



APPENDIX C

Summary Tables of Proposed Modifications to the SWMP

SCHEDULE FOR DEVELOPMENT AND IMPLEMENTATION OF SWMP ELEMENTS AND PROGRAMS

PROGRAM TO COLLECT QUANTITATIVE DATA TO DETERMINE THE IMPACTS OF URBAN STORMWATER ON THE NATURAL ENVIRONMENT 122.26(d)(2)(iii)(A)

The Comprehensive Monitoring Program (MN)

| Code | Activity | Schedule |
|---|--|---|
| <u>Seasonal Storm Event Monitoring</u> | | |
| MN-1 | - Review and update the Standard Operating Procedures (SOP) for the Seasonal Sampling program (previously submitted with the first annual report during the first permit cycle). | Within 12 months |
| | - Maintain at least five (5) automatic monitoring stations at locations approved by TDEC. | Ongoing |
| | - Collect twenty (20) to thirty (30) flow weighted composite samples annually (minimum of one/quarter/station). Test each sample for at least the 13 routine parameters: pH, TSS, TDS, BOD5, COD, total ammonia nitrogen (as N), total ammonia plus organic nitrogen, nitrate plus nitrite nitrogen (as N), total nitrogen, total recoverable lead, total recoverable zinc, dissolved phosphorus, and total phosphorus. Laboratory analysis will be used in accordance with 40 CFR part 136 for all parameters except pH which will be tested in the field during sample collection. | Annually |
| | - Collect five (5) wet weather bacteria sample (fecal coliform). One sample/station/year. | Annually |
| | - Collect five (5) full-suite grab samples (One/station/permit term). Tests will include the 13 routine parameters listed above plus: oil & grease, and the pollutants listed in tables II & III of 40CFR Part 122 Appendix D (Volatiles, Pesticides, Acids, Base/Neutrals, Toxic Metals, Cyanide, and Total Phenol). | One Station per year |
| | - Analyze results from Ongoing Monitoring program. | Ongoing |
| <u>Dry Weather Screening & Industrial/Commercial Site Monitoring</u> | | |
| MN-2 | - Dry Weather Screening as described in ILL-2. | Annually |
| | - Implement Commercial/Industrial Monitoring Programs as described in IN-3 | Varies |
| <u>Ambient, Biological, & Bacteriological Monitoring</u> | | |
| MN-3 | - An ongoing Ambient sampling program will be implemented at the five monitoring station sites at a minimum. The 13 routine parameters will be tested once per quarter per station. | Quarterly |
| | - Develop a Biological Monitoring program to supplement the current program administered by TVA. This program will focus on habitat assessments, bioassessments, etc. | Within 12 months |
| | - Implement the Supplemental Biological Monitoring program. | Annually Beginning year two |
| | - A Bacteriological Monitoring program will be developed and implemented. This program may be conducted by City, KUB, UTK, or volunteer personnel. (May be coordinated with ILL-7). | Full Implementation after 12 months |
| | - Develop and implement a QA/QC program for the Bacteriological Monitoring program. | Full Implementation after 12 months |
| <u>Related Programs</u> | | |
| MN-4 | - Develop, calibrate, and maintain a water quality model to evaluate urban stormwater loading and transport processes and facilitate planning and additional pollution control strategies. | Within 60 months |
| | - Develop and Implement Training Program for Staff and/or Volunteers. | Annually |
| <u>Annual and Public Reporting</u> | | |
| MN-5 | - Publish and maintain monitoring data (submitted by KUB/others) for public use on website. | Beginning Year Two |
| | - Annual reporting to TDEC concerning the progress of this program. | Within 6 Months after end of each year |

SCHEDULE FOR DEVELOPMENT AND IMPLEMENTATION OF SWMP ELEMENTS AND PROGRAMS

PROGRAM TO IMPLEMENT AND MAINTAIN BMP PLANS TO REDUCE CONSTRUCTION SITE RUNOFF TO THE MUNICIPAL STORM SEWER 122.26(d)(2)(iv)(D)

The Construction Site Runoff Program (CS)

| Code | Activity | Schedule |
|--|--|--|
| <u>Site Planning</u> | | |
| CS-1 | - Review and update the Stormwater & Streets Ordinance which requires construction sites greater than 10,000 sq.ft. to submit Erosion and Sediment (E&S) Control Plans. | Full implementation after 24 months |
| | - Require site plan submittals per the City of Knoxville BMP manual. | Immediately |
| | - Review & update minimum criteria for plan review and inspection checklists. | Full implementation within 12 months |
| | - Review, update, & continue Preconstruction Assistance Meetings with developer/contractors. | Immediately |
| <u>BMP Requirements</u> | | |
| CS-2 | - Require Construction BMPs from the City of Knoxville BMP manual or equivalent. | Immediately |
| | - Evaluate additional BMP requirements and design modifications. Maintain the updated BMP requirements on the City's web page. | 2nd half of each year. |
| | - Continue to require construction site "good housekeeping" practices. | Ongoing |
| <u>Inspection / Enforcement</u> | | |
| CS-3 | - Maintain expanded inspections program including smaller construction sites (single family). | Ongoing |
| | - Implement routine site inspections on commercial and subdivision developments (e.g. rough grading, E&S control installation, final grading, and final stabilization). | Ongoing |
| | - Continue to require post-construction Development Certifications from licensed professional Engineers before bond release to insure the stormwater facilities were built as planned. | Ongoing |
| | - Evaluate and update enforcement procedures, policies, and follow-up monitoring / inspections. | Full implementation after 24 months |
| <u>Training Programs</u> | | |
| CS-4 | - Co-sponsor E&S Control Practice Seminars for City staff, designers, developers, engineers, and contractors. | Annually |
| | - Continue to provide training for City plan review staff and inspectors. | Annually |
| <u>Annual Reporting</u> | | |
| CS-5 | - Annual reporting to TDEC concerning the progress of this program. | Within 6 Months after end of each year |

SCHEDULE FOR DEVELOPMENT AND IMPLEMENTATION OF SWMP ELEMENTS AND PROGRAMS

PROGRAM TO DETECT AND REMOVE ILLICIT AND IMPROPER DISCHARGES TO THE MUNICIPAL STORM SEWER SYSTEM 122.26(d)(2)(iv)(B)

The Illicit Discharges and Improper Disposal Program (ILL)

| Code | Activity | Schedule |
|--|--|--|
| <u>Ordinances</u> | | |
| ILL-1 | <ul style="list-style-type: none"> - Evaluate possible revisions to the prohibitions and exemptions of non-stormwater discharges in the existing Stormwater & Streets Ordinance. Maintain authority for \$5,000 penalty. - Implement any new revisions to the Stormwater & Streets Ordinance. | Complete within 24 months |
| | | Full implementation after 24 months |
| <u>Field Screening</u> | | |
| ILL-2 | <ul style="list-style-type: none"> - Perform follow-up analysis at all high risk field screening sites. - Investigate 150 field sites four times per year (including the repeat high parameter sites above). | Ongoing |
| | | Annually |
| <u>Investigation of Storm Drain System</u> | | |
| ILL-3 | <ul style="list-style-type: none"> - Evaluate & update procedures for mapping, field surveys, and upstream source identification. - Implement updated procedures for mapping, field surveys and upstream source identification. - Evaluate and update enforcement procedures, policies, and follow-up monitoring / inspections. - Coordinate with Knoxville Utility Board (KUB) sanitary sewer inspections. - Inspect system-wide stormdrain system and maintain updated/corrected features on GIS. | Full implementation after 12 months |
| | | Full implementation after 12 months |
| | | Full implementation after 24 months |
| | | Ongoing |
| | | Ongoing |
| <u>Spill Response Program</u> | | |
| ILL-4 | <ul style="list-style-type: none"> - Coordinate with Knoxville Emergency Response Team (KERT) and Tennessee Department of Environment and Conservation (TDEC). | Ongoing |
| <u>Reporting of Illicit Discharges and Public Education Program</u> | | |
| ILL-5 | <ul style="list-style-type: none"> - Continue to maintain, monitor, and publicize "Water Quality Hotline" for public reporting. - Post and maintain health hazard warning signs where appropriate on 303(d) listed creeks. - Evaluate and redevelop an ongoing, comprehensive, and innovative public education program. | Ongoing |
| | | Within 6 months |
| | | Full Implementation after 12 months |
| <u>Used Oil & Toxic Materials Program</u> | | |
| ILL-6 | <ul style="list-style-type: none"> - Implementation and coordination of recycling program (managed by Solid Waste Division). - Maintain and operate household hazardous waste facility (managed by Solid Waste Division). | Ongoing |
| | | Ongoing |
| <u>Control Infiltration</u> | | |
| ILL-7 | <ul style="list-style-type: none"> - Develop and implement new policies/ordinances to reduce cross connections between MS4 and sanitary sewer system (i.e. Floor Drain policies, laterals from demolitions and rehabs). - Monitor KUB's collection system O&M program, ongoing sewer line repair & rehabilitation progress, 5-yr capital improvement plan and creek monitoring data. - Develop mechanisms for reporting illicit connections, breaks, surcharges, and general sanitary sewer system problems with potential to release to the municipal separate storm drain system. - Maintain Legal Authority over KUB and other utilities for unpermitted discharges not otherwise regulated under their separate NPDES permits. | Immediately |
| | | Annually |
| | | Within 6 months |
| | | Ongoing |
| <u>Annual Reporting</u> | | |
| ILL-8 | <ul style="list-style-type: none"> - Annual reporting to TDEC concerning the progress of this program. | Within 6 Months after end of each year |

SCHEDULE FOR DEVELOPMENT AND IMPLEMENTATION OF SWMP ELEMENTS AND PROGRAMS

PROGRAM TO MONITOR AND CONTROL RUNOFF FROM TSD AND INDUSTRIAL FACILITIES SUBJECT TO SARA III, SECTION 313 122.26(d)(2)(iv)(C)

The Industrial and Related Facilities Program (IN)

| Code | Activity | Schedule |
|----------------------------------|---|--|
| <u>Ordinances</u> | | |
| IN-1 | <ul style="list-style-type: none"> - Evaluate possible revisions to the prohibitions and exemptions of non-stormwater discharges in the existing Stormwater & Streets Ordinance. - Implement any new revisions to the Stormwater & Streets Ordinance. | Complete within 24 months |
| | | Full implementation after 24 months |
| <u>Inspection Element</u> | | |
| IN-2 | <ul style="list-style-type: none"> - Develop inspection program for non-permitted commercial facilities (i.e. restaurants, service stations, grocery stores, car lots, etc.) - Continue to collect and analyze KUB stormwater inspection reports. Assess impact to MS4. - Identify potential industrial discharges through Illicit Connection and Improper Disposal Program. (Both SW and non-SW discharges) - Continue to collect and analyze NOIs from Industrial Permit applicants. - Review and update inspection program as part of Pollution Prevention Plans for Municipal Industrial Facilities. Conduct annual inspections at municipal industrial facilities. | Full implementation During Year Three |
| | | Semi-annually |
| | | Ongoing |
| | | Ongoing |
| IN-3 | <ul style="list-style-type: none"> - Collect monitoring data from permitted industrial stormwater dischargers and/or from TDEC. Assess impacts to the stormdrain system. (See Part 2 application, pp. 5-66 thru 5-67) - Develop ongoing monitoring program at non-permitted commercial facilities using guidelines pursuant to 40 CFR 122.26(d)(2)(iv)(c)(2). Identify pollutants and sources as applicable. - Implement the ongoing monitoring program at non-permitted commercial facilities and analyze the results from ongoing commercial monitoring program. - Maintain adequate legal authority to require monitoring and reports from TSDs and Industrial Facilities subject to SARA Title III, Section 313. Request monitoring/reports as necessary. - Evaluate and update the monitoring program for Municipal Industrial Facilities (MIFs) submitted with the 1st annual report (1997). Include new MIFs in the updated program. - Manage and conduct monitoring program at Municipal Industrial Facilities. | Ongoing |
| | | Within 24 months |
| | | Annually, beginning year 3 |
| | | Ongoing |
| | | Full implementation after 12 months |
| | | Ongoing |
| <u>Annual Reporting</u> | | |
| IN-4 | <ul style="list-style-type: none"> - Annual reporting to TDEC concerning the progress of this program. | Within 6 Months after end of each year |

SCHEDULE FOR DEVELOPMENT AND IMPLEMENTATION OF SWMP ELEMENTS AND PROGRAMS

PROGRAM OF STRUCTURAL AND SOURCE CONTROLS FOR REDUCING POLLUTANTS TO THE MUNICIPAL SEPARATE STORM SEWER SYSTEM 122.26(d)(2)(iv)(A)

The Residential and Commercial Program (RC)

| Code | Activity | Schedule |
|--|---|--|
| <u>Maintenance Activities for Structural Controls</u> | | |
| RC-1 | - Continue existing maintenance programs from Part 2 application, pp. 5-5 thru 5-8. | Ongoing |
| | - Develop improved stream restoration and channel maintenance program. | Complete within 12 months |
| | - Implement improved stream restoration and channel maintenance program. | Implement beginning in yr. 2 |
| | - Require Standard Maintenance Agreement for on-site facilities. | Ongoing |
| | - Continue to coordinate with other agencies/organizations to develop, install, and maintain structural controls that prevent floating pollution (litter/oils/foam/etc) from entering the TN River. | Ongoing |
| | - Require routine / major maintenance of BMP facilities. | Ongoing |
| <u>Planning for New Development</u> | | |
| RC-2 | - Review current Stormwater & Streets Ordinance to evaluate possible improvements to existing water quality and quantity requirements for new development. | Complete within 24 months |
| | - Require "No Dumping" message cast into all new curb irons and solid stormwater catch basin covers installed on new developments. | Immediately |
| | - Investigate and/or implement Pilot Master Plan on selected watershed(s). Emphasis will be on limiting impacts of new development/construction (i.e. buffer zones, wet ponds, etc.) | Full implementation within 60 months |
| | - Plan and site location for regional BMP facilities for areas of new development. | Ongoing |
| | - Continue to review, update, and maintain guidance criteria for BMP's on City web page (http://www.ci.knoxville.tn.us/engineering) | Ongoing |
| <u>Maintenance for Public Streets, Roads, and Highways</u> | | |
| RC-3 | - Continue street maintenance activities outlined in Part 2 application, p. 5-8. | Ongoing |
| | - Investigate benefits/feasibility of upgrading fleet with higher efficiency street sweepers. | Within 24 months |
| | - Evaluate current deicing program and study alternatives and improvements. | Within 36 months |
| <u>Evaluation of Flood Management Projects</u> | | |
| RC-4 | - Continue to evaluate regional BMP facilities for water quality retrofits. | Ongoing |
| | - Maintain existing GIS inventory of on-site BMP facilities, including newly constructed facilities. | Ongoing |
| <u>Monitoring of Solid Waste Facilities</u> | | |
| RC-5 | - See Program described in City's new management program for industrial areas. | See Code IN-3 |
| <u>Management of Pesticides, Herbicides, and Fertilizer</u> | | |
| RC-6 | - Evaluate possible improvements to existing public education program as part of illicit connection and improper disposal program. Educate City staff, public, etc. | Full implementation after 12 months |
| | - Reevaluate effect of fertilizers as part of the City's ongoing monitoring program. | Full implementation after 12 months |
| <u>Annual Reporting</u> | | |
| RC-7 | - Annual reporting to TDEC concerning the progress of this program. | Within 6 Months after end of each year |