STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
William R. Snodgrass - Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102

Addendum to Rationale
Including
Record of Comments and Responses
(Notice of Determination)

General National Pollutant Discharge Elimination System (NPDES)
Permit for Discharges from Small Municipal Separate Storm Sewer Systems

Permit No. TNS000000

September 30, 2016

Administrative Record

The permit rationale dated February 25, 2016 sets forth the Division of Water Resource's (division's) basis for permit conditions to be applied statewide for the issuance of the new Tennessee National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (Phase II MS4s). The Phase II MS4 permit is intended to authorize stormwater point source discharges to waters of the State of Tennessee from stormwater runoff contaminated by municipal activities occurring on sites such as construction, residential, commercial and industrial properties within the jurisdiction of the small MS4 as defined at 40 C.F.R. § Part 122.26(b).

The current Phase II MS4 permit expired on September 1, 2015. On February 25, 2016, the division issued Public Notice of its intent to reissue the Phase II MS4 general permit. The proposed Draft Phase II MS4 permit was made available on the division's web site http://www.tn.gov/environment/article/permit-water-stormwater-discharges-permitting and via email to current permit holders and interested stakeholders. On March 14, 2016, the division published NOPH- TNS000000-160414, which announced a public hearing as follows:

Location:	**312 Rosa L. Parks Avenue**
	William R. Snodgrass – Tennessee Tower
	Nashville Room 3rd Floor
Date:	**Wednesday, April 27, 2016**
Informational Session:	**12:00 Noon Central Time**
Public Hearing:	**1:00 PM – 3:00 PM Central Time**

In addition, by video conference at the following Environmental Field Offices (EFOs):

Eastern Time Zone (1:00 PM)

EFO	Location	Phone
Chattanooga	1301 Riverfront Pkwy., Suite 206	(423) 634-5745
Johnson City	2305 Silverdale Rd	(423) 854-5400
Knoxville	3711 Middlebrook Pk	(423) 594-6035

Central Time Zone (12:00 PM)

EFO	Location	Phone
Jackson	1625 Hollywood Dr	(731)512-1300
Cookeville	1221 South Willow Ave	(931) 432-4015
Columbia	1421 Hampshire Pk	(931) 380-3371
Memphis	8383 Wolf Lake Dr, Bartlett	(901) 371-3000

The proposed NPDES permit was drafted in accordance with the provisions of the Federal Water Pollution Control Act, the Tennessee Water Quality Control Act, and other applicable standards and regulations. The division received comments through May 25, 2016. This Notice of Determination (NOD) serves as the division's response to all questions, comments and issues that were raised at the hearing and/or submitted during the entire public comment period. For the sake of brevity, similar comments were combined and comments such as those pointing out typographical errors or requested highly technical clarification that did not affect the substance of the permit in any manner are not included in the NOD. The final permit contains modifications that address the comments and questions from EPA and stakeholders.

Comments and Responses

Part/Section	Comment 1
General	The permit requirements should be no more stringent than what EPA requires of those small MS4s they administer. Several permit standards and requirements, particularly the permanent stormwater control measure standards, should be removed from the permit. The EPA has acknowledged that its regulations "do not include specific management practices or standards to be implemented" 74 Fed. Reg 68620 (2009)." Moreover, EPA has specifically noted that: "EPA disagrees with the notion that this regulation…. should create mandatory permit requirements which may have no legitimate application to a particular municipality. The whole point of the permit scheme for these discharges is to avoid inflexibility in the type and levels of control."

Response:

Recent EPA-issued and EPA-approved MS4 permits contain clear, specific and measurable stormwater standards similar to ours. (See Response to Comment 36, Permit sub-section 4.2.5.2). Tennessee's final Phase II MS4 General Permit, TNS000000, meets all federal and state laws and regulations, and includes requirements that comply with the Clean Water Act directive to reduce the discharge of pollutants to the Maximum Extent Practicable (MEP).

The permit contains sufficiently detailed standards and requirements to define the expectations of MEP. Except for the specific comments addressed below, EPA's Draft Permit Comment letter dated May 25, 2016, agreed with the division that, in general, the draft permit requirements are clear, specific, and measurable. The permit establishes effluent limitations for post construction stormwater controls and gives permittees discretion in selecting measures appropriate to their jurisdictions. In addition, the final permit has addressed many specific stakeholder comments and concerns by including additional clarification and flexibility as noted in comments and responses below.

Part/Section	**Comment 2a**
General	The Draft Permit Violates the Minimum Requirements of Federal Law Standard. The Draft Permit so diminishes the requirements of post-construction control for new and redeveloped sites as to violate the anti- backsliding provisions of state and federal law and rules. *See* Clean Water Act §402(o), 33 U.S. Code § 1342(o) and Tenn. Comp. R. & Regs Rule 0400-40-05-.08(j).

Response:

In a draft permit comment letter EPA Region 4, dated May 25, 2016, Mr. Giattina stated that some areas of the draft permit, particularly in the areas of management, operation and maintenance of permanent stormwater BMPs and the removal of buffer requirements on all streams, "raise(d) questions about whether the permit continues to require MEP-level controls and whether the change(s) reflect(s) prohibited backsliding…." Otherwise, EPA stated that the draft permit met the standard of MEP and did not constitute backsliding. The division has addressed the areas of concern in the final permit.

Part/Section	**Comment 2b**
General and Section 4.2.5.2 Permanent Stormwater Standards	Elimination of the one-inch retention requirement should be reversed on the following grounds, absent a requirement for controls that are equally effective: • Failure to include this requirement would violate Clean Water Act Section 402(p)(3)(B)(iii), which provides that MS4 permits "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, ..." Tennessee has demonstrated, through the successful implementation of this one-inch retention requirement, that it is, in fact, "practicable." • Failure to include this requirement would violate SB1830/HB1892 because, since the one-inch requirement is "practicable", that failure would put the Draft Permit in conflict with minimum requirements of federal law. As such, the elimination of the requirement would render the Draft Permit ultra vires. • Failure to include this requirement would render future general permits without it subject to the anti-backsliding provisions of the Clean Water Act, and EPA regulations. Such failure might also render the Draft Permit subject to EPA disapproval. Such elimination would thus render the Draft Permit in violation of SB1830/HB1892, which requires that state standards meet the minimum requirements of federal law, as well as ultra vires. • Failure to include a clear requirement in the Draft Permit will create a circular, "chasing its tail" standard. Clean Water Act Section 402(p)(3)(B)(iii) provides that MS4 permits "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, . . ." SB1830/HB1892 prohibits any "… permit issued pursuant to this section to a local governmental entity administering a municipal separate storm sewer system … [from imposing] post-construction stormwater requirements, except to the extent necessary to comply with the minimum requirements of federal law." Thus, failure to include a clear standard – such as that of the one-inch retention requirement, which has already been shown to be practicable – suggests that SB1830/HB1892 is itself void for vagueness under well-established principles of law. • Failure to include a clear retention requirement will also likely result in costly litigation from both development proponents and opponents as to what is or isn't stricter than federal requirements. It is further likely to lead to delays in the approval of development projects, possibly impairing growth in the state. Failure to include clear standards will likely result in flooding of adjoining owners' property. These adjoining owners' property rights will thus be impaired, and they will have to clean up any damage caused, which may result in additionally costly litigation by them against project proponents who do not effectively control runoff. Post-construction flooding that enters public property (like streets, parks, and streams) will also cause taxpayers in affected communities to have to "pick up the tab" for easily preventable damage. TDEC should not adopt regulations that are likely to impose significant costs on regulated parties, adjacent property owners, or the general public.

Response:

This permit does contain controls that are equally effective. The water quality treatment volume (WQTV) in the final permit is the volume of rainfall that must be treated. The primary standard is to remove as closely as possible to 100% of the pollutants from the WQTV. Since there are stormwater control measure (SCM) technologies that are readily available and will accomplish this requirement, such as infiltration and other capture technologies, the standard is designed to achieve equivalent pollutant removal to the 2010 permit.

The division understands that post-construction flooding has the potential to impact public property. However, this is an NPDES permit, issued for the purpose of pollutant reduction.

Part/Section	**Comment 3a**
General	The final permit must define the time period and return frequency for the rainfall event associated with any post-construction mandate. EPA guidance would suggest (at the maximum) that the rainfall event not exceed the 80th percentile, 24-hour rainfall event.

Response:

Except where incentives apply to reduce the WQTV, this permit requires SCMs that are designed to treat the runoff from the first inch of a rainfall event onto impervious surfaces. This is approximately the 80th percentile depth across the state (see table below).

The 80th percentile rainfall event represents a precipitation depth which is not exceeded by 80 percent of all rainfall events for the period of record. It does not have a time period (*i.e.*, duration; usually measured in hours) or return frequency (usually measured in years). It is a simple depth (usually measured in inches). However, depending upon how the rainfall data are collected, a time period might be implied. For example, rainfall percentiles determined from daily rainfall data imply a time period of 24 hours. A return period is typically only used to determine the annual probability of larger individual storms (*e.g.*, those that occur, on average, once every 100 years have a 1% annual probability), not for frequent storms (*e.g.*, those less than or equal to one inch). Thirty years of data is standard for characterizing climatic variables such as rainfall (NOAA 2016). The percentiles in the table above were derived from hourly rainfall data over a minimum of 30 years of record. Using hourly rainfall data provides more detail for use in site design than daily totals. Storms were delineated by a period of 6 hours without rainfall (instead of arbitrary 24-hour periods).

EPA guidance calls for use of the 95th percentile in Phase 2 MS4 general permits (EPA 2010), and EPA imposes this requirement for stormwater management at federal facilities (EPA 2009). However, many states use alternatives, such as: an 80th percentile event (KY, CO); an 85th percentile event (GA, CA); a 90th percentile event (NM, MT, RI, VT, NY, WA); 80% of the annual runoff volume (NV, ID, OR); or simply a specified depth of one inch (TN, WV, MS, MN, IN, MI, HI, CT, NC, ME, PA).

<u>Rainfall depths in Tennessee (inches)</u>

	80th percentile	95th percentile
Knoxville	0.93	1.78
Chattanooga	1.08	2.19
Nashville	0.99	2.03
Memphis	1.20	2.29

References:
EPA 2009. Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act", EPA 841-B-09-001, December 2009).
https://www.epa.gov/sites/production/files/2015-08/documents/epa_swm_guidance.pdf

EPA. 2010. MS4 Permit Improvement Guide.
https://www3.epa.gov/npdes/pubs/ms4permit_improvement_guide.pdf

NOAA 2016. National Climatic Data Center.
https://www.ncdc.noaa.gov/data-access/land-based-station-data/land-based-datasets/climate-normals.

Part/Section	**Comment 3b**
General	Please provide definitions for "top of bank," "riparian" and "forested." Add a definition for "larger common plan of development or sale," "developed land" and "a new opportunity for stormwater controls."

Response:

The term forested has been removed from the permit. "A new opportunity for stormwater control measures" means simply any opportunity for redevelopment with stormwater controls that the MS4 would like to identify. Definitions for the remaining terms have been included in the final permit.

The Tennessee Department of Agriculture developed a handbook with more information about riparian buffers:
https://www.tn.gov/assets/entities/agriculture/attachments/UrbanRiparianBufferHandbook.pdf

Part/Section	**Comment 4**
General	The permit fails to recognize the iterative process to improve water quality.

Response:

The permit is written with the iterative nature of stormwater management in mind. In particular, section 4.4 deals with reviewing and updating SCMs on the basis of effectiveness. Permittees must evaluate effectiveness and change any practices deemed to be ineffective. Permittees may do this without the direct approval of the division. Permittees must report and explain the change to the division for oversight purposes. Additionally, the monitoring requirements in part 5 were modified to place more emphasis on measuring program effectiveness and stream impacts, and using that information to make decisions on making changes to the management program.

Part/Section	Comment 5
General	Section 4.1 generally states that implementation of the BMPs in compliance with the permit constitutes Maximum Extent Practicable (MEP). As commenters, we agree with this position. However, multiple other sections of the permit include MEP as a stand-alone permit condition for compliance with a specific activity. It is inappropriate to include the MEP standard in the permit as a stand-alone requirement. Specifically, Section 3.1 seems to require special BMPs over and above the BMPs required in Sections 4 and 5 for streams that are identified as having unavailable conditions.

Response:

The first statement is an incomplete quotation from Section 4.1 that only partially describes MEP. The permit actually states "Implementation of the BMPs consistent with the SWMP and compliance with provisions of this permit, including reporting and monitoring requirements…" constitute MEP. Within the Clean Water Act, the term is used even more broadly.

The permit must be clear, specific, and measurable in each section of the permit. Permit standards and requirements must be established that clearly define the implementation of the MEP in each section of the permit. Implementation of the BMPs required in each section of the permit, including those specified in section 3.1, constitute the MEP for the applicable section. The MS4's BMP selection is expected to be pollutant specific and the corresponding pollutant reductions iterative.

Part/Section	Comment 6
General	This permit is not applicable to universities; a different permit should be developed for universities.

Response:

40 C.F.R. § 122.26(b)(16) establishes that only public institutions that own a separate storm sewer system are subject to MS4 regulations. The following footnote from the permit explains our attempt to cover that situation for agencies that do not have legislative ability.

> *"Throughout this permit, MS4s that do not have the regulatory authority to promulgate ordinances or other regulatory mechanisms (universities, departments of transportation…) must create approved and implemented policies, memoranda of agreement or other control mechanisms in place of ordinances or regulations."*

Part/Section	Comment 7
General	We further note that during the question and answer session before the public hearing on the Draft Permit, TDEC staff orally asserted that the use of the word "streams" was not intended to limit coverage of all "waters of the state." This oral assertion should be reduced to writing. Further, we reiterate the request made during the public hearing that video and/or a transcript of the question and answer session be made public on TDEC's website. The question and answer session included a number of specific answers to questions that should be part of the public and administrative record regarding the Draft Permit. A presentation given regarding the run-off assessment and assessment (RAT) tool should also be made part of the public and administrative record.

Response:

The final permit has been revised to include the definition of "streams."

The division followed the established protocols for draft permit public hearings. The preliminary question and answer period was advertised and always intended to be an informal opportunity for stakeholders and the public to ask questions that would be answered in the informal atmosphere of the session. There was never any intention of recording the preliminary session to become part of the public record. By providing these preliminary sessions, the division is simply trying to provide the public and especially stakeholders with opportunities to communicate with DWR staff in an informal setting. A link, *http://tnpermanentstormwater.org/TNRRAT.asp*, to a website with information and training on the TNRAT tool is being posted on the Data Viewer.

Part/Section	Comment 8a
General	The costs to MS4s both in necessary taxes/fees to implement the requirements of the permit, along with the costs to consumers who pay for all of the expenses related to compliance is a significant burden on Tennessee citizens and makes our state less competitive with surrounding states for economic investment.

Response:

Tennessee Code Annotated § 68-221-1107 authorizes Tennessee municipalities to establish a reasonable, graduated stormwater user's fee to fund the construction, operation, and maintenance of stormwater or flood control facilities. All states must comply with the Clean Water Act requirements applicable to MS4s.

General	**Comment 8b** Overly stringent mandates can have significantly negative economic impacts on homeowners, would be homeowners, and surrounding communities. On average, strict post-construction mandates (like those proposed in this permit) add costs to new homes ranging from $15,000 to $25,000 per lot. For every $1,000 increase in home price it is estimated that 5,200 Tennessee families are knocked out of the market for that home.

Response:

TDEC recognizes that home-ownership is very important to many people and that construction of new homes is an important industry in Tennessee. TDEC's mission statement reflects an understanding that regulatory programs can affect people's lives:

> The Tennessee Department of Environment and Conservation exists to enhance the quality of life for citizens of Tennessee and to be stewards of our natural environment by: Protecting and improving the quality of Tennessee's air, land, and water through a responsible regulatory system; Protecting and promoting human health and safety; Conserving and promoting natural, cultural and historic resources; and, Providing a variety of quality outdoor recreational experiences.
>
> Our department is committed to providing a cleaner, safer environment that goes hand-in-hand with economic prosperity and increased quality of life in Tennessee. We deliver on our mission through managing regulatory programs that maintain standards for air, water and soil quality while providing assistance to businesses and communities in areas ranging from recreation to waste management. (TDEC 2016)

However, there is little to no factual basis to support the comment.

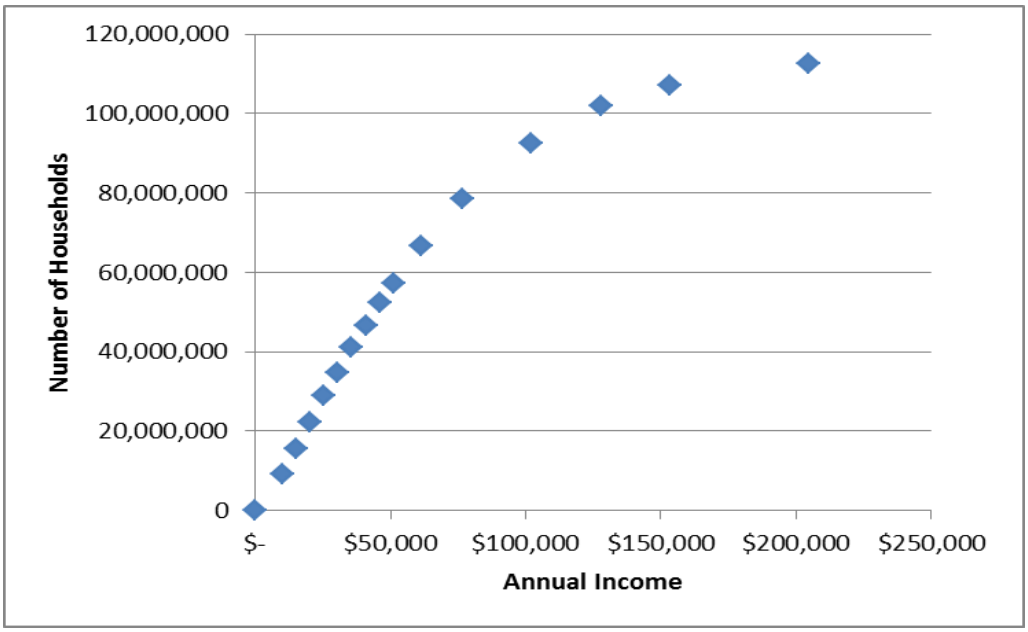
First, the comment provides no documentation whatsoever to support the assertion that costs increase by $15,000 to $25,000 per lot due to post-construction stormwater controls, and TDEC has not found any data to support these numbers.

It can be difficult to compare the costs and benefits associated with stormwater management. However, a review found that infiltration-based stormwater control measures can be both cost-effective compared to conventional stormwater measures and provide greater benefits to individual property owners and their communities (MacMullan and Reich, 2007). Local factors and site-specific conditions will vary and so will the resultant overall cost and benefit of stormwater control measures. A review by North Carolina State University (NCSU 2016) gives an overview of economic comparisons and supports the conclusion that infiltration-based stormwater control measures can decrease costs and increase value. The comparison lists potential effects for land developers and local governments. Moreover, it is overly simplistic to say that the per-unit cost of stormwater controls will prevent people from buying a home. Many factors influence the cost of building and the actual sale price of new homes, including location, size of the home (square footage), lot size, building materials, and interior design.

Second, the assertion that with every $1,000 increase in cost "5,200 Tennessee families are knocked out of the market for that home" is misleading. The net increase in a monthly mortgage payment is approximately five dollars for a $1,000 increase in price, based on a 30-year loan for the entire $256,000 median price of a new home in Tennessee at a 4% annual interest rate (THCDA 2016). Despite this modest price increase, a homebuilder industry report asserts that 5,227 out of 2,505,609 families in Tennessee would be unable to qualify for a mortgage on a new home if the price increased by $1,000 (NAHB 2014).

Even if we take the homebuilder industry's estimate as true, family incomes do not increase linearly, as seen in the chart below. As income levels go up, there are fewer families affected, so that each additional $1,000 increase in price affects fewer people. It is misleading to say that "every $1,000 increase" eliminates 5,200 buyers. It is not true that a $10,000 increase would eliminate 5,200 x 10 = 52,000 buyers. The non-linear relationship is especially pronounced above income levels of $50,000, and the median price of a new home is $275,000, with an income of $73,649 needed to qualify for a mortgage (NAHB 2014). While the potential impact of increased cost to a home-buyer is understood, the relationship cannot be extrapolated upward.

US Household Income (from data presented in NAHB 2014).



Moreover, the 2014 study looked only at new home prices. The median purchase price of a new home in Tennessee ($256,000) is considerably more than existing homes ($156,500), so more people can qualify for mortgages of existing homes (THDA 2014).

Third, the comment's assertions regarding costs overlook potential benefits to local governments and developers from improved stormwater controls.

Potential benefits to local governments include:

- Protecting water quality, which helps protect real estate values and tax revenues.
- Restoration of groundwater.

- Reduced public expenditures on stormwater infrastructure, including expensive retrofits.
- Reduced system-wide operations and maintenance costs of pipe infrastructure.
- Extension of the useful life of central pipe infrastructure as populations increase.
- Reduced regulatory costs associated with water-quality impacts, such as threats to sensitive species and permit compliance.
- Clean water is a quality-of-life benefit. Although difficult to quantify, its value may rival or exceed more tangible benefits. For example, protecting human health is the driving force behind the nation's water supply protection program.
- Reduced pollutant loading to downstream waters.

Potential benefits to developers include:

- Increased number of buildable lots. Reducing the size of stormwater ponds may result in more lots available for homesites.
- Less spent on infrastructure. Replacing curb, gutter, and storm sewers with roadside swales saved one developer $70,000 per mile, or $800 per residence.
- Increased property values. Lots in well-designed neighborhoods sold for $3,000 more than lots in competing areas.
- Initial savings are usually accomplished through reducing the amount of conventional stormwater infrastructure, less paving, and lower site preparation costs.

Finally, the 2016 permit clarifies that economic factors can be considered by permittees in developing a local stormwater program, especially the long-term impacts to the community. The 2010 permit included the following conditions:

> "A determination that standards cannot be met on site may not be based solely on the difficulty or cost of implementing measures, but must include multiple criteria that would rule out an adequate combination of infiltration, evapotranspiration and reuse such as: lack of available area to create the necessary infiltrative capacity; a site use that is inconsistent with capture and reuse of stormwater; physical conditions that preclude use of these practices."(Section 4.2.5.2 of the 2010 permit)
>
> "A determination that water quality buffer widths cannot be met on site may not be based solely on the difficulty or cost of implementing measures, but must include multiple criteria, such as: type of project, existing land use and physical conditions that preclude use of these practices."(Section 7 of the 2010 permit.)

These statements about cost were misunderstood by some to mean that cost was not to be considered at all. To avoid this confusion, the 2016 permit does not refer to cost.

References:

THDA 2014. Tennessee Housing Development Agency. 2014 Home Sales by County.
https://thda.org/research-planning/tennessee-housing-market

NAHB. 2014. National Association of Home Builders. State and Metro Area House Prices: the "Priced Out" Effect. https://www.nahb.org/en/research/housing-economics/special-studies/state-and-metro-area-house-prices-the-priced-out-effect-2014.aspx

TDEC 2016. Mission Statement. http://www.tn.gov/environment/section/about-tdec

TDHCA. 2016. Mortgage calculator. Texas Department of Housing and Community Affairs. https://www.tdhca.state.tx.us/calculator.htm

MacMullan, Ed; Sarah Reich. 2007. The Economics of Low-Impact Development: A Literature Review. http://www.econw.com/our-work/publications/the-economics-of-low-impact-development-a-literature-review

NCSU. 2016. North Carolina State University. Low Impact Development economic fact sheet. http://www.ces.ncsu.edu/depts/agecon/WECO/nemo/documents/WECO_LID_econ_factsheet.pdf

Part/Section	**Comment 9**
General	Considerable amounts of private property will be "taken" by the requirements of the permit. A mechanism for reimbursement by the State should be included for the fair market value of property removed from use by the permit.

Response:

Nothing in this permit constitutes a regulatory taking. However, a mechanism to present a takings claim against the State already exists via the Tennessee Claims Commission, which has sole jurisdiction over any takings claims related to State actions. *See* Tenn. Code Ann. §§ 9-8-307(a)(1)(V) and 9-8-307(a)(2)(A).

Part/Section	**Comment 10**
1.3.3.2 Non SW Discharges	1. Fifth bullet, Uncontaminated groundwater infiltration – Definition of infiltration – Add the word "storm" before the word "sewer" (two places). 2. This list includes the term "dechlorinated," but that term is not further defined or discussed in the permit. TDEC must further define what it considers necessary to satisfy that requirement.

Response:

1. This is the definition of infiltration, which is defined in terms of sewers, storm or otherwise. This list is taken from the Code of Federal Regulations and no change is necessary.

2. Dechlorinating is a common term used throughout the water and wastewater treatment industries and means the removal of free chlorine. The list of types of non-stormwater in this section is quoted directly from 40 C.F.R. § 122.

Part/Section	Comment 11
1.4. (b) Limitations on Coverage	As written, this permit limitation would appear to prohibit stormwater discharges associated with industrial activities into the MS4 system. We realize it could not be TDEC's intent to prohibit such discharges into the MS4 system. Accordingly, we request the language be replaced.

Response:

Section 1.4 is a list of discharges that are not authorized under the Phase II MS4 General Permit. As such, sub-part 1.4 doesn't prohibit or mandate anything; it simply lists discharges that are not authorized under this permit. Industrial stormwater discharges are (or should be) authorized under the Tennessee Stormwater Multi-sector General Permit for Industrial Activities (TMSP) or an individual NPDES permit and are not authorized by this general permit.

Part/Section	Comment 12
1.4. (f.) Limitations on Coverage	We are concerned with the "contribute to" language. The "contribute to" language was purposely removed from TDEC regulations with such intent clearly evidenced in rulemaking response to comments. We request that the "or contribute to" language be removed from this section as well as anywhere else it may appear in the permit.

Response:

The concept of "causing or contributing" to a violation of water quality is established in the Clean Water Act and EPA's implementing regulations, including 40 C.F.R. § 122.44(d)(1), which requires NPDES permits to impose water quality based effluent limitations on discharges of pollutants that have the reasonable potential to cause or contribute to a violation of state water quality standards. This provision is applicable to TDEC's issuance of NPDES permits. 40 C.F.R. § 123.25(a)(15).

The Tennessee Water Quality Control Act incorporates the concept of "contributing" to water quality violations by prohibiting the issuance of permits for activities that "would cause a condition of pollution either by itself or in combination with others." Tenn. Code Ann. § 69-3-108(g) (emphasis added).

The referenced rule revision addressed antidegradation and the definitions of "*de minimis*" and "measurable degradation," which are not applicable to this permit provision.

Finally, the 2010 permit included "contribute to" language, so removing it from this permit may implicate federal and state prohibitions against backsliding.

Accordingly, the permit's "contribute to" language will be retained.

Part/Section	Comment 13
1.4. (f) Limitations on Coverage	We request that the language pertaining to "an in-stream exceedance of water quality standards" be eliminated. This provision is inconsistent with Section 4.1 which specifically recognizes that implementation of BMPs, consistent with the SWMP and compliance with the provisions of the permit, constitute compliance with the MEP standard. Compliance with MEP provides an iterative process of working towards compliance with water quality standards.

Response:

Section 1.4 is a list of discharges that are not authorized under the Phase II MS4 General Permit. Both the Clean Water Act and the Tennessee Water Quality Control Act prohibit the issuance of NPDES permits that would authorize activities that would cause pollution. 33 U.S.C. § 1311(b)(1)(c); Tenn. Code Ann. § 69-3-108. Also, the 2010 permit includes identical language, so deleting this language may implicate federal and state prohibitions against backsliding. Accordingly, this language will be retained.

Part/Section	Comment 14
1.4. (g.) Limitations on Coverage	1. The language has been changed and is confusing. Please define and explain *"specific wasteload allocation WLA applicable to MS4 permits"* and "*Discharges of any pollutant into any water for which a Total Maximum Daily Load (TMDL) has been approved by EPA, where the TMDL establishes a specific wasteload allocation and recommends it be incorporated into an individual NPDES permit."* Rather than this confusing language, TDEC should first identify TMDLs with stormwater specific WLAs that may impact particular sMS4s and identify for those MS4s those TMDL mandates that may require additional SWMP considerations. TDEC should clearly state in the permit as MS4's obligations 2. The permit should also recognize a phased process to achieving water quality standards, including WLAs in TMDLs.

Response:

1. The division publishes TMDLs on its web site. MS4s can easily look up TMDLs for the watersheds that receive the MS4's discharges and can evaluate the WLAs and the Implementation Plan sections to determine applicable requirements. In addition, MS4s are notified if a new, applicable TMDL is being developed, including a public notice process. Most of the division's TMDLs simply require MS4s to comply with permit requirements to be in compliance with the TMDL.

2. TMDL WLAs related to stormwater permitting are based on the concept of MEP and the iterative nature of stormwater management.

Part/Section	Comment15a
1.4. (h.) Limitations on Coverage – spills	Recommend this paragraph be deleted. As written, this paragraph would leave the permittee open to possible third party litigation. While a spill response can usually be handled by emergency responders, the permittee has little control over spills that occur when they are not made aware of the spill. These types of spills should be treated as illicit discharges by the permittee. Like the federal NPDES stormwater permits, TDEC should tie any spill related requirements to those spills that exceed "Reportable Quantity" regulatory thresholds.

Response:

Section 1.4 is a list of discharges that are not authorized under the Phase II MS4 General Permit. Section (h.) is not a mandate. Any discharges resulting from spills are not covered under this permit unless prudent and reasonable measures are taken to mitigate the impact of the discharge on the receiving stream.

Part/Section	Comment 15b
1.5 Obtaining Authorization. 2.1. Deadlines for Notification. 2.2 Where and How to Submit Notice of Intent.	In accordance with Tenn. Comp. R. & Regs 0400-40-05-.06, the public must be afforded a meaningful opportunity to review and comment on permits. The authorization section of this permit must be expanded to require that MS4s provide public notice of NOIs and Programs, post them on their web sites, allow for comment and discussion, and make record of the comments received and their responses to those comments. All of that must be submitted with the NOI to be reviewed by TDEC as the agency determines whether coverage under the general permit should be granted to any particular MS4.

Response:

This permit, along with the drafting process, public notice process, and hearing process used in the completion of the final permit, is in full compliance with Tenn. Comp. R. & Regs 0400-40-05-.06. As stated above, this permit is clear, specific, and measurable; and the publication of this Notice of Determination and the issuance of the Phase II Municipal Separate Storm Sewer System General Permit, TNS000000, is the completion of the MS4's and the public's opportunity to review and provide comment regarding this permitting action.

Part/Section	Comment 16
Section 3.1 Discharges to Waterbodies with Unavailable Parameters	This section gives TDEC the authority to require a corrective action plan of the permittee if discharges from the MS4 are determined to cause or contribute to an in-stream exceedance of water quality standards. We believe this is the purpose of TMDLs with WLAs and an implementation plan. TDEC should be responsible for identifying when a SWMP derived in conformity with the permit does not provide sufficient protection to meet any TMDL.

Response:

A corrective action plan (CAP) is simply an enforcement tool used by the division to bring about compliance. A CAP is used to mutually prescribe a detailed plan and schedule to bring a permittee back into compliance with, in this case, the general permit. Monitoring and, where necessary, CAP implementation are part of the iterative process for MS4s to achieve water quality.

Part/Section	Comment 17
Section 3.1 Discharges to Waterbodies with Unavailable Parameters	Modify the first sentence of paragraph 1 to replace "the most current 303(d) list" to the "303(d) list effective at the time of permit issuance."

Response:

Except for Monitoring Parts 5.1 and 5.2, MS4s are expected to use the most recent versions of assessment tools when developing, assessing, evaluating, implementing and improving the various programs in the six minimum measures.

Part/Section	Comment 18
Section 3.1 Discharges to Waterbodies with Unavailable Parameters	During the public hearing for the Draft Permit, TDEC informed participants that unassessed waters cannot be deemed to have unavailable conditions and therefore are assumed to have available conditions. This reasoning is contradictory to water quality protection and negates the rules in place to protect urban streams from further degradation. This section must require unassessed streams to be considered to have unavailable conditions for relevant parameters until demonstrated otherwise and thereby protected from polluted runoff.

Response:

The referenced comment was made in the context of water quality riparian buffers. In EPA's draft permit comment letter, James D. Giattina expressed concern the proposed draft permit raised questions of meeting MEP level controls and raising backsliding concerns because of the elimination of buffers on some streams, particularly those that are unassessed (See comments 43b and 48). In response, the permit has been changed to require buffers based on the drainage area of the receiving stream rather than the assessment.

Part/Section	Comment 19
Section 4.1 Requirements & Section 4.4	TDEC should not have to approve SWMPs. TDEC doesn't require a copy of the SWMP to be submitted to them for approval so why would changes have to be approved? This also restricts the inherent flexibility that the permit process should be affording the permittees for program implementation. The Program must be reviewed periodically in accordance with Subpart 4.4. This is an additional requirement to evaluate the SWMP annually. Why is this being required? It seems like an onerous requirement to do this annually

Response:

The division has been granted the regulatory responsibility for administering the federal NPDES program. In such a capacity, the division has the oversight and enforcement responsibilities for this program. Because these annual review requirements were contained in part 4.4 of the 2010 general MS4 permit, this is not an additional permit requirement. As in the draft permit, part 4.4 of the new permit allows MS4s to add control measures at any time; to replace an ineffective SCM at any time, and notify the division of the change in next annual report with justification. MS4s may not eliminate an activity/BMP without written approval.

Part/Section	Comment 20
Section 4.1.1 – Newly Permitted MS4s	Several instances in the table for new permittees require an ordinance implementation within a certain number of months. In order to implement ordinances, most small MS4s must go through a process of writing, stakeholder meetings and elected/appointed board approvals. It would be a more efficient use of the permittee's resources to only go through this process once for permit implementation actions. Since the longest time frame for ordinance revisions/implementation is 24 months, we believe all ordinance revisions should be based upon this longer time frame. To this, the 18 months specified in rows labeled 4.2.3 and 4.2.4a should be changed to 24 months. Sections 4.2.4 and 4.2.4a have different timetables. Passing an ordinance before an MS4 has program components, such as supporting policies and resources, in place is not advisable. All construction site runoff program deadlines should be set to 24 months for new MS4s.

Response:

The division understands the efficiency of making multiple ordinance revisions at the same time, and would encourage MS4s to do so when possible. However, different requirements have different timeframes for implementation based on the anticipated complexity of the requirement. Therefore, the permit will not mandate one timeframe for all requirements.

Part/Section	Comment 21
Section 4.1.2 – Previously Permitted MS4s – Implementation Schedule	4.2.5 has significantly changed from the previous permit, so much so that it will probably take more than 90 days to fully understand the impacts of the changes let alone attempt to provide comments on them within the comment period for this draft. To require an implementation schedule be submitted within 90 days of NOI submittal is not only unreasonably but onerous. Recommend this requirement be deleted. Additionally, implementation schedules should be contained in the permittee's SWMP. Since the permittee is not required to submit the SWMP to TDEC, it is inappropriate to request a portion of the SWMP be submitted in permit language. It can be submitted to the local EFO when they request the SWMP in preparation for their audits/inspections. The implementation schedule should be submitted within 90 days of receiving Notice of Coverage, instead of submittal of the Notice of Intent.

Response:

Requiring a schedule such as this is actually an NPDES permitting issue and may be required in any NPDES permit. The division recognizes that the permanent stormwater control program is multi-faceted and, especially in light of the new standards and recent state legislation, implementation will be complicated. Different jurisdictions are in different places in the development process, and a one-schedule-fits-all approach is not appropriate. The permit contains a compliance date for the overall program of 24 months, but this isn't descriptive of the jurisdictions that already have a program in place and just want to make minor changes.

40 C.F.R. § 122.47 allows schedules of compliance in NPDES permits for requirements that cannot be implemented immediately. However, these schedules require detailed intermediate deadlines and frequent intermediate progress reports that will vary by jurisdiction. It is much more appropriate for this general permit to allow each MS4 to submit its own implementation plan.

The division also recognizes that the stormwater legislation adopted after the draft permit was issued would prevent some MS4s from meeting the proposed schedules. Therefore, the final permit allows any jurisdiction that (1) intends to adopt programs that exceed the minimum requirements of federal law, or (2) currently administers post construction stormwater through control mechanisms other than ordinances or resolutions, an extra 90 days to submit their NOIs. These MS4s are also required to submit a brief explanation of the changes and the standards they intend to adopt along with a step-wise schedule.

In the final permit, the implementation schedule has been tied to the date of issuance of the Notice of Coverage rather than specific calendar dates.

Part/Section	Comment 22
Section 4.2.1 – Public Education and Outreach	There is no regulatory requirement for a Public Information and Education (PIE) plan. If the requirement is retained in the permit, it should not be a mandatory permit requirement but listed as a recommendation.

Response:

40 C.F.R. § 122.34 (b)(1) provides, "You must implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff." The PIE plan is simply the documentation of this federally-required program.

Part/Section	Comment 23
Section 4.2.2 Public Involvement/ Participation	The permit should not have a requirement for the development and implementation of a publicizing plan, particularly within a specified time period. Guidance and other suggestions for the different public education, involvement and participation approaches should be placed in the rationale and not in the permit text. The permit needs to specify that MS4 phase II programs will provide all public material related to the Stormwater program, including Stormwater Appeals board meetings on the jurisdiction's web site within a timely manner to enable meaningful public involvement in decision-making related to the MS4 program.

Response:

MS4s must have a public involvement/participation and a program to advertise these opportunities. 40 C.F.R. § 122.34 (b)(3) & (4), Illicit Discharge Detection and Elimination and Construction Stormwater Runoff Control, both require public input/participation, and public participation is strongly recommended throughout guidance in the other minimum measures. The deadline is a necessary and appropriate measure to implement this federal requirement. The plan does not have to be complicated and could be included in the PIE plan.

Part/Section	**Comment 24**
Section 4.2.3 Illicit Discharge Detection and Elimination	1. 3rd paragraph line 2: Add the word "unauthorized" before the word "non-stormwater." Not all non-stormwater discharges are prohibited. 2. Language should require continued implementation of an IDDE program that is "*compliant with the requirements of this section."* 3. Language states the map must show, "*inputs into the storm sewer collection system, such as the inlets, catch basins, drop structures or other defined contributing points to the sewershed of that outfall*". This bullet should be rewritten to focus on the actual MS4 as opposed to privately owned systems. 4. Language requires the implementation of plans to eliminate non-stormwater discharges, illegal discharges, and ID hotspots. The word "*program*" should be used instead of "*plan*" to avoid implying that a written plan is required. Otherwise, please clarify where a written plan or standard operation procedure is required.

Response:

1. The language was changed to include "unless authorized by 1.3.3.2."

2. This section already requires development, modification if necessary, implementation, and enforcement of the IDDE program. No change is necessary.

3. The map is only expected to be developed for public infrastructure or private infrastructure where the MS4 has operation and maintenance (O/M) responsibilities. Private SCMs don't need to be a part of the map, but must be inventoried/tracked for long term O/M if they discharge to the MS4.

4. This paragraph specifically calls for Standard Operating Procedures, etc. Therefore, "Plan" means Stormwater Management Plan and should remain so.

Part/Section	**Comment 25**
Section 4.2.4 Construction Site Stormwater Runoff Control	The permit should not require program updates as a result of the issuance of a new Construction General Permit. Although an update will most likely occur as a result of annual SWMP review, this should not be required. 40 C.F.R. § 122.43(b) states "For a State issued permit, an applicable requirement is a State statutory or regulatory requirement which takes effect prior to final administrative disposition of a permit." As such, it does not include any requirements (including the Construction General Permit) that come into effect during the permit term.

Response:

The CGP is a permit and is not a "statutory or regulatory requirement." Construction permits (general or individual) are required for the industrial activity of construction. The CGP may contain requirements that towns, cities and other jurisdictions must meet. Since the CGP authorizes stormwater discharges

from the activity much like the TMSP authorizes stormwater discharges from other industries, and owner/operators of the activity must obtain coverage to discharge stormwater according to the requirements of the current (or latest) permit, and since the activity may be within the jurisdiction of the MS4, the MS4 must also be aware of and in compliance with the requirements of the latest permit. The citation means that statutory and regulatory requirements included in the permit must be from those statutes and regulations (laws and rules) in effect at the time of the permitting action disposition. Permit (CGP) requirements and those of other permits within the jurisdiction will change over time.

Part/Section	**Comment 26**
Section 4.2.4 Construction Site Stormwater Runoff Control	Subparagraph e, is broad in its application and could be assumed to imply an MS4 is responsible for controlling waste from construction sites that do not require coverage under the Tennessee Construction General Permit. Please modify to only permitted sites.

Response:

This subparagraph is only applicable to construction activities subject to this section of the permit.

Part/Section	**Comment 27**
Section 4.2.4 Construction Site Stormwater Runoff Control	Subparagraph g, Please provide clarification of TDEC's expectation regarding public access and information on construction sites. Through TDEC program audits, MS4s have encountered an expectation that "mechanisms for public access" to information on construction projects must come in the form of a formalized customer service program dedicated to construction water quality information. Such a formalized program would require a substantial investment. With regard the public access and input, most MS4s make construction site information and their permits available for public access **when requested**. This public access mechanism is typically a face-to-face encounter between the MS4 staff person and the person requesting the information (usually a land development plan or a permit). Land development timelines, deadlines, and other information is accessible to the public via normal planning commission and local government council tools and processes, such as regular public meetings, zoning maps, regulations, codes, etc.

Response:

The permittee must have mechanisms for public access to information on projects and receiving and considering comments from the public on those projects. The permittee has the flexibility to choose the mechanisms to satisfy this requirement. The examples provided in the comment above are acceptable mechanisms.

Part/Section	Comment 28
Section 4.2.4 Construction Site Stormwater Runoff Control	Subparagraph j, The identification of priority construction sites and requirements should just reference the CGP requirements for priority sites and not restate. (multiple commenters)

Response:

Priority construction activities and the applicable sites are not defined in the CGP. Designating priority activity and appropriate sites is intended to identify which construction activities require the actions specified in section 4.2.4(j) of this permit.

Part/Section	Comment 29
Section 4.2.4 Construction Site Stormwater Runoff Control	TDEC can simplify this section by merely referencing the TN CGP without repeating its terms and conditions. We believe that by TDEC repeating the TN CGP provisions and referencing other "guidance," it risks creating inconsistencies between the TN CGP and the sMS4's obligations. The entire permit section can be simplified. Additionally, the permit implies that the permittee must ensure that site BMPs are effective and is responsible for maintaining compliance on the construction site. The site operator should be responsible for maintaining compliance on site.

Response:

MS4 regulations have specific requirements that the construction stormwater regulations do not have. Communication of these may not be accomplished by referencing CGP requirements. 40 C.F.R. § 122.34(a)(4)(ii) and the permit require:

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

These requirements apply to MS4s; making it very clear that the MS4 is ultimately responsible for the oversight and enforcement of construction site EPSCs and water quality. However, the division recognizes that subparagraph (h) was poorly worded and has been revised to read: “The ERP must include specific enforcement steps to ensure construction operators maintain compliance with the permittee’s construction program requirements.”

Part/Section	Comment 30
Section 4.2.4 Construction Site Stormwater Runoff Control	Once a month inspections can be valuable for identifying problems on priority sites. However, some construction site operators have established histories of compliance, making monthly inspections unnecessary. 1. Bullet d.; in sentence 1, add the word "active" in front of "public" and "within the MS4" after "sites". 2. TDEC should abide by the requirements in 4.2.4.

Response:

Monthly inspections are required only for sites discharging to waters with unavailable parameters or Exceptional Tennessee Waters. These sites are defined in the permit as "priority construction" sites and monthly inspections provide necessary additional protection for the receiving streams.

1. Since construction sites can lie dormant for long periods of time, the word "permitted" rather than "active" was added to the final permit. Even if the site does not have current construction activity, EPSC should be checked at some frequency to ensure proper function.

2. The division has its own inspection and enforcement procedures, as required by a Memorandum of Agreement with EPA dated October 24, 2007.

Part/Section	Comment 31
Section 4.2.5 Permanent Stormwater Management at New Development and Redevelopment Projects	1. The small MS4s of Shelby County respectfully ask that all post development regulations be deferred or waived until TDEC issues a permit to Memphis of substantially equivalent requirements as the one proposed to be issued to small MS4s. 2. Does this requirement apply to development within the MS4 program area, or does it apply to only those projects that discharge directly into the MS4 system? What is the responsibility of the MS4 Program for developments that discharge directly into Streams and WOTUS? What is the responsibility of the MS4 Program for developments that do not discharge into the MS4 system, but located within the MS4 jurisdiction; such as discharges into other MS4s – TDOT, adjacent MS4s, Phase 1 MS4s.

Response:

1. The division plans to reissue the Memphis permit with the same permit standards as Phase II permit very soon after the Phase II permit is issued. Consistency across geographically-related MS4s would potentially be better for the programs and water quality. The division will work with MS4s to coordinate implementation between Phase I and Phase II programs.

2. The permit regulates discharges of pollutants from the MS4 to waters of the state.

Part/Section	Comment 32
Section 4.2.5.1 Program Requirements & Section 4.2.5.5. Development Project Plan Review, Approval and Enforcement	The permit language requiring plans review and approval for both construction stormwater plans and permanent stormwater management SCMs seems to be redundant and causes confusion during TDEC audits. There is an understanding that there must be two different review and approval processes. Please clarify this issue.

Response:

Permanent Stormwater Control Measures (PSCMs) are different from construction stormwater EPSCs. There must be plans review for construction stormwater controls and permanent stormwater controls. There may or may not be a separate process, person, office, etc. They may or may not occur at the same time or place or by the same individual(s), but both types of plans must be reviewed and approved.

Part/Section	Comment 33
Section 4.2.5.1 Permanent Stormwater Standards	"*The permittee shall identify and make information available for a suite of SCMs to be used in various situations. Application of innovative SCMs is encouraged. If the permittee decides to significantly limit the number of SCM options, it must document in the SWMP how the performance standard can be met with the limited set of control measures that are allowed.*" These statements are vague as to the suite of SCMs required, yet overly prescriptive in that it absolutely requires a suite of SCMs. As this is written, the burden of SCM design is placed upon the permittee. We believe this is not TDEC's intent. The project designer is responsible for determining what SCM they should use to achieve the water quality standard for the development or re- development. With the vast amount of information currently available to designers, the permittee shouldn't have to be required to provide a suite of SCMs for use. Also define and explain innovative SCMs.

Response:

40 C.F.R. § 122.34 (b)(5)(ii)(A) requires MS4s to "[d]evelop and implement strategies which include a combination of structural and/or non-structural best management practices (BMPs) appropriate for your community."

The regulation is straightforward. The MS4 must designate BMPs that designers are allowed to use within the MS4's jurisdiction. The only restriction beyond the regulation that the permit language applies is to require the MS4 to explain why it might decide to significantly limit the BMPs it will allow in its jurisdiction. DWR is requesting this justification in its oversight role and wishes to discourage the unnecessary limiting of PSCMs. Otherwise, catalogs of BMPs are published and recognized and the division always encourages innovation.

Part/Section	Comment 34
Section 4.2.5.2 Permanent Stormwater Standards	In the 2010 permit (§ 4.2.5.2), cost was explicitly prohibited as a sole criteria for determining that standards cannot be met, the rationale for the new draft (§ IV.D.5) says that cost will now be a permissible basis for consideration of whether permanent stormwater standards can be met. However, the word "cost" does not appear in the draft permit itself, nor is there a clear reference to cost in that context. If cost is to be considered, it can disqualify preferred control practices only when it can be demonstrated by a qualified design professional that the cost of such controls at any particular site are significantly above less protective alternatives. Such demonstrations must be available for public review and summarized in annual reports. Further, as the requirement is to meet the "maximum extent practicable" standard, the introduction of this consideration is impermissible in any event and must be removed.

Response:

Cost is an element of practicability, so it is an appropriate consideration in implementing the MEP standard. EPA includes cost in determinations of applicability. Accordingly, the permit does not exclude the use of cost as a factor. However, cost should not be used exclusively as the only factor. On the other hand, taking the old language to the extreme, stakeholders were concerned that they could be required to install unrealistic technologies to meet the PSW standards. The division has no intent to exclude cost from practicability considerations.

Part/Section	Comment 35a
Section 4.2.5.2 Permanent Stormwater Standards	Impervious surfaces are not point sources. Sheet flow is non-point runoff. Non point sources should not be regulated by the NPDES program.

Response:

Congress has defined the scope of the Clean Water Act to include discharges from municipal storm sewer systems. Accordingly, the permit requires permittees to regulate the discharge of pollutants from their MS4 to waters of the state, as required by section 402(p) of the Clean Water Act, 33 U.S.C. § 1342(p)(3)(B)(iii).

In accordance with this statutory provision, the permit requires best management practices within the permittee's jurisdiction to reduce the discharge of pollutants to the maximum extent practicable. The storm sewer systems do not typically generate pollutants themselves (although erodible channels such as earthen ditches are a potential source of pollutants), but instead collect, channel, and discharge stormwater containing pollutants, including stormwater that originates from sheet flow. The runoff from impervious surfaces is a significant source of pollutants into the MS4 (NSQD, 2005; NRC, 2009), but individual land development sites are not treated as point sources required to obtain an NPDES permit for post-construction runoff. Accordingly, and as required by federal law, the permit includes provisions for post-construction stormwater controls at new development and redevelopment sites.

References:
NSQD, 2005. National Stormwater Quality Database. http://www.bmpdatabase.org/nsqd.html

NRC, 2009. National Research Council. Urban Stormwater Management in the United States. http://www.nap.edu/catalog/12465/urban-stormwater-management-in-the-united-states

Part/Section	**Comment 35b**
Section 4.2.5.2 Permanent Stormwater Standards	TDEC uses "one-size-fits-all stringent mandates".

Response:

The division disagrees with this assertion. Consistent with federal requirements, the recent stormwater legislation recognizes that it is TDEC's obligation to establish "numeric or narrative effluent limitations to manage post-construction stormwater." In accordance with this statutory obligation, the permit includes a suite of narrative effluent limitations and allows each permittee discretion in selecting measures appropriate for their local area and for site-specific conditions to comply with these limitations. Land developers within each jurisdiction will propose site-specific stormwater controls to comply with the locally-adopted requirements and address site-specific limitations (see permit section 4.2.5.2), use local incentives (see permit section number 4.2.5.2.2), and leverage unique opportunities. Moreover, this permit allows each MS4 to identify site-specific limiting conditions that it will consider during plans review and to incentivize low impact development by providing site-specific reductions in the design criteria for stormwater controls. Finally, MS4 jurisdictions have the option to seek an individual NPDES permit specifically tailored to local conditions instead of seeking coverage under this general permit.

Part/Section	**Comment 35c**
Section 4.2.5.2 Permanent Stormwater Standards	Small MS4s are "self-motivated" and are "incentivized by their communities and desire to maintain the quality of the local environment," making such standards unnecessary.

Response:

While many communities seek to enhance the quality of life for their citizens by protecting water quality, this inherent desire has proven insufficient to prevent pollution of waters of the state within their jurisdictions (TDEC, 2014a; TDEC, 2014b).

TDEC, 2014a. 305(b) Report. The Status of Water Quality in Tennessee
http://www.tn.gov/assets/entities/environment/attachments/water-quality_2014-305b-final.pdf

TDEC, 2014b. Final Version Year 2014 303(d) List.
http://www.tennessee.gov/assets/entities/environment/attachments/wr_wq_303d-2014-final.pdf

Part/Section	Comment 36
Section 4.2.5.2 Permanent Stormwater Standards	TDEC proposes a new concept of water quality treatment volume (WQTV), which is a pseudo stormwater retention standard (and unlawful).

Response:

This permit does not regulate stormwater quantity or create a retention requirement. The post-construction elements of this permit are focused on the treatment of stormwater for the removal of pollutants prior to discharge. As defined in the permit, the WQTV is simply the volume of runoff **for which treatment is required**; that is, the runoff generated by the specified rainfall depth of one inch, which is approximately the 80th percentile rainfall depth for Tennessee. Any volume of stormwater may be discharged from the site after adequate treatment.

Although the phrase "WQTV" was not included in TDEC's 2010 permit, that permit required permittees to enact programmatic controls so that new development sites would manage the "first inch" of rainfall with no discharge where possible and to treat runoff to 80% TSS removal where limitations exist. The 2016 draft permit clarifies TDEC's expectations. By specifying that only "one inch" needs to be treated, the permit does not require the design, installation, and maintenance of controls that would otherwise be needed to treat the runoff from rainfall in excess of this minimum design standard. In other words, defining a WQTV means that not every drop of rain from every storm needs to be treated.

The WQTV is **not** a new concept. Instead, the WQTV as a standard design practice has been utilized for decades across the country, and is currently in wide use across the country, as shown below by a review of all 50 states' small MS4 programs. In their Phase 2 permits, 31 states use some form of a water quality volume, percentile rainfall depth, or explicitly specified rainfall depth (*e.g.*, one inch). Three more states use other design storms (*e.g.*, 2-yr/ 24-hr) and/or specify some form of infiltration or groundwater recharge. Therefore, 34 states out of 50 use a concept similar to the WQTV in this general permit. Some of the remaining 16 states are continuing to operate with expired permits, and these are reasonably expected to be updated soon.

An EPA report on performance standards used by states in MS4 permits included a link to a summary list of state requirements that was current as of 2011 (EPA 2014). The summary tables below were updated by EPA in July 2016.

ABBREVIATIONS USED IN THE TABLES BELOW

CGP	Construction General Permit
IC	Impervious Cover
LID	Low Impact Development
MEP	Maximum Extent Practicable
MS4	Municipal Separate Storm Sewer System
RR	Runoff Reduction
SF	Square Feet
TP	Total Phosphorus
TSS	Total Suspended Solids
WQv	Water Quality Volume

EPA Region	Program	Where required	Size Threshold	Performance Standards for New Development			Redevelopment Standard
				Volume-based/ Retention	Treatment	Exception	
1	Connecticut	Statewide (CGP)	1 acre disturbed area	Retain 1 inch	Reduce the average annual TSS loadings by 80% (assumed met by retention standard).		For sites >40% effective IC, retain 0.5 inch and treat remaining 0.5 inch
1	Maine	MS4s (State regulation)	1 acre disturbed area		Treat 1" times impervious area plus 0.4 times pervious area		No increase in current stormwater runoff
1	Mass-achusetts	Wetland areas, MS4s (State regulation)	1 acre disturbed area	Retain 1 inch multiplied by the impervious area and/or meet treatment standard	Remove 90% TSS AND 60% TP generated from the impervious area	Retain 0.8 inch multiplied by the impervious area and/or remove 80% TSS AND 50% TP generated from the impervious area	Retain 1 inch multiplied by the impervious area and/or meet treatment standard
1	New Hampshire	MS4s (State regulation)	1 acre disturbed area / 100,000 sf outside MS4s	Narrative standard			

EPA Region	Program	Where required	Size Threshold	Performance Standards for New Development			Redevelopment Standard
				Volume-based/ Retention	Treatment	Exception	
1	Rhode Island	MS4s (Phase II permit)	1 acre disturbed area		Capture and treat WQv equivalent to 1.2" rainfall runoff	WQv requirement may be waived or reduced by applying disconnection -based LID practices	Same as new development if <40% IC; >40% IC then reduce IC by 50% or water quality and recharge for 50% of area
1	Vermont	State-wide (State regulation)	1 acre develop-ment, redevelop-ment and/or increased impervious cover	Capture 90% annual storms	80% TSS and 40% TP removal	WQv may be reduced where non-structural practices are employed.	Reduce IC by 20% or treat 20% of WQv
2	New Jersey	State-wide (State regulation)	1 acre disturbed area or increase IC by ≥ 0.25 acres	Maintain groundwater recharge volume or infiltrate runoff for 2-year storm (post development volume to predevelop-ment volume)	80% TSS reduction		50% TSS reduction or equivalent to existing BMP; 80% TSS removal to new IC
2	New York	State-wide (CGP)	1 acre disturbed area	Runoff Reduction (RR) for post-development volume (0.8" – 1.2") to replicate pre-development hydrology	Remaining WQv not retained must be treated	Single family homes less than 5 acre disturbance	Same as new development but if not possible IC reduced by 25%, and/or 25% WQv treated

EPA Region	Program	Where required	Size Threshold	Performance Standards for New Development			Redevelopment Standard
				Volume-based/ Retention	Treatment	Exception	
3	Delaware	State-wide (State regulation)	5,000 sf disturbed area	RR for Resource Protection Event (1-year) (post-development runoff volume to predevelopment volume) or 0% effective IC	Remaining WQv not retained must be treated	RR practices should be employed to the MEP.	RR to achieve 30% reduction in effective impervious area from existing conditions
3	Maryland	State-wide (State regulation)	5,000 sf disturbed area	Runoff Reduction using Environmental Site Design required for treatment, and to the MEP for 1-year storm.	Manage 0.9" / 1" of rainfall		Same as new development if <40% IC, for >40% IC, volume control (ESD to the MEP) required for 50% of existing imperviousness, or reduce impervious area by 50%, or combination; no channel protection for existing imperviousness
3	Pennsylvania	State-wide (State regulation)	1 acre disturbed area	For sites <1 acre; remove 1" of runoff from IC. All sites: No post development runoff volume increase for the 2-year storm	85% reduction TSS and TP; 50% reduction in NO3-N		Same as new development; modeling guidance for pre-development IC
3	District of Columbia	District-wide (Phase I permit)	5,000 sf of land disturbance	1.2 inches (90th percentile storm)	0.3-0.5 inch treatment (Guidance)		

EPA Region	Program	Where required	Size Threshold	Performance Standards for New Development			Redevelopment Standard
				Volume-based/ Retention	Treatment	Exception	
3	Virginia	State-wide (State regulation)	1 acre or 2,500 sf in Chesapeake Bay Preservation Area	Requires control of the 1-yr storm	New Development: Shall not exceed 0.41 lbs P/acre/yr		20% (sites >1 acre) 10% (sites ≤1 acre) P reduction from existing condition
3	West Virginia	MS4s (Phase II permit)	1 acre disturbed area	Keep and manage on site 1" rainfall from 24-hour storm			0.2" reduction of 1" on site retention standard and additional 0.2" reductions exist
4	Alabama	MS4s (Phase II permit)	1 acre disturbed area	Narrative standard			
4	Florida	State-wide (State regulation)	4,000 sf impervious area	Must meet predevelop-ment volume in closed basins only	Varies by Water Management District – from first ½ inch runoff to 1.25 times percent imperviousness plus an additional one half inch of runoff for online retention systems		Same as new development
4	Georgia	MS4s (Phase II permit)	1 acre disturbed area		Treat runoff from 85% of storms (1.2" rainfall)		Same as new development
4	Kentucky	MS4s (Phase II permit)	1 acre disturbed area		Manage 80th percentile precipitation event runoff (0.75")		Same as new development

EPA Region	Program	Where required	Size Threshold	Performance Standards for New Development			Redevelopment Standard
				Volume-based/ Retention	Treatment	Exception	
4	Mississippi	MS4s (Phase II permit)	1 acre disturbed area	Develop site designs and require measures that infiltrate, evapotranspirate, harvest and/or use first inch of rainfall			Same as new development
4	North Carolina	In 20 coastal counties; water supply water-sheds, nutrient sensitive waters, Outstand-ing National Resource Waters (State regulation)	1 acre disturbed area; Coastal-Non residential: 10,000 sf IC; Residential w/in ½ mile shellfish waters: 10,000 sf IC (other variations for specific programs)		Non-coastal: 1" rainfall; Coastal: 1.5" rainfall or vol. diff. of 1-yr, 24-hr rainfall post-pre development	Low density or redevelop-ment	No treatment required if no net increase in built upon area and provide equal or better stormwater control as previous development
4	South Carolina	MS4s (State regulation)	1 acre disturbed area	1,000 ft from shellfish waters, retain 1.5" of rainfall	Volume control varies by practice		Same as new development
4	Tennessee* **updated by TDEC in this document*	MS4s (DRAFT Phase 2 general permit, Feb. 2016)	1 acre disturbed area		Treat WQv to maximize pollutant removal	Site-specific limitations may be allowed	Same as new development; incentives may be allowed
5	Illinois	MS4s (Phase II permit)	1 acre disturbed area	Narrative standard			

EPA Region	Program	Where required	Size Threshold	Performance Standards for New Development			Redevelopment Standard
				Volume-based/ Retention	Treatment	Exception	
5	Indiana	MS4s (State regulation)	1 acre disturbed area		Phase I only: Treat runoff from first 1" of precipitation		Same as new development
5	Michigan	MS4s (Phase I/II permits)	1 acre disturbed area	Post-construction rate and volume to not exceed predevelop-ment for all storms up to 2-yr, 24-hr storm	Treat first inch runoff or 90% of all runoff-producing storms (to reduce TSS load by 80% or concentration less than 80 mg/L)		
5	Minnesota	State-wide (CGP)	1 acre disturbed area	1 inch retention on-site	No net increase of TSS or TP		Reduce IC and/or implement stormwater management practices
5	Ohio	State-wide (CGP)	1 acre disturbed area		Treat WQv equivalent to 0.75" rainfall runoff volume		20% WQv treatment and/or 20% IC reduction
5	Wisconsin	State-wide (State regulation)	1 acre disturbed area	Infiltrate runoff to achieve 60–90% of predevelop-ment volume based on IC level	80% TSS reduction	Size of infiltration area is limited to 1%–2% of site area.	40% TSS reduction from parking areas and roads or MEP
6	Arkansas	MS4s (Phase II permit)	1 acre disturbed area		"Goal" of 80% removal of TSS		Same as new development

EPA Region	Program	Where required	Size Threshold	Performance Standards for New Development			Redevelopment Standard
				Volume-based/ Retention	Treatment	Exception	
		MS4 (Little Rock - Phase I permit)	1 acre disturbed area	Narrative standard			
6	Louisiana	MS4s (Phase I/II permits)	1 acre disturbed area	Narrative standard			
6	New Mexico	MS4s (Middle Rio Grande MS4 permit)	1 acre disturbed area	Capture 90th percentile rainfall event			
		MS4s (Phase II permit)	1 acre disturbed area	Narrative standard			
6	Oklahoma	MS4s (Phase I/II permits)	1 acre disturbed area	Narrative standard			
6	Texas	MS4s (Phase I/II permits)	1 acre disturbed area	Narrative standard			
7	Iowa	MS4s (Manual)	1 acre disturbed area	Narrative standard			
7	Kansas	MS4s (Phase I/II permits)	1 acre disturbed area	Narrative standard			
7	Missouri	MS4s (Phase I/II permits)	1 acre disturbed area	Narrative standard			
7	Nebraska	MS4s (Phase I/II permits)	1 acre disturbed area	Narrative standard			

EPA Region	Program	Where required	Size Threshold	Performance Standards for New Development			Redevelopment Standard
				Volume-based/ Retention	Treatment	Exception	
8	Colorado	MS4s (Phase I/II permits)	1 acre disturbed area	Infiltrate WQv (80th percentile storm event)	Treat 80th percentile storm event or reduce TSS to 30 mg/L or less		
8	Montana	MS4s (Phase II permit)	1 acre disturbed area	Infiltrate, evapotranspire, or capture for reuse runoff from first 0.5”			Same as new development
8	North Dakota	MS4s (Phase II permit)	1 acre disturbed area		Treat 0.5” runoff from IC		Same as new development
8	Utah	MS4s (Phase I/II permits)	1 acre disturbed area	Retain on-site the 90th percentile storm event		Infeasibility Demonstra-tion	
8	South Dakota	MS4s (Phase I/II permits)	1 acre disturbed area	Narrative standard			
8	Wyoming	MS4s (Phase II permit)	1 acre disturbed area	Narrative standard			
9	Arizona	MS4s (Phase II permit)	1 acre disturbed area	Narrative standard			
		MS4s (Phase I Permits)	1 acre disturbed area	Detain on-site the 100-year, 2 hour storm event			
9	California	Statewide (CGP, Phase I/II permits)	5,000 sf IC	Retain volume from 85th percentile storm event		Biofiltration may be used if retention is infeasible	Local program defined
9	Hawaii	MS4s (Honolulu Phase I permit)	1 acre disturbed area	Retain on-site 1 inch storm			

EPA Region	Program	Where required	Size Threshold	Performance Standards for New Development			Redevelopment Standard
				Volume-based/ Retention	Treatment	Exception	
		MS4s (Phase II permit)	1 acre disturbed area	Narrative standard			
9	Nevada	MS4s (Phase I/II permits)	1 acre disturbed area		80% annual runoff volume treatment	Treatment volume may be locally determined based on historical records	Same as new development
10	Alaska	MS4s (Anchor-age Phase I permit)	1 acre disturbed area	Retain first 0.52 inches of rainfall from 24 hr event preceded by 48 hrs of no precip.			Same as new development
		MS4s (Phase II)	1 acre disturbed area	Narrative standard			
10	Idaho	MS4s (Boise Phase I permit)	5,000 sf	Retain first 0.6 inch rainfall			
		MS4s (Phase II)	1 acre disturbed area	Narrative standard			
10	Oregon	MS4s (Phase I permit)	1 acre disturbed area	80% average annual runoff volume reduction			Capture and treat 80% annual average runoff
		MS4s (Phase II)	1 acre disturbed area	Narrative standard			

EPA Region	Program	Where required	Size Threshold	Performance Standards for New Development			Redevelopment Standard
				Volume-based/ Retention	Treatment	Exception	
10	Washington	MS4s (Phase I/II permits)	2000 sf of new and/or replaced IC or 7000 sf disturbed area	Infiltrate, disperse, and retain onsite to Maximum Extent Practicable (MEP)	Volume predicted from 6 month 24 hr storm OR 91st percentile 24 hr runoff volume indicated by continuous runoff model. Max flow rate where 91% of runoff volume (determined by model) will be treated		Same as new development when size threshold is met.

Reference:
EPA, 2014. Post-Construction Performance Standards and Water Quality-Based Requirements. EPA 833-R-14-003. https://www3.epa.gov/npdes/pubs/sw_ms4_compendium.pdf

Revised list posted July 2016:
https://www.epa.gov/sites/production/files/2016-08/documents/swstdsummary_7-13-16_508.pdf

Part/Section	**Comment 37**
Section 4.2.5.2 Permanent Stormwater Standards	"*SCMs that rely on infiltration, evapotranspiration, or capture/reuse of the water quality treatment volume (WQTV), as defined in sub-section 4.2.5.2.2, are practices that approach <u>100% pollutant removal and constitute MEP</u> where site-specific conditions allow.*" The underlined portion of this sentence is directly translated as full and complete removal of all pollutants (bacteria, nutrients, TSS, metals, solubles, and insolubles, etc.) constituting the MEP. Such a standard is an exceptionally high in terms of both percentage removal (100%) and implication that all "pollutants" (e.g., TSS, metals, nutrients, solubles, insoluble, etc.) can be removed from stormwater. This is a wholly unattainable standard, should not be stated as MEP, and could lead to significant liabilities for MS4s claiming to achieve such a standard. The use of the word "pollutant" as opposed to "TSS" is inconsistent with the fallback stormwater standard in the 3rd paragraph of this section, which explicitly uses "*80% TSS Removal.*" Common industry standard is 80% TSS Removal, as is used to comply with MS4 permits by many jurisdictions around the United States.

Response:

We agree that 100% removal of all pollutants for all storms, all SCMs, and all sites would be impracticable as a performance standard (*e.g.*, with analytical monitoring required to demonstrate compliance), but have determined it is appropriate for use as a design standard for small storms of moderate intensities and appropriately-maintained SCMs as applied in the permit. The permit recognizes the practical limitations of "100% removal" while indicating the theoretical potential: "SCMs that rely on infiltration, evapotranspiration, or capture/reuse of the water quality treatment volume (WQTV), as defined in sub-section 4.2.5.2.2, are practices that **<u>approach</u>** 100% pollutant removal and constitute MEP where site-specific conditions allow." Section 4.2.5.2 (emphasis added).

This is true because there is theoretically no surface discharge of **<u>any</u>** pollutant contained within stormwater for SCMs that are designed to function without any surface discharge during small storms. Thus, SCMs that "approach" 100% TSS removal (*e.g.*, by infiltration) are expected to do a better job of treating other pollutants than controls which can only remove 80% of TSS (*e.g.*, by a hydrodynamic separator). Measures to achieve 80% TSS removal are the ***minimum*** practicable control standard, and would only constitute MEP where a specific site is shown to be severely limited. In reality, site-specific variables and limitations are expected to exist so that MEP forms a continuum from rates "approaching" 100% pollutant removal down to the minimum standard of 80% TSS removal. The overall process established in the permit compels each permittee to establish local design standards (including limiting factors) that will be applied on a site-specific basis and reviewed during a plans review procedure, for plans that are developed and submitted by the project owner or operator to the local MS4 for review.

Part/Section	Comment 38
Section 4.2.5.2 Permanent Stormwater Standards	1. Provide data that stormwater control measures will provide pollutant removal efficiencies that approach 100%. 2. TSS removal rates are dependent on particle size. A permit standard should include a particle size specification for testing of proprietary devices.

Response:

1. This permit is focused on pollutant removal from stormwater discharges, and there is theoretically no discharge of pollutants to surface waters during the majority of storms where infiltration-based SCMs are designed to treat pollutants in the stormwater generated by up to one inch of rainfall. This common-sense conclusion is further supported by a National Research Council publication (NRC 2009, pg 417-418; emphasis added):

   > "For runoff-volume-reduction SCMs, performance monitoring can be extremely difficult because these systems are spread over the project site. The monitoring program must consider multiple-size storms because these SCMs are designed to remove perhaps the first inch of runoff. Therefore, for storms of less than an inch, there is no surface water release, so **the treatment is 100 percent effective for surface discharges**. During larger events, a bioretention SCM or green roof may export pollutants. When viewed over the entire spectrum of storms, these devices are an outstanding success; however, this may not be evident during a hurricane."

2. TDEC allows permittees to establish an appropriate test method or particle size distribution for proprietary devices, but retains an oversight function through inspections and audits of local programs. The TSS removal rate for SCMs other than proprietary devices is expected to come from published values in guidance manuals and other technical literature. Infiltration-based SCMs are presumed to effectively treat all particle sizes.

Reference:
NRC 2009. National Research Council. Urban Stormwater Management in the United States.
http://www.nap.edu/catalog/12465/urban-stormwater-management-in-the-united-states

Part/Section	Comment 39
Section 4.2.5.2 Permanent Stormwater Standards	The sixth paragraph implies that a permittee can either comply with this permit or comply with the previous permit's performance standards. We believe TDEC meant this to apply to previously permitted MS4s.

Response:

The Division considers compliance with the permanent stormwater design performance standards detailed in the previous Phase II general NPDES permit issued August 31, 2010 to satisfy the permanent stormwater standards in this permit. DWR intends for the standard in the draft permit to apply to new or existing MS4s.

Part/Section	Comment 40
Section 4.2.5.2.1 Site-Specific Limitations	1. Notwithstanding the request to delete the entire sub-section, we believe this listing in this section is not nor intended to be all inclusive since the introduction to the list reads "may include." As such, we find it difficult to find a legitimate application to a small MS4 for a mandatory permit requirement to approve other conditions and document them in the SWMP. Additionally, as written, subparagraph g requires the permittee to develop criteria in advance and then apply it to the project site. We don't believe this is TDECs intent. The criteria for other conditions would vary depending upon the existing land use and physical conditions of individual project sites, making it impossible to develop criteria in advance of knowing any information for a given project. We recommend subparagraph g be deleted 2. The permit must not defer on this sort of decision to the permittee: any basis for determination that a site is unsuitable for the preferred controls, other than those listed as items *a* through *f*, must be approved on a site-by-site basis by TDEC. And all site-specific limitation determinations must be identified and explained in the MS4's annual reports. Therefore, item *g* must be removed from this proposed permit. 3. Section 4.2.5.2.1states, "Site specific limitations to infiltration, evapotranspiration, or capture/reuse of the entire Water Quality Treatment Volume (WQTV) may include": Can TDEC address the following: d. Clarify "close proximity" limitation. e. How much constitutes "extensive" presence? g. Give examples of other conditions the MS4 might approve?

Response:

40 C.F.R. § 122.34(b)(5)(ii) provides, "You must: (A) Develop and implement strategies which include a combination of structural and/or non-structural best management practices (BMPs) appropriate for your community."

1. This provision is intended to allow MS4s flexibility to address situations on a construction site that would not allow for the design SCMs to meet MEP, approaching 100% pollutant removal. The MS4 must develop criteria for making this determination on a jurisdiction-wide basis, and apply these criteria on a site-by-site basis.

2. The division agrees that other site limitations identified by the jurisdiction should require approval by the division prior to implementation. The permit has been changed accordingly.

3. By using terms such as close proximity and extensive or significant, the division simply acknowledges that a certain degree of judgment is involved in evaluating site-specific conditions.

Part/Section	Comment 41
Section 4.2.5.2.2 Water Quality Treatment Volume (WQTV)	The WQTV reduction incentives can be a useful tool to MS4s, but the current list is not practical, especially to smaller MS4s. Could the list be edited to remove high density and mixed-use development but add an option for MS4s to come up with their own incentives? Alternately, could the allowed incentive rate for a specific development type be increased to more than 20%, even up to the whole 50% cap for one incentive? If the MS4 decided to not use incentives, is it in jeopardy of not meeting the MEP?

Response:

Incentives are an option available to the MS4; they need not be used to comply with the MEP standard. Incentives are intended to make certain kinds of development and redevelopment projects more attractive to developers, while providing offsetting pollutant reduction benefits and equivalent water quality protection. Allowing the proposed increase of the incentive rate would not achieve these offsetting benefits. However, the final permit has removed “high density” and “mixed-use” from the specified incentives list and added an option for MS4s to add their own incentives, which must be justified in the SWMP.

Part/Section 4.2.5.2 Permanent Stormwater Standards – Buffer Language	**Comment 42** 1. TDEC's proposal to mandate stormwater buffers exceeds its authority and this section should be deleted. 2. It is suggested that TDEC recognize water quality buffers as an SCM with a pollutant removal percentage based on width and vegetation. See NCDNR buffer widths as an example. There needs to be some pollutant removal recognition or "credit" given to water quality buffers. Such an approach would allow TDEC to continue to include buffers as a viable water quality control tool, but would also lend support to a discussion on MEP because the buffer is clearly recognized as a water quality control device. If vegetated filter strips are considered a SCMs and have a pollutant removal percentage, then why are water quality buffers not considered a SCM? 3. There is a conflict or disconnection in how TDEC recognizes riparian buffers in 4.2.5.2 versus what is presented on riparian buffers in section 4.2.5.3. The paragraphs in 4.2.5.2 imply that buffers can be considered and used as SCMs to meet the pollutant removal performance standard. Further, section 4.2.5.3 allows infiltration SCMs within buffers. However, the majority of section 4.2.5.3 recognizes buffers as a requirement outside of the pollutant removal standard. With the new legislation related to MS4 program stringency against the Federal standard of MEP, this conflict puts MS4s in a precarious position regarding buffers because the permit does not provide sufficient information to support the argument of what is MEP, when it comes to buffers.

Response:

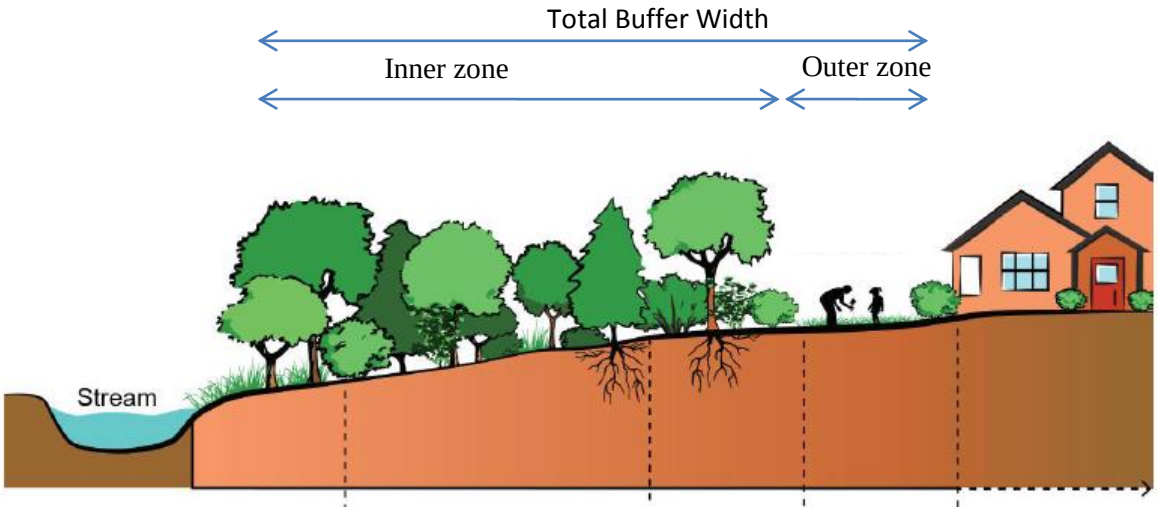
Riparian buffers are a recognized pollutant removal practice because riparian areas remove pollutants from stormwater that passes across or through them (NRC 2002). The permit's buffer requirements are part of MEP because they maximize pollutant removal potential while accounting for practicability by allowing MS4s to account for site-specific limitations.

Because the permit does not require SCMs to treat the entire stormwater volume generated by every rainfall event or to remove 100% of all pollutants, buffers are intended to help maximize pollutant removal. Buffers are documented to provide a net-positive pollutant removal capacity (NRC 2002). However, the many variables that affect the pollutant removal capacity of buffers (*e.g.*, land slope, cover type, soil type, degree of soil saturation, flow paths across the buffer, etc.) preclude placing a numeric value on that potential.

By contrast, SCMs such as vegetated filter strips have design specifications for land slope, contributing area, vegetation density and composition, and sheet flow (Tennessee Permanent Stormwater Management and Design Guidance Manual, 2014).

The draft permit allows the use of SCMs (such as filter strips) in the outer third of the buffer in drainage areas over 1 square mile. This enhances the pollutant removal potential of the overall buffer, and the SCM portion of the buffer may be used ("credited") to meet the pollutant removal design criteria.

The following graphic representation is included to help all interested parties envision the basic concepts of water quality riparian buffers. The inner zone should be forested and predominantly made up of trees. The outer zone allows for more options and may consist of herbaceous cover and infiltration based SCMs.



Source: Tennessee Urban Riparian Buffer Handbook. Modified from original.

References:
NRC 2002. National Research Council. Riparian Areas.
http://www.nap.edu/catalog/10327/riparian-areas-functions-and-strategies-for-management

Tennessee Permanent Stormwater Management and Design Guidance Manual, 2014.
http://tnpermanentstormwater.org/manual.asp

Tennessee Urban Riparian Buffer Handbook, 2015.
https://www.tn.gov/assets/entities/agriculture/attachments/UrbanRiparianBufferHandbook.pdf

Section 4.2.5.2 Permanent Stormwater Standards – Buffer Language	**Comment 43** 4th paragraph- Who will determine how far upstream is appropriate and what is "measureable?" Is the local government left to determine this? This is a vague standard that would require modeling or monitoring to determine potential impacts (i.e., measurable). Is the State's intent that local governments require such a detailed analysis to determine when and where buffers are required? The provision to require buffers upstream of impairments should be removed.

Response:

In the comment letter from EPA, Mr. James D. Giattina expressed concern the proposed draft permit raised questions of meeting MEP level controls and raising backsliding concerns because of the elimination of buffers on some streams. To maintain MEP level permit requirements and address violation of the state's anti-backsliding policy, buffers are now required based on drainage area regardless of stream assessment status, similar to the permit requirement in the 2010 permit.

Part/Section 4.2.5.2.2 Water Quality Treatment Volume (WQTV) General – Hydrology and Buffers	**Comment 44** The permit makes no mention of "hydrology," even though state law protects waters from physical alterations. Probably the most important function of a riparian buffer is to allow the stream to adjust to changing watershed hydrology over time.

Response:

This is a National Pollutant Discharge Elimination System permit. Accordingly, this permit establishes limitations to control the discharge of pollutants to waters of the state. This permit does not authorize aquatic alterations. Additionally, buffer language is no longer included in this sub-section of the permit.

Part/Section 4.2.5.2 Permanent Stormwater Standards – Buffer Language	**Comment 45** Clarify whether an SCM within a riparian buffer could be used to treat the entire WQTV.

Response:

The outer third of 45- or 60-foot wide buffers may be used to install an SCM, so this possibility might exist on some sites. An 'inner zone' would still be required. This combination of an infiltration-based 'outer zone' and forested 'inner zone' is one of the recommended practices to maximize the water quality benefits and treatment potential of riparian areas (NRC 2002). On a site with a required buffer width of 30-feet, the SCM would be placed outside the buffer, and the entire buffer would be considered 'inner zone.'
Reference: NRC 2002. National Research Council. Riparian Areas.
http://www.nap.edu/catalog/10327/riparian-areas-functions-and-strategies-for-management

Part/Section	Comment 46
4.2.5.2.2 Water Quality Treatment Volume (WQTV) – General and Buffers	The MEP standard strongly suggests that buffers be used in addition to other practicable controls. Buffer requirements in the previous Phase II permit were more consistent with MEP. Buffers are designed to improve the water quality of impaired streams and protect streams from becoming impaired. Reducing buffer requirements for municipalities that have already implemented their buffer protection program – based on past TDEC MS4 Permit mandates – is problematic for program consistency and will likely result in a significant decrease in overall water quality protections. Buffers function as do various other MS4 Program BMPs, which is to prevent stormwater quality impacts to receiving streams. The draft permit adds a new item -- the addition of a water quality buffer on unimpaired streams -- to the list of conditions that would allow a 20% reduction in the volume of rainfall treated. This must be removed.

Response:

TDEC agrees that buffers are an effective and practicable pollutant control measure. Buffers were required in the 2010 permit, and will be required in the final 2016 permit, for both waters with available parameters and those with unavailable parameters. This change from the draft permit will simplify implementation for permittees, address concerns from commenters about application of the buffer requirement to unassessed waters, and address EPA's comment that the relaxed buffer requirements may otherwise have constituted backsliding. Federal law (as well as state law) prohibits backsliding, so this modification from the draft permit is in accordance with the minimum requirements of federal law. Requiring buffers in waters with available parameters is also necessary to prevent the future pollution of waters as development increases over time. Since buffers will be required uniformly for all waters, the use of buffers as an incentive for the reduction of WQTV has been removed from the permit.

Part/Section	**Comment 47**
Section 4.2.5.3 Water Quality Riparian Buffers	It is well recognized that contaminants introduced to small watercourses will very likely transport into larger waters. Therefore, the use of buffers next to established watercourses, including wet weather conveyances, will protect streams in those watersheds from contaminants originating in areas that drain to wet weather conveyances before entering streams. Where practicable, that protection should be continued and therefore, TDEC must revert to the language from the 2010 permit. In the 2010 permit the definition of a Water Quality Buffer listed the water bodies that were to be protected by water quality buffers, i.e. streams, ponds, wetlands, springs, reservoirs or lakes. The new permit changes the name of the buffers to Water Quality Riparian Buffers required in riparian areas and refers to streams.

Response:

The 2010 MS4 General Permit was not intended or implemented to require buffers on wet weather conveyances. This permit has been revised to clarify this intention that buffers are required for all streams (as defined by Tenn. Code Ann. § 69-3-103(40)), and are not required on wet weather conveyances. The final permit has been modified to include the definition of streams from the Tennessee Water Quality Control Act and to make it clear that this includes lakes, wetlands, and ponds.

Part/Section	Comment 48
Section 4.2.5.3 Water Quality Riparian Buffers	1. Subparagraph 5 requires the permittee to develop criteria in advance and then apply it to the project site. We don't believe this is TDEC's intent. The criteria for alternative buffer width would vary depending upon the existing land use and physical conditions of individual project sites, making it impossible to develop criteria in advance of knowing any information for a given project. Additionally, it is the project engineer's responsibility for project design. 2. TDEC's proposal to mandate stormwater buffers exceeds its authority and this section should be deleted. EPA has guidance regarding water quality riparian buffer requirements (MS4 Permit Improvement Guide (April 2010)) but they are not mandatory. TDEC also must consider existing flood control mandates small MS4s already have implemented in lieu of any mandates regarding new buffers. 3. a. 1st sentence after the table. This sentence conflicts with the minimum forested zone width shown for the > 2 sq. mi. drainage area stream (i.e., 40 ft inner width). b. This sentence also implies that if the inner zone before development is only grass that the developer may be required to plant trees in the buffer. c. Several permissible activities are listed within the buffer. Public road crossings and public utility crossings should also be added as acceptable activities within the buffer. 4. Requiring a buffer width expansion for the width of impervious trails located in the buffer is overly prescriptive. 5. Provide guidance on Buffer Maintenance. Is the buffer intended to be an undisturbed area as described in the 2010 permit? If subsections 3., 4., and 5. are not established by the MS4, will the MS4 essentially have requirements that are stricter than the permit and MEP? These aforementioned subsections should be removed and placed into a guidance document. 6. The language in note 5 of this section leaves entirely too much to the discretion of the permittee. This section must be expanded to clarify what circumstances would allow a determination that buffer widths cannot be fully implemented and that any such cases must be documented in the MS4 annual report. 7. Since the minimum buffer width and the minimum forested zone is the same for areas draining less than 1 square mile (both at 30 feet), is the intent of the permit to NOT allow buffer averaging on streams that drain less than 1 square mile?

Response:

1. The MS4 must first set the criteria in general terms and then approve specific application of the criteria during a plans review on a site-by-site basis.

2. In the May 25, 2016, comment letter from EPA, James D. Giattina expressed concern the draft permit raised questions of meeting MEP level controls and raising backsliding concerns because of the elimination of buffers on some streams. To maintain MEP level permit requirements and comply with state and federal anti-backsliding regulations, buffers are now required based on drainage area regardless of stream assessment status, similar to the requirements in the 2010 permit.

   Although flood management is not regulated under the MS4 permit, TDEC acknowledges that MS4s must dovetail stormwater quality management with stormwater quantity management.

3. a. The division agrees with this comment and has changed this provision in the final permit.

   b. The permit allows selective landscaping, although trees should remain the predominant vegetation where they currently exist. While a permittee may enact a local requirement to reestablish forested canopy cover, there is not a state-wide requirement to establish a forested area where it does not exist.

   c. The final permit has been clarified to explicitly allow road and utility crossings within buffers. Road and utility crossings can be constructed within the riparian area when they are authorized by TDEC (*e.g.*, when an Aquatic Resource Alteration Permit is required) and, when applicable, by the local government. Aquatic alterations that require an ARAP must be avoided, minimized, and mitigated per existing requirements.

4. The permit provides the flexibility to allow limited uses within the buffer, such as biking and walking trails. Trails constructed within the buffer must not create a source of pollutants and should either be constructed with permeable materials, or constructed so as to direct runoff to infiltration-based SCMs, or the buffer width should be adjusted to compensate for the width of the trail.

   Buffers do not need to be a completely 'undisturbed' area as described in the 2010 permit to achieve their pollutant removal function. This permit allows a permittee to establish permissible land uses or activities within the buffer, such as landscaping. While trees are to be the predominant vegetation, a completely forested buffer is not required. The Tennessee urban riparian buffer handbook provides guidance on maintenance activities. *https://www.tn.gov/assets/entities/agriculture/attachments/UrbanRiparianBufferHandbook.pdf*

5. The criteria that would prevent required buffer widths from being implemented will vary widely based on topography, geography, stream and soil type, and many other similar local and even site-specific conditions. The MS4 must develop the criteria to be used to allow variance in a general fashion in advance of implementation, and retains the ability to apply these criteria to address site-specific conditions as necessary.

6. In this case, buffer averaging does not apply to the minimum 30 foot forested zone. However, the permit does allow the MS4 to authorize alternative buffer widths where the water quality buffers required by sub-section 4.2.5.2 cannot be fully implemented.

Part/Section	**Comment 49**
Section 4.2.5.3 Water Quality Riparian Buffers	"*The local variance process for riparian areas, if any, must prevent channel relocation or encapsulation that is otherwise unnecessary and intended solely to meet or avoid the local buffer requirements.*" This statement should be removed as it is subjective and vague. Furthermore, local MS4s do not permit disturbances in or around waters of the state. If the stream should not be relocated or encapsulated, that decision must be made by TDEC.

Response:

The division recognizes this concern and will address aquatic alterations through our ARAP program. The sentence has been removed in the final permit.

Part/Section	**Comment 50**
Section 4.2.5.3 Water Quality Riparian Buffers	1. MS4s that implemented the riparian buffer requirements of the 2010 permit should be allowed to modify their local requirements to align with the new permit. This allowance should be stated explicitly. 2. Page 17, Bullet #2 Table and Bullet #4. Bullet #4 allows buffer averaging and notes that the minimum forested zone must be maintained. Looking at the Table in Bullet #2, a "maximum" grass zone is provided. Is the intent of providing a "maximum" grass zone that any averaging be made up by extending the forested buffer zone only? Example: A property is adjacent to a stream that drains greater than 2 square miles, thus requiring a 60-foot buffer. In one area, the applicant want to go with a 50 foot buffer and another area they want to go with 70 feet (thus, a 60-ft average). The 50-ft buffer section would be the minimum 40-ft forested and 10-ft grass. For the 70-ft section, would the applicant be capped at the 20-ft maximum grass zone (as required by the table) and have to go with 50-ft of forested? Or, can the applicant still maintain the minimum 40-ft and go with 30-ft of grass. If the latter is allowable, then the "maximum" should be removed from the table for the grass zone.

Response:

1. The permit states, "Existing ordinances and requirements for water quality riparian buffers that comply with the 2010 general permit are deemed to satisfy the conditions of this subpart." MS4s may keep their ordinances based on the 2010 permit. They may also incorporate the new permit requirements as they desire.

2. The division has clarified these requirements in the final permit.

Part/Section	Comment 51
Section 4.2.5.3 Water Quality Riparian Buffers	Can you please make the buffer zone requirements for MS4s and CGP match? With the present wording on both documents a developer could have a 15' minimum width just outside the city on the same body of water as we require a minimum 30' buffer inside the city. This amounts to a disadvantage.

Response:

This issue was addressed in the 2016 CGP (Construction General Permit), section 5.4.2, which reads:

> "Every attempt should be made for construction activities not to take place within the water quality riparian buffer zone and for any existing forested areas to be preserved. Where it is not practicable to maintain a full water quality riparian buffer, or if the construction site is located in an MS4 jurisdiction and would qualify for a smaller permanent water quality riparian buffer due to the size of the drainage area, then BMPs providing equivalent protection to a receiving stream as a natural riparian zone may be used at a construction site."

Part/Section	Comment 52
Section 4.2.5.2.3 Off-site Mitigation or Payment into a Public Stormwater Fund	Some MS4s have expressed an interest in using the offsite and/or fee-in-lieu programs as an approach to solving known water quality issues such as stream sedimentation resulting from streambank erosion. Can such programs be available to MS4s if they can show an equivalency in pollutant reduction? E.g., sediment load reduction through bio-engineered streambank stabilization = sediment load reduction via 1.5 X WQTV. If this is acceptable, additional language may be necessary in the permit to define what types of projects are acceptable.

Response:

Streambank stabilization does not reduce the discharge of pollutants from the storm sewer system to waters of the state, and is thus not an appropriate stormwater mitigation measure under this permit.

Part/Section	Comment 53
Section 4.2.5.2.3 Off-site Mitigation or Payment into a Public Stormwater Fund	First paragraph, sentences two through six: These sentences comprise a list of things the permittee must have in its mitigation and payment program. As such, these would be better listed as subparagraphs. And for clarity and standardized formatting, the last sentence of the first paragraph should be the first sentence of the second paragraph.

Response:

The division has modified the referenced language in the final permit.

Part/Section	Comment 54
Section 4.2.5.4 Codes and Ordinance Review and Update	This paragraph presents ambiguity between newly and previously permitted small MS4s because section 4.1 requires revisions and updates within 24 months of coverage for both newly and previously permitted small MS4s

Response:

Although the compliance dates in sections 4.1.1 and 4.1.2 are similar to those specified in 4.2.5.4, the difference is that existing MS4s are expected to continue the implementation of their existing permanent stormwater program until the modifications have been implemented.

Part/Section	Comment 55
Section 4.2.5.4 Codes and Ordinance Review and Update	TDEC should move the reference to EPA's Water Quality Scorecard to the Fact Sheet or other guidance.

Response:

The scorecard has proven to be a useful tool for MS4s to evaluate their status and track progress. No change will be made.

Part/Section	Comment 56
Section 4.2.5.5. Development Project Plan Review, Approval and Enforcement	Remove all reference to enforcement in the section, including in the title. The concept of enforcement does not belong in a plans review and approval process. The EPA has acknowledged that its regulations "do not include specific management practices or standards to be implemented" 74 Fed. Reg 68620 (2009). The language implies that the permittee has a responsibility for design to performance standards. We do not believe this is TDEC's intent. This is the responsibility of the project design engineer.

Response:

40 C.F.R § 122.34(b)(5) states in part:

> "(i)You must develop, implement, and enforce a program to address stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale that discharge into your small MS4. Your program must ensure that controls are in place that would prevent or minimize water quality impacts."
> (ii) You must:
> (A) Develop and implement strategies which include a combination of structural and/or non-structural best management practices (BMPs) appropriate for your community;

The MS4 is not responsible for designing the site, but is responsible for ensuring that appropriate BMPs are included in design and are installed according to design. The MS4 must develop, implement and enforce.

Part/Section	**Comment 57**
Section 4.2.5.6 Maintenance of Stormwater Assets	The title of this section should be changed from "*maintenance of stormwater assets*" to "*maintenance of SCMs*", otherwise the language implies a comprehensive stormwater asset maintenance requirement, which is likely beyond regulatory authority of the permit. Please provide guidance on how to develop a program that ensures SCMs are adequately maintained. At minimum, the following elements need to be included: ● Annual reporting at a sufficient level of detail for the public to have confidence that the requirements of this program element are being effectively carried out ● MS4 review of plans for permanent control ● Inspection of controls after installation by the MS4 or the design professional ● MS4 receipt of as-built plans and continuing public access to those plans ● Written maintenance agreements with all property owners acknowledging their requirement to maintain controls, which should be recorded in deed records as "institutional controls" as in the brownfield setting, so that there is fair notice of the control and it remains enforceable ● Inventory of all post-construction controls on the MS4's web site including description, location and photographs ● Annual verification that controls are maintained for every site ● Periodic inspection by the MS4 to assure maintenance ● An enforcement program with authority to require correction where controls have been eliminated or rendered less effective Long-term maintenance of post-construction controls is the most important part of mature stormwater programs. Without such assurance, urban streams will be unsustainable, subject to wider fluctuations in flow, more flooding and degrading water quality. Urban populations will be unjustifiably and unacceptably exposed to more pathogens, and more silt, nutrients and toxins will flush into our waters under the Draft Permit. This section states that the permittee must "verify that SCMs have been installed per design specifications." Recognizing that communities may have dozens of projects moving in parallel, it would be impossible to expect a community to provide sufficient inspection staffing to meet such a requirement. Would an acceptable alternative be for the local government to require the contractor or developer to certify or warranty such installation rather than expect city staff to verify it?

Response:

The title of this subpart has been changed to "Permanent Stormwater Control Measure Assets."

The use of the term "asset" in this context is to emphasize that permanent stormwater control measures have an intrinsic value, which includes the design, construction, installation and long term operation and maintenance of SCMs.

Additional language has been added to the permit that requires the MS4 to document the means they intend to use to ensure maintenance and lists several activities and program areas that must be covered.

The permit doesn't specify the means to be used to verify installation. Physical verification by MS4 staff is not required; however, a program to verify installation is required.

Part/Section	**Comment 58**
Section 4.2.5.6 Maintenance of Stormwater Assets	The text "*and provide full treatment capacity within 72 hours following the end of the preceding rain event*" is a DESIGN criteria and should not be included in a maintenance requirement. If an SCM is not designed (and constructed) to achieve this criteria, maintenance after construction will fail to achieve it too.

Response:

We agree with this suggestion and have moved the referenced language to permit section 4.2.5.2.

Part/Section	**Comment 59**
Section 4.2.5.6 Maintenance of Stormwater Assets	Ultimate flexibility should be given for MS4s to maintain cost-effective post-construction BMPs that don't burden property owners or home owner associations.

Response:

The division agrees that practicability must be considered in choosing and designing SCMs. The MS4 has the ultimate responsibility for choosing BMPs that are appropriate and practicable for its community.

Part/Section	Comment 60
Section 4.2.6 Pollution Prevention/Good Housekeeping for Municipal Operations	1. A requirement for annual training has been added to this permit but no rationale has been given for this addition. Has TDEC demonstrated, through audit or inspection, that the current permit requirement for training is insufficient? We recommend the word "annual" be deleted from the first sentence. 2. Is the "operation and maintenance plan" a written plan? Please clarify. 3. Clarify or remove the final paragraph about flood management projects. Are you all referring to projects / maintenance in the County / MS4 ROW

Response:

1. This requirement has been modified in the final permit. MS4s must develop a training program that consists of retraining all existing employees over the permit cycle and training all new employees within six months of hiring.

2. Yes, MS4s must have written plans and/or procedures for any of the activities that the MS4 chooses to include in the program. Consistency and effectiveness in any operation is next to impossible without written plans and/or procedures. These do not have to be lengthy or complicated, the simpler and more straightforward they are, the easier they will be for employees to understand and for management to follow up. Language to clarify that the procedures must be written and included in the SWMP has been added.

3. The language is not a mandate; it requests that the MS4 evaluate flood management projects in the light of possible water quality improvement benefits. We are only asking the MS4s to consider water quality issues when planning flood related projects. There are no mandated requirements other than documenting that water quality was considered in this process.

Part/Section	Comment 61
Section 4.2.6 Pollution Prevention/Good Housekeeping for Municipal Operation	As written, the fourth paragraph would apply to all maintenance activities within the small MS4. We don't believe this is TDEC's intent. We believe this requirement was only intended to apply to stormwater BMPs. We also believe that the requirements of this paragraph are overly burdensome and have no legitimate application to a permittee. Additionally, the documenting of maintenance activities in a SWMP is inappropriate. A SWMP is a plan, not a repository of activities/documentation used to implement that plan. How these activities are documented and where that documentation is to be kept should be left to the discretion of the permittee. To this, we recommend the paragraph be deleted or changed

Response:

40 C.F.R. § 122.34 (b)(6)(i) provides that the MS4 "must develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations." The fourth paragraph states that the MS4 "must

consider" the various operations, activities and specific pollutants listed in the paragraph. The MS4 may choose only those parts of the paragraph that apply to the MS4. However, the MS4 must have a program and the program must be documented. However through an oversight, the draft permit did not explicitly require documentation. The following language has been added to the permit. "The municipal operations training, and maintenance activities referenced in this section must be documented in the annual report."

Part/Section	**Comment 62**
Section 4.4.1 Annual Stormwater Management Program Review	1. We take issue with changes of the SWMP having to be reported and justified to TDEC. TDEC doesn't require a copy of the SWMP to be submitted to them justifying BMP use so why would changes that a permittee believes are required to improve the Program have to be reported and justified? Additionally, this requirement is of no legitimate use to the permittee. Permittees are given the flexibility to create their Stormwater Management Program. The purpose of the review is to make the program work better. If that means deleting a program component that isn't working, the permittee should have that flexibility. We don't see the relevance of this and take issue with changes of the SWMP having to be approved through TDEC. 2. The requirement to conduct an annual assessment of the Program is a new requirement. If this "overall assessment of Program Effectiveness" is going to be required every year, we do not need, yet another plan to implement it. Just incorporate the changes into the SWMP or include these in the Annual Report. 3. There may be other reasons to change an activity/control measure in the SWMP other than it being "ineffective."

Response:

1. A change, replacement or addition may be made at any time. Additions/changes/replacements need only be reported in the Annual Report (AR). It is only deletion without replacement that must be approved by the division.
2. The plan does not need to be lengthy or complex and most MS4s are probably doing it anyway. The plan is just a written record of the assessment with a schedule of when the MS4 expects to complete the indicated changes. This sort of information is already required in the annual report and is a normal part of the management and planning process.
3. The permit language does not preclude the MS4 from making changes for reasons other than effectiveness.

Part/Section	Comment 63
Section 4.4.2 Stormwater Management Program Updates Required by the Division	As written, this sentence gives TDEC the authority to direct changes that may not be necessary to meet permit requirements. This sentence should be changed to clarify that only changes to meet permit requirements can be directed by TDEC. Permit modification provides the process for imposing new requirements, where appropriate. Any other changes, including those necessary to implement new regulations, should be accomplished through permit modification.

Response:

The SWMP and Program are permit requirements. This section is about changes to the Program, which is a requirement of the permit. It is not about changes to the permit. The division would not propose changes to the permit unless changes were required by law or regulation. Clarification of the first sentence has been added to the final permit.

Part/Section	Comment 64
Section 4.4.3 Transfer of Ownership, Operational Authority or Responsibility	The second sentence of the first paragraph seems to contradict the first. We believe TDEC's intent is that stormwater management programs for new areas be implemented as expeditiously as possible but allows for program elements to be phased beyond the one year requirement. Depending upon the size of new areas, a task, such as mapping outfalls, should be treated the same as if the permit requirement was for a newly permitted small MS4 (18 months). Additionally, the only added requirement in the second paragraph is to have a plan in place within 90 days for how to implement the program in newly acquired areas. We believe a permit requirement for any plan to be developed within any time frame has no legitimate purpose to the permittee. It should be sufficient to require the program to be in place within 18 months and leave the permittee the flexibility for planning to achieve that goal. Also, the second paragraph requires updates to the Stormwater Management Program resulting from any new addition be included in the annual report. Again, we see no legitimate purpose for this to a permittee. The permittee isn't required to submit the Stormwater Management Program to TDEC so it would be inappropriate to require any element changes to be reported to TDEC.

Response:

The word "immediately" in the last sentence of the first paragraph has been changed to "one year."

Part/Section	Comment 65
Section 4.5 Enforcement Response Plan	1. State issued permits should not require more of a permitted small MS4 than EPA issued permits. The e-C.F.R. § for Title 40, Chapter 1, Subchapter D, Part 122, Subpart B, § 122.34 (current as of December 23, 2015), EPA Administered Permit Programs, has no requirements for an enforcement response plan. 2. MS4s should be allowed an opportunity for those alleged to not be in compliance to "cure" any alleged compliance concerns prior to issuing fines.

Response:

1. Each MS4 must enforce its stormwater management plan. 40 C.F.R. § 122.34(a) ("Your NPDES MS4 permit will require at a minimum that you develop, implement, and <u>enforce</u> a stormwater management program designed to reduce the discharge of pollutants from your MS4 to the maximum extent practicable (MEP).") (emphasis added).

2. The division would expect the MS4 to allow noncompliant parties the opportunity to remedy the problem, if appropriate.

Part/Section	Comment 66
Section 4.5 Enforcement Response Plan	The first sentence seems to apply to all permittees. We believe TDEC intended this to apply to newly permitted MS4s and tried to include previously permitted MS4s by adding "or maintain".

Response:

The division agrees and has modified the language.

Part/Section	Comment 67
Section 4.5.1 Enforcement Response Plan	The third sentence implies that the permittee must use those actions listed in subparagraphs a through f in their ERP. We believe TDEC's intent was to use them as examples that a permittee could use but were not required to use.

Response:

The requirement is to provide enforcement options appropriate to each jurisdiction. The list provides examples of these options.

Part/Section	Comment 68
Section 4.5.1 Enforcement Response Plan	The ERP contains enforcement components for several MCMs, all with differing implementation timelines. The date of ERP implementation should correspond to the date of ordinance or program adoption and can differ for permanent stormwater management for existing MS4s who are modifying their programs based on the new permit.

Response:

The schedule for ERP implementation is based on the completion date for the first minimum control measure, IDDE. The ERP may be modified as each MCM program is completed, such as permanent stormwater ordinance and appropriate suite of SCMs. However, it may be beneficial to the MS4 to complete the entire ERP at the same time.

Part/Section	Comment 69
Section 4.5.2 NPDES Permit Referrals	1. This section establishes the permittee in violation of its permit for not reporting activities that should have permit coverage through the state. We don't believe this is TDEC's intent. We believe TDEC actually wants a collaborator relationship with the permittees to gain compliance from construction and industrial activities. 2. Section 4.5.2.b provides for referrals of non-compliance by NPDES permitted facilities if the MS4 has not been able, through its enforcement mechanisms and protocol, to bring an NPDES-permitted facility into compliance. We believe the primary responsibility for bringing State-NPDES permitted facilities into compliance should fall upon TDEC, not the MS4. 3. If TDEC wants to make MS4 staff serve as compliance informants for TDEC rules, we request that you do so via a policy of cooperation and courtesy, not via a permit requirement.

Response:

The permit language has been changed to clarify responsibilities for these situations.

Part/Section	Comment 70
Section 4.5.3 Enforcement tracking	This section gets into such detail that it restricts the flexibility the permittee should be permitted to have for program implementation. Additionally, instances of non-compliance are so all encompassing that even a verbal recommendation, done on site during the course of a construction inspection, would have to be documented. Why even do a verbal if you have to document it? With that said, we agree that the documentation should include all the bullet points but they should not be required in permit language.

Response:

Documentation is required for all legal compliance and enforcement issues and for permit oversight. The methods used for documentation are up to each jurisdiction.

Part/Section	Comment 71
Section 4.5.4 Requirements for Chronic Violators	1. Last sentence - Although a permittee may elect to document work as a means of obtaining re-imbursement from a BMP/SCM owner, we see no legitimate purpose for this as a permit requirement. 2. Clarify what constitutes a “Chronic Violator.” Is this an individual? LLC? Permitted Operator?

Response:

1. The division agrees and the last sentence has been removed and documentation requirements have been moved to the BMP maintenance section.
2. The definition of “chronic violator” would depend on the nature and seriousness of the violation and the history of the violator, and, to a large extent and within reason, up to the MS4. The violator is the person or entity legally responsible for the violation.

Part/Section	Comment 72
Section 5.1 Monitoring	In Section 5.1, Option 1, of the draft general permit would require monitoring for "streams with unavailable parameters for nutrients, pathogens, siltation, or other parameters specifically required by the division." The words "or other parameters specifically required by the division" should be deleted. If there are other pollutant parameters that the division wants to be monitored, then it should provide for applicable permit due process procedures in the event that there is disagreement as to the appropriateness of such additional monitoring.

Response:

The division does not expect to require additional monitoring that is not already included in the subsection. However, the division reserves the right to require additional monitoring as necessary to address a water quality impairment related to pollutants contained in discharges from the MS4.

Part/Section	Comment 73
Section 5.1 Analytical Monitoring	1. This section should be deleted in its entirety as the required in-stream monitoring is not an effective, reasonable or cost-conscious approach to indicating MS4 program or BMP effectiveness. In-stream analytical monitoring is a waste of MS4 time and resources as many other factors which are not within the MS4s control can influence in-stream monitoring results. MS4s should not be required to collect data that is often not reflective of their program's effectiveness but may be used to influence program requirements or stringency. Costs for the analytical monitoring program would be better used for other water quality initiatives that can be effective. 2. Stream monitoring requirements expounded upon in this draft permit have no legitimate application to an MS4 and should be removed from permit language, specifically when they apply to pollutants of concern which have no TMDLs. TMDLs have their own requirements in the implementation section. 3. In Option 2, Paragraph a. states "Measure the effectiveness of the permittee's Stormwater Management Program." TDEC has not provided, and must provide, the criteria that are being used to measure effectiveness. 4. Under Option 2, does submittal of an alternative plan assume the Division's approval? If yes, what if there are disagreements or concerns about the plan, after it has been implemented, discovered during an audit, or Compliance Inspection? We recommend a process in which the MS4 and the TDEC EFO to discuss the plan prior to implementation.

Response:

1. EPA's small MS4 regulations require the MS4 to evaluate and assess the effectiveness of its Program. 40 C.F.R. § 122.34(g) provides:

   > (g) Evaluation and assessment—(1) Evaluation. You must evaluate program compliance, the appropriateness of your identified best management practices, and progress towards achieving your identified measurable goals.
   >
   > Note to paragraph (g)(1): The NPDES permitting authority may determine monitoring requirements for you in accordance with State/Tribal monitoring plans appropriate to your watershed. Participation in a group monitoring program is encouraged.

   Additionally Option 2 of subpart 5.1 allows the MS4 to establish its own jurisdiction-specific monitoring plan in accordance with specific objectives.

2. TMDLs are detailed watershed management planning tools that identify the sources of pollutants of concern and establish the pollutant reductions necessary to restore water quality to available conditions through Waste Load Allocations (WLAs) for an entire watershed. There are many smaller streams, not covered by a TMDL, that are assessed as having unavailable conditions for pollutants of concern. The smaller streams feed larger streams and jeopardize the water quality of entire larger watersheds.

3. The division expects MS4s to measure the effectiveness of their program in meeting the terms and conditions of this permit, including the goal of reducing the discharge of pollutants to the maximum extent practicable and protecting water quality.

4. Language containing an approval process has been added to the permit.

Part/Section	**Comment 74**
Section 5 Monitoring, Recordkeeping and Reporting	A monitoring component of the SWMP would be a valuable tool in assessing the effectiveness of BMPs used to reduce or eliminate pollutants of concern. But we disagree that a monitoring program, such as the one expounded upon in this permit, should be a permit requirement. Requiring a monitoring program in this permit removes the inherent flexibility the permittee should be allowed in establishing illicit discharge detection and elimination procedures and evaluating the effectiveness of the Stormwater Management Program.

Response:

There are two analytical monitoring options available in the permit. The first is basically the same monitoring scheme that was in the 2010 permit. The second option provides flexibility by allowing the MS4 to develop its own monitoring program based on the MS4's needs. Under Option 2, the permittee may perform any monitoring it selects as long as it meets the specified objectives.

Part/Section	Comment 75
Section 5 Monitoring, Recordkeeping and Reporting	The Standard Operating Procedures (SOPs) referenced in this draft permit for stream monitoring) make it clear that the documents were never intended to be used as a regulatory requirement for permittees. This SOP is an intra-departmental document intended to govern the internal management of the Tennessee Department of Environment and Conservation and to meet requirements of the U.S. Environmental Protection Agency for a quality system. It is not intended to affect right, privileges or procedures available to the public. Furthermore, these documents (SOPs) have never been established through rulemaking as binding requirements. As these are internal TDEC documents that the permittees have had no opportunity to review and provide comment upon, we find it inappropriate to use them as a permit requirement. The permittee would be forced to hire a consultant to meet this requirement. We believe it is inappropriate to establish a permit requirement that requires a permittee to contract work out in order to achieve permit compliance, especially for a permit requirement that has no legitimate application to a particular permittee.

Response:

The SOPs in question were developed under the auspices of the EPA and meet all EPA requirements. There are skilled and trained individuals available in both the public and private sectors who can perform the test procedures in accordance with the SOPs. If a permittee properly applies the SOPs, the methodology would satisfy the requirements of this permit. However, each permittee may develop its own equivalent assessment procedures, which would have to go through the same vetting process that the division's procedures went through.

Part/Section	Comment 76
Section 5 Monitoring, Recordkeeping and Reporting	1. The section requires the permittee to monitor all streams without available parameters regardless as to the source of the pollutant of concern. Unavailable parameters could be the result of non-regulated activities, such as farming, on waters shared/bordering the permittee. We recommend the permit be changed to require monitoring only if the MS4 is listed as a source of the pollutant parameter. Monitor all on 303d vs all listed as impaired and/or only if MS4 is listed as a source? 2. Provide options for Non-Analytical Monitoring that are similar to options provided in 5.1 Analytical Monitoring.

Response:

1. Our assessment reports only list primary sources of pollutants. Urban runoff is a source of pollutants of concern and MS4s are known contributors of these pollutants. Therefore, MS4s

must track stream assessments based on these pollutants of concern, whether or not a particular assessment lists the MS4 as a source.

2. The non-analytical monitoring requirement still consists of visual stream assessments as it did in the previous permit. This requirement applies to all MS4s and was carried over because of the many successes reported by MS4s. Additionally each MS4 has the flexibility to select the assessment protocol that best suits its needs.

Part/Section	**Comment 77**
Section 5 Monitoring, Recordkeeping and Reporting	3rd paragraph 1st sentence - Although we don't believe it would ever happen, as written, the first sentence would imply that TDEC could just call a permittee and tell them their stream has unavailable parameters and to start monitoring. We believe TDECs intent is that analytical monitoring is accomplished on the unavailable parameters streams listed on the division's approved 303(d) list or TDEC's GIS mapping tool web site.

Response:

MS4s should use the latest 303(d) list and the GIS mapping tool to gather stream assessment information. The language in the permit has been changed to add "using the procedure identified in sub-part 3.1."

Part/Section	**Comment 78**
Section 5 Monitoring, Recordkeeping and Reporting	Although the permit specifically removes the requirement to collect the flow measurement required by the SOP, other data (dissolved oxygen, ph, temperature and conductivity) has not. This data is not relevant to the stated objectives of this monitoring program (pollutant source and determining the effectiveness of the Program). Only the sample collection should be required for permit compliance. During the last permit cycle, TDEC agreed and removed the requirement to obtain added data required in the SOP. This exclusion should be included in the permit language.

Response:

The requirement to include flow measurement as part of pathogen sampling has been removed from the permit because it was removed from the SOP. However, other field parameters such as DO, pH, temperature and conductivity remain in the SOP for pathogens and nutrients and must be collected.

Part/Section	Comment 79
Section 5 Monitoring, Recordkeeping and Reporting	The purpose of the IDDE section of the permit is to identify sources of pollutants. To require this in a monitoring program is inappropriate.

Response:

Permittees must develop and implement a plan to detect, identify and eliminate non-stormwater discharges, including illegal disposal, throughout the MS4. MS4s may include an IDDE component in their Option 2 monitoring program if they wish. It is not a requirement.

Part/Section	Comment 80
Section 5 Monitoring, Recordkeeping and Reporting	*"When developing the alternative analytical monitoring plan, the permittee must examine and consider a variety of factors, including, but not limited to, land use conditions, stream status/characteristics, and utilization of monitoring results."* The sentence is directive in nature but then goes on to say "including, but not limited to", which provides much room for interpretation. If TDEC wishes to leave some flexibility by not spelling out all factors, then the sentence should not be directive in nature. Recommend removing the directive language, i.e. "must", and replacing with non- directive language, i.e. "should".

Response:

The sentence means the MS4s must consider the factors listed but it may also consider other factors as well. The verb "consider" does not mean one must take action.

Part/Section	Comment 81
Section 5 Monitoring, Recordkeeping and Reporting	We take issue with this subparagraph (which should be "a" to make the subparagraph formatting consistent within this section). As written, this subparagraph implies that the permittee can only use option 2 if option 1 is not available. We do not believe this is TDEC's intent. The first paragraph of this section gives the permittee the flexibility of using either option 1 or option 2. Therefore, requiring a permittee to justify the use of option 2 is inappropriate. Recommend this subparagraph be deleted.

Response:

MS4s are free to choose whichever option they prefer. If an MS4 chooses Option 2, it must explain its reasoning. In doing so, MS4s do not need to demonstrate that Option 1 is unavailable. A clarification to the introductory paragraph has been included.

Part/Section	Comment 82
Section 5 Monitoring, Recordkeeping and Reporting	We take issue with the requirement to submit the proposed alternate plan to the local EFO within 12 months of coverage under this permit. The alternate plan should be included in the SWMP.

Response:

The permit already requires that the monitoring plan be included in the SWMP. Approval language has been added to the permit.

Part/Section	Comment 83
Section 5 Monitoring, Recordkeeping and Reporting	What records a permittee keeps is going to be dependent upon the purpose of the permittee's monitoring as well as what pollutant the permittee is performing monitoring for. As stated in the opening sentence of this section, monitoring is intended to identify pollutant sources and determine the effectiveness of the program. A permit requirement for "representative monitoring" would be inappropriate to achieve these objectives. Additionally, in reference to test procedures approved under 40 C.F.R. § 136, we don't see the applicability to a small MS4 program. Most of the references included in that section concern EPA administered permits as well as pretreatment and sludge facilities. If this section truly applies to a small MS4 program, we request a more specific reference. Most permittees don't have the staff to support such analysis, most analysis will be performed by a lab outside the permittee's administration. Typically, the resulting reports show only the results, not who performed the actual analysis. The "exact place" where the sampling is conducted isn't typically provided by latitude and longitude either.

Response:

An MS4 permit is an NPDES permit. 40 C.F.R. § 122.41 (Conditions applicable to all permits (applicable to state programs see section 123.25)) provides, in part:

> (i)(4) (j) Monitoring and records.
> (1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
>
> (2) Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 C.F.R. part 503), 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:

(i) The date, exact place, and time of sampling or measurements;

(ii) The individual(s) who performed the sampling or measurements;

(iii) The date(s) analyses were performed;

(iv) The individual(s) who performed the analyses;

(v) The analytical techniques or methods used; and

(vi) The results of such analyses.

(4) Monitoring must be conducted according to test procedures approved under 40 C.F.R. Part 136 unless another method is required under 40 C.F.R. subchapters N or O.

Part/Section	**Comment 84**
Section 5 Monitoring, Recordkeeping and Reporting	Although typically 1 July to 30 June, a fiscal year may be different for permittees. For instance, a fiscal year for federal installations is 1 October to 30 September.

Response:

The permit language has been changed from fiscal year to permit reporting year – July 1 through June 30.

Part/Section	**Comment 85**
Section 5.1 and 5.2 Monitoring, Recordkeeping and Reporting	1. Footnote 3 at the bottom of page 23 says a sampling program is only needed where the Division has designated stream segments as impaired at the time of permit issuance. It is well-established that in urban areas where a significant fraction of impervious cover, streams are very likely to be impaired. Monitoring requirements must be expanded to include streams assessed as impaired and unassessed streams in watersheds with 25% or greater impervious cover. 2. We wish to recognize the note at the bottom of Page 23, which states that the monitoring requirements apply only to impaired streams listed as of the effective date of the permit. <u>This approach shall apply throughout the permit wherever the existence of impaired streams or TMDLs triggers a new permit requirement</u>.

Response:

1. Option 1 establishes minimum monitoring requirements based on unavailable parameter stream status. However, under either option, the jurisdiction may choose to monitor streams based on additional criteria such as impervious land cover.

2. The footnote is specific to the monitoring programs as specified in Sections 5.1 and 5.2 only. It is reasonable to expect that other requirements triggered by the impaired status of a stream, such as monthly inspections of construction activities, must be implemented based on the latest stream assessment data available. This is true, in part, because all required monitoring for the permit cycle may be completed prior to a change in impairment status.

Part/Section	**Comment 86**
Section 5.2 Non-analytical Monitoring,	This part must clarify the meaning of "...a stream segment is identified as being in need of additional controls."

Response:

This provision was intended to apply to waters with unavailable parameters. The permit terminology has been clarified accordingly.

Part/Section	**Comment 87**
Section 5.4 Reporting-	MS4 annual reports are the most effective tool for Tennessee stormwater programs to communicate to their stakeholders what they are doing to protect the people and waters in their communities and downstream. Reporting requirements in the draft must be greatly expanded to be clear, specific and measurable. TDEC also needs to incorporate the monitoring data gathered by the MS4 Phase II permittees into its databases such as STORET, into its 303(d) and 305(b) water quality assessment program, TMDL program, and provide this data for related data gathering and analysis efforts by partner agencies. The previous permit (§5.4) required MS4s to hold public hearings to present their annual reports. That requirement has been eliminated in this draft (in favor of allowing comments on a website). The requirement of a public hearing must be restored, so that MS4s can encourage stakeholders to attend to learn about and discuss their stormwater programs. Alternatively, a public hearing should be required if requested.

Response:

The feedback received by the division has been nearly unanimous that the annual report public meetings were not an effective means of communication with the public. MS4s have suggested it would be more effective to communicate the annual report via a website or other means and have individual meetings with stakeholders who have questions or concerns.

Part/Section	Comment 88
General	Several commenters requested minor revisions to the Notice of Intent and Annual Report forms.

Response:
The division made appropriate changes to the forms.

Determination

In conclusion, the comments included in this notice of determination document were compiled based on their relevance to the permit content, intent and interpretation of this general permit, rather than implementation of the permit conditions (e.g. penalty evaluations, appropriateness of various enforcement measures, development of TMDLs, etc.).

The division's decision on this matter is to issue the NPDES General Permit for Discharges from Small Municipal Separate Storm Sewer Systems, Permit No. TNS000000.

DATE: September 30, 2016

Vojin Janjić
Manager, Water-Based Systems Unit