Tennessee Department of Environment and Conservation
Division of Water Resources
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Municipal Separate Storm Sewer System (MS4) Annual Report

1. MS4 Information

Knox County	TNS075582
Name of MS4	MS4 Permit Number
Chris Granju	Chris.granju@knoxcounty.org
Name of Contact Person	Email Address
865-215-5840	
Telephone (including area code)	
205 West Baxter Avenue	
Mailing Address	

Knoxville	TN	37917
City	State	ZIP code

What is the current population of your MS4? 256,168

What is the reporting period for this annual report? From July 1, 2014 to June 30, 2015

2. Water Quality Priorities (Section 3.1)

A. Does your MS4 discharge into waters listed as impaired on TN's most current 303(d) list and/or according to the on-line GIS mapping tool? ☒ Yes ☐ No

B. If yes, please attach a list all impaired waters within your jurisdictional area. *Attached*

C. Does your MS4's jurisdictional area contain any waterbodies where a TMDL has been approved for parameters other than pathogens, siltation and habitat alterations? *NO* If yes, please attached list.

D. Does your MS4 discharge to any Exceptional TN Waters (ETWs) or Outstanding National Resource Waters (ONRWs)? If yes, please attach a list ☒ Yes ☐ No

Waterbody	Description	Basis_for_Inclusion
Flat Creek Unnamed Tributary	Portion in House Mountain State Natural Area. Tributary flows into river mile 7.9 of Flat Creek.	House Mountain State Natural Area
Brice Branch Unnamed Tributary	Portion in House Mountain State Natural Area. Tributary flows into Brice Branch at river mile 1.6.	House Mountain State Natural Area
Brice Branch Unnamed Tributary	Portion in House Mountain State Natural Area. Tributary flows into Brice Branch at river mile 1.8.	House Mountain State Natural Area
Hogskin Branch	Portion in House Mountain SNA.	House Mountain State Natural Area.
Holston River	From confluence with French Broad River to McBee Island.	Federal endangered Pink Mucket, federal threatened Snail Darter.
French Broad River	From Holston River to Douglas Dam.	Federally endangered Pink Mucket, federal threatened Snail Darter, state endangered Lake Sturgeon (includes frequent reported sightings from fisherman below dam) and state threatened Blue Sucker (includes TTU report at mile 22).
Tuckahoe Creek	In its entirety.	State Scenic River (Class III Developed River Area).
Clinch River	From Melton Hill Dam (river mile 23.1) to Pellissippi Parkway (river mile 43.7).	State Scenic River (Class III Developed River Area)
Clinch River - Melton Hill Reservoir	Clinch River from Melton Hill Dam to Pellissippi Parkway.	State Scenic River (Class III - Developed River Area).
Turkey Creek	From Fort Loudon Lake to Hwy 11.	State endangered Sweetscent Ladies'-Tresses

E. Are you implementing additional specific provisions to ensure the continued integrity of ETWs or ONRWS located within your jurisdiction? ☒ Yes ☐ No

The County considers work within the watershed of ETWs or ONRWs (if any) to be priority construction activities. The additional requirements outlined in section 5.4.1 of the TNCGP are applied within the entire watershed.

3. PROTECTION OF STATE OR FEDERALLY LISTED SPECIES (SECTION 3.2.1 General Permit for Phase II MS4s)

A. Are there any state or federally listed species within the MS4's jurisdiction? ☒ Yes ☐ No

B. Are any of the MS4 discharges or discharge-related activities likely to jeopardize any state or federally listed species? ☐ Yes ☒ No

C. Please attach any authorizations or determinations by U.S. Fish & Wildlife Service on the effect of the MS4 discharges on state or federally listed species. *Attached*.

4. PUBLIC EDUCATION AND PUBLIC PARTICIPATION (SECTION 4.2.1 AND 4.2.2)

A. Have you developed a Public Information and Education plan (PIE)? ☒ Yes ☐ No

B. Is your public education program targeting specific pollutants and sources of those pollutants, such as Hot Spots? ☒ Yes ☐ No

C. If yes, what are the specific causes, sources and/or pollutants addressed by your public education program? See *Tables below: Table 1 shows the pollutants and sources. Table 2 provides details on the specifics of the education program.*

Table 1. Water Body Impairment Pollutants and Sources

Waterbody Name	Cause of Impairment	Source of Impairment
TIER 1 STREAMS		
Little Turkey Creek	Loss of biological integrity due to siltation	Discharges from MS4 area
Grandview Branch	Escherichia coli	Discharges from MS4 area
High Bluff Branch	Escherichia coli	Discharges from MS4 area
Sinking Creek	Escherichia coli	Discharges from MS4 area
Ten Mile Creek (formerly called Sinking Creek)	Habitat loss due to alteration in streamside or littoral vegetative cover Loss of biological integrity due to siltation Escherichia coli	Discharges from MS4 area
Willow Fork	Alteration in stream-side or littoral vegetative cover Loss of biological integrity due to siltation Escherichia coli	Discharges from MS4 area
Cox Creek	Escherichia coli	Discharges from MS4 area
Hines Branch	Habitat loss due to other anthropogenic substrate alterations Escherichia coli	Discharges from MS4 area

Knob Fork	Loss of biological integrity due to siltation Habitat loss due to other anthropogenic substrate alterations Alteration in stream-side or littoral vegetative cover Escherichia coli	Discharges from MS4 area
Grassy Creek	Loss of biological integrity due to siltation Escherichia coli	Discharges from MS4 area
Meadow Creek	Escherichia coli	Discharges from MS4 area
Plum Creek	Escherichia coli	Discharges from MS4 area
TIER 2 STREAMS		
Grable Branch	Oil & Grease Loss of biological integrity due to siltation Physical Substrate Habitat Alterations	Minor Industrial Point Source Channelization Industrial Permitted Runoff Discharges from MS4 area
Swanpond Creek	Loss of biological integrity due to siltation Alteration in stream-side or littoral vegetative cover Escherichia coli	Channelization Discharges from MS4 Area
Casteel Branch	Loss of biological integrity due to siltation	Pasture Grazing Discharges from MS4 area
Twin Branch	Habitat loss due to alteration in streamside or littoral vegetative cover Loss of biological integrity due to siltation	Pasture Grazing Discharges from MS4 area
McCall Branch	Loss of biological integrity due to siltation	Discharges from MS4 area Streambank Modification
Whites Creek	Other Anthropogenic Habitat Alterations Escherichia coli	Discharges from MS4 area Streambank Modification
Beaver Creek (segment 1000)	Phosphate Nitrates Escherichia coli Low Dissolved Oxygen Loss of biological integrity due to siltation Physical Substrate Habitat Alterations	<u>Section 1000</u> Major Municipal Point Source Pasture Grazing Discharges from MS4 Area
Beaver Creek (segments 2000 and 3000)	Escherichia coli Loss of biological integrity due to siltation Physical Substrate Habitat Alterations	<u>Section 2000 and 3000</u> Pasture Grazing Discharges from MS4 Area
Bullrun Creek	Escherichia coli Loss of biological integrity due to siltation Physical Substrate Habitat Alterations	Discharges from MS4 Area Pasture Grazing Channelization
Love Creek	Loss of biological integrity due to siltation Other Anthropogenic Habitat Alterations	Discharges from MS4 area (multiple MS4s)
TIER 3 STREAMS		
Roseberry Creek	Escherichia coli	Pasture Grazing Septic Tanks
Little Flat Creek	Escherichia coli	Animal Feeding Operations (NPS)

Flat Creek	Escherichia coli	Pasture Grazing Collection System Failure
Fort Loudon Reservoir (segment 1000)	PCBs	Contaminated Sediment
Fort Loudon Reservoir (segment 2000)	Mercury, PCBs	Atmospheric Deposition Contaminated Sediment
Roddy Branch	Alteration in stream-side or littoral vegetative cover Physical Substrate Habitat Alteration, Loss of biological integrity due to siltation Escherichia coli	Pasture Grazing Channelization
Stock Creek (Segments 1000 and 2000)	Escherichia coli	Pasture Grazing
Gun Hollow Branch	Escherichia coli	Pasture Grazing
East Fork Third Creek (Located within the City of Knoxville)	Loss of biological integrity due to siltation Other Anthropogenic Habitat Alterations Escherichia coli	Discharges from MS4 area Urbanized High Density Area Land Development Collection System Failure
Third Creek (Located within the City of Knoxville)	Nitrates Loss of biological integrity due to siltation Other Anthropogenic Habitat Alterations Escherichia coli	Discharges from MS4 area Urbanized High Density Area Land Development Collection System Failure
First Creek (Located within the City of Knoxville)	Nitrate + Nitrite Loss of biological integrity due to siltation Other Anthropogenic Habitat Alterations Escherichia coli	Discharges from MS4 area Urbanized High Density Area Collection System Failure
Second Creek (Located within the City of Knoxville)	Nitrate + Nitrite Loss of biological integrity due to siltation Other Anthropogenic Habitat Alterations Escherichia coli	Discharges from MS4 area Urbanized High Density Area Collection System Failure
Williams Creek (Located within the City of Knoxville)	Other Habitat Alterations Escherichia coli	Discharges from MS4 area Collection System Failure
Baker Creek (Located within the City of Knoxville)	Nitrate + Nitrite Other Habitat Alterations Escherichia coli	Discharges from MS4 area Collection System Failure
Goose Creek (Located within the City of Knoxville)	Loss of biological integrity due to siltation Other Anthropogenic Habitat Alterations PCBs Escherichia coli	Collection System Failure Discharges from MS4 area RCRA Hazardous Waste
Fourth Creek (Located within the City of Knoxville)	Physical Substrate Habitat Alterations Escherichia coli	Discharges from MS4 area Channelization
Melton Hill Reservoir	PCBs Chlordane	Contaminated Sediment
Williams Branch	Loss of biological integrity due to siltation	Industrial Permitted Runoff

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Table 2. Education Program Target Groups and Target Pollutants

Description	Goal	Type	Target Groups	Target Pollutants	2010 Permit Citation(s)
Brochure(s) Distribution	To broaden public understanding of the storm drainage system and how behaviors contribute to water quality	Publications	Homeowners, Engineers, Developers, Construction Workers, Public	All	4.2.1a,b.c,f,g &h
Website	▪ To provide manuals, policies and information regarding construction-phase and long term stormwater management. ▪ To educate the public on how to prevent stormwater pollution and become involved with County programs ▪ To educate the public on illicit discharge detection and reporting	Internet	Engineers, Developers, Construction Workers, Public	All	4.2.1a-h
Social Media	To engage the public in a discussion of water pollution prevention and raise awareness on how the public can get more involved in County programs	Internet	Homeowners, Engineers, Developers, Construction Workers, Public	All	4.2.1a,b.c,f,g &h
Interactive BMP Tour	To provide education and demonstrate green infrastructure practices	Internet/ Educational Sites	Engineers, Developers, Construction Workers, Public	All	4.2.1 and 4.2.2
Signage at select Knox County Parks	To provide education and demonstrate green infrastructure practices	Educational Site	Engineers, Developers, Construction Workers, Public	All	4.2.1 and 4.2.2
Adopt A Stream	▪ To provide an opportunity for citizen involvement in visual stream assessments, cleaning streams and reporting illicit discharges. ▪ To educate the public on how to prevent stormwater pollution and become involved with County programs	Training/ Educational Event	Public	All	4.2.1 and 4.2.2
Adopt A Watershed	To educate middle and high school students about watershed concepts and stormwater pollution prevention through service based learning projects	Training/ Educational Event	Public	All	4.2.1 and 4.2.2
Waterfest	To engage elementary students in learning about water pollution and watershed concepts	Training/ Educational Event	Public	All	4.2.1

Description	Goal	Type	Target Group	Target Pollutants	2010 Permit Citation(s)
Festivals/Exhibitions/ Speaking Engagements	To provide requested stormwater pollution prevention awareness to public and private groups	Training/ Educational Event	Public	All	4.2.1
Watershed Initiatives	▪ To encourage citizens to take ownership of their water resources ▪ To provide education and demonstrate stormwater pollution prevention techniques	Training, Events, Projects	Homeowners, Engineers, Developers, Construction Workers, Public	All	4.2.1
Tennessee Smart Yards (Previously TN Yards & Neighborhoods)	To assist residents and neighborhood associations on tactics that can be employed in yards to encourage water infiltration and prevent stormwater pollution	Training/ Educational Event	Homeowners, Public	All	4.2.1a
Homeowner BMP Manual and Workshops	To broaden public understanding of stormwater best management practices and maintenance activities needed to ensure functionality of the BMP	Publication	Homeowners	Siltation	4.2.1b
Contractor Education	To make construction workers and sub-contractors aware of water quality impacts from daily operations	Training Event	Construction Workers	Siltation	4.2.1c & g
Development Workshops	To make development community aware of regulations, guidance materials and long-term water quality impacts from development activities	Training Event	Engineers, Developers, Construction Workers	All	4.2.1c & g
Pre-Construction Meetings	To make development community aware of regulations, guidance materials and long-term water quality impacts from development activities	Event	Engineers, Developers, Construction Workers	All	4.2.1c & g
Outreach to Professional Chemical Applicators	To limit the improper storage, use and disposal of items in areas which are exposed to stormwater runoff	Training Event/ Internet	Chemical applicators	Phosphate, Nitrate	4.2.1d &e
Public Notices	To comply with applicable state and local laws governing this activity	Publications, Internet	Public	All	4.2.2
Municipal Employee Training	To make municipal employees aware of water quality impacts from daily operations, and to educate staff on how to identify and report illicit discharges	Training Event/Publication	Municipal Staff	All	4.2h

D. Note specific successful outcome(s) (NOT tasks, events, publications) fully or partially attributable to your public education program during this reporting period. Please see chart below:

Outcomes from Education/Participation Programs

Description	Adopt A Watershed Program	Environmental Stewardship Program	Grant Funded Projects	Other Knox Co. Programs
Rain gardens maintained or planted	**2** at Powell Middle School were planted with natives; natives planted at Harrell Rd. rain garden plus weeding & modification for drainage; South Doyle High RG maintained & improved	5	1	
Storm drain inserts	**TOTAL= 956.4 pounds** of debris and sediment removed from storm drains; **11 new** storm drain inserts installed; decaled 15 storm drain inserts on Grace Christian Academy campus			
Upland stabilization projects	**TOTAL=2,250 square feet** of soil stabilized			
Water catchment systems installed				
Water catchment systems sold				245 rain barrels sold during 3 "Make It, Take It" workshops and one truckload sale
Grassed swales installed		**15**		
Bioswales installed		**1**		
Citizens reached through workshops and classroom outreach	**1666** middle and high school students participated in AAW water quality educational activities. 1589 students participated in a service project to benefit their local watershed.		**23** citizens attended a Lower Clinch Council Rain Garden workshop in March 2015	**1,043** citizens were exposed to stormwater pollution prevention ideas by Knox County Stormwater education initiatives.
Stream clean ups conducted				**11** stream clean ups were completed removing **440** pounds of trash in and along local streams through the Adopt A Stream program. **5 new AAS groups** created & trained
Invasive species removal	**TOTAL= 7,654 pounds of invasive species removed.** 25 #s at Grace Christian Academy (Beaver Creek); 1192 #s at Hardin Valley (Conner Creek); 320 #s at			**TOTAL = 5,812 pounds of invasive species removed** by the 2014-2015 Knox County CAC AmeriCorps Water Quality Team

	Fulton High (First Creek); 1014 #s at South Doyle High & 2403 #s at Marble Springs Site (Stock Creek); 2700 #s at West Valley Middle (Ten Mile Creek)			
Social Media	205 Facebook Fans of Water Quality Team, 671 Facebook Fans of Knox County Stormwater			18,702 page views at Knox County Stormwater website. 108 page views at Knox County Stormwater Management Facebook
Tree / Riparian Buffer Plantings	**TOTAL = 231 native trees / shrubs planted:** 100 trees at South Doyle Middle; 105 native plants at Harrell Rd. Park; 6 trees at West high; 20 native plants at Farragut High; **250 seedlings started** to use for Water Quality projects			**Total= 575 native trees / shrubs planted;** 300 swamp milkweed plants at Harrell Rd. Park; 100 at West Valley Middle; 100 at Hardin Valley High; 75 at South Doyle Middle as part of the 50K Tree Day initiative
Trash Removal	**TOTAL = 86.4 pounds of trash removed from area watersheds:** 39.2 #s at Fulton High (First Creek); 15 #s at Carter High (Lyon Creek); 32.2 #s at West High (Third Creek)			**Total = 1,960 Pounds of trash removed from area streams** during 3 clean-ups on 9/17/14, 11/20/14 and 3/17/15
Trail Maintenance	**TOTAL = 150 sq. feet** of Carter High's Outdoor Classroom maintained			
Elementary School education	**TOTAL = 1,680 elementary school children educated** on watershed & water pollution concepts			

E. Do you have an advisory committee or other body comprised of the public and other stakeholders that provides regular input on your stormwater program? ☐ Yes ☒ No

F. How do you facilitate, advertise, and publicize public involvement and participation opportunities? *Knox County posts information on the website (www.knoxcounty.org/stormwater), Facebook, Newspaper articles and advertisements, emails to list serves and reaching out to specific organizations to post pertinent information on their social media and web pages.*

G. Do you have a webpage dedicated to your stormwater program? ☒ Yes ☐ No

If so, what is the link/URL: *www.knoxcounty.org/stormwater*

H. Are you tracking and maintaining records of public education, outreach, involvement and participation activities? Please attach a summary of these activities. -- 2 documents attached. ☒ Yes ☐ No

5. Illicit Discharge Detection and Elimination (Section 4.2.3)

A. Have you completed a map of all outfalls and receiving waters of your storm sewer system? ☒ Yes ☐ No

B. Have you completed a map of all storm drain pipes of storm sewer system? ☐Yes ☒ No

C. How many outfalls have you identified in your system? *3985 outfalls: 1534 pipes, 2266 ditches,185 springs*

D. Have any of these outfalls been screened for dry weather discharges? ☒Yes ☐ No

E. What is your frequency for screening outfalls for illicit discharges? *Weekly, if weather permits and when an illicit discharge is reported to us.*

F. Do you have an ordinance that effectively prohibits illicit discharges? ☒ Yes ☐ No

G. During this reporting period, how many illicit discharges/illegal connections have you discovered (or been reported to you)? *139 total – Health Department – 107; Stormwater – 32*

H. Of those illicit discharges/illegal connections that have been discovered or reported, how many have been eliminated? *36 of 139 total have been eliminated. Out of the 139 total complaints or illicit discharges discovered:*

- *Only 57 were found to be legitimate complaints.*
- *Many were dumping complaints where we could see staining or it was brush or trash being dumped in or near a drainageway/stream, so we are monitoring and educating the surrounding businesses or residents on the issue.*
- *For a couple, a source could not be found and we are monitoring.*
- *And a couple were Ag related, so we have been talking to the Soil Conservation District, when appropriate, and monitoring.*

6. Construction Site Stormwater Runoff (Section 4.2.4)

A. Do you have an ordinance or adopted policies stipulating:

Erosion and sediment control requirements? ☒ Yes ☐ No

Other construction waste control requirements? ☒ Yes ☐ No

Requirement to submit construction plans for review? ☒ Yes ☐ No

MS4 enforcement authority? ☒ Yes ☐ No

B. How many active construction sites disturbing at least one acre were there in your jurisdiction this reporting period? *176 Residential and 35 Commercial*

C. How many of these active sites did you inspect this reporting period? *211*

D. On average, how many times each, or with what frequency, were these sites inspected (e.g., weekly, monthly, etc.)? *monthly*

E. Do you prioritize certain construction sites for more frequent inspections? ☒ Yes ☐ No

If Yes, based on what criteria? *All sites are considered priority sites in Knox County. Additional inspections are done for active construction and installation of infrastructure (e.g., road and pipe installation), NOV (notice of violation) follow up and work orders.*

7. Permanent Stormwater Controls (Section 4.2.5)

A. Do you have an ordinance or other mechanism to require:

Site plan reviews of all new and re-development projects? ☒ Yes ☐ No

Maintenance of stormwater management controls? ☒ Yes ☐ No

Retrofitting of existing BMPs with green infrastructure BMPs? ☐ Yes ☒ No

B What is the threshold for new/redevelopment stormwater plan review? (e.g., all projects, projects disturbing greater than one acre, etc.) *One acre of disturbance or 10,000 square feet of imperviousness added*

C. Have you implemented and enforced performance standards for permanent stormwater controls? ☒ Yes ☐ No

D. Do these performance standards go beyond the requirements found in Section 4.2.5.2 and require that pre-development hydrology be met for:

Flow volumes ☐ Yes ☒ No

Peak discharge rates ☒ Yes ☐ No

Discharge frequency ☒ Yes ☐ No

Flow duration ☐ Yes ☒ No

E. Please provide the URL/reference where all permanent stormwater management standards can be found.

www.knoxcounty.org/stormwater/

F. How many development and redevelopment project plans were reviewed for this reporting period? 43

G. How many development and redevelopment project plans were approved? 40

H. How many permanent stormwater management practices/facilities were inspected? 216

I. How many were found to have inadequate maintenance? 19

J. Of those, how many were notified and remedied within 30 days? (If window is different than 30 days, please specify) 4 within 30 days, 1 within 60 days, 4 within 150 days

K. How many enforcement actions were taken that address inadequate maintenance? 4

L. Do you use an electronic tool (e.g., GIS, database, spreadsheet) to track post-construction BMPs, inspections and maintenance? ☒ Yes ☐ No

M. Do all municipal departments and/or staff (as relevant) have access to this tracking system? ☐ Yes ☒ No

N. Has the MS4 developed a program to allow for incentive standards for redeveloped sites? ☐ Yes ☒ No

O. How many maintenance agreements has the MS4 approved during the reporting period? 41

8. CODES AND ORDINANCES REVIEW AND UPDATE (SECTION 4.2.5.3)

A. Is a completed copy of the EPA Water Quality Scorecard submitted with this report? ☐ Yes ☒ No
This report was required with submission of the 2011-2012 Annual Report and is on file

B. Include status of implementation of code, ordinance and/or policy revisions associated with permanent stormwater management.
Knox County Staff is currently developing revisions of the Stormwater Management Ordinance as well as the referenced technical design manual for land development.

9. STORMWATER MANAGEMENT FOR MUNICIPAL OPERATIONS (SECTION 4.2.6)

A. Have stormwater pollution prevention plans (or an equivalent plan) been developed for:

All parks, ball fields and other recreational facilities ☐ Yes ☒ No
Current SWPPP development in progress for Parks & Rec Dept. & facilities

All municipal turf grass/landscape management activities ☐ Yes ☒ No
Current SWPPP development in progress for Parks & Rec Dept. & facilities

All municipal vehicle fueling, operation and maintenance activities
SWPPP has been developed for the EPW Department; still in development for Parks & Recreation Department & Solid Waste Department ☐ Yes ☒ No

All municipal maintenance yards ☐ Yes ☒ No
SWPPP has been developed for the EPW Department; still in development for Parks & Recreation Department & Solid Waste Department

All municipal waste handling and disposal areas ☐ Yes ☒ No
SWPPP development in progress for Solid Waste Dept.

B. Are stormwater inspections conducted at these facilities? ☒ Yes ☐ No

1. If Yes, at what frequency are inspections conducted?_*Once every two weeks for the Engineering and Public Works facility & monthly inspections for the Sheriff's Detention Facility*

C. Have standard operating procedures or BMPs been developed for all MS4 field activities? (e.g., road repairs, catch basin cleaning, landscape management, etc.) –They have been for Engineering and Public Works only. ☒ Yes ☐ No

D. Do you have a prioritization system for storm sewer system and permanent BMP inspections? ☐ Yes ☒ No

E. On average, how frequently are catch basins and other inline treatment systems inspected? *Once every two weeks at the Engineering and Public Works facility & monthly at the Sheriff's Detention Facility*

F. On average, how frequently are catch basins and other inline treatment systems cleaned out/maintained? *As needed*

G. Do municipal employees in all relevant positions and departments receive comprehensive training on stormwater management? ☒ Yes ☐ No

H. If yes, do you also provide regular updates and refreshers? ☒ Yes ☐ No

If so, how frequently and/or under what circumstances? *All field staff are required to take an online Stormwater test annually; we also offer job-specific training for all departments with established SWPPPs (currently Engineering & Public Works & Sheriff's Detention Facility)*

10. STORMWATER MANAGEMENT PROGRAM UPDATE (SECTION 4.4)

A. Describe any changes to the MS4 program during the reporting period including but not limited to:

Changes adding (but not subtracting or replacing) components, controls or other requirements (Section 4.4.2.a).

Changes to replace an ineffective or unfeasible BMP (Section 4.4.2.b).

BMP 4 – Post Construction Goal: Knox County will develop, implement, and enforce a program to address permanent stormwater management from new development and re-development projects that disturb one or more acres, or add more than 10,000 sq. feet of imperviousness. That may include, but are not limited to LID and green infrastructure. The program will be designed to fulfill "Performance Standards" and "Runoff Reduction" requirements as set forth in the NPDES permit.

- *Changes to BMP 4B – Milestone Year 4 of the Post Construction section should be changed from Release findings of off-site mitigation/in-lieu of programs, and implement revisions to ordinances, and develop a program to ensure that all Stormwater BMPs are operating correctly and are properly maintained to* ***Evaluate program and determine needed updates.***
- *Changes to BMP4B – Milestone Year 5 of the Post Construction section should be changed from Evaluate program and determine needed updates to* ***Release findings of off-site mitigation/in-lieu of programs, and implement revisions to ordinances, and develop a program to ensure that all Stormwater BMPs are operating correctly and are properly maintained.***

This change is due to a 12 month extension by TDEC on having ordinance changes complete by the end of year 4 to having them complete by the end of year 5 for all post construction requirements.

Information (e.g. additional acreage, outfalls, BMPs) on program area expansion based on annexation or newly urbanized areas. N.A.

Changes to the program as required by the division (Section 4.4.3). N.A.

11. EVALUATING/MEASURING PROGRESS

A. What indicators do you use to evaluate the overall effectiveness of your Stormwater Management Program, how long have you been tracking them, and at what frequency? Note that these are not measurable goals for individual BMPs or tasks, but large-scale or long-term metrics for the overall program, such as in-stream macroinvertebrate community indices, measures of effective impervious cover in the watershed, indicators of in-stream hydrologic stability, etc.

Indicator	Began Tracking (year)	Frequency	Number of Locations
Example: E. coli	*2003*	*Weekly April–September*	*20*
E. Coli	2003	Varies	30
Benthics	1998	Varies	14
Tree Cover	2001	10 Years	All of Knox County

Stream Inventory	2008	5 Years	Listed Streams

B. Provide a summary of data (e.g., water quality information, performance data, modeling) collected in order to evaluate the performance of permanent stormwater controls installed throughout the system. This evaluation may include a comparison of current and past permanent stormwater control practices.

Knox County has taken a watershed approach to improve water quality. Knox County has created several watershed initiatives which encompass the Lower Clinch and Fort Loudon watersheds. Within these watersheds stormwater staff has developed the Beaver Creek, Bullrun Creek, and Stock Creek watershed initiatives. The task forces meet regularly to discuss ways to target problems based upon existing data and to target data collection based upon strategies implemented. Knox County coordinates monitoring efforts based upon our partners required monitoring and what stormwater staff believes are useful data sets. Some data is generated based upon grants received from partnership efforts.

Knox County used Integrated Pollution Source Index (IPSI) data from TVA to help guide efforts in Stock Creek and Bullrun Creek which primarily focused on bacteria sources. Knox County continues monitoring both streams for bacteria with the help of partners Knox Chapman Utility, Halls-Dale Powell Utility, First Utility District, UT, and TVA. Knox County plans to continue monitoring these streams to evaluate any improvements that may result from Ag improvements and sewer and septic rehabilitations. Knox County plans to determine bacteroides when it will help guide strategy.

There have been numerous studies done on Beaver Creek over the last fifteen years. Knox County has used these studies to help develop watershed management plans. The watershed plan is the guiding document for grants received to improve Beaver Creek. Knox County is focusing on retrofits in Beaver Creek to improve water quality in different land uses such as Ag, parks, and residential areas.

The Stormwater department collected benthic samples in Upper Beaver Creek, to more closely look at problems in the upper section of the main stem this summer. A benthic sample was collected in the Halls Community Park restoration project to see if the restoration is improving habitat. Stormwater is evaluating the results. Several samplers have been installed in Cedar Crossing subdivision to monitor storm water runoff in anticipation of installing bioinfiltration systems to determine its effectiveness in reducing pollutants as well as volume reduction. Stormwater staff collected bacteria samples last summer for our 303d listed stream segments in the Ft. Loudon watershed. The data is currently being reviewed.

The Stock Creek initiative implemented a watershed improvement plan with the help of a 319 grant. The focus was on septic rehabilitation, Ag BMP installations, and green infrastructure opportunities such as bioinfiltration. We collected samples last June for bacteria and they have been analyzed by UT for bacteriodes and they have created a report analyzing all the data we have collected over the past 11 years.

Prior to 2005, when most of the built environment occurred, Knox County stormwater requirements focused on peak flow mitigation. Knox County updated its stormwater ordinance to include a "first flush" requirement and buffer regulation in 2005. In 2008 Knox County updated its ordinance to include water quality volume requirements that include an 80% TSS removal component and a buffer requirement. Since 2008 Knox County has created 139 maintenance agreements for permanent stormwater controls related to new developments. We have cost shared through our Environmental Stewardship Program to install 20 Green Infrastructure type BMP's with landowners this past year which will reduce sediment, flow, and increase habitat.

12. ENFORCEMENT (SECTION 4.5)

A. Identify which of the following types of enforcement actions you used during the reporting period, indicate the number of actions, the minimum measure (e.g., construction, illicit discharge, permanent stormwater control) or note those for which you do not have authority:

Action	Construction	Permanent Stormwater Controls	Illicit Discharge	Authority?	
Notice of violation	#42	#11	#28	☒ Yes	☐ No
Administrative fines	#N/A	#N/A	#0	☒ Yes	☐ No
Stop Work Orders	#7	#N/A	#0	☒ Yes	☐ No
Civil penalties	#16	#N/A	#0	☒ Yes	☐ No
Criminal actions	#0	#N/A	#0	☒ Yes	☐ No
Administrative orders	#0	#N/A	#N/A	☒ Yes	☐ No
Other Holds placed on building lots	#1	#N/A	#N/A		

B. Do you use an electronic tool (e.g., GIS, data base, spreadsheet) to track the locations, inspection results, and enforcement actions in your jurisdiction? ☒ Yes ☐ No

C. What are the 3 most common types of violations documented during this reporting period?

Construction:

1. *Failure to obtain necessary permits.*
2. *Temporary erosion prevention/sediment controls are not properly installed, functional and/or maintained. Sediment has the potential to leave the site.*
3. *Failure to temporarily stabilize non-vegetated areas within 15 days since location was actively worked. This includes individual building lots*

Illicit Discharges:

1. *Failing or leaking sewer and septic systems and grey water discharges.*
2. *Dumping of other materials in storm sewer system or stream - Residential*
3. *Dumping of yard waste in drainageway or storm sewer system.*

Permanent Construction:

1. *Water Vaults not being inspected and maintained*
2. *Catch Basin inserts not being inspected and maintained*
3. *Headwalls separated from pipes*

13. Program Resources (Optional)

A. What was your annual expenditure to implement the requirements of your MS4 NPDES permit and SWMP this past reporting period? $1,510,603

B. What is next year's budget for implementing the requirements of your MS4 NPDES permit and SWMP? $2,564,798

C. Do you have an independent financing mechanism for your stormwater program? ☐ Yes ☒ No

D. If so, what is it/are they (e.g., stormwater fees), and what is the annual revenue derived from this mechanism?

Source: N.A. Amount $N.A.

Source: N.A. Amount $N.A.

E. How many full time employees does your municipality devote to the stormwater program (specifically for implementing the stormwater program vs. municipal employees with other primary responsibilities that dovetail with stormwater issues)? 20

F. Do you share program implementation responsibilities with any other entities? _Yes X No

Entity	Activity/Task/Responsibility	Your Oversight/Accountability Mechanism

G. Please attach a copy of your Organizational Chart: Attached

14. CERTIFICATION

This report must be signed by a ranking elected official or by a duly authorized representative of that person. See signatory requirements in sub-part 6.7.2 of the permit.

"I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury."

Tim Burchett Mayor		9/14/15
Printed Name and Title	Signature	Date

Annual reports must be submitted in accordance with the requirements of Section 5.4. (Reporting) of the permit. Annual reports must be submitted to the appropriate Environmental Field Office (EFO) by September 30 of each calendar year, as shown in the table below:

EFO	Street Address	City	Zip Code	Telephone
Chattanooga	540 McCallie Avenue STE 550	Chattanooga	37402	(423) 634-5745
Columbia	1421 Hampshire Pike	Columbia	38401	(931) 380-3371
Cookeville	1221 South Willow Ave.	Cookeville	38506	(931) 432-4015
Jackson	1625 Hollywood Drive	Jackson	38305	(731) 512-1300
Johnson City	2305 Silverdale Road	Johnson City	37601	(423) 854-5400
Knoxville	3711 Middlebrook Pike	Knoxville	37921	(865) 594-6035
Memphis	8383 Wolf Lake Drive	Bartlett	38133	(901) 371-3000
Nashville	711 R S Gass Boulevard	Nashville	37216	(615) 687-7000

List of Attachments

1.1.1. 3.2.1 Discharges to Water Quality Impaired Waters

Under section 303(d) of the Clean Water Act, states are required to develop lists of impaired waters. A waterbody (i.e., stream reaches, lakes, waterbody segments) is considered "impaired" when the results of monitoring by TDEC indicate chronic or recurring violations of the applicable numeric and/or narrative water quality criteria. The list, commonly called "the 303(d) list" also provides information on the pollutant(s) for which the stream is not meeting criteria and the source(s) of those pollutants. The 303(d) list is typically updated every other year.

In the State of Tennessee, the NPDES Phase II permit requires that each MS4 maintain awareness of the streams and other waterbodies in their jurisdictions that are on the 303(d) list. More importantly, the permit includes a provision for monitoring the streams on the 303(d) list for which "Discharges from the MS4" is designated as a pollutant source. Additionally, some streams on the 303(d) list have sources that have a direct relation to requirements of the NPDES Phase II permit. For example, a stream that is included on the 303(d) list for the pollutant "sediment" and the source of the sediment is "land development" would be a stream of special interest to a permitted MS4 due to the permit's focus on management of pollutants at land development (i.e. construction) sites. MS4s are required to implement best management practices to control pollutants, including sediment, from land developments.

Table 7 provides a listing of impaired streams in Knox County, as identified in the EPA Approved Final Year *2010 303(d) List* for the State of Tennessee. The table is divided in three priority tiers depending upon the source(s) of the stream's pollutant and the relevance of that source to the requirements of the NPDES Phase II permit, as explained below.

- **Tier 1** includes those streams where discharges from the County's public stormwater conveyance system (i.e., the MS4) are considered as the *sole* source of pollutant(s). *Tier 1 streams are of primary focus in the County's water quality program, therefore permit compliance activities target the impairments in these waterbodies.* The County's stormwater management program includes activities that target the pollutant(s) causing the impairment(s).
- **Tier 2** includes those streams where discharges from the County's public stormwater conveyance system are one of several sources of pollutant(s). *Tier 2 streams are also a strong focus of the County's water quality program; therefore permit compliance activities target the impairments in these waterbodies.* However, water quality improvements in these waterbodies likely cannot be achieved by the County's efforts alone.
- **Tier 3** includes those streams where discharges from Knox County's public stormwater conveyance system are NOT considered a source of pollutant(s). Water quality in these waterbodies are addressed by the County's stormwater management ordinance, general public education/outreach efforts and by other County stormwater program activities (e.g., illicit discharge enforcement), but the County's stormwater management resources are typically not highly focused on these streams.

Table 7. Impaired Waters in Knox County

Waterbody Name	Cause of Impairment	Source of Impairment
TIER 1 STREAMS		
Little Turkey Creek	Loss of biological integrity due to siltation	Discharges from MS4 area
Grandview Branch	Escherichia coli	Discharges from MS4 area
High Bluff Branch	Escherichia coli	Discharges from MS4 area
Sinking Creek	Escherichia coli	Discharges from MS4 area
Ten Mile Creek (formerly called Sinking Creek)	Habitat loss due to alteration in streamside or littoral vegetative cover Loss of biological integrity due to siltation Escherichia coli	Discharges from MS4 area

Table 7. Impaired Waters in Knox County		
Waterbody Name	**Cause of Impairment**	**Source of Impairment**
Willow Fork	Alteration in stream-side or littoral vegetative cover Loss of biological integrity due to siltation Escherichia coli	Discharges from MS4 area
Cox Creek	Escherichia coli	Discharges from MS4 area
Hines Branch	Habitat loss due to other anthropogenic substrate alterations Escherichia coli	Discharges from MS4 area
Knob Fork	Loss of biological integrity due to siltation Habitat loss due to other anthropogenic substrate alterations Alteration in stream-side or littoral vegetative cover Escherichia coli	Discharges from MS4 area
Grassy Creek	Loss of biological integrity due to siltation Escherichia coli	Discharges from MS4 area
Meadow Creek	Escherichia coli	Discharges from MS4 area
Plum Creek	Escherichia coli	Discharges from MS4 area
TIER 2 STREAMS		
Grable Branch	Oil & Grease Loss of biological integrity due to siltation Physical Substrate Habitat Alterations	Minor Industrial Point Source Channelization Industrial Permitted Runoff Discharges from MS4 area
Swanpond Creek	Loss of biological integrity due to siltation Alteration in stream-side or littoral vegetative cover Escherichia coli	Channelization Discharges from MS4 Area
Casteel Branch	Loss of biological integrity due to siltation	Pasture Grazing Discharges from MS4 area
Twin Branch	Habitat loss due to alteration in streamside or littoral vegetative cover Loss of biological integrity due to siltation	Pasture Grazing Discharges from MS4 area
McCall Branch	Loss of biological integrity due to siltation	Discharges from MS4 area Streambank Modification
Whites Creek	Other Anthropogenic Habitat Alterations Escherichia coli	Discharges from MS4 area Streambank Modification
Beaver Creek (segment 1000)	Phosphate Nitrates Escherichia coli Low Dissolved Oxygen Loss of biological integrity due to siltation Physical Substrate Habitat Alterations	Section 1000 Major Municipal Point Source Pasture Grazing Discharges from MS4 Area
Beaver Creek (segments 2000 and 3000)	Section 2000 and 3000 Escherichia coli Loss of biological integrity due to siltation Physical Substrate Habitat Alterations	Section 2000 and 3000 Pasture Grazing Discharges from MS4 Area
Bullrun Creek	Escherichia coli Loss of biological integrity due to siltation Physical Substrate Habitat Alterations	Discharges from MS4 Area Pasture Grazing Channelization
Love Creek	Loss of biological integrity due to siltation Other Anthropogenic Habitat Alterations	Discharges from MS4 area (multiple MS4s)
TIER 3 STREAMS		

Table 7. Impaired Waters in Knox County

Waterbody Name	Cause of Impairment	Source of Impairment
Roseberry Creek	Escherichia coli	Pasture Grazing Septic Tanks
Little Flat Creek	Escherichia coli	Animal Feeding Operations (NPS)
Flat Creek	Escherichia coli	Pasture Grazing Collection System Failure
Fort Loudon Reservoir (segment 1000)	PCBs	Contaminated Sediment
Fort Loudon Reservoir (segment 2000)	Mercury, PCBs	Atmospheric Deposition Contaminated Sediment
Roddy Branch	Alteration in stream-side or littoral vegetative cover Physical Substrate Habitat Alteration, Loss of biological integrity due to siltation Escherichia coli	Pasture Grazing Channelization
Stock Creek (Segments 1000 and 2000)	Escherichia coli	Pasture Grazing
Gun Hollow Branch	Escherichia coli	Pasture Grazing
East Fork Third Creek (Located within the City of Knoxville)	Loss of biological integrity due to siltation Other Anthropogenic Habitat Alterations Escherichia coli	Discharges from MS4 area Urbanized High Density Area Land Development Collection System Failure
Third Creek (Located within the City of Knoxville)	Nitrates Loss of biological integrity due to siltation Other Anthropogenic Habitat Alterations Escherichia coli	Discharges from MS4 area Urbanized High Density Area Land Development Collection System Failure
First Creek (Located within the City of Knoxville)	Nitrate + Nitrite Loss of biological integrity due to siltation Other Anthropogenic Habitat Alterations Escherichia coli	Discharges from MS4 area Urbanized High Density Area Collection System Failure
Second Creek (Located within the City of Knoxville)	Nitrate + Nitrite Loss of biological integrity due to siltation Other Anthropogenic Habitat Alterations Escherichia coli	Discharges from MS4 area Urbanized High Density Area Collection System Failure
Williams Creek (Located within the City of Knoxville)	Other Habitat Alterations Escherichia coli	Discharges from MS4 area Collection System Failure
Baker Creek (Located within the City of Knoxville)	Nitrate + Nitrite Other Habitat Alterations Escherichia coli	Discharges from MS4 area Collection System Failure
Goose Creek (Located within the City of Knoxville)	Loss of biological integrity due to siltation Other Anthropogenic Habitat Alterations PCBs Escherichia coli	Collection System Failure Discharges from MS4 area RCRA Hazardous Waste
Fourth Creek (Located within the City of Knoxville)	Physical Substrate Habitat Alterations Escherichia coli	Discharges from MS4 area Channelization
Melton Hill Reservoir	PCBs Chlordane	Contaminated Sediment
Williams Branch	Loss of biological integrity due to siltation	Industrial Permitted Runoff

United States Department of the Interior

FISH AND WILDLIFE SERVICE
446 Neal Street
Cookeville, TN 38501

August 19, 2013

Ms. Parci Gibson
Knox County Stormwater Management
205 West Baxter Avenue
Knoxville, Tennessee 37917

Re: FWS #13-CPA-0635

Dear Ms. Gibson:

Thank you for your e-mail received July 8, 2013, regarding compliance with the Tennessee Department of Environment and Conservation (TDEC) Notice of Coverage annual reporting requirements for Knox County's MS4 permit (TNS075582) and stormwater management program in Knox County, Tennessee. U.S. Fish and Wildlife Service (Service) personnel have reviewed the 2012 Knox County Stormwater Management Plan, pertinent stormwater regulations, and the spatial data provided by your office.

Historic records for large-river federally endangered Unionid mussel species exist in Knox County. Most of these species have been extirpated from Knox County; however, the federally endangered pink mucket (*Lampsilis abrupta*), spectaclecase (*Cumberlandia monodonta*), and sheepnose (*Plethobasus cyphus*) may occur in suitable habitats within the jurisdictional boundaries of Knox County's stormwater management program. The federally threatened snail darter (*Percina tanasi*) may also occur in these medium to large river habitats. In 2007, the Service finalized regulations authorizing the establishment of non-essential experimental populations of 15 federally listed mussel, snail, and fish species in suitable habitats in the Douglas Dam tailwaters of the French Broad River (72 FR 52433-52461). The Service and it conservation partners also have an active reintroduction program for the lake sturgeon (*Acipenser fulvescens*) in the Lower French Broad River.

We appreciate the efforts of the Knox County's Stormwater Management Program in helping to ensure that the quantity and quality of stormwater discharges from development activities in upland areas protect water quality in the tributaries to the larger rivers which support these species. In view of this, we believe that adverse effects to federally listed species from activities carried out under that program are not anticipated.

Thank you for the opportunity to comment. If you have any questions, please contact Steve Alexander of my staff at 931/528-6481, ext. 210, or via e-mail at *steven_alexander@fws.gov*.

Sincerely,

Brad Bryant

Actg for Mary E. Jennings
Field Supervisor

xc: Robert Karesh, TDEC, Nashville
Karina Bynum, TDEC, Cookeville
Jonathan Burr, TDEC, Knoxville

TENNESSEE WILDLIFE RESOURCES AGENCY

ELLINGTON AGRICULTURAL CENTER
P. O. BOX 40747
NASHVILLE, TENNESSEE 37204

September 23, 2013

Parci Gibson
Knox County Stormwater Management
205 West Baxter Avenue
Knoxville, TN 37917

Re: Knox County MS4 Determination Review

Dear Ms. Gibson:

The Tennessee Wildlife Resources Agency has reviewed the information that you provided regarding your MS4 permit. Data available to us indicates that numerous aquatic state listed species under our authority have been documented in streams within your jurisdictional area. Many of the state listed freshwater mollusks have been extirpated due to the impoundment of the Tennessee River within your jurisdiction but several state listed aquatic species continue to persist within your county's jurisdiction. It is our opinion that current code, city ordinances and policies, and other efforts to protect water quality are sufficient to minimize potential impacts to listed species under our authority in order to not jeopardize the continued existence of these species; and we agree with your determination that the MS4 discharges or discharge-related activities within the Knox County area are not likely to jeopardize any state or federally listed species.

If you have questions regarding this matter or if I may be of further assistance, please contact me at 615-781-6572.

Sincerely,

Robert M. Todd

Robert M. Todd
Fish and Wildlife Environmentalist

cc: Rob Lindbom

Type	Scientific Name	Common Name	Global Rank	St. Rank	Fed. Prot.	St. Prot.	Habitat
Vascular Plant	Carex alopecoidea	Foxtail Sedge	G5	SH	--	E-P	Wet Meadows And Swamps
Vertebrate Animal	Carpiodes velifer	Highfin Carpsucker	G4G5	S2S3	--	D	Large rivers, mostly in Tennessee River drainage.
Vertebrate Animal	Chrosomus tennesseensis	Tennessee Dace	G3	S3	--	D	First order spring-fed streams of woodlands in Ridge and Valley limestone region; Tennessee River watershed.
Vascular Plant	Cimicifuga rubifolia	Appalachian Bugbane	G3	S3	--	T	Rich Woods
Vertebrate Animal	Cryptobranchus alleganiensis	Hellbender	G3G4	S3	No Status	D	Rocky, clear creeks and rivers with large shelter rocks.
Invertebrate Animal	Cumberlandia monodonta	Spectaclecase	G3	S2S3	LE	Rare, Not State Listed	Medium to large rivers; in substrates from mud and sand to gravel, cobble, and boulders; Cumberland and Tennessee river systems.
Vertebrate Animal	Cycleptus elongatus	Blue Sucker	G3G4	S2	--	T	Swift waters over firm substrates in big rivers.
Invertebrate Animal	Cyprogenia stegaria	Fanshell	G1Q	S1	LE	E	Medium to large streams and rivers with coarse sand and gravel substrates; Cumberland and Tennessee river systems.
Vascular Plant	Delphinium exaltatum	Tall Larkspur	G3	S2	--	E	Glades And Barrens
Vascular Plant	Diervilla lonicera	Northern Bush-honeysuckle	G5	S2	--	T	Rocky Woodlands And Bluffs
Invertebrate Animal	Dromus dromas	Dromedary Pearlymussel	G1	S1	LE	E	Medium-large rivers with riffles and shoals w/ relatively firm rubble, gravel, and stable substrates; Tennessee & Cumberland systems.
Invertebrate Animal	Epioblasma capsaeformis	Oyster Mussel	G1	S1	LE	E	Shallow riffles in mod-swift current of small-medium rivers with coarse sand and gravel; Tennessee & Cumberland river systems.
Vascular Plant	Eurybia schreberi	Schreber's Aster	G4	S1	--	S	Mesic Woods & Seepage Slopes

Type	Scientific Name	Common Name	Global Rank	St. Rank	Fed. Prot.	St. Prot.	Habitat
Vertebrate Animal	Falco peregrinus	Peregrine Falcon	G4	S1B	No Status	E	Varied habitats including farmlands, marshes, river mouths, and cities; often nests on ledges.
Invertebrate Animal	Fusconaia cor	Shiny Pigtoe	G1	S1	LE	E	Shoals and riffles of small-medium sized rivers with mod-fast current over sand-cobble substrates; upper Tennessee River watershed.
Invertebrate Animal	Fusconaia cuneolus	Finerayed Pigtoe	G1	S1	LE	E	Riffles of fords and shoals of mod gradient streams in firm cobble and gravel substrates; middle & upper Tennessee River watershed.
Vertebrate Animal	Gallinula chloropus	Common Moorhen	G5	S1B	No Status	D	Marshes, quiet rivers, lakes and ponds; nests among marsh plants over water; infrequently flies.
Vertebrate Animal	Gyrinophilus gulolineatus	Berry Cave Salamander	G1Q	S1	--	T	Aquatic cave obligate; Ridge & Valley; formerly included with G. palleucus.
Vertebrate Animal	Haliaeetus leucocephalus	Bald Eagle	G5	S3	--	D	Areas close to large bodies of water; roosts in sheltered sites in winter; communal roost sites common.
Vascular Plant	Helianthus occidentalis	Naked-stem Sunflower	G5	S2	--	S	Limestone Glades And Barrens
Vertebrate Animal	Hemidactylium scutatum	Four-toed Salamander	G5	S3	--	D	Woodland swamps, shallow depressions, & sphagnum mats on acidic soils; middle & east Tennessee.
Vertebrate Animal	Hemitremia flammea	Flame Chub	G3	S3	--	D	Springs and spring-fed streams with lush aquatic vegetation; Tennessee & middle Cumberland river watersheds.
Other (Ecological)	Heron rookery	Heron Rookery	GNR	SNR	--	Rare, Not State Listed	

Type	Scientific Name	Common Name	Global Rank	St. Rank	Fed. Prot.	St. Prot.	Habitat
Nonvascular Plant	Homaliadelphus sharpii	Sharp's Homaliadelphus	G3?	S1	--	E	Calcareous Or Dolomite Bluffs
Vascular Plant	Hydrophyllum virginianum	Appalachian Waterleaf	G5	S3	--	T	Alluvial Woods
Invertebrate Animal	Io fluvialis	Spiny Riversnail	G2	S2	--	Rare, Not State Listed	Shallow waters of shoals that are rapid to moderate and well-oxygenated; Tennessee River & main tributaries; E Tennessee.
Vertebrate Animal	Ixobrychus exilis	Least Bittern	G5	S2B	--	D	Marshes with scattered bushes or other woody growth; readily uses artificial wetland habitats.
Vascular Plant	Juglans cinerea	Butternut	G4	S3	--	T	Rich Woods And Hollows
Invertebrate Animal	Lampsilis abrupta	Pink Mucket	G2	S2	LE	E	Generally a large river species, preferring sand-gravel or rocky substrates with mod-strong currents; Tennessee & Cumberland river systems.
Vascular Plant	Lathyrus palustris	Marsh Pea	G5	S1	--	S	Wet Woods & Marshes
Invertebrate Animal	Lemiox rimosus	Birdwing Pearlymussel	G1	S1	LE	E	Small-medium size rivers in riffle areas with sand and gravel substrates in mod-fast currents; Tennessee River system.
Vascular Plant	Lilium canadense	Canada Lily	G5	S3	--	T	Rich Woods And Seeps
Vascular Plant	Lilium michiganense	Michigan Lily	G5	S3	--	T	Swamps And Open Wet Woods
Vascular Plant	Lonicera dioica	Mountain Honeysuckle	G5	S2	--	S	Mountain Woods And Thickets
Vascular Plant	Monotropsis odorata	Sweet Pinesap	G3	S2	--	T	Piney Woods
Vertebrate Animal	Myotis grisescens	Gray Myotis	G3	S2	LE	E	Cave obligate year-round; frequents forested areas; migratory.
Vertebrate Animal	Napaeozapus insignis	Woodland Jumping Mouse	G5	S4	--	D	Deciduous and coniferous forests with herbaceous groundcover; middle and east Tennessee.

Type	Scientific Name	Common Name	Global Rank	St. Rank	Fed. Prot.	St. Prot.	Habitat
Invertebrate Animal	Nesticus paynei	A Cave Spider	G3G4	S3	--	Rare, Not State Listed	Terrestrial cave associate; also may be found on surface; northern Ridge & Valley.
Vertebrate Animal	Noturus flavipinnis	Yellowfin Madtom	G1	S1	LT,XN	E	Medium size to large creeks and small rivers that are unpolluted & relatively unsilted; upper Tennessee River watershed.
Invertebrate Animal	Obovaria retusa	Ring Pink	G1	S1	LE	E	Large rivers in gravel and sand bars; Tennessee & Cumberland river watersheds; many historic locations currently inundated.
Invertebrate Animal	Obovaria subrotunda	Round Hickorynut	G4	S2S3	--	Rare, Not State Listed	Medium-large rivers in sand and gravel subst with moderate flow; TN & Cumb rivers; also Red River in Robertson Co., W Highland Rim.
Vascular Plant	Onosmodium hispidissimum	Shaggy False Gromwell	G4	S1	--	E	Dry Woods
Vascular Plant	Onosmodium molle ssp. occidentale	Western False Gromwell	G4G5T 4?	S1S2	--	T	Glades
Vertebrate Animal	Ophisaurus attenuatus longicaudus	Eastern Slender Glass Lizard	G5T5	S3	--	D	Dry upland areas including brushy, cut-over woodlands and grassy fields; nearly statewide but obscure; fossorial.
Vascular Plant	Panax quinquefolius	American Ginseng	G3G4	S3S4	--	S-CE	Rich Woods
Vertebrate Animal	Percina tanasi	Snail Darter	G2G3	S2S3	LT	T	Sand and gravel shoals of moderately flowing, vegetated, large creeks; upper Tennessee River watershed.
Vertebrate Animal	Pituophis melanoleucus melanoleucus	Northern Pinesnake	G4T4	S3	--	T	Well-drained sandy soils in pine/pine-oak woods; dry mountain ridges; E portions of west TN, E to lower elev of the Appalachians.

Type	Scientific Name	Common Name	Global Rank	St. Rank	Fed. Prot.	St. Prot.	Habitat
Invertebrate Animal	Plethobasus cooperianus	Orangefoot Pimpleback	G1	S1	LE	E	Large rivers in sand-gravel-cobble substrates in riffles and shoals in deep flowing water; Cumberland & Tennessee river systems.
Invertebrate Animal	Plethobasus cyphyus	Sheepnose	G3	S2S3	LE	Rare, Not State Listed	Large to medium-sized rivers, in riffles and coarse sand/gravel subst; TN & Cumb river systems incl KY Reservoir; W Uplands & Rim.
Invertebrate Animal	Pleurobema plenum	Rough Pigtoe	G1	S1	LE	E	Medium to large rivers in sand, gravel, and cobble substrates of shoals; Tennessee & Cumberland river systems.
Invertebrate Animal	Quadrula cylindrica cylindrica	Rabbitsfoot	G3G4T3	S3	--	Rare, Not State Listed	Large rivers in sand and gravel; Tennessee & Cumberland systems; big river form of Q. cylindrica.
Invertebrate Animal	Quadrula intermedia	Cumberland Monkeyface	G1	S1	LE	E	Shallow riffle and shoal areas of headwater streams and bigger rivers, in coarse sand/gravel substrates; Tennessee River system.
Nonvascular Plant	Radula voluta	A Liverwort	G3	S2	--	S	Shady Moist Boulders By Waterfalls Or Streams
Vascular Plant	Ranunculus flabellaris	Yellow Water-crowfoot	G5	S2	--	T	Ponds And Marshes
Vertebrate Animal	Sorex cinereus	Cinereus Shrew	G5	S4	--	D	Rich woodlands of many types; open fields; middle and east Tennessee.
Vertebrate Animal	Sorex longirostris	Southeastern Shrew	G5	S4	--	D	Various habitats including wet meadows, damp woods, and uplands; statewide.
Vertebrate Animal	Tyto alba	Barn Owl	G5	S3	--	D	Open and partly open country, often around human habitation; farms.

Type	Scientific Name	Common Name	Global Rank	St. Rank	Fed. Prot.	St. Prot.	Habitat
Vertebrate Animal	Zapus hudsonius	Meadow Jumping Mouse	G5	S4	No Status	D	Open grassy fields; often abundant in thick vegetation near water bodies; statewide.

Based on the project description and location, our office does not anticipate any impacts to rare, threatened, or endangered plant species. However, should suitable habitat exist on or immediately downstream of the site, we ask that project plans provide for the protection of these species. We ask that you closely coordinate this project with the Tennessee Wildlife Resources Agency (Rob Todd, rob.todd@tn.gov , 615-781-6577) to ensure that legal requirements for protection of state listed rare animals are addressed. Additionally, we ask that you contact the U.S. Fish and Wildlife Service Field Office, Cookeville, Tennessee (931-525-4970) for comments regarding federally listed species.

Please keep in mind that not all of Tennessee has been surveyed and that a lack of records for any particular area should not be construed to mean that rare species necessarily are absent. For information regarding species protection status and ranks, please visit http://www.tn.gov/environment/na/pdf/Status&Ranks.pdf.

To assist in determining whether rare species are located at a given site, the Tennessee Natural Heritage Program has implemented a publicly accessible website where rare species data lists by county, quadrangle, watershed, and MS4 boundaries can be obtained: http://environment-online.state.tn.us:8080/pls/enf_reports/f?p=9014:3:3875605994273657.

Should you have any questions, please do not hesitate to contact Stephanie at (615) 532-4799 or stephanie.whitaker@tn.gov .

Sincerely,

Chelsea L. Broach
Environmental Review Assistant

Stephanie A. Whitaker
Natural Heritage Data Manager

Community Action Committee Water Quality AmeriCorps Team
2014-2015 Year-End Overview (7/1/14 – 6/30/15)
Adopt-A-Watershed Program

Adopt-A-Watershed Hands-on Learning	• **1666 middle and high students** participated in Adopt-A-Watershed (AAW) water quality educational activities, each activity lasting between 60 – 90 minutes.
Adopt-A-Watershed Service Projects	• **1589 middle and high students** participated in a service project to benefit their local watershed. • **Watershed improvement projects** included: **Baker Creek Watershed** **South Doyle Middle** • The Outdoor Classroom Club, led by education contact Mr. Gorman, planted 100 trees at the 50K Tree event. In addition to planting the trees, over 280 feet of fence line was installed. • Sixty 7th grade students learned about home stormwater actions their families could take and then took the messages home to educate their parents. The learning activities were conducted in partnership with Ijams with Green Mountain sponsoring the project. **Beaver Creek Watershed** **Grace Christian Academy** • Mrs. Walker's 3rd and 4th period Environmental Science classes planted 105 native plants at Harrell Rd Stormwater Par, weeded the Harrell Rd. rain garden (removing 25 lbs of weeds) and modified the garden's outlet to minimize further erosion. In addition, the students decaled 15 stormdrains around their campus.. **Karns High** • Mrs. Rogers's fall/spring Ecology class removed 140.7 lbs of debris from stormdrain inserts on their campus. • Mrs. Mink's fall/spring Ecology class removed 213.74 lbs of debris from the stormdrain inserts on their campus. • Mr. Lakin's spring AP Environmental Science class surveyed 148 students from Karns on their knowledge of the Beaver Creek watershed and their interest in future volunteer opportunities. **Halls High** • Mr. Blakenship's Greenhouse Management class started over 250 seeds in the Halls High greenhouse to use for different Water Quality Forum projects. • Ms. Johnson's Ecology class performed and recorded a chemical, biological, and physical assessment on North Fork Creek, and tributary of Beaver Creek that runs by the Halls Outdoor Classroom. **Powell Middle** • Mr. Davis' 7th grade Science students planted native plants in the school's two rain gardens and conducted an *Erosion Prevention Initiative*, applying 1,800 sq ft of erosion control matting on an eroding hill on campus. **Loves Creek Watershed** **Holston Middle** • Mr. McMillan's 7th grade Honors Science students helped prepare the outdoor

Adopt-A-Watershed Service Projects	classroom for *Families in the Creek* by conducting maintenance along the Love Creek corridor. **Conner Creek Watershed** **Hardin Valley** • Mr. Paquette's two Fall Zoology/ Botany class removed 352 lbs of invasives from the outdoor classroom. • Mr. Paquette's two Spring Zoology/ Botany classes and Mr. Knapp's AP Environmental Science class removed 840 lbs of invasives from the outdoor classroom and 139 lbs of debris from three storm drains on campus. **First Creek Watershed** **Fulton High** • Ms. Kennard's Fall Ecology class removed 320 lbs of invasive species from the wooded area adjacent to First Creek and 39.2 lbs of trash from the campus. **Central High School** • Mr. Alexander's Principles of Wildlife Management removed 247 lbs of parking lot debris from Central High School's storm drain inserts in the fall of 2014. The spring of 2015 class removed 181 lbs. **Lyon Creek** **Carter High** • Ms. Baker's Fall AP Environmental Science class installed 3 storm drain inserts and cleaned up 15 lbs of trash on campus. Her spring Ecology class removed 20 lbs of debris from storm drain inserts and conducted maintenance on the 150 sq feet of trail in the outdoor classroom. **Stock Creek Watershed** **South Doyle High** • Mr. McBride's Fall Ecology class removed 1014 lbs of invasive plants at Marble Springs Historic Site. • Ms. Brown's Fall class maintained the rain garden, improving 5400 cubic feet of public lands and painted a rain barrel to be installed adjacent to the rain garden. • Spring semester, Mr. McBride, Ms. Arnold, and Ms. Nixon's classes removed 2403 lbs of invasive plants at Marble Springs Historic Site. **Ten Mile Creek Watershed** **West Valley Middle (WVM)** • Mrs. Hayes, Mr. Hussey, and Mrs. Lyttle's 8th grade classes removed 2,700 lbs of invasive plants where the school has plans to build an outdoor classroom. **Bearden High** • Mrs. Morrow's Ecology class installed 5 storm drain inserts on their campus. **Third Creek Watershed** **West High** • Mrs. Brown's 1st and 2nd Period Ecology classes identified stormwater pollutant sources on campus and compiled and presented their findings. This was in part to pilot students collecting data for future school SWPPPs. • Ms. Dailey's 2nd and 6th Period Environmental Science classes conducted a campus cleanup. In total, 32.2 lbs of trash were removed from the campus grounds • Ms. Nanney's 5th and 6th period Biology classes started a research project in conjunction with the UTK Environmental Engineering Department that is examining

	tree health under varying conditions in bioretention practices. Six trees were planted and data was collected to determine their state of health. **<u>Turkey Creek Watershed</u>** **Farragut High** • Ms. George- Smith's fall Zoology/ Botany classes installed 3 storm drain inserts on campus. Her spring semester removed 15 lbs of debris from the storm drains, installed 20 native plants in the outdoor classroom, and stabilized 450 square feet of soil with native grasses.
Elementary Student Outreach & Service	• Involved approximately 220 elementary students in hands-on activities at the following following schools: West Hills on Sept. 26th, West Hills on January 23rd and Tates Pre-School on April 22nd • Involved 30 Episcopal School of Knoxville (ESK) 1st graders in water quality education activity and in the installation of 300 swamp milkweed plants at Harrell Rd. Stormwater Park on May 15th as a part of the ESK's Monarch Butterfly Project • Assisted UT Extension in conducting a water quality hands-on session with 30 students at their summer "Youth Garden Camp" on June 3rd. • Assisted Knox Co. Soil Conservation District in the "Ag in the Classroom" event on May 5th involving approximately 1400 students.
Development of School/ Community Outdoor Classrooms	**Halls Outdoor Classroom (HOC)** • Conducted fall teacher HOC involvement survey and expanded teacher involvement on HOC Steering Committee • Assisted in the implementation of an ESP grant awarded to Ms. Kerrie Coley for the installation of a demonstration riparian zone • Expanded teacher, student and community involvement in Spring HOC celebration; featured HHS Jazz Band and Madrigal Singers • Working with Eagle Scout candidate, Joseph Greer on the installation of a second amphitheater • Worked with HHS Art Classes to create an HOC entry sign **West Valley Middle Outdoor Classroom** • Initiated the creation of a new learning space on campus adjacent to the school entrance, removing a total of 4140 lbs of invasive plants • Played a lead in coordinating a place-based learning project across four disciplines that involved the installation and evaluation of demonstration paths (gravel, rubber mulch, wood mulch); project will continue the fall of 2015 • Planted 100 native trees as a part of the 50K Tree Initiative • Identified 30 different species of trees to qualify the WVMS campus as a certified, Level 1 Arboretum **Hardin Valley High Outdoor Classroom** • Participated in the East TN Design Center planning meetings for the development of the HVA OC concept plan

	• Conducted multiple invasive removal efforts, removing approximately 1192 lbs of invasive plants • Planted 100 native trees as a part of the 50K Tree Initiative
Water Quality Forum Event Support	River Rescue • Evaluated creek sites and identified those appropriate for River Rescue • Assisted in organizing River Rescue site supplies • Captained and coordinated volunteers at 15 creek sites • Assisted with the unloading of the trash on the barges at Volunteer Landing • Assisted with the Fulton High *Living Land and Water* Field Trip to Barge WaterFest • Assisted with planning & conducting *WaterFest*, with 750 elementary school students participating from 6 different schools • Coordinated 81volunteers for each of the 11 stations • Helped design t-shirts Rain Barrel Workshops & Sale • Prepared over 85 barrels for the WQF's "Make it, Take it" Rain Barrel Workshops andassisted with their implementation • Promoted and assisted with the WQF Rain Barrel Truckload Sale on July 20th Families in the Creek event – June 6th, 2015 • Marketed, planned event activities and coordinated logistics • Assisted with event activities, with a total of 38 adults and youth participants Executive Committee • Assisted with agendas and minutes • Created fall newsletter • Assisted with WQF Facebook page
EarthFest	• Attended *Earthfest* Planning Committee meetings and served on the *Earthfest* Education Committee. • Assisted in planning and conducting the *Earthfest* Scavenger Hunt including coordinating this activity with 55 organizations • Assisted with the *Scavenger Hunt* prize acquisition, collecting prizes from 64 local/regional businesses • A total of 575 attendees completing the Scavenger Hunt. • Assisted with the development of the *EarthFest* Enviro-characters
50K Tree Day	• As a part of the Tennessee Environmental Council's statewide tree planting initiative, on March 14th involved 81 volunteers in planting 275 trees at the following locations: o Along Baker Creek on the South Doyle Middle campus o West Valley Middle Outdoor Classroom o Along Conner Creek in the Hardin Valley Academy Outdoor Classroom
Other Community Engagement	• UT Upward Bound Program (involves low income high school students that are potential first-generation college students) o On Dec. 6, involved 39 high school students in removing invasive plants at the Halls and Powell Outdoor Classrooms o On June 11th involved 45 students in the following: ▪ West High - testing of the use of ArcGIS for stormdrain mapping

	▪ HOC - mulching and removing 160 lbs of invasive plants ▪ West Valley Middle OC - removing 320 lbs of invasive plants • On MLK Day, Jan.17, conducted a morning and afternoon service o AM: Participated in an AmeriCorps-led cleanup at West View Park o PM: Coordinated invasive removal at Hardin Valley Academy with 61UT Upward Bound students • Assisted Keep Knoxville Beautiful in three creek cleanups on Sept. 17, Nov. 20, and March 17 at Second Creek at Davanna, Second Creek Greenway, Turkey Creek at Lovell Rd, respectively, collecting approximately total of 1960 lbs. of trash. • Involved 31 University of Illinois students on March 21st in removing invasive plants at the WVM Outdoor Classroom
Knox County Adopt-A-Stream	• Trained five new Knox Co. AAS Stream groups • Assisted with 11 AAS group clean ups/stream assessments • Since September 2014, AAS groups have collected approximately 440 lbs of trash • Conducted promotional events at America Recycles Day; UT "Make Orange Green" event; Scripps Howard environmental fair; and at UT Farmers Market
Stock Creek Initiative	• Attended Stock Creek Education Committee meetings • Coordinated water quality youth and adult outreach activities at the John Sevier Days event on September 20th • Coordinated with the John Sevier Homestead staff on conducting community service-learning activities at their Arbor Day event on April 24th. Involved arboretum tours and invasive plant removal
Knox Co. - TN Smart Yards	• Assisted with marketing and logistics for Knox Co./Farragut Stormwater TNSY Sustainable Turf Management workshop on Oct 25 • Assisted with marketing, set up and management of the Knoxville House and Garden booth from Feb. 12th-14th, making approximately 700 contacts. Promoted upcoming rain garden, turf management, permeable pavers and rain barrel workshops and rain barrel sale • Assisted with logistics for Lower Clinch Watershed Council in partnership with TNSY's Oak Ridge Row House Rain Garden Workshop on March 28th • Helped to maintain Lower Clinch Watershed Council/TNSY demonstration rain gardens located at Oak Ridge High, Claxton Elementary and Harrison Springs subdivision
Environmental Stewardship Program Support	• Assisted in the design of 23 Knox Co. ESP projects, including streambank restorations and rain garden and grass swale designs • Conducted design specifications and research on three projects: 1) Audrianna Lane – Streambank Restoration; 2) Cogdill Road – Rain Garden and Permeable Pavers; Ohio Avenue – Streambank Restoration • Total of 40 design hours for all projects
Knox County Construction Site Education	• Revised lay-out of educational boards and translations • Rebuilt rain simulators

Knox Co. Dry Weather Screening & TDEC Monitoring	• Dedicated about 20 hours to dry weather screening assessments • Assisted TDEC in benthic and IBI assessments on reference waterbodies
Knox Co. SWPPP	• Assisted with the Knox Co. EPW's Stormwater Pollution Prevention Plan's quarterly inspections
East Tennessee Development Symposium	• Assisted in planning and management of registration for the E. TN Development Symposium on Nov. 4th and 5th • Registered over 350 participants
Other	• Assisted with Farragut Outdoor Classroom Community Day on September 28th, helping prepare six raised beds • Maintained stormwater brochures at seven Knox County libraries, tracking monthly removal. • Assisted with two *Knox Co. Stormwater Rain Barrel Workshops* for a Scout Troop and Garden Club on March 10 & March 11th, respectively, making 20 rain barrels.
Summary	• **14,160 lbs** invasives removed • **1661** native plants installed • **11** new stormdrain inserts installed • **940 lbs** debris removed from storm drains • **34,676 lbs** trash removed from streams and rivers • **2250 sq ft** of soil stabilized • **1758** volunteers engaged in watershed improvement activities

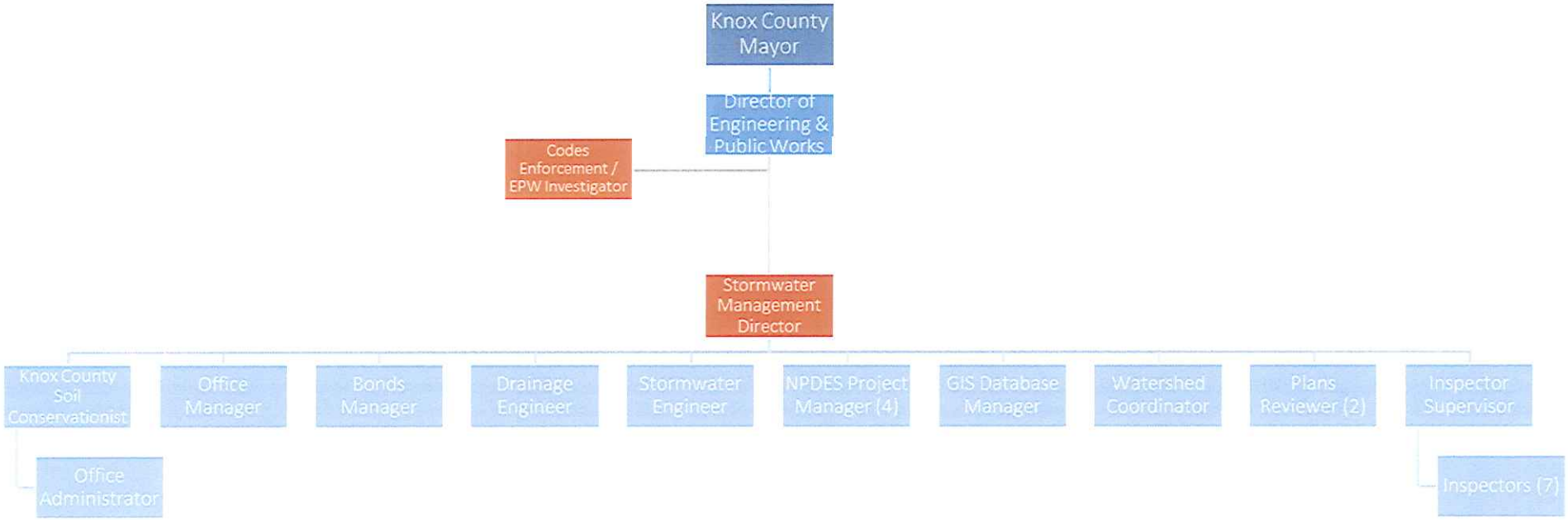
Knox County Stormwater Staff Education/Outreach Activities

Tracking of Knox County's stormwater education, outreach, involvement and participation activities July 1, 2014-June 30,2015

7/8/2014	**AAS Training: Knoxville Rugby Club**	2 people attended a 2-hour training on AAS, Stream Walk, Stream Clean-ups. Stream Walk conducted; score of 7.6 for section of Beaver Creek at the Northwest Sports Park
7/9/2014	**AAS Training: Goodwill Good Guides**	10 people attended the second phase of AAS Training. Stream Walk of Burnett Creek scored a 6.5; Stream Clean-up, removed about 30 lbs. of trash
7/12/2014	**Rain Barrel Workshop: Farragut Town Hall**	41 people attended the education portion and made 31 barrels
8/16/2014	**AAS Trash Clean-Up: Knoxville Rugby Club**	7 people attended the Beaver Creek stream clean-up and picked up ~300 lbs. of trash in 3 hrs.
8/19/2014	**Watershed / Enviroscape Lesson: Tate's School of Discovery - 4th Grade**	24 students (4th graders) attended an Enviroscape / Watershed / Water Pollution lesson for ~1 hr.
8/20/2014	**PPGH: EPW SWPPP Facility Training**	66 Engineering & Public Works employees were trained on the creation and implementation of the EPW SWPPP and related Spill Prevention & Response Plan; ~45 min. training included videos, a PPT, and spill kit demonstration
8/21/2014	**PPGH: EPW SWPPP Facility Training**	65 Engineering & Public Works employees were trained on the creation and implementation of the EPW SWPPP and related Spill Prevention & Response Plan; ~45 min. training included videos, a PPT, and spill kit demonstration
9/16/2014	**Annual Report Hearing**	0 people attended. 12:00pm-4:00pm at 205 Baxter Avenue Knoxville, TN
10/25/2014	**TNSY Get Your Grass Into Gear Turf Workshop**	19 people attended a 3 hour workhsop on turfgrass. The workshop touched on ways to incorporate turf in a sustainable fashion.
10/31/2014	**AAS Clean-up**	7 people from the Asset Planning Corporation attended this 2 hour clean-up on 10 mile creek. 84 pounds of trash were removed from Ten Mile Creek.
11/4 - 11/5/14	**East TN Development Symposium**	389 water quality professionals, surveyors, engineers, developers, etc. attended this Development Conference at the Knoxville Convention Center
12/9/2014	**AAS Training: Fulton High Environmental Science Club**	7 people (5 Environmental Science Club students and 2 teachers) trained at Fulton High Environmental Science Club (4pm - 5pm)

1/22/2015	**Speaking Engagement:** AAS Training for UT Master Marketing Course	**AAS Presentation:** Gave a presentation to 3 UT Grad students and their professor (total 4 adults) about the AAS program. They will be helping us market the program to the general public in 2015
1/23/2015	**Speaking Engagement:** West Hills Elementary	150 2nd grade students & 8 teachers: Enviroscape & Sediment Survival
1/26/2015	**AAS Training & Speaking Engagement:** Brownie Troop 2011 (Helen Morrow, Coordinator)	16 (13 brownie scouts & 3 adults) people attended the training for a new AAS group. We also conducted an Enviroscape demonstration
2/13 - 2/15	**Exhibit:** Dogwood Arts House and Garden Show	702 people stopped by the booth to learn about infiltration techniques & homeowner stormwater pollution prevention.
3/3/2015	**Speaking Engagement:** CAC Leadership Class 2015	40 people attended this panel discussion on Knoxville / Knox County community resources
3/10/2015	**Speaking Engagement:** RB workshop	5 girl scouts (aged 8-9 years) & 2 adults attended a RB presentation & Enviroscape demonstration. 2 barrels sold thru Stormwater (Darlene Martin)
3/11/2015	**Speaking Engagement:** RB workshop	21 adults attended a RB presentation for adults at a barn off of Choto Rd. (Karen Smith) 17 barrels sold thru Stormwater
3/13/2015	**Speaking Engagement:** Homebuilder's Association - Home Show	5 adults attended a presentation at the Homebuilders' Associations' Home Show about Runoff Reduction
3/14/2015	**Workshop:** Permeable Pavers	Darryl Sapp with Belgard gave a presentation about installing permeable pavers (10am - 11:30am at John Deere Landscaping off of Lovell Rd.) **11 attendees**
3/14/2015	**50K Tree Planting Day**	80 volunteers planted ~300 trees at West Valley Middle School, Hardin Valley Academy and South Doyle Middle School
3/16/2015	**AAS Clean-Up & Stream Watch:** Fulton High School	10 AAS team members picked up 55.3 pounds of trash at 1st Creek. 1st Creek scored a 7 on the Stream Watch
3/24/2015	**PPGH:** EPW SWPPP Team training	Meeting to introduce new 3 member Parks & Rec SWPPP team to requirements
3/24/2015	**Speaking Engagement:** Farrington Subdivision Homeowners Association Meeting	25 HOA members from Farrington Subdivision attended a presentation on Home Stormwater Essentials & ESP Program (Parci & Marty)
4/7/2015	**Speaking Engagement:** Master Gardeners' training	40 Master Gardeners attended a training on the Land-Water Connection (6pm-9pm, UT Ag Campus)
4/28/2015	**Roundtable Discussion:** Introduction of Draft Policies & Knox Manual regarding the new Runoff Reduction Requirement (DEVELOPMENT COMMUNITY)	42 people (Developers, Engineers, Landscape Architects and municipal staff) attended from 9am - 3pm at Cherokee Mills

5/6/2015	**Roundtable Discussion:** Introduction of Draft Policies & Knox Manual regarding the new Runoff Reduction Requirement (AGENCIES)	47 people (Parks/Rec, MPC, PBA, Highways, Planning, Codes, Community Dev't, Schools, Utilities, COK, Sevier, Farragut, Maryville and Knox Co. Stormwater staff) attended from 10am - 2pm at Cherokee Mills
5/7/2015	**Pervious Concrete Workshop:** TN Concrete Association conducted workshop on Maintenance / Cleaning of Pervious	20 municipal staff, utilites, etc. attended
5/8/2015	**Pervious Concrete Workshop:** TN Concrete Association conducted workshop on Installation of Pervious	20 municipal staff, utilites, etc. attended
5/13/2015	**Roundtable Discussion:** Introduction of Draft Policies & Knox Manual regarding the new Runoff Reduction Requirement (SPECIAL INTEREST GROUPS)	23 people (Real estate agents, Sierra Club, Chamber rep., ETN Quality Growth, HOA rep., Rainwater Resources, landscapers, municipal staff) attended from 10am - 2pm at Cherokee Mills
5/16/2015	**Rain Barrel "Make-It, Take-It" Workshop:** 45 minute presentation on water quality, watersheds, water conservation	19 people attended the workshop; we sold 25 Barrels. This is one of the WQF workshops. 10am - 12pm at New Harvest Park.
5/20/2015	**Speaking Engagement:** 30 minute presentation on Permanent Stormwater Requirements	30 people attended from the Institute of Real Estate Management (Tracy Jones made the presentation on commercial and residential requirements)
5/20/2015	**Speaking Engagement:** 45-minute presentation on Runoff Reduction Requirements	20 people attended from the Knoxville Chapter of Planners at the UT Visitors Center (Parci and Amy co-presented)
6/5/2015	**Families in the Creek**	38 children and adults attended an all day event at Loves Creek at Holston Middle School. The group was divided into four rotating teams that completed a fish assessment, benthic assessment, stream walk and a land use scavenger hunt.
6/13/2015	**Rain Barrel "Make-It, Take-It" Workshop:** 45 minute presentation on water quality, watersheds, water conservation	20 people attended the workshop; we sold 17 Barrels. This is one of the WQF workshops. 10am - 12pm at Town of Farragut.
FY15	**Municipal Employee Training**	A total of 211 municipal employees took online Safety Tests on Stormwater Pollution Prevention + an additional 131 employees took job-specific SWPPP training


Knox County Mayor
Director of Engineering & Public Works
Codes Enforcement / EPW Investigator
Stormwater Management Director
Knox County Soil Conservationist
Office Manager
Bonds Manager
Drainage Engineer
Stormwater Engineer
NPDES Project Manager (4)
GIS Database Manager
Watershed Coordinator
Plans Reviewer (2)
Inspector Supervisor
Office Administrator
Inspectors (7)