Regional Wet Weather Characterization Program, Program Term Four

Best Management Practice Analysis and Evaluation Plan

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Notice

This document and its contents have been prepared and are intended solely for the North Central Texas Council of Governments' information and use in relation to the evaluation of Best Management Practices and water quality data to assist entities/participants of the Regional Stormwater Monitoring Program with determining the effectiveness of implemented Best Management Practices.

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Acronyms and Abbreviations

BANEP	BMP Analysis and Evaluation Plan
BMP	Best Management Practice
BOD_5	5-day Biochemical Oxygen Demand
CFR	Code of Federal Regulations
CGP	Construction General Permit
COD	Chemical Oxygen Demand
DFW	Dallas-Fort Worth
DO	Dissolved Oxygen
DWS	Dry Weather Screening
E. coli	Escherichia coli
GPS	Global Positioning System
HHW	Household Hazardous Waste
IDDE	Illicit Discharge Detection and Elimination
LID	Low-Impact Development
MCM	Minimum Control Measure
MS4	Municipal Separate Storm Sewer System
MSGP	Multi-Sector General Permit
NCTCOG	North Central Texas Council of Governments
NRSA	National Rivers and Streams Assessment
NSQD	National Stormwater Quality Database
NTTA	North Texas Tollway Authority
NURP	National Urban Runoff Program
POC	Pollutant of Concern
RIC	Reduction in Impervious Cover
RWWCP	Regional Wet Weather Characterization Program
SSO	Sanitary Sewer Overflow
SWMP	Storm Water Management Program
TCEQ	Texas Commission on Environmental Quality
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
TPDES	Texas Pollutant Discharge Elimination System
TSS	Total Suspended Solids
TSWQS	Texas Surface Water Quality Standards
TxDOT	Texas Department of Transportation
USEPA	U.S. Environmental Protection Agency

1. Introduction

1.1. Background

Starting in 1996 (initial program term from 1996 to 2001, administered by the U.S. Environmental Protection Agency [USEPA]), a regional stormwater monitoring program was developed in the Dallas-Fort Worth (DFW) metropolitan area involving the seven largest cities and major transportation agencies to achieve compliance with Federal and State stormwater permit requirements. The seven municipalities were the cities of Dallas, Fort Worth, Arlington, Irving, Garland, Plano and Mesquite, and two local districts of the Texas Department of Transportation (TxDOT).

In 2003 (program term from 2006 to 2010, administered by the Texas Commission on Environmental Quality [TCEQ]), the revised program was termed the Regional Wet Weather Characterization Program (RWWCP) and was added as an option in Part IV.A.3 of the Texas Pollutant Discharge Elimination System (TPDES) Municipal Separate Storm Sewer System (MS4) permits issued to the Phase I North Central Texas governmental entities. The primary goal of the new in-stream monitoring program was to obtain baseline data on receiving streams in the DFW Metroplex for use in determining long-term water quality trends. In general, participants remained the same, except for the TxDOT-Fort Worth District, who became a co-permittee with the cities of Fort Worth and Arlington and were no longer required to conduct wet-weather monitoring. Also, the North Texas Tollway Authority (NTTA) joined the program at the beginning of this term.

During term three (2011-2016), the primary goal of the RWWCP consisted in continuing the assessment of urban impact on receiving stream water quality and documenting improvements presumably resulting from the implementation of local Best Management Practices (BMPs). Participants included the cities of Arlington, Dallas, Fort Worth, Garland, Irving, Mesquite and Plano, together with the North Texas Tollway Authority and the TxDOT-Dallas District.

For the current program term (2018 to 2022), the cities of Arlington, Dallas, Fort Worth, Garland, Irving, Mesquite, and Plano and the NTTA agreed to continue their regional partnership to work cooperatively through the NCTCOG to develop a revised regional monitoring program. TxDOT obtained a statewide permit incorporating both the Dallas and Fort Worth Districts, which removed the requirement to conduct wet weather monitoring. The revised regional monitoring program was approved by the TCEQ in 2017.

The municipal regional Participants proposed to continue to use a sampling plan that will effectively monitor at least 50% of their jurisdictional area by the end of the program term. As in the previous term, in-stream watershed monitoring will be continued to obtain greater statistical robustness of the data by increasing the sampling at each location for a minimum of two years. The Participants will maintain fixed sampling stations to the extent practicable. This will enable the data to be examined for trends and show improvements or decline in water quality within the fixed sampling period.

Watersheds that will be monitored were prioritized based on TMDLs and 303d streams which were in watersheds that cover the jurisdictional area of the municipalities. Participants proposed to monitor in these impaired waterbodies in order to better assess the impacts of stormwater on these impaired streams. It is primarily the same area monitored during the previous program terms with some additional watersheds.

1.2. Purpose of the BANEP

The BMP Analysis and Evaluation Plan (BANEP) is a high-level approach for evaluating BMPs through the regional program. The BANEP is a guidance document that outlines the approach to analyze BMPs. The plan builds upon previous program term efforts to create a more-robust inventory of BMP implementation.

The intent of this plan is for participating entities to **use as a platform or building block** towards a more-robust BMP effectiveness analysis. Through its initial implementation, additional evaluation criteria may be developed that may be used to provide an enhanced analysis.

The plan provides a methodology for using BMP and water quality data to assist Participants with determining BMP implementation effectiveness at the watershed level. The implementation of this plan will:

1. Identify pollutants of concern (POC).
2. Identify BMP evaluation metrics such as construction dates, implementation timelines and frequencies, locations, drainage and/or coverage areas, and other quantifiable parameters.
3. Document potential sources of BMP data (i.e., permits, Storm Water Management Programs (SWMPs), and annual reports).
4. Provide a correlation between pollutant parameters and BMP metrics.
5. Provide information to be used by Participants to evaluate BMP implementation effectiveness indicators based on BMP data only, water quality data only, and a combination/aggregation of BMP and water quality data within monitored watersheds.

1.3. BANEP Approach

Alternative approaches for evaluating water quality and BMP effectiveness at the watershed level can be accomplished via large watershed-scale monitoring, watershed scale adaptive management assessments, and watershed modeling/monitoring combinations (Ice and Whittemore, 1998).

The approach documented herein utilizes water quality monitoring data and BMP implementation data collected at the watershed and municipal levels to provide a platform for determining watershed BMP effectiveness based on quantitative, qualitative, trend, comparative, and spatial analysis.

The water quality data analysis involves evaluating raw and statistical trends against historical watershed data and benchmark data obtained from sources such as Texas Surface Water Quality Standards (TSWQS), TCEQ nutrient screening levels, the National Stormwater Quality Database (NSQD), criteria proposed by the National Rivers and Streams Assessment (NRSA) for each monitored stream segment, Multi-Sector General Permit benchmarks and Numeric Limits, Total Maximum Daily Load (TMDL) allocation data, and data from the National Urban Runoff Program (NURP).

The BMP data analysis involves the assignment of BMPs into groups based on the evaluation of similar quantifiable BMP implementation data against applicable target and spatial criteria (using logical and researched BMP performance assumptions).

Overall watershed BMP water quality groups/tiers will be determined based on the combined results of BMP and water quality analysis.

Figure 1-1 below shows a graphical representation of the BANEP process and how the various arms are integrated to support the determination of BMP effectiveness at the watershed level.

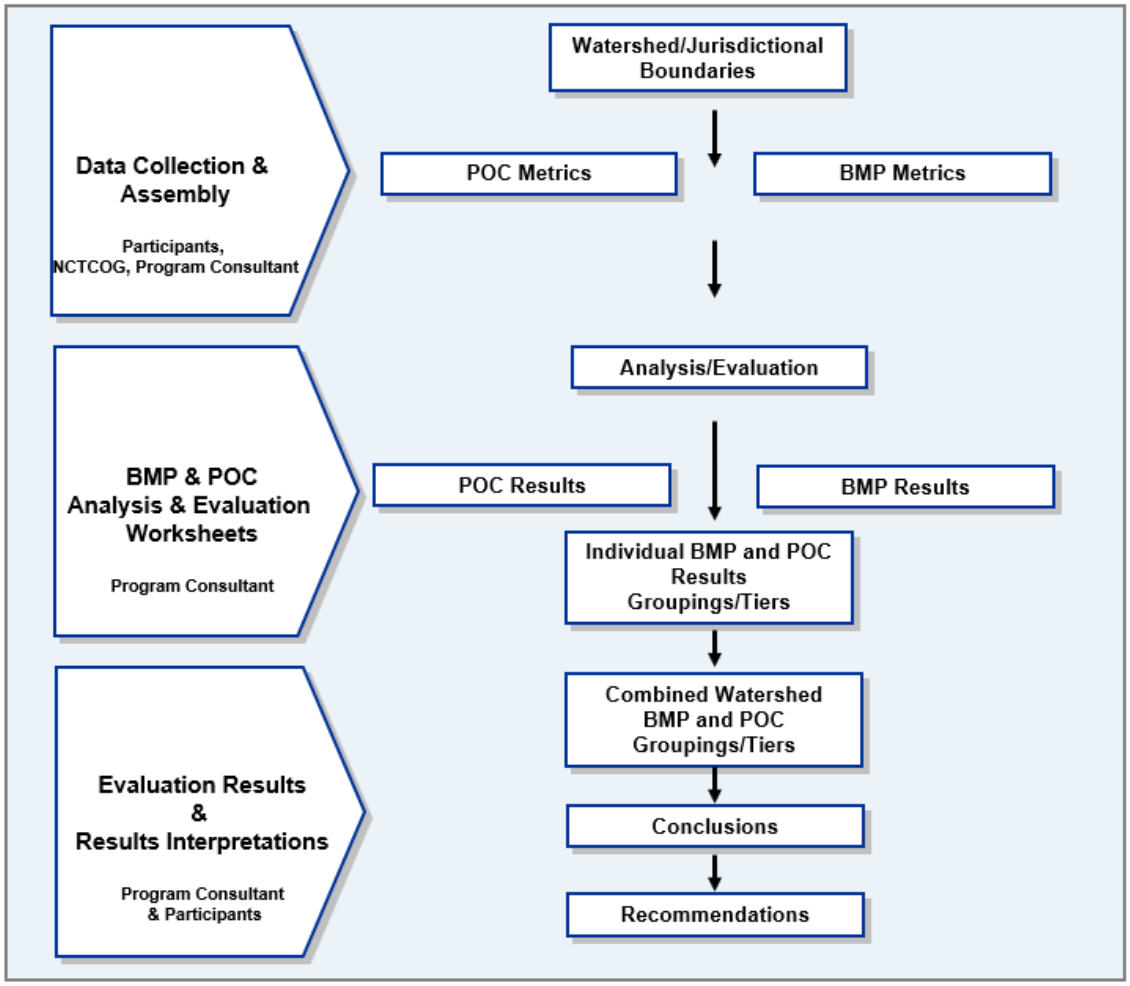

Figure 1-1 BANEP Methodology

1.4. Summary of BANEP

The BANEP assigns BMPs and POC results to groups based on the criteria outlined below and assumes that BMPs within the same group inherently exhibit the same or similar characteristics while water quality results within similar groups are a function of similar water quality characteristics.

The BANEP will evaluate water quality characteristics first by comparing the raw and statistical values of parameters collected in a watershed over a defined time frame, and secondly to the results of other comparable studies, benchmarks, and numeric limits. Water quality groups/tiers are assigned to each parameter in the watershed as follows:

Individual trends over time: The quarterly results are reviewed over the defined time frame (annual) in order to determine the trend for grouping purposes. Other statistical indices (maximum, minimum, average, etc.) and box plot comparisons will be made across multiple years and or program term time frames. Parameter results trends will be assigned to one of five groups as follows:

- Tier V: Parameters whose quarterly results/averages show a consistent improvement, were consistently positive, or were undetected during the time frame under review.

- Tier IV: Parameters where the majority of the evaluated results show an improvement or are positive over the time frame under review.
- Tier III: Parameters whose evaluated results remain the same (within a 10% window of reference result) *or* an equal number shows improvement/positive trend or decline/negative trend over the time frame under review.
- Tier II: Parameters that have majority of the evaluated results show a decline or are not positive over the time frame under review.
- Tier I: Parameters that have all the evaluated results showing a decline/negative trend over the time frame under review.

For example, if the results of the parameter zinc improve, show a positive trend or are undetected every quarter over the year, it will be assigned to group V; if the improvement/positive trend is across majority of the quarters, it will be assigned to group IV; if the results stay the same or improvement and positive trends occur only half the time, it will be assigned to group III; if the results decline/or show a negative trend across the majority of the quarters, it will be assigned to group II; and if the results are all below the reference result across all quarters, then it will be assigned to group I. The reference result will be defined based on a review of the first sample collected at the site and historical data from the watershed if available.

Monitored parameter comparisons: Comparable statistical indices will be reviewed against results from other program terms, studies, and benchmarks outlined in subsection 1.3 above. A similar grouping/tier structure will be assigned to each observed trend as follows:

- Tier V watershed: All POC metrics meet the evaluation criteria.
- Tier IV watershed: Majority of POC metrics meet the evaluation criteria.
- Tier III watershed: An equal number of the POC metrics meet/do not meet the evaluation criteria.
- Tier II watershed: Majority of POC metrics do not meet the evaluation criteria.
- Tier I watershed: All POC metrics do not meet the evaluation criteria.

Individual POC results trend groupings and POC metric comparison tiers will be aggregated to determine an overall water quality tier for each watershed (Refer to Section 6).

The BANEP will also evaluate BMPs by compiling, analyzing and grouping BMPs implemented within the watersheds under consideration to meet the MS4 permit stipulated Minimum Control Measures of each MS4. Structural BMPs and non-structural BMP activities will be evaluated based on quantity/type, implementation frequency and/or timelines, locations/coverage areas, and POCs addressed as applicable. Land use and watershed characteristics and activity data will also be used to determine the potential for the release of POCs. The evaluation criteria will be defined as follows:

Quantity/Type: Under this criterion, BMPs will be evaluated and grouped based on the total number of stormwater infrastructure listings (documented in SWMP databases/collected during maintenance activities), criteria/enforcement/guideline documents completed, hours spent, miles covered, completed projects, ordinances passed, illicit discharges identified, work orders completed, spill or hazard incidents responded to, industrial facility listings, inspections conducted, events organized, reviews completed, development permits issued, active construction site listings, training sessions completed, water quality issues identified, remedial/mitigation actions completed, violations observed, penalties assessed, target audiences reached, materials distributed, attendee or participation records, outfalls screened, and monitored sites. BMP groups/tiers will be assigned based on implemented quantities versus total target numbers within each city and/or watershed, as applicable.

Location/Coverage Areas: BMPs will be evaluated and grouped based on the locations of structural controls and where applicable non-structural BMP activities occurred in relation to watershed sampling locations.

Implementation Frequency and/or Timelines: BMPs will be evaluated and grouped based on the dates BMPs and/or BMP activities were conducted or the frequency or availability of BMP activities.

Pollutants of Concern Addressed: BMPs will be evaluated and grouped based on which of the POCs are potentially addressed by the BMP under evaluation.

Land Use/Land Cover (Pollution Potential): This BANEP assumes that BMP implementation will be enhanced or inhibited by the land use or operational activities within the watershed. Therefore, the level of risk for pollution-causing activities (e.g., rainfall between mitigation activities, or a higher number of a certain type of industry/activity) or the frequency with which pollution causing and pollution mitigation activities occurred within each city and/or watershed, as applicable will be evaluated as part of the BMP analysis.

In cases where watersheds traverse multiple jurisdictions, the extent of coverage of each jurisdiction will be documented and a weighted/composite coverage approach applied to the evaluation results where applicable.

Individual BMP groupings will be aggregated by MCM to determine an overall BMP tier for each watershed (Refer to Section 6).

1.5. Organization of this Document

This document is organized into the following sections:

Section 1.0 Introduction

This section provides background information on NCTCOG's RWWCP, the primary goal of the monitoring program, and evolution of the program. The section explains the purpose of the document, presents the BANEP development approach and data requirements, summarizes the methodology, and describes document organization.

Section 2.0 Data Requirements and Sources

This section describes the data providers and format required to support the assessment and evaluation of BMP effectiveness and water quality.

Section 3.0 Pollutants of Concern and POC Metrics

This section presents the chemical and bioassessment parameters and potential sources and/or modes of release of the POCs. This section also presents how POC metrics will be assembled/tabulated to facilitate evaluations and assessments.

Section 4.0 BMPs and BMP Metrics

This section provides the method for the tabulation/assembly of BMPs with quantifiable measurable goals under each minimum control measure (MCM). BMPs implemented will be similarly grouped based on type (structural or non-structural), timeline, quantity, location, coverage/area of influence, land use, and potential POCs addressed as they relate to the watershed(s) under evaluation.

Section 5.0 Watershed POCs and BMP Trends

This section details the method for evaluating BMP implementation and water quality trends (qualitative and quantitative analysis) for the watersheds and time frames under consideration by contrasting the data

collected and assembled in sections 3 and 4 against historic data, targets, and goals, and presenting the observed spatial and non-spatial trends.

Section 6.0 Watershed BMP Implementation and/or Water Quality Groups/Tiers

This section provides the method for assigning watershed BMP and water quality tiers, where applicable. This section also defines the groupings/tiers and assigns watersheds to a BMP tier only, a water quality tier only, and an overall combined watershed tier.

Section 7.0 Summary

This section summarizes the document contents, discusses the results of the analysis and evaluation of the BMPs and POCs, requirements satisfied, limitations, and potential expansions/refinements.

2. Data Collection Requirements and Sources

This section summarizes the data required to conduct the analysis and tabular evaluation to determine the water quality and BMP tiers for each watershed. It also notes the data type, format, and potential sources for data collection purposes.

2.1. Data Collectors/Providers

The BMP data to be used for the BMP analysis shall be collected by the participating entities, namely the cities of Arlington, Dallas, Fort Worth, Garland, Irving, Mesquite, and Plano, together with the NTTA. The data shall be collected, grouped and/or categorized and submitted in accordance with the requirements outlined in Section 2.2 below and Appendix A of this plan. The Cities of Dallas and Fort Worth shall also provide water quality data in addition to their BMP data. The scope of the data shall at a minimum be restricted to the watersheds under investigation, however the entities may submit the data (sub grouped by watershed) for all watersheds within their jurisdiction. Entities may be requested to submit BMP data for watersheds that are within their jurisdiction but are currently being monitored by other participating entities.

Water quality data and all other data not provided by the participating entities shall be obtained by the program consultant and the NCTCOG, as applicable. The NCTCOG shall assist the entities in generating required maps from tabulated BMP data as necessary.

The program consultant shall use the data collected to complete the BANEP worksheets in Appendix B and results and grouping tables in Appendix C.

2.2. Data Requirements

2.2.1. Minimum Control Measures

In accordance with the requirements of the Phase I permits of the RWWCP participants, each entity must develop a SWMP that shall, at a minimum, contain the following MCMs for:

- MS4 maintenance activities (MCM-1)
- Post construction stormwater control measures (MCM-2)
- Detection and elimination of illicit discharges (MCM-3)
- Pollution prevention and good housekeeping for municipal operations (MCM-4)
- Limiting industrial and high-risk stormwater runoff (MCM-5)
- Limiting stormwater runoff from construction sites (MCM-6)
- Public education, outreach, involvement, and participation (MCM-7)
- Monitoring, evaluation, and reporting (MCM-8)

Where applicable, control measures shall also be implemented under the TMDL section of each permit.

In order to meet the above requirements, a set of BMPs in the form of structural and non-structural controls are implemented in accordance with measurable goals and implementation schedules set forth in each entity's approved SWMP. The BMP analysis performed in this plan will generate results that will be aggregated to the MCM level to facilitate watershed grouping based on BMP implementation. Structural and non-structural control data to be utilized for the analysis set forth in this plan must be in a format that will facilitate quantitative tabulation and analysis. BMP data requirements are described in the next section.

2.2.2. Best Management Practices (BMPs)

To utilize the evaluation criteria for BMP analysis, BMP data shall be collected in the format as described below. Data collection checklists and templates (Appendix A) will be used by the participating entities to facilitate the recording and submission of the required data. All quantity related data (number, miles, hours, participation/attendee records, etc.) shall include a breakdown by quarter; where the four quarters in the year are defined as Jan-Mar, Apr-Jun, Jul-Sept, Oct-Dec.

MCM 1 – MS4 Maintenance Activities

- List of stormwater infrastructure/structural controls (grouped under proprietary, preservation/ undisturbed, conveyance, detention/infiltration, vegetative, Low Impact Development [LID]/Reduction in Impervious Cover [RIC], other) and associated location information (addresses or Global Positioning System [GPS] coordinates[preferred]) and installation dates.
- List of maintenance activities (concrete channel cleaning/desilting, culvert cleaning, earthen channel cleaning, flume cleaning, inlet cleaning, channel/flume/culvert/inlet/sewer inspections, inspection results and follow-up maintenance, drainage pipe repair, new drainage construction, special projects, tree removal, trim trees/limbs/brush), including quantity of infrastructure maintained, hours utilized, activity dates, and activity locations in GPS coordinate (preferred) or address formats. Maintenance activities will be grouped under aesthetics, system functionality, hardscape and infrastructure, inspections, safety/mobility/access, and other elements.
- Street-sweeping records including in-house or contracted sweeping activities, sweeping hours, sweeping miles, and dates and locations of sweeping activities.
- Litter-pickup records such as contracted pickup activities, activity locations, hours, miles, and dates. Additional records may include citizen clean-up events (unless provided elsewhere under MCM 7) to include number of clean-up events, event dates and locations, attendance/participation records, miles covered, and volunteer hours. Litter records may also include curbside recycling and leaf and brush programs (unless provided elsewhere under MCM 3), which will comprise mode(s) of collection and collection points, dates of collection, and total amount collected.
- Deicing/sanding and deicing mitigation records must include event dates, contracted or in-house hours employed, miles covered, coverage areas/locations, quantity of deicing material deployed, and accompanying deicing street sweeping activities (unless provided under street sweeping).

MCM 2 – Post-Construction Stormwater Control Measures

- Acknowledgment of records related to the development or updates to post-construction ordinance(s) and BMP design criteria manual(s).
- List of completed flood control projects, including locations, information related to water quality considerations incorporated, and dates of completion.

MCM 3 – Illicit Discharge Detection and Elimination (IDDE)

- Acknowledgment of records related to the development or updates to illicit discharge ordinance(s), Illicit Discharge Detection and Elimination/Dry Weather Screening (IDDE/DWS) manual(s) and an up-to-date MS4 outfall map.
- List of locations, quantities and extents of private or public sanitary sewer overflows (SSOs) and discharges to the storm sewer system, dates of occurrence, remedial/repair actions, dates of remedial/repair actions, and locations and dates of SSO-related work orders (including work activities) if different from work orders issued for remedial/repair actions.
- List of Household Hazardous Waste (HHW) collection activities, including types of waste collected, quantity of waste totaled by month, source of waste, modes of collection, frequency/dates of collection, and contributing households/neighborhoods/population or coverage areas. Collected waste will be grouped into toxic, corrosive, flammable, and other (pharmaceutical) categories.

- List of locations, quantities and extents of spills (not covered under SSOs and Hazardous materials) and discharges to the storm sewer system, dates of occurrence, containment/mitigation/cleanup actions, dates of containment/mitigation/cleanup actions, and location(s) of temporary cleanup waste storage locations, if any.
- List of locations, quantities and extents of releases associated with hazardous event responses (not accounted for under SSOs or spill responses) and discharges to the storm sewer system, dates of occurrence, containment/mitigation/cleanup actions, dates of containment/mitigation/cleanup actions, and location(s) of temporary cleanup waste storage locations, if any.
- List of locations and quantities of qualifying rain events within the watershed (events greater than 0.1inches), IDDE mitigation measures (CCTV programs, initiatives etc.), onsite sewage systems, wastewater treatment plants and lift stations, identified hotspots, high-risk facilities, motor vehicle garages and third-party connections to MS4.

MCM 4 – Pollution Prevention and Good Housekeeping for Municipal Operations

- Acknowledgment of the presence/absence of the following records: an up-to-date list of municipal facilities, list of priority pollutants or POCs, a list of priority facilities, documentation of inspection guidelines and documentation of Pesticide, Herbicide and Fertilizer Application Program (including list of licensed applicators).
- List of properties and facilities owned and leased by the municipality, including the locations and POCs for each facility, list of facilities inspected and inspection locations, results of inspections, including stormwater quality issues identified, mitigation actions implemented for identified issues, and dates mitigation actions were implemented. Facilities will be grouped under animal services, airports, landfills, recreational centers, parks and golf courses, storage facilities, maintenance facilities, water/wastewater plants, fire stations, and pools.
- List of completed training activities, including number of staff members trained, and dates of training activities. Staff trained must be broken down into the applicable department such as street and maintenance, public works and transportation, water utilities and operations, stormwater maintenance and operations, storage areas, fleet vehicle and equipment maintenance, municipal landfill operations, and municipal airport operations.
- List of waste management sites, including temporary storage locations, storage conditions, stormwater quality issues related to waste handling, dates issues were identified, dates of mitigation actions, and ultimate waste disposal mechanisms. Waste collection records will be grouped into the following categories: recycling, municipal waste collection, hazardous waste collection, municipal collection centers, bio-hazardous waste collection, and mobile waste collection.
- List of the Pesticide, Herbicide, and Fertilizer Application program types, including a list of parks and open-space locations, associated maintenance activities, and dates of maintenance activities.

MCM 5 – Industrial and High-Risk Stormwater Runoff

- List of properties and facilities operating under a multi-sector general permit (MSGP) or other industrial permit, including the names, locations and permit numbers, list of facilities inspected and inspection locations, results of inspections, including stormwater quality issues identified, mitigation actions implemented for identified issues, and dates mitigation actions were implemented.

MCM 6 – Construction Site Stormwater Runoff

- Acknowledgement of records related to the development or updates to construction related ordinance(s) and construction plans review and development permit issuance criteria documentation. Records must include links to, or hard copies of, completed documents.

- Acknowledgement of completed predevelopment meetings, operator training activities, and dates of training activities.
- List of construction sites with/without a construction general permit (CGP), including the names, locations and permit numbers, list of sites inspected and inspection locations, results of inspections, including stormwater quality issues identified, mitigation actions implemented for identified issues, and dates mitigation actions were implemented.

MCM 7 – Public Education and Outreach/Public Involvement and Participation

- List of materials, social and training events, tools, or mechanisms through which the public is informed of stormwater related issues (unless otherwise provided through another MCM). List must include the quantity of each item, acknowledgement of audience reached (web hits, event participation/attendee totals), and coverage areas (including sources of participation and locations of distributed or posted materials). Public education mechanisms will be grouped under online platforms, radio and television forms of communication, billboards, hardcopy materials, events (not accounted for elsewhere), residential outreach, schools' outreach, and businesses/commercial outreach.
- List of stakeholder/public input into stormwater issues, public complaints (including source of complaint, stormwater issues identified, location of issues, response/mitigation actions, and the dates mitigation actions were completed.

MCM 8 – Monitoring, Evaluation and Reporting

- List of dry- and wet-weather monitoring, outfall screening, in-stream monitoring, industrial or hot-spot monitoring, other monitoring activities (outside of the RWWCP), location or extents of monitoring activities, implementation dates, stormwater issues (illicit discharges/stormwater violations) identified as part of monitoring activities, mitigation actions implemented, and dates on which mitigation actions were implemented. Water quality data collected as part of this MCM may also be utilized for the water quality evaluation component of this plan.

Other – Targeted Controls/Focused BMPs

- List of additional BMPs under implementation to meet impaired waterbodies, TMDL waterbodies, interim bacteria reduction plan, or other requirement.
- List of targeted or focused BMPs, associated POCs, locations of controls, dates of implementation, results of assessment of POCs, list of POC sources, rainfall records, and third-party connections to MS4 via outfall map (See MCM 3).

2.2.2.1. BMP Data Sources

2.2.2.1.1. Storm Water Management Programs

SWMPs serve as MS4's roadmap towards meeting Phase I MS4 permit requirements. SWMPs typically include pollution prevention measures, treatment or pollution removal techniques, stormwater monitoring, legal framework for enforcement, and all appropriate stormwater management measures. The MCMs and BMPs that will be evaluated as part of this plan will be obtained from each MS4's SWMP.

2.2.2.1.2. SWMP Annual Reports

Each MS4 permit requires permittees to complete an annual system-wide report that describes the status of implementing their SWMP, including the status of complying with new requirements as applicable. Most of the data required for this plan can be collected using the same mechanisms in place for preparing annual reports, with the necessary modifications applied to incorporate BANEP data requirements.

2.2.2.1.3. SWMP Reporting Data Collection Tools and Databases (Internal Collection Mechanisms)

Each MS4 utilizes a variety of sources to collect the information used to complete the required annual report and for other reporting purposes. These sources will also be utilized to collect the data required by this BANEP including:

- Municipal Capital Improvements Databases
- Municipal Stormwater Budgets and Fiscal Databases
- Municipal/MS4 Maintenance Management Systems
- Maintenance Management Consultants and Contractors
- The North Central Texas Council of Governments
- Various Municipal Government Departments
- Engineering or Other Consultants
- Geographic Information System Databases

2.2.3. Water Quality Data

As part of the evaluation of the water quality component of this BANEP, water quality data will be collected. Water quality data will be collected from multiple sources for the following parameters: oil and grease, pH, E. coli, total coliforms, Total Dissolved Solids (TDSs), Total Suspended Solids (TSSs), biochemical oxygen demand (BOD), COD, total nitrogen (n), dissolved phosphorus (P), total P, total arsenic (As), total chromium, (Cr), total copper (Cu), total lead (Pb), total zinc (Zn), total cadmium (Cd), atrazine, ammonia nitrogen, orthophosphate, and nitrate nitrogen.

Data collected must include results of field-collected samples, as well as calculated statistical parameters such as the arithmetic and geometric means, standard deviations, and coefficients of variation. The data must also include sampling protocols and frameworks to facilitate comparison analysis.

2.2.3.1. Water Quality Data Sources

2.2.3.1.1. Regional Wet Weather Characterization Program

POCs to be utilized for the water quality trend and comparative analysis of the BANEP will be obtained from the chemical and biomonitoring protocols of the RWWCP. The RWWCP will also be utilized to collect additional information such as watershed limits and jurisdictions, land use/land cover data, sampling locations, and sampling results and statistical data.

2.2.3.1.2. Texas Surface Water Quality Standards

TSWQSs establish explicit goals for the quality of streams, rivers, lakes, and bays throughout the state. The standards are developed to maintain the quality of surface waters in Texas so that it supports public health and enjoyment and protects aquatic life, consistent with the sustainable economic development of the state. Standards generated from the TSWQS will be compared with the data collected as part of the RWWCP. Due to the differences in data collection techniques described in TCEQ guidance documents, the analysis to be performed as part of this plan will be strictly for comparison purposes and may not represent compliance with TSWQS and for managing point and nonpoint loadings in Texas surface waters.

2.2.3.1.3. Screening Levels for Nutrient Parameters

Nutrient screening levels will be obtained from the TCEQ's *2014 Guidance for Assessing and Reporting Surface Water Quality in Texas (June 2015).* The screening levels (instream concentrations) for nutrients that have been established by the TCEQ as targets will be directly compared with monitoring data.

2.2.3.1.4. National Stormwater Quality Database

The NSQD is an urban stormwater runoff characterization database developed under the direction of Dr. Robert Pitt, P.E., of the University of Alabama and the Center for Watershed Protection under support from

the USEPA. It is now supported as a companion project to the International Stormwater BMP Database. The NSQD is maintained as a separate stand-alone database, serving as an important resource for municipal stormwater managers and researchers who are seeking urban runoff characterization data. The NSQD can be downloaded from www.bmpdatabase.org. Datasets that do not have numeric criteria such as TSS, oil and grease, biochemical oxygen demand, total nitrogen, and chemical oxygen demand will be compared with the third quartile of the NSQD data for each parameter.

2.2.3.1.5. National Rivers and Streams Assessment

The NRSA is a collaborative survey that provides information on the ecological condition of the nation's rivers and streams and the key stressors that affect them, both on a national and an ecoregional scale. The NRSA 2008-2009 report provides information on the biological and recreational condition of the nation's rivers and streams and the key stressors that affect them. It also reports out on changes in stream condition compared to an earlier study, the 2004 Wadeable Streams Assessment. Applicable data from the RWWCP will be compared with data compiled under this program.

2.2.3.1.6. Nationwide Urban Runoff Program (NURP)

NURP was a research project conducted by the USEPA between 1979 and 1983. The overall goal of the NURP was to develop information that would help provide local decision makers, states, USEPA, and other interested parties with a rational basis for determining whether urban runoff is causing water quality problems and, in the event that it is, for postulating realistic control options and developing water quality management plans, consistent with local needs, that would lead to implementation of least-cost solutions (USEPA, 1983). Applicable data from the RWWCP will be compared with data compiled under this project.

2.2.3.1.7. Texas Clean Rivers Program (CRP)

The Texas CRP, established in 1991, is a state fee-funded, non-regulatory program that was created to provide a framework and forum for managing water quality issues in a more-holistic manner. The focus of the program is to work at the watershed level, within each river basin, by coordinating the efforts of diverse organizations (TCEQ, 2018). Data from this program will be used as a benchmark for evaluating RWWCP data, as applicable.

2.2.3.1.8. Total Maximum Daily Loads

A TMDL is the calculation of the maximum amount of a pollutant allowed to enter a waterbody so that the waterbody will meet and continue to meet water quality standards for that particular pollutant. A TMDL determines a pollutant reduction target and allocates load reductions necessary to the sources(s) of the pollutant (USEPA, 2018a). The TCEQ is responsible for developing TMDLs in Texas and submitting them to the USEPA for approval. Where TMDLs have been completed for a watershed under evaluation, RWWCP data will be contrasted with the TMDL or stormwater wasteload allocation, if applicable.

2.2.3.1.9. Multi-Sector General Permits

Federal regulations at 40 CFR 122.26(b)(14)(i)-(xi) require stormwater discharges associated with specific categories of industrial activity to be covered under National Pollutant Discharge Elimination System (NPDES) permits (unless otherwise excluded) (USEPA, 2018b). Facilities that discharge stormwater associated with industrial activity and certain non-stormwater discharges may discharge to surface water in the state in accordance with the TCEQ-administered TPDES General Permit TXR050000. The 30 industrial sectors covered by the permit are subject to numeric effluent limitation and benchmark monitoring requirements. Data from the RWWCP will be compared with MSGP numeric and benchmark data as part of the water quality evaluation and analysis.

3. Pollutants of Concern and POC Metrics

This section presents the chemical and bioassessment POCs, potential sources and/or modes of release of the POCs, and methods for tabulating POC metrics to facilitate evaluations and assessments.

3.1. POCs

One hundred and eighty-eight POCs were initially analyzed from 210 storm events across a network of 30 monitoring sites from 1992 through 1994 as part of participating MS4's National Pollutant Discharge Elimination System (NPDES) permit application process. Since then, based on results of analysis, POCs for the program have been reduced to 22 from 1996 to 2001 (Program Term One), 18 from 2006-2010 (Program Term Two), and 17 from 2011-2016 (Program Term Three).

The 20 POCs that are currently being monitored at the time of preparation of this BANEP include oil and grease, pH, conductivity, E. Coli, TDS, TSS, BOD_5, COD, total nitrogen, dissolved phosphorus, total phosphorus, arsenic, chromium, copper, lead, zinc, atrazine, ammonia nitrogen, orthophosphate, nitrate nitrogen. Fourteen (oil and grease, pH, TDS, TSS, BOD, COD, dissolved P, P, As, Cr, Cu, Pb, and Zn) have been part of the program since the first program term. Atrazine, ammonia nitrogen, orthophosphate, and nitrate nitrogen constitute the latest additions to the program. For the bioassessment portion of the RWWCP, monitored POCs include dissolved oxygen, pH, specific conductance, temperature, turbidity, E. coli, phosphorus as orthophosphate, and nitrate as nitrogen.

The table below provides a listing of the POCs and potential sources or modes of release of the pollutants into stormwater.

Table 3-1 Pollutants of Concern

POC	Probable pathway to stormwater
Oil and Grease	Food service operations, disposal of cooking or edible oil products and leaking dumpsters. Commercial and industrial oils and greases from washing buildings, vehicles, equipment, paved surfaces, greasing rail switches and handling oils as bulk materials. (Port of Portland, 2015) Roads; driveways; parking lots; vehicle maintenance areas; gas stations; illicit discharge to storm drains. (USEPA, 1999)
pH	Low pH: Mine wastes; historic mine sites; acid generating rocks/soils; power plants and other sources of acidic gases; coal pile runoff; industrial effluents; landfill leachate; confined animal feeding operations, dairy runoff; Instream oxidation/reduction processes; recent draining of naturally inundated wetlands/floodplains High pH: Industrial discharges; alkaline geology and soils; asphalt production or disposal; agricultural lime; oil and gas brines; industrial landfills; cement manufacturing; soap manufacturing; limestone gravel roads. (USEPA, 2007)
Conductivity	Road salt; land cover alteration leading to dryland salinity; water withdrawal; irrigation; combustion wastes; mining activities; sewage and industrial waste discharges. (USEPA, 2007)

POC	Probable pathway to stormwater
E. Coli	Temporary sanitary facilities (portable toilets); structures that provide roosting space for birds or other wildlife; leaking or open dumpsters that attract wildlife; pet waste; cross connections with the sanitary sewer system; leaking sanitary sewer system due to broken or failing pipes; inadequate or incorrectly functioning septic systems. (Port of Portland, 2015) Regulated sources: Municipal and private domestic wastewater treatment facility discharges; industrial facilities with individual stormwater permits and/or discharging treated wastewater and/or groundwater; stormwater discharges from industries, construction, and MS4s. Nonpoint sources: Pets; livestock, and wildlife; failing onsite sewage facilities. (TCEQ, 2013)
TDS	See Conductivity.
TSS/Particulates	Exposed soil: Autumn plowing; livestock grazing; devegetated banks/shores; logging roads and trails; construction; road maintenance; landslides; burned forests; erosional rills and gullies; stored soil/waste. Instream processes: In-stream gravel mining; vehicle or boat traffic; dredging and trawling; breached impoundments; incised channels; channel modification; eroding and collapsing stream banks; shallow or poorly developed root systems; fish activity that resuspends sediments. Altered flow: Impoundments; upstream sourced streambeds; impervious surfaces; lack of connectivity with floodplain. (USEPA, 2017)
BOD_5	De-icing aircraft or pavements; storing food waste or other waste material outdoors; managing landscaping waste; leaks from dumpsters, fertilizer, herbicide, or pesticide use; sanitary facilities such as portable toilets; washing equipment with soap containing biodegradable solutions; spills of biodegradable material. (Port of Portland, 2015) Woody debris; dead plants and animals; animal manure; effluents from pulp and paper mills; wastewater treatment plants; feedlots, and food-processing plants; failing septic systems; and urban stormwater runoff. (USEPA, 1997)
COD	Residual food and beverage waste from cans/bottles; antifreeze; emulsified oils. (StormwateRx, LLC., 2019) Plant debris; animal and food waste; trash; gasoline and motor oil; heavy metals; fertilizers; and pesticides. (USEPA, 2015)
Total Nitrogen	Wastewater treatment plant effluent; industrial effluents; municipal landfills and waste disposal sites; animal feed lots or confined animal feeding operations; construction and development sites; combined stormwater and sanitary sewers; agricultural and irrigation runoff; runoff from impervious surfaces associated with urban or other developed areas; pasture and rangeland runoff; septic systems; atmospheric deposition; landscaping runoff (e.g., from residential lawns, golf courses and athletic fields). (USEPA, 2007)
Dissolved Phosphorus	See Total Phosphorus.
Total Phosphorus	See Total Nitrogen.
Arsenic	Mines and smelters; firing ranges; municipal waste treatment outfalls, industrial point sources; urban runoff; landfills; junkyards. (USEPA, 2007)
Chromium	Metal plating; moving engine parts; brake lining wear; electroplating; paints and preservatives. (Kobringer, 1984; Wright Water Engineers, Inc., and Geosyntec Consultants, Inc., 2011) Mines and smelters; firing ranges; municipal waste treatment outfalls, industrial point sources; urban runoff; landfills; junkyards. (USEPA, 2007)
Copper	Metal plating; bearing and bushing wear; moving engine parts; brake lining wear; fungicides and insecticides applied by maintenance operations, building materials; paints and wood preservatives; algaecides. (Kobringer, 1984; Wright Water Engineers and Geosyntec Consultants, Inc., 2011) Mines and smelters; firing ranges; municipal waste treatment outfalls, industrial point sources; urban runoff; landfills; junkyards. (USEPA, 2007)

POC	Probable pathway to stormwater
Lead	Wear on body and brakes of equipment and vehicles; storing scrap metal; storage and disposal of paints, tires, or metal materials; leaded gasoline (auto exhaust); tire wear (lead oxide filler material); lubricating oil and grease; and bearing wear. (Port of Portland, 2015; Kobringer, 1984) Mines and smelters; firing ranges; municipal waste treatment outfalls, industrial point sources; urban runoff; landfills; junkyards. (USEPA, 2007)
Zinc	Galvanized metal roofing and gutters; corrosion of metal surfaces such as fences or steel, aluminium, and other galvanized metal structures; hydraulic fluid spills; material handling equipment operating at slow speeds where wear on tires is more likely due to frequent turning; asphalt sealcoating; storing scrap metal; storage and disposal of paint, tires, or metal materials; pesticide or fungicide application; biocides used for roof cleanings or boat coatings; galvanic corrosion protection for equipment such as boats and tanks, tire wear (filler material); motor oil (stabilizing additive); and grease. (Port of Portland, 2015; Kobringer 1984) Mines and smelters; firing ranges; municipal waste treatment outfalls, industrial point sources; urban runoff; landfills; junkyards. (USEPA, 2007)
Atrazine	Forest management; agriculture/crop cultivation; parks; golf courses; lawns; roads/rights of way; aquatic weed control. (USEPA, 2007)
Ammonia Nitrogen	Impoundments; municipal waste treatment outfalls; septic seepage; industrial point sources; agricultural and urban runoff (fertilizer); manure application; concentrated animal feeding operations; aquaculture; landfill leachate; atmospheric sources; riparian devegetation. (USEPA, 2007)
Orthophosphate	See Total Phosphorus.
Nitrate Nitrogen	Sewage disposal systems; livestock facilities; fertilized cropland, parks, golf courses, lawns and gardens. (Water Research Watershed Center, 2014)
Dissolved Oxygen	Impoundments; municipal waste treatment outfalls, industrial point sources; agricultural and urban runoff; removal of riparian vegetation; channel alteration; groundwater inflow. (USEPA, 2007)
Temperature	Discharge of heated effluents; removal of upland vegetation; removal of riparian vegetation; impervious surface; channel alteration; impoundments or dams; removal of water from surface or groundwater. (USEPA, 2007)
Turbidity	Soil erosion; waste discharge; urban runoff; eroding stream banks; large numbers of bottom feeders (such as carp), which stir up bottom sediments. (USEPA, 1997)

3.2. POC Metrics

At the end of each year of the RWWCP, the program consultant, in consultation with the NCTCOG, completes an annual report for submission to the TCEQ. The report includes the field-recorded and laboratory-reported results of POCs collected over the year at the corresponding site locations for each watershed as well the summary statistics data set comprising the minimum, maximum, mean, median, and standard deviation for each POC and site/watershed.

Upon conclusion of the program term, the program consultant also completes a comprehensive final report, which includes the summary statistics metrics: number of samples, minimum, maximum, median, arithmetic mean, and geometric mean. The final report also includes statistical figures (box-whisker plots) and statistical comparisons of RWWCP data to date from previous terms, the Clean River Program data, and reference data such as the NSWQD and TSWQC.

The sample results, statistical summaries and statistical figures (where applicable), and bioassessment indices/scores will serve as the POC metrics for the water quality analysis component of the BANEP.

3.2.1. Sample Results (Laboratory and Field Collected)

Sample results for each POC and bioassessment indices from the individual sampling stations/sites within each watershed will be utilized for single-year trend analysis. Sample results may be utilized for multi-year comparative analysis when the sampling stations/sites remain the same.

3.2.2. Summary Statistics

Summary statistics (minimum, maximum, median, arithmetic mean, and geometric mean) and statistical figures (box-whisker plots) as well as bioassessment indices will serve as the POC metric for each watershed for multi-year comparative analysis and comparisons to other benchmark or reference data.

3.3. Tabulation of POC Metrics

POC evaluation metrics will be collected by the program consultant in accordance with the RWWCP program term scope of work and monitoring plan as well as format described in Section 2 and Appendix A of this plan. The data will be compiled in sortable spreadsheet format.

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4. BMPs and BMP Metrics

This section describes the BMPs to be evaluated, the metrics to be used in these evaluations, and format in which the metrics will be collected and presented.

4.1. BMPs

BMPs must be implemented primarily under eight MCMs and the "Impaired Water Bodies and Total Maximum Daily Load Requirements" sections of the Phase I MS4 permits issued to the participants of the RWWCP. The eight MCMs are presented under Section 2 of this plan.

As presented under subsection 1.1, the primary goal of the RWWCP was to obtain baseline data on receiving streams in the DFW metroplex for use in determining long-term water quality trends. The plan for program term four includes the identification and evaluation of BMPs implemented during the monitoring period in order to better assess and document any improvements in water quality, presumably resulting from the implementation of the BMPs.

Table 4-1 below represents the different BMPs infrastructure and/or activities utilized as of the end of program term three by each participant of the RWWCP. The table reflects the variation between the participant's MCM requirements and BMPs. The BANEP has been designed to use a standardized set of metrics from the data to be submitted by participating entities for the evaluation of BMPs. The BMP metrics are presented in Section 4.2.

Table 4-1 Locally Implemented BMPs by Participating Entity

Best Management Practices	Participating Entities[1]							
	ARL	DAL	FW	GAR	IRV	MES	NTTA	PLA
Maintenance Activities								
Pipe conveyance system repair and maintenance	X	X	X	X	X	X	X	X
Stream bank erosion control and drainage	X	X	X	X	X	X	X	X
Water quality and flood control structures	X	X	X	X	X	X	X	X
Provide floatables protection resources for special events/businesses	X	X	X	X			N/A	
Employed personnel for picking up litter/floatables	X	X	X	X	X	X	X	X
Participate in local litter abatement program	X	X	X	X	X	X	X	X
Street sweeping	X	X	X	X	X	X	X	X
Deicing BMPs	X	X	X	X	X	X	X	X
Post Construction Control Measures								
Implements/On track to implementing Integrated Stormwater Management (iSWM) for new development and redevelopment		X	X	X	X			
Implements and evaluates low-impact development and green infrastructure	X	X	X	X	X	X	N/A	

Best Management Practices	Participating Entities[1]							
	ARL	DAL	FW	GAR	IRV	MES	NTTA	PLA
Illicit Discharge Detection and Elimination								
Initiatives to reduce grass clippings, leaf litter, and animal wastes	X	X	X	X		X	X	
MS4 screening and illicit discharge inspections	X	X	X	X	X	X	X	X
Uses CCTV to monitor for illicit discharges, overflows, and leaks	X	X	X	X	X	X		X
Tracks and addresses sanitary sewer overflows and infiltration	X	X	X	X	X	X	N/A	X
Household hazardous waste and used-vehicle motor fluid program	X	X	X	X	X	X	N/A	X
MS4 map verification and update	X	X	X	X	X	X	X	X
Pollution Prevention & Good Housekeeping for Municipal Operations								
Municipal facility programs	X	X	X	X	X	X	X	X
Pesticides, herbicides, and fertilizer application program	X	X	X	X	X	X	X	X
Spill response program	X	X	X	X	X	X	X	X
Industrial and High-Risk Runoff								
Inspections and control measures for industrial and high-risk locations	X	X	X	X	X	X	X	X
Screening program for industrial and high-risk locations	X	X	X	X	X	X	X	X
Construction Site Stormwater Runoff								
Use and maintenance of controls	X	X	X	X	X	X	X	X
Inspection of construction sites and enforcement of control measure requirements	X	X	X	X	X	X	X	X
Notification/training for responsible parties	X	X	X	X	X	X	X	X
Public Education, Outreach, Involvement and Participation								
Community education	X	X	X	X	X	X	X	X
School education	X	X	X	X	X	X		X
Business education	X	X	X	X	X	X	X	X
Construction site operator training	X	X	X	X	X	X	X	X
Industrial site operator training		X	X		X		N/A	
Staff education	X	X	X	X	X	X	X	X
Community outreach	X	X	X	X	X	X	X	X
Visitor and tourist outreach		X	X					
Media-based outreach	X	X	X	X	X	X	X	X
Household hazardous waste	X	X	X	X	X	X	N/A	X
Facilitate public reporting and response	X	X	X	X	X	X	X	X
Volunteer opportunities	X	X	X	X	X	X		X
SWMP development and public involvement	X	X	X	X	X	X		X

Best Management Practices	Participating Entities[1]							
	ARL	DAL	FW	GAR	IRV	MES	NTTA	PLA
Monitoring, Evaluation and Reporting								
Dry-weather screening	X	X	X	X	X	X	X	X
Wet-weather screening	X	X	X	X	X	X	X	X
Rapid bioassessment monitoring		X	X	X				X
Industrial and high-risk runoff monitoring	X	X	X	X	X	X	X	X

Notes:

1. ARL = City of Arlington; DAL = City of Dallas; FW = City of Fort Worth; GAR = City of Garland; IRV = City of Irving; MES = City of Mesquite; NTTA = North Texas Tollway Authority

4.2. BMP Metrics

In order to facilitate a uniform evaluation of different types of BMPs implemented by each participant, the BANEP has been designed to utilize the metrics described below in an evaluation/analysis process with results rolled up to the MCM level where all BMPs are considered a subset. For example, each participant may perform maintenance activities on different types of stormwater infrastructure, but the BANEP has been designed to roll maintained infrastructure into the uniform evaluation metrics in order to unify the evaluation/analysis process and report results up to the MCM, and not BMP, level.

The metrics used for the BMP analysis portion of the BANEP are: the quantity and types of BMP structures; enforcement/criteria documents, activities and activity units; the locations/coverage areas of the BMP structures, activities and activity units; the dates of implementation or availability of the structures, documents, activities, and activity units; and pollutants of concern potentially addressed by the structures, activities, and activity units. The activity units and land use data will also be used to determine the pollution potential risk levels (ranging from high to low) for each watershed.

4.2.1. Quantity/Types

BMP metrics to be considered will include, but will not be limited to, the following:

- Number and types of structural controls (stormwater infrastructure), facilities, industries, construction sites, waste collection schemes, storm events, reviews, meetings, notifications, complaints/reports, training sessions, monitoring activities, and public interaction tools.
- Maintenance and/or BMP activity units (e.g., miles, acreage, volume and hours) expended.
- Number and types of enforcement mechanisms and criteria manuals implemented.
- Number of inspections, response, follow-up, investigative, and mitigation actions employed.
- Training and/or event participation and attendee records.
- Population distribution records.

4.2.2. Location/Coverage

BMP metrics to be considered will include the following:

- Geographic coordinates of BMP structures or activities and activity units with point location data.
- Coverage/service/source areas for BMP activities where point location data may not be available.

4.2.3. Timelines/Frequency

BMP metrics to be considered will include the following:

- Dates of implementation or installation of BMP structures and/or occurrence of BMP activities.
- Frequency of occurrence or availability of BMP events, activities, training, mechanisms, and/or tools.

4.2.4. POCs addressed

BMP metrics to be considered will be the number of POCs potentially/presumably addressed (based on research and entity collected data) by the BMP structures or activities under evaluation.

4.2.5. Pollution Potential (land use/land cover and pollution sources)

This BMP metric will be calculated as the risk level for the release of applicable POCs based on the evaluation of land use, watershed activities, and the potential sources of pollution data included in the BMP data provided by each entity.

4.3. Tabulation of BMP Metrics

BMP metrics will be collected by the participating entities in accordance with the format described in Section 2 and Appendix A of this plan. The data will be submitted in sortable spreadsheet format and as ArcGIS files with point/polygon shapefiles attributed with non-spatial data.

'POCs addressed' data will be determined by the program consultant based on the data collected by the participating entities, unless the POCs are implemented in response to impaired waterbodies or TMDL requirements. Targeted POCs will also be provided by participating entities where applicable.

5. Watershed POCs and BMP Trends

This section presents the method for evaluating BMP implementation and water quality trends (evaluation and analytical steps) for the watersheds and time frames under consideration by contrasting the data collected and calculated in sections 3 and 4 with evaluation criteria such as historic data, targets, and goals, and presenting the observed spatial and non-spatial trends.

5.1. Overview

BMP and POC metrics will be evaluated against the BANEP criteria using the worksheets provided in Appendix B. Individual BMP and POC groups/tiers (ranging from tier V to tier I) assigned using the worksheets will be cumulatively rolled up into overall groups/tiers at the MCM and POC level for each watershed.

The evaluation and analysis criteria utilized for the BANEP is predicated on the following assumptions. For the BMP component of the analysis, BMPs within an MCM are assigned to a particular group/tier based on how closely or otherwise implementation characteristics aligns with the following general criteria:

- BMPs meet permit requirements.
- A variety of BMP structures or activities are installed or conducted, respectively.
- All applicable facilities, industries, and construction sites are inspected, and inspections occur early in the year or year-round.
- Applicable enforcement, criteria, guidelines, procedures, reviews, notifications, and training are fully applied.
- Waste collection units/activities are more widespread when compared with the MS4 average and are available to a significant portion of the watershed population.
- BMP activity units are more widespread when compared with overall MS4 averages.
- BMP structures or activity units are located in the upstream section of a watershed or cover extensive areas of a watershed.
- Issues identified, complaints/reports received, and spills/illicit discharge incidents are promptly resolved.
- Training sessions, events, and interactive tools are available earlier in the year and year-round.
- A larger number of POCs are addressed by BMPs.
- Watershed activities and/or land use characteristics pose a low risk for pollution potential.

For the water quality component of the analysis, a POC is assigned to a particular group/tier based on how closely or otherwise sample results align with the following general criteria:

- Sample results are within acceptable ranges or below benchmark targets.
- Sample results show a consistent improvement or are consistently positive over the period of interest.
- Statistical metrics are below/above benchmark targets or within acceptable ranges.
- Statistical metrics show a consistent improvement or are consistently positive over the period of interest.
- POC metrics are generally below all applicable reference data.

Details of the evaluation and analysis process are presented in the next section.

5.2. Summary of Analysis Steps

The BMP and POC evaluation and analysis steps are shown in the flow chart below. Details are provided in the subsections below.

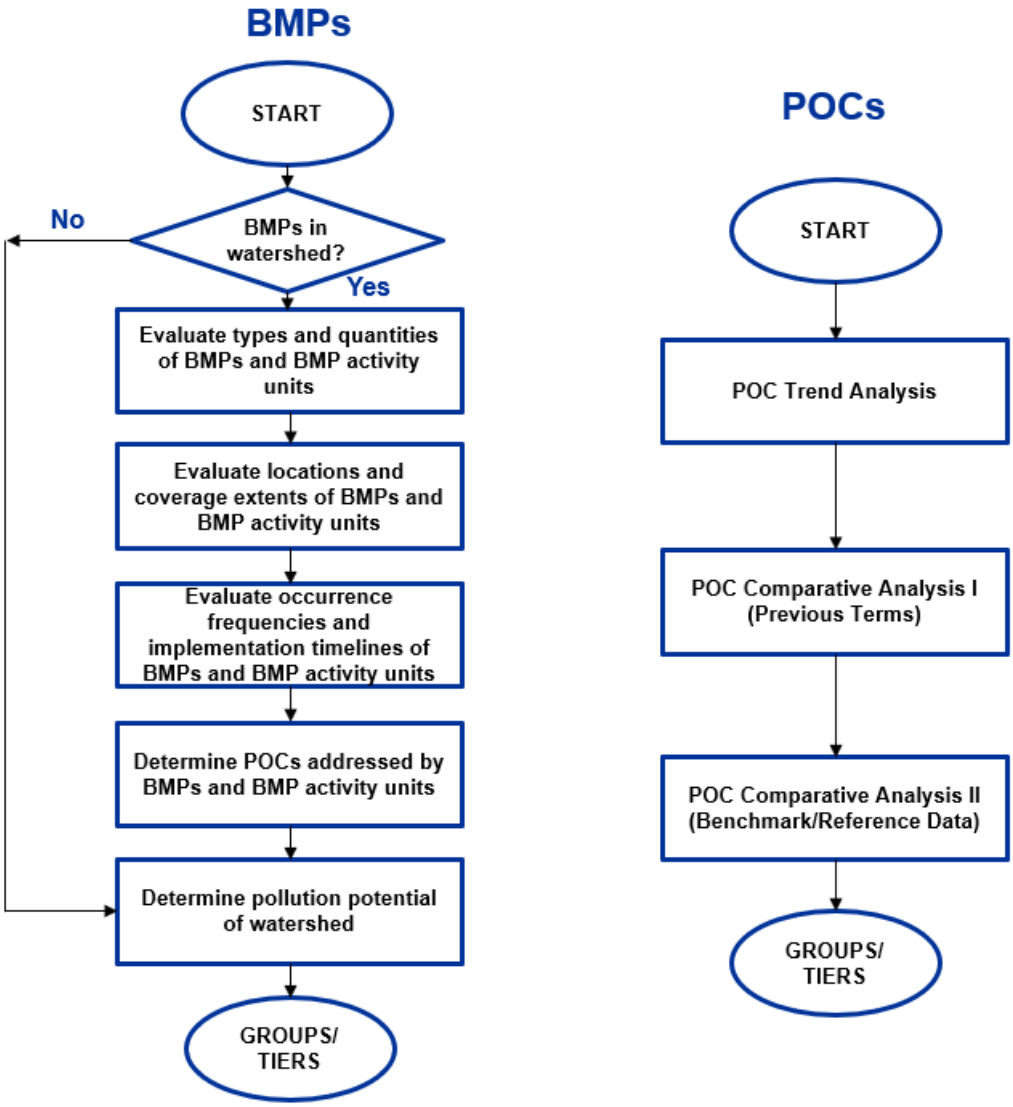

Figure 5-1 BANEP Analysis Steps

5.2.1. BMPs

A five-step process will be utilized to evaluate and analyze BMP data. Analysis steps will be broadly classified under quantity and types (quantitative and qualitative), location/coverage (spatial), timelines and

frequency (trends), POCs addressed (qualitative) and pollution potential (quantitative, qualitative, comparative, spatial, and trends).

In the first step, based on the MCM under evaluation, structural BMP types and quantities, BMP maintenance activity units, water quality considerations employed during project designs, enforcement/criteria manuals, spill and illicit discharge response actions, quantity and type of staff trained, quantity and types of facilities inspected, quantity and types of waste collected, quantity and types of construction related reviews, meetings, and training conducted, active construction sites inspected, quantity and types of public interaction tools implemented, target audiences and audiences reached, types of monitoring activities conducted, and types and quantity of targeted controls installed will be assessed against the evaluation/analysis criteria provided in the MCM/BMP worksheets in Appendix B. Grouping will be applied as outlined in the applicable worksheets.

In the second step, the locations of structural BMPs and focused BMPs (where applicable), maintenance activities, flood control, and other drainage improvements projects within the watershed will be evaluated. Step two analysis will also include the evaluation of the coverage areas/extents of waste collection activities, response/mitigation activities, inspection activities, public education events and platforms, and monitoring activities.

The timing and frequencies of BMPs will be evaluated as part of step three. This step will evaluate the dates that structural BMPs were fully functional, how frequently maintenance activities, training events, inspection activities, and monitoring activities were conducted, and how often waste collection schemes and public interaction tools were made available to the watershed communities. The timeliness of responses to spills, illicit discharges, and citizen complaints will also be reviewed in this step.

The penultimate step will comprise the determination of the POCs that were potentially addressed by the BMPs under evaluation for each MCM. For example, BMPs that address sanitary sewer overflows will presumably address bacteria and any other POCs determined to be discharged through sanitary sewer overflows.

The final step of the BMP evaluation and analysis process will involve the determination of the risk potential (based on land use, watershed activities, and pollution sources) for the release of pollutants within the watershed. Grouping will be tempered for watersheds with higher pollution potential risk.

Results determined from each step will be tabulated to determine a final group/tier for each MCM for the watershed.

5.2.2. POCs

A three-step process will be utilized to evaluate and analyze POC data. Analysis steps will be broadly classified under trend analysis (year/period-to-date), and comparative analysis (previous terms and other reference/benchmark data).

In the first step, applicable sampling station/site results will be evaluated against the evaluation criteria provided in the POC worksheet forms in Appendix B. The evaluation criteria will include an assessment of whether individual results or quarterly results averages improved, declined or were sporadic during the year under review. Water quality grouping will be applied per guidelines in the POC evaluation worksheets.

In the second step, data from the current year under evaluation will be compared with prior years of the current term, and previous terms where applicable. In this analysis, each calculated metric will be compared with a similar metric from previous years. Grouping will be assigned to metrics based on whether the metrics are observed to meet the evaluation criteria when compared with all previous-year metrics.

In the third and final step, statistical data from the period of interest will be compared with similar benchmark/reference data from the sources outlined in Section 2 of this plan. Water quality tiers will be applied per the POC worksheet in Appendix C.

Results determined from each step will be tabulated to determine a final group/tier for each POC for the watershed.

5.3. Data Analysis, Evaluation and Trends

The following analysis will have to be performed to complete the steps outlined above.

5.3.1. Quantitative Analysis

Quantitative analysis will be conducted by taking quantified data and running it through the evaluation criteria to determine the applicable group/tier. Under these analyses, BMP tiers will be distinguished from each other by the number and/or types of BMP structures installed, or BMP activities conducted. The minimum number of BMPs to be used as yardsticks for analyses that evaluate the grouping/types of structures or activities will be determined based on data provided by participants.

Similarly, from a pollution potential risk analysis, watershed groups/tiers will be determined based on the potential pollutant source, contributing area or pollution causing agent.

5.3.2. Qualitative Analysis

Qualitative analysis will be performed on BMP documents to determine groups/tiers. Under this analysis, the presence/absence of the BMP will be the distinguishing factor. BMPs such as ordinances/enforcement mechanisms, criteria manuals, policies, procedures and review guidelines will be subject to qualitative analysis. The application of these BMPs will be evaluated under the other types of BANEP analysis described herein.

POCs addressed by BMP structures and activities will also be determined based on a qualitative assessment of which BMPs, based on research data, have been determined to work well on a set of POCs. Qualitative analysis will also be utilized to determine how certain land use types will contribute to pollution.

5.3.3. Trend Analysis

POC sample results from sampling stations and sample results averages from monitored watersheds will be evaluated over the period of interest to determine trends or patterns that will be used to determine POC groups and tiers. Under this analysis, upward or positively consistent trends (from a water quality improvement perspective) will be the distinguishing factor for groups/tiers.

Multi-year trend analysis from sampling station results will only be conducted if the same sampling station is monitored over the period of interest and the period of interest spans more than 1 year.

Trends in BMP activity frequencies (events, training, etc.), structural BMP installation timelines, spill response and mitigation/eradication timelines will also be evaluated to determine BMP groups/tiers. Activities that occur more frequently or over the earlier part of the period of interest will be grouped separately from activities that occur less frequently or later within the period of interest. Timeliness targets will be defined during the analysis process based on the review of data to be submitted by the participating entities.

5.3.4. Comparative Analysis

The number of structural BMPs, maintenance activity units, spill/illicit discharge responses, inspected facilities, and inspected construction sites will be evaluated against quantities recorded in other watersheds across the MS4 to facilitate group/tier assignments. Observed quantities will serve as the distinguishing factor across groups/tiers.

Summary statistics from the period of interest will be compared with similar data from previous terms (where applicable) in order to determine the progress or regress from a water quality perspective. Comparisons will also be made to similar benchmark/reference data from the sources presented in subsection 2.2. Grouping will be determined in accordance with the evaluation criteria provided in the POC worksheets in Appendix B.

5.3.5. Spatial Analysis

BMPs with location/point-specific attributes will be evaluated in an ArcGIS map framework to determine similarities in spatial characteristics for groups/tiers. Under this analysis, BMPs that are uniformly distributed upstream of the most-downstream sampling stations (if area upstream of reference point represents at least 50% of watershed) will be grouped separately from BMPs located further downstream within the watershed. BMP coverage/service area attributes will also be evaluated to determine similarities in coverage extents.

Location-specific or coverage-related pollution source data will also be analyzed to determine the pollution potential risk within each applicable watershed.

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6. Watershed BMP and/or Water Quality Groups/Tiers

This section provides the method for presenting results obtained via the analysis worksheets, assigning BMP and water quality (POC) groups/tiers, and reporting the grouping/tier for each watershed.

6.1. Overview

Upon completion of the BMP and POC evaluation and analysis, grouping for each set of analysis will be compiled and respective groups/tiers assigned as described below. BMP grouping for the BMP portion of the analysis will be adjusted based on the jurisdictional limits of each participating entity for the watershed under evaluation. For example, for a watershed that may have a 57% and 33% jurisdictional split between two entities, the evaluation results of data provided by the two entities will result in adjustments by 0.57 and 0.33, respectively. Final groups/tiers will be assigned for each watershed.

6.2. Presentation of Results

Results obtained from the BMP and POC evaluation and analysis worksheets will be presented in the BMP Data Metrics and Evaluation Results Summary and the Water Quality Data Metrics and Evaluation Results Summary Tables, respectively. Templates of the respective tables are provided in Appendix C.

6.3. Assigning BMP/Water Quality Groups/Tiers

Each watershed will have a BMP implementation-only group/tier and a water quality POC only-group/tier after tabulation of results in the tables provided in Appendix C. BMP and POC groups/tiers will then be combined to determine the combined group/tier for each watershed. This will be done by calculating the cumulative average of all results assigned to each MCM or POC for the watershed.

BMP only, water quality (POCs) only, and overall group/tier classifications will be assigned as follows:

- Tier V – BMP/POC evaluation results are closely aligned with BANEP Tier V criteria
- Tier IV – BMP/POC evaluation results are closely to moderately aligned with BANEP Tier V criteria
- Tier III – BMP/POC evaluation results are moderately aligned with BANEP Tier V criteria
- Tier II – BMP/POC evaluation results are moderately to least aligned with BANEP Tier V criteria
- Tier I – BMP/POC evaluation results are least aligned with BANEP Tier V criteria
- ND – No Data Collected (data not collected by participant or watershed area outside RWWCP participant's jurisdiction)
- N/A – Data not applicable (BMP not applicable for participant)

The results provided in Appendix C will be used to present the final groups/tiers assigned to each MCM and POC and the overall final watershed group/tier classification.

6.4. Interpretation of Results

Based on the inherent assumptions of the BANEP outlined in subsection 5.1, a comments section will be included with the report to convey information related to, but not limited to, the following:

- A summary of data not collected
- Grouping inconsistencies with assumptions
- Analysis targets and goals defined based on the data received
- Deviations in analysis process or additional assumptions made due to data or other constraints
- Recommendations for future analysis and evaluations

Participants will interpret the provided results to draw conclusions based on local conditions, current programmatic activities, and assumptions and deviations in their respective jurisdictions. Participants may not be able to establish BMP effectiveness based on these results. It is the Participants' discretion to incorporate findings from this effort into their stormwater programs or annual reporting. BMP effectiveness evaluation information may be obtained from Participants upon request.

7. Summary

7.1. BANEP Summary

This document provides the method and approach to be used to evaluate BMPs through the regional program as part of the larger goal of using the results to document any improvements in water quality presumably resulting from the implementation of BMPs. The results of the method and approach will also provide participating entities with data that will facilitate their BMP implementation decision-making processes.

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8. References

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Appendix A

Data Collection Checklists and Templates

MCM 1

MS4 Maintenance Activities

Prepared by:_____Date:_____MS4: _____

Permit #:_____Period: _____Project: RWWCP BANEP_____

Structural Controls (Infrastructure)

Lists (Spreadsheet Format)

List of structural BMPs, locations (address/lat/long), BANEP subgroup type (proprietary, preservation/undisturbed, conveyance, detention/infiltration, vegetative, Low Impact Development (LID)/Reduction in Impervious Cover (RIC)), wetlands, other, and dates of full operational status. ☐Yes ☐No ☐NA

Maps (GIS Format)

Map including a layer file of structural BMPs and attributes listed above as well as delineation of residential, commercial, industrial, transportation, undeveloped, recreational/open areas within watershed and other watersheds in MS4. ☐Yes ☐No ☐NA

POCs (Spreadsheet Format) – Performed by Program Consultant

POCs targeted/addressed by BMPs provided above. ☐Yes ☐No ☐NA

Structural Controls (Maintenance)

Lists (Spreadsheet Format)

List of maintenance activities, activity measurable unit, dates of activities, locations/coverage areas, BANEP subgroup type, and structural controls maintained. ☐Yes ☐No ☐NA

Measurable Units (Spreadsheet Format)

Breakdown of maintenance activity units (volume/hours/area/length) by quarter and locations where they occurred within MS4. ☐Yes ☐No ☐NA

Maps (GIS Format)

Map including a layer file showing locations of maintenance activities or activity units as well as delineation of residential, commercial, industrial, transportation, undeveloped, recreational/open areas within watershed and other watersheds in MS4. ☐Yes ☐No ☐NA

POCs (Spreadsheet Format) – Performed by Program Consultant

POCs targeted/addressed by maintenance activities documented above. ☐Yes ☐No ☐NA

MCM 1

MS4 Maintenance Activities

Prepared by:_____Date:_____MS4: _____

Permit #:_____Period: _____Project: RWWCP BANEP_____

Roadways (Street Sweeping)

Lists (Spreadsheet Format)

List of streets sweeping activities, activity measurable unit, dates of activities, and locations/coverage areas.	☐Yes	☐No	☐NA
List of deicing events, activity measurable unit, dates, and locations/coverage areas (List must include third party deicing within MS4 jurisdiction)	☐Yes	☐No	☐NA
List of active construction sites and locations (See MCM 6).	☐Yes	☐No	☐NA
List of other deicing mitigation mechanisms (including third parties) and locations.	☐Yes	☐No	☐NA

Measurable Units (Spreadsheet Format)

Breakdown of sweeping activity units (volume/hours/area/length) by quarter and locations where they occurred within MS4.	☐Yes	☐No	☐NA
Breakdown of deicing event units (volume/hours/area/length) by quarter and locations where they occurred within MS4.	☐Yes	☐No	☐NA

Maps (GIS Format)

Map including a layer file showing locations of sweeping activities or activity units, locations of deicing events and other deicing mitigation mechanisms, locations of active construction sites as well as delineation of residential, commercial, industrial, transportation, undeveloped, recreational/open areas within watershed and other watersheds in MS4.	☐Yes	☐No	☐NA

POCs (Spreadsheet Format) – Performed by Program Consultant

POCs targeted/addressed by street sweeping activities documented above.	☐Yes	☐No	☐NA

MCM 1

MS4 Maintenance Activities

Prepared by:_____Date:_____MS4: _____

Permit #:_____Period: _____Project: RWWCP BANEP_____

Floatables (Litter Pickup/Floatables Monitoring)

Lists (Spreadsheet Format)

List of litter pickup or floatables monitoring activities (in-house or contracted), clean-up events and curbside recycling and leaf and brush program [unless provided elsewhere under MCM7 and 3 respectively], activity measurable units, dates of activities, and locations/coverage areas.	☐Yes	☐No	☐NA

Measurable Units (Spreadsheet Format)

Breakdown of litter pickup activity units (volume/hours/area/length) by quarter and locations where they occurred within MS4.	☐Yes	☐No	☐NA
Unless provided elsewhere (MCM 7), breakdown of litter pickup activity units for clean-up events (attendance/participation/miles/volunteer hours) by quarter and locations where they occurred within MS4.	☐Yes	☐No	☐NA
Unless provided elsewhere (MCM 3), breakdown of curbside recycling and leaf and brush program activity units (volume) by quarter and locations where they occurred within MS4.	☐Yes	☐No	☐NA

Maps (GIS Format)

Map including a layer file(s) showing locations of litter pickup activities or activity units, locations of floatables prevention/collection BMPs as well as delineation of residential, commercial, industrial, transportation, undeveloped, recreational/open areas within watershed and other watersheds in MS4.	☐Yes	☐No	☐NA

POCs (Spreadsheet Format) – Performed by Program Consultant

POCs targeted/addressed by litter pickup activities documented above.	☐Yes	☐No	☐NA

MCM 2

Post-Construction Storm Water Control Measures

Prepared by:_____Date:_____MS4: _____

Permit #:_____Period: _____Project: RWWCP BANEP_____

Areas of New development and Significant Redevelopment and Flood Control Projects

Documentation (Hard Copies or URLs)

Is there an ordinance (enforcement mechanism) that governs new development and significant redevelopment projects and flood control/drainage improvement projects?	☐Yes	☐No	☐NA
Is there a criteria manual(s) that governs new development and significant redevelopment projects and flood control/drainage improvement projects?	☐Yes	☐No	☐NA

Lists (Spreadsheet Format)

List of completed new development or significant redevelopment projects, dates of completion, locations (lat/long or addresses) and water quality considerations/long term O&M provisions included.	☐Yes	☐No	☐NA
List of completed flood control/drainage improvement projects, dates of completion, locations (lat/long or addresses) and water quality considerations/long term O&M provisions included.	☐Yes	☐No	☐NA

Maps (GIS Format)

Map including a layer file showing locations of completed development and flood control projects as well as delineation of residential, commercial, industrial, transportation, undeveloped, recreational/open areas within watershed and other watersheds in MS4.	☐Yes	☐No	☐NA

POCs (Spreadsheet Format) – Performed by Program Consultant

POCs targeted/addressed by development and flood control projects documented above.	☐Yes	☐No	☐NA

MCM 3

Illicit Discharge Detection and Elimination

Prepared by:_____Date:_____MS4: _____

Permit #:_____Period: _____Project: RWWCP BANEP_____

Illicit and Allowable Discharges, Outfall Map, and Household Hazardous Waste (HHW)

Documentation (Hard Copies or URLs)

Is there an ordinance (enforcement mechanism) that governs/facilitates illicit and allowable waste tracking and enforcement?	☐Yes	☐No	☐NA
Is there an up-to-date outfall map that governs/facilitates illicit and allowable waste tracking and enforcement?	☐Yes	☐No	☐NA
Is there a criteria manual(s) that governs/facilitates illicit and allowable waste tracking and enforcement?	☐Yes	☐No	☐NA

Lists (Spreadsheet Format)

List of HHW activities, dates, modes of collection, locations (address/lat/long)/coverage areas/service areas and/or sources of waste.	☐Yes	☐No	☐NA

Measurable Units (Spreadsheet Format)

Breakdown of HHW activity units (volume) by type, quantity/quarter and locations where they occurred within MS4.	☐Yes	☐No	☐NA
Breakdown of other HHW activity units (hours/area/length) by quarter and locations where they occurred within MS4.	☐Yes	☐No	☐NA

Maps (GIS Format)

Map including a layer file of locations of HHW activities or activity units as well as delineation of residential, commercial (motor vehicle fluid sources), industrial and transportation land uses within watershed.	☐Yes	☐No	☐NA

POCs (Spreadsheet Format) – Performed by Program Consultant

POCs targeted/addressed by HHW activities.	☐Yes	☐No	☐NA

MCM 3

Illicit Discharge Detection and Elimination

Prepared by:_____Date:_____MS4: _____

Permit #:_____Period: _____Project: RWWCP BANEP_____

Sanitary Sewer Overflows (SSOs), Spills, Hazardous and Illicit Discharge/Dumping Response/Mitigation

Lists (Spreadsheet Format)

List of SSOs, measurable unit, locations (lat/long/addresses), dates, discharge status (whether it made it to the storm sewer system), response dates, response actions, follow-up dates, follow up actions/investigations, work order dates, work order actions and dates of completion of eradication/mitigation/repair activities.	☐Yes	☐No	☐NA
List of spills (including hazardous spills), measurable unit, locations (lat/long/addresses), dates, discharge status (whether it made it to the storm sewer system), response dates, response actions, follow-up dates, follow up actions/investigations, work order dates, work order actions and dates of completion of eradication/mitigation/repair activities.	☐Yes	☐No	☐NA
List of illicit discharges (including illegal dumping), measurable units, locations (lat/long/addresses), dates, discharge status (whether it made it to the storm sewer system), response dates, response actions, follow-up dates, follow up actions/investigations, work order dates, work order actions and dates of completion of eradication/mitigation/repair activities.	☐Yes	☐No	☐NA
List of qualifying rain events (0.1 inches and above) and dates.	☐Yes	☐No	☐NA
List of IDDE/illegal dumping reports/calls and locations/sources (see MCM 7).	☐Yes	☐No	☐NA
List of proactive mitigation measures (CCTVs, Initiatives etc.) implemented, dates of implementation and locations/coverage areas.	☐Yes	☐No	☐NA
List of identified onsite sewage systems, waste water treatment plants, lift stations, identified hotspots, and high-risk facilities and their locations.	☐Yes	☐No	☐NA

Measurable Units (Spreadsheet Format)

Breakdown of SSOs, spills (including hazardous events), illicit discharge, illegal dumping quantities (volume) by, types, quantity/quarter and locations where they occurred within the MS4.	☐Yes	☐No	☐NA

Maps (GIS Format)

Map including a layer file showing locations of SSOs, spills, illicit discharges and associated attributes above as well as delineation/locations of MS4 outfalls, waste water treatment plants, identified onsite sewage systems, identified hotspots, and locations of proactive mitigation measures.	☐Yes	☐No	☐NA

POCs (Spreadsheet Format) – Performed by Program Consultant

POCs targeted/addressed by response and mitigation measures documented above.	☐Yes	☐No	☐NA

MCM 4

Pollution Prevention/Good Housekeeping for Municipal Operations

Prepared by:_____Date:_____MS4: _____

Permit #:_____Period: _____Project: RWWCP BANEP_____

Pollution Prevention/Good Housekeeping (PP/GH) Program (Municipal Facilities, Training, and Pesticide, Herbicide and Fertilizer Application Program)

Documentation (Hard Copies or URLs)

Is there an up-to-date list of all municipal facilities?	☐Yes	☐No	☐NA
Is there documentation of priority pollutants or POCs?	☐Yes	☐No	☐NA
Is there documentation of priority facilities?	☐Yes	☐No	☐NA
Is there documentation of a mechanism for inspections and inspection guidelines?	☐Yes	☐No	☐NA
Is there documentation of a Pesticide, Herbicide and Fertilizer Application Program (including list of licensed applicators)?	☐Yes	☐No	☐NA

Lists (Spreadsheet Format)

List of training activities/records of training, operational staff trained and dates of training. Trained staff will be grouped under street and maintenance, public works and transportation, water utilities operations and maintenance, stormwater maintenance and operations, storage areas, fleet and vehicle maintenance, municipal landfill operations, and municipal airport operations.	☐Yes	☐No	☐NA
List of identified priority pollutants/POCs and list of locations/areas where pesticide, herbicide and fertilizer program guidelines were applied.	☐Yes	☐No	☐NA

Maps (GIS Format)

Map including a layer file of locations of municipal facilities including but not limited to animal services, airports, landfills, recreational centers, parks and golf courses, storage facilities, maintenance facilities, water/wastewater plants, fire stations and pools within watershed.	☐Yes	☐No	☐NA

POCs (Spreadsheet Format) – Performed by Program Consultant

POCs targeted/addressed by activities listed above.	☐Yes	☐No	☐NA

MCM 4

Pollution Prevention/Good Housekeeping for Municipal Operations

Prepared by:_____Date:_____MS4: _____

Permit #:_____Period: _____Project: RWWCP BANEP_____

PP/GH Program (Facility Inspections)

Lists (Spreadsheet Format)

List of municipal facilities (including sub grouping: animal services, airports, landfills, recreational centers, parks and golf courses, storage facilities, maintenance facilities, water/waste water plants, fire stations, pools and waste handling facilities), locations (address/lat-long), permit status, inspection status, dates inspected, issues identified, response actions and dates, follow-up actions/investigations and dates, mitigation measures, and dates of completion of eradication/mitigation/repair of inspection issue.	☐Yes	☐No	☐NA
List of qualifying rain events (0.1 inches and above) for the period of interest.	☐Yes	☐No	☐NA
List of proactive mitigation measures implemented and dates of implementation.	☐Yes	☐No	☐NA

Maps (GIS Format)

Map including a layer file showing locations of municipal facilities and associated attributes above.	☐Yes	☐No	☐NA

POCs (Spreadsheet Format) – Performed by Program Consultant

POCs targeted/addressed by inspection and response measures documented above.	☐Yes	☐No	☐NA

MCM 4

Pollution Prevention/Good Housekeeping for Municipal Operations

Prepared by:_____Date:_____MS4: _____

Permit #:_____Period: _____Project: RWWCP BANEP_____

PP/GH Program (Waste Handling)

Lists (Spreadsheet Format)

List of waste collection, handling and disposal mechanisms, locations (address/lat-long)/coverage/service areas, and implementation/availability dates.	☐Yes	☐No	☐NA

Maps (GIS Format)

Map including a layer file showing locations of waste collection, handling and disposal sites and associated attributes above as well as delineation of residential, commercial, industrial, transportation, undeveloped, recreational/open areas within watershed and other watersheds in MS4.	☐Yes	☐No	☐NA

POCs (Spreadsheet Format) – Performed by Program Consultant

POCs targeted/addressed by waste collection, handling and disposal measures documented above.	☐Yes	☐No	☐NA

MCM 5

Industrial and High-Risk Runoff

Prepared by:_____Date:_____MS4: _____

Permit #:_____Period: _____Project: RWWCP BANEP_____

Policies, Procedures and Monitoring

Documentation (Hard Copies or URLs)

Does the MS4 maintain a list of facilities subject to MSGPs, and/other individual industrial/environmental permits (pretreatment, EPCRA, SARA)/high risk within its jurisdiction.	☐Yes	☐No	☐NA

Lists (Spreadsheet Format)

List of industrial and high-risk facilities, locations (address/lat-long), permit status (MSGP, pretreatment, EPCRA Title III, Section 313, other) inspection status, dates inspected, issues identified, response actions and dates, follow-up actions/investigations and dates, mitigation actions and dates of completion of eradication/mitigation/repair of inspection issue, and numeric/benchmark results review status (exceedances).	☐Yes	☐No	☐NA
List of qualifying rain events (0.1 inches and above) during the period of interest.	☐Yes	☐No	☐NA
List of facilities with proactive mitigation measures implemented, dates of implementation.	☐Yes	☐No	☐NA

Maps (GIS Format)

Map including a layer file showing locations of industrial and high-risk runoff and associated attributes above.	☐Yes	☐No	☐NA

POCs (Spreadsheet Format) – Performed by Program Consultant

POCs targeted/addressed by inspections, mitigation and review activities documented above.	☐Yes	☐No	☐NA

MCM 6

Construction Site Storm Water Runoff

Prepared by:_____Date:_____MS4: _____

Permit #:_____Period: _____Project: RWWCP BANEP_____

Regulatory Requirements, Training and Inspections

Documentation (Hard Copies or URLs)

Is there an ordinance (enforcement mechanism) that governs development and/or construction activities as they relate to enforcement of construction general permit (CGP) requirements?	☐Yes	☐No	☐NA
Is there a criteria/guidelines manual(s) that governs development and/or construction activities as they relate to stormwater quality and enforcement of construction general permit (CGP) requirements?	☐Yes	☐No	☐NA

Lists (Spreadsheet Format)

List of active construction sites (municipal and other), locations (address/lat-long), permit status (small, large or other) and size (acreage), inspection status, inspection type (operator/oversight), dates inspected, issues identified, follow-up actions/investigations and dates, enforcement actions and dates, mitigation actions and dates of completion of eradication/mitigation/repair of inspection issues.	☐Yes	☐No	☐NA
List of active construction sites and the status of the following and dates completed: pre-development stormwater quality reviews, pre-development meetings, operator notification of regulatory requirements, updated sites listing and operator training.	☐Yes	☐No	☐NA
List of qualifying rain events (0.1 inches and above) for the period of interest.	☐Yes	☐No	☐NA

Measurable Units (Spreadsheet Format)

Breakdown of active construction sites by permit type (including project acreage), total acreage/quarter and locations where they occurred within the MS4.	☐Yes	☐No	☐NA

Maps (GIS Format)

Map including a layer file showing locations of active construction sites and associated attributes above within the MS4.	☐Yes	☐No	☐NA

POCs (Spreadsheet Format) – Performed by Program Consultant

POCs targeted/addressed by documentation, inspections and mitigation activities listed above.	☐Yes	☐No	☐NA

MCM 7

Public Education and Outreach/Public Involvement & Participation

Prepared by:_____Date:_____MS4: _____

Permit #:_____Period: _____Project: RWWCP BANEP_____

Outreach/Public Input/Complaints

Lists (Spreadsheet Format)

List of public education/participation mechanisms (if not claimed under another MCM), platforms/media, locations (if applicable), BANEP subgroup type (online platforms, radio and tv forms, billboards, hardcopy materials, events, residential outreach, schools outreach and business/commercial outreach), and dates of implementation/availability.	☐Yes	☐No	☐NA
List of audiences/communities targeted by outreach platforms, locations of communities, BANEP subgroup type (residential, commuters, commercial/businesses, industries, MS4 operators/employees, schools), evidence of audience reached (participation, physical interaction, event location etc.).	☐Yes	☐No	☐NA
List of public reporting/complaint tools, locations, and dates/times of availability.	☐Yes	☐No	☐NA
List of public complaints/reports, associated issue/type of complaint, measurable unit, locations (lat/long/addresses), dates, discharge status (whether issue resulted in discharge to the storm sewer system), response dates, response actions, follow-up dates, follow up actions/investigations, work order dates, work order actions and dates of completion of eradication/mitigation/repair activities.	☐Yes	☐No	☐NA
List of qualifying rain events (0.1 inches and above) for the period of interest.	☐Yes	☐No	☐NA

Maps (GIS Format)

Map including a layer file showing locations of public education outreach events and audiences reached, billboards, distributed materials, posted or installed decals, complaint sources, and response measures within the MS4.	☐Yes	☐No	☐NA

POCs (Spreadsheet Format) – Performed by Program Consultant

POCs targeted/addressed by above listed public education and participation activities.	☐Yes	☐No	☐NA

MCM 8

Monitoring, Evaluation and Reporting

Prepared by:_____Date:_____MS4: _____

Permit #:_____Period: _____Project: RWWCP BANEP_____

Monitoring, Evaluation and Reporting

Lists (Spreadsheet Format)

List of monitoring activities, locations, BANEP subgroup types (dry weather, wet weather, outfall, industrial/high risk, floatables, bioassessment, other), illicit discharges or exceedances observed, dates of observations, response actions and dates, follow-up actions/investigations and dates, mitigation actions and dates of completion of elimination/mitigation/repair of cause of identified discharge or exceedance.	☐Yes	☐No	☐NA
List of qualifying rain events (0.1 inches and above) during period of interest.	☐Yes	☐No	☐NA
List of third party connections to MS4 system and locations.	☐Yes	☐No	☐NA

Maps (GIS Format)

Map including a layer file showing locations of monitoring activities and associated attributes above as well as third party connections to MS4 system.	☐Yes	☐No	☐NA

POCs (Spreadsheet Format) – Performed by Program Consultant

POCs targeted/addressed by monitoring and mitigation activities documented above.	☐Yes	☐No	☐NA

OTHER

Impaired and/or TMDL Receiving Water Bodies

Prepared by:_____Date:_____MS4: _____

Permit #:_____Period: _____Project: RWWCP BANEP_____

Targeted Controls or Focused BMPs

Documentation (Hard Copies or URLs)

Are there any additional BMPs not covered elsewhere or implemented based solely on Impaired Water Bodies or TMDL Requirements?	☐Yes	☐No	☐NA

Lists (Spreadsheet Format)

List of targeted controls/focused BMPs (bacteria and non-bacteria), locations (address/lat-long), BANEP subgroup type, dates of full operational status, review results of exceedances over benchmarks/other limits, follow-up actions/investigations and dates, mitigation actions and dates of completion of elimination/mitigation/repair of cause of identified exceedances.	☐Yes	☐No	☐NA
List of qualifying rain events (0.1 inches and above) during period of interest.	☐Yes	☐No	☐NA

Maps (GIS Format)

Map including a layer file showing locations of targeted controls/focused BMPs and associated attributes above as well as third party connections to MS4 system.	☐Yes	☐No	☐NA

POCs (Spreadsheet Format)

POCs targeted/addressed by targeted controls/focused BMPs above.	☐Yes	☐No	☐NA

NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS - BANEP DATA COLLECTION FORM TEMPLATES
Revised [5/1/19]
GENERAL INFORMATION

Introduction

The BANEP data collection form templates attached illustrate (based on our plan assumptions) the type and format of data required to perform the analysis and evaluation steps of the BANEP. The forms provide two main data entry header coulmns as described in the color coding below and shall be used in concert with the data collection checklists. The data currently entered in the form templates represents the drop down selection menu options available to form users. Participating entities shall be provided with electronic versions of the form that will include additional "mouseover" directions where applicable on what information to enter into the data entry fields.

Color Coding

Light Blue	Light blue shading or highlighting represents fields that have prepopulated drop down menu selections.
Clear	No shading or highlighting represents fields that will be populated by form users based on directions provided.

Assumptions

1. Drop down selection menu options were derived from information that participating entities have used to complete MS4 permit annual reports in the past and from documents such as the iSWM^{TM} criteria manual.
2. The template will be updated as needed based on feedback obtained from participating entities.

Structural BMP Name (City Reference)	BMP Category	BMP Location		BMP Operational?	BMP Implementation/Start Date
		Latitude	Longitude		
	Proprietary			Yes	
	Preservation/Undisturbed			No	
	Conveyance				
	Detention/Infiltration				
	Vegetative/Filtration				
	Low Impact Development (LID)				
	Reduction in Impervious Cover (RIC)				
	Wetlands				
	Other				

Activity Name (City Reference)	BMP Maintenance Activity Name	BMP Activity Type	BMP Name (City ID)	BMP Category	Activity Date
	Cleaning/Desilting	Aesthetics		Proprietary	
	Inspection	System Functionality		Preservation/Undisturbed	
	Construction	Hardscape/Infrastructure		Conveyance	
	Other	Inspections		Detention/Infiltration	
	Special Project	Safety/Mobility/Access		Vegetative/Filtration	
	Tree removal	Other		Low Impact Development (LID)	
	Trimming			Reduction in Impervious Cover (RIC)	
	Mowing			Wetlands	
				Other	

* Summarize units per quarter

Activity Name (City Reference)	*Measurable Unit						Location/Coverage Area			
	Quantity	Miles	Hours	Volume	Area	Dollars	Latitude	Longitude	Service Area	Neighborhood

* Summarize units per quarter

MCM1- Maintenance Activities; BMP - Roadways (Street Sweeping); BMP Type: Non-Structural; BMP Subtype: Operational/Municipal

Activity Name (City Reference)	Roadway BMP Activity	Date	*Measurable Unit						Location/Coverage Area			
			Quantity	Miles	Hours	Volume	Area	Dollars	Latitude	Longitude	Service Area	Neighborhood
	Regular Sweeping											
	Deicing											
	Deicing Sweeping											
	Third Party Sweeping											
	Third Party Deicing											
	Third Party Deicing Sweeping											
	Other Deicing Mitigation BMPs											

* Summarize units per quarter

NCTCOG BANEP - Data Collection Template

MCM1- Maintenance Activities; BMP - Floatables (Litter Pickup); BMP Type: Non-Structural; BMP Subtype: Operational/Municipal

Activity Name (City Reference)	Litter/Floatables Activity/BMP	Activity Date	*Measurable Unit						Location/Coverage Area			
			Quantity	Miles	Hours	Volume	Area	Dollars	Latitude	Longitude	Service Area	Neighborhood
	In-house Event											
	Contracted Event											
	Third Party Event											
	Curbside Recycling											
	Leaf and Brush Program											

* Summarize units per quarter

Project Name (City Reference)	Project Type	Project Location				Completion Date	WQ Considerations	Long-Term O&M Provisions
		Latitude	Longitude	Area	Neighborhood			
	New Development						Yes	Yes
	Significant Redevelopment						No	No
	Flood Control Project							
	Drainage Improvement Project							

NCTCOG BANEP - Data Collection Template

MCM3- IDDE; BMP - Illicit and Allowable Discharges, Outfall Map and Household Hazardous Waste/Vehicle Fluids; BMP Type: Non-Structural; BMP Subtype: Ordinance/Criteria Manual/Maps/Documentation/Interactive

Activity Name (City Reference)	HHW Activity/Mode of Collection	HHW Item	HHW Type	Date	*Measurable Unit				
					Quantity	Miles	Hours	Area	Volume
	In-house activity	Antifreeze	Toxic						
	Contracted activity	Batteries (Lead)	Corrosive						
	Third Party activity	Motor Oil	Flammable						
	Curbside activity	Oil Filters	Other						
	Other	Pesticides							
		Paint Products							
		Aerosols							
		Solvents/Thinners							
		Household Cleaners							
		Flammables							
		Household Batteries							
		Pharmaceuticals							
		Cooking Oil							
		Light Bulbs							
		Corrosives							
		Miscellaneous							

* Summarize units per quarter

Activity Name (City Reference)	Location/Coverage Area			
	Latitude	Longitude	Service Area	Neighborhood

* Summarize units per quarter

NCTCOG BANEP - Data Collection Template

MCM3- IDDE; BMP - SSOs, Spill Response, illicit Discharges; BMP Type: Non-Structural; BMP Subtype: Operational/Municipal

Event Name (City Reference)	Discharge Event	Discharge Event Status	Discharge Date	City Notification Date	Response Date	Discharge Event Resolved	Resolution Date
	SSO	Contained				Yes	
	Hazardous Event	Reached SWS				No	
	Illicit Discharge	Other					
	Illegal Dumping						
	Other						

* Summarize units per quarter

Event Name (City Reference)	*Measurable Unit						Location/Coverage Area				Response Action
	Quantity	Miles	Hours	Volume	Area	Dollars	Latitude	Longitude	Service Area	Neighborhood	

* Summarize units per quarter

Event Name (City Reference)	Follow-up Action/Investigation	Associated Work Order	Work Order Date	Work Order Actions

* Summarize units per quarter

MCM 3 Evaluation Item	Item Name (City Reference)	Date	Measurable Unit							Location/Coverage Area			
			Quantity	Miles	Hours	Volume	Area	Inches	Dollars	Latitude	Longitude	Service Area	Neighborhood
Qualifying Rain Event (> 0.1in)													
IDDE Mitigation Measures (CCTV programs, initiatives etc.)													
Onsite Sewage Systems													
Wastewater Treatment Plants													
Wastewater Treatment Lift Station													
Identified Hotspots													
High-Risk facilities													
Motor Vehicle Garages													
Third Party Connection													

NCTCOG BANEP - Data Collection Template

MCM4- PP/GH for Municipal Operations; BMP - PP/GH Program (Municipal Facilities), Training, Pesticide, Herbicide Fertilizer Application (PHFA); BMP Type: Non-Structural; BMP Subtype: Documentation/Educational

PPGH Item	Municipal Facility Name (City Reference)	Municipal Facility Type	Facility Location		Identified POC
			Latitude	Longitude	
Municipal Facility		Animal Services			
Pesticide Program		Airport			
Identified Priority Pollutants/POC		Landfill			
Municipal Staff Training		Rec Centers			
		Parks			
		Golf Courses			
		Storage Facilities			
		Maintenance Facilities			
		Water Plants			
		Wastewater Plants			
		Fire Stations			
		Public Pools			
		Waste Handling			

NCTCOG BANEP - Data Collection Template

MCM4- PP/GH for Municipal Operations; BMP - PP/GH Program (Municipal Facilities), Training, Pesticide, Herbicide Fertilizer Application (PHFA); BMP Type: Non-Structural; BMP Subtype: Documentation/Educational

PPGH Item	PHFA Program Name (City Reference)	PHFA Program Type	PHFA Implementation Location/Coverage Area				PHFA Implementation Date
			Latitude	Longitude	Service Area	Neighborhood	
Municipal Facility		Pesticide Application					
Pesticide Program		Pest Management					
Identified Priority Pollutants/POC		Fertilizer Application					
Municipal Staff Training		Integrated Management					

NCTCOG BANEP - Data Collection Template

MCM4- PP/GH for Municipal Operations; BMP - PP/GH Program (Municipal Facilities), Training, Pesticide, Herbicide Fertilizer Application (PHFA); BMP Type: Non-Structural; BMP Subtype: Documentation/Educational

PPGH Item	Training Name (City Reference)	Operational/Department Staff Trained	Training Status?	Quantity Trained	Training Date
Municipal Facility		Street & Maintenance	Yes		
Pesticide Program		Public Works and Transportation	No		
Identified Priority Pollutants/POC		Water Utilities Operations and Maintenance			
Municipal Staff Training		Stormwater Maintenance and operations			
		Storage Areas			
		Fleet and Vehicle Maintenance			
		Municipal Landfill Operations			
		Municipal Airport Operations			

Municipal Facility Name (City Reference)	Municipal Facility Type	Permit Status	Permit #	Inspection Status	Date Inspected	Location/Coverage Area	
						Latitude	Longitude
	Animal Services	Permitted		Yes			
	Airport	Not Permitted		No			
	Landfill						
	Rec Centers						
	Parks						
	Golf Courses						
	Storage Facilities						
	Maintenance Facilities						
	Water Plants						
	Wastewater Plants						
	Fire Stations						
	Public Pools						
	Waste Handling						

Municipal Facility Name (City Reference)	Issues identified	Response Action	Response Action Date	Follow-up Action/Investigation	Follow-up Action/Investigation Date
	Follow-up required No Follow-up required				

Municipal Facility Name (City Reference)	Mitigation Measures	Resolution Date	Proactive Mitigation Measure	Proactive Mitigation Measure Implementation Date

Waste Collection/Handling Mechanism (City Reference)	Waste Handling Site	Waste Type	Location/Coverage Area			Implementation/Service date
			Latitude	Longitude	Service Area	
	In-house	Hazardous				
	Contracted	Collection Centers				
	Third Party	Bio-hazardous				
	Other	Recycling				
		Municipal				
		Mobile				
		Other (special, e-waste, etc.)				

Municipal Facility Name (City Reference)	Municipal Facility Type	Permit Status	Permit #	Inspection Status	Date Inspected	Location/Coverage Area	
						Latitude	Longitude
	MSGP	Permitted		Yes			
	Individual SW Permit	Not Permitted		No			
	Individual WW Permit						
	Pretreatment						
	EPCRA Title III, Section 313						
	Other						

Municipal Facility Name (City Reference)	Issues identified	Response Action	Response Action Date	Follow-up Action/Investigation	Follow-up Action/Investigation Date
	Follow-up required				
	No Follow-up required				

Municipal Facility Name (City Reference)	Mitigation Measures	Resolution Date	Proactive Mitigation Measure	Proactive Measure Implementation Date

Municipal Facility Name (City Reference)	Benchmark/Numeric Data Review Status	Exceedances Observed
	Reviewed	Yes
	Not Reviewed	No

Site Name (City Reference)	Site Type	Permit Status	Permit #	*Measurable unit		Project Type	Project Status	Status Date	Inspection Status	Inspection Type
				Quantity	Acreage					
	Municipal	None				Residential	Active			
	Other	Small				Commercial	Inactive		No	Oversight
		Large				Transportation	Completed			
		Other				Industrial				
						Recreational				
						Environmental				
						Other				

* Summarize units per quarter

Site Name (City Reference)	Inspection Date	Location/Coverage Area		Issues identified	Response Action	Response Action Date	Follow-up Action/Investigation
		Latitude	Longitude				
				Follow-up required No Follow-up required	Citation Stop Work Notice of Violation Verbal warning Other		

* Summarize units per quarter

Site Name (City Reference)	Follow-up Action/Investigation Date	Mitigation Measures	Resolution Date	Predevelopment SWQ Review	Predevelopment SWQ Review Date
				Yes No	

* Summarize units per quarter

Site Name (City Reference)	Predevelopment Meeting	Predevelopment Meeting Date	Operator Notification Status	Notification Date	Operator Training	Training Date
	Yes No		Yes No		Yes No	

* Summarize units per quarter

Public Education Item (City Reference)	Public Education/Participation Mechanism	Mechanism Type	Location/Coverage Area			
			Latitude	Longitude	Service Area	Neighborhood
	In-house	Online				
	Contracted	Radio				
	Third Party	TV				
	Other	Billboards				
		Hard copy materials				
		Events				
		Residential outreach				
		Schools outreach				
		Business/Commercial outreach				

Public Education Item (City Reference)	Implementation/Availability Date(s)	Audience Targeted	Audience Reached?	Measurable Unit					
				Quantity	Miles	Hours	Volume	Area	Dollars
		Residential							
		Commuters	no						
		Commercial/businesses	maybe						
		Industries	unknown						
		MS4 operators/employees							
		Schools							

Public Participation Item (City Reference)	Complaint/Reporting/Input Tools	Tool Location			Dates/Times of availability	Complaint/Report/Input Source
		Latitude	Longitude	Other		
	Online				Year-round	Online
	Phone				Normal Business hours	Phone
	Department/Operational Facility				Other	Department/Operational Facility
	Stakeholder Event					Stakeholder Event
	Other					Other

*Add here or refer to other MCM

NCTCOG BANEP - Data Collection Template

MCM7- Public Education and Participation; BMP - Outreach/Public Input/Complaints; BMP Type: Non-Structural; BMP Subtype: Educational/Interactive

Public Participation Item (City Reference)	Report Date	Source Location/Coverage Area				*Associated Issue	Discharge Status	Discharge Date	Response Date
		Latitude	Longitude	Other	Neighborhood				
						SSO	Contained		
						Hazardous Event	Reached SWS		
						Illicit Discharge	Other		
						Illegal Dumping			
						Other			

*Add here or refer to other MCM

Public Participation Item (City Reference)	Resolved	Resolution Date	Measurable Unit						Location/Coverage Area			
			Quantity	Miles	Hours	Volume	Area	Dollars	Latitude	Longitude	Service Area	Neighborhood

*Add here or refer to other MCM

Public Participation Item (City Reference)	Response Action	Follow-up Action/Investigation	Associated Work Order	Work Order Actions	Work Order Date

*Add here or refer to other MCM

NCTCOG BANEP - Data Collection Template

MCM8- Monitoring, Evaluation, Reporting; BMP - Dry, Wet Weather, Industrial Monitoring; BMP Type: Non-Structural; BMP Subtype: Monitoring/Sampling

Program Name (City Reference)	Monitoring Activity Name	Monitoring Type	Monitoring Activity Location/Drainage Area				Illicit Discharge/Exceedances?
			Latitude	Longitude	Service Area	Neighborhood	
		Dry Weather					Illicit Discharge
		Wet Weather					Exceedances
		Dry Weather Screening (Outfall)					No illicit Discharge
		Industrial/High Risk					No Exceedances
		Floatables					
		Bioassessment					
		Other					

Program Name (City Reference)	Illicit Discharge/exceedances ID Date	Response Action	Response Action Date	Follow-up Action/Investigation	Follow-up Action/Investigation Date

Program Name (City Reference)	Mitigation Measures	Resolution Date	Identified third party connection	Identified third party connection date	Third party connection location	
					Latitude	Longitude

Structural or Non-Structural BMP Name (City Reference)	Additional Requirement Name	Targeted Controls/Focused BMPs	Structural BMP Category
	Impaired Water Bodies	Non-Bacteria Controls	Proprietary
	TMDL Water Bodies	Bacteria Control - Sanitary System	Preservation/Undisturbed
	Interim Bacteria Reduction Plan	Bacteria Control - Onsite Sewage	Conveyance
	Other Requirements	Bacteria Control - ID & Dumping	Detention/Infiltration
		Bacteria Control - Animal Sources	Vegetative/Filtration
		Bacteria Control - Residential Education	Low Impact Development (LID)
			Reduction in Impervious Cover (RIC)
			Wetlands
			Other

Structural or Non-Structural BMP Name (City Reference)	POCs	Targeted Controls/Focused BMP Location				Implementation/Completion Date
		Latitude	Longitude	Area	Neighborhood	

Structural or Non-Structural BMP Name (City Reference)	Data review Status	Exceedances?	Response Action	Response Action Date
		Yes		
	No	No		

Structural or Non-Structural BMP Name (City Reference)	Follow-up Action/Investigation	Follow-up Action/Investigation Date	Mitigation Measures	Resolution Date

Structural or Non-Structural BMP Name (City Reference)	Proactive Mitigation Measure	Proactive Measure Implementation Date

Appendix B

Data Analysis and Evaluation Worksheets

(Watershed Name), (# of Entities)
(Entity Names [% jurisdiction])
(BMPs [Source and % Provided])

Evaluation Documentation Form
(Report Month and Year)

DATE: _____

BMP: Structural Controls_____

MCM: 1. Maintenance Activities_____

BMP Type: Structural_____

BMP Subtype: Performance_____

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Quantity/Type					
1.	Are there any structural BMPs in the watershed?	✓		If **Yes**, assign a score of 5 and continue to 2. If **No**, assign score of 0 and continue to 12.	
2.	Are all types of BMPs present in the watershed?			If **Yes**, assign a score of 5 and continue to 4. If **No**, continue to 3.	
3.	As defined in the BANEP, what types of BMPs are present in watershed? a. Proprietary b. Combination c. Preservation/Undisturbed d. Conveyance System e. Detention/infiltration f. Vegetative/Filtration g. LID/RIC h. Wetlands i. Other			If **at least six types present**, assign a score of 4. If **at least four types present**, assign a score of 3. If **three types or less present**, assign a score of 2. Continue to 4.	
4.	Does this watershed have the highest number of structural BMPs (compared to BMPs in other monitored watersheds)?			If **Yes**, assign a score of 5 and continue to 6. If **No**, continue to 5.	
5.	How many structural BMPs are located in this watershed?			If **higher than watersheds average (>10%)**, assign a score of 4. If **equal to watersheds average (within 10%)**, assign a score of 3. If **lower than watersheds average (<10%)**, assign a score of 2. Continue to 6.	
Location/Coverage					
6.	Are all structural BMPs located upstream of sampling location?			If **Yes**, assign a score of 5 and continue to 8. If **No**, continue to 7.	
7.	Where are the structural BMPs located or distributed?			If **majority upstream**, assign a score of 3. If **majority downstream**, assign a score of 1. Continue to 8.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Timelines/Frequency					
8.	Were the structural BMPs completed and functional within first half of year?			If **Yes**, assign a score of 5 and continue to 10. If **No**, go to 9.	
9.	When were the structural BMPs complete and functional?			If **majority within first half of year**, assign a score of 3. If **majority within second half of year**, assign a score of 1. Continue to 10.	
POCs Addressed					
10.	Are all POCs addressed?			If **Yes**, assign a score of 5 and continue to 12. If **No**, go to 11.	
11.	What POCs are addressed?			If **majority addressed**, assign a score of 4. If **half of the POCs addressed**, assign a score of 3. If **less than half addressed**, assign a score of 2. Continue to 12.	
Land Use/Pollution Potential					
12.	Based on the review of land use and upstream activities, is there a high risk for all applicable POCs (Evaluate overall pervious-impervious ratio)? a. Residential b. Commercial c. Industrial d. Transportation e. Undeveloped f. Recreational/Open Areas			If **ratio < than 0.25**, deduct a score of 5 and calculate total score. If **No**, go to 13.	
13.	What is the risk level for POC contribution by upstream land use/activities?			If **ratio between 0.25 -0.70**, deduct a score of 4. If **ratio between 0.70-1**, deduct a score of 3. If **ratio between 1.00 -1.5**, deduct a score of 2. If **ratio >1.5**, deduct a score of 1 Calculate total score	
TOTAL SCORE					

DATE: _____ **BMP:** Structural_____

MCM: 1. Maintenance Activities_____ **BMP Type:** Non-structural_____

BMP Subtype: Maintenance/Operational/Municipal____

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Quantity/Type					
1.	Were any of the structural control maintenance activities conducted in the watershed?	✓		If **Yes**, assign a score of 5 and continue to 2. If **No**, assign score of 0 and continue to 12.	
2.	Were all the maintenance activity units expended in this watershed?			If **Yes**, assign a score of 5 and continue to 4. If **No**, continue to 3.	
3.	How many maintenance activity units were expended in this watershed (determine the units expended in all watersheds in City)?			If **higher than watersheds average (>10%)**, assign a score of 4. If **equal to watersheds average (within 10%)**, assign a score of 3. If **lower than watersheds average (<10%)**, assign a score of 2. Continue to 4.	
4.	How many stormwater infrastructure facilities were maintained in this watershed (determine the quantity maintained in all watersheds in City)?			If **higher than watersheds average (>10%)**, assign a score of 4. If **equal to watersheds average (within 10%)**, assign a score of 3. If **lower than watersheds average (<10%)**, assign a score of 2. Continue to 4.	
5.	Were all types of BMP maintenance activities completed in the watershed?			If **Yes**, assign a score of 5 and continue to 6. If **No**, continue to 5.	
6.	As defined in the BANEP, what types of BMP maintenance activities were completed in the watershed? a. Aesthetics (vegetative/trash) b. System Functionality (sediment removal etc.) c. Hardscape & Infrastructure (sidewalks, inlets, channels pipes etc.) d. Inspections e. Safety/Mobility/Access f. Other Elements			If **majority of activities completed**, assign a score of 4. If **equal number of activities completed**, assign a score of 3. If **less than half of activities completed**, assign a score of 2. Continue to 7.	
Location/Coverage					
7.	Were all BMP maintenance activities/units located upstream of sampling location?			If **Yes**, assign a score of 5 and continue to 9. If **No**, continue to 8.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
8.	Where were the BMP maintenance activity units located or distributed?			If **majority upstream**, assign a score of 3. If **majority downstream**, assign a score of 1. Continue to 9.	
Timelines/Frequency					
9.	When were the BMP maintenance activities completed (Evaluate units/quarter)?			If **majority within first half of year**, assign a score of 5. If **evenly distributed throughout year**, assign a score of 3. If **sporadic or majority within second half of year**, assign a score of 1. Continue to 10.	
POCs Addressed					
10.	Are all POCs addressed?			If **Yes**, assign a score of 5 and continue to 12. If **No**, go to 11.	
11.	What POCs are addressed?			If **majority addressed**, assign a score of 4. If **half of the POCs addressed**, assign a score of 3. If **less than half addressed**, assign a score of 2. Continue to 12.	
Land Use/Pollution Potential					
12.	Based on the review of land use and upstream activities, is there a high risk for all applicable POCs (Evaluate overall pervious-impervious ratio)? a. Residential b. Commercial c. Industrial d. Transportation e. Undeveloped f. Recreational/Open Areas			If **ratio < than 0.25**, deduct a score of 5 and calculate total score. If **No**, go to 13.	
13.	What is the risk level for POC contribution by upstream land use/activities?			If **ratio between 0.25 -0.70**, deduct a score of 4. If **ratio between 0.70-1**, deduct a score of 3. If **ratio between 1.00 -1.5**, deduct a score of 2. If **ratio >1.5**, deduct a score of 1 Calculate total score	
TOTAL SCORE					

DATE: _____

BMP: Roadways (Street Sweeping)

MCM: Maintenance Activities

BMP Type: Non-structural

BMP Subtype: Operational/Municipal

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Quantity/Type					
1.	Were any street sweeping activities conducted in this watershed?	✓		If **Yes**, assign a score of 5 and continue to 2. If **No**, assign score of 0 and continue to the next BMP or MCM.	
2.	Were majority of street sweeping activities (miles and/or hours) or other unit of measure completed in this watershed?			If **Yes**, assign a score of 5 and continue to 4. If **No**, continue to 3.	
3.	How many street sweeping hours or miles were expended/covered in this watershed (determine the hours or miles expended/covered in all watersheds in City/monitored watersheds)?			If **higher than watersheds average (>10%)**, assign a score of 4. If **equal to watersheds average (within 10%)**, assign a score of 3. If **lower than watersheds average (<10%)**, assign a score of 2. Continue to 4.	
Location/Coverage					
4.	Were all street sweeping activities located upstream of sampling location?			If **Yes**, assign a score of 5 and continue to 6. If **No**, continue to 5.	
5.	Where were the street sweeping activities located or distributed?			If **majority upstream**, assign a score of 3. If **majority downstream**, assign a score of 1. Continue to 6.	
Timelines/Frequency					
6.	When were the street sweeping activities completed (Evaluate hrs. or miles/units/quarter)?			If **amount/quarter trending upward**, assign a score of 5. If **evenly distributed throughout year**, assign a score of 3. If **amount/quarter trending downward**, assign a score of 1. Continue to 7.	
7.	Were street sweeping activities completed in a timely manner after deicing events (Evaluate timeliness based on a "defined" target)?			If **completed majority of time within target timeframe**, assign a score of 5. If **equal number completed within and outside target timeframe**, assign a score of 3. If **completed majority of the time outside target timeframe**, assign a score of 1. Continue to 8.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
POCs Addressed					
8.	Are all POCs addressed?			If **Yes**, assign a score of 5 and continue to 10. If **No**, go to 9.	
9.	What POCs are addressed?			If **majority addressed**, assign a score of 4. If **half of the POCs addressed**, assign a score of 3. If **less than half addressed**, assign a score of 2. Continue to 10.	
Land Use/Pollution Potential					
10.	Based on the review of the items below, is there a high risk for all applicable POCs (Evaluate watershed totals vs watershed averages across City/monitored watersheds)? a. # of Active construction sites upstream (acreage) b. # of deicing events c. # of transportation/paved ROW upstream			If **high potential (all items evaluated higher than watersheds averages)**, deduct a score of 5 and calculate total score. If **No**, go to 11.	
11.	What is the risk level for POC contribution by upstream land use/activities?			If **medium to high potential (majority of items evaluated higher than watersheds averages)**, deduct a score of 4. If **average potential (half the number of items evaluated higher than watersheds averages)**, deduct a score of 3. If **average to low potential (less than half the number of items evaluated higher than watersheds averages)**, deduct a score of 2. If **low potential (none of the items evaluated higher than watersheds averages),** deduct a score of 1. Calculate total score	
TOTAL SCORE					

DATE: _____

BMP: Floatables (Litter Pickup)

MCM: 1. Maintenance Activities

BMP Type: Non-structural

BMP Subtype: Operational/Municipal

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Quantity/Type					
1.	Were any litter pickup activity units (miles/hours/tonnage/acreage/cu. yd) conducted in this watershed?	✓		If **Yes**, assign a score of 5 and continue to 2. If **No**, assign score of 0 and continue to the next BMP or MCM.	
2.	Were majority of litter pickup activity units completed in this watershed?			If **Yes**, assign a score of 5 and continue to 4. If **No**, continue to 3.	
3.	How many litter pickup units were recorded in this watershed (determine the hours, miles, tonnage recorded in all watersheds in City/municipality/monitored watersheds)?			If **higher than watersheds average (>10%)**, assign a score of 4. If **equal to watersheds average (within 10%)**, assign a score of 3. If **lower than watersheds average (<10%)**, assign a score of 2. Continue to 4.	
Location/Coverage					
4.	Were all litter pickup activities/devices located upstream of sampling location (Neighborhoods served, source of drop offs, location of pickup events etc.)?			If **Yes**, assign a score of 5 and continue to 6. If **No**, continue to 5.	
5.	Where were the litter pickup activities located or distributed?			If **majority upstream**, assign a score of 3. If **majority downstream**, assign a score of 1. Continue to 6.	
Timelines/Frequency					
6.	When were the litter pickup activities completed (Evaluate hrs., tonnage or miles/quarter)?			If **amount/quarter trending upward**, assign a score of 5. If **evenly distributed throughout year**, assign a score of 3. If **amount/quarter trending downward**, assign a score of 1. Continue to 7.	
POCs Addressed					
7.	Are all POCs addressed (Evaluate what items are collected/picked up)?			If **Yes**, assign a score of 5 and continue to 9. If **No**, go to 8.	
8.	What POCs are addressed?			If **majority addressed**, assign a score of 4. If **half the number of POCs addressed**, assign a score of 3. If **less than half addressed**, assign a score of 2. Continue to 9.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Land Use/Pollution Potential					
9.	Based on the review of land use and upstream activities, is there a high risk for all applicable POCs (Evaluate overall pervious-impervious ratio)? a. Residential b. Commercial c. Industrial d. Transportation e. Undeveloped f. Recreational/Open Areas			If **ratio < than 0.25**, deduct a score of 5 and calculate total score. If **No**, go to 10.	
10.	What is the risk level for POC contribution by upstream land use/activities?			If **ratio between 0.25 -0.70**, deduct a score of 4. If **ratio between 0.70-1**, deduct a score of 3. If **ratio between 1.00 -1.5**, deduct a score of 2. If **ratio >1.5**, deduct a score of 1 Calculate total score	
TOTAL SCORE					

DATE: _____

BMP: New Development & Significant Redevelopment and Flood Control

MCM: 2. Post Construction

BMP Type: Non-structural/Structural

BMP Subtype: Ordinance/Criteria Manual/Documentation

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Quantity/Types					
1.	Is there an ordinance (enforcement mechanism) and/or criteria manual applicable to the watershed?	✓		If **Yes to all**, assign a score of 5 If **Yes to one**, assign a score of 3 Continue to 2. If **No to all**, assign score of 0 and continue to 11.	
2.	Were there any flood control/drainage improvement/Other projects completed in the watershed?			If **Yes**, assign a score of 5 and continue to 3. If **No**, assign score of 0 and continue to 11.	
3.	Did all the flood control/drainage improvement/Other projects have water quality considerations?			If **Yes**, assign a score of 5 and continue to 5. If **No**, continue to 4.	
4.	How many of the flood control/drainage improvement/Other projects had water quality considerations?			If **majority considered water quality**, assign a score of 4. If **equal number considered/did not consider water quality**, assign a score of 3. If **less than majority considered water quality**, assign a score of 2. Continue to 5.	
Location/Coverage					
5.	Were all flood control/drainage improvement/Other projects upstream of sampling location?			If **Yes**, assign a score of 5 and continue to 7. If **No**, continue to 6.	
6.	Where were the flood control/drainage improvement/Other projects located or distributed?			If **majority upstream**, assign a score of 3. If **majority downstream**, assign a score of 1. Continue to 7.	
Timelines/Frequency					
7.	Were all the flood control/drainage improvement/Other projects completed and functional within first half of year?			If **Yes**, assign a score of 5 and continue to 9. If **No**, go to 8.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
8.	When were the flood control/drainage improvement/Other projects complete and functional?			If **majority within first half of year**, assign a score of 3. If **majority within second half of year**, assign a score of 1. Continue to 9.	
POCs Addressed					
9.	Were all POCs addressed?			If **Yes**, assign a score of 5 and continue to 11. If **No**, go to 10.	
10.	What POCs were addressed?			If **majority addressed**, assign a score of 4. If **equal number addressed vs not addressed**, assign a score of 3. If **less than half addressed**, assign a score of 2. Continue to 11.	
Land Use/Pollution Potential					
11.	Based on the review of land use and upstream activities, is there a high risk for all applicable POCs (Evaluate overall pervious-impervious ratio)? a. Residential b. Commercial c. Industrial d. Transportation e. Undeveloped f. Recreational/Open Areas			If **ratio < than 0.25**, deduct a score of 5 and calculate total score. If **No**, go to 12.	
12.	What is the risk level for POC contribution by upstream land use/activities?			If **ratio between 0.25 -0.70**, deduct a score of 4. If **ratio between 0.70-1**, deduct a score of 3. If **ratio between 1.00 -1.5**, deduct a score of 2. If **ratio >1.5**, deduct a score of 1 Calculate total score	
TOTAL SCORE					

DATE: _____

BMP: Illicit and Allowable Discharges, Outfall Map and Household Hazardous Waste/Vehicle Fluids

MCM: 3. IDDE

BMP Type: Non-structural

BMP Subtype: Ordinance/Criteria Manual/Maps/Documentation/Interactive

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Quantity/Type					
1.	Is there an ordinance (enforcement mechanism) and/or IDDE Implementation manual and up-to-date MS4 outfall map applicable to the watershed?	✓		If **Yes to all**, assign a score of 5 If **Yes to majority**, assign a score of 3 If **Yes to one**, assign a score of 1 Continue to 2. If **No to all**, assign score of 0 and continue to the next BMP or MCM.	
2.	Was household hazardous waste (HHW) collected by municipality?			If **Yes**, assign a score of 5 and continue to 3. If **No**, assign score of 0 and continue to the next BMP or MCM.	
3.	Were all the types of HHW items collected by municipality?			If **Yes**, assign a score of 5 and continue to 5. If **No**, continue to 4.	
4.	As defined in the BANEP, what types of HHW items were collected by municipality? a. Toxic (antifreeze, pesticides etc.) b. Corrosive (pool chemicals, cleaning solvents etc.) c. Flammable (gasoline, paints etc.) d. Other (Pharmaceuticals)			If **majority of types collected**, assign a score of 4. If **equal number collected/not collected**, assign a score of 3. If **less than majority of types collected**, assign a score of 2. Continue to 5.	
5.	Did the tonnage of HHW collected in this watershed represent the largest across the municipality/monitored watersheds?			If **Yes**, assign a score of 5 and continue to 7. If **No**, continue to 6.	
6.	How many tons of HHW was recorded in this watershed (determine the tonnage recorded in all watersheds in City/municipality/monitored watersheds)?			If **higher than watersheds average (>10%)**, assign a score of 4. If **equal to watersheds average (within 10%)**, assign a score of 3. If **lower than watersheds average (<10%)**, assign a score of 2. Continue to 7.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Location/Coverage					
7.	Were all the sources of HHW (participating/serviced locations/tonnage) attributable to the watershed located upstream of sampling location?			If **Yes**, assign a score of 5 and continue to 9. If **No**, continue to 8.	
8.	Where were the sources of HHW attributable to the watershed located or distributed?			If **majority upstream**, assign a score of 3. If **majority downstream or unknown**, assign a score of 1. Continue to 9.	
Timelines/Frequency					
9.	Were all the HHW collection events/mechanisms available throughout the year?			If **Yes**, assign a score of 5 and continue to 11. If **No**, go to 10.	
10.	How were the HHW collection events/mechanisms distributed throughout the year?			If **available most of the year**, assign a score of 4. If **available half of the year**, assign a score of 3. If **available less than half of the year**, assign a score of 2. If **available only a quarter of year**, assign a score of 1. Continue to 11.	
POCs Addressed					
11.	Were all POCs addressed?			If **Yes**, assign a score of 5 and continue to 13. If **No**, go to 12.	
12.	What POCs were addressed?			If **majority addressed**, assign a score of 4. If **half the number of POCs addressed**, assign a score of 3. If **less than half addressed**, assign a score of 2. Continue to 13.	
Land Use/Pollution Potential					
13.	Based on the review of land use and upstream activities, is there a high risk for all applicable POCs (Evaluate watershed totals vs watershed averages across City/monitored watersheds)? a. Residential b. Commercial (e.g., Auto Repair Shops/Garages) c. Industrial d. Transportation			If **high potential (all items evaluated higher than watersheds averages)**, deduct a score of 5 and calculate total score. If **No**, go to 14.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
14.	What is the risk level for POC contribution by upstream land use/activities?			If **medium to high potential (majority of items evaluated higher than watersheds averages)**, deduct a score of 4. If **average potential (half the number of items evaluated higher than watersheds averages)**, deduct a score of 3. If **average to low potential (less than half the number of items evaluated higher than watersheds averages)**, deduct a score of 2. If **low potential (none of the items evaluated higher than watersheds averages),** deduct a score of 1. Calculate total score	
TOTAL SCORE					

(Watershed Name), (# of Entities)
(Entity Names [% jurisdiction])
(BMPs [Source and % Provided])

Evaluation Documentation Form
(Report Month and Year)

DATE: _____

BMP: SSOs, Spill Response, Illicit Discharges

MCM: 3. IDDE

BMP Type: Non-structural

BMP Subtype: Operational/Municipal

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Quantity/Type					
1.	Were there any IDDE related response action items implemented in the watershed?	✓		If **Yes**, assign a score of 5 and continue to 2. If **No**, assign score of 0 and continue to 9.	
2.	Were majority of IDDE response measures implemented in this watershed?			If **Yes**, assign a score of 5 and continue to 4. If **No**, continue to 3.	
3.	How many times did the MS4 respond (via immediate response, work order or investigations) to IDDE related incidents in this watershed (determine the response action items implemented in all watersheds in City/monitored watersheds)?			If **higher than watersheds average (>10%)**, assign a score of 4. If **equal to watersheds average (within 10%)**, assign a score of 3. If **lower than watersheds average (<10%)**, assign a score of 2. Continue to 4.	
Location/Coverage					
4.	Were all IDDE related response measures located upstream of sampling location?			If **Yes**, assign a score of 5 and continue to 6. If **No**, continue to 5.	
5.	Where were the IDDE related response measures activities located or distributed?			If **majority upstream**, assign a score of 3. If **majority downstream**, assign a score of 1. Continue to 6.	
Timelines/Frequency					
6.	Were IDDE related response mitigation action items completed in a timely manner after spill event (Evaluate timeliness based on a "defined" target)?			If **completed majority of time within target timeframe**, assign a score of 5. If **equal number of action items completed within and outside target timeframe**, assign a score of 3. If **completed majority of the time outside target timeframe**, assign a score of 1. Continue to 7.	
POCs Addressed					
7.	Are all POCs addressed?			If **Yes**, assign a score of 5 and continue to 9. If **No**, go to 8.	
8.	What POCs are addressed?			If **majority addressed**, assign a score of 4. If **half the number of POCs addressed**, assign a score of 3. If **less than half addressed**, assign a score of 2. Continue to 9.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Land Use/Pollution Potential					
9.	Based on the review of the items below, is there a high risk for all applicable POCs (Evaluate watershed totals vs watershed averages across City/monitored watersheds)? a. # and sizes of spill events upstream b. # of outfalls upstream c. # WWTPs upstream d. # of rain events between mitigation measures e. # of discharges to storm sewer network f. # of industries upstream g. # of Illegal Dumping incidents h. # of identified hotspots i. # of identified onsite sewage systems			If **high potential (all items evaluated higher than watersheds averages)**, deduct a score of 5 and calculate total score. If **No**, go to 10.	
10.	What is the risk level for POC contribution by upstream land use/activities?			If **medium to high potential (majority of items evaluated higher than watersheds averages)**, deduct a score of 4. If **average potential (half the number of items evaluated higher than watersheds averages)**, deduct a score of 3. If **average to low potential (less than half the number of items evaluated higher than watersheds averages)**, deduct a score of 2. If **low potential (none of the items evaluated higher than watersheds averages),** deduct a score of 1. Calculate total score	
TOTAL SCORE					

DATE: _____

BMP: PP/GH Program (Municipal Facilities, Training, Pesticide, Herbicide and Fertilizer Application)

MCM: 4. Pollution Prevention/Good Housekeeping (PP/GH) for Municipal Operations

BMP Type: Non-structural

BMP Subtype: Ordinance/Criteria Manual/Documentation/Educational

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Quantity/Type					
1.	Have all of these been identified/implemented or is there a document that includes the following? a. List of Municipal Facilities b. POCs c. Priority Facilities d. Inspection Guidelines e. Herbicide/Pesticide Application Program (including certified applicators)	✓		If **Yes**, assign a score of 5 and continue to 3. If **No**, continue to 2.	
2.	How many of the items from (1) above have been identified?			If **majority identified**, assign a score of 3. If **less than majority identified**, assign a score of 1. Continue to 3.	
3.	Were stormwater quality training sessions held for all operational staff?			If **Yes**, assign a score of 5 and continue to 5. If **No**, continue to 4.	
4.	Which operational staff received training? a. Street and Maintenance b. Public Works and Transportation c. Water Utilities Operations and Maintenance d. Stormwater Maintenance and Operations e. Storage Areas f. Fleet Vehicle and Equipment Maintenance g. Municipal Landfill Operations h. Municipal Airport Operations			If **majority were trained**, assign a score of 4. If **equal number trained/not trained**, assign a score of 3. If **less than majority trained**, assign a score of 2. Continue to 5.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Location/Coverage					
5.	Where was the pesticide, herbicide, fertilizer application program applied within the watershed?			If **all upstream**, assign a score of 5 and If **majority upstream**, assign a score of 3. If **majority downstream or none**, assign a score of 1. Continue to 6.	
Timelines/Frequency					
6.	Were all training sessions completed within the first half of the year or conducted year-round?			If **Yes**, assign a score of 5 and continue to 8. If **No**, go to 7.	
7.	When were the training sessions completed?			If **majority within first half of year**, assign a score of 4. If **majority within second half of year**, assign a score of 2. Continue to 8.	
POCs Addressed					
8.	Were all POCs addressed in priority listing and PPGH activities?			If **Yes**, assign a score of 5 and continue to 10. If **No**, go to 9.	
9.	What POCs were addressed in priority listing and PPGH activities?			If **majority addressed**, assign a score of 4. If **half the number of POCs addressed**, assign a score of 3. If **less than half addressed**, assign a score of 2. Continue to 10.	
Land Use/Pollution Potential					
10.	Based on the review of the items below, is there a high risk for all applicable POCs (Evaluate watershed totals vs watershed averages across City)? a. Animal Services b. Airports c. Landfills d. Recreational Centers e. Parks and Golf Courses f. Storage Facilities g. Maintenance Facilities h. Water/Wastewater Plants i. Fire Stations j. Pools k. Waste Handling			If **high potential (all items evaluated higher than watersheds averages)**, deduct a score of 5 and calculate total score. If **No**, go to 11.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
11.	What is the risk level for POC contribution by upstream land use/activities?			If **medium to high potential (majority of items evaluated higher than watersheds averages)**, deduct a score of 4. If **average potential (half the number of items evaluated higher than watersheds averages)**, deduct a score of 3. If **average to low potential (less than half the number of items evaluated higher than watersheds averages)**, deduct a score of 2. If **low potential (none of the items evaluated higher than watersheds averages),** deduct a score of 1. Calculate total score	
TOTAL SCORE					

DATE: _____

BMP: PP/GH Program (Facility Inspections)

MCM: 4. Pollution Prevention/Good Housekeeping (PP/GH) for Municipal Operations

BMP Type: Non-structural

BMP Subtype: Guidelines/Inspections/Surveys

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Quantity/Type					
1.	Are there any municipal facilities in the watershed?	✓		If **Yes**, continue to 2. If **No**, assign score of 0 and continue to 11.	
2.	Were all the municipal facilities in the watershed inspected?			If **Yes**, assign a score of 5 and continue to 4. If **No**, continue to 3.	
3.	How many of the municipal facilities were inspected?			If **majority of facilities inspected**, assign a score of 4. If **less than majority inspected**, assign a score of 3. If **none inspected**, assign a score of 2. Continue to 4.	
4.	How many facilities were inspected in this watershed (determine the quantity inspected in all watersheds in City/monitored watersheds)?			If **higher than watersheds average (>10%)**, assign a score of 4. If **equal to watersheds average (within 10%)**, assign a score of 3. If **lower than watersheds average (<10%)**, assign a score of 2. Continue to 5.	
Location/Coverage					
5.	Were all inspection activities located upstream of sampling location?			If **Yes**, assign a score of 5 and continue to 7. If **No**, continue to 6.	
6.	Where were the inspection activities located or distributed?			If **majority upstream**, assign a score of 3. If **majority downstream**, assign a score of 1. Continue to 7.	
Timelines/Frequency					
7.	When were the inspection activities completed?			If **majority within first half of year**, assign a score of 5. If **evenly distributed throughout year**, assign a score of 3. If **sporadic or majority within second half of year**, assign a score of 1. Continue to 8.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
8.	Were responses to issues completed in a timely manner (Evaluate timeliness based on a "defined" target)?			If **no issues or issues resolved majority of time within target timeframe**, assign a score of 5. If **equal number of issues resolved within and outside target timeframe**, assign a score of 3. If **completed majority of the time outside target timeframe**, assign a score of 1. Continue to 9.	
POCs Addressed					
9.	Are all POCs addressed?			If **Yes**, assign a score of 5 and continue to 11. If **No**, go to 10.	
10.	What POCs are addressed?			If **majority addressed**, assign a score of 4. If **half the number of POCs addressed**, assign a score of 3. If **less than half addressed**, assign a score of 2. Continue to 11.	
Land Use/Pollution Potential					
11.	Based on the review of the items below, is there a high risk for all applicable POCs (Evaluate watershed totals vs watershed averages across City)? a. # of issues identified upstream and overall b. # rain events before resolution of issues c. # of untimely resolution to issues			If **high potential (all items evaluated higher than watersheds averages)**, deduct a score of 5 and calculate total score. If **No**, go to 12.	
12.	What is the risk level for POC contribution by upstream land use/activities?			If **medium to high potential (majority of items evaluated higher than watersheds averages)**, deduct a score of 4. If **average potential (half the number of items evaluated higher than watersheds averages)**, deduct a score of 3. If **average to low potential (less than half the number of items evaluated higher than watersheds averages)**, deduct a score of 2. If **low potential (none of the items evaluated higher than watersheds averages),** deduct a score of 1. Calculate total score	
TOTAL SCORE					

DATE: _____

BMP: Waste Handling

MCM: 4. Pollution Prevention/Good Housekeeping (PP/GH) for Municipal Operations

BMP Type: Non-structural

BMP Subtype: Operational/Municipal

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Quantity/Type					
1.	Are all the following waste collection/handling mechanisms available to the watershed? a. Recycling b. Municipal waste collection/handling c. Hazardous waste collection/handling d. Municipal Collection Centers e. Bio-hazardous waste collection/handling f. Mobile waste collection/handling g. Other	✓		If **Yes**, assign a score of 5 and continue to 3. If **No**, continue to 2.	
2.	How many of the above waste collection mechanisms are available to watershed?			If **majority available**, assign a score of 3. If **less than majority available**, assign a score of 1. Continue to 3.	
Location/Coverage					
3.	where are the waste collection sites/schemes located within the watershed?			If **all upstream**, assign a score of 5 and If **majority upstream**, assign a score of 3. If **majority downstream or none**, assign a score of 1. Continue to 4.	
Timelines/Frequency					
4.	Are all waste collection mechanisms available year-round?			If **Yes**, assign a score of 5 and continue to 6. If **No**, go to 5.	
5.	What is the availability of waste collection mechanisms throughout the year?			If **majority available year-round**, assign a score of 4. If **evenly distributed throughout the year**, assign a score of 3. If **majority not available year-round**, assign a score of 2. Continue to 6.	
POCs Addressed					
6.	Were all POCs addressed?			If **Yes**, assign a score of 5 and continue to 8. If **No**, go to 7.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
7.	What POCs were addressed?			If **majority addressed**, assign a score of 4. If **half of the number of POCs addressed**, assign a score of 3. If **less than half addressed**, assign a score of 2. Continue to 8.	
Land Use/Pollution Potential					
8.	Based on the review of land use and upstream activities, is there a high risk for all applicable POCs (Evaluate watershed totals vs watershed averages across City/monitored watersheds)? a. Residential b. Commercial c. Industrial d. Transportation e. Exposed Waste handling Activities			If **high potential (all items evaluated higher than watersheds averages)**, deduct a score of 5 and calculate total score. . If **No**, go to 9.	
9.	What is the risk level for POC contribution by upstream land use/activities?			If **medium to high potential (majority of items evaluated higher than watersheds averages)**, deduct a score of 4. If **average potential (half the number of items evaluated higher than watersheds averages)**, deduct a score of 3. If **average to low potential (less than half the number of items evaluated higher than watersheds averages)**, deduct a score of 2. If **low potential (none of the items evaluated higher than watersheds averages),** deduct a score of 1. Calculate total score	
TOTAL SCORE					

DATE: _____ **BMP:** Policies/Procedures/Monitoring

MCM: 5. Industrial & High-Risk Runoff **BMP Type:** Non-structural

BMP Subtype: Guidelines/Inspections/Investigations

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Quantity/Type					
1.	Does the MS4 maintain a list of facilities subject to MSGPs, and/other individual industrial/environmental permits (pretreatment, EPCRA, SARA)/high risk within its jurisdiction?			If **Yes**, assign a score of 5 and continue to 2. If **No**, assign score of 1 and continue to 2.	
2.	Are there any facilities on the list above within the watershed?	✓		If **Yes**, continue to 3. If **No**, assign score of 0 and continue to 11.	
3.	Were all the industrial/high risk facilities in the watershed inspected?			If **Yes**, assign a score of 5 and continue to 5. If **No**, continue to 4.	
4.	How many of the industrial/high risk facilities were inspected?			If **majority of facilities inspected**, assign a score of 4. If **less than majority inspected**, assign a score of 3. If **none inspected**, assign a score of 2. Continue to 5.	
Location/Coverage					
5.	Were all inspection activities located upstream of sampling location?			If **Yes**, assign a score of 5 and continue to 7. If **No**, continue to 6.	
6.	Where were the inspection activities located or distributed?			If **majority upstream**, assign a score of 3. If **majority downstream**, assign a score of 1. Continue to 7.	
Timelines/Frequency					
7.	When were the inspection activities completed?			If **majority within first half of year**, assign a score of 5. If **evenly distributed throughout year**, assign a score of 3. If **sporadic or majority within second half of year**, assign a score of 1. Continue to 8.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
8.	Were responses to issues completed in a timely manner (Evaluate timeliness based on a "defined" target)?			If **completed majority of time within target timeframe**, assign a score of 5. If **equal number of issues resolved within and outside target timeframe**, assign a score of 3. If **completed majority of the time outside target timeframe**, assign a score of 1. Continue to 9.	
POCs Addressed					
9.	Are all POCs addressed?			If **Yes**, assign a score of 5 and continue to 11. If **No**, go to 10.	
10.	What POCs are addressed?			If **majority addressed**, assign a score of 4. If **half the number of POCs addressed**, assign a score of 3. If **less than half addressed**, assign a score of 2. Continue to 11.	
Land Use/Pollution Potential					
11.	Based on the review of the items below, is there a high risk for all applicable POCs (Evaluate watershed totals vs watershed averages across City/monitored watersheds)? a. # and types of industrial/high-risk facilities upstream b. # of issues identified upstream c. Response timelines d. Benchmark and/numeric exceedances e. # rain events before resolution of issues f. # of untimely resolution to issues			If **high potential (all items evaluated higher than watersheds averages)**, deduct a score of 5 and calculate total score. If **No**, go to 12.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
12.	What is the risk level for POC contribution by upstream land use/activities?			If **medium to high potential (majority of items evaluated higher than watersheds averages)**, deduct a score of 4. If **average potential (half the number of items evaluated higher than watersheds averages)**, deduct a score of 3. If **average to low potential (less than half the number of items evaluated higher than watersheds averages)**, deduct a score of 2. If **low potential (none of the items evaluated higher than watersheds averages),** deduct a score of 1. Calculate total score	
TOTAL SCORE					

DATE: _____ **BMP:** Regulations/Training/Inspections

MCM: 6. Construction Site Stormwater Runoff **BMP Type:** Non-structural

BMP Subtype: Ordinance/Manuals/Reviews/Educational/Inspections

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Quantity/Type					
1.	Does the MS4 maintain an up-to-date list of active construction sites (internal + external) subject to construction general permits (CGPs) within its jurisdiction?			If **Yes**, assign a score of 5 and continue to 2. If **No**, assign score of 1 and continue to 2.	
2.	Is there an ordinance (enforcement mechanism) and/or development review guidelines (WQ) applicable to the watershed?			If **Yes**, assign a score of 5 and continue to 3. If **No**, assign score of 1 and continue to 3.	
3.	Are there active construction sites within the watershed?	✓		If **Yes**, continue to 4. If **No**, assign score of 0 and continue to 17.	
4.	Were storm water quality reviews conducted and requirements notifications made for all active construction sites within the MS4's jurisdiction?			If **Yes**, assign a score of 5 and continue to 6. If **No**, continue to 5.	
5.	How many active construction sites received a storm water quality pre-construction review?			If **majority of sites reviewed**, assign a score of 4. If **less than majority reviewed**, assign a score of 3. If **none reviewed**, assign a score of 2. Continue to 6.	
6.	Were all active construction sites in the watershed inspected?			If **Yes**, assign a score of 5 and continue to 8. If **No**, continue to 7.	
7.	How many of the active construction sites were inspected?			If **majority of sites inspected**, assign a score of 4. If **equal # of sites inspected/not inspected**, assign a score of 3. If **less than majority inspected**, assign a score of 2. If **none inspected**, assign a score of 1. Continue to 8.	
8.	How many active construction sites were inspected in this watershed (determine the quantity inspected in all watersheds in City/monitored watersheds)?			If **higher than watersheds average (>10%)**, assign a score of 4. If **equal to watersheds average (within 10%)**, assign a score of 3. If **lower than watersheds average (<10%)**, assign a score of 2. Continue to 9.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
9.	Were all the following conducted for all active construction projects as applicable? a. Reviews b. Pre-development meetings c. Notifications d. Operator Training			If **Yes**, assign a score of 5 and continue to 11. If **No**, continue to 10.	
10.	How many of the above were completed for all active construction projects?			If **majority conducted**, assign a score of 4. If **less than majority conducted**, assign a score of 3. If **none conducted**, assign a score of 2. Continue to 11.	
Location/Coverage					
11.	Were all inspection activities located upstream of sampling location?			If **Yes**, assign a score of 5 and continue to 13. If **No**, continue to 6.	
12.	Where were the inspection activities located or distributed?			If **majority upstream**, assign a score of 3. If **majority downstream**, assign a score of 1. Continue to 7.	
Timelines/Frequency					
13.	When were the inspection activities completed?			If **majority within first half of year**, assign a score of 5. If **evenly distributed throughout year**, assign a score of 3. If **sporadic or majority within second half of year**, assign a score of 1. Continue to 14.	
14.	Were responses to issues completed in a timely manner (Evaluate timeliness based on a "defined" target)?			If **completed majority of time within target timeframe**, assign a score of 5. If **equal number resolved within and outside target timeframe**, assign a score of 3. If **completed majority of the time outside target timeframe OR stop work order issued**, assign a score of 1. Continue to 15.	
POCs Addressed					

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
15.	Are all POCs addressed?			If **Yes**, assign a score of 5 and continue to 17. If **No**, go to 16.	
16.	What POCs are addressed?			If **majority addressed**, assign a score of 4. If **half the number of POCs addressed**, assign a score of 3. If **less than half addressed**, assign a score of 2. Continue to 17.	
Land Use/Pollution Potential					
17.	Based on the review of the items below, is there a high risk for all applicable POCs (Evaluate watershed totals vs watershed averages across City/monitored watersheds)? a. # of acres of construction projects upstream b. # of issues identified upstream c. Response timelines d. # rain events before resolution of issues e. # of enforcement actions f. Other non-MS4 projects			If **high potential (all items evaluated higher than watersheds averages)**, deduct a score of 5 and calculate total score. If **No**, go to 18.	
18.	What is the risk level for POC contribution by upstream land use/activities?			If **medium to high potential (majority of items evaluated higher than watersheds averages)**, deduct a score of 4. If **average potential (half the number of items evaluated higher than watersheds averages)**, deduct a score of 3. If **average to low potential (less than half the number of items evaluated higher than watersheds averages)**, deduct a score of 2. If **low potential (none of the items evaluated higher than watersheds averages),** deduct a score of 1. Calculate total score	
TOTAL SCORE					

DATE: _____ **BMP:** Outreach/Public Input/Complaints

MCM: 7. Public Education and Participation **BMP Type:** Non-structural

BMP Subtype: Educational/Interactive

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Quantity/Type					
1.	Are there any public education or public participation mechanisms or platforms available to the watershed communities?			If **Yes**, assign a score of 5 and continue to 2. If **No**, assign score of 0 and continue to 15.	
2.	Are there reporting tools available to watershed communities?			If **Yes**, assign a score of 5 and continue to 3. If **No**, assign score of 1 and continue to 3.	
3.	Which of the following public education/participation mechanisms were available to or were conducted within the watershed? a. Online platforms b. Radio and TV forms of communication c. Billboards d. Hardcopy materials e. Events (not accounted for under another MCM) f. Residential Outreach g. Schools Outreach h. Businesses/Commercial outreach i. Other	✓		If **all conducted**, assign a score of 5. If **majority conducted**, assign a score of 4. If **equal number conducted vs not conducted**, assign a score of 3. If **less than majority conducted** assign a score of 2. If **none conducted**, assign a score of 1. Continue to 4.	
4.	Are all applicable target audiences within the watershed reached by the mode(s) of outreach?			If **Yes**, assign a score of 5 and continue to 6. If **No**, continue to 5.	
5.	Which of the following target audiences are reached through public education/participation platforms? a. Residential b. Commuters c. Commercial/Businesses d. Industries e. MS4 Operators and employees f. Schools			If **majority of target audiences reached**, assign a score of 4. If **equal number of target audiences reached vs not reached**, assign a score of 3. If **less than majority reached** assign a score of 2. If **none reached**, assign a score of 1. Continue to 6.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
6.	How many people in the watershed, through location capable tracking mediums participated in outreach events or interacted with public education/participation platforms (Compare # vs "defined" target. Target shall be a function of the total estimated targeted audience/watershed population)			If **# within 75%tile of target**, assign a score of 5. If **# within 50%tile of target**, assign a score of 3. If **# within 25%tile of target**, assign a score of 1. Continue to 7.	
7.	Were all water quality reports/complaints/input from the watershed communities addressed?			If **Yes**, assign a score of 5 and continue to 9. If **No**, continue to 8.	
8.	How many of the watershed community reports/complaints/input were addressed?			If **majority of issues resolved**, assign a score of 4. If **equal # of issues resolved vs not resolved**, assign a score of 3. If **less than majority resolved**, assign a score of 2. If **none resolved or no public input**, assign a score of 1. Continue to 9.	
Location/Coverage					
9.	Were all location driven public education/participation items located upstream of sampling location?			If **Yes**, assign a score of 5 and continue to 11. If **No**, continue to 10.	
10.	Where were the location driven public education/participation items located or distributed?			If **majority upstream**, assign a score of 3. If **majority downstream or none implemented**, assign a score of 1. Continue to 11.	
Timelines/Frequency					
11.	Were all public reporting mechanisms available throughout the year?			If **Yes**, assign a score of 5 and continue to 13. If **No**, assign score of 1 and continue to 12.	
12.	Were responses to complaints/reports completed in a timely manner (Evaluate timeliness based on a "defined" target)?			If **completed majority of time within target timeframe**, assign a score of 5. If **equal number responses provided within and outside target timeframe**, assign a score of 3. If **completed majority of the time outside target timeframe**, assign a score of 1. Continue to 13.	
POCs Addressed					

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
13.	Are all POCs addressed?			If **Yes**, assign a score of 5 and continue to 15. If **No**, go to 14.	
14.	What POCs are addressed?			If **majority addressed**, assign a score of 4. If **half the number of POCs addressed**, assign a score of 3. If **less than half addressed**, assign a score of 2. Continue to 15.	
Land Use/Pollution Potential					
15.	Based on the review of the items below, is there a high risk for all applicable POCs (Evaluate watershed totals vs watershed averages across City/monitored watersheds)? a. # of complaints/reports b. # of issues identified upstream c. Types of issues d. Response timelines e. # rain events before resolution of issues			If **high potential (all items evaluated higher than watersheds averages)**, deduct a score of 5 and calculate total score. If **No**, go to 16.	
16.	What is the risk level for POC contribution by upstream land use/activities?			If **medium to high potential (majority of items evaluated higher than watersheds averages)**, deduct a score of 4. If **average potential (half the number of items evaluated higher than watersheds averages)**, deduct a score of 3. If **average to low potential (less than half the number of items evaluated higher than watersheds averages)**, deduct a score of 2. If **low potential (none of the items evaluated higher than watersheds averages),** deduct a score of 1. Calculate total score	
TOTAL SCORE					

DATE: _____

BMP: Dry, Wet Weather, Industrial Monitoring

MCM: 8. Monitoring, Evaluation, Reporting_

BMP Type: Non-structural_____

BMP Subtype: Monitoring/Sampling_____

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Quantity/Type					
1.	Were there any monitoring activities or monitoring data collected within or from the watershed?	✓		If **Yes**, assign a score of 5 and continue to 2. If **No**, assign score of 0 and continue to 10.	
2.	Were all the required monitoring activities (unless evaluated under another MCM) conducted in this watershed?			If **Yes**, assign a score of 5 and continue to 4. If **No**, continue to 3.	
3.	What types of monitoring activities were conducted in this watershed? a. Dry Weather Screening (Outfalls) b. Dry Weather Monitoring c. Wet Weather Monitoring d. Industrial and High-Risk Monitoring e. Floatables Monitoring f. Bioassessment Monitoring g. Other Monitoring			If **majority of monitoring activities completed**, assign a score of 4. If **equal number of monitoring activities completed**, assign a score of 3. If **less than majority of monitoring activities completed**, assign a score of 2. Continue to 4.	
Location/Coverage					
4.	Were all the monitoring activities located within the watershed?			If **Yes**, assign a score of 5 and continue to 6. If **No**, continue to 5.	
5.	Where were the monitoring activities located or distributed within the watershed?			If **majority upstream**, assign a score of 3. If **majority downstream**, assign a score of 1. Continue to 6.	
Timelines/Frequency					
6.	When were the monitoring activities completed?			If **conducted year-round**, assign a score of 5. If **conducted first half of the year**, assign a score of 3. If **conducted within second half of year**, assign a score of 1. Continue to 7.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
7.	Were illicit discharges or exceedances investigated in a timely manner (Evaluate timeliness based on a "defined" target)?			If **completed majority of time within target timeframe**, assign a score of 5. If **equal number completed within and outside target timeframe**, assign a score of 3. If **completed majority of the time outside target timeframe**, assign a score of 1. Continue to 8.	
POCs Addressed					
8.	Are all POCs addressed?			If **Yes**, assign a score of 5 and continue to 10. If **No**, go to 9.	
9.	What POCs are addressed?			If **majority addressed**, assign a score of 4. If **half the number of POCs addressed**, assign a score of 3. If **less than half addressed**, assign a score of 2. Continue to 10.	
Land Use/Pollution Potential					
10.	Based on the review of the items below, is there a high risk for all applicable POCs (Evaluate watershed totals vs watershed averages across City)? a. # of issues identified upstream b. # of exceedances recorded c. # rain events before resolution of issues d. # of third party connections to MS4 (refer to MS4 outfall map)			If **high potential (all items evaluated higher than watersheds averages)**, deduct a score of 5 and calculate total score. If **No**, go to 11.	
11.	What is the risk level for POC contribution by upstream land use/activities?			If **medium to high potential (majority of items evaluated higher than watersheds averages)**, deduct a score of 4. If **average potential (half the number of items evaluated higher than watersheds averages)**, deduct a score of 3. If **average to low potential (less than half the number of items evaluated higher than watersheds averages)**, deduct a score of 2. If **low potential (none of the items evaluated higher than watersheds averages),** deduct a score of 1. Calculate total score	
TOTAL SCORE					

DATE: _____ **BMP:** Targeted Controls/Focused BMPs

MCM: Other: Impaired and/or TMDL Receiving Waters **BMP Type:** Non-structural/Structural_____

BMP Subtype: Monitoring/Performance____

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Quantity/Type					
1.	Were there any additional requirements not covered elsewhere applicable to this watershed?	✓		If **Yes**, continue to 2. If **No**, assign total score of 0 and continue to next MCM.	
2.	Were all the additional requirements implemented for this watershed?			If **Yes**, assign a score of 5 and continue to 4. If **No**, continue to 3.	
3.	What types of additional requirements were conducted in this watershed? a. Impaired Water Bodies b. TMDL Water Bodies c. Interim Bacteria Reduction Plan (IBRP) d. Other Requirement(s)			If **majority conducted**, assign a score of 4. If **equal number conducted vs not conducted**, assign a score of 3. If **less than majority conducted**, assign a score of 2. Continue to 4.	
4.	Are there targeted controls or bacteria focused BMPs in place in this watershed?			If **Yes**, continue to 5. If **No**, continue to 12.	
5.	Are all the targeted controls/bacteria focused controls complete and functional within the watershed?			If **Yes**, assign a score of 5 and continue to 7. If **No**, continue to 6.	
6.	What targeted controls/bacteria focused controls are complete and operational in watershed? a. Non-Bacteria Controls b. Bacteria Controls 1. Sanitary Systems 2. Onsite Sewage 3. Illicit Discharge & Dumping 4. Animal Sources 5. Residential Education			If **majority in place**, assign a score of 4. If **less than majority conducted**, assign a score of 2. Continue to 7.	
Location/Coverage					
7.	Were all the targeted/focused controls located upstream within the watershed?			If **Yes**, assign a score of 5 and continue to 9. If **No**, continue to 8.	
8.	Where were the monitoring activities located or distributed?			If **majority upstream**, assign a score of 3. If **majority downstream**, assign a score of 1. Continue to 9.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Timelines/Frequency					
9.	When were the targeted/focused controls fully operational?			If **operational year-round**, assign a score of 5. If **operational half the time**, assign a score of 3. If **operational less than half the time**, assign a score of 1. Continue to 10.	
POCs Addressed					
10.	Are all required POCs addressed trending in the right direction (Review results vs benchmarks or Waste Load Allocations)?			If **Yes**, assign a score of 5 and continue to 12. If **No**, go to 11.	
11.	How are the addressed POCs trending?			If **majority in right direction**, assign a score of 4. If **no discernable trend**, assign a score of 3. If **majority in the wrong direction**, assign a score of 2. Continue to 12.	
Land Use/Pollution Potential					
12.	Based on the review of the items below, is there a high risk for all applicable POCs (Evaluate overall total #s and watershed totals vs watershed averages across City)? a. # POC related sources b. # bacteria related sources c. # rain events before resolution of issues d. # of third party connections to MS4 (refer to MS4 outfall map)			If **high potential (all items evaluated higher than watersheds averages)**, deduct a score of 5 and calculate total score. If **No**, go to 13.	
13.	What is the risk level for POC contribution by upstream land use/activities?			If **medium to high potential (majority of items evaluated higher than watersheds averages)**, deduct a score of 4. If **average potential (half the number of items evaluated higher than watersheds averages)**, deduct a score of 3. If **average to low potential (less than half the number of items evaluated higher than watersheds averages)**, deduct a score of 2. If **low potential (none of the items evaluated higher than watersheds averages),** deduct a score of 1. Calculate total score	
TOTAL SCORE					

DATE: _____

Data: Individual Results and Calculated Metrics

POC: (Parameter Name) - Chemical_____

Analysis Type: Trend and Comparative_____

Analysis Subtype: Year to Date/Previous Terms/Other Water Quality Data

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Trend (Monitoring Year to date)					
1.	Do the quarterly sample results/averages show a consistent improvement, consistently positive, or undetected across the period?			If **Yes**, assign a score of 5 and continue to 3. If **No**, continue to 2.	
2.	What is the trend of the quarterly sample results across the period of interest?			If **majority of results meet criteria**, assign a score of 4. If **results are sporadic**, assign a score of 3. If **majority of results do not meet criteria**, assign a score of 2. If **all results do not meet criteria**, assign a score of 1. Continue to 3.	
Comparative (Previous Term(s))					
3.	Was the calculated metric (Min, Max, Median, Mean, Loadings, EMC) a better/acceptable result when compared to all previous years of previous terms?			If **Yes (repeat for all applicable metrics)**, assign a score of 5 and continue to 5. If **No**, continue to 4.	
4.	How did the calculated metrics compare with the previous terms?			If **better/acceptable than majority of compared data**, assign a score of 4. If **equal number better vs worse when compared to calculated metric**, assign a score of 3. If **majority of compared data better/acceptable than calculated metric**, assign a score of 2. If **all compared data better than calculated metric**, assign a score of 1. Continue to 5.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Comparative (Other Water Quality Data)					
5.	Was the applicable calculated metric (Min, Max, Median or Mean) better, worse or same (within 10%) when compared to applicable data from the following sources (compare based on the reporting metric of data source): a. Texas Surface Water Quality Standards b. TCEQ Nutrient Screening Levels c. National Stormwater Quality Database d. National Rivers and Streams Assessment Benchmarks e. Industrial Permitting Numeric Limits f. Industrial Permitting Benchmarks g. TMDL Limits if water body is impaired h. National Urban Runoff Program i. Clean Rivers Program			If **all better**, assign a score of 5 If **majority better**, assign a score of 4. If **results are sporadic**, assign a score of 3. If **majority worse**, assign a score of 2. If **all worse**, assign a score of 1. Calculate total score. .	
TOTAL SCORE					

DATE: _____

Data: Individual Results and Calculated Metrics

POC: Bioassessment Parameters (Water Quality)

Analysis Type: Trend and Comparative

Analysis Subtype: Year to Date/Previous Terms

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Trend (Monitoring Year to date)					
1.	Did the sample results improve/were positive and were both results (averaged) below WQ criteria?			If **Yes (repeat for all results)**, assign a score of 5 and continue to 3. If **No**, continue to 2.	
2.	What is the trend of the bi-annual sample results across the period of interest?			If **results stayed the same (within 10%) and average below WQ criteria**, assign a score of 4. If **results declined but average stayed below WQ criteria**, assign a score of 3. If **results improved but average stayed above WQ criteria**, assign a score of 2. If **results stayed the same/declined and average stayed above WQ criteria** assign a score of 1. Continue to 3.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Comparative (Previous Term(s))					
3.	Was the spring time or first half result a better/acceptable result when compared to all previous years and terms?			If **Yes (repeat for all applicable spring time results)**, assign a score of 5 and continue to 5. If **No**, continue to 4.	
4.	How did the spring time or first half result compare with the previous terms?			If **better/acceptable than majority of compared data**, assign a score of 4. If **equal number better vs worse when compared to calculated metric**, assign a score of 3. If **majority of compared data better/acceptable than calculated metric**, assign a score of 2. If **all compared data better than calculated metric**, assign a score of 1. Continue to 5.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Comparative (Previous Term(s))					
5.	Was the fall time or second half result a better/acceptable result when compared to all previous terms?			If **Yes (repeat for all applicable fall time results)**, assign a score of 5 and calculate total score. If **No**, continue to 6.	
6.	How did the fall time or second half result compare with the previous years and terms?			If **better/acceptable than majority of compared data**, assign a score of 4. If **equal number better vs worse when compared to calculated metric**, assign a score of 3. If **majority of compared data better/acceptable than calculated metric**, assign a score of 2. If **all compared data better than calculated metric**, assign a score of 1. Calculate total score.	
TOTAL SCORE					

DATE: _____

Data: Calculated Metrics

POC: Bioassessment (Indices)

Analysis Type: Trend and Comparative

Analysis Subtype: Year to Date/Previous Terms

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Trend (Monitoring Year to date)					
1.	Did the calculated metric (Fish IBI, Habitat Quality Index, Macroinvertebrate IBI) improve/was positive and were both above average?			If **Yes (repeat for all results)**, assign a score of 5 and continue to 3. If **No**, continue to 2.	
2.	What is the trend of the bi-annual calculated metric across the period of interest?			If **results stayed the same (within 10%) and above average**, assign a score of 4. If **results declined but stayed above average**, assign a score of 3. If **results improved but stayed below average**, assign a score of 2. If **results stayed the same/declined and stayed below average** assign a score of 1. Continue to 3.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Comparative (Previous Term(s))					
3.	Was the spring time or first half calculated metric a better/acceptable result when compared to all previous years and terms?			If **Yes (repeat for all applicable spring time results)**, assign a score of 5 and continue to 5. If **No**, continue to 4.	
4.	How did the spring time or first half calculated metric compare with the previous terms?			If **better/acceptable than majority of compared data**, assign a score of 4. If **equal number better vs worse when compared to calculated metric**, assign a score of 3. If **majority of compared data better/acceptable than calculated metric**, assign a score of 2. If **all compared data better than calculated metric**, assign a score of 1. Continue to 5.	

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation	Score
Comparative (Previous Term(s))					
5.	Was the summer/fall time or second half calculated metric a better/acceptable result when compared to all previous and terms?			If **Yes (repeat for all applicable fall time results)**, assign a score of 5 and calculate total score. If **No**, continue to 6.	
6.	How did the summer/fall time or second half metric compare with the previous years and terms?			If **better/acceptable than majority of compared data**, assign a score of 4. If **equal number better vs worse when compared to calculated metric**, assign a score of 3. If **majority of compared data better/acceptable than calculated metric**, assign a score of 2. If **all compared data better than calculated metric**, assign a score of 1. Calculate total score.	
TOTAL SCORE					

Appendix C

Data Results Tables and Groups/Tiers Results

Regional Wet Weather Characterization Program (RWWCP) Program Term Four
Best Management Practice Analysis and Evaluation Plan (BANEP)
BMP Data Metrics and Evaluation Results Summary Table

Bold Text in Table Indicates MCMs and BMPs																			Evaluation Criteria (5 - Meets Criteria; 4 - Majority meets criteria; 3 - Even distribution; 2 - Majority not meeting criteria; 1 - Does Not Meet Criteria)			
																			Evaluation Criteria (-1 - Low pollution potential; -2 - Average to low pollution potential; -3 - Average pollution potential; -4 - medium to high pollution potential; -5 - High Pollution Potential			
MCM	BMP	BMP Type	BMP Subtype	BMP Activity/Metrics Data Required	Analysis Category		Quantity/Type				Location/Coverage	Timelines/Frequency	POCs Addressed	Land Use/Pollution Potential	Total	Max	Total/Max	Tier
					Spatial	Non-Spatial	#	hrs.	miles	Other (cy, acres, $)								
MCM 1 - Maintenance Activities	Structural Controls	Structural	Performance	Listing of structural controls			5								5	5		
				Types of structural controls			5								5	5		
				Number of structural controls in watershed			5								5	5		
				Locations of structural controls							5				5	5		
				Fully Operational Dates								5			5	5		
				Applicable POCs addressed									5		5	5		
				Sources of POCs in watershed (Locations of Residential, Commercial, Industrial, Transportation, Undeveloped, Recreational/Open Areas)										-5	-5	-1		
															25	29	86%	IV
	Structural Controls	Non-Structural & Structural	Maintenance/Operational/ Municipal	Listing of Maintenance Activities					5						5	5		
				Maintenance Activity hours				5							5	5		
				Number of maintained infrastructure			5								5	5		
				Locations of activity hours							5				5	5		
				Locations of maintained infrastructure							5				5	5		
				Dates of maintenance activities								5			5	5		
				Applicable POCs addressed									5		5	5		
				Sources of POCs in watershed (Locations of Residential, Commercial, Industrial, Transportation, Undeveloped, Recreational/Open Areas)										-5	-5	-1		
															30	34	88%	IV
	Roadways	Non-Structural	Operational/Municipal	Street Sweeping hours				5							5	5		
				Street Sweeping miles					5						5	5		
				Locations of street sweeping hours and/or miles							5				5	5		
				Dates of street sweeping activities								5			5	5		
				Applicable POCs									5		5	5		
				Sources of POCs in watershed (Active construction sites and locations, Ice Events & Locations, Other Deicing Mitigation, Paved/transportation ROWs)										-5	-5	-1		
															20	24	83%	IV
	Floatables	Non-Structural	Operational/Municipal	Litter pickup miles					5						5	5		
				Litter pickup hours				5							5	5		
				Litter pickup tonnage			5								5	5		
				Summary of litter pickup			5								5	5		
				Locations of litter pickup miles, hours and tonnage							5				5	5		
				Dates of litter pickup activities and associated mileage, hours and tonnage								5			5	5		
				Applicable POCs addressed									5		5	5		
				Sources of POCs in watershed (Locations of Residential, Commercial, Industrial, Transportation, Undeveloped, Recreational/Open Areas)										-5	-5	-1		
															30	34	88%	IV
															105	121	87%	IV
MCM 2 - Post Construction Storm Water Control Measures	New Development and Significant Redevelopment	Non-Structural	Ordinance/Criteria Manual	Implemented Ordinance/Enforcement Mechanism/Development Criteria Manual			5								5	5		
	Flood Control	Non-Structural & Structural	Documentation	Listings of completed flood control/drainage improvement and other projects			5								5	5		
				Documentation of the consideration/not of WQ measures for above listed projects			5								5	5		
				Locations of completed flood control/drainage improvement and other projects							5				5	5		
				Dates of completion of the above listed projects								5			5	5		
				Applicable POCs addressed									5		5	5		
				Sources of POCs in watershed (Locations of Residential, Commercial, Industrial, Transportation, Undeveloped, Recreational/Open Areas)										-5	-5	-1		
															25	29	86%	IV

Regional Wet Weather Characterization Program (RWWCP) Program Term Four
Best Management Practice Analysis and Evaluation Plan (BANEP)
BMP Data Metrics and Evaluation Results Summary Table

Evaluation Criteria (5 - Meets Criteria; 4 - Majority meets criteria; 3 - Even distribution; 2 - Majority not meeting criteria; 1 - Does Not Meet Criteria)																			
Evaluation Criteria (-1 - Low pollution potential; -2 - Average to low pollution potential; -3 - Average pollution potential; -4 - medium to high pollution potential; -5 - High Pollution Potential																			
MCM	BMP	BMP Type	BMP Subtype	BMP Activity/Metrics Data Required	Analysis Category		Quantity/Type				Location/Coverage	Timelines/Frequency	POCs Addressed	Land Use/Pollution Potential	Total	Max	Total/Max	Tier
					Spatial	Non-Spatial	#	hrs.	miles	Other (cy, acres, $)								
MCM 3 - IDDE	Illicit and Allowable Discharges	Non-Structural	Ordinance/Criteria Manual	Implemented ordinance or enforcement mechanism, IDDE Manual & up-to-date MS4 outfall map			5								5	5		
	MS4 Outfall Map	Non-Structural	Documentation	Implemented HHW			5								5	5		
	Household Hazardous Waste (HHW) & Used Motor Vehicle Fluids	Non-Structural	Interactive/Operational/Municipal	HHW program details including types of collected items			5								5	5		
				Tonnage and associated sources of collected waste			5								5	5		
				Locations/sources or coverage/service areas of waste collection							5				5	5		
				Tonnage and associated sources of collected waste							5				5	5		
				Dates of waste collection or availability of collection mechanisms								5			5	5		
				Applicable POCs addressed									5		5	5		
				Sources of POCs in watershed (quantity and types of waste, locations of Residential, Commercial, Industrial, Transportation, Recreational/Open Areas)										-5	-5	-1		
															35	39	90%	V
	SSOs and Response Actions	Non-Structural	Operational/Municipal	Listing of SSOs, spills, Hazardous Events, and Illicit Discharges			5								5	5		
	Other Spill/Hazardous Event Responses	Non-Structural	Operational/Municipal	Listing of responses including immediate actions and follow up work orders and investigations			5								5	5		
	Illicit Discharge Response	Non-Structural	Operational/Municipal	Locations of SSOs, spills, hazardous events and illicit discharges							5				5	5		
				Dates and times of SSOs, spills, hazardous events and illicit discharges, dates and times of responses, and dates and times of complete eradication of causes and effects.								5			5	5		
				Applicable POCs addressed									5		5	5		
				Sources of POCs in watershed (# and sizes of spills and illicit discharges, locations of outfalls, WWTPs, Storm Events, Discharges that make it to the storm sewer, Industries, illegal Dumping Incidents)										-5	-5	-1		
															20	24	83%	IV
															55	63	87%	

Regional Wet Weather Characterization Program (RWWCP) Program Term Four
Best Management Practice Analysis and Evaluation Plan (BANEP)
BMP Data Metrics and Evaluation Results Summary Table

Evaluation Criteria (5 - Meets Criteria; 4 - Majority meets criteria; 3 - Even distribution; 2 - Majority not meeting criteria; 1 - Does Not Meet Criteria)																		
Evaluation Criteria (-1 - Low pollution potential; -2 - Average to low pollution potential; -3 - Average pollution potential; -4 - medium to high pollution potential; -5 - High Pollution Potential																		
MCM	BMP	BMP Type	BMP Subtype	BMP Activity/Metrics Data Required	Analysis Category		Quantity/Type				Location/Coverage	Timelines/Frequency	POCs Addressed	Land Use/Pollution Potential	Total	Max	Total/Max	Tier
					Spatial	Non-Spatial	#	hrs.	miles	Other (cy, acres, $)								
MCM 4 - Pollution Prevention and Good Housekeeping (PP/GH) for Municipal Operations	PP/GH Program (Including Training)	Non-Structural	Criteria Manual/Guidelines/Educational	Implemented program document and guidelines including listing of Municipal Facilities including POCs, prioritization, inspection guidelines and records of pesticide, herbicide and fertilizer application program			5								5	5		
	Municipal Facilities	Non-Structural	Documentation	Training records for operational staff including attendees			5								5	5		
	Pesticide, Herbicide and Fertilizer Application	Non-Structural	Guidelines/Documentation	Locations of application of pesticide program							5				5	5		
				Dates of training activities for municipal operational staff								5			5	5		
				Applicable POCs addressed									5		5	5		
				Sources of POCs in watershed (Animal Services, Airports, Landfills, Recreational Centers, Parks and Golf Courses, Storage Facilities, Maintenance Facilities, Water/Wastewater Plants, Fire Stations, Pools, Waste Handling)										-5	-5	-1		
															20	24	83%	IV
	PP/GH Program (Facility Inspections)	Non-Structural	Guidelines/Inspections/Surveys	Listing of facilities inspected			5								5	5		
				Number of facilities inspected			5								5	5		
				Locations of facilities inspected							5				5	5		
				Dates when facilities were inspected								5			5	5		
				Dates when identified issues were resolved								5			5	5		
				Applicable POCs addressed									5		5	5		
				Sources of POCs in watershed (Issues identified; rain events prior to issues resolution; elapsed time prior to resolution)										-5	-5	-1		
															25	29	86%	IV
	Waste Handling	Non-Structural & Structural	Operational/Municipal	Number and types of waste collection and handling mechanisms employed by MS4			5								5	5		
				Locations of waste collection and handling services							5				5	5		
				Dates of availability of waste collection services								5			5	5		
				Applicable POCs addressed									5		5	5		
				Sources of POCs in watershed (Locations of municipal waste generation sources and handling services										-5	-5	-1		
															15	19	79%	III
															60	72	83%	IV

Regional Wet Weather Characterization Program (RWWCP) Program Term Four
Best Management Practice Analysis and Evaluation Plan (BANEP)
BMP Data Metrics and Evaluation Results Summary Table

Evaluation Criteria (5 - Meets Criteria; 4 - Majority meets criteria; 3 - Even distribution; 2 - Majority not meeting criteria; 1 - Does Not Meet Criteria)																		
Evaluation Criteria (-1 - Low pollution potential; -2 - Average to low pollution potential; -3 - Average pollution potential; -4 - medium to high pollution potential; -5 - High Pollution Potential																		
MCM	BMP	BMP Type	BMP Subtype	BMP Activity/Metrics	Analysis Category		Quantity/Type				Location/Coverage	Timelines/Frequency	POCs Addressed	Land Use/Pollution Potential	Total	Max	Total/Max	Tier
				Data Required	Spatial	Non-Spatial	#	hrs.	miles	Other (cy, acres, $)								
MCM 5 - Industrial and High Risk Runoff	Policies, Procedures & Monitoring and/or Oversight	Non-Structural	Guidelines/Inspections/ Permits/Monitoring Oversight	Listing of facilities subject to MSGPs, Individual and other environmental permits (pretreatment, EPCRA, SARA)			5								5	5		
				Locations of facilities from above list							5				5	5		
				List of facilities that were inspected			5								5	5		
				Dates when facilities were inspected and records of issues identified and response action items								5			5	5		
				Dates when identified issues were resolved								5			5	5		
				Applicable POCs addressed									5		5	5		
				Sources of POCs in watershed (quantity and types of facilities, issues identified, response timelines, benchmark/numeric exceedances, storm events)										-5	-5	-1		
															25	29	86%	IV
MCM 6 - Construction Site Stormwater Runoff	Regulatory Requirements	Non-Structural	Ordinance/Review Guidelines/Criteria Manuals/Permits	Implemented ordinance or enforcement mechanism and design/development criteria manual			5								5	5		
	Active Construction Sites Listings	Non-Structural	Documentation	Listing of active construction projects			5								5	5		
	Site Operator Training and Notifications	Non-Structural	Educational	Records of reviews, predevelopment meetings, notifications, training for site operators as applicable			5								5	5		
	Inspections and Enforcement	Non-Structural	Inspections/Surveys/ Investigations	Details of reviews, predevelopment meetings, notifications, training for site operators as applicable (including related projects & attendees)			5								5	5		
				Records of inspection activities			5								5	5		
				Number of inspected sites			5								5	5		
				Locations of construction projects and associated inspection activities							5				5	5		
				Dates of inspection activities								5			5	5		
				Response times to inspection deficiencies								5			5	5		
				Applicable POCs addressed									5		5	5		
				Sources of POCs in watershed (acreage of construction activities by site, # of inspection deficiencies, response timelines, storm events, enforcement actions, TxDOT or other MS4 projects listings)										-5	-5	-1		
															45	49	92%	V
MCM 7 - Public Education, Outreach, Involvement and Participation	Education and Outreach	Non-Structural & Structural	Educational/Interactive	Records of public education tools and mechanisms (online, radio and tv, billboards, material, decals, events, target audiences reached, other)			5								5	5		
	Public Input	Non-Structural	Educational/Interactive	Types of public education mechanisms			5								5	5		
	Citizen complaint mechanism	Non-Structural	Interactive/Operational/Municipal	Locations of all of public education platforms (if trackable)							5				5	5		
				Record of audiences targeted by public education tools			5								5	5		
				Level of participation using public education tools			5								5	5		
				List of citizen complaint tools and/or modes			5								5	5		
				Availability and/or accessibility of complaint tools								5			5	5		
				Complaint records			5								5	5		
				Response records to complaints including dates of resolution								5			5	5		
				Applicable POCs addressed									5		5	5		
				Sources of POCs in watershed (# of complaints and sources, types of issues reported, response timelines, storm events between responses)										-5	-5	-1		
															45	49	92%	V

Regional Wet Weather Characterization Program (RWWCP) Program Term Four
Best Management Practice Analysis and Evaluation Plan (BANEP)
BMP Data Metrics and Evaluation Results Summary Table

Evaluation Criteria (5 - Meets Criteria; 4 - Majority meets criteria; 3 - Even distribution; 2 - Majority not meeting criteria; 1 - Does Not Meet Criteria)																		
Evaluation Criteria (-1 - Low pollution potential; -2 - Average to low pollution potential; -3 - Average pollution potential; -4 - medium to high pollution potential; -5 - High Pollution Potential																		
MCM	BMP	BMP Type	BMP Subtype	BMP Activity/Metrics Data Required	Analysis Category		Quantity/Type				Location/Coverage	Timelines/Frequency	POCs Addressed	Land Use/Pollution Potential	Total	Max	Total/Max	Tier
					Spatial	Non-Spatial	#	hrs.	miles	Other (cy, acres, $)								
MCM 8 - Monitoring, Evaluation and Reporting	Screening and Monitoring	Non-Structural	Monitoring/Sampling	Records/Details of monitoring activities (Dry Weather, Wet Weather, Representative, Industrial & High-Risk, Floatables, Bioassessment, Other)			5								5	5		
	Evaluations/Reporting	Non-Structural	Data Management	Locations of monitoring activities							5				5	5		
				Dates of monitoring activities								5			5	5		
				Types of monitoring activities conducted			5								5	5		
				Response timelines to resolution of illicit discharges and exceedances								5			5	5		
				Applicable POCs addressed									5		5	5		
				Sources of POCs in watershed (# of issues identified, exceedances recorded, storm events, third party connections, # of outfalls, sampling results and evaluation conclusions)										-5	-5	-1		
															25	29	86%	IV
OTHER - Impaired Receiving Waters	Impaired water bodies and TMDL Requirements	Non-Structural/ Structural	Monitoring/Performance	Records of identified targeted controls and/or focused BMPs			5								5	5		
	TMDL Water Bodies	Non-Structural/ Structural	Monitoring/Performance	Number and types of targeted controls and/or focused BMPs			5								5	5		
	Impaired water bodies and TMDL Requirements	Non-Structural/ Structural	Monitoring/Performance	Locations of targeted controls and/or focused BMPs							5				5	5		
				Fully operational dates of controls or frequency of implementation								5			5	5		
				POCs addressed (Performance in relation to benchmarks/WLAs I applicable)									5		5	5		
				Sources of POCs in watershed (POCs and bacteria related sources [Land use data], storm events, third party connections to MS4)										-5	-5	-1		
															20	24	83%	IV

Regional Wet Weather Characterization Program (RWWCP) Program Term Four
Best Management Practice Analysis and Evaluation Plan (BANEP)
WQ Data Metrics and Evaluation Results Summary Table

Bold Text in Table Indicates POC Group and Status

Evaluation Criteria (5 - Meets Criteria; 4 - Majority meets criteria; 3 - Sporadic distribution; 2 - Majority not meeting criteria; 1 - Does Not Meet Criteria)

POC	POC Group	POC Status		POC Metric	Analysis Category		Year to Date	Previous Terms	TSWQ	TCEQ NSL	NSQD	NRSAB	MSGP-Numeric	MSGP-Benchmark	TMDL	NURP	CRP	Comparative (Other WQ Data)	Total	Max	Total/Max	Tier
		New	Repeated	Data Required	Trend	Comparative																
Oil and Grease	Oils		Repeated	Q1 -Q4			5												5	5		
				Min				5											5	5		
				Max				5						5					5	5		
				Median				5											5	5		
				Arithmetic Mean				5			5							5	10	10		
				Geometric Mean															0	0		
				Standard Deviation															0	0		
				Coefficient of Variation															0	0		
				Annual Loading				5											5	5		
				Event Mean Concentration				5											5	5		
																			40	40	100%	V
pH	Acidity		Repeated	Q1 -Q4			5												5	5		
				Min				5											5	5		
				Max				5						5					5	5		
				Median				5											5	5		
				Arithmetic Mean				5			5						5	5	10	10		
				Geometric Mean															0	0		
				Standard Deviation															0	0		
				Coefficient of Variation															0	0		
				Annual Loading				5											5	5		
				Event Mean Concentration				5											5	5		
																			40	40	100%	V
Conductivity	Other		Repeated	Q1 -Q4			5												5	5		
				Min				5											5	5		
				Max				5											5	5		
				Median				5											5	5		
				Arithmetic Mean				5				5						5	10	10		
				Geometric Mean															0	0		
				Standard Deviation															0	0		
				Coefficient of Variation															0	0		
				Annual Loading				5											5	5		
				Event Mean Concentration				5											5	5		
																			40	40	100%	V
E. Coli	Bacteria		Repeated (Three Terms)	Q1 -Q4			5												5	5		
				Min				5											5	5		
				Max				5											5	5		
				Median				5											5	5		
				Arithmetic Mean							5								0	0		
				Geometric Mean				5	5						5		5	5	10	10		
				Standard Deviation															0	0		
				Coefficient of Variation															0	0		
				Annual Loading				5											5	5		
				Event Mean Concentration				5											5	5		
																			40	40	100%	V
TDS	Solids		Repeated	Q1 -Q4			5												5	5		
				Min				5											5	5		
				Max				5											5	5		
				Median				5											5	5		
				Arithmetic Mean				5	5		5						5	5	10	10		
				Geometric Mean															0	0		
				Standard Deviation															0	0		
				Coefficient of Variation															0	0		
				Annual Loading				5											5	5		
				Event Mean Concentration				5											5	5		
																			40	40	100%	V
TSS	Solids		Repeated	Q1 -Q4			5												5	5		
				Min				5											5	5		
				Max				5							5				5	5		
				Median				5											5	5		
				Arithmetic Mean				5	5		5					5	5	5	10	10		
				Geometric Mean															0	0		
				Standard Deviation															0	0		
				Coefficient of Variation															0	0		
				Annual Loading				5											5	5		
				Event Mean Concentration				5											5	5		
																			40	40	100%	V
Atrazine	Toxic	New		Q1 -Q4			5												5	5		
				Min				5											5	5		
				Max				5											5	5		
				Median				5											5	5		
				Arithmetic Mean				5											5	5		
				Geometric Mean															0	0		
				Standard Deviation															0	0		
				Coefficient of Variation															0	0		
				Annual Loading				5											5	5		
				Event Mean Concentration				5											5	5		
																			35	35	100%	V

Regional Wet Weather Characterization Program (RWWCP) Program Term Four
Best Management Practice Analysis and Evaluation Plan (BANEP)
WQ Data Metrics and Evaluation Results Summary Table

Bold Text in Table Indicates POC Group and Status

Evaluation Criteria (5 - Meets Criteria; 4 - Majority meets criteria; 3 - Sporadic distribution; 2 - Majority not meeting criteria; 1 - Does Not Meet Criteria)

POC	POC Group	POC Status		POC Metric	Analysis Category		Year to Date	Previous Terms	TSWQ	TCEQ NSL	NSQD	NRSAB	MSGP-Numeric	MSGP-Benchmark	TMDL	NURP	CRP	Comparative (Other WQ Data)	Total	Max	Total/Max	Tier
		New	Repeated	Data Required	Trend	Comparative																
Total Arsenic	Metals		Repeated	Q1 -Q4			5												5	5		
				Min				5											5	5		
				Max				5											5	5		
				Median				5											5	5		
				Arithmetic Mean				5										5	10	10		
				Geometric Mean															0	0		
				Standard Deviation															0	0		
				Coefficient of Variation															0	0		
				Annual Loading				5											5	5		
				Event Mean Concentration				5											5	5		
																			40	40	100%	V
Total Chromium	Metals		Repeated	Q1 -Q4			5												5	5		
				Min				5											5	5		
				Max				5											5	5		
				Median				5											5	5		
				Arithmetic Mean				5										5	10	10		
				Geometric Mean															0	0		
				Standard Deviation															0	0		
				Coefficient of Variation															0	0		
				Annual Loading				5											5	5		
				Event Mean Concentration				5											5	5		
																			40	40	100%	V
Total Copper	Metals		Repeated	Q1 -Q4			5												5	5		
				Min				5											5	5		
				Max				5											5	5		
				Median				5											5	5		
				Arithmetic Mean				5										5	10	10		
				Geometric Mean															0	0		
				Standard Deviation															0	0		
				Coefficient of Variation															0	0		
				Annual Loading				5											5	5		
				Event Mean Concentration				5											5	5		
																			40	40	100%	V
Total Lead	Metals		Repeated	Q1 -Q4			5												5	5		
				Min				5											5	5		
				Max				5											5	5		
				Median				5											5	5		
				Arithmetic Mean				5										5	10	10		
				Geometric Mean															0	0		
				Standard Deviation															0	0		
				Coefficient of Variation															0	0		
				Annual Loading				5											5	5		
				Event Mean Concentration				5											5	5		
																			40	40	100%	V
Total Zinc	Metals		Repeated	Q1 -Q4			5												5	5		
				Min				5											5	5		
				Max				5											5	5		
				Median				5											5	5		
				Arithmetic Mean				5										5	10	10		
				Geometric Mean															0	0		
				Standard Deviation															0	0		
				Coefficient of Variation															0	0		
				Annual Loading				5											5	5		
				Event Mean Concentration				5											5	5		
																			40	40	100%	V
BOD	Oxygen Demanding		Repeated	Q1 -Q4			5												5	5		
				Min				5											5	5		
				Max				5											5	5		
				Median				5											5	5		
				Arithmetic Mean				5										5	10	10		
				Geometric Mean															0	0		
				Standard Deviation															0	0		
				Coefficient of Variation															0	0		
				Annual Loading				5											5	5		
				Event Mean Concentration				5											5	5		
																			40	40	100%	V

Regional Wet Weather Characterization Program (RWWCP) Program Term Four
Best Management Practice Analysis and Evaluation Plan (BANEP)
WQ Data Metrics and Evaluation Results Summary Table

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POC	POC Group	POC Status		POC Metric	Analysis Category		Year to Date	Previous Terms	TSWQ	TCEQ NSL	NSQD	NRSAB	MSGP-Numeric	MSGP-Benchmark	TMDL	NURP	CRP	Comparative (Other WQ Data)	Total	Max	Total/Max	Tier
		New	Repeated	Data Required	Trend	Comparative																
COD	**Oxygen Demanding**		**Repeated**	Q1 -Q4			5												5	5		
				Min				5											5	5		
				Max				5											5	5		
				Median				5											5	5		
				Arithmetic Mean				5										5	10	10		
				Geometric Mean															0	0		
				Standard Deviation															0	0		
				Coefficient of Variation															0	0		
				Annual Loading				5											5	5		
				Event Mean Concentration				5											5	5		
																			40	40	100%	V
Total Phosphorus	**Nutrients**		**Repeated**	Q1 -Q4			5												5	5		
				Min				5											5	5		
				Max				5											5	5		
				Median				5											5	5		
				Arithmetic Mean				5										5	10	10		
				Geometric Mean															0	0		
				Standard Deviation															0	0		
				Coefficient of Variation															0	0		
				Annual Loading				5											5	5		
				Event Mean Concentration				5											5	5		
																			40	40	100%	V
Dissolved Phosphorus	**Nutrients**		**Repeated**	Q1 -Q4			5												5	5		
				Min				5											5	5		
				Max				5											5	5		
				Median				5											5	5		
				Arithmetic Mean				5										5	10	10		
				Geometric Mean															0	0		
				Standard Deviation															0	0		
				Coefficient of Variation															0	0		
				Annual Loading				5											5	5		
				Event Mean Concentration				5											5	5		
																			40	40	100%	V
Orthophosphate	**Nutrients**	**New**		Q1 -Q4			5												5	5		
				Min				5											5	5		
				Max				5											5	5		
				Median				5											5	5		
				Arithmetic Mean				5										5	10	10		
				Geometric Mean															0	0		
				Standard Deviation															0	0		
				Coefficient of Variation															0	0		
				Annual Loading				5											5	5		
				Event Mean Concentration				5											5	5		
																			40	40	100%	V
Total Nitrogen	**Nutrients**	**New**		Q1 -Q4			5												5	5		
				Min				5											5	5		
				Max				5											5	5		
				Median				5											5	5		
				Arithmetic Mean				5										5	10	10		
				Geometric Mean															0	0		
				Standard Deviation															0	0		
				Coefficient of Variation															0	0		
				Annual Loading				5											5	5		
				Event Mean Concentration				5											5	5		
																			40	40	100%	V
Ammonia-Nitrogen	**Nutrients**	**New**		Q1 -Q4			5												5	5		
				Min				5											5	5		
				Max				5											5	5		
				Median				5											5	5		
				Arithmetic Mean				5										5	10	10		
				Geometric Mean															0	0		
				Standard Deviation															0	0		
				Coefficient of Variation															0	0		
				Annual Loading				5											5	5		
				Event Mean Concentration				5											5	5		
																			40	40	100%	V
Nitrate-Nitrogen	**Nutrients**	**New**		Q1 -Q4			5												5	5		
				Min				5											5	5		
				Max				5											5	5		
				Median				5											5	5		
				Arithmetic Mean				5										5	10	10		
				Geometric Mean															0	0		
				Standard Deviation															0	0		
				Coefficient of Variation															0	0		
				Annual Loading				5											5	5		
				Event Mean Concentration				5											5	5		
																			40	40	100%	V

Regional Wet Weather Characterization Program (RWWCP) Program Term Four

Best Management Practice Analysis and Evaluation Plan (BANEP)

WQ Data Metrics and Evaluation Results Summary Table

Bold Text in Table Indicates POC Group and Status

Evaluation Criteria (5 - Meets Criteria; 4 - Majority meets criteria; 3 - Sporadic distribution; 2 - Majority not meeting criteria; 1 - Does Not Meet Criteria)

POC	POC Group	POC Status		POC Metric	Analysis Category		Year to Date	Previous Terms	TSWQ	TCEQ NSL	NSQD	NRSAB	MSGP-Numeric	MSGP-Benchmark	TMDL	NURP	CRP	Comparative (Other WQ Data)	Total	Max	Total/Max	Tier
		New	Repeated	Data Required	Trend	Comparative																
Bioassessment Water Quality	**Bioassessment**			Dissolved Oxygen			1												1	5		
				pH			5												5	5		
				Specific Conductance			5												5	5		
				Temperature			5												5	5		
				Turbidity			5												5	5		
				E. Coli			5												5	5		
				Phosphorus as Orthophosphate			5												5	5		
				Nitrate as Nitrogen			2												2	5		
				Dissolved Oxygen (Spring)				5											5	5		
				pH (Spring)				5											5	5		
				Specific Conductance (Spring)				5											5	5		
				Temperature (Spring)				5											5	5		
				Turbidity (Spring)				5											5	5		
				E. Coli (Spring)				5											5	5		
				Phosphorus as Orthophosphate (Spring)				5											5	5		
				Nitrate as Nitrogen (Spring)				5											5	5		
				Dissolved Oxygen (Fall)				5											5	5		
				pH (Fall)				5											5	5		
				Specific Conductance (Fall)				5											5	5		
				Temperature (Fall)				5											5	5		
				Turbidity (Fall)				5											5	5		
				E. Coli (Fall)				5											5	5		
				Phosphorus as Orthophosphate (Fall)				5											5	5		
				Nitrate as Nitrogen (Fall)				5											5	5		
																			113	120	94%	V
Bioassessment Other	**Bioassessment**			Fish IBI Score			5												5	5		
				Habitat Quality Index			5												5	5		
				Macroinvertebrate IBI Score			5												5	5		
				Fish IBI Score (Spring)				5											5	5		
				Habitat Quality Index (Spring)				5											5	5		
				Macroinvertebrate IBI Score (Spring)				5											5	5		
				Fish IBI Score (Fall)				5											5	5		
				Habitat Quality Index (Fall)				5											5	5		
				Macroinvertebrate IBI Score (Fall)				5											5	5		
																			45	45	100%	V

BMP/POC Groups/Tiers
Results

Watershed Name: **Number of Entities:**

Entity Names (% Jurisdiction):

BMP Analysis Results	Group Result	Tier
MCM 1 - Maintenance Activities	87%	IV
MCM 2 - Post Construction Storm Water Control Measures	86%	IV
MCM 3 - IDDE	87%	IV
MCM 4 - Pollution Prevention and Good Housekeeping (PP/GH) for Municipal Operations	83%	IV
MCM 5 - Industrial and High Risk Runoff	86%	IV
MCM 6 - Construction Site Stormwater Runoff	92%	V
MCM 7 - Public Education, Outreach, Involvement and Participation	92%	V
MCM 8 - Monitoring, Evaluation and Reporting	86%	IV
OTHER - Impaired Receiving Waters	83%	IV
BMP Group Result	87%	
BMP Tier	IV	

POC Analysis Results	Group Result	Tier
Oil and Grease	100%	V
pH	100%	V
Conductivity	100%	V
E. Coli	100%	V
TDS	100%	V
TSS	100%	V
Atrazine	100%	V
Total Arsenic	100%	V
Total Chromium	100%	V
Total Copper	100%	V
Total Lead	100%	V
Total Zinc	100%	V
BOD	100%	V
COD	100%	V
Total Phosphorus	100%	V
Dissolved Phosphorus	100%	V
Orthophosphate	100%	V
Total Nitrogen	100%	V
Ammonia-Nitrogen	100%	V
Nitrate-Nitrogen	100%	V
Bioassessment Water Quality	94%	V
Bioassessment Indices	100%	V
POC Group Result	100%	
POC Tier	V	

Overall Watershed BMP/POC Group/Tier	96%	V

BMP/POC Groups/Tiers
Results Card

BMP Analysis Comments:
POC Analysis Comments: