, the results of this monitoring shall be included along with required monitoring results.

c. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

## **5. Twenty-four hour reporting**

a. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

b. The following shall be included as information which must be reported within 24 hours under this paragraph.

i. Any unanticipated bypass which exceeds any effluent limitation in the permit. (See § 122.41(g).)

ii. Any upset which exceeds any effluent limitation in the permit.

iii. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. (See § 122.44(g).)

c. The Director may waive the written report on a case-by-case basis for reports under paragraph (L)(5)(ii) of this section if the oral report has been received within 24 hours.

## **6. Other noncompliance**

The permittee shall report all instances of noncompliance not reported under paragraphs (L) (4) and (5) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (L)(5) of this section.

## **7. Other information**

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

## **M. SEVERABILITY**

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

## **N. LIABILITIES**

### **1. Civil and Criminal Liability**

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Notwithstanding this permit, the permittee shall remain liable for any damages sustained by the State of Tennessee, including but not limited to fish kills and losses of aquatic life and/or wildlife, as a result of the discharge of contaminated storm water discharges to any surface or subsurface waters. Additionally, notwithstanding this permit, it shall be the responsibility of the permittee to conduct its discharge activities in a manner such that public or private nuisances or health hazards will not be created.

### **2. Liability Under State Law**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or the Federal Water Pollution Control Act, as amended.

## **PART VIII**

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### **PERMIT MODIFICATION**

#### **A. MODIFICATION OF THE PERMIT**

The permit may be reopened and modified during the life of the permit to:

- 1.** Address impacts on receiving water quality caused, or contributed to, by discharges from the MS4;
- 2.** Address changes in State or Federal statutory or regulatory requirements;
- 3.** Include the addition of a new permittee who is the owner or operator of a portion of the Municipal Separate Storm Sewer System; or

4. Include other modifications deemed necessary by the Director to comply with the goals and requirements of the Clean Water Act.

All modifications to the permit will be made in accordance with 40 CFR 122.62, 122.63, and 124.5 and applicable State regulations.

#### **B. TERMINATION OF COVERAGE FOR A SINGLE PERMITTEE**

Permit coverage may be terminated, in accordance with the provisions of 40 CFR 122.64 and 124.5, for a single permittee without terminating coverage for other permittees.

#### **C. MODIFICATION OF STORM WATER MANAGEMENT PROGRAMS (SWMPS)**

Only those portions of the Storm Water Management Programs specifically required as permit conditions shall be subject to the modification requirements of 40 CFR 124.5. Replacement of an ineffective or infeasible BMP implementing a required component of the Storm Water Management Program with an alternate BMP expected to achieve the goals of the ineffective or infeasible BMP shall be considered minor modifications to the Storm Water Management Program and not modifications to the permit. (See also Part III(H)(2))

#### **D. CHANGES IN MONITORED OUTFALLS**

This permit is issued on a system-wide basis in accordance with CWA §402(p)(3)(B)(i) and authorizes discharges from all portions of the municipal separate storm sewer system. Since all outfalls are authorized, changes in monitoring outfalls, if any, shall be considered minor modifications to the monitoring program and not modifications to the permit. (See also Part VI(A)(2)(g)).



**RATIONALE**

**City of Memphis Municipal Separate Storm Sewer System  
NPDES PERMIT NO. TNS068276  
Shelby County Tennessee**

**Permit Writers: Maybelle T. Sparks  
Robert L. Haley, III**

**I. DISCHARGER(S)**

This permit and rationale address the discharge of storm water runoff to the municipal separate storm sewer system (MS4) owned and operated by The City of Memphis, located in Shelby County, Tennessee.

**The application was submitted by:**

**The City of Memphis  
Division of Public Works  
125 N. Main Street  
Memphis, TN 38103**

**Contact: Mr. Tom Lawrence  
Manager - Storm Water  
901-576-7122**

**II. PERMIT STATUS**

The present permit was issued May 31, 1996 and expired May 31, 2001. The city made application for reissuance of the permit on November 22, 2000, as a part of the fourth year annual report.

**III. MS4 DESCRIPTION(S)**

**A. The City's System**

The City of Memphis encompasses an area of approximately 340 square miles in Shelby County in the southwest corner of Tennessee. Storm water drainage in the city and the county is directed to the Mississippi River, via one of three major waterbodies, the Nonconnah Creek, the Wolf River, or the Loosahatchie River.

## **B. EPA Definitions**

The Environmental Protection Agency (EPA), in 40 CFR §§122.26(b)(8) and 122.26(b)(4), defines a *Municipal Separate Storm Sewer* and a *Large Municipal Separate Storm Sewer System* as follows:

*“Municipal Separate Storm Sewer”* means a conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, and storm drains):

- (i) owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State Law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State Law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian Tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;
- (ii) designed or used for collecting or conveying storm water;
- (iii) which is not a combined sewer; and
- (iv) which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

*“Large Municipal Separate Storm Sewer System”* means all municipal separate storm sewers that are either:

- (i) located in an incorporated place (city) with a population of 250,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and G of 40 CFR Part 122); or,
- (ii) located in the counties with unincorporated urbanized populations of 250,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties (these counties are listed in Appendices H and I of 40 CFR Part 122); or,
- (iii) owned or operated by a municipality other than those described in paragraph (i) or (ii) and that are designated by the Director as part of the large municipal separate storm sewer system.

## **IV. RECEIVING WATERS**

### **A. Introduction**

The Loosahatchie River flows along the northern border of the city, the Wolf River flows through the north of the city, and Nonconnah Creek flows through the south of the city. Since the topography of the area is relatively flat, these streams have historically been slow moving waterbodies with a high degree of sinuosity.

Because of urbanization and channelization of numerous waterbodies in the city, stream flow, particularly in the Nonconnah Creek, fluctuates extremely. Nonconnah Creek behaves much like a wet weather conveyance, with steeply increasing flows following a rain event.

Memphis maintains a storm sewer system completely separate from a sanitary sewerage. The storm drainage system in the urban area generally proceeds as follows: inlets along the streets collect runoff during storms and direct it into underground pipes, which connect with larger trunk lines. These lines connect with concrete-lined open channels, which follow the former route of natural streams before development. The open channels flow into one of the three large streams mentioned above. The open channels and the conveyance systems upstream of them are generally dry, except during rainfall and when receiving NPDES discharges or possibly flow from residential lawn watering and the like.

**B. Impaired waterbodies, SW TN area**

**1. Wolf River watershed (HUC 08010210)**

The division's recent proposed 303(d) list shows the following creeks in the Wolf River watershed, in Shelby county, impaired for various reasons:

Harrington Creek, Workhouse Bayou, Wolf River, Sweetbriar Creek, tributaries to Grays Creek, Marys Creek, Fletcher Creek and tributary, Cypress Creek.

Causes include siltation, organic enrichment/low DO, nutrients, pathogens, metals lead and copper, other habitat alterations, flow alteration, and in the case of the Wolf River, Chlordane, PCBs, Dioxin.

**2. Nonconnah Creek watershed (HUC 08010211)**

The division's recent proposed 303(d) list shows the following creeks in the Nonconnah Creek basin, in Shelby county, impaired for various reasons:

Horn Lake Creek, Cypress Creek South, Tenmile Creek, Hurricane Creek, Days Creek, Nonconnah Creek, John's Creek

Causes include organic enrichment/low DO, siltation, pathogens, other habitat alterations, metals lead and copper, and in the case of the Nonconnah Creek, PCBs, Dioxin, Chlordane, Phosphorus.

**3. Loosahatchie River watershed (HUC 08010209)**

The division's recent proposed 303(d) list shows the following creeks in the Loosahatchie River basin, in SW TN area, impaired for various reasons:

Todd Branch, Loosahatchie River, Cypress Creek.

Causes include organic enrichment/low DO, siltation, other habitat alterations, and in the case of the Loosahatchie River, also PCBs, Dioxin, Chlordane, Phosphorus.

**C. Streams impaired for which TMDLs have been promulgated**

We note that a significant amount of stream miles in the **SW TN** area are impaired because of pathogen contamination. Three Total Maximum Daily Load (TMDL) analyses have been completed for fecal coliform contamination in the **SW TN** area.

**1. Fecal Coliform in the Wolf River, etc. (HUC 08010210)**

Wolf River, Fletcher Creek, Cypress Creek, and Grissum Creek  
Shelby, Fayette, & Hardeman Counties

This TMDL, issued January 30, 2003, determines needed load reductions from 51% to 88% in the different watersheds. Needed load reductions assigned to MS4s (including City of Memphis and small MS4s) range from 61% to 75%.

**2. Fecal Coliform in the Nonconnah Creek watershed, etc. (HUC 08010211)**

Johns Creek, Cypress Creek South, Lower Nonconnah Creek - RM 0 to 2.1  
(Includes Cold Creek), Nonconnah Creek - RM 2.1 To 11.5, Nonconnah Creek from  
RM 11.5 to Headwaters  
Shelby County, Tennessee

This TMDL, issued September 20, 2001, determines needed load reductions of greater than 90%.

**3. Fecal Coliform in the Loosahatchie River watershed, etc. (HUC 08010209)**

Cypress Creek, Big Creek, two segments of the Loosahatchie River  
Shelby, and Fayette Counties, Tennessee

This TMDL, issued September 12, 2001, determines needed load reductions in runoff of 47% for protection of Cypress Creek, 46% for Big Creek, 80% for the Loosahatchie at confluence of Big Creek, and 89% for the Loosahatchie at mouth.

**V. PERMIT DEVELOPMENT AND METHODOLOGY**

**A. Introduction**

The Water Quality Control Act of 1987 (the *Clean Water Act*, or the "CWA"), 33 U.S.C. §1342, et. seq., which set up the present NPDES permit requirements for discharges of urban runoff, requires that the NPDES permit issued to the City of Memphis, Shelby County:

- i. include a requirement to effectively prohibit non-stormwater discharges into the storm sewers; and,
- ii. reduce pollutants in discharges from the MS4 to the “Maximum Extent Practicable” (MEP).

As did the previous permit, this reissued permit will fulfill these requirements primarily by requiring the city implement a number of programs and tasks, Best Management Practices (BMPs), to prevent storm water pollution at the source, through a comprehensive SWMP.

**B. Elements of a Phase I MS4 program**

The EPA regulations of November 16, 1990, 40 CFR §122.26, established certain application requirements for medium and large MS4s, which formed the basis for present permit conditions.

**C. Six minimum measures of the storm water phase II programs**

The City of Memphis, in its fourth year annual report, proposed that its reissued permit be structured according to the six minimum measures of the EPA phase II rule.

The division will structure the permit after the six minimum measures of the phase II rule and include the phase I requirements -- except for several being dropped that have not proven cost-effective under the first term of the permit -- that are not explicitly included in the phase II six minimum measures.

**VI. PROPOSED STORM WATER MANAGEMENT ELEMENTS**

**A. BMPs proposed by the city**

The city prepared a table, “City of Memphis Storm Water Program (1996-2000) Item Evaluation” that lists the permit requirements of the present permit and shows which of those permit requirements it proposes for the reissued permit, and within which of the six minimum measures those requirement would be placed. See Appendix 1 for this table.

The city also provided a set of proposed permit requirements based on the six minimum measure of the EPA storm water phase II rule, December 8, 1999.

The permit writer began with the city’s proposed program of six minimum measures, added several items of detail so that the Memphis permit requirements are at least as stringent as those in the recently issued Tennessee small MS4 general permit. The permit writer has also included requirements to maintain existing programs implemented during the term of the present permit. See the draft permit, section III. B..

Considered below are requirements related to impaired waters in the city of Memphis. We note that city of Memphis is not the only entity that has a part in addressing stream impairment in these streams.

**B. Additional requirements based on implementation plans in TMDLs**

**1. Wolf River watershed TMDL – January 30, 2003**

The TMDL recommends the following on the part of the Memphis MS4:

- Identification of all sources of fecal coliform loading to the Wolf River watershed within the City of Memphis.
- A reduction of fecal coliform loading in point and non-point source storm water runoff discharges to the Wolf River watershed as indicated by the load analyses of the TMDL (60-75% for different watersheds).
- Reduction of fecal coliform loading, to the maximum extent practicable, due to failing septic systems and miscellaneous sources located within the city limits. Miscellaneous sources include, but are not limited to, leaking collection systems, illicit discharges, and unidentified sources.
- Appropriate discharge and stream monitoring to verify the effectiveness of pollution reduction measures.

**2. Nonconnah Creek watershed TMDL – September 20, 2001**

The TMDL recommends the following on the part of the Memphis MS4:

- A reduction of fecal coliform loading in point and non-point source storm water runoff discharges to the Nonconnah as indicated by the load analyses of the TMDL (90% and greater, for different watersheds)
- Identification of sources and reduction of fecal coliform loading, to the maximum extent practicable, due to failing septic systems and miscellaneous sources located within the city limits. Miscellaneous sources include, but are not limited to, leaking collection systems, illicit discharges, and unidentified sources.
- Appropriate discharge and stream monitoring to verify the effectiveness of pollution reduction measures.

In addition, the City of Memphis should be encouraged to develop and calibrate a dynamic water quality model, such as the Storm Water Management Model (SWMM), to evaluate urban storm water loading/transport processes and facilitate planning and additional pollution control strategies.

One paragraph of the TMDL analysis states:

Best management practices (BMPs) that could be used to implement this TMDL include controlling pollution from urban runoff, identification and elimination of illicit discharges, and repair of failing septic systems. The continual prompt response by the City of Memphis to fix leaking sewer collection lines and overflowing sanitary sewers should minimize the adverse affect of collection line failures. In addition, loading from agricultural sources could be minimized by adoption of NRCS [Natural Resources Conservation

Service] resource management practices. NRCS practices include measures such as covering manure stacks exposed to the environment; reducing animal access to **streams**.

### **3. Loosahatchie River watershed TMDL**

The TMDL recommends the following on the part of the Memphis MS4.

- A reduction of fecal coliform loading in point and non-point source storm water runoff discharges to the Loosahatchie watershed in accordance with the Load Allocations (needed load reductions in runoff of 47% for protection of Cypress Creek, 46% for Big Creek, 80% for the Loosahatchie at confluence of Big Creek, and 89% for the Loosahatchie at mouth)
- Reduction of fecal coliform loading, to the maximum extent practicable, due to failing septic systems and miscellaneous sources located within the city limits. Miscellaneous sources include, but are not limited to, leaking collection systems, illicit discharges, and unidentified sources.
- Appropriate discharge and stream monitoring to verify the effectiveness of pollution reduction measures.

In addition, the City of Memphis should be encouraged to develop and calibrate a dynamic water quality model, such as the Storm Water Management Model (SWMM), to evaluate urban storm water loading/transport processes and facilitate planning and additional pollution control strategies.

The TMDL further addresses Shelby county and Millington as NPDES storm water phase II MS4s, recommending the following;

- Field screening and monitoring programs to identify the types and extent of fecal coliform water quality problems, relative degradation or improvement over time, areas of concern, and source identification.
- Requirements that all new and replacement sanitary sewage systems are designed to minimize discharges from the system into the storm sewer system.
- Mechanisms for reporting and correcting illicit connections, breaks, surcharges, and general sanitary sewer system problems with potential to release to the municipal separate storm sewer system.

### **4. Proposed TMDL-- specific permit requirements**

The TMDLs noted above all address fecal coliform; i.e., pathogen contamination. The permit writer will include requirements that the city:

- Monitoring to identify the nature of the fecal coliform contamination;
- Field screening or other methods of surveillance and assessment to identify sources of pathogens; and specifically,

- An assessment of the integrity of private infrastructure and estimate of scope of seepage and loading to the MS4 as a result of such seepage (see III. B. 3.);
- A system whereby leaking privately-owned sewer lines are identified and repaired, including guidance for owners of private property sewer lines;
- Taking actions to remedy sources; and
- A program of discharge and stream monitoring to verify the effectiveness of pollution reduction measures.

## **VII. SAMPLING AND MONITORING REQUIREMENTS**

### **A. Introduction**

The phase I MS4 storm water application regulations set forth requirements such that MS4 cities will address at least three (3) types of sampling during the term of their permits. The types of samples are as follows:

- representative data collection (refers to sampling storm water discharges at Outfalls....of the MS4 system; may be designed to describe an area of homogeneous land use);
- field screening for illicit connections and improper disposal; and,
- monitoring runoff from industrial sites.

In addition, large and medium MS4s might perform other types of monitoring as well, including but not limited to:

- in-stream sampling, both chemical and biological;
- stream bioassessments; and,
- BMP or other storm water treatment system influent and effluent monitoring.



## **B. The City's Proposed Program**

### **1. Existing permit(1996 to present) sampling activities**

- a. Industrial storm water runoff sampling
  - 4-8 facilities sampled
- b. Wet weather monitoring (characterization sampling)
  - Five sites are sampled, describing different land uses
- c. Field screening, in order to locate illicit discharges;
  - 73 sites visited in the last annual report year; 12 sites with flow
  - Most common pollutant being detergents, next chlorine.
- d. BMP monitoring
  - Discontinued under present permit
  - Replaced with additional ambient sampling in the Wolf and Nonconnah
- e. Ambient monitoring
  - Nonconnah Creek, Loosahatchie River, Wolf River
  - Sampling parameters include COD, *E. coli*, Enterococcus, Fecal Coliform, pH, Temperature
  - Split sampling has shown inconsistent results between laboratories
- f. Stream bioassessments
  - Once during the term of the present permit

### **2. City's proposed sampling program**

The city proposes ambient sampling monthly in the following places:

- Nine sites, as recorded in the fifth year annual report of 2001, in the Nonconnah Creek watershed
- Seven sites, as recorded in the fifth year annual report of 2001, in the Wolf River watershed
- Six sites, as recorded in the fifth year annual report of 2001, in the Loosahatchie River watershed
- One site, as recorded in the fifth year annual report of 2001, in the South Cypress Creek watershed

The city does not propose wet weather discharge sampling.

### **3. TDEC -- proposed sampling requirements**

The state proposes to include in the permit the ambient sampling program planned by the city (above). In addition, TDEC will require the city to assess the usefulness of wet weather monitoring, in consideration of the TMDLs issued since its reapplication in the year 2000. The division believes that some degree of wet weather monitoring is warranted.

The state will require again certain bioassessments of impaired waterbodies. These are required to a minimal extent to track improvements in water quality of impaired streams.

Though the permit will not specify any particular monitoring, the permit writer notes that other types of monitoring – other than analytical types specified in 40 CFR 136 and bioassessments – might be cost-effective means to monitor effectiveness of BMPs and changing water quality.

## **VIII. ASSESSMENT OF CONTROLS**

### **A. Need for assessments**

The division believes an MS4 city needs to assess the effectiveness of its storm water quality management program for a number of reasons. These assessments serve many purposes such as:

- a step in determining whether the most cost effective best management practices are included in the storm water management program;
- a means to ensure the operator of the MS4 is accountable to the public and other users of the MS4;
- to assist in designing on going monitoring, inspection and surveillance programs that help refine estimates of program effectiveness;
- a baseline and ongoing measuring stick of the progress of the program; and
- in developing a strategy to evaluate progress toward achieving water quality goals.

### **B. Definition of assessments**

EPA's Part 2 Guidance Manual states: "For some components of a proposed management program, such as structural controls (e.g., vegetative streambank stabilization, sediment pond or basin, etc.), the effect on pollution in storm water runoff is observable, and pollutant removal efficiencies can be estimated directly. For other components, pollutant reductions may be difficult to quantify. Applicants may need to use indirect estimates. For example, a program component may address source controls such as changing the behavior of citizens in the community, or improving the municipal control of industrial or commercial runoff." So there are direct measurements of program effectiveness and indirect measurements.

Examples of some direct measurements:

- expected pollutant load reductions (fourth year annual report)
- removal efficiencies of BMPs
- reductions in the volume of storm water discharged
- reductions in event mean concentrations

Examples of indirect measurements:

- gallons of used oil recycled
- amount of household hazardous waste collected
- number of education brochures distributed
- number of reports of illicit discharges or illegal dumping
- number of construction and erosion and sediment control plans submitted and approved

**C. Division's proposed permit conditions**

The division will require an assessment of controls in the permit, primarily by reiterating the federal regulations concerning the annual reporting requirements.

The permit will continue the requirement that the city report estimated reductions of pollutant loadings each year. In its last annual report, the city reported trends in runoff quality based on the characterization monitoring at five sites.

The city believes that the sampling strategy it has proposed for the reissued permit is more likely to provide information useful for estimating pollutant levels in streams. The division notes that the permit requires loading estimates; i.e. estimates of loading from outfalls to streams.

**IX. NEW PERMIT LIMITS AND CONDITIONS**

The body of the permit contains the schedule of implementation for the proposed SWMP.

**X. CONSIDERATION OF COMMENTS AND PERMIT ISSUANCE DECISIONS**

The Division of Water Pollution Control proposes to issue this permit with the described effluent limitations, monitoring and reporting requirements and standard conditions. These conditions are tentative and open to comment. Interested persons are invited to submit comments for consideration.

Comments should be submitted to the following address:

Division of Water Pollution Control  
ATTN: Robert L. Haley, III  
6th Floor, L & C Annex  
401 Church Street  
Nashville, Tennessee 37243-1534

And/or by e-mail to [robert.haley@state.tn.us](mailto:robert.haley@state.tn.us).