FINAL
Region 4 Guidelines for Reconciling
Storm Water Management and
Water Quality and Resource Protection Issues[1]
(06/23/04)

Introduction

It is the goal of the Clean Water Act to protect the Nation's waters from pollution so all citizens will be able to fish, swim and play in their neighborhood creek, stream, lake or wetland. The Environmental Protection Agency (EPA) Region 4, and our States, are responsible for ensuring the waters in the eight southeastern states of Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee, are protected from pollution. A large number of our Region's impaired waters are attributed to storm water runoff from both point and nonpoint sources. Therefore, to address this aspect of the impairment, Region 4 is working to improve the prevention and control of pollution from storm water runoff through coordinated program efforts. EPA Region 4 and our states are interested in developing better solutions to storm water runoff from the streets, parking lots, rooftops, and lawns in our cities and towns. We are also concerned with addressing storm water runoff from other activities such as construction sites and surface mining projects. Unfortunately, the solutions to storm water pollution are difficult and expensive once the pollution has occurred. It is much easier and less costly to prevent storm water pollution from occurring before the streets, parking lots, stores, and homes are built. We can make a difference in storm water management by encouraging good planning and development strategies to prevent and reduce pollution through our Wetlands, Total Maximum Daily Load (TMDL), National Pollutant Discharge Elimination System (NPDES), Nonpoint Source, and Grant programs. For areas with existing pollution caused by storm water runoff, we can ensure the Clean Water Act (CWA) is consistently implemented throughout the region.

Through the Clean Water Act Section 404 process, many local governments are requesting that the regulatory agencies allow them to use existing creeks, streams, lakes and wetlands as treatment systems to remove pollutants in storm water runoff from existing and developing urban areas. Surface mining operations are also requesting the use of our waters to remove pollutants from storm water runoff. Through the National Environmental Policy Act (NEPA) process, Region 4 is receiving requests from other federal agencies to address storm water runoff by impounding streams for pollutant removal purposes. Even though allowing polluted storm water to discharge into these waters causes water quality degradation or impairment, the requesting agencies believe this is the only option they have because it is the least expensive solution for the taxpayer.

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[1]This is a guidance document only - It does not establish legally binding requirements or regulations.

For purposes of these guidelines, the use of existing creeks, streams, lakes and wetlands to remove pollutants from storm water runoff is defined as **in-stream treatment**.[2] In general, the Clean Water Act prohibits the designated use of our creeks, streams, lakes or wetlands, and the larger rivers in which we fish and swim, from being used as pollution treatment systems except in the most extreme situations. The basis for this prohibition is discussed below.

The construction of in-stream treatment systems generally requires the issuance of a **Section 404 permit** for the discharge of dredged or fill material to construct control structures in waters of the United States. These structures create pond-like facilities in place of the natural stream channels and/or wetlands. The pond-like facilities are used to remove pollutants from storm water runoff largely through physical and biological processes such as sedimentation, adsorption, plant uptake, microbial activity, etc. The Section 404 process requires an alternatives analysis to demonstrate that there is no less damaging practicable upland alternative than the in-stream treatment system to accomplish the purpose(s) of the project. Environmental impacts caused by the project must be minimized, and any adverse environmental impacts mitigated. EPA's role in the Section 404 permit process is to provide comments on the permit application to construct such systems to ensure that the project is consistent with the Section 404(b)(1) regulations which provide that environmental impacts to waters of the United States be avoided, minimized and mitigated as appropriate. If required, EPA may elevate a proposed permit to higher levels, and, in extreme situations, EPA may veto a permit. However, Region 4 believes we can address proposals for in-stream treatment systems through the comment and alternatives analysis mechanism, rather than by elevation or veto.

The guidelines herein were developed to ensure consistency among the various Region 4 programs in our review of projects that propose to construct in-stream storm water treatment systems, specifically: Section 404 permits, NEPA projects, and grant projects. These guidelines are also intended to explain the CWA prohibition of in-stream treatment of storm water for regulated parties including other federal agencies, state agencies and local governments as well as the regulated public. These guidelines provide a framework for balancing storm water treatment, storm water attenuation, water quality restoration, and wetlands protection objectives. Specific issues identified and discussed in this document are: (1) treatment of wastes, including polluted storm water, in waters of the United States; (2) storm water treatment works in areas where upland control alternatives are not available; and (3) storm water treatment works for new development. The overall goal of these guidelines is to address storm water issues at the source, and where it must be done in-stream, place it as close to the source, as far up in the headwaters as possible.

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[2]Many of the same principles, issues and regulatory requirements addressed in these guidelines have been discussed in the October 2000, guidance document, Guiding Principles for Constructed Treatment Wetlands: Providing for Water Quality and Wildlife Habitat, EPA 843-B-00-003 (Guiding Principles). This document is available on EPA's web site: http://www.epa.gov/owow/wetlands/constructed/guide.html

(1) Treatment of wastes, including polluted storm water, in waters of the United States is inconsistent with provisions of the Clean Water Act.

Section 101(a) of the Clean Water Act states the objective of the Act "...is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" and to eliminate the discharge of pollutants into navigable waters Section 101(a) goes on to state that it is our national interim goal to provide for the protection and propagation of fish, shellfish, and wildlife and to provide that recreation in and on the waters be achieved (fishable/swimmable goal). To help achieve the objectives of the Act, Water Quality Standards (WQS) are required for all waters that include the designated uses of the water body, the criteria to protect the designated use and anti-degradation requirements to prevent degradation of the waters. Also, under the Clean Water Act, there is a specific prohibition against the states adopting waste assimilation (i.e., treatment) or waste transport as a designated use of a water. 40 CFR §131.10(a).[3] These provisions are implemented through Section 301(a) which provides that the discharge of any pollutant by any person into waters of the United States shall be unlawful, except as in compliance with certain other provisions of the Act (e.g., a Section 402 permit is issued allowing such a discharge, a discharge meets required effluent limitations, a discharge is consistent with water quality criteria, uses, and antidegradation, etc.). Therefore, read together, as a matter of policy, to specifically allow waters of the U.S. to serve as treatment systems to remove pollutants and pollution would be inconsistent with the goals of the Clean Water Act that all waters be fishable and swimmable.[4]

In addition, storm water discharges from municipal and industrial sources, including certain construction activities, and mining, are recognized as point source discharges subject to the permit requirements of the Act. Under Section 402(p)(3) of the Act, NPDES permits are required for discharges of storm water from industrial facilities and municipal separate storm sewer systems (MS4s)[5]. Section 402(p)(3)(B) further states that municipal storm sewer permits shall require controls to reduce the discharge of pollutants to the maximum extent practicable. The required controls include management practices, control techniques and systems, design and engineering methods, and such other provisions as determined appropriate for the control of such

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[3]In the legislative history of the 1972 amendments to the CWA, it is clear that the Congress equated the term wastes with pollutants, and the goal of the 1972 amendments was to institutionalize the new policy on ceasing discharges of pollutants into waters of the U.S. and "halt the use of our waterways as a waste treatment system." In 1983, reflecting this 1972 policy, this prohibition statement was added to 40 CFR §131.10(a).

[4]As noted below, a Section 404 permit may legally convert a waters of the U.S. in to non-waters of the U.S.. For an in-stream treatment system, the permit would have to cover the structure and the impounded area, and identify it as a treatment system designed to meet the requirements of the CWA. *See* Guiding Principles, Pps. 16 -17.

[5]The definition of "discharge of a pollutant" specifically "includes addition of pollutants into waters of the United States from: surface runoff which is collected or channeled by man...." 40 CFR §122.2. Clearly this includes stormwater.

pollutants. However, the Act does not just apply to permitted discharges. Section 101(a)(7) states that programs for the *control* of nonpoint sources of pollution are to be developed and implemented in an expeditious manner to enable the goals of the Act to be met. In other words, storm water runoff from point and nonpoint sources shall be controlled to the maximum extent practicable prior to discharging pollutants into waters of the United States.

Under Section 404, the Clean Water Act has provisions that allow for waters of the United States to be legally converted to non-waters of the U.S., i.e. removed from jurisdiction.[6] This is accomplished through the issuance of a Section 404 permit by the U.S. Army Corps of Engineers. Any project proposed for a Section 404 permit must comply with the Section 404(b)(1) guidelines (*See* 40 CFR Part 230).[7] The guidelines require every project to have a clear purpose statement (sometimes a statement of multiple purposes) and an evaluation of all available alternatives to meet the project purpose(s) including an analysis that there are no practicable alternatives that would not involve discharges to waters of the U.S. Once it has been determined that no upland alternatives exist, the analysis turns to whether the project represents the practicable alternative with the least amount of adverse impacts to waters of the U.S. The selected alternative must also demonstrate minimization of impacts. Compensatory mitigation is normally required for the remaining impacts. The Section 404(b)(1) guidelines require anyone proposing an in-stream treatment facility to clearly describe the purpose and need for the facility, evaluate all alternatives to meet that purpose and need (usually on a watershed scale), select the least damaging practicable alternative, minimize the impacts of that alternative and mitigate for the remaining impacts. Multiple project purposes may require multiple alternative analyses. What is "practicable" is highly dependent on the circumstances of the proposed project but is ultimately the determination of the Corps, not the applicant. However, applicants can and should provide information as to why they believe certain alternatives may not be practicable.

In addition to the legal requirements for treating polluted storm water before it is discharged into the nation's waters, there are also water quality issues that suggest in-stream treatment is not usually the best solution. A large number of stream miles and lake acres in our nation are listed as impaired due to storm water runoff from both point and nonpoint sources. Under Section 303 of the Clean Water Act, EPA and the states are responsible for restoring these waters to provide

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[6]Absent the conversion to non-waters of the U.S., water quality standards and permitting requirements would still apply to the impoundment. For example, a discharge of pollutants into the impoundment would require an NPDES permit. Also, since the impoundment is designed to capture pollutants, it would most likely not meet water quality standards within the water body. As the pollutants build up, this leads to impairment issues both in existing impoundments used for treatment and in new impoundments, unless there is a legal basis for converting the impoundment into non-waters of the United States.

[7]Under the 404(b)(1) regulations, among other requirements, section 404 projects must comply with applicable water quality standards, not cause or contribute to significant degradation of waters of the U.S. and demonstrate that all impacts are avoided and then where they cannot be avoided, minimized.

for their designated use. Reports indicate the primary pollutants from urban runoff are: sediment, nutrients, oxygen demanding substances, bacteria, heavy metals, and oil and grease; which cause water quality impairments in receiving waters. In addition to the pollutants associated with storm water runoff, water quality impairment from storm water runoff is also documented due to increased volumes and velocity associated with increasing impervious surfaces especially in urban areas. Therefore, sending increased volumes of polluted storm water to our already impaired waters for treatment purposes without upland controls warrants our attention to this matter. Past and recent studies have found that storm water treatment ponds have an environmental impact on the upstream and downstream segments of the receiving water body. There are indications the discharges from the treatment ponds cannot continuously meet water quality standards downstream without careful consideration to design and location. There is also the concern that the upstream portion of the water body will likely never attain the water quality goals of the Clean Water Act, including meeting the existing and designated uses of the water body unless the sources of the pollution are addressed.

Therefore unless an applicant complies with all the requirements of the Clean Water Act including the Section 404 (b)(1) guidelines, Region 4 will oppose the creation of **storm water treatment works** in waters of the United States for the *express purpose of treating storm water discharges*, in lieu of requiring upland controls to reduce the discharge of pollutants. The Region also opposes the use of waters of the United States as conveyance for storm water discharges that do not meet water quality standards. Consistent with national and regional guidance documents concerning wetland treatment systems, the Region supports the use of treated storm water to re-establish hydrology in degraded wetlands and other waters of the United States, provided that there is adequate treatment prior to discharging into receiving waters. The Region may support in-stream facilities that are designed to attenuate existing storm water flooding problems as long as the storm water has been sufficiently treated prior to entering waters of the United States and there are no other practicable alternatives to flow control. The Region will express objections to Section 404 permit applications that propose to construct control structures in waters of the United States for the express purposes of impounding waters to provide storm water treatment or conveyance in lieu of implementing the required upland controls. In addition, the Region will not provide funding through Sections 319, 320, 106, 104(b)(3), 205 or other EPA funding mechanisms, to support the construction of in-stream storm water treatment works in lieu of providing upland storm water controls. The Region will give NEPA projects that propose in-stream treatment works a thorough review to assure upland alternatives have been fully evaluated.

(2) Storm water treatment works in areas where upland control alternatives are not available.

Region 4 recognizes there may be cases in which the project purpose, geographic setting or other critical function may preclude the use of upland storm water controls. In the case where circumstances preclude the use of upland controls, Region 4 will consider an exceptional case exists. In these exceptional cases, the Section 404(b)(1) guidelines are the substantive regulations that must be satisfied before Region 4 will support the issuance of a Section 404 permit, provide grant support, or provide for NEPA compliance. It is assumed an individual

Section 404 permit will be required as part of the EPA grant application and to satisfy the NEPA requirements for projects of this nature. This means Region 4 will be requesting specific information concerning these projects during EPA's review for proposed in-stream storm water treatment projects. To assist Region 4 programs in reviewing these projects as well as to help our external customers, Region 4 has developed a process that should be followed and listed conditions to be satisfied to demonstrate the in-stream treatment alternative is the best alternative for the environment which will satisfy the primary project purpose. The process is found in Figure 1.

As noted above, the issuance of a Section 404 permit that specifically includes the impoundment as part of the project will remove any in-stream treatment works authorized under Section 404 from being jurisdictional waters of the United States. The limits of non-jurisdictional waters will generally be based on the design pool elevation for which treatment occurs. However, in extreme cases, the water body above the treatment works (impoundment) may be converted into non-waters of the U.S. as part of the Section 404 permit process in situations where the water body is being used as a specific conveyance of storm water to the treatment impoundment which does not meet water quality standards. However, EPA does not recommend that conveyance streams and other water bodies be included in the Section 404 permit. Any wetlands created as part of the treatment impoundment would also be considered non-jurisdictional as they are part of the treatment system. However, the Section 404 permit should include provisions to prevent the use of these converted waters for other pollutant discharges. In some instances where the conveyance stream is not meeting its existing or designated use, a State may need to pursue a use attainability analysis to change the current designated use of the waters above the in-stream treatment works. Additionally, in-stream storm water treatment works may not be considered part of a MS4 system and thus an individual or general permit under NPDES may be required.

Figure 1 - Process for Evaluating Proposed In-Stream Treatment Systems	
Step 1	Proposals for in-stream treatment works must provide a detailed analysis to determine consistency with the CWA Section 404(b)(1) guidelines.
	(a) The 404 proposal must clearly define the primary project purpose and demonstrate the need. This is especially important in multi-purpose projects.
	(b) Proposals for in-stream treatment works must demonstrate that other treatment controls have either been implemented or cannot be implemented (i.e., demonstration that Section 404(b)(1) guidelines regarding alternatives analysis have been met). [alternatives analysis]
	(c) In keeping with the provisions of area-wide waste management goals of Section 201(c) of the Clean Water Act, storm water management should be evaluated on a watershed basis to determine the upland controls that are available to reduce pollutant discharges in the watershed. [avoidance]

Figure 1 - Process for Evaluating Proposed In-Stream Treatment Systems	
Step 2	Once the alternatives analysis in step 1 demonstrates that in-stream treatment is the best environmental option available to meet the project purpose, the following criteria/information are required.
	(a) New in-stream treatment works may only be considered for ephemeral or intermittent streams [minimization];
	(b) Retrofits of existing ponds on first order streams may be considered, and will require approval from adjacent land owners [minimization];
	(c) Full mitigation for length of stream and wetlands impacted will be required in accordance with Region 4's policy on Section 404 mitigation; state mitigation policies may also apply [mitigation];
	(d) A plan for operation and maintenance shall be required, including demonstration of the financial resources necessary to assure the treatment works will be maintained for as long as the project is in place [operation & maintenance];
	(e) In-stream treatment works must be designed to meet minimum performance standards if states have established such standards [design criteria];
Step 3	Where a NPDES permit for the discharge from the treatment works is required, the permit will have sufficient controls to ensure water quality violations are not occurring and minimum flow levels are maintained (e.g., chemical monitoring, minimum flow, and appropriate effluent limits);
Step 4	EPA concurrence that EPA grant proposals, Section 404 project proposals, or NEPA project proposals, meet Section 404(b)(1) guidelines.

The types of projects that ***may*** qualify as an exceptional case and warrant additional consideration under Section 404 are listed below. Although EPA lists these potential cases for consideration of in-stream storm water treatment, there is no guarantee that every type of project listed below will be considered exceptional. Each case will be evaluated based on its individual merits using the 404(b)(1) guidelines. Additionally, there may be a type of project we have not listed below that will qualify as an exceptional case.

(1) areas of steep terrain where the only control alternative is a treatment pond and the terrain prohibits the use of off-line treatment ponds**,** such as surface mining in the mountain region where storm water ponds are required by regulation**;**

(2) areas where flood plains are too narrow to support off-line treatment ponds and off-

line ponds are the only control method available for storm water treatment, such as urban areas in the Piedmont where upland controls have not produced the required water quality improvement;

(3) areas where existing development is so dense as to prohibit all other methods of storm water treatment, such as in the City of Atlanta's downtown area where piped, culverted, and severely degraded streams may be the only placement option for treatment controls; or

(4) existing ponds on first order streams that may be retrofit for storm water treatment. Such ponds must address the impacts to the remaining upstream segment of the creek, stream, wetland or other waters, and have approval from adjacent property owners, for consideration of this alternative.

Therefore, Region 4 will recommend that the alteration, impoundment, or other utilization of waters of the United States for the purposes of storm water treatment meet the purposes of the Clean Water Act, such as compliance with water quality standards, and Region 4 will oppose proposed project until the process outlined in Figure 1 has been satisfactorily addressed on a watershed basis. After the process has been completed, Region 4 will consider an exceptional situation exists. In the case of an exceptional situation, in-stream storm water treatment works that enhance the overall watershed system will be considered a priority.

(3) Storm water treatment works for new development.

Due to the availability of a wide array of storm water control options in new developments, Region 4 will oppose the alteration, impoundment, or other utilization of waters of the United States for the purpose of storm water treatment for new developments, except those currently allowed under nationwide permits. Additionally, EPA shall encourage **low impact development** techniques and strategies to reduce the necessity for in-stream flow controls. With proper planning and local controls, there should seldom be a need to use waters of the United States for treatment purposes and little need for flow control in new developments. Therefore, Region 4 will raise strong objections to individual Section 404 permit applications for the construction of storm water control structures in waters of the United States for the purposes of storm water treatment and/or flow control for new development in lieu of upland controls and management practices.

Glossary of Terms and Acronyms

For the purposes of this document, the following definitions or terms apply:

In-stream treatment - the use of jurisdictional waters of the United States to treat, abate, reduce, separate and/or remove pollutants or pollution, in order to meet the requirements of the Clean Water Act, such that the waters will not meet, or will likely not meet, applicable water quality standards.

Low impact development - development based on design techniques and strategies aimed at mimicking the pre-development site hydrology such as the approach described in, "Low-Impact Development Design Strategies, An Integrated Design Approach," by Prince George's County, Maryland, January 2000.

Section 404 permit - the permit issued, in accordance with Section 404 of the Clean Water Act, by the U.S. Army Corps of Engineers for the discharge of dredged or fill material into navigable waters.

Storm water treatment works - any method, devices, or systems for preventing, abating, reducing, storing, treating, separating or disposing of storm water runoff.

Waters of the United States - as defined by 40 CFR § 122.2(a)-(g), which includes all waters used for interstate or foreign commerce, all interstate waters, all other waters which would or could affect interstate or foreign commerce, the territorial seas, and wetlands.

Wetlands - as defined by 40 CFR § 122.2

The following acronyms are used in this document:

CWA - Clean Water Act

EPA - Environmental Protection Agency

MS4 or MS4s - Municipal separate storm sewer system(s)

NEPA - National Environmental Policy Act

NPDES - National Pollutant Discharge Elimination System

TMDL - Total Maximum Daily Load