# ANNUAL REPORT

## TPDES Storm Water Permit No. WQ0004705000
## (NPDES Permit No. TXS000401)

## System-Wide Annual Report

*for the*

## City of Austin

Reporting Period: October 1, 2019 to September 30, 2020

Submitted to:

U.S. EPA Region 6
Compliance Assurance & Enforcement Division
Water Enforcement Branch (6EN-WC)
1445 Ross Avenue
Dallas, Texas 75202

&

TCEQ Region 11
Wastewater Permitting Section
Storm Water & Pretreatment Team
(MC-148)
P.O. Box 13087
Austin, TX 78711-3087

May 1, 2021

**Watershed Protection Department**
**Annual Report – Permit Year 2**

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City of Austin
Founded by Congress, Republic of Texas, 1839
Watershed Protection Department
P.O. Box 1088, Austin, Texas 78767

May 1, 2021

Ms. Rebecca L.Villalba, Team Leader
Storm Water & Pretreatment Team (MC-148)
Water Quality Division
Texas Commission on Environmental Quality (TCEQ)
P.O. Box 13087
Austin, Texas 78711-3087

Re: City of Austin - TPDES Permit No. WQ0004705000 (NPDES Permit No.TXS000401)
Municipal Separate Storm Sewer System (MS4) System-wide Annual Report

Dear Ms. Villalba,

Please find herewith for your review, the MS4 system-wide annual report for the City of Austin. The report has been prepared as required by Part IV.C. of the permit and includes information on the City's compliance activities during the reporting period from October 1, 2019 through September 30, 2020.

As required by Part IV.E and in accordance with Part V.B.8 of the permit, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If additional information related to any of the City's compliance activities described in the report should be required, please contact Ms. Julie White, TPDES Program Coordinator at (512) 974-3527 or julie.white@austintexas.gov.

Sincerely,

Christopher Herrington, P.E., Acting Director
Watershed Protection Department

# SYSTEM-WIDE OVERVIEW

The City of Austin was originally issued a Municipal Separate Storm Sewer System (MS4) Storm Water Permit by the Environmental Protection Agency (EPA) in September 1998 (EPA ID. TXS000401). The City renewed the MS4 storm water permit with the Texas Commission on Environmental Quality (TCEQ) in February 2006 (WQ0004705000) and has continued to do so every 5 years as required since then. The TCEQ reissued the City's most recent MS4 storm water permit on August 15, 2018.

The City of Austin has continued the compliance activities required by the storm water permit and as outlined in the City's Storm Water Management Program (SWMP); reporting on the execution of these activities during the reporting period from October 1st through September 30th of each year. The System-Wide Annual Report is due May 1st of each year.

This report documents the City's compliance activities during the reporting period from October 1, 2019 to September 30, 2020; permit year 2 of the reissued permit. The City of Austin continued to execute Storm Water Management Program (SWMP) activities during the reporting period as required, with the detailed information related to these activities included in Section 1 (Status of Storm Water Management Program Implementation and Summary Data), Section 4 (Summary of Monitoring and Other Data), and Section 7 (Summary of Enforcement Actions, Inspections, and Public Education), of the annual report.

It should be noted that two significant events affected the City's activities during the reporting period:

- *The Texas Commission on Environmental Quality (TCEQ) Comprehensive Compliance Investigation (Investigation #1622827).* The TCEQ conducted a comprehensive compliance investigation from January 14-29, 2020 and issued a Notice of Violation and a Summary of Investigation Findings on May 8, 2020. The TCEQ investigation documentation identified two alleged violations and additional issues to be considered by the City. As directed by the Recommended Corrective Action for the only outstanding alleged violation identified, the City of Austin submitted a compliance plan to the TCEQ by the July 7, 2020 compliance due date. The plan addressed the training deficiencies of

the existing Minimum Control Measure (MCM) 4 pollution prevention and good housekeeping program. The TCEQ provided acceptance of the compliance plan on August 5, 2020. The City updated the SWMP to reflect the approved activities and completed all the TCEQ approved compliance plan milestone activities within the permit year (ending September 30, 2020); details can be found in the status section of the report.

- *COVID-19 Global Pandemic*. The increased presence and potential spread of the COVID-19 virus within the state of Texas and the City of Austin's MS4 jurisdiction warranted the March 6, 2020 issuance of a "local state of disaster" order for the City of Austin and Travis County areas. This order and subsequent updates throughout the permit year directed City of Austin operations to be modified to better protect employees and customers from the extremely communicable and dangerous virus. This requirement caused most municipal operations to be limited to activities that could be completed remotely, or in a safely distanced manner with proper personal protective equipment (PPE). These protective measures and practices affected the activities and productivity of field units associated with many of the minimum control measures (MCMs); details can be found in the status section of the report.

# SECTION 1

## Status of Storm Water Management Program Implementation and Summary of Minimum Control Measure Activities

As required by Parts IV.C. of the City of Austin (COA) Texas Pollutant Discharge Elimination System (TPDES) Municipal Separate Stormwater Sewer System (MS4) Storm Water Permit, the status of implementing the Storm Water Management Program (SWMP), the status of compliance with any schedules established under the permit, and a summary of the SWMP activities and measurable goals completed by COA during the reporting period from October 1, 2019 through September 30, 2020 have been included in this section of the report. The measurable goals described within each Minimum Control Measure (MCM) element have been identified to preserve and enhance the quality of storm water runoff to the Maximum Extent Practicable (MEP) throughout the City's full purpose jurisdiction; but the activities may also be considered supportive of the Part II.C. Impaired Water Bodies and Total Maximum Daily Load (TMDL) requirements and consistent with the voluntary responsibilities in those portions of the MS4 that discharge to portions of watersheds included in one of the two Texas Commission on Environmental Quality (TCEQ) Approved Austin Area TMDL Implementation Plans.

## MCM 1: MS4 Maintenance Activities

### Structural Controls

**Status of Implementation & Compliance:** Fully implemented; compliant

The City's programs to operate and maintain the municipal storm sewer system (MS4), including stormwater controls, in such a manner as to reduce erosion and the discharge of pollutants to the maximum extent practicable (MEP) is the responsibility of the Watershed Protection Department (WPD). WPD is responsible for the operation, inspection, maintenance, and repair of the City's storm water drainage infrastructure. WPD's operation and management of the MS4 is part of a comprehensive drainage maintenance plan to identify, evaluate and solve flooding, erosion and water quality problems, including those related to non-point source pollution.

The measurable goals described within this minimum control measure (MCM) element have been identified to affect the quality of storm water to the MEP, but should also considered supportive of the

Part II.C. Impaired Water Bodies and Total Maximum Daily Load (TMDL) requirements and consistent with the City's voluntary responsibilities.

The following measurable goals were performed during the reporting period:

- Removed debris and excessive vegetation from approximately 95 miles of open waterways to maintain flood flow conveyance and improve water quality.
- Removed vegetation periodically from over 762 City maintained detention and water quality facilities.
- Conducted 832 inspections of City maintained detention and water quality facilities.
- Completed 925 inspections of privately owned and maintained detention and water quality facilities to enforce compliance with City Code and criteria.
- Removed sediment and debris obstructions from just over 5.0 miles of open channels to maintain flood flow conveyance, minimize erosion and improve water quality.
- Removed debris, sediment, vegetation and obstructions from over 400 culvert and bridge locations to maintain flood flow conveyance and improve water quality.
- Cleaned approximately 8 miles of the storm water conveyance pipeline system to maintain flood flow conveyance and improve water quality.
- Inspected and cleaned as necessary 2,826 storm drain inlets to maintain flood flow conveyance and remove collected sediment, debris and other pollutants.
- Inspected 265 of the 325 publicly maintained facilities within the Barton Springs Zone (BSZ) as of September 30, 2020.
- WPD staff conducted 951 inspections of the 359 privately maintained water quality controls in the BSZ subject to the BSZ Operating Permit program requirements.
- Staff issued 12 letters of non-compliance to BSZ Operating Permit facilities.
- WPD staff continued to update the department's records associated with the public and private storm water management facilities databases to ensure more accurate documentation of activities.

There are no additional activities, Best Management Practices (BMPs) or changes to the SWMP identified as needed at this time.

**Floatables Program**

**Status of Implementation & Compliance:** Fully implemented; compliant

The City's program to reduce the discharge of floatables into the MS4 is the responsibility of the Watershed Protection Department (WPD). WPD is responsible for the maintenance and periodic observation of two trash boom monitoring sites on Lady Bird Lake (at the mouth of Shoal and West Bouldin Creeks); inspecting sites weekly and cleaning monthly, if necessary, or as needed after major

storm events, once staff verifies that site conditions are safe and adequate for access and will allow for the use of mechanical equipment without damage to the surrounding ground.

The following activities were performed during the reporting period:

- Approximately 1.21 tons of floatable trash and debris was removed from the two boom locations on Lady Bird Lake.

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

**Roadways Program**

**Status of Implementation & Compliance:** Fully implemented; compliant

The City's programs to operate and maintain public streets and roadways to minimize the discharge of pollutants, including pollutants related to de-icing or sanding events is the responsibility of the Public Works Department (PWD) and Austin Resource Recovery (ARR). The Roadways Program addresses snow and ice management, road repair, street sweeping, and litter collection within the public Right of Way (ROW). The performance of activities within this minimum control measure (MCM) were affected by the Citywide COVID-19 safety measures.

The following measurable goals were performed during the reporting period:

- PWD continued the ROW roadway maintenance activities, using BMPs and controls appropriate for each project.
- ARR continued street sweeping in the downtown Central Business District and along major thoroughfares in other areas of the City; performed on varying schedules.
- ARR collected over 4,388 tons of trash, leaves, debris, and dirt that had collected along impervious roadway surfaces in Austin.
- Removed 500 tons of litter from sidewalks and litter containers in the downtown area, street rights-of-way and other City-owned property.
- Removed 33 tons of dead animals from roadways.
- Collected a total of 5,506 tons of bulk items from residences within the service area.
- Collected a total of 3,691 tons of brush items from residences within the service area.
- Collected a total of 48,115 tons of yard trimmings which includes compost totals from residences during weekly collection activities. No snow management activities were required during the reporting period.

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

## MCM 2: Post-Construction Storm Water Control Measures

Areas of New Development**,** Significant Redevelopment, Comprehensive Planning & Regulatory Mechanism

**Status of Implementation & Compliance:** Fully implemented; compliant

The City's programs to minimize the discharge of pollutants form areas of new and significant redevelopment are the responsibility of the Planning and Zoning Department (PAZ) and the Development Services Department (DSD). PAZ is responsible for most comprehensive planning activities, including ongoing planning support in areas such as land use inventories, mapping, and analysis; population and demographic forecasting; neighborhood planning and transportation planning. PAZ staff review zoning cases and the DSD ensures the review of site development plan applications, subdivision plans and proposed utility projects for compliance with the water quality regulations of the City's land development code, as part of the overall development review process within the city limits and the extraterritorial jurisdiction (ETJ).

The following measurable review activities were performed during the reporting period:

- 469 subdivision applications
- 2,014 site development plans
- 48 school site plans
- 132 projects requiring zoning
- 143 underground storage tank permits
- 430 General Permit application
- 253 Operating Permit applications for development in the Barton Springs Zone

From October 1, 2019 to September 30, 2020, the City of Austin experienced a net growth of 14,493 persons to reach a total population of 1,007,240. This increase represents a 1.46% annual growth rate and is down from an annual increase of 1.6% from the previous year. The population for the Metropolitan Statistical Area on September 30, 2020, was 2,323,510.

During the reporting period the net acres annexed were as follows:

- 129.5 acres full purpose (converted from limited purpose)
- 0* acres limited purpose

- 129.5 total acreage added to the city limits in FY 2019-2020

* 51.5 acres of limited purpose were converted to full purpose

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

**Flood Control Projects**

**Status of Implementation & Compliance:** Fully implemented; compliant

The City's programs to ensure the assessment of existing and future structural flood control devices is the responsibility of the Watershed Protection Department (WPD). WPD staff continued the activities to meet City code and criteria elements in proposed flood control projects, evaluate existing flood control facilities for flood and water quality retrofit opportunities during the reporting period. The projects may include upgrade of low water crossings and culverts, the acquisition and restoration of properties in flood prone areas, channel modifications, storm drain improvements and the construction or modernization of storm water detention facilities. WPD continued work on adoption of floodplain regulations, Drainage Criteria Manual (DCM) updates and floodplain mapping to account for the increased rainfall per Atlas 14; activities include updates to existing floodplain models and maps and extension of modeling and mapping to approximately the 64-acre drainage area point.

The activities within this minimum control measure (MCM) element have been identified primarily to preserve and enhance the quality of storm water to the maximum extent practicable (MEP), but should also considered supportive of the Part II.C. Impaired Water Bodies and TMDL requirements and consistent with the City's voluntary responsibilities.

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

## MCM 3: Illicit Discharges Detection and Elimination

Illicit and Allowable Discharges

**Status of Implementation & Compliance:** Fully implemented; compliant

The City's Illicit Discharge Program, which includes a series of regulatory requirements in City Code to effectively prohibit illicit discharges and improper disposal into the municipal storm sewer system (MS4), is enforced by programs within the City's Austin Water (AW), and the Watershed Protection

Department (WPD). City staff investigates suspect facilities or activities, initiates inspections of the premises and connections to the MS4 and works to obtain voluntary compliance with City Code requirements. Non-storm water discharges to the City's MS4 are addressed through the City's Illicit Discharge Program. The activities within this minimum control measure (MCM) element have been identified primarily to preserve and enhance the quality of storm water to the maximum extent practicable (MEP), but should also considered supportive of the Part II.C. Impaired Water Bodies and Total Maximum Daily Load (TMDL) requirements and consistent with the City's voluntary responsibilities.

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

**Detection and Elimination of Illicit Discharges**

**Status of Implementation & Compliance:** Fully implemented; compliant

The City's Illicit Discharge Program, which includes investigations of illicit discharges and improper disposal into the municipal separate storm sewer system (MS4), to prevent, reduce or facilitate recovery of polluting discharges to the MS4, creeks and lakes from commercial, residential, and industrial sources, is implemented by the Watershed Protection Department (WPD).

During the reporting period WPD staff performed the following measurable goals:

- Conducted a total of 1057 incident investigations of which 32 were in the Barton Springs Recharge Zone (BSRZ).
- Spills and Complaint Response Program (SCRP) staff initiated 118 enforcement actions citywide, with 6 located in the BSRZ.
- The SCRP staff has continued to work with the criminal prosecutors at the Travis County District Attorney's Office in Austin and the SCRP staff referred 10 cases for criminal prosecution.
- Continued efforts to identify priority areas for illicit detection activities.

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

**Overflows and Infiltration (Wastewater Pipelines)**

**Status of Implementation & Compliance:** Fully implemented; compliant

The City's Austin Water (AW) is responsible for maintaining the integrity of its wastewater collection system to prevent the infiltration or seepage of wastewater into the storm sewer system and waterways.

This task is accomplished by using flow monitoring, sewer cleaning, television inspection, smoke testing, dye testing, walking of creeks with sewer line crossings and working with the Watershed Protection Department (WPD) to determine the location and sources of seepage, exfiltration, and inflow/infiltration.

During the reporting period AW staff performed the following measurable goals:

- Inspected 1,428,832 linear feet of wastewater pipeline via television.
- Cleaned 1,785,589 linear feet of wastewater pipeline.
- Smoke tested 218,791 is linear feet of wastewater pipeline.
- Replaced 22,703 linear feet of wastewater main pipeline.
- Handled a total of 1,936 requests for wastewater service calls including stop-up, backups, and overflows.
- Continued with improved wastewater overflow emergency response time – 91.4% of emergency calls associated with wastewater overflows had a crew on site to relieve the problem within one hour or less of the call being dispatched; 100% of calls had a crew on site to relieve problem within three hours or less.
- Continued with process improvements for correction, cleanup and investigation of cause of all wastewater overflows, backups, stop-ups, odor complaints, and other problems.
- Continued to provide on-the-spot repair of small leaks in the wastewater collection system as necessary.

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

**Overflows and Infiltration (Septic Systems)**

**Status of Implementation & Compliance:** Fully implemented; compliant

The City's Austin Water (AW) is responsible for the program to regulate On-Site Sewage Facilities (OSSF) located within the City of Austin's full purpose jurisdiction, and limited purpose annexation areas where health and safety codes apply.

The Texas Commission on Environmental Quality (TCEQ) has granted AW the authority to implement and enforce the OSSF regulations outlined in Title 30 of the Texas Administrative Code (TAC) Chapter 285 as well as additional requirements under City Code 15-5. The focus of the program is to abate and/or prevent pollution and injury to the public health from the use of inadequate and/or failing private sewage facilities therefore preventing the improper disposal of domestic waste and sewage.

The following measurable goals were performed during the reporting period:

- Completed 63 administrative and technical plan reviews for new or modified OSSFs.

- Issued 18 permits to construct OSSFs.
- Conducted 21 reviews for minor modifications to sites served by OSSFs.
- Completed 83 site inspections, (e.g., site evaluations, open trench, rock and pipe, and final inspections) to ensure compliance with existing design and installation requirements.
- Conducted 77 inspections to ensure proper abandonment of OSSFs.
- Completed two OSSF pollution complaint investigations.
- Conducted nine investigations related to malfunctioning systems and potential permit violations.
- Opened 39 enforcement cases to address maintenance reporting deficiencies.

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

**Household Hazardous Waste Program**

**Status of Implementation & Compliance***:* Fully implemented; compliant

The City's Austin Resource Recovery (ARR) Household Hazardous Waste Program (HHW) serves residents of Austin and Travis County Texas. The HHW Program provides for daily collection at a permanent facility with service throughout the week, and for customers who require home pickups or other accommodations. Participation levels have increased from 450 households at the initial event to some 35,615 households serviced in Fiscal Year 2019. The HHW facility suspended operations from March 18-May 31, 2020 and from July 6-September 7, 2020 due to Citywide COVID-19 safety concerns. As a result of these closures, participation fell to 21,113 households in Fiscal Year 2019-2020. In total, approximately 1,193,912 pounds of household hazardous waste was diverted from City municipal waste streams in FY 2019-2020.

ARR's HHW Program accomplished the following measurable goals during the reporting period:

- Provided drop-off services to 21,113 households in the Austin area.
- Handled a total volume of 1,193,912 pounds of hazardous waste.
- Disposed of 346,967 pounds of flammable materials.
- Disposed of 69,173 pounds of corrosive materials.
- Recycled 130,908 pounds of materials, this does not include paint.
- Recycled 155,031 pounds of paint.
- Recycled 65,108 pounds of waste oil and 2,475 pounds of oil filters.

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

**Illicit Discharge Inspection Program**

**Status of Implementation & Compliance:** Fully implemented; compliant

The City's Illicit Discharge Inspection Program is based primarily on the activities of the Watershed Protection Department (WPD). WPD staff investigate complaints/reports of illicit discharges to the storm sewer system, tracking the route of an illicit discharge and attempting to identify its source and cause. Once an illicit discharge source and cause have been identified, Spills and Complaint Response Program (SCRP) staff will work with the responsible party(s) to obtain compliance with City Code requirements. This includes the coordination of any initial response activities that may be necessary, supervision of remedial activities and possible referral to other more appropriate City programs, such as the Stormwater Discharge Permit Program (SDDP), that have regulatory and/or permitting authority over the facility. During the reporting period the SCRP staff performed the following minimum control measure activities:

- Responded to a total of 950 incidents that were reported through the 24-Hour Pollution Hotline.
- One illicit plumbing connection was detected and corrected during illicit discharge investigations by the SCRP staff.

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

**NPDES and TPDES Permittee List**

The list of NPDES and TPDES permittees is maintained by the WPD; the list is available upon request.

**MS4 Outfall Map**

MS4 outfall maps available upon request.

**Spill Prevention and Response**

**Status of Implementation & Compliance:** Fully implemented; compliant

The City's Watershed Protection Department's (WPD) Spills and Complaint Response Program (SCRP) maintains a rapid response capability for the investigation of environmental emergencies. When hazardous materials are involved, the SCRP staff work directly with the Austin Fire Department (AFD) Hazardous Materials Emergency Response Team. In these cases, emergency incident notification comes from AFD dispatch. Notification also comes from other agencies such as the Texas Commission on Environmental Quality (TCEQ), Travis County and through the WPD Pollution Hotline. The hotline

operates on a 24-hour basis, thus allowing for after-hours notification of environmental emergencies. The SCRP also responds to non-emergency pollution complaints, which are received from many sources, including:

- Private citizens calling the WPD Pollution Hotline directly.
- Patrolling assigned districts for evidence of illicit discharges.
- Referrals from other WPD field staff.
- Referrals from other City departments such as the Austin Fire Department (AFD), Austin Water (AW), and the Austin Police Department.
- Referrals from other regulatory agencies such as the TCEQ.

The SCRP has developed a categorization system for the reports of illegal discharges that are received based on the severity of the incident and the potential to pollute surface water or storm water quality. The two incident categories are:

- *Priority Incidents* - which pose an immediate threat to water quality, and
- *Non-priority Incidents* - which do not pose an immediate threat to water quality.

During the reporting period the Spills and Complaint Response Program completed the following minimum control measure activities:

- Responded to 550 priority incidents.
- Responded to 400 non-priority incidents.

The Spills and Complaint Response Program recovered 11,226,392 gallons and 972 cubic yards of pollutants, as a result of these pollution investigations.

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

**Austin Fire Department Special Operations**

**Status of Implementation & Compliance:** Fully implemented; compliant

The Austin Fire Department (AFD) hazardous materials response is one of several activities that are the responsibility of the Special Operations Division. The Special Operations Division specializes in maintaining response capabilities to hazardous material spills or other incidents that may endanger

human health and safety within the city limits. During the reporting period, the AFD Special Operations Division performed the following minimum control measure activities:

- Responded to 1,981 incidents, of which 59 were at facilities that have been identified as requiring AFD Aboveground Hazardous Materials Permits (see Industrial and High Risk Runoff).

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

## MCM 4: Pollution Prevention/Good Housekeeping for Municipal Operation

### Pollution Prevention/Good Housekeeping Program

**Status of Implementation & Compliance:** Fully implemented; compliant

The Pollution Prevention Good Housekeeping programs are implemented by several departments as described in the SWMP. The Watershed Protection Department (WPD) screens a list of all City properties and facilities to identify and prioritize city locations that could potentially contribute to pollutants in storm water runoff. Staff inspects these City properties and facilities on a rotational basis and provides periodic training on TPDES storm water best management practices to facilities staff, in various city departments. Although the WPD Water Quality Compliance (WQC) activities were affected by the Citywide COVID-19 safety measures, staff completed the following minimum control measure activities during the reporting period:

- Conducted 37 site visits of City owned properties to verify compliance with storm water regulations.
- Provided technical assistance to Public Works Seal Coat and Overlay Division on the application of trap rock to prevent illegal discharges to the storm sewer system.
- Assisted City of Austin Parks and Recreation staff with end-of-season swimming pool water discharges by testing the water to ensure complete removal of chlorine prior to releasing the water to area waterways.
- Assisted with special events; coordinating with event staff to identify appropriate BMP’s and pollution prevention measures for each event.
- Assisted Austin Parks and Recreation staff on best management practices for pressure washing graffiti from structures located over a body of water. Trained program staff on TPDES rules so that they were aware that wastewater from pressure washing activities could not be discharge to the City of Austin’s MS4.

- Completed all activities approved by TCEQ in the Compliance Plan (year one) relative to the MCM 4 deficiencies in the training program by September 30, 2020; activities included the formation of the citywide training team and distribution of training materials.

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time; updates to include the MCM 4 training requirements were completed and submitted in the system-wide annual report submitted May 1, 2020.

**Structural Control Maintenance - Waste Handling**

**Status of Implementation & Compliance:** Fully implemented; compliant

All materials removed from MS4 maintenance activities were disposed of in an acceptable permitted local landfill. There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

**Pesticide, Herbicide and Fertilizer Application**

**Integrated Pest Management Program**

**Status of Implementation & Compliance:** Fully implemented; compliant

The Integrated Pest Management (IPM) Program is a Citywide program that actively coordinates educational outreach activities and provides information to Texas Department of Agriculture licensed pesticide applicators, retail nurseries, the landscaping community, City land managers and their staff, and the general public to promote environmentally sound herbicide, pesticide and fertilizer management practices. The IPM Program is managed by the Watershed Protection Department (WPD). During the reporting period this program was affected by the Citywide COVID-19 safety measures, the IPM Program accomplished the following:

- WPD Education staff distributed brochures and other IPM materials to the public, retailers, and City staff on a limited basis by mailing materials to partner sites.
- Pest-related questions from citizens are responded to with a phone call or an email.
- The WPD Education staff hosted a one-day virtual Grow Green/IPM training for landscape professionals on November 17, 2020.
- Provided Structural Pest Control Service support:
    - Austin Water's Center for Environmental Research, a partnership of the City of Austin, The University of Texas at Austin, and Texas A&M University hosted the Texas Department of Agriculture Structural Pest Control Service's Austin area exams and classes on February 19,

2020.These Structural Pest Control Service classes and exams are provided for Austin area pest control and landscape management businesses, local school district employees and local governmental agency staff involved in pest control and landscape maintenance. Structural Pest Control Service training emphasizes the use of Integrated Pest Management for pest control, termite control, structural fumigation and weed control to reduce the use of chemicals in the environment. They have been closed for classes since March 16 2020, and will continue hosting classes and exams when the facility is allowed to reopen;

  - Collaborated with the Texas A&M AgriLife Extension, Travis County on a Texas Department of Agriculture continuing education units training with focus on urban pest issues including landscape pest management, herbicides and invasive brush control, minimizing pest pressures in turfgrass, turf diseases, oak wilt, and laws and regulations;
  - Administered the internal IPM Program, providing guidance to various City departments related to pest management activities.
- Administered an IPM Review Program for development projects; 100 private and public development IPM plans were reviewed for compliance with City codes and criteria.

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

**List of Municipal Facilities**

**Status of Implementation & Compliance:** Fully implemented; compliant

The Watershed Protection Department is responsible for this minimum control measure (MCM) element. See Appendix F for the List of Municipal Facilities.

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

## MCM 5: Industrial and High Risk Program

**Industrial and High Risk Inspection Program**

**Status of Implementation and Compliance:** Fully implemented; compliant

The Industrial and High Risk Program is based on the activities of the Austin Fire Department (AFD) and the WPD programs.

**Hazardous waste treatment, disposal or recovery facilities and facilities subject to SARA Title III**

The AFD Aboveground Hazardous Materials Permit Program is responsible for the inspection and permitting (three year permit term) of Austin facilities that store hazardous materials. During the reporting period, the AFD Aboveground Hazardous Materials Permit Program continued these minimum

control measure activities, maintaining information on 3,232 permit locations (281 are Tier II sites) and inspecting 480 facilities.

WPD is responsible for tracking remediation activities at selected sites. During the reporting period, WPD continued monitoring and mitigation activities when warranted at the following locations:

- **Waste Management, Inc., Industrial Waste Unit** The Austin Community Landfill Industrial Waste Unit is a closed industrial liquid waste disposal area that was operated in the 1970s and received large quantities of solvents, acids and other industrial liquid wastes. In response to citizen concerns in 2002, an agreement between the City and Waste Management, Inc. was finalized that requires WMI to conduct additional groundwater monitoring near the IWU. Placement of additional cover over the IWU was also required to prevent infiltration of storm water. The City continues to receive and review these monitoring reports and will work with WMI and/or the TCEQ to address any identified problems. In 2016 and 2018, the City collected surface water samples from the tributaries that are downgradient of the industrial waste unit and the adjacent municipal solid waste landfills. Samples were analyzed for a selective group of parameters (1,4-dioxane, arsenic, nickel and cobalt) which are periodically detected at or near the method detection limit in the groundwater monitoring wells located downgradient of industrial waste unit. To better understand the fate and transport of theses constituents, the City collected replicate surface water samples and analyzed them using more sensitive laboratory analytical methods with lower detection limits. Summary statistics for downgradient water chemistry results are below. All concentrations are within the federal and state permissible limits for surface water.

| Analyte | Min | Max | Average |
|---|---|---|---|
| 1,4-Dioxane (µg/L) | 0.147 | 1.25 | 0.564 |
| Arsenic (µg/L) | 0.7 | 2.59 | 0.946 |
| Cobalt (µg/L) | 0.4 | 1.37 | 0.488 |
| Nickel (µg/L) | 0.7 | 8.25 | 4.125 |

- **Brinkley-Anderson Landfill** – This abandoned landfill is located in northeast Austin near the intersection of Highway 183 and U.S. 290 East and is located on the east bank of Little Walnut Creek. Watershed Protection Department staff previously worked with the owners of the Salado at Walnut Creek Apartments, which overlie a portion of the landfill, to address leachate discharges to the creek from their drainage facility. The owner's consultant designed a system to redirect that leachate to the sanitary sewer system. The system was approved by TCEQ in 2009, and subsequently submitted to the City for review, but was never constructed. The owner's have conducted water quality monitoring and submitted results to TCEQ for review.

- **Lott Avenue Dump Site –** This small dumping area was discovered in early 2010 as a result of a citizen complaint regarding trash in a tributary of Fort Branch Creek. After large areas of surface dumping were removed from the stream channel by Watershed Protection Department crews; buried waste was discovered in the banks of the creek in several areas. The waste appears similar to the Rosewood site, likely ash from burned municipal-type waste. In 2012, the City began

design of remediation for the site. Design work by a private firm under contract to the City was delayed due to a dispute but has resumed. Construction is expected to begin in mid-2021

- **Butler Landfill –** The Butler Landfill is located on City parkland on the southern shore of Lady Bird Lake near the MoPac Expressway Bridge. The landfill was operated by the City from 1948 to 1967 exclusively for municipal waste. The City Council has initiated a public process to consider short- and long-term repairs of erosion of the landfill covering.

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

**Industrial facilities that the municipality determines are contributing a substantial pollutant loading to the municipal storm sewer system**

WPD's Water Quality Compliance (WQC) staff are responsible for identifying facilities that may be contributing a substantial pollutant load to the City's municipal storm sewer system (MS4) and establishing a database of industrial and high-risk facilities discharging to the City's MS4 within the Austin city limits.

During the reporting period, WQC staff continued to contact industrial facilities which according to their listed SIC codes, were required to obtain a Multi-Sector General Permit (MSGP) under the State's TPDES storm water permit program. Staff provided facilities notification regarding the issuance of the MSGP, instructed facilities to confirm their permit eligibility and provided instructions for obtaining permit coverage or no exposure certification.

Facilities were directed to complete the appropriate forms, submit originals to the State and forward a signed copy of either their Notice of Intent (NOI) or No Exposure Certification (NEC) to the City of Austin.

Facilities declaring a non-industrial status were required to sign and return a City of Austin non-industrial Facility Declaration Form and were advised to update their SIC Facilities declaring a non-industrial status were required to sign and return a *City of Austin Non-Industrial Facility Declaration Form* and were advised to update their Standard Industrial Classification (SIC) code to one that accurately reflects their business activities. In addition, code to one that accurately reflects their business activities.

In addition, Stormwater Discharge Permit Program (SDPP) staff also focused efforts on those facilities that may not be subject to the MSGP requirements but are believed to have the potential to contribute

pollutant loads to the MS4. During the reporting period, the following minimum control measure activities were performed:

- Issued City of Austin Stormwater Discharge Permits to 1,019 facilities.
- Conducted 176 stormwater inspections within the City's full purpose jurisdiction.
- Recovered approximately 71 gallons and 12 cubic yards of pollutants.
- Two illicit plumbing connections were detected and corrected during illicit discharge investigations by WQC staff.

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

**Underground Storage Tank Leak Protection Program**

DSD's Underground Storage Tank Leak Detection Program (UST) continued to focus efforts on all permittable facilities with underground storage tanks found within both the Barton Spring Zone (BSZ) and the full purpose city limits. The UST Program staff conducted inspections of identified facilities, ensuring compliance with City Water Quality Codes, including proper storage, monitoring and leak detection activities. The UST Program staff recommend best management practices and provide educational materials applicable to each operation as needed and during permit renewals. The UST Program issued both storage and/or construction permits to identified facilities in the BSZ.
During the FY19-20 reporting period, the UST Program performed the following minimum control measure activities:

- Issued 143 UST Hazardous Materials Construction permits.
- Renewed 135 UST Hazardous Materials Storage permits.
- Conducted 213 UST Compliance and Construction Inspections in the Austin and BSZ area.

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

## MCM 6: Construction Site Runoff

**Site Development Plan Regulations**

**Status of Implementation and Compliance:** Fully implemented; compliant

The Development Services Department (DSD) staff continued the site plan review program functions within the City's planning jurisdiction. The DSD environmental inspection staff inspects permitted site development plans, subdivision, and utility construction projects within the City and the ETJ for compliance with water quality regulations regarding water quality zones, impervious cover limitations,

erosion and sedimentation controls, site disturbances, permanent final stabilization, cut and fill, water quality controls, spoil disposal, storm sewer discharges, wastewater restrictions, roadways, where applicable.

**Inspection of Sites During Construction**

**Status of Implementation and Compliance:** Fully implemented; compliant

The DSD Environmental Inspection staff are responsible for inspecting construction projects for compliance with the approved plan which includes code and criteria manual requirements. Environmental inspectors conduct the required Pre-Construction meeting with the owner's representative, engineer, contractor, and relevant inspection staff. All parties review and discuss details and requirements of construction phase activities. Environmental Inspectors review the approved erosion sedimentation plan for placement and maintenance of erosion controls, water quality and drainage construction, and site restoration, permanent revegetation activities, and confirm placement of all temporary and permanent BMP's onsite. During the reporting period, DSD Environmental Inspection staff performed the following minimum control measure activities:

- Conducted 8,570 inspections at commercial construction sites.
- Conducted 1,350 inspections at residential construction sites.
- Conducted 8.832 inspections at residential redevelopment sites.
- Issued 100 Stop Work Orders due mostly to inadequate erosion and sedimentation controls or development activities without the required approved site plan or permits.
- Filed 139 misdemeanor complaint cases in municipal court, including 12 citations.

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

**Education and Outreach Program for Construction Site Operators**

**Status of Implementation and Compliance:** Fully implemented; compliant

Multiple City departments, including DSD and WPD, provide outreach to construction site operators and contractors. During the reporting period, the City continued the Education and Outreach Program for construction site operators, including the following activities:

- Provide written materials upon request related to local, state and federal regulatory requirements and technical guidance and non-technical information to the development, construction and engineering communities as well as the general public on an on-going basis.

- Continued meeting with development, construction and engineering communities as well as City staff during the design, development review and site construction phases of projects.
- DSD EV Inspection staff developed a pre-construction handout to educate the contractors and developers and help guide them through the City's environmental inspection and enforcement procedures. The handout has detailed diagrams and information on inspection of water quality and drainage ponds, maintenance requirements for BMP's, spill response contacts, TPDES Construction General Permit (CGP) permitting information and contacts.

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

## MCM 7: Public Education and Involvement

### Public Education

### Water Quality Education and Awareness Programs

**Status of Implementation and Compliance:** Fully implemented; compliant

The public education and awareness efforts of the City of Austin encompass a wide variety of water quality-related programs. The Watershed Protection, Austin Resource Recovery, and Austin Water Departments each have programs that provide water quality protection and pollution protection education to citizens in the Austin area. Efforts of each department continued during the reporting period, although many of the outreach efforts were significantly affected by the implementation of Citywide COVID-19 safety measures.

The Watershed Protection Department (WPD) Water Quality Compliance section , which focuses on pollution prevention education activities, promoted additional public education and awareness programs. During the reporting period WQC accomplished the following:

- Promotion of the 24-Hour Pollution Hotline targeted geographic locations with high population density and historically low call volume, aimed at raising awareness of the City's pollution investigation services in these underserved areas. Advertisements were run on social media, web pages, and in Austin Energy's Utility Bill Insert.
- East Austin Environmental Initiative (EAEI): One issue of the EAEI newsletter was produced and distributed virtually.
- Promoted a "Don't Blow It" campaign and posted information on social media that emphasizes keeping leaves and yard debris out of storm drains and waterways. Posted information on Facebook and responded to several of subsequent Facebook comments.
- Austin Enviro-Mechanics (AEM) – AEM is a program that gives incentive and recognition to businesses that contribute exceptional efforts to protect water quality program. Participants were recognized in a Community Impact Newspaper, and various Time Warner Cable media outlets.

- Shade Tree Mechanic Program: An initiative aimed at preventing pollution and water quality degradation associated with home automotive repair. Free oil change buckets, educational material and a list of free locations to drop off used oil are available to City of Austin residents. If a home auto repair issue is reported to the 24-Hour Pollution Hotline, staff investigates the complaint and meets with home mechanics to educate them on BMP's, water quality laws, and give them the free oil change bucket for recycling their waste oil.

**Public Involvement and Participation**

**Community Education**

**Status of Implementation and Compliance:** Fully implemented; compliant

The Watershed Protection Department (WPD) continued community outreach efforts during the reporting period, although the program efforts were impacted by the implementation of Citywide COVID-19 safety measures. During the reporting period the following activities continued:

- Displayed prominent interpretive signage about the endangered Barton Springs and Austin Blind salamanders, hydrology of the Edwards Aquifer, the history of the springs, and the importance of stewardship at the main entries to Barton Springs Pool.
- Displayed signs in English and Spanish at Eliza Spring, Sunken Gardens and Upper Barton Springs to raise awareness about the endangered salamanders and activities that are not allowed in the area.
- Continued to provide materials such as an audio tour of Barton Springs Pool that citizens can stream on their phones, the "Who's swimming with you?" brochure in both English and Spanish, and Barton Springs salamander masks.
- Provided Grow Green landscaping education that includes a focus on reducing the use of landscaping chemicals by using integrated pest management techniques.
- Continued support for the Splash! groundwater education exhibit near Barton Springs. The building was closed to the public during the pandemic, but staff worked to share educational information online. During the reporting period the, "Barton Creek Timestream" exhibit debuted to share information about community advocacy that has protected the environmental health of this special ecosystem.

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

## MCM 8: Monitoring, Evaluation and Reporting

The monitoring, evaluation and reporting requirements as required by Part B.2.h. are the responsibility of the Watershed Protection Department (WPD). The program activities were impacted by the implementation of Citywide COVID-19 safety measures, but efforts continued to review and evaluate collected data and further refine standard operating procedures (SOP) within each program.

**Dry Weather Screening**

**Status of Implementation and Compliance:** Fully implemented; compliant

The WPD staff conducts dry-weather screening as part of ongoing efforts to detect and eliminate illicit connections and improper discharges to the MS4 . Outfalls to be screened were selected if they were a) 36 inches or greater, (b) within 50 feet of the centerline of named creeks and c) within the full purpose jurisdiction of the City of Austin. No dry weather screening was conducted in FY19-20 due to Citywide COVID-19 safety measures and transition of the program from the Monitoring group to Water Quality Compliance group. The Water Quality Compliance staff will resume Dry Weather Screening in Year Three of the permit. Activities reported on within this Minimum Control Measure (MCM) element have been identified as supportive of the TCEQ Approved Austin Area TMDL IP Plans. There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

**Wet Weather Screening**

**Status of Implementation and Compliance:** Fully implemented; compliant

The Wet Weather Screening was not conducted during the reporting period due to the implementation of Citywide COVID-19 safety measures. Wet weather screening activities will resume and be completed within the remaining permit period.

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

**Industrial and High Risk Monitoring**

**Status:** On-going

Austin Fire Department (AFD) and Watershed Protection Department (WPD) have an Industrial and High Risk Monitoring Program that identifies and prioritizes facilities that have the potential to discharge pollutants into the municipal separate storm sewer system (MS4). As part of this effort WPD Pollution, Prevention, Reduction (PPR) Stormwater Discharge Permit Program (SDPP) staff are responsible for identifying facilities that may fall under TPDES Stormwater rules. The SDPP staff may request that analytical monitoring data collected by the facility be submitted for review. TCEQ's Central Registry is reviewed annually for new facilities. SDPP staff did not submit any enforcement referrals to the TCEQ during this reporting period. There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

**Floatables Program**

**Status of Implementation & Compliance:** Fully implemented; compliant

The City's program to reduce the discharge of floatables into the MS4 is the responsibility of the Watershed Protection Department (WPD). WPD is responsible for the maintenance and periodic observation of two trash boom monitoring sites on Lady Bird Lake (At the mouth of Shoal and West Bouldin Creeks); inspecting sites weekly and cleaning monthly, if necessary, or as needed after major storm events, once staff verifies that site conditions are safe and adequate for access. The WPD during the reporting period WPD removed approximately 1.21 tons of floatable trash and debris from the two boom locations on Lady Bird Lake.

There are no additional activities, BMPs or changes to the SWMP identified as needed at this time.

**TMDL Requirements**

**Status of Implementation & Compliance:** Fully implemented; compliant

The City of Austin has participated in the development the two TCEQ Approved Austin Area TMDL IP Plans, and while the measurable goals described within many of the minimum control measure (MCM) elements, activities and BMPs within the City's SWMP have been identified primarily to preserve and enhance the quality of storm water runoff to the maximum extent practicable (MEP), these activities may also be considered supportive of the Part II.C. Impaired Water Bodies and Total Maximum Daily Load (TMDL) requirements and consistent with the voluntary responsibilities in those portions of the MS4 that discharge to portions of watersheds included in one of the two TCEQ Approved Austin Area TMDL IP Plans. It has been identified and noted within each MCM when the activities or BMPs are supportive of the TMDL IP Plans.

# SECTION 2

## Proposed Changes to the Storm Water Management Program

As required by Parts III.H.1. and IV.C.3.c. of the City's permit, a review of the current Storm Water Management Program (SWMP) was conducted. Based on this review and the TCEQ Comprehensive Compliance Investigation Summary of Investigation Findings, the Watershed Protection Department (WPD) has made updates to the SWMP ranging from minor and non-substantive changes to more succinctly and appropriately describe the MCM activities, best management practices (BMPs) and measurable goals, to the MCM 4 description update warranted by and the TCEQ acceptance of the City's Compliance Plan resolving alleged violation 743805.

### Proposed Modifications

*Global Changes*

- Minor updates, grammatical, typographical, and other incidental, non-substantive changes and updates were made throughout the SWMP document to improve accuracy.

*Section-Specific Changes*

- Update to Part III.B. SWMP MCM 4. Pollution Prevention and Good Housekeeping for Municipal Operations to include information related to the TCEQ approved compliance plan to ensure appropriate training for all employees responsible for municipal operations.

A copy of the revised SWMP is included as Appendix A.

# SECTION 3

## Summary of Enforcement Actions and Inspections

As required by Part IV.C.3.d. of the permit, the City of Austin has compiled summary information describing the number and nature of enforcement action, inspections and complaint investigations conducted by various City programs during the reporting period between October 1, 2019 and September 30, 2020. A summary of the enforcement and inspection activities of these programs have been summarized below:

### Spill Response Program

The Watershed Protection Department (WPD) Water Quality Compliance (WQC) conducts investigations to prevent, reduce or facilitate recovery of polluting discharges to the MS4, creeks and lakes from commercial, residential, and industrial sources. During the reporting period the WQC staff conducted:

- 950 incident investigations, 18 of which were in the Barton Springs Recharge Zone (BRSZ).
- Initiated 142 enforcement actions citywide, with 3 located in the BSRZ.

A portion of these enforcement actions were more appropriate for other local enforcement agencies to investigate, and WPD staff continued to work with the criminal prosecutors at the Travis County District Attorney's Office in Austin, as well as other local enforcement agencies (Development Services Department, Texas Commission on Environmental Quality, etc). During the reporting period the SR staff referred 11 cases for investigation by other enforcement agencies.

### Stormwater Inspection Program

The WPD WQC staff is responsible for the inspections of commercial, industrial, and city facilities in the Full Purpose City Limits that have the potential to discharge pollutants into the storm sewer system and waterways. WQC staff confirm proper use of best management practices (BMPs) and ensure corrective actions are taken to obtain compliance with the City's water quality code. During the reporting period WQC staff:

- Conducted 176 inspections of facilities, 1 in the Barton Springs Recharge Zone (BSRZ).

- Initiated 4 enforcement actions were initiated due to non-compliant conditions, none of which are located in the BSRZ.

**Construction Inspection Program**

The Development Services Department (DSD), Environmental Inspection Program staff continued to ensure compliance and proper installation and maintenance of erosion and sedimentation controls, BMP's and on-site drainage and water quality controls. During the reporting period DSD staff:

- Conducted 8,570 inspections at commercial construction sites.
- Conducted 1,350 inspections at residential construction sites.
- Conducted 8,832 inspections at residential redevelopment construction sites. Staff issued 100 Stop Work Orders, due mostly to inadequate erosion and sedimentation controls. The Environmental Inspection Program filed 334 misdemeanor complaint cases in municipal court including 12 Citations.

**Underground Storage Tank Inspection and Leak Detection Program**

During the reporting period, the DSD Underground Storage Tank (UST) Program:

- Issued 14 hazardous materials construction permits.
- Renewed 92 (underground) hazardous materials storage permits (for a 3-year period)
- Conducted 1,483 inspections in the Austin and Barton Springs Zone (BSZ) area.

**On-site Sewer System Program**

The Austin Water (AW) On-site Sewage Facility (OSSF) Program continued efforts to ensure compliance with OSSF regulations. During the reporting period the AW staff:

- Conducted approximately 83 inspections to ensure compliance with installation and modification of on-site sewage facilities.
- Conducted approximately 77 inspections to ensure the proper abandonment of OSSFs.
- Investigated 2 pollution complaints related to OSSFs.
- Opened 9 enforcement cases to address malfunctioning systems and potential permit violations.
- Initiated 39 enforcement cases related to reporting deficiencies.

- No cases were referred to Municipal Court since the effective date of the Citywide COVID-19 safety measures (Work Safe-Stay at Home City Orders).

**Stormwater Control Measures (SCM) Inspection Program**

The Watershed Protection Department (WPD) continued inspection of residential (public) and commercial (private) stormwater control measures (SCM) throughout the permit area specifically the Barton Springs Zone (BSZ) for compliance with City code and criteria requirements. During the reporting period, the WPD staff:

- Conducted 832 residential (public) inspections.
- Conducted 925 commercial (private) inspections.
- Conducted 247 Notice of Violations (NOVs) for commercial program assets.
- Conducted 951 post-construction inspections of the 359 Operating Permit assets within the Barton Springs Zone (BSZ).
- Issued 31 NOVs issued to commercial (private) assets within BSZ.

**Aboveground Hazardous Materials Permit Program**

The Austin Fire Department (AFD) Fire Marshal's Office and Special Operations personnel conducted the following activities during the reporting period:

- Conducted inspections at 482 facilities that store hazardous materials.
- No enforcement actions were necessary to gain compliance.

**Inactive Landfill Inspection Program**

The Watershed Protection Department (WPD) did not identify any new sites or find unexpected conditions at any known inactive landfills during the reporting period.

# Appendix A

# City of Austin Storm Water Management Program

*TPDES Permit No.* WQ0004705000 *(EPA I.D. No. TXS000401)*
*STORM WATER MANAGEMENT PROGRAM*
*City of Austin*

# STORM WATER MANAGEMENT PROGRAM
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# Storm Water Management Program

## MCM 1. MS4 Maintenance Activities

### Structural Controls (i)

In compliance with Part III. Stormwater Management Program, Section B.2.a.i. of the City of Austin (COA) TPDES Stormwater Permit, the Watershed Protection Department (WPD) operates and maintains the municipal storm sewer system (MS4), a storm water conveyance network composed of natural waterway, engineered channels, pipelines, stormwater controls, green infrastructure and other structural controls. The WPD Field Operations Division (FOD) is primarily responsible for the on-going operation of the MS4, which includes a variety of inspection and management activities to ensure conveyance of storm water runoff in a manner as to reduce erosion and the discharge of pollutants. These MS4 inspection and maintenance programs are part of a comprehensive drainage asset management plan to identify, evaluate and solve flooding, erosion and water quality problems, including those related to non-point source pollution; ensuring satisfactory operation of the drainage network facilities, maximizing the life of the assets.

The targeted controls and measurable goals described within this Part III.B. SWMP minimum control measure element have been identified primarily to preserve and enhance the quality of storm water runoff to the maximum extent practicable (MEP) throughout the City's full-purpose jurisdiction; but they are also to be considered supportive of the Part II.C. Impaired Water Bodies and Total Maximum Daily Load (TMDL) Requirements, and consistent with the voluntary responsibilities in those portions of the MS4 that discharge to portions of watersheds included in one of the two TCEQ Approved Austin Area TMDL IP Plans for Four Austin Streams and Gilleland.

The FOD conducts MS4 inspection and maintenance activities in an on-going manner throughout the year, between October 1$^{st}$ and September 30$^{th}$ to maintain proper operation and conveyance of storm water runoff. The frequency of maintenance activities are based on standard best management practices (BMP) for the assets, results of routine inspections, and complaint driven investigation findings. Any necessary repairs identified during inspections and investigations are

documented, work is prioritized, assigned and completed in a manner to ensure functionality and compliance with City code and criteria.

These best management practices (BMPs) activities include routine vegetation control within identified open channels, stormwater controls and green infrastructure assets; removal of excessive vegetation, debris and obstructions from open channels, waterways, culvert and bridge locations; and completion of routine flow-line restoration activities, mid-scale creek bank stabilization and large-scale waterway rehabilitation projects that address significant erosion concerns. These activities also include routine inspections of the MS4 drainage pipeline system asset areas; inlets, manholes and pipeline routes are cleaned and repaired as needed throughout the year based on asset performance, condition and prioritization. FOD staff conduct inspections of stormwater control measures (SCMs) associated with residential development and City facilities on a routine basis throughout the year. Full asset condition assessments, identifying and prioritizing structural issues, general maintenance, site conditions, or excess vegetation to be addressed to ensure proper functionality, are conducted on a one-year schedule.
FOD staff are responsible for the identification and inspection of residential and commercial storm water controls located within the Barton Springs Zone multiple times per year due to the sensitivity of the areas and inspection of stormwater control measures (SCMs) associated with commercial development throughout the remainder of the City have routine site inspections conducted on a three-year schedule.

***Measurable Goals - Structural Controls***

- Remove debris and excessive vegetation from approximately fifty (50) miles of open channels through routine vegetation management; frequency between three and six times a year/growing season.
- Provide routine vegetation management at 75% of all storm control measures identified as the City of Austin's maintenance responsibility; frequency between three and six times a year/growing season.
- Clear a minimum of 3 miles of open waterways of excess sediment and obstructions annually in order to maintain flood flow conveyance; frequency based on inspection specifications and prioritization criteria.
- Remove debris, sediment, vegetation and obstructions from at least 500 culvert and bridge locations annually in order to maintain flood flow conveyance; based on inspection specifications and prioritization criteria.

- Annually inspect 75% of the storm control measures identified to be maintained by the City of Austin.
- Annually inspect 75% of the publicly maintained facilities within the BSZ and perform necessary maintenance.
- Annually inspect 2,500 stormwater control measures associated with private commercial development to enforce compliance with City Code.
- Annually inspect 75% of the commercial water quality controls in the BSZ subject to the Barton Springs Zone Operating Permit program requirements.
- Inspect and clean at least 2,500 City of Austin storm drain inlets to maintain flood flow conveyance and remove collected sediment and other pollutants.
- Clean at least four miles (21,120 ft.) of the City of Austin storm drain pipeline system annually to maintain flood flow conveyance.

## Floatables (ii)

In compliance with Part III. Stormwater Management Program, Section B.2.a.ii. of the City of Austin (COA) TPDES Stormwater Permit, the Watershed Protection Department (WPD) operates a floatables program that has established litter collection sites at the mouth of two urban creeks that receive storm water discharges from Austin's MS4, just prior to their discharge into Lady Bird Lake. The Shoal Creek site was selected due to the abundance of impervious cover in the central-west Austin watershed. It is 11.2 miles in length and has a drainage area of 12.9 square miles of highly urbanized development. There is an extensive amount of public use as the creek passes through several City parks and includes a Hike and Bike Trail that runs the length of the stream, and the potential for refuse to enter the stream. The land-use break down for the watershed is 54% residential, 19% business, 9% civic, 6% roadways and 12% undeveloped.

The West Bouldin Creek site is located on stream that winds through a primarily residential area of south-central Austin. It is three miles in length and has a drainage area of approximately 2.9 square miles, passing through several parks before entering Lady Bird Lake at Auditorium Shores. The land-use breakdown for the watershed is 69% residential, 12% business, 4% civic, 3% roadways and 12% undeveloped. This stream was selected due to the abundance of impervious cover in the watershed, the numerous public access locations along the stream, the potential for refuse associated with human activities to enter the stream and the possibility of increased public use in the future. See Table 1. for the floatables program removal locations.

Table 1. Floatables Removal Site Locations

| Watershed | Site No. | Monitoring & Collection Site Location | Land Use |
|---|---|---|---|
| Shoal Creek | 1 | Shoal Creek at Lady Bird Lake | Mixed Urban |
| West Bouldin Creek | 2 | West Bouldin Creek at Lady Bird Lake | Residential Urban |

The FOD conducts floatable inspection and maintenance activities in an on-going manner throughout the year, between October 1st and September 30th to ensure proper operation and effectiveness. Each boom is made of materials that allow the boom to float at the water surface and extends across the width of the creek, anchored on either shoreline to maintain its position in the creek; trapping floating materials flowing toward the mouth of the creek for easier removal. FOD inspect the booms and when identified, crews remove all trapped floating material using hand equipment that reach the middle of the creek, allowing removal from both sides of the creeks. The material removed from each site is loaded into City dump trucks, hauled to an acceptable local landfill and measured by weight at the disposal site.

***Measurable Goals - Floatables***

- Inspect the condition of each floatables monitoring boom site weekly and after major storm events.
- Clean each monitoring boom site on a monthly basis (if necessary); trash/debris removal activities commence when the access areas to the sites have dried and are safe for work.
- Report total tons of trash and debris (wet) removed from floatables booms.

## Roadways (iii)

In compliance with Part III. Stormwater Management Program, Section B.2.a.iii. of the City of Austin (COA) TPDES Stormwater Permit, and in the effort to reduce the amount of pollutants discharged into local waterways from streets and roadways, the City of Austin has developed a Roadways Program that addresses snow and ice response, road repair, street cleaning, litter control, and pollutants from traffic.

The City conducts roadway program activities in an on-going manner throughout the year, between October 1st and September 30th to ensure proper operation and effectiveness.

Snow and Ice Response

Snow, ice, and sleet create unsafe driving surfaces on streets and bridges. As such, the City has developed an emergency response program that uses barricading and sanding to effectively treat slick streets and roadways during the rare ice and snow events. Public Works Department (PWD) staff monitors and evaluates the road condition to identify the streets and bridges that need to be sanded or barricaded to ensure public safety. Once it has been determined that the ice or snow conditions are no longer a threat, PWD will dispatch staff to remove barricades and start street sweeping activities in the areas where sand was used.

Road/Right of Way Maintenance and Repair

Routine maintenance of the streets, bridges, and ROW within the City of Austin are the responsibility of the PWD. The primary maintenance functions of the Street and Bridge Operations Division of PWD include, but are not limited to:

- repairs to potholes, surface replacements and pavement failures
- crack sealing
- overlay
- seal coating
- fog sealing
- slurry sealing
- maintenance of unpaved streets and alleys
- removal of debris from the Rights of Way (ROW)
- Bridge repair and management
- Utility excavation repairs, concrete structure repairs

PWD roadway maintenance projects require the use of erosion and sedimentation controls on all projects and will typically include:

- Temporary inlet protection
- Silt fence
- Rock berms
- Mulch logs and socks
- Stabilized construction entrances

PWD staff use approved cleaning materials, good house cleaning practices, proper waste disposal methods and other best management practices (BMP) to minimize the occurrence of non-storm water discharges. Over the five-year permit period the PWD will continue the roadway maintenance as described, although changes to the scope of the program activities may occur during the annual review of the program budget and effectiveness.

Street Cleaning

Routine street cleaning in the City of Austin is the responsibility of Austin Resource Recovery (ARR), which conducts activities in all areas within the City limits. ARR activities include the removal of trash, litter and dirt that has collected in the streets and gutters for health, safety, aesthetic and water quality reasons. The ARR Street Cleaning Program uses regenerative air street sweepers in its operations to clean Austin streets; each year this program:

- cleans over 52,900 curb miles of streets in Austin, and
- collects over 6,300 tons of trash, leaves, debris and dirt from impervious roadway surfaces.

The Central Business District will be swept daily to maximize removal efficiencies. Residential curbed streets will be swept on an average frequency of twice per year.

Litter Control

The Litter Control Program of the City of Austin is the responsibility of ARR, Litter Abatement Division. The Litter Control Program is implemented within the City limits and targets:

- City-owned property within the City limits for removal of trash, litter, and debris which has collected in the streets and the public rights-of-way.
- neighborhood cleanups; as requested.
- brush and bulk pick-up; approximately twice per year (Brush and Bulk Collection Program).
- removal of dead animals from roadways and public property; as reported or found.
- marketing of anti-littering programs in Austin; ongoing.

Programs to control litter are also implemented by the Collection Services Division, which is collected once a week from residences. Recyclables are collected every other week, and grass clippings and leaves are collected weekly and taken to Hornsby Bend for composting into "Dillo Dirt."

***Measurable Goals – Roadways***

- Number of snow or ice events during the reporting period.
- Tons of litter from sidewalks and litter containers in the downtown area, streets, rights-of-ways, and other City-owned property.
- Tons of dead animals removed from roadways.
- Tons of bulk items collected from residences within the service area.
- Tons of brush items collected from residences within the service area. and

- Tons of yard trimmings (to be recycled into compost) collected from residences during weekly collection activities.

# MCM 2. Post-Construction Stormwater Control Measures

## Areas of New Development and Significant Redevelopment (i)

In compliance with Part III. Stormwater Management Program, Section B.2.b.i. of the City of Austin (COA) TPDES Stormwater Permit, multiple departments implement the comprehensive over-sight of land development process requirements, regulatory compliance and enforce programs to ensure the proper operation and maintenance of controls after new or redevelopment is complete. Included in goals of these activities is to limit erosion and the discharge of pollutants in the effort to protect water quality within the City's jurisdiction. This is achieved through a number of ordinances, water quality regulations, and policies.

## Comprehensive Planning Process (ii)

In compliance with Part III. Stormwater Management Program, Section B.2.b.ii. of the City of Austin (COA) TPDES Stormwater Permit, the City continues to implement a master planning process that minimize the discharge of pollutants to the municipal storm sewer system (MS4). The Planning and Zoning Services (PAZ) are responsible for comprehensive planning in the City. Comprehensive planning is done to assure orderly growth, protect environmentally sensitive areas and maintain an efficient infrastructure within the City's planning jurisdiction, which is defined as the areas within the City's territorial and extra-territorial boundaries. The land use and population information produced by the PAZ are utilized by a number of City departments for comprehensive planning activities. Comprehensive planning activities are conducted by other City of Austin departments as well. These activities include, but are not limited to the following:

- Implementation of Imagine Austin through the eight identified priority program teams
- Watershed, land use and natural resource studies conducted by the WPD which is responsible for the development of water quality control programs, planning and design for flood control structures, erosion control and prevention projects and implementation of regulatory controls
- Wastewater facility planning is conducted on an on-going basis by the Austin Water, as part of the City's Capital Improvements Program
- Transportation planning conducted by the Transportation Department
- The base-map maintenance program provided by the Geographic Information Systems Section of the City's Communication and Technology Management Office, which is directed at building and maintaining a uniform land use base map to be used by all utilities and City departments, as one of several on-going planning support programs. Additional mapped data available includes topography, floodplains, geological features and political jurisdictions.

The Imagine Austin Comprehensive Plan was adopted by the Austin City Council in June 2012. Two major themes of Imagine Austin are "Complete Communities" and "Sustainability." In order to transform the plan's vision into reality, several priority programs were identified to provide the structure and direction to implement the plan: Code Next is currently being revised involving all City Council PAZ, DSD, City Departments and the Public.

See http://www.austintexas.gov/department/imagine-austin

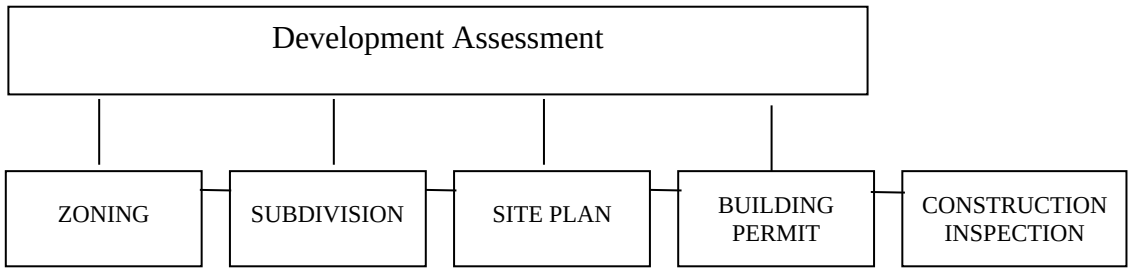
***Measurable Goals – Planning***

- Population change data
- Annexation data

## Regulatory Mechanism (iii)

In compliance with Part III. Stormwater Management Program, Section B.2.b.iii. of the City of Austin (COA) TPDES Stormwater Permit, multiple City departments continue to implement and enforce the controls that minimize the discharge of pollutants to the municipal storm sewer system (MS4), after new or redevelopment is complete.

New development and redevelopment activities in the City of Austin's planning jurisdiction are subject to internal review for compliance with water quality regulations of the Austin City Code. Development or redevelopment of an individual parcel of land generally undergoes the following review process:




The DSD includes development review staff that are responsible for the environmental and water quality related aspects of project review, including:

- the detailed review of new subdivisions for compliance with City drainage standards with respect to stormwater control measures, drainage easements and other proposed water quality facilities;
- the detailed review of specific stormwater control measures, drainage easements and drainage facilities in the construction plans for subdivisions, site development projects and utility projects;
- the detailed review of Site Plan for compliance with environmental code and criteria.

The Austin City Council passed a new Watershed Protection Ordinance October 2013 to improve creek and floodplain protection; prevent unsustainable public expense on drainage systems; and simplify development regulation where possible. See Tables 2-5 for site plan review process. See Table 6 for the environmental review process. See Table 7 Watershed Protection Ordinance Regulations Summary.

***Measurable Goals - Regulatory Mechanism***

- Subdivision application reviewed.
- Site development plan review & school plan reviewed.
- Zoning application reviewed.
- Underground Storage Tank application reviewed.
- General Permit application reviewed.
- Operating Permit Barton Springs Zone application reviewed.

Table 2. City of Austin Zoning Process within the City Limit

| Submittal | To DSD Intake |
|---|---|
| Environmental Regulation Review Elements | *Development:*<br>Intensity<br>Density<br>*Environmental:*<br>Water resources/quality<br>Floodplain/flooding<br>Critical environmental features<br>Existing trees<br>Significant slopes greater than 15% |
| Review Authority | DSD PAZ Planning Commission<br>Environmental Commission<br>Zoning and Platting Commission |
| Notice | Property owners within 500 feet<br>Registered neighborhood organizations within 500 feet<br>Utility Customers within 500 feet<br>Public hearings notification through sign posting and newspaper advertisements |
| Approval Authority | City Council |
| Product | Zoning change |

Table 3. City of Austin Subdivision Development Process within City Limits and ETJ

| Submittal | To DSD Intake |
|---|---|
| Environmental Regulation Review Elements | *Design and Engineering:*<br>Lot size and layout<br>Drainage and floodplains<br>Erosion Hazard Zone<br>Runoff controls and water quality controls<br>*Environmental:*<br>Water quality zones<br>Impervious cover calculations<br>Non-structural water quality controls<br>Structural water quality controls<br>Critical environmental features<br>Existing trees<br>Significant slopes greater than 15% |
| Review Authority | DSD<br>Environmental Commission<br>Planning Commission<br>Zoning and Platting Commission |
| Notice | Property owners within 500 feet<br>Registered neighborhood organizations within500 feet<br>Utility customers within 500’<br>Public hearings notification through sign posting and newspaper advertisements (preliminary plan only) |
| Approval Authority | Planning Commission<br>Zoning and Platting Commission<br>DSD & PAZ Director |
| Product | Preliminary plan<br>Final plat<br>Released subdivision construction plan |

Table 4. City of Austin Site Plan Process*

| Submittal | To DSD Intake |
|---|---|
| Environmental Regulation Review Elements | *Design:*<br>Intensity<br>Density<br>Setbacks<br>*Environmental:*<br>Water quality zones<br>Impervious cover calculations<br>Non-structural water quality controls<br>Structural water quality controls<br>Critical environmental features<br>Existing trees<br>Significant slopes greater than 15%<br>Landscape requirements<br>*Construction:*<br>Drainage and floodplains<br>Erosion Hazard Zone<br>Runoff controls and water quality controls |
| Review Authority | DSD<br>Environmental Commission<br>Planning Commission<br>Zoning and Platting Commission |
| Notice | Property owners within 500 feet<br>Registered neighborhood organizations within 500 feet<br>Utility customers within 500 feet<br>Public hearings notification through sign posting and newspaper advertisements |
| Approval Authority | Planning Commission for:<br>Hill Country Roadway site plans<br>Conditional use site plans<br>Variances<br>Administrative approval for all others if complying with City Code |

Table 5**.** Summary of Water Quality Regulations in the Austin City Code, Chapter 25-8 Relative to the Watershed Protection Ordinance (Applicable Within City and ETJ)

| ***General Standards – Chapter 25-8, Subchapter A*** | |
|---|---|
| Critical Water Quality Zones (CWQZ) | Establishes CWQZs along creeks with drainage basins over 64 acres as well as the shorelines of lakes and rivers. The geometry of the buffer can vary with the size of the contributing drainage area and the watershed classification. Most waterways are classified as minor, intermediate, or major. Development or alterations within the CWQZ is prohibited, with exceptions for limited roadway |
| Water Quality Transition Zones (WQTZ) | Established WQTZs parallel to all CWQZs, except for waterways in the Urban and Suburban watersheds. Width differs depending on type of waterway. Limited development and impervious cover allowed within WQTZs depending on watershed category. |
| Construction on Slopes | Prohibits roadways or driveways on slopes over 15% unless providing access to flatter slopes. Prohibits structures on slopes over 25%. Allows structures on slopes between 15-25% if less than 10% impervious cover on slopes of 15-25% with containment and terracing. |
| Erosion & Sedimentation Controls (ESC) | Requires ESC for all construction and development within all watersheds. ESC plan must comply with standards in the City of Austin Environmental Criteria Manual. |
| Clearing and Temporary Site Disturbances | Limits survey width to 15 feet. Limits length of time between rough cutting and surfacing/stabilization to 18 months. Limits roadway clearing to twice the surface width. Required in all watersheds. |
| Cut and Fill | Prohibits cut or fill over four feet except for within roadway rights-of-way and for structural excavation. Not applicable within Urban watersheds. |
| Water Quality Controls | Requires water quality controls to capture and treat runoff from all contributing areas in all watersheds. Innovative runoff management practices must be reviewed and approved by WPD. Requires water quality controls for all development in the Barton Springs Zone and for greater than 8,000 square feet of impervious cover in all other watersheds |
| Optional Payment-In-Lieu of Structural Controls | Allows developer the option to request authorization to deposit a cash payment with the City in lieu of constructing onsite structural water quality controls. Applicable only with Urban watersheds. |
| Floodplain Modification | Floodplain modification is permitted if the modifications are necessary to protect public health and safety; would provide a significant, demonstrable environmental benefit; are necessary for development allowed in the CWQZ; or are located outside of the CWQZ in an area determined to be in poor or fair condition by a functional assessment of floodplain health. |
| Impervious Cover | Impervious cover is defined as the total area of any surface that prevents the infiltration of water into the ground, with exceptions for things like trails, water quality controls, and pools. Limits in upland areas vary by watershed classification. |

Table 5. Continued

| | |
|---|---|
| Redevelopment Exception | Properties that meet all the requirements of the redevelopment exception (e.g., no increase in impervious cover, install water quality controls) do not have to comply with the rest of the requirements of Section 25-8 Subchapter A. The Redevelopment Exception varies by watershed regulation area. |
| Spoils Disposal | Prohibits spoils sites in 100-year floodplains or on slopes over 15%, with some exceptions. Sites require reasonable access, restoration, and revegetation. Required in all watersheds. |
| Critical Environmental Features (CEFs) | Requires 150-foot setbacks from bluffs, springs, canyon rimrocks, caves, sinkholes, karst features, and wetlands. Setbacks may be administratively reduced upon inspection by staff geologists/biologists in WPD. No wetland protection in the central business district. |
| Wastewater Treatment | Wastewater treatment by land application prohibited on slopes greater than 15 percent, in a critical water quality zone, in a 100-year floodplain, on the trunk of surveyed trees, in a CEF buffer, or during wet weather conditions. |
| Storm Sewer Discharges | Allows issuance of a certificate of occupancy only if it is in compliance with requirements of Discharges to Storm Sewers or Watercourses of the City Code. |
| *Additional Standards* | |
| Environmental Resource Inventory | Requires an environmental resource inventory in accordance with the Environmental Criteria Manual regarding hydrology, vegetation, wastewater treatment, critical environmental features, and storm water runoff and pollution abatement. |
| Overland Flow | Requires maintenance of overland flow patterns, natural drainage features and dispersion of runoff to sheet flow whenever possible. |
| Blasting | Restrictions placed on blasting for projects in CWQZs or WQTZs over the Edwards Aquifer Recharge Zone and within 300 feet of critical environmental features. |
| Industrial Uses | Requires pollutant attenuation plans and refers to City Code storage design requirements for hazardous materials. Requires detention of storm water onsite and filtration before discharge. |
| Roadways and Driveways | Requires alternative designs for streets in water quality transition zones, minimum lot sizes and lot frontage and reasonable driveway access relative to design, grades and joint use. |
| Wastewater Treatment | Wastewater treatment by land application prohibited on slopes greater than 15 percent, in a critical water quality zone, in a 100-year floodplain, on the trunk of surveyed trees, in a CEF buffer, or during wet weather conditions. |
| Storm Sewer Discharges | Allows issuance of a certificate of occupancy only if it is in compliance with requirements of Discharges to Storm Sewers or Watercourses of the City Code. |

Table 6. Additional Standards in the Barton Springs Zone

| ***Additional Standards for Watersheds in the Barton Springs Zone*** | |
|---|---|
| Impervious Cover Limits | All percentages listed are maximums allowable values calculated on a net site area basis. 15% is allowed over the Recharge Zone. 20% is allowed over the Barton Springs Contributing Zone within the Barton Creek Watershed. 25% is allowed over the remaining portion of the Barton Springs Contributing Zone. |
| Pollutant Load Restrictions | Requires that runoff be managed and treated such that no increases occur in the average annual loadings of total suspended solids, total phosphorus, total nitrogen, chemical oxygen demand, total lead, cadmium, E. coli, volatile organic compounds, total organic carbon, pesticides, and herbicides from the site. |
| Pollution Reduction Measures | Impervious cover must be reduced if needed to assure compliance with pollutant load restrictions. |
| Critical Water Quality Zones (CWQZ) | Boundary of the CWQZ shall not be less than 200 feet from the centerline of a major waterway, or less than 400 feet from the centerline of the main channel of Barton Creek. No pollution control structures or residential or commercial buildings may be established within the CWQZ. |

**Note:** Pre-existing and non-conforming development approvals are subject to the grandfathering provisions of ordinance No. 20140612-084 which may be amended from time to time.

# Table 7. City of Austin Watershed Protection Ordinance Regulations Summary Table

Effective: October 28, 2013 Red Text = Change from Previous Requirements

| REGULATORY CATEGORY | ZONE | DESIRED DEVELOPMENT ZONE | | | DRINKING WATER PROTECTION ZONE | | |
|---|---|---|---|---|---|---|---|
| | | Urban | Suburban City Limits | Suburban N. Edwards / ETJ | Water Supply Suburban | Water Supply Rural | Barton Springs Zone |
| Impervious Cover (IC) | Calculation Basis | Gross Site Area | Gross Site Area | Gross Site Area | Net Site Area | Net Site Area | Net Site Area |
| | Transfers Allowed | No | Yes | Yes | Yes | Yes | No |
| | Uplands: Max Pct IC | Max Pct | Max Pct Std / w Transfer | Max Pct Std / w Transfer | Max Pct Std / w Transfer | Max Pct Std / w Transfer | Max Pct [No Transfers] |
| | Single-Family Res. (Lot > 5750 ft²) | No Watershed IC Limit: Zoning Limits only | 50% / 60% | 45% / 50% | 30% / 40% | 1 unit per 1 ac. / 1 unit per 2 ac.* | R / BC / C ** 15% / 20% / 25% for all uses |
| | Single-Family Res. (Lot < 5750 ft²) | | 55% / 60% | 55% / 60% | | | |
| | Multi-Family Residential Max Pct | | 60% / 70% | 60% / 65% | 40% / 55% | 20% / 25% | |
| | Commercial Max Pct | | 80% / 90% | 65% / 70% | | | |
| | | | | | | * Min lot ¾-acre; ½-acre with transfers; Clustering: 1 unit/ac max; 2 units/ac w transfer | ** R = Recharge Zone BC = Barton Creek Contributing C = Other Contributing |
| | WQ Transition Zone Max Pct IC (outside floodplain) | Not Applicable | Not Applicable | Not Applicable | 18% | 1 SF unit / 3 acres | 1 SF unit / 3 acres None over recharge |
| | Critical WQ Zone: Max Pct IC | None (except road crossings) | ne (except limited road crossings) | ne (except limited road crossings) | ne (except limited road crossings) | ne (except limited road crossings) | ne (except limited road crossings) |
| | Critical Environmental Feature (CEF) Max Pct IC | None within 150 to 300 ft radius | None within 150 to 300 ft radius | None within 150 to 300 ft radius | None within 150 to 300 ft radius | None within 150 to 300 ft radius | None within 150 to 300 ft radius |
| Waterway Classifications | Minor | 64 acres | 64 – 320 acres | 64 – 320 acres | 64 – 320 acres | 64 – 320 acres | 64 – 320 acres |
| | Intermediate | | 320 – 640 acres | 320 – 640 acres | 320 – 640 acres | 320 – 640 acres | 320 – 640 acres |
| | Major | | over 640 acres | over 640 acres | over 640 acres | over 640 acres | over 640 acres |
| | Notes | Urban creeks not classified | | | | | |
| Waterway Setbacks | Critical Water Quality Zone | | | | | | |
| | Minor | 50 – 400 ft. No CWQZ Downtown | 100 ft. | 100 ft. | 50 – 100 ft. | 50 – 100 ft. | 50 – 100 ft. |
| | Intermediate | | 200 ft. | 200 ft. | 100 – 200 ft. | 100 – 200 ft. | 100 – 200 ft. |
| | Major | | 300 ft. | 300 ft. | 200 – 400 ft. | 200 – 400 ft. | 200 – 400 ft. (Barton mainstem 400 ft.) |
| | Notes | Between min and max width, coincides with the 100-year fully-developed floodplain | uffer averaging" allow buffers by up to one-ha protected rem | s sites to reduce width of if the overall amount ains the same | Betwen min and max width, coincid es with the 100-year fully-developed flood plain | | |
| | Water Quality Transition Zone | | | | | | |
| | Minor | Not Required | Not Required | Not Required | 100 ft. | 100 ft. | 100 ft. |
| | Intermediate | | | | 200 ft. | 200 ft. | 200 ft. |
| | Major | | | | 300 ft. | 300 ft. | 300 ft. |
| | Variances from Buffers | dministrative under certain conditions | Must apply f Commissio | or Land Use n variance | Must apply for Land Use Commission variance. | | |
| Water Quality Controls | Treatment Standard | limentation/ Filtration | limentation/ Filtration | limentation/ Filtration | limentation/ Filtration | limentation/ Filtration | Non-Degradation |
| | When Required | ll new/redeveloped if IC > 8,000 sq. ft. | ll new/redeveloped if IC > 8,000 sq. ft. | ll new/redeveloped if IC > 8,000 sq. ft. | All new/redeveloped if IC > 8,000 sq. ft.; all IC in WQTZ | All new/redeveloped if IC > 8,000 sq. ft.; all IC in WQTZ | All development |
| | Allowed in Creek Buffer | CWQZ = Yes per ECM WQTZ = N/A | /Z = Yes per ECM WQTZ = N/A | Z = Yes per ECM WQTZ = N/A | CWQZ = No WQTZ = Yes per ECM | CWQZ = No WQTZ = Yes per ECM | CWQZ = No WQTZ = Yes per ECM |
| | Alternative Strategies Allowed | Yes | Yes | Yes | Yes | Yes | No |
| | Optional Payment-in-Lieu | Yes | No | No | No | No | No |

key: CWQZ = Critical Water Quality Zone; ETJ = Extra-Territorial Jurisdiction; IC = Impervious Cover; SF = Single-Family Residential; WQ = Water Quality; WQTZ = Water Quality Transition Zone

## Flood Control Projects (iv)

In compliance with Part III. Stormwater Management Program, Section B.2.b.iv. of the City of Austin (COA) TPDES Stormwater Permit, the City continues to implement programs that assess the impacts of flood control projects on receiving waters; evaluating any new storm water structural flood control projects proposed to be utilized and examining the City's existing flood control facilities to determine if retrofitting is feasible. Historically many structural flood control devices have been implemented through the City's Regional Storm Water Management Program (RSMP), while many other flood and water quality controls were built through private development. The WPD evaluates all the existing flood control structures in addition to other urban sites as potential flood/water quality retrofit locations.

The activities and measurable goals described within this Part III.B. SWMP minimum control measure (MCM) element have been identified primarily to preserve and enhance the quality of storm water runoff to the maximum extent practicable (MEP) throughout the City's full-purpose jurisdiction, but they are also considered supportive of the Part II.C. Impaired Water Bodies and Total Maximum Daily Load (TMDL) Requirements, and consistent with the voluntary responsibilities in those portions of the MS4 that discharge to portions of watersheds included in one of the two TCEQ Approved Austin Area TMDL IP Plans for Four Austin Streams and Gilleland.

Future Flood Control Review Program

In the effort to assess the potential water quality impacts from proposed flood control projects, the City of Austin uses both regulatory design requirements and technical review to evaluate both municipal and private flood control projects.

City of Austin Land Development Code (LDC) currently requires an Environmental Assessment (EA) be filed with the director of the WPD for any proposed development located in a floodplain. This includes both City and private flood control projects such as large regional detention facilities and any type of floodplain modification. The requirements of the EA include a Hydrogeological Report which must demonstrate that the proposed drainage patterns resulting from the construction of the project will protect the quality and quantity of recharge at significant points. The EA must also include a Vegetation Report, a Wastewater Report, and a Pollutant Attenuation Plan for any proposed industrial use that is not completely enclosed in a building.

For both City and private flood control projects, the flood control facility design and the accompanying EA are submitted with the permit application and reviewed by WPD staff. The proposed project must also comply with the requirements of the City's LDC, Environmental Criteria Manual (ECM) and Drainage Criteria Manual (DCM). LDC and ECM codes and rules require project impacts to water quality and riparian systems to be evaluated and minimized. The DCM outlines design, performance and safety criteria for storm water management. As part of the Master Plan, WPD's MIP Team will integrate, to the greatest extent possible, flood control, erosion control and water quality goals into future WPD projects. Currently, all WPD flood control projects meet LDC, ECM and DCM requirements and include evaluations of opportunities to incorporate erosion control and water quality design features.

Existing Flood Control Program Descriptions

The WPD will continue to evaluate stormwater control facilities, utilizing existing asset condition assessment and maintenance records along with the following evaluation criteria:

- General size and layout
- Drainage area size and pollutant load
- Opportunities for BMP integration with existing features

Bio-retention systems, Permanent wet pool, Extended detention are a few examples of water quality technologies that may be considered for use at each identified facility as determined practicable by the City. Erosion detention and base flow augmentation may also be considered for use in combination with these water quality technologies. Cost effectiveness of retrofit activities will be taken into account during the evaluation process to determine implementation priority. Evaluations and consideration of flood/water quality retrofit potential will continue at each of the identified structures throughout the five-year permit period. No specific schedule will be set for the retrofit evaluation process as it will be done in conjunction with other master planning processes.

***Measurable Goals - Flood Control***

- Number of flood and or retrofit projects under design and completed.

# MCM 3. Illicit Discharge Detection and Elimination

## Illicit Non-Stormwater Discharges Prohibition (i)

In compliance with Part III. Stormwater Management Program, Section B.2.c.i. of the City of Austin (COA) TPDES Stormwater Permit, the City of Austin effectively prohibits illicit discharges to the municipal separate storm sewer system (MS4) through the use of a series of ordinances, regulatory programs, and best management practices.

The City code sections that address illicit discharges and improper disposal are as follows:

Water Quality Regulations
Title 6, Chapter 6-5. Water Quality

The chapter 6-5 Water Quality regulations of the Austin City Code contain regulatory language that prohibits non-storm water discharges into storm sewers or water courses and provides requirements for pretreatment, monitoring and specifications related to specific activities. In addition, provisions for inspection by the City and penalties due to violations are included in this chapter.

Watershed Regulations
Title 25, Chapter 25-8. Environmental

This chapter of the Austin City Code contains language that prohibits illegal connections to the storm sewer system or any other illicit discharges at newly constructed facilities. Section 25-8-362 (Storm Sewer Discharge) of the Chapter states: "A certificate of occupancy may not be issued for development subject to this subchapter unless the development is in compliance with Chapter 6-5, Article 5 *(Discharges Into Storm Sewers Or Watercourses)*."

Hazardous Materials Storage and Registration Regulations
2003 International Fire Code

The Austin Fire Department enforces the 2003 International Fire Code (IFC) to regulate hazardous materials storage and registration in the City of Austin. Included in IFC is regulatory language that prohibits the discharge of materials into the storm sewer or watercourses. Section 2703.3 of the IFC states: "Hazardous materials in any quantity shall not be released into a sewer, storm drain, ditch, drainage canal, creek, stream, river, lake or tidal waterway or on the ground, sidewalk, street, and highway or into the atmosphere."

The City of Austin also has amended sections of the IFC to include provisions for reporting emergencies and cost recovery. In addition, the Fire Department requires adherence with Section 6-5-51 of the City of Austin Code.

Litter Regulations

Title 10, Chapter 10-5. Litter

Chapter 10-5, Article 3 of the Austin City Code prohibits litter. Section 10-5-42 (Littering Prohibited) of the chapter states: (A) A person commits an offense if the person deposits or throws litter on a street, alley, sidewalk, premises, vacant lot or public property, including a park or playground.

(B) A person commits an offense if the person deposits or throws litter along a street, alley, sidewalk or public property, including a park or playground.(C) A person commits an offense if the person deposits or throws litter from cleaning the interior of a residence, business or premises on a street, alley, sidewalk or creek."

On-Site Sewage Facility Regulations

Title 15, Chapter 15-5. Private Sewage Facilities

Chapter 15-5 of the Austin City Code provides regulations for sewage facilities. Section 15-5-26 (discharge or spill) of the chapter provides specific guidelines for reporting and cleanup activities so that appropriate action is taken to "protect public health and the environment."

Investigations and Enforcement Program

The City investigates illicit discharges on a complaint or emergency response basis and on the results of the dry weather screening activities. Investigations of suspect facilities or activities include a thorough inspection of the premises and the connections to the MS4 to determine if an illicit discharge has occurred, or if the potential for illicit discharges exists. When an illicit discharge is found, City investigators work with the responsible party(s) to obtain voluntary compliance with City Code requirements. If voluntary compliance cannot be achieved, legal action can be taken against the violators in Municipal Court (See Prosecution). Illicit discharges to the storm sewer system found during routine facility inspections conducted by other City programs are addressed by the investigator conducting the inspection. If the illicit discharge cannot be addressed in this manner, the problem will be reported to the Pollution Hotline for follow-up inspection and investigation. In addition, other City field staffs have been instructed to follow the proper procedures for reporting illicit discharges.

Municipal Court Prosecution

If voluntary compliance is not obtained, evidence of the violation, including investigation reports, photo documentation of the violation and all correspondence with the responsible

party is obtained for the DSD Environmental Inspection Legal Enforcement Liaison and City's Law Department staff. The DSD legal enforcement liaison will then file a complaint in Municipal Court and work with a prosecutor to prepare the case against the violator and any responsible party(s).

The City's Law Department prosecutes environmental cases, as necessary in Municipal Court, and in most cases Chapters 25-8 (Land Development Code) and 6-5 (Water Quality Code) of the Austin City Code are cited as the legal mechanism for prosecution. Violations of Chapters 6-5 and 25-8 are Class C misdemeanors, finable up to $2,000 per violation. The penalty and fines imposed by the Municipal Court Judge are generally based upon the recommendation of the City Prosecutor, but in most cases a plea bargain is negotiated and a "deferred disposition" verdict is reached.

Criminal Prosecution

During a site investigation or inspection of a permitted site in Travis County, if the investigator determines criminal or malicious intent associated with a violation, the investigation may be referred to the Travis County District Attorney's Office for possible criminal prosecution under Texas Water Code Section 7.145. As with municipal prosecution, staff provide Travis County officials with evidence of the violation, reports, photo documentation and any correspondence with the responsible party. Travis County then conducts a thorough review of the evidence and determines if there is enough evidence to support filing criminal charges in County court. A violation of Texas Water Code 7.145 is a Class B misdemeanor. Fines of between $1,000 and $100,000 as well as jail time of up to five years are possible for a responsible party, if found guilty.

Referral to the TCEQ

During a spill investigation or a site inspection of a permitted site in Williamson County or Hays County, if the investigator determines criminal or malicious intent associated with a violation, the investigation may be referred to the TCEQ for possible prosecution under Texas Water Code Section 7.145. Furthermore, if a responsible party is unwilling or financially

unable to mitigate an illicit discharge, notification to the TCEQ is made for legal enforcement and/or possible mitigation funding.

## Allowable Non-Stormwater Discharges (ii-vii)

In compliance with Part III. Stormwater Management Program, Sections B.2.c.ii. through B.2.c.vii. of the City of Austin (COA) TPDES Stormwater Permit, the City of Austin does not prohibit the following miscellaneous, non-stormwater discharges the MS4:

a) discharges from emergency fire-fighting activities and uncontaminated fire hydrant flushings;
b) potable water sources, including waterline flushings, but excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life;
c) natural springs, diverted stream flows, or flows from riparian habitats and wetlands;
d) uncontaminated pumped groundwater, rising groundwater, or groundwater infiltration;
e) air conditioning condensation that is uncontaminated by water from a cooling tower or any other source of pollutants;
f) uncontaminated water from crawl space pumps, footing drains, foundation drains, or sump pumps;
g) lawn watering and similar irrigation drainage, provided that all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling;
h) water from the routine washing of streets, sidewalks, parking lots, driveways, or exteriors of buildings conducted without the use of detergents or other chemicals and where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed);
i) individual residential vehicle washing, where detergents and soaps are not used;
j) wash waters using only potable water, and which are similar in quality and character to street wash water or individual residential vehicle washing but without the use of detergents or surfactants;
k) dechlorinated swimming pool discharges (excluding pool filter backwashes) that are free of visible algae;

l) other allowable non-stormwater discharges listed in 40 CFR 122.26(d)(2)(iv)(B)(1);
m) other allowable non-stormwater discharges listed in the TPDES Construction General Permit No. TXR150000 and TPDES Multi-Sector General Permit No. TXR050000; and
n) other similar occasional incidental non-stormwater discharges.

## Overflows and Infiltration (viii)

In compliance with Part III. Stormwater Management Program, Sections B.2.c.viii. of the City of Austin (COA) TPDES Stormwater Permit, the City's wastewater collection system (separate from the storm water system) is operated and maintained by Austin Water (AW) Pipeline Operations Program. AW is responsible for inspection and repair of wastewater infrastructure within the utility's service area.

The targeted controls and measurable goals described within this Part III.B. SWMP minimum control measure element have been identified primarily to preserve and enhance the quality of storm water runoff to the maximum extent practicable (MEP) throughout the City's full-purpose jurisdiction; but they are also to be considered supportive of the Part II.C. Impaired Water Bodies and Total Maximum Daily Load (TMDL) Requirements, and consistent with the voluntary responsibilities in those portions of the MS4 that discharge to portions of watersheds included in one of the two TCEQ Approved Austin Area TMDL IP Plans for Four Austin Streams and Gilleland.

Wastewater Pipelines

AW has an active Operation and Maintenance (O&M) program that includes cleaning, TV inspection, and smoke testing to clean and identify public and private defects in the collection system. AW continues to repair and improve the collection system and has an emergency response plan that includes emergency crews and contractors available 24 hours a day, 7 days a week.

The O&M activities, collection system improvements and emergency response activities have continued to reduce the number of overflows and their duration. The utility conducts Sewer System Evaluation Survey (SSES) studies for the collection system in the drainage basins of

its wastewater service area. The collection system located within the Edwards Aquifer Recharge Zone (EARZ) is televised once every five years to comply with the Texas Commission Environmental Quality (TCEQ) Edwards Aquifer Rules.

In addition to the closed-circuit TV inspection required by TCEQ, the utility also cleans the wastewater lines and inspects manholes located in the EARZ. Interceptors in creeks are "walked" for visual inspection of any damage after indication of significantly high flows. Sources of infiltration and seepage that cannot be eliminated through the routine maintenance are evaluated as part of a SSES to determine the best method of rehabilitation/repair/replacement. Any illicit discharge of sewage or wastewater from a private or public system may be reported to the Austin Water or WPD Pollution Hotline by the public. The City's Spills and Complaint Response Program (SCRP) of the WPD investigate any Pollution Hotline reports of overflows that threaten to discharge to a storm sewer or waterway.

AW has a division called Utility Development Services (UDS) who has a team that investigates wastewater issues with private laterals. This team works on resolving stop-ups, back-ups, and SSO's on the lateral side. The Austin city code requires customers to repair sections of their private plumbing that are not per code or functioning properly. UDS has legal authority to require homeowners to repair their private plumbing using the Private Lateral (PLAT) program. AW and SCRP staff will coordinate with other governmental agencies, such as the TCEQ, and/or the Environmental Protection Agency (EPA) during emergency spill incidents.

***Measurable Goals - Overflows and Infiltration (Wastewater Pipelines)***

- Linear feet of wastewater lines cleaned.
- Linear feet TV inspection of wastewater lines.
- Linear feet Smoke test wastewater pipeline.
- Provide routine maintenance of wastewater lines as necessary.
- Linear feet wastewater pipelines replaced or rehabilitated
- Response time for wastewater overflow emergencies.

On-site Sewage Facilities (Septic Systems)

The Water Department of the City of Austin (Austin Water) regulates On-Site Sewage Facilities (OSSF"s) Utility located within the City's jurisdictional boundaries for OSSF's. The City's jurisdictional boundaries include the City's corporate limits and areas annexed for the implementation of the Health and Safety code. The Texas Commission on Environmental Quality (TCEQ) has granted authority to Austin Water to enforce the requirements established in Title 30 of the Texas Administrative Code (TAC) Chapter 285 and has approved additional requirements under City Code 15-5 article I for the regulation of OSSF's. The focus of the OSSF program is to abate and/or prevent pollution and injury to the public health from the inadequate treatment and disposal of on-site treated sewage.

The OSSF Program uses a multi-step process to reduce or prevent illegal discharges of improperly treated on-site sewage into the city's municipal separate storm sewer system. Potential unpermitted discharges include but are not limited to seepage/infiltration and runoff of partially treated effluent and/or raw wastewater.

City Regulations

In January 2019, the City of Austin Council passed Ordinance No. 20190131-002 amending Article 1 of City Code Chapter 15-5 related to the regulation of OSSF's. the TCEQ issued an order approving the ordinance, the effective date is April 4, 2019. COA chapter 15-5 was amended to increase public protection by introducing registration requirements for TCEQ licensed OSSF maintenance providers and clarifying requirements introduced in previous code amendments. Major amendments include but are not limited to:

Monitoring of Existing Systems

Properties with an OSSF in which the property owner is seeking to obtain a building permit from the City of Austin must be evaluated for potential impacts to the OSSF before a building permit can be issued. Design plans for the installation of new or

modified systems are reviewed by Austin Water to ensure compliance with City and State design and installation requirements.

Enforcement

City code does not require existing OSSF to be abandoned unless the systems are failing (e.g., the OSSF are known sources of pollution, nuisance conditions and/or a threat to public health, or when the system is altered). The City may inspect OSSF reasonably believed to be causing pollution. Enforcement action may be taken for any non-compliant OSSF. Enforcement actions may include citations for failure or refusal to remedy conditions prohibited by City Code. Violations of City Code may be issued through the appropriate municipal court. Violations of the City Water Quality Code, which include any un-permitted or illicit discharges of sewage or wastewater from a private or public system, into a storm sewer system or waterway are reported to City's WPD Spill Complaint Response Program (SCRP). The SCRP is responsible for determining the source of illegal discharges such as wastewater discharges to storm water sewers, evaluating the impacts of such discharges to Austin's waterways and enforcing regulations preventing these discharges.

When necessary action may be taken through Municipal Court to enforce these provisions of the City Code. Additional remedies available to the City include; but are not limited to, the temporary disconnection of water and/or electric services to non-compliant sites. Austin Water also coordinates enforcement activities with several other local agencies such as the TCEQ, the Lower Colorado River Authority (LCRA), Travis County Transportation and Natural Resources Department and the Williamson County Health District on an as needed basis. For example, the TCEQ may assist with the enforcement of special regulations for the construction of wastewater systems over the Edwards Aquifer Recharge Zone. LCRA may assist with regulations regarding private sewage facilities near Lake Travis and the other Highland Lakes.

***Measurable Goals- Overflows and Infiltration (Septic Systems)***

- Number of new OSSF's permitted and inspected.

- Number of enforcement actions taken against poorly maintained OSSF's with advanced treatment systems (secondary and tertiary).
- Number of investigations and enforcement actions taken to correct failing OSSF's.
- Number of complaint responses related to illegal discharges from private sewage systems.

## Household Hazardous Waste and Used Motor Vehicle Fluids (ix)

In compliance with Part III. Stormwater Management Program, Sections B.2.c.ix. of the City of Austin (COA) TPDES Stormwater Permit, the City's Austin Resource Recovery ARR is responsible for the development and management of the City's Household Hazardous Waste (HHW) Program.

These programs fall within the disposal services operational area. In October 2015, the HHW Program was combined with the Resource Recovery Center (RRC) to become the Recycle and Reuse Drop Off Center (RRDOC). Within the umbrella of the RRDOC the HHW still operates in the same manner as before with a staff of environmental professionals. Staff members provide the day-to-day operations and management of the facility and program.

The City of Austin's HHW Program serves the residents of Austin and Travis County, Texas. Funding is primarily from the City ARR customers, although 10-15 percent of program participants come from Travis County outside the City's service area, and Travis County contributes close to 10 percent of the annual program budget. The program focus is on decreasing pollution from indiscriminate use or disposal of home chemical and used oil, thus preventing pollution of local watersheds.

Citizens from surrounding counties may use the program's services, although they must pay a fee for the use. Publicity is provided through local newspapers and other news media, and talks provided to area schools, professional organizations and environmental conferences. With the assistance of the TCEQs Pollution Prevention and Education Section, and the North American Hazardous Materials Management Association

(NAHMMA), information on the operation and success of Austin's program is made available to communities throughout Texas and the United States.

This program continues to benefit Austin and Travis County residents by providing convenient, responsible disposal options so that hazardous household wastes are removed from the City's and County's regular liquid (sanitary sewer) and solid waste streams. Proper disposal of hazardous waste also decreases this category of material from being disposed of in vacant yards, easements or storm sewers.

Removing flammable, caustic or explosive hazards from solid waste collections contributes to a safer workplace for sanitation workers and lessens risks for fire fighters. Program awareness and participation also helps make homes safer. Public education efforts are detailed in Section 7, Public Education and Involvement

Household Hazardous Waste Program

The HHW Program consists of a daily collection program at a permanent solid waste transfer facility, and customers who require home pickups or other accommodations will be helped throughout the week. Household battery collection and recycling through numerous area stores, latex paint recycling through numerous area stores, latex paint recycling and distribution, and reusing safe, good quality products in a product reuse program will continue. In October 2015, the HHW Program expanded to include the Resource Recovery Center (RRC) and became the Recycle and Reuse Drop-off Center (RRDOC). This new name and larger scope of services increased participation dramatically. The Household Hazardous Waste Program is fenced separately per TCEQ requirements. The RRDOC takes Styrofoam, rigid plastics, appliances, electronics, single stream recycling and brush from the public. Although the City can no longer accept Conditionally Exempt Small Quantity Generator (CESQG) wastes, as 30 TAC 335 Subchapter N disallows this practice, CESQG customers will be provided a list of vendors.

The City of Austin HHW staff accepts and segregates waste into approved shipping containers for storage until the disposal contractor can transport the waste for disposal or recycling. Mixed solvents, antifreeze, oil, and latex paint will be bulked into drums (or storage tanks for oil and antifreeze) during collection hours. Oil-based paint is packaged into cubic yard boxes. A qualified, permitted hazardous waste transporter and disposal contractor is present, on a weekly basis, to further segregate the collected material, manifest, package and transport collected wastes for disposal at U.S. EPA licensed disposal facilities. Collected waste will be stored at the HHW Facility in accordance with Title 30 Texas Administrative Code (30 TAC) Chapter 335 Subchapter N.

Paint Recycling Program

Another successful program under the HHW umbrella is the latex paint recycling program. Part of the segregation operation at the facility includes determining if latex paint, which is dropped off, is in usable condition. Good latex paint is poured into two separate containers to make up white, green and dark latex paint. The City of Austin has a contract with a local paint company to blend and package the latex paint into 3.5 gallon containers. It is given to the general public 501(c) groups for building projects, to the Physical Graffiti Abatement Program of the Austin Police Department and to other groups deemed candidates for the paint.

Public Education Involvement and Intergovernmental Coordination

Another key component to the success of the HHW Program will be continued public involvement and coordination with other government entities. The City's HHW Program works closely and coordinates program planning and implementation with the TCEQs Pollution Prevention and Education Section. Notification of any HHW collection program is required 45 days prior, and a full operational plan with specific regulatory requirements is required to be available on site for any HHW collection. For permanent sites such as Austin's, the notification is required to be updated periodically (typically annually) while the operational plan is updated as changes occur within the program. The City will also continue to work with Travis County contributes funds to pay for the county's share of hazardous waste transportation and disposal costs and additional

employees to handle the workload in managing HHW from County residents outside the City. The county and the City have agreed that County funding contributions to the program will be based on the percentage of participation coming from areas in the county outside the City limits.

***Measurable Goals – Household Hazardous Waste and Used Motor Vehicle Fluids***

- Provided drop off services to (number of households) in the Austin area.
- Total volume of Hazardous Waste handled.
- Pounds of Flammable Materials disposed of.
- Pounds of Corrosive Materials disposed of.
- Pounds of Materials recycled.
- Pounds of Paint recycled.
- Pounds of Waste Oil and Oil filters recycled.

## MS4 Screening and Illicit Discharge Inspections (x)

In compliance with Part III. Stormwater Management Program, Sections B.2.c.x. of the City of Austin (COA) TPDES Stormwater Permit, the primary goal of the illicit discharge inspection program is to detect the source of illicit discharges to the City's municipal separate storm sewer system (MS4) in the effort to prevent or minimize the impact to water quality or other natural resources in the Austin area. This goal will be achieved through investigation of portions of the MS4 identified as potential sources of non-storm water discharges due to illicit connections or improper disposal practices.
The illicit discharge inspection program is based primarily on the activities of the SCRP of the WPD. The SCRP staff investigates reports of illicit discharges to the storm sewer system. The SCRP investigators track the route of an illicit discharge and attempt to identify its source and cause. The standard procedures for conducting illicit discharge investigations have been summarized in the following outline (Figure 7-1).

The SCRP staff maintains written documentation on all illicit discharge investigations. The documentation will include, as necessary, information such as field observations, potential responsible party information, causes, sources, specific violations (or potential

violations) observed, response action requested and final resolution. Incident reports are kept in a computer database that can be queried by map grid, watershed, facility name and various other pertinent fields. Any supporting material acquired during the investigation, including MSDSs, photos, phone logs or waste manifests are kept in respective hard copy incident files.

Illicit discharge investigation and inspection activities are not scheduled; they are initiated as warranted by the Dry Weather Screening program referrals, citizen complaint report of illicit discharges or improper disposal practices, staff complaint from other City departments or agencies.

***Measurable Goals -MS4 Screening and Illicit Discharge Inspections***

- Number of incidents reported and responded to.
- Number of illicit plumbing connections detected and corrected.

## Priority Areas (xi.)

In compliance with Part III. Stormwater Management Program, Sections B.2.c.xi. of the City of Austin (COA) TPDES Stormwater Permit, WPD staff used collected information on pollution type volume and location data to produce heat maps/hotspot maps to indicate areas where illicit discharges are likely to occur and prioritize these areas for inspection. Using a combination of spatial and traditional analysis, and historical data trends for the previous one and five-year calendar periods, the following general areas were determined to have a higher probability of polluting illicit discharges:

- High population density areas, particularly the urban core;
- Transportation corridors;
- Active construction sites; and
- Areas with aging water and wastewater infrastructure

The Heat Map is available upon request and will be utilized for prioritizing inspections.

## NPDES and TPDES Permittee List (xii.)

In compliance with Part III. Stormwater Management Program, Sections B.2.c.xii. of the City of Austin (COA) TPDES Stormwater Permit, the SDPP staff has implemented a database of industrial and high-risk facilities discharging to the City's MS4. SDPP staff utilizes the TCEQ NOI database, and information from field inspections to maintain the database. Summary data is reported annually in Section 5 of the System-wide Annual Report.

## MS4 Maps (xiii.)

In compliance with Part III. Stormwater Management Program, Sections B.2.c.xiii. of the City of Austin (COA) TPDES Stormwater Permit, the WPD maintains a Geographic Information System (GIS) feature class of the mapped MS4 system. This information is continually updated and MS4 system maps are produced upon request.

## Spill Prevention and Response (xiv.)

In compliance with Part III. Stormwater Management Program, Sections B.2.c.xiv. of the City of Austin (COA) TPDES Stormwater Permit, this program seeks to protect the water quality of streams and related natural resources in Austin. This program targets illegal or illicit discharge to the storm sewer system and spills of hazardous and non-hazardous materials, which might be a threat to water quality within the City's planning jurisdiction and water supply watersheds. Discharges may occur through illicit plumbing connections to the City's storm sewer system, deliberate dumping or accidental spills of hazardous and non-hazardous materials. This program will work to reduce the number of these discharges by tracking and eliminating illicit connections, enforcing state and local statutes regarding illegal discharges and responding to accidental spills to monitor material containment and clean-up.

The targeted controls and measurable goals described within this Part III.B. SWMP minimum control measure element have been identified primarily to preserve and enhance the quality of storm water runoff to the maximum extent practicable (MEP)

throughout the City's full-purpose jurisdiction; but they are also to be considered supportive of the Part II.C. Impaired Water Bodies and Total Maximum Daily Load (TMDL) Requirements, and consistent with the voluntary responsibilities in those portions of the MS4 that discharge to portions of watersheds included in one of the two TCEQ Approved Austin Area TMDL IP Plans for Four Austin Streams and Gilleland.

The responsibility for responding to surface water quality complaints and hazardous and non-hazardous materials spills for water quality protection is held by the WPD, ERM Division, Pollution Prevention and Reduction (PPR) Section. The Austin Fire Department (AFD) is responsible for responding to hazardous material spills for protection of human health and safety. AFD also responds to certain non-hazardous materials releases that may be a threat to life, property, or the environment. The TCEQ is responsible for regulating disposal of hazardous waste.

The WPD maintains a rapid response capability by having investigators on-call on a rotating basis, and after-hours notification of environmental emergencies is accomplished through a 24-hour hotline operated by the WPD. In a typical response situation, the Spills and Complaints Response Program (SCRP) investigators are notified of hazardous material incidents by the AFD dispatch office. Occasionally, this notification is from the TCEQ or the Austin and Travis/Travis County Health and Human Services (HHSD).

Water pollution complaints are received from many sources: directly from private citizens calling the department's Pollution Hotline, and referrals from other City departments such as the ATCHD or AW and referrals from other regulatory agencies such as TCEQ or LCRA. Figure 8 shows the procedures for investigating and Figure 9 describes each procedure.

The SCRP classifies incident investigations into two different categories: Priority Incidents and non-priority incidents. "Priority Incidents" are generally emergency spill incidents and situations that pose an immediate threat to water resources. "Non-priority incidents" are general environmental complaints that do not pose an immediate threat to

water resources. When the investigators note other problems outside their jurisdiction, they will refer them to other departments or agencies for action as appropriate.

SCRP investigators attempt to obtain voluntary compliance with applicable water quality regulations when violations are found. If unable to obtain voluntary compliance with City regulations, WPD staff has the option of filing complaints against the responsible party(s) in municipal court. Uncooperative offenders are referred to the TCEQ or EPA for enforcement as well. Criminal investigations where necessary are referred to Travis County Attorney's Office. Ultimate enforcement may be through one or more City departments or external agencies as their jurisdictions apply. Investigators in this program work with several regulatory entities, including interactions with government organizations at the federal, state, county and local level. Investigation reports are recorded from a field notebook into a computerized database. Materials gathered during an investigation, such as photographs, reports, correspondence and Material Safety Data Sheets (MSDS) are recorded in the database.

SCRP staff also provides an educational service by offering information to regulated businesses, City departments that work with WPD and citizens. The information is provided in the form of written handouts and staff presentations.
Currently handouts include general program description, regulatory contact information, good housekeeping and spill clean-up procedures, and waste recycling information. The WPD currently sponsors a youth monitoring program that monitors the water quality of local streams, creeks and lakes. The youth monitors are briefed on how to contact the SCRP Pollution Hotline if they observe a polluting discharge while in the field. WPD SCRP staff will continue training in the following areas:

- Hazardous Materials Operations and Emergency Response 40 - hour course (satisfies OSHA 1910.120)
- In house training using staff resources, training manuals, videos, WPD safety liaison and various reference manuals.
- Various conferences, workshops and seminars related to spill clean-up techniques, disposal of contaminated materials, federal and state environmental regulations,

emergency response, and investigation techniques, and other related subjects such as confined spaces and rail car releases.

***Measurable Goals Spill Prevention and Response***

- Number of priority incidents responded to by program
- Number of non-priority incidents responded to by program.

Figure 8. Spill & Complaint Flow Chart

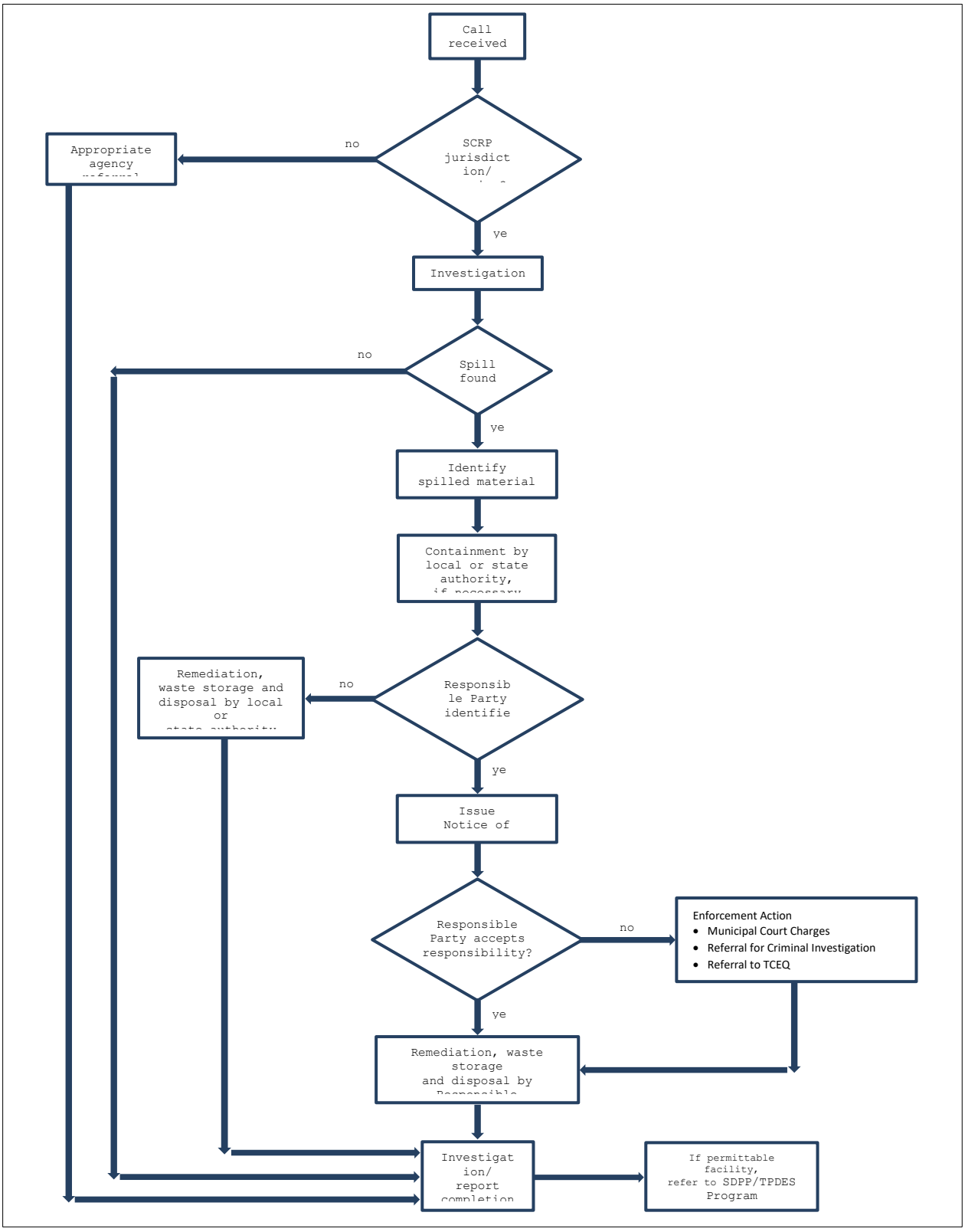


Figure 9. Spills and Complaints Response Program Investigation Procedure

CALL RECEIVED
- Call is received by WPD Spill and Complaint Response Program Investigators through the City of Austin
- 24-Hour Pollution Hotline.

SCRP JURISDICTION / PURVIEW?

Yes:
- Investigator prioritizes call according to potential environmental impact and responds to calls in order of priority.

No:
- Refer to appropriate agency (see *Appropriate Agency Referral*).

APPROPRIATE AGENCY REFERRAL
- Refer to appropriate agency.
  For example: Austin Health and Human Services Department, Travis County, TCEQ.

INVESTIGATION
- Review information reported.
- Check and prepare equipment anticipated for the investigation.
- Mobilize to Site.
- Observe from safe distance and approach with caution from upwind direction, if necessary.
- Establish contact with potential responsible party(ies) and/or other agency representatives. Present credentials, explain authority and purpose of investigation.
- Record observations in field notebook, documenting violations or potential violations.

SPILL FOUND?

Yes:
- See *Identify Spilled Material.*
- Assess general properties of material spilled to determine method of initial containment, if necessary.
- Evaluate environmental impact(s).
- Coordinate with other agencies and contractors, if necessary.
- Collect samples, if necessary.
- Communicate applicable regulations and associated legal responsibilities to suspected or potential responsible party(ies).

No:
- Verify spill / complaint information with caller.
- Gather all pertinent information and evidence if a spill is suspected, but not found.
- Communicate applicable regulations and associated legal responsibilities to suspected or potential responsible party(ies).
- Complete investigation report (see *Investigation / report completion*)

IDENTIFY SPILLED MATERIAL
- If material is not positively identified by observation, consult resources such as: AFD, Safety Data Sheet(s), Chemtrec, Emergency Response Guidebook, other reference books.
- Take appropriate safety precautions for exposure to material.

CONTAINMENT BY LOCAL OR STATE AUTHORITY
- AFD conducts initial spill containment when material is a public hazard.
- SCRP Investigator conducts initial spill containment when material is an immediate threat to a storm sewer or watercourse, but is not a significant public hazard.

Figure 9. Spills and Complaints Response Program Investigation Procedure *continued*

RESPONSIBLE PARTY IDENTIFIED?

Responsible party is person(s) or business causing the illegal discharge. If no responsible party is identified, the owner of the property on which the material is spilled is responsible. Unknown property ownership is determined by accessing City of Austin utility records or county tax records.

Yes:

- See *Issue Notice of Violation.*

No:

- See *Cleanup, storage, disposal by local or state authority.*

REMEDIATION, WASTE STORAGE AND DISPOSAL BY LOCAL OR STATE AUTHORITY

- When no responsible party is identified, and if necessary, local or state authority (e.g. WPD, AFD or TCEQ), or contractor hired by local/state authority, performs remediation, waste storage and disposal.
- SCRP Investigator makes recommendations on remediation methods, sample parameters, waste storage and disposal methods, etc.

ISSUE NOTICE OF VIOLATION

- Verbally issue notice of violation and request for remediation.
- If violation is a repeat-offense, egregious, neglectful or malicious, or the Responsible Party is absent, issue a written Notice of Violation with a compliance deadline.

RESPONSBILE PARTY ACCEPTS RESPONSIBILITY?

Yes:

- See *Remediation, storage and disposal by Responsible Party or RP contractor.*

No:

- See *Enforcement Action.*

ENFORCEMENT ACTION

- Notify personnel necessary to begin enforcement process, potentially including WPD management and COA legal staff and superior authorities.
- SCRP Investigator gathers case documentation (SDS, photos, field notebook entries, NOVs) and files affidavit for civil charges in municipal court.
- Notify County District Attorney, if investigation reveals potential criminal intent.
- Notify TCEQ for enforcement and/or possible funding if Responsible Party refuses or is financially-unable to perform remediation.
- Conduct legal enforcement seeking Responsible Party remediation (see *Cleanup, storage, disposal by responsible party or RP contractor*).

REMEDIATION, WASTE STORAGE AND DISPOSAL BY RESPONSIBLE PARTY OR RP CONTRACTOR

- If necessary, Responsible Party (or contractor hired by Responsible Party) conducts remediation.
- SCRP Investigator makes recommendations on remediation methods, sample parameters, waste storage and disposal methods, etc.

INVESTIGATION / REPORT COMPLETION

- Inspect Site to verify remediation of observable contamination.
- Review lab analyses, waste manifests and other remediation documentation.
- Complete and document follow-up investigations, as necessary, enter report into database.

Austin Fire Department Special Operations Division

The Special Operations Division supplies hazardous material response personnel, apparatus and equipment from four fire stations located in the central, north, east and south sectors of Austin. This Division also supplies Special Operations personnel who act as incident advisors, provide training, evaluate new equipment and maintain specialized response equipment.

Generally, this program targets the control of potentially hazardous material spills or other incidents that may endanger human health and safety within the City limits. The AFD emergency response activities are not targeted to any specific industry or business, rather the Special Operations Division is trained to handle a wide variety of hazardous materials incidents including liquid spills, gas releases and rescues under hazardous conditions.

In addition to providing personnel, training and equipment for emergency response, the AFD maintains a large inventory of equipment for use during hazardous materials incidents, including spill containment, chemical monitoring, personnel protective clothing, confined space entry, decontamination and water rescue equipment.

Incidents are responded to in an expeditious manner with a priority given to life safety and protection of property. Fire suppression may not be initiated due to possible run-off of toxic substances. The "no attack" strategy has become an important consideration during the incident pre-planning effort. If an incident commander declares the no attack strategy, personnel will construct temporary diking and containment to control runoff from containers that sill fail and water (or foam-water) that will be applied once the majority of hazardous materials are incinerated by the fire. With the exception of Austin Bergstrom International Airport (ABIA), firefighting foam used by AFD are fluorine free. The selected foam is does not produce PFOS (perflurooctane sulfonate) and does not disassociate into PFOA (perfluroctanoic acid). The foam has been evaluated and certified by Underwriters Laboratories. Firefighting foam at ABIA do contain perfluorinated surfactants because the Federal Aviation Administration (FAA) has a different standard

for foams and requires their use for aircraft firefighting as a condition of the Airport's Operating Certificate issued by the FAA. ABIA has multiple on-site containment structures throughout the aircraft operating areas to capture spill from aviation fuels and firefighting water.

Once an immediate hazard has been alleviated, the Special Operations Division has required follow-up remediation when a responsible party is identified, or actually performs cleanup operations. The AFD Special Operations Division coordinates with the City of Austin WPD, TCEQ, and the HHSD to ensure that current environmental and life safety regulations are met. The Special Operations Division will continue to provide emergency response capabilities as described throughout the permit period. The AFD Special Operations Division coordinates with the City of Austin WPD, TCEQ, and the HHSD to ensure that current environmental and life safety regulations are met. The Special Operations Division will continue to provide emergency response capabilities to hazardous material spills or other incidents.

***Measurable Goals – Spill Prevention and Response (AFD)***

- Number of incidents AFD responded to.

# MCM 4. Pollution Prevention and Good Housekeeping for Municipal Operations

## Pollution Prevention and Reduction/Good Housekeeping Programs (i.)

In compliance with Part III. Stormwater Management Program, Section B.2.d.i. of the City of Austin (COA) TPDES Stormwater Permit, and in the effort to reduce the amount of pollutants discharged into local waterways from municipal operations, the City of Austin has developed and implemented several programs within several departments. Many of these programs are also described in detail throughout various sections in the Storm Water Management Plan (SWMP).but the primary means of identifying municipal operations and the associated best management practices is the Watershed Protection Department's (WPD) Program.

Identification and Reduction of Discharges

The WPD screens a list of all City properties and facilities for the purpose of identifying those operations with potential municipal sources of stormwater pollution. Site visits to those identified city facilities are then conducted on a rotational basis. Some examples of City facilities and properties included in this program are fleet service stations, power plants, fire stations, municipal pools, golf courses, airport operations, the household hazardous waste facility, and material storage areas.

Inspections include confirmation of proper waste storage, handling and disposal practices; plumbing connections to the storm sewer system; and review of housekeeping and facility maintenance practices. In addition, staff initiates training to periodically advise City personnel on stormwater best management practices (BMPs). City staff also determines which of these facilities require coverage under the Texas Pollution Discharge Elimination System (TPDES). Facilities that are subject to TPDES permit requirements receive a more detailed inspection that includes a thorough review of the facility's Stormwater Pollution Prevention Plan (SWP3), including the description of potential pollutants and their sources and required documentation. Staff monitors the facility's active implementation of the SWP3 to verify that the plan is current and site specific.

Spill and Complaints Response Program (SCRP) staff responds to emergency spill incidents and investigates pollution complaints involving City owned properties. Calls are typically reported to the City's 24-Hour Pollution Hotline and response is rapid to prevent and/or minimize potentially polluting discharges to the storm sewer system. Staff identifies illicit discharges and requests that corrective actions and preventive measures be taken. Follow up visits are conducted to ensure compliance.

The ARR Litter Abatement Program targets City owned property within the City limits, including parks, for removal of trash, litter and debris which has collected in the parks, streets and the public rights-of way. The ARR Street Cleaning Program targets the cleaning of curbed City streets within the City limits for removal of trash, litter and dirt streets and gutters, for health, safety, aesthetic and water quality reasons.

The City of Austin supports Keep Austin Beautiful (KAB) which targets business and citizens in the City of Austin, through activities that center on litter abatement, recycling, environmental education, and beautification in Austin. The WPD Scoop the Poop Program, partners with the Parks and Recreation Department. Pet Waste dispensers are located in over half the City's parks and facilities to encourage dog owners to clean up after their pets.

Training

Training for City employees maximizes participation in water quality, waste reduction, and water and energy conservation programs within each department and the departments individual facilities. Safety training is mandatory for City employees and provided annually within the employee workgroups on a variety of subjects pertinent to the daily activities and duties, including the BMP's for their particular municipal operations. The citywide stormwater training program key activities and reporting are coordinated by Watershed Protection Department (WPD), working with established program representatives and newly identified contacts within departments whose employees' daily duties and activities have the potential to affect water quality. The program enhancements focus on enabling a better understanding of basic stormwater quality issues, the potential sources of

non-point pollution throughout COA operations, and the recognition and utilization of best management practices (BMPs) for pollution prevention in their workspace. WPD will assist if needed in development of a more standardized training program that can be incorporated into each department's annual operations and safety curriculum, ensuring every employee responsible for municipal operations is receiving the appropriate information on preventing and reducing stormwater pollution. The key elements of the citywide stormwater training program include:

- BMP education and training associated with TPDES compliance inspection activities conducted at COA facilities;
- Standard (computer-based) stormwater training, multiple topics;
- Customized (computer-based) pollution prevention training, based on activities; and
- Requested training sessions.

The citywide stormwater trainings for employees will be reported in the System-wide Annual Report which includes status/summary information on the COA permit compliance activities occurring during the period of October 1st and September 30th of each year.

## Waste Handling (ii)

In compliance with Part III. Stormwater Management Program, Section B.2.d.ii. of the City of Austin (COA) TPDES Stormwater Permit, the City of Austin properly disposes of waste that is removed from the MS4, and other municipal operations, including maintenance of storm water structural controls. For example, the WPD FOD crews, when removing trapped floating materials from its two locations on Lady Bird Lake, load the materials into City dump trucks and haul the material to an acceptable local landfill.

The materials removed from the maintenance of City of Austin storm water structural controls are taken to a local approved landfill. FOD vacuum trucks remove materials from the City of Austin storm sewer pipes and drains. The materials are taken to a Field Operations maintenance facility with dewatering areas, and solids are taken to an

approved local landfill. ARR and PWD takes all the litter and debris picked up from streets to an approved landfill.

## Pesticide, Herbicide, and Fertilizer Application (iii.)

In compliance with Part III. Stormwater Management Program, Section B.2.d.iii. of the City of Austin (COA) TPDES Stormwater Permit, the City of Austin uses the activities of the City's Integrated Pest Management (IPM) Program to implement controls to reduce the discharge of pollutants related to the storage and application of pesticide, herbicide and fertilizers. The IPM Program is a City-wide program that actively coordinates educational outreach activities and information to Texas Department of Agriculture licensed pesticide applicators, retail nurseries, the landscaping community, City land managers and their staff, and the general public to promote environmentally sound herbicide, pesticide and fertilizer management practices.

The City's IPM public education program is to provide information related to IPM principles and practices and non-point source pollution that may result from improper fertilizing and pest management practices. Program staff provide information related to specific yard and garden products, general water quality, xeriscaping, erosion control practices, rain gardens, and wet pond maintenance. Information is disseminated through various means including the Grow Green/IPM websites (www.GrowGreen.org) and (www.austintexas.gov/ipm) social media, public service announcements, and printed media. Printed material include posters, bookmarks and brochures distributed in displays at local gardening centers, City libraries, and facilities, at fairs, festivals, trades shows on billboards; via one-on-one conversations; and presentations to community and professional volunteer and non-profit organizations.

The target audiences for these activities are:

- City of Austin employees responsible for pest management and grounds maintenance
- City contractors conducted vegetation or land management activities.
- Homeowners and the general public in the Austin area.

- Professional communities including those who design, install and manage outdoor areas.
- Retail distributors of pest control products and gardening supplies.

## List of Municipal Facilities (iv.)

In compliance with Part III. Stormwater Management Program, Section B.2.d.iv. of the City of Austin (COA) TPDES Stormwater Permit, the City maintains a list of all municipal operations subject to the program listed in the SWMP MCM; see Appendix D for the list.

### *Measurable Goals – Pollution Prevention and Good Housekeeping for Municipal Operations*

- Number of inspections of City operations with storm water permit coverage.
- Number of inspections of City operations for compliance with TPDES storm water regulations.
- Number of citywide stormwater trainings conducted, and number of attendees (to begin reporting in FY20-21 system wide annual report).
- Number of IPM reviews for private and public development projects.

# MCM 5. Industrial and High Risk Program

## Industrial and High Risk Inspection Program (i-iii)

In compliance with Part III. Stormwater Management Program, Section B.2.e.i-iii. of the City of Austin (COA) TPDES Stormwater Permit, the goal of the City's Industrial and High Risk Runoff Program is to identify and control pollutants in storm water discharges to the municipal separate storm sewer system (MS4). This goal will be achieved through the establishment of priorities and procedures for inspections and monitoring of the industrial facilities identified in § 122.26 (d) (2) (IV) (C) of the NPDES regulations.

The Industrial and High Risk Program will be based on the activities of the AFD Aboveground Hazardous Material Permit Program and the WPD programs related to the inspection of municipal landfills and industrial facilities the City may determine as potentially contributing a substantial pollutant load to the municipal storm sewer system.

Hazardous waste treatment, disposal or recovery facilities and facilities subject to SARA Title III: The permitting of hazardous material locations in Austin began in 1985 with City Council approval of the Hazardous Materials Ordinance. Since that time the AFD Aboveground Hazardous Materials Permit Program has been permitting and conducting inspections of facilities that store or handle hazardous materials. As defined in the International Fire Code (IFC) and Local Amendments, industries and commercial facilities storing hazardous materials that meet the following requirements are required to obtain an Aboveground Hazardous Materials Storage Permit:

- The Hazardous Material has a health, flammability, or instability rating of 2 or more as defined in the National Fire Protection Association (NFPA) Standard 704.
- The Hazardous Material is stored or used aboveground in quantities exceeding the amounts specified in the Local Amendments to the IFC.
- The Hazardous Material is a compressed or liquefied compressed gas in a quantity exceeding 100 cu. Ft at NTP.
- A site where motorized equipment or vehicles are filled with hydrocarbon fuels that are dispensed from a US Department of Transportation approved tank vehicle.

The Aboveground Hazardous Materials Permit Program has identified approximately 3,062 facilities in the city limits that meet the above noted criteria. These facilities are issued Aboveground Hazardous Materials Storage Permits that are renewed every three years. These locations are subject to periodic, routine inspections to ensure proper storage, handling and disposal practices. Of the total number of facilities included in the Aboveground Hazardous Materials Storage Permit Program, there are approximately 281 above ground storage/use facilities that are considered Texas Tier Two facilities. None of these facilities are known to be federally permitted hazardous waste treatment, storage or disposal facilities. The Tier Two facilities are subject to the federal (EPCRA Title III) and state "Community Right to Know" reporting requirements and as such, provide the AFD with all the reports required by the regulations.

The AFD currently inspects the Tier Two facilities on an as needed basis, usually in response to new construction permit approvals, or as a result of citizen complaints. During inspections, AFD reviews the facility's hazardous material storage, handling and disposal practices and enforces City and IFC requirements. Many of the Fire Code requirements that are enforced have the potential to impact storm water discharges at the facility. These requirements include, but are not limited to

- proper storage of raw and finished materials
- proper spill control, drainage control and secondary containment
- prohibitions on unauthorized discharges
- proper procedures for outdoor storage, dispensing and use of materials
- leak detection, leak reporting and emergency shut-off equipment maintenance

If during facility inspections or reviews AFD observes practices or procedures that may affect storm water discharge quality but are not violations of the IFC, the City's Pollution Hotline will be notified and an inspection by WPD will be initiated. In addition to coordinating efforts with the WPD, AFD also coordinates its permitting activities with the TCEQ, and the HHSD. Coordination with these agencies should result in the identification of additional facilities that have not obtained an AFD Aboveground Hazardous Materials Permit.

***Measurable Goals - Industrial and High Risk (AFD)***

- Number of facilities with Aboveground Materials Permit (Tier II sites).
- Number of inspections at these facilities.

Municipal Landfills

The City of Austin currently has no active landfill locations. The City has implemented a program to investigate inactive landfills on a complaint basis primarily by WPD, with assistance from the AW, and the ARR. The Inactive Municipal Landfill Investigation Program can include enforcing code provisions, eliminating nuisance conditions and preventing hazardous public health conditions.

- Providing information on the location and history of closed and abandoned landfills in the City of Austin to the public via the Internet and in response to public information requests.; and
- Requiring applicants for certain site development permits over closed landfills to certify that the development is in fact not over a closed landfill or otherwise provide a copy of a development permit from the Texas Commission on Environmental Quality; and
- Investigating complaints as necessary.

Forty-six former landfills have been identified in the Austin area. Investigations of specific sites will also be conducted based on complaints or evidence of a pollution problem. When investigated, sites are examined for access, proximity to and condition of waterways, presence of exposed waste, odors, landfill gas generation, land subsidence, erosion or cracking of waste cover.

***Measurable Goals - Industrial and High Risk (Municipal Landfills)***

- Summary of Landfill complaint investigations.

Industrial facilities that the municipality determines may contribute a substantial pollutant load to the municipal storm sewer system

To regulate facilities that may be contributing a substantial pollutant load to the City's municipal storm sewer system (MS4), WPD Water Quality Compliance (WQC) administers a Stormwater Inspection program which includes a database of industrial and high-risk facilities discharging to the City's MS4 within the Austin city limits.

Under the City's own Stormwater Discharge Permit Program (SDPP), WQC identifies, permits and inspects facilities that conduct activities with a high potential for illicit discharges of pollutants, and located within the Full Purpose City limits jurisdiction. WQC targets facilities with activities such as automotive repair, machine shop services, transmission rebuilding and repair, fuel storage and dispensing. During inspections, WQC confirms proper waste storage, handling and disposal practices, plumbing connections to the storm sewer system, and housekeeping / facility maintenance practices. WQC staff may also recommend best management practices that are appropriate for the facility during inspections.

WQC also inspects and maintains databases for NOI and NEC facilities with TXR050000 (MSGP) and TXG110000 general permits. These databases incorporate permit information from the TCEQ website and are used as a resource for tracking inspection frequency.

Additionally, a list of active businesses within the City of Austin Full Purpose area is obtained from the Texas State Comptroller and queried for SIC codes that require MSGP coverage. The resulting list of permittable businesses is cross-referenced with the NOI and NEC databases to determine permit coverage.

Remaining unpermitted businesses are inspected according to a sector forecast schedule. Pre-inspections are conducted by desktop review to exclude obvious closed or non-industrial facilities. If a facility is identified as requiring a MSGP and does not currently possess a permit, WQC staff informs facility representatives of the regulations and their responsibility to obtain permit coverage. If the facility does not obtain proper permit coverage or is violating certain provisions of a storm water permit, WQC reports the facility to TCEQ.

***Measurable Goals - Industrial and High Risk (SDPP)***

- Number of SDPP permits issued
- Number of SDPP inspections

- Number of Unpermitted MSGP inspections
- Number of Permitted NEC inspections
- Number of Permitted NOI inspections

Underground Storage Tank

The Underground Storage Tank (UST) Leak Detection Program continues to focus efforts on all permittable facilities with underground storage tanks found within both the Barton Springs Zone (BSZ) and the Full Purpose City limits. The UST Program staff conducts inspections of identified facilities, and construction of new facilities ensuring compliance with City Water Quality Codes, including proper storage, monitoring and leak detection activities. The UST Program will issue UST storage and/or construction permits to facilities in the targeted BSZ area.

***Measurable Goals - Industrial and High Risk (UST)***

- Number of UST hazardous materials Construction permits issued.
- Number of UST hazardous materials storage permits renewed.
- Number of UST facility inspections.

Monitoring

Most of the EPCRA Title III facilities found in the Austin area are included in one of the industrial activity SIC codes or in one of the narrative industrial activity descriptions that require storm water permit coverage. As such, the City of Austin will not conduct any storm water discharge monitoring at facilities where the terms of the TPDES storm water permit are considered by the City to be sufficient, and if the review of the monitoring results (based on monitoring conducted by the facility) are in compliance.

If the SDPP staff determines that the monitoring results submitted to the City by the facility are not in compliance, a letter will be sent to the facility requesting compliance. If repeated non-compliance occurs, the program will notify the appropriate permitting agency, TCEQ, for possible enforcement action. If it is determined that a facility included in either the AFD or SDPP high-risk inspection program does not meet the eligibility

requirements for TPDES storm water permit coverage, a self-monitoring and reporting program may be established for the facility.

# MCM 6. Construction Site Storm Water Runoff

## Development Regulations, Construction Site Inspections and BMPs(i-iv)

In compliance with Part III. Stormwater Management Program, Section B.2.f.i-iii of the City of Austin (COA) TPDES Stormwater Permit, the City of Austin requires the approval of a site plan and release of a site development permit for multifamily or commercial development on a specific parcel of land. For a detailed description of responsibilities and procedures related to the site development plan regulations, please refer to the Areas of New Development and Significant Redevelopment Section 2 of the SWMP.

The City's Development Assistance Center (DAC) provides the first one-on-one interaction with the development community. During the initial discussions, City staff provides general information and guidance to the development proponents related to the various permit applications, certification and regulatory requirements that may be associated with their particular type of development project. The DAC has environmental, water quality & drainage staff to assist with issues owners, engineers, contractors, consultants, and citizens may encounter. Environmental Inspectors work with on-site operators during routine site inspections to achieve compliance.

The Development Services Department (DSD) Environmental Inspectors inspect all projects which have site development plans during construction for compliance with BMPs and the erosion and sedimentation control (ESC) plan. The ESC plan shows appropriate areas for staging, construction waste, spoils, concrete washout, dumpsters for litter and sanitary waste from porta-toilets. The pre-construction meeting handout includes a page stating "all spoils, fill, and waste from the construction site is required to go to an approved land fill." The inspector can request trip tickets from construction site managers to verify where the construction waste and spoils have been taken.

The purpose of this program is to inspect projects being constructed in the City of Austin to ensure compliance with requirements of approved development permits and the Erosion and Sedimentation Control Plan. The DSD Environmental Inspectors also ensure

proper construction of drainage and water quality facilities during construction. Environmental Inspection staff provide assistance to contractors with compliance of site construction sequencing of water quality and drainage structures, and maintenance of erosion and sedimentation controls. Environmental Inspection staff also respond to citizen complaints. All construction and development projects involving land-disturbing activities within the City are required to use erosion and sedimentation controls in accordance with technical guidelines found in the City's Environmental Criteria Manual (ECM), and Drainage Criteria Manual (DCM).

At the commencement of development or construction activity, the project site engineer/manager is required to contact the supervisor of the DSD Environmental Inspection, and/or PWD Construction Inspection Section. A pre-construction meeting is conducted at project inception, to verify installation of the ESC's and BMP's per the approved plan and followed by regular site inspections.

If during site inspections the inspector finds the applicable ESC plans to be inadequate at a given site, minor modifications to the approved ESC plan and construction sequencing plan may be made in the field to upgrade erosion controls without written DSD approval. Major modifications may require a plan correction. At the final inspection, the appropriate inspector confirms the proper completion of runoff and water quality controls, permanent ESC controls and site restoration as a prerequisite to project acceptance or issuance of a certificate of occupancy.

If a development project is found in non-compliance with conditions of the development permit during a site visit, an inspector may give the project manager a verbal warning with instructions to achieve compliance within 24 to 48 hours. This action is followed by a written warning if remedial action was not taken to resolve the problems. If corrective actions to bring about compliance are not achieved, a cease-and-desist order may be issued, whereby all work at the project site is stopped until compliance is achieved. A "red-tag" is posted at the site, and a written notice of the cease-and-desist order is mailed to the alleged violator with an explanation of the site factors resulting in non-compliance.

If a development project is found to be without a valid development permit and in non-compliance with applicable water quality regulations, or a high priority violation exists, a cease-and-desist order may be issued immediately. Environmental Inspection staff are responsible for enforcement of City Land Development Code, and water quality codes and regulations.

In addition, DSD will continue to dedicate environmental inspectors to the Barton Springs Zone (BSZ) to ensure development projects comply with applicable erosion control standards. This program coordinates with and assists inspectors from other governmental entities in controlling erosion from active construction sites. Such inspection coordination most commonly occurs with Travis County and the TCEQ. Citizens in the Austin area call Environmental Inspection with complaints and requests for inspections, on sites that appear to not be in compliance with the site development permit or might not have a site development permit. Environmental Inspection investigates these complaints, or requests for inspection, and documents the investigation and reports the findings to the concerned citizen.

Public Education for Construction Site Operators

In the effort to reduce the amount of pollutants discharged into local waterways from construction related activities, the City of Austin has developed and implemented a variety of public information and education tools for construction site operators and the development community.

The City provides educational information related to storm water management techniques such as erosion and sedimentation controls, construction sequencing, permanent water quality controls and site restoration activities. The City provides this information to developers and construction site operators in the following ways:

- Written materials, Land Development Code, Drainage, Environmental Water Quality, Transportation Criteria Manuals, and Standards Manual.
- City of Austin Development Website: Codes and Criteria online.

- One-on-One Meeting: i.e. Development Assessment Meeting, Pre-Construction Meeting

The City has found that written materials are an effective tool in communicating regulatory guidelines, technical guidance and basic non-technical information to both the development and construction communities. The WPD and DSD have developed many of these documents that range from fact sheets on good housekeeping practices for construction sites to detailed criteria for the design and implementation of various storm water control structures.

City inspection staff have training opportunities, certification training for the various certification i.e. CEPESC. Training on the TPDES Construction General Permit has been developed specifically for the City's construction project management and stormwater inspection staff to relate regulatory requirements and provide inspection services to new and redevelopment projects.

***Measurable Goals – Construction Site Stormwater Runoff***

- Number of construction site inspections at commercial sites.
- Number of construction site inspections at residential sites.
- Number of stop-work orders issued for non-compliance.

# MCM 7. Public Education, Outreach, Involvement and Participation

## Public Education and Outreach (i)

In compliance with Part III. Stormwater Management Program, Section B.2.g.i-ii. of the City of Austin (COA) TPDES Stormwater Permit, the City of Austin's public education and awareness programs are conducted by the WPD, and ARR, and AW. Advertising, education, both internal and external, and outreach activities are used to maximize participation in water quality, waste reduction and conservation programs. The target audience for educational programs includes homeowners, students, visitors, businesses and professionals.

The targeted controls and measurable goals described within this Part III.B. SWMP minimum control measure element have been identified primarily to preserve and enhance the quality of storm water runoff to the maximum extent practicable (MEP) throughout the City's full-purpose jurisdiction; but they are also to be considered supportive of the Part II.C. Impaired Water Bodies and Total Maximum Daily Load (TMDL) Requirements, and consistent with the voluntary responsibilities in those portions of the MS4 that discharge to portions of watersheds included in one of the two TCEQ Approved Austin Area TMDL IP Plans for Four Austin Streams and Gilleland.

The Policy and Planning Division of the WPD has primary responsibility for the management of the water quality component of these programs. ARR is responsible for the trash abatement, hazardous chemical and recycling components. When possible, these departments have formed partnerships to increase their ability to reach a larger audience with a wider, yet compatible, message.

The public education and awareness efforts of the City of Austin encompass several different elements reflecting the wide variety of water quality-related programs that are supported by the City. Specific elements, which will likely continue through the permit period include the following:

- ***Grow Green*** – This interdepartmental homeowner and landscape professional outreach program provides Earth-Wise gardening tips in nearly all of the nurseries and the big box retail in Travis County. The Watershed Education group coordinates this effort to provide "one-stop shopping" for citizens for all their gardening needs. Six City departments participate and address water quality, water conservation, composting Dillo Dirt, The Don't Bag It Program among other issues. The effort helps prevent duplication of effort and provide cost savings. Display units contain a wide variety of fact sheets to help homeowners make informed decisions on least toxic alternatives for their yard care at the point of purchase for pesticides and fertilizers. A full-color Native and Adapted Plant Guide is also available to encourage the use of plants that require fewer pesticides and less water, and is available as an online searchable database. Grow Green offers classes for homeowner's and a Landscape Professional Training series.
- ***Integrated Pest Management*** – The City's IPM program produces brochures, posters and a web page (under the auspices of the Grow Green program) containing information on least toxic pest management techniques. Presentations and public appearances on TV and radio also supplement the public outreach activities of this program. Grow Green includes television spots that ask homeowners to avoid inappropriate use of pesticides in the spring gardening season. Assistance to City of Austin staff and the general public is offered via a telephone assistance line.
- ***Earth Camp*** - The camp is offered to fifth grade students in the lower socio-economic areas of Austin and focuses on watershed and aquifer education. Earth Camp provides teacher training, curriculum and materials for classroom lessons, as well as field trips, outdoor activities and environmental expertise, all of which are provided free of charge. Components include water quality testing, lessons on macro-invertebrates, green gardening, cave tours and visits to Splash! Into the Edwards Aquifer, a hands-on, interactive educational exhibit. A teacher-led version of Earth Camp allows teachers who have attended regular Earth Camp to come back, and lead the following year. The City supports this program with full time and temporary staff, training, equipment, and bus funding.
- ***Earth School*** - This one-hour, in-school lesson provides hands-on watershed and aquifer education to Austin Independent School District (AISD) and Eanes Independent School district (EISD) fifth graders. Using models developed by WPD and other educational sources, students learn how storm water carries pollutants to creeks and aquifers. Earth Camp, teacher Led Earth Camp, or Earth School are offered to 100% of AISD elementary schools.
- ***Watershed Detectives*** – The middle school curriculum involves students in a hands-on simulation of an investigation of a real live fish – kill. Students use

topographic maps and a watershed model to determine flow paths and then locate the source of contamination by conducting simulated tests.

- ***Hydrofiles*** - This program teaches high school students how to monitor water quality in our creeks. Classes are also given the opportunity to go on field trips to local creeks or caves.
- ***Storm Drain Marking*** - Volunteers are recruited to affix tile markers to storm drains, informing citizens, "*No Dumping, Drains to Creek".* The tiles are available in both English and Spanish.
- ***Scoop the Poop****:* In partnership with the Parks and Recreation Department, pet waste bag dispensers have been placed in City parks to encourage dog owners to clean up after their pets. The program also partners with dog focused non-profits to raise awareness about the importance of picking up pet waste by distributing branded giveaways and including educational articles in newsletters and social media.
- ***East Austin Environmental Initiative (EAEI)*** - The WPD publishes the *Eastside Environmental News*, a biannual newsletter that has hard copies and electronic versions which focus on environmental issues and City activities affecting east Austin communities. Staff may participate in community events such as neighborhood cleanups, meetings, and special events.
- ***Austin Enviro Mechanics*** – This program is a cooperative effort between WPD and local businesses. The program encourages businesses to adopt shop practices that keep pollutants from entering storm drains and waterways. Those who participate are given rewards that benefit both the shop operators and their customers.
- ***Shade Tree Mechanic*** – This program is targeted at do it yourself citizens who like to take care of vehicles. Citizens are allowed to pick up a free oil change bucket, sun shade and educational materials by providing proof of residency at the WPD office, or Household Waste Facility. Home site inspections are performed if there is a violation reported to the 24-hr pollution hotline, or by citizen request.

As funding allows, the City will run advertisements and radio spots in the local media to promote water quality education. And, as noted in the introduction, City departments have formed partnerships to increase their ability to reach a larger audience. The City of Austin also coordinates its various public education and awareness efforts with other governmental entities. Partners have included Austin Independent School District, Lower Colorado River Authority, Keep Austin Beautiful, Texas Parks and Wildlife Department

and The Barton Springs/Edwards Aquifer Conservation District the Friends of the Colorado River, Children in Nature Collaborative of Austin, and other groups.

***Measurable Goals - Public Education and Outreach***

- Number students participating in the Earth Camp and Earth School
- Number students participating in The Clean Creek Campus
- Number of students participating in Watershed Detectives
- Number of students participating in Hydrofiles
- Number of Storm Drains Markers installed.
- Number of Scoop the Poop waste bags purchased for distribution.
- Number of calls to Pollution Hotline Public Reporting.
- Number of handouts for household hazardous waste and used oil education.
- Number of visits to the Grow Green webpage.
- Maintain the educational signage at Barton Springs Pool that explains how the Edwards Aquifer functions and provides information on the Barton Springs Salamander, and Austin Blind Salamander endangered species that reside in the Barton Springs.
- Maintain two education stations at the Splash! Groundwater education exhibit.
- Number of storm drain marking activities in portions of the Barton Springs Zone watersheds within the permit area.

<u>Pollution Hotline Public Education</u>

In the effort to protect water quality, the City of Austin established a 24-Hour Pollution Hotline for citizens to report pollution concerns in 1986. The City has promoted the Pollution Hotline in a variety of ways over the years and the WPD Spills and Complaint Response Program (SCRP) staff now investigates approximately 1,400 pollution complaints each year, the majority of which are citizen pollution complaints received through the Pollution Hotline. The increase in calls to the Pollution Hotline over the years is believed to be in large part due to the increase in public awareness about the reporting system and not just an increase in the number of incidents occurring in the Austin area.

The Pollution Hotline is a system that allows the general public to report pollution 24 hours a day, seven days a week. The hotline is answered by a WPD staff member during normal business hours and by an automated voice mail and paging system after hours. The SCRP staff investigates the complaints received on the hotline, identifying the pollutants, the potential pollutant sources and the party responsible for the illicit discharge. All complaints received on the Pollution Hotline are treated as anonymous complaints and the WPD makes every effort attempt to keep complainants' names confidential. The SCRP staff believes citizens are more inclined to use the public reporting system if there is an attempt to restrict access to their names. The WPD promotes public reporting of illicit discharges and improper disposal activities on the hotline in a variety of ways, with some of the Pollution Hotline promotional materials published in both Spanish and English. The following is a list of promotional materials and activities the City uses:

- Newsletters, fact sheets and specific promotional materials such as brochures and magnets are provided to the public at trade shows, libraries, community centers, community events and a variety of speaking engagements
- The WPD web site provides information on the Pollution Hotline, the SCRP activities and common pollutants and potential sources
- Radio announcements, newspaper advertisements and periodic press releases to the media are used to publicize the hotline, the SCRP and specific pollution prevention initiatives
- Magnets, brochures and door hangers promoting the Pollution Hotline, the SCRP and specific pollution prevention practices are provided to citizens by SCRP staff during complaint investigations

***Measurable Goals - Public Education and Outreach***

- Number of calls into the Pollution Hotline Public Reporting.

<u>Austin Resource Recovery</u>

ARR implements education programs that reduce the generation of litter and promote proper disposal of household hazardous waste.

*Pay-As-You-Throw Educational Support*: Pay-As-You-Throw (PAYT) is a garbage collection system that aggressively encourages recycling and “smart” trash habits. The

PAYT program reaches residential and commercial customers through billboards, print ads, utility bill inserts and the City's web site.

*Curbside Single Stream Recycling Educational Support:* The Curbside Single Stream Recycling Program provides weekly collection of newspaper, corrugated cardboard, glass bottles and jars, and tin and aluminum cans and many plastic bottles to all households served by City garbage collection. The program includes the Block Leader Program and Recycling Pays projects to promote public awareness and participation in the program. The Recycling Program reaches the various audiences through brochures, magnets, billboards, radio ads, public service announcements, print ads, seasonal event fliers, compost kitchen buckets made from recycled materials, rulers and pencils made from 50% post-consumer material.

*Household Hazardous Waste Collection Facility Education:* The City of Austin operates a permanent facility to collect hazardous home chemicals direct the citizenry to properly dispose of waste and prevent disposal in the landfill or dumping on the ground where chemicals can cause pollution. from Austin and Travis properly dispose of waste and prevent disposal in the landfill or dumping on the ground where chemicals can cause pollution. County residences a throughout the week in the effort to direct the citizenry to properly dispose of waste and prevent disposal in the landfill or dumping on the ground where chemicals can cause pollution.

A key to the HHW Program's long-term success is effective public education on aspects of waste reduction, pollution prevention and consumer behavior. The program's educational mission is to encourage the use and purchase of non-toxic or less-toxic alternative products, wise consumer practices, and to avoid purchase or acquisition of materials and products that may not be used. One of the program goals is for individual residents or participants to need HHW programs less often and for less material in the future. Information is provided over the telephone, webpages, to ARR/AW customers through utility bills, fliers, newspaper advertising, presentations to area schools, professional organizations, and environmental conferences, and outreach at the facility during collection activities. Public education and information efforts will be reviewed each year.

***Measurable Goals – Public Education and Outreach***

- Number of educational flyers distributed.

## Public Involvement and Participation (ii.)

In compliance with Part III. Stormwater Management Program, Section B.2.g.ii. of the City of Austin (COA) TPDES Stormwater Permit, the City of Austin's coordinates through co-sponsorship agreements and contracts with Keep Austin Beautiful (KAB) Program is a 501(c) (3) non-profit organization, officially certified affiliate of Keep America Beautiful. KAB's core purpose is to inspire and educate individuals and our community towards greater environmental stewardship. The organization operates with the support of the City of Austin, Travis County, local businesses, community groups and citizens. Extensive coordination occurs between the KAB program staff and the staff of City and County programs that benefit from KAB's public education and awareness efforts in the areas of water quality, non-point source pollution, littering, recycling and beautification. Continuing support of this program is provided yearly by the City of Austin and Travis County through funding approval during budget cycles. Responsibility for the operations of the program rest with the KAB staff and policy and oversight is the responsibility of a volunteer board of directors.

The programs of KAB target all business and citizens in the greater Austin area through activities, that center on litter abatement, recycling, environmental education and beautification. The primary goal of KAB is to clean, beautify and protect the Austin environment through physical improvements and hands-on education:

- ***Clean*** - Removing litter from our neighborhoods, streets, schools, parks and public spaces, and promoting a litter-free Austin.
- ***Beautify*** - Empowering and supporting schools, neighborhood groups and local businesses in efforts to beautify their communities and restore habitats.
- ***Educate*** - Promoting environmental stewardship through presentations, hands-on activities and service-learning projects.
- ***Recognize*** – honoring the most outstanding environmental efforts of individuals, schools, and organizations.

The KAB board and staff develop and implement projects and programs in the areas of cleanup, beautification, habitat and creek restoration, and education. Major activities

sponsored or supported through the efforts of KAB in past years have included the following:

- Environmental Education - Providing environmental presentations and activities to students K-12.
- Awards - Recognizing positive behavior in all segments of the community.
- Clean Sweep - Providing opportunities for grassroots involvement in city-wide clean-ups.
- Community Cleanups - Providing opportunities for grassroots involvement in cleanups year-round.
- Clean Creek Campaign (KAB & WPD)
- Adopt a Creek – providing the community with an opportunity to take ownership of local creeks and help keep them clean.

***Measurable Goals - Public Involvement and Participation***

- Estimated tons of litter reduction.
- Number of river and creek clean-up events sponsored each year.
- Number of student and teachers reached through the education program.
- Number of promotional materials distributed.
- Number of volunteers engaged in service projects.
- Number of volunteer hours donated to the community.

KAB will continue to coordinate its program with public agencies with the same or similar environmental focus. These include the City of Austin, Travis County, Keep America Beautiful, Keep Texas Beautiful, LCRA, TCEQ, Texas General Land Office, AISD and the University of Texas at Austin, Austin Community College, Capital Area Council of Governments and Texas Department of Transportation.

# MCM 8. Monitoring Programs

## Dry Weather Screening (i)

In compliance with Part III. Stormwater Management Program, Section B.2.h.i. of the City of Austin (COA) TPDES Stormwater Permit, The City of Austin Watershed Protection Department (WPD) has implemented a program based on the characteristics of the Austin area MS4. The general topography of the City of Austin characterized by a large number of natural creeks and tributaries that serve as the primary conveyance of storm water through the City. For this reason, the typical storm sewer pipe system is short in length and serves to carry storm water runoff from a limited drainage area to the nearest waterway. The result is a municipal separate storm sewer system (MS4) that is comprised of numerous small pipe networks and many outfalls. In past dry weather screening activities, relatively few outfalls were found to have dry weather flow.

The goal of the dry weather screening program will again be to screen a proportionate number of storm water outfalls within the City of Austin MS4 during the five year permit term, focusing screening efforts in several watersheds each year, and using a ratio of outfalls screened to total number of outfalls to calculate and report the percent of MS4 in which outfall evaluations have been completed. Storm water outfalls with a diameter of 36 inches or larger identified and located during the first permit term and additional outfalls identified for inclusion in the screening program will be screened, based on visual observation of flow during field investigation activities.

The targeted controls and measurable goals described within this Part III.B. SWMP minimum control measure element have been identified primarily to preserve and enhance the quality of storm water runoff to the maximum extent practicable (MEP) throughout the City's full-purpose jurisdiction; but they are also to be considered supportive of the Part II.C. Impaired Water Bodies and Total Maximum Daily Load (TMDL) Requirements, and consistent with the voluntary responsibilities in those portions of the MS4 that discharge to portions of watersheds included in one of the two TCEQ Approved Austin Area TMDL IP Plans for Four Austin Streams and Gilleland.

During dry weather periods (no rainfall in the previous three days), Storm Water Monitoring Program staff will physically locate each targeted outfall. Once an outfall has been located in the field, the physical description of the outfall will be recorded in a field logbook. The physical characteristics to be recorded will include the dimensions of the storm sewer pipe, a description of any stains, deposition or vegetative growth present and any other site-specific information that may be relative to the screening efforts. If flow exists at an outfall, a sample will be collected and flow conditions, discharge color and odor information will be recorded.

Samples will be tested for pH, TDS, temperature, ammonia, chlorine, detergents, TPH, fluoride, potassium and chromium using Hach field test kits and hand held Oakton probes to help determine the possible source. The City's Spills and Complaints Response Program (SCRP) staff will be notified of the flow and results of the analyses. If flow is present at an outfall, the outfall will be resampled after eight hours but before 24 hours to determine if any changes in the discharge have occurred. Any change in analyses will be reported to SCRP.

As noted previously, the Storm Water Monitoring Program staff will work in dry weather periods throughout the permit period to evaluate storm water outfalls in each of the twenty-eight watersheds found within the City's permit area. Building on experience from the screening, the dry weather screening program will focus on fewer watersheds, concentrating on those most likely to have illicit connections.

The following is a list of the watersheds that will be included in the screening program:

- Blunn
- Boggy
- Bull
- Buttermilk
- Carson
- Country Club E
- Country Club W
- East Bouldin
- Fort Branch
- Harper's Branch
- Huck's Slough
- Johnson
- Little Walnut
- Shoal
- South Boggy
- Tannehill
- Taylor Slough S.
- Taylor Slough N.
- Lady Bird
- Waller
- Walnut
- West Bouldin
- West Bull

***Measurable Goals - Dry Weather Screening***

- Number of outfalls screened (dry weather).

## Wet Weather Screening (ii)

In compliance with Part III. Stormwater Management Program, Section B.2.h.ii. of the City of Austin (COA) TPDES Stormwater Permit, The City of Austin Watershed Protection Department (WPD) has implemented a program that uses a visual assessment to provide a post-storm event evaluation of the storm water runoff in the Austin area waterways. The program will be implemented over the five year permit term, using watersheds as the basis for defining the City's MS4 and measuring program progress. The City anticipates that the wet weather monitoring program will accomplish the following objectives over the permit period:

- Provide a tool to detect excessive levels of pollutants in waterways after storm events
- Provide information related to the type of pollutants present in waterways after storm events
- Provide a tool for investigating the origin of pollutants
- Provide a limited assessment of storm water impact on aquatic life
- Provide a tool to detect acute pollution events

Because the majority of the MS4 discharges into nearby waterways, the City will use watersheds to define the MS4 areas and track the progression of the monitoring activities. The proposed monitoring sites within each watershed have been selected based on the following criteria:

- within the City's permit area
- along the main stem of the stream
- longitudinal distribution along the stream length
- ability for staff to access site safely
- ability to determine the MS4 area discharging to the stream segment upstream of the site;

The wet weather monitoring program will complete visual assessments of storm water flow in the following watersheds: Barton, Blunn, Bull, Buttermilk, Carson, Country Club East, Country Club West, Decker, Dry Creek, Eanes, East Bouldin, West Bouldin, Fort

Branch, Harper's Branch, Huck's Slough, Johnson, Little Walnut, North Boggy, South Boggy, Tannehill Branch, Taylor Slough North, Taylor Slough South, Waller, Walnut, West Bouldin, West Bull, and Williamson.

Each watershed monitoring site(s) will be screened at least once during the permit term. A visual assessment of storm water flow will be completed at each monitoring site within 36 hours of a storm event. For the purposes of this monitoring program, a storm event will be defined as any event with greater than 0.10 inches of rain. After determining that a storm event has occurred within the target watersheds, WPD staff will conduct a visual evaluation related to the type of pollutants that may be present in the storm water flow at each monitoring site. WPD staff will review each monitoring site assessment form for indications of elevated pollutant levels. If unusual conditions exist at a monitoring location, the WPD Spills and Complaint Response Program (SCRP) may be notified and a complaint investigation could be initiated. If, during an assessment, site conditions indicate that an acute pollutant event may have occurred, the SCRP will be notified immediately, and the SCRP investigator will respond to initiate a detailed investigation of the situation.

***Measurable Goals – Wet Weather Screening Program***

- WPD staff will conduct wet weather monitoring in all watersheds at least once during the permit period. The wet weather data sheets will be provided.

## Industrial and High Risk Runoff Monitoring Program (iii)

In compliance with Part III. Stormwater Management Program, Section B.2.h.iii. of the City of Austin (COA) TPDES Stormwater Permit, the AFD and WPD have an Industrial and High Risk Runoff Program that identifies and prioritizes facilities that have the potential to discharge pollutants into the municipal separate storm sewer system (MS4). As part of this effort, staff identify facilities eligible for NPDES/TPDES storm water discharge permit coverage and request that analytical monitoring data collected by the facility (to comply with state or federal permit requirements) be submitted to the City for review.

Most of the EPCRA Title III facilities found in the Austin area are included in one of the industrial activity SIC codes or in one of the narrative industrial activity descriptions that require MSGP coverage. As such, the City of Austin will not conduct any additional storm water discharge monitoring at facilities where the terms of the TPDES stormwater permit are considered by the City to be sufficient, and if the review of the monitoring results (based on monitoring conducted by the facility) are in compliance.

If WQC observes that the monitoring results reviewed during TPDES inspections are not in compliance, WQC requests action from the facility to reduce pollutants in stormwater runoff. If repeated polluting discharges occur in violation of MSGP, WQC initiates enforcement action and notifies TCEQ, as the permitting agency.

## Storm Event Discharge Monitoring (iv.)

In compliance with Part III. Stormwater Management Program, Section B.2.h.iv. of the City of Austin (COA) TPDES Stormwater Permit, the City of Austin Watershed Protection Department (WPD) has implemented a program utilizing the Part IV. A.2. *Option 2: Representative Rapid Bioassessment Monitoring*. As such, during the five year permit period, the Environmental Resource Management Division of the WPD will continue to monitor and assess the ecological integrity and the degree of impairment of creeks within the watersheds of the Barton Springs Zone (BSZ) using the Environmental Integrity Index (EII). ERM staff will conduct EII assessments of the Onion Creek, Barton Creek, Little Barton Creek, Williamson Creek, Slaughter Creek, Bear and Little Bear Creek watersheds located within the Barton Springs Zone on a semi-annual monitoring schedule. The following six protection categories (sub-indices) are used in the EII:

- **Contact Recreation (Swimming/Wading)** - The suitability of a water body for contact recreational use is evaluated using *Escherichia coli* bacteria concentration, which is an indicator of fecal contamination. Concentration numbers are converted to an index score relative to common State of Texas criteria for human health protection.

- **Non-Contact Recreation/Aesthetic** - The parameters included in the non-contact recreation field assessment include water surface appearance, litter, odor, clarity

and percent algae cover. Scoring is primarily from visual assessment by trained staff.

- **Water Quality** - Water quality subcomponents are calculated from chemical analysis of grab samples from all study sites during baseflow conditions.

- **Sediment Quality -** Sediment sampling is also conducted at one site in each watershed located near the mouth. Scoring is from concentration data compared to local reference conditions for water and aquatic toxicity effects levels published for sediment.

- **Habitat Quality Index** - Parameters used to measure habitat quality include instream cover, embeddedness, velocity/depth regimes, channel alteration, sediment deposition, frequency of riffles, channel flow status, condition of banks and riparian zone width. Scoring is from field measurements and visual assessment by trained staff.
- **Aquatic Life Support** - Aquatic life support evaluates biological health using benthic macroinvertebrate and diatom community structure. Scoring is from biological indices calculated from taxonomic identification and compared to a reference condition.

Scores of the six sub-indices are averaged to obtain one EII score for each monitoring site. EII scores range from 0 to 100 and are characterized by using the following eight ranges: very bad (0-12), bad (13-25), poor (26-37), marginal (38-50), fair (51-62), good (63-75), very good (76-87), and excellent (88-100). Overall watershed scores are determined by averaging the site-specific scores for all reaches within the watershed.

As directed by the Part IV.A. of this permit, stormwater discharge monitoring collection activities of MS4 will continue to be completed by the Watershed Protection Department at four identified outfalls within permit years one and four.

***Measurable Goals – Storm Event Discharge Monitoring***

- Provide an assessment of at least Four (4) Watersheds on a rotational basis within the permit area and BSZ using the EII methodology.
- Provide discharge monitoring sample data in permit years one and four.

## Floatables Monitoring (v.)

In compliance with Part III. Stormwater Management Program, Section B.2.h.v. of the City of Austin (COA) TPDES Stormwater Permit, the City of Austin Watershed Protection Department (WPD) has implemented a program to monitor the floatable materials discharging into the MS4. The WPD operates and maintains floatable boom litter collection sites at the mouth of two urban creeks that receive storm water discharges from Austin's MS4, just prior to their discharge into Lady Bird Lake.

The FOD conducts floatable inspection and maintenance activities in an on-going manner throughout the year, between October 1st and September 30th to ensure proper operation and effectiveness. Each boom is made of materials that allow the boom to float at the water surface and extends across the width of the creek, anchored on either shoreline to maintain its position in the creek; trapping floating materials flowing toward the mouth of the creek for easier removal. FOD inspect the booms and when identified, crews remove all trapped floating material using hand equipment that reach the middle of the creek, allowing removal from both sides of the creeks. Heavier material such as wet wood is pulled to the shorelines and removed with mechanical equipment. The material removed from each site is loaded into City dump trucks, hauled to an acceptable local landfill and measured by weight at the disposal site.

***Measurable Goals - Floatables***

- Inspect the condition of each floatables monitoring boom site weekly and after major storm events.
- Clean each monitoring boom site on a monthly basis (if necessary); trash/debris removal activities commence when the access areas to the sites have dried and are safe for work.
- Report total tons of trash and debris (wet) removed from floatable booms.

# Additional Water Quality and Biological Monitoring (vi.)

Critical Environmental Feature Protection

Critical Environmental Feature (CEF) is defined by COA Land Development Code, and includes wetlands, springs, seeps, rim rocks, bluffs, sinkholes and caves. Protective buffers from 150 feet to 300 feet are typically established to protect the character and function of CEF during and after the development process. During the site development permit application process, City of Austin staff review site plans for large-scale residential and commercial development to ensure that critical environmental features are properly identified and buffered from the development. These buffers are critical to maintaining the quality and quantity of recharge to karst aquifers, maintaining the stability of vertical rock outcrops, and maintain the water quality functions of wetlands. The number of CEF identified, and protective CEF buffers established by COA staff will reported annually.

***Measurable Goals***

- Number of CEF identified and feet of CEF Buffer established.

Barton Springs Complex Sediment Monitoring

The City's ERM division of WPD will continue periodic sediment sampling of Barton Springs and other associated spring outlets as well as sediment monitoring from the contributing watersheds to the Barton Springs Zone. The monitoring will consist of quarterly monitoring at Barton Springs; annual sampling of Eliza, Old Mill, and Upper Barton Springs, where accumulations of sediment and flow conditions allow for collection. The type of parameters to be analyzed will include metals, oil and grease, semi-volatile organics, petroleum hydrocarbons, polychlorinated biphenyls and selected pesticides.

Barton Springs Complex Water Quality Monitoring

WPD will conduct a variety of ambient and storm water monitoring during the permit

period.

- Intensive spring outlet and surface water sampling will continue at Barton Springs Pool. The frequency will be enough to identify trends that threaten this water resource in a timely manner. Sampling will occur at a minimum on a monthly basis and include analysis for nutrients and Total Suspended Solids (TSS).
- Water quality sampling will be conducted at Barton Springs and at the other associated spring outlets on an annual basis. Samples will be analyzed for an extensive suite of parameters including metals, volatiles, semivolatiles, bacteria and selected pesticides and herbicides. Parameters approaching levels of concern or detected frequently enough that trends may be examined will be examined at a minimum biannually.
- A data logger will be continually deployed (except for maintenance and data retrieval) at a cave at the bottom of Barton Springs Pool to collect basic physical parameters.

***Measurable Goals***

- Provide Barton Springs Sediment Sampling data
- Provide Barton Springs Pool Biweekly data.

# Appendix B

# Identification of Water Quality Improvement or Degradation

# APPENDIX B

## Identification of Water Quality Improvement or Degradation

As required by Part IV.C.4.a. of the permit, the City of Austin has reviewed the annual report summary data in the effort to identify any water quality improvement or degradation.

Identification of improvement or degradation of water quality can be done directly or indirectly. Indirect measures of water quality improvements related to the pollution prevention efforts of several City programs have been identified. The following are indirect measures of City's storm water pollutant load reduction efforts during the October 1, 2019 through September 30, 2020 reporting period:

- Collected 4,817 tons of dirt and debris from roadways throughout the City.
- Properly disposed of approximately 1,992,736 pounds of household hazardous waste.
- Recycled 92,940 pounds of waste oil and 3,275 pounds of oil filters.
- Recycled 401,860 pounds of paint.
- Recovered approximately 11,226,464 gallons and 984 cubic yards of pollutants as a result of pollution investigations.
- Removed approximately 1.6 tons of floatable debris from two floatable boom locations.
- Removed approximately 1,303 tons of trash and debris from all Waller Creek Tunnel facilities.

# Appendix C

# Annual Expenditures & Assessment of Controls

# APPENDIX C

## Annual Expenditures & Assessment of Controls

As required by Part IV.C.4. of the permit, the City of Austin has compiled annual expenditure information for the reporting periods between October 1, 2019 and September 30, 2020 and the anticipated budget for the reporting period between October 1, 2020 and September 30, 2021. The expenditure information addresses the major elements of the Storm Water Management Program (SWMP) and reflects current operation budgets of the City of Austin programs utilized to satisfy the City's TPDES MS4 stormwater permit requirements. The expenditure information may in some cases include expenses for activities not directly required by the permit.

| Storm Water Management Program Element | FY 19-20 Actual | FY 20-21 Budget |
|---|---|---|
| MS4 Maintenance Activities | $49,685,788 | $46,632,799 |
| [1]Post-Construction Storm Water Control Measures | $3,818,330 | $4,225,857 |
| [2] Illicit Discharges Detection and Elimination | $9,695822 | $10,041,718 |
| Pollution Prevention/good Housekeeping for Municipal Operation | $72,119 | $73,799 |
| Industrial and High Risk Runoff | $2,656,728 | $2,764,534 |
| Construction Site Runoff | $2,569,976 | $2,726,824 |
| Public Education | $2,334,569 | $2,692,648 |
| Monitoring Programs | $72,119 | $73,799 |
| [3]**Total Expenditures** | **$71,623,501** | **$69,964,056** |

[1]Does not include capital expenditures for construction or retrofit activities.
[2]Does not include capital expenditures for Austin Water.
3Total may include expenditures for program activities not directly related to compliance with the City's TPDES Storm Water Permit.

No revisions to the assessment of controls or fiscal analysis reported in the permit application are necessary.

# Appendix D

# NPDES & TPDES Notices and COA Inspection Summary

# APPENDIX D

## NPDES & TPDES Notices and COA Inspection Summary

As required by Part IV.C.4.e. & f. of the City's permit, this is a summary of the number of Notices of Intent, Change, Secondary, Termination and Small Construction Notices received from construction site operators and industrial facilities seeking NPDES or TPDES coverage for storm water discharges during the reporting period. The number of inspections conducted by the City of Austin at construction sites and industrial facilities during the reporting period has been included.

The City of Austin received the following submissions:

**TPDES Construction General Permit TXR150000**

- 99 Notices of Intent (NOI)
- 63 Notices of Termination (NOT)
- 98 Construction Site Notices (CSN)
- 44 Construction Site Notice NOTs
- 24 Notices of Change (NOC)
- 17 Secondary Operator Notices

**TPDES Multi-Sector General Permit TXR050000**

- 0 Notices of Intent
- 1 No Exposure Certification

**TPDES General Permit TXG110000**

- 0 Notices of Intent

Submissions to TCEQ during this reporting period included:

**TXR050000**

- 7 Notices of Intent
- 7 Notices of Termination
- 5 No Exposure Certifications

**TXG110000**

- 2 Notices of Termination

Inspections by the City of Austin at construction and industrial site included:

- 18,752 construction inspections at permitted development sites.
- 482 industrial inspections at facilities that store hazardous materials.
- 176 industrial inspections at facilities that may be contributing a substantial pollutant load to the MS4.

# Appendix E

# Summary of Representative and Other Monitoring Data

# APPENDIX E

## Summary of Representative and Other Monitoring Data

As required by Part IV.C.4. of the City's permit (TPDES Permit No. WQ0004705000), a summary of the data, including monitoring data that is accumulated throughout the year has been included in the system-wide annual report. The City of Austin utilizes Option 2: Representative Rapid Bioassessment Monitoring as described in the Part IV.A.2 of the permit. Option 2 requires storm water monitoring events in permit Years 1 and 4. The previous annual report summarized storm water monitoring in Year 1. This report will summarize information on the compliance activities completed in Year 4. However, the lack of storm events during Year 4 necessitated using storm water monitoring information obtained during Years 3 and 5 of this extended permit. The storm water permit was subsequently renewed in August of 2018 for storm water monitoring beginning October 2019. For the storm water monitoring occurring during this period, sampling is currently on-going due to a paucity of storm events.

The Representative Monitoring, Data Monitoring Reports (DMR's) were submitted electronically to TCEQ. During the reporting period between October 1, 2019 and September 30, 2020, the City's Watershed Protection Department (WPD) conducted sampling activities associated with the Representative and Rapid Bioassessment Component monitoring requirements.

### Representative Monitoring

The Watershed Protection Department (WPD) Environmental Resource Management (ERM) staff are responsible for the City of Austin's Representative Monitoring Program. The principal objectives in the effort to satisfy the representative monitoring requirements for the City of Austin's municipal separate storm sewer system (MS4) permit are to characterize not only the quality and quantity of storm water discharges, but the effect these discharges may have on aquatic environments in the Austin area. These objectives were met through the continued implementation of a monitoring program composed of traditional chemical water quality measures and biological integrity assessments.

Streams that receive storm water discharges from Austin's MS4 have been selected to represent the variety and intensity of development pressures on Austin's surface water resources. Storm Water monitoring is conducted at USGS- type stations, at sites selected to characterize storm water influences and flow during storm events. A minimum of four sites are sampled in Year 1 and Year 4 of the permit period. The composite samples are analyzed for nutrients, metals, field and physical parameters. An overview of Austin area watersheds and the representative monitoring site locations is included in Figure 1.

**Storm Water Sampling Component**

The storm water monitoring component of the program consists of four monitoring sites at outfalls located within four watersheds. Information about each monitoring location has been included in Table 1.

**Figure 1. City of Austin Representative Monitoring Locations**

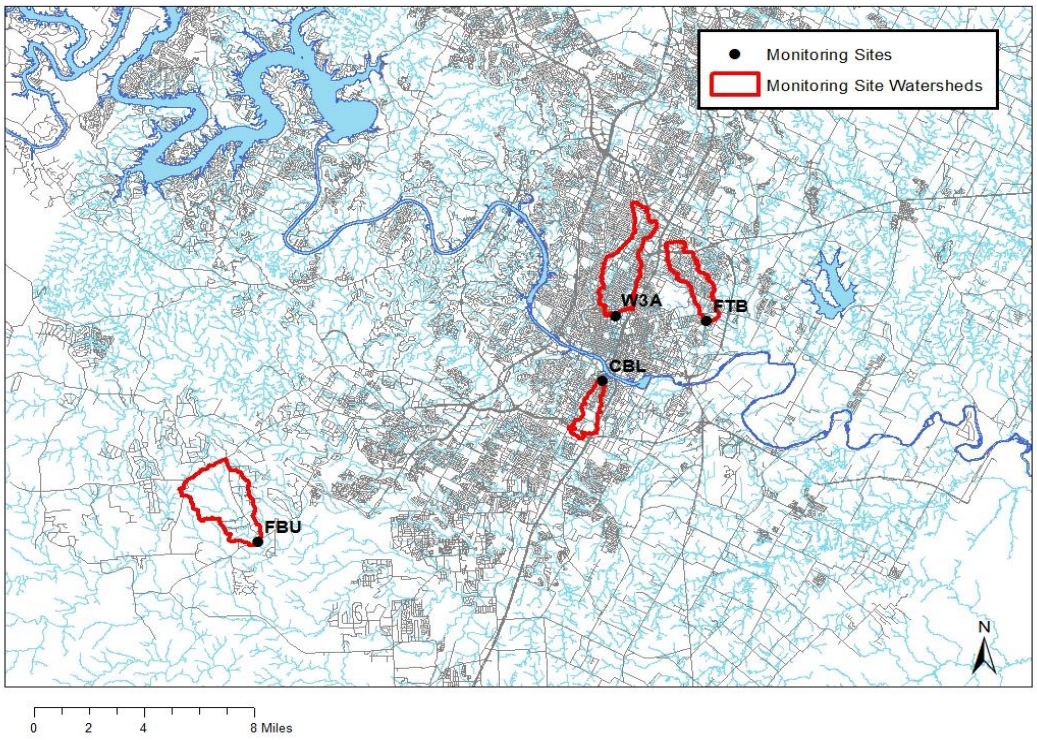


**Table 1**. Storm Water Monitoring Site Locations

| Watershed | Site No. | Monitoring Site Location | Drainage Area (Acres) | Land Use | Receiving Water Body (Segment No.) |
|---|---|---|---|---|---|
| Bear Creek | 001 | Bear Creek @ FM 1826 | 3,563 | Undeveloped | 1427 |
| Waller Creek | 002 | Waller Creek @ 23rd St. | 2,524 | Mixed Urban | 1429 |
| Fort Branch | 003 | Fort Branch near Webberville Road | 1,600 | Residential (Mixed) Urban | 1428 |
| Blunn Creek | 004 | Blunn Creek near Little Stacey Park | 786 | Mixed Urban | 1429 |

## Sample Collection and Analysis

Storm water monitoring consisted of the collection of composite storm water samples using automatic water quality samplers (Isco3700) and bubbler-type flow meters (generally ISCO 4200) at each outfall during storm events. The sample aliquots were collected for at least the first three hours of runoff or for the entire period of discharge if the duration is less than 3 hours. Sample aliquots were collected based on equal volumes of runoff. In addition to the composite sample, one grab sample was collected at each of the four outfalls during the first 2 hours of runoff of the same runoff event. The storm water samples were taken to an EPA-approved water quality laboratory for analysis and grab samples were tested for the parameters listed in Table 2. Storm water monitoring staff collected pH (S.U.) and temperature (ºC) information from the grab samples prior to transporting the samples to the laboratory.

**Table 2.** Grab Sample Parameters

| PARAMETER | UNITS |
|---|---|
| Oil and Grease | mg/l |
| Fecal Coliform | colonies/100ml |
| Enterococci | colonies/100ml |
| Hardness (as $CaCO_3$) | mg/l |

In addition to the event mean concentration data collected from laboratory analyses, the following information was collected for each sampled storm in Year 4 of the permit:

- Rainfall depth (in.)
- Runoff volume (gal.)
- Event duration (hr.)
- Duration of the intervening dry period (hr.)

**Table 3. Sampled Storm Information for Year 4 of the MS4 Permit**

| Outfall | Date | Rainfall (in) | Flow (gal) | Duration (hr) | Preceding dry interval (day) |
|---|---|---|---|---|---|
| Blunn Creek | 11/3/16 | 0.88 | 267,676 | 16.25 | 1.29 |
| Blunn Creek | 1/15/17 | 1.29 | 807,332 | 21.40 | 2.18 |
| Blunn Creek | 5/19/17 | 0.64 | 63,702 | 16.77 | 19.20 |
| Blunn Creek | 8/26/17 | 8.96 | 4,463,565 | 48.88 | 0.34 |
| Blunn Creek | 11/8/18 | 0.49 | 21,575 | 17.80 | 4.79 |
| Blunn Creek | 3/12/19 | 0.36 | 17,800 | 9.48 | 31.59 |
| Bear Creek | 11/8/16 | 0.75 | 1,415,283 | 24.75 | 0.18 |
| Bear Creek | 1/15/17 | 0.92 | 2,266,738 | 14.75 | 1.61 |
| Bear Creek | 4/2/17 | 0.97 | 1,958,883 | 35.20 | 3.97 |
| Bear Creek | 4/11/17 | 0.94 | 2,313,878 | 33.28 | 0.41 |
| Bear Creek | 8/26/17 | 6.84 | 11,959,616 | 27.02 | 0.41 |
| Bear Creek | 12/7/18 | 1.74 | 4,494,118 | 24.48 | 0.31 |
| Bear Creek | 4/6/19 | 1.96 | 4,378,463 | 37.08 | 24.01 |
| Fort Branch | 11/3/16 | 1.65 | 2,222,293 | 6.40 | 20.49 |
| Fort Branch | 1/13/17 | 0.98 | 2,694,096 | 14.97 | 11.05 |
| Fort Branch | 4/2/17 | 0.42 | 556,670 | 14.65 | 3.96 |
| Fort Branch | 8/7/17 | 2.39 | 4,040,377 | 17.38 | 14.40 |
| Fort Branch | 12/7/18 | 2.14 | 6,357,211 | 19.00 | 0.42 |
| Fort Branch | 4/6/19 | 2.25 | 7,547,905 | 17.68 | 23.95 |
| Waller Creek | 11/3/16 | 0.51 | 1,009,777 | 2.40 | 1.61 |
| Waller Creek | 1/15/17 | 1.12 | 3,252,005 | 19.90 | 1.18 |
| Waller Creek | 5/20/17 | 0.72 | 1,004,987 | 11.00 | 19.90 |
| Waller Creek | 8/25/17 | 7.86 | 26,191,638 | 63.00 | 17.07 |
| Waller Creek | 11/8/18 | 0.85 | 1,746,660 | 17.72 | 4.74 |
| Waller Creek | 3/12/19 | 0.36 | 461,215 | 16.67 | 12.39 |

## Rapid Bioassessment Component

**The Environmental Integrity Index (EII)**

(http://austintexas.gov/department/environmental-integrity-index) is the primary routine non-storm, surface water monitoring program of the Watershed Protection Department (WPD) (COA1997), and is a critical piece of the WPD master planning process (COA 2001). The Environmental Resource Management (ERM) Division of the WPD has implemented the EII as a tool to monitor and assess the ecological integrity and the degree of impairment of Austin's creek watersheds. In accordance with the approved

rapid bioassessment monitoring program; the City of Austin performs EII studies on the following four watersheds on a semi-annual rotation: Barton Creek, Onion Creek, Walnut Creek, and Bull Creek. The WPD sampled the following Barton Springs Zone watersheds during the FY19-20 reporting period: Onion, Bear, Slaughter, Little Bear, and Little Barton creeks (See Table 5).

Sample sites within each watershed are selected for each defined sampling reach, with reaches representing contiguous areas of similar geomorphology and anthropogenic impacts. Each watershed is monitored for six index components: water quality, sediment quality, contact recreation, aesthetics, physical integrity, and aquatic life support. Water quality samples are collected quarterly, and data are collected for all other components once per sampling year.

Each of the six components are averaged by site to produce the overall EII score. The aquatic life support score integrates benthic macroinvertebrate data collected using Surber samplers and periphyton (diatoms) collected from rock scrapings.
EII scores are reported on 100-point basis and are associated with narrative score descriptions, see (Table 4).

**Table 4. Narrative EII score descriptions**

| Narrative Score | EII Score Range | |
|---|---|---|
| | Lower | Upper |
| Excellent | 89 | 100 |
| Very Good | 76 | 88 |
| Good | 64 | 75 |
| Fair | 51 | 63 |
| Marginal | 39 | 50 |
| Poor | 26 | 38 |
| Bad | 13 | 25 |
| Very Bad | 0 | 12 |

The EII narrative scores for all the EII watersheds sampled during the reporting period are found in Table 5; watersheds in the Barton Springs Zone of the Edwards Aquifer are indicated with an asterisk (*) and watersheds monitored to fulfill permit requirements have been highlighted. EII sampling was conducted in 31 watersheds see (Table 5, Figure

2). A total of 58 different reaches within the 31 watersheds were visited approximately 5 times for the EII program. The watersheds which required EII sampling this reporting period (Onion, Bear, Slaughter, Little Bear, and Little Barton creeks) are highlighted in Table 5. Data and resulting analyses obtained from monitoring additional watersheds are included for informational purposes only. Data from Barton and Williamson creeks will be submitted in FY 20-21 as part of the two-year rotational cycle of the EII.

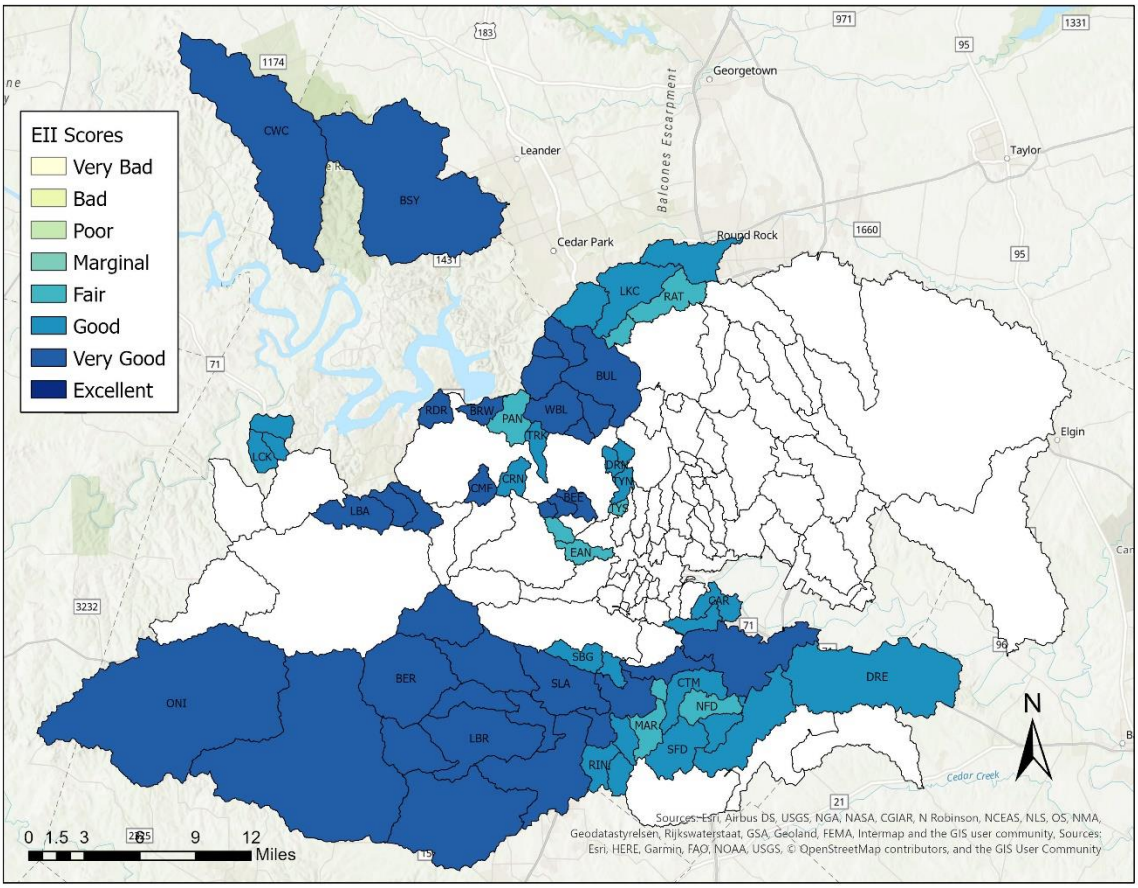
**Table 5.** Total EII scores by watershed for FY 19-20 EII component. Rapid Bioassessment watersheds highlighted. Watersheds containing the Barton Springs Segment of the Edwards Aquifer Recharge Zone noted with an asterisk (*).

| Watershed | Watershed EII Score | | Water Quality | Sediment Quality | Contact Recreation | Aesthetics | Habitat | Aquatic Life |
|---|---|---|---|---|---|---|---|---|
| Bull Creek | 83 | Very Good | 74 | 73 | 71 | 92 | 91 | 95 |
| Bee Creek | 83 | Very Good | 65 | 88 | 75 | 93 | 87 | 90 |
| Bear Creek * | 88 | Very Good | 71 | 87 | 96 | 94 | 89 | 92 |
| Bear Creek West | 77 | Very Good | 64 | 76 | 56 | 84 | 92 | 88 |
| Big Sandy Creek | 84 | Very Good | 70 | 89 | 63 | 92 | 90 | 97 |
| Carson Creek | 74 | Good | 58 | 90 | 54 | 82 | 75 | 84 |
| Cottonmouth Creek | 67 | Good | 54 | 81 | 39 | 77 | 75 | 76 |
| Dry Creek East | 68 | Good | 66 | 85 | 75 | 63 | 60 | 61 |
| Dry Creek North | 75 | Good | 77 | 71 | 60 | 85 | 80 | 78 |
| Little Barton Creek * | 86 | Very Good | 68 | 87 | 91 | 96 | 86 | 87 |
| Little Bear Creek * | 77 | Very Good | 65 | 85 | 62 | 90 | 86 | 74 |
| Lake Creek | 67 | Good | 76 | 81 | 70 | 70 | 78 | 25 |
| Marble Creek | 63 | Fair | 56 | 85 | 44 | 62 | 64 | 68 |
| N. Fork Dry Creek East | 63 | Fair | 61 | 68 | 73 | 48 | 57 | 69 |
| Onion Creek * | 83 | Very Good | 71 | 89 | 72 | 91 | 85 | 91 |
| Panther Hollow | 62 | Fair | 57 | 88 | 87 | 66 | 76 | 0 |
| Rattan Creek | 56 | Fair | 62 | 81 | 30 | 71 | 64 | 28 |
| Rinard Creek | 73 | Good | 68 | 86 | 74 | 70 | 62 | 79 |
| South Boggy Creek | 67 | Good | 74 | 74 | 49 | 72 | 60 | 71 |
| S. Fork Dry Creek East | 66 | Good | 64 | 83 | 76 | 62 | 56 | 57 |
| Slaughter Creek * | 83 | Very Good | 80 | 88 | 96 | 80 | 75 | 81 |
| Turkey Creek | 68 | Good | 47 | 89 | 25 | 81 | 91 | 76 |
| Taylor Slough North | 65 | Good | 56 | 60 | 38 | 89 | 82 | 66 |
| Taylor Slough South | 56 | Fair | 44 | 66 | 35 | 87 | 64 | 42 |
| West Bull Creek | 81 | Very Good | 78 | 83 | 66 | 88 | 80 | 92 |
| Eanes Creek | 51 | Fair | 69 | 66 | 47 | 61 | 61 | 0 |
| Commons Ford Creek | 79 | Very Good | 71 | 89 | 71 | 87 | 82 | 76 |
| Cuernavaca Creek | 75 | Good | 51 | 89 | 47 | 91 | 82 | 92 |
| Running Deer Creek | 79 | Very Good | 61 | 89 | 65 | 97 | 70 | 92 |
| Lick Creek | 72 | Good | 62 | 89 | 44 | 84 | 72 | 80 |
| Cow Creek | 87 | Very Good | 83 | 90 | 77 | 91 | 90 | 93 |

Current total EII watershed scores indicate that 25 of 31 watersheds did score “good” or better in total overall EII score in the FY2019-2020 reporting period see (Table 5).

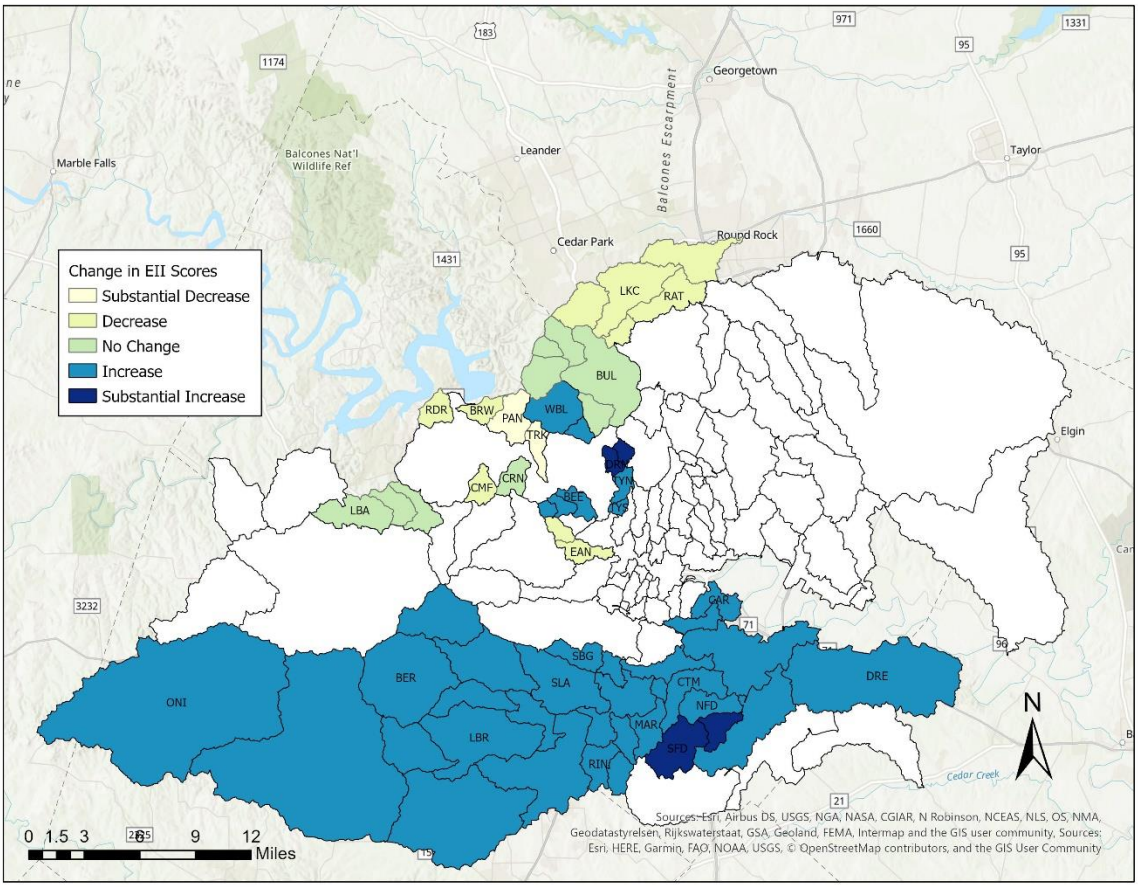
Bear Creek, yielded the highest total overall EII score, while Eanes Creek yielded the lowest total overall EII score, classified a “fair” score.

**Figure 2.** Map of FY2020 EII reach total scores. White spaces are watersheds not sampled in this reporting year.




The change in the current EII scores was evaluated relative to baseline conditions established from 1996 to 1999. Change in a score of more than 12 points represents a significant change of at least one narrative category. There were two (2) significant decreases in EII sampling reach scores relative to baseline levels in the FY2020 reporting period. The maximum decrease in EII scores was -20 points, observed in the Panther Hollow Creek watershed, which flows into Lake Austin. Two (2) sampling reaches yielded a substantial positive change from baseline. See Figure 3.

**Figure 3.** Change in FY2020 EII reach total scores from baseline sampling year (1996-1999).




The change in EII scores from baseline assessments were stable (no change) or improved in 70% of sampled reaches. The overall average change was a plus 2 points.

## Other Water Quality Monitoring

### Barton Springs Complex Sediment Monitoring

Due to the COVID-19 pandemic, staff was unable to collect sediment samples from within Barton Springs Pool in the FY20 reporting period. WPD staff in FY16 have completed a new monitoring program to evaluate the spatial and temporal extent of organochlorine and PAH contamination in multiple watersheds in Austin including Barton Creek and published these summary reports in FY17.

http://www.austintexas.gov/watershed_protection/publications/document.cfm?id=276630
http://www.austintexas.gov/watershed_protection/publications/document.cfm?id=283711

**Barton Springs Continuous Monitoring**

A multi-probe data logger has been continually deployed at a spring-fed cave at the bottom of Barton Springs Pool. The units are serviced every three to four weeks for cleaning and recalibration. Field parameter and discharge data continues to be monitored by the United States Geological Survey (USGS) in cooperation with City of Austin staff on a 15-minute interval basis and is available real-time via the web. (http://waterdata.usgs.gov/tx/nwis/dv?referred_module=sw&site_no=08155500).

Physical parameters including temperature, conductivity and dissolved oxygen, turbidity, pH may be accessed real-time or as daily averages from the USGS website, maintained under contract with the City of Austin. Barton Springs daily discharge averaged 56.3 $ft^3/s$ during the reporting year. The long-term historic average is 62 $ft^3/s$. See Table 9.

**Table 9.** Multi-probe summary data for FY19-20

| Parameter | Units | Mean | Minimum | Maximum | # Days Measured |
|---|---|---|---|---|---|
| Temperature | Deg C | 21.5 | 21 | 22.2 | 365 |
| Conductivity | uS/cm | 652.9 | 582 | 673 | 365 |
| Dissolved Oxygen | mg/L | 5.8 | 5.3 | 6.6 | 365 |
| pH | Std Units | 7.0 | 6.7 | 7.2 | 365 |
| Turbidity | FNU | 1.9 | 1.3 | 7.2 | 365 |

**Barton Springs Complex Water Quality Monitoring - Biweekly Monitoring**

During the reporting period, WPD staff monitored for conventional water quality parameters, including physical parameters and nutrients, yielding a total of 12 samples from Barton Springs (see Appendix E). Nitrate-nitrogen levels were higher in FY20 with annual average nitrate-nitrogen concentrations of 1.41 mg/L.

**Barton Springs and Associated Springs – Semi-annual and Annual Monitoring**

An expanded list of water chemistry analytes was analyzed from Barton Springs on a quarterly basis (see Table 8). One sample for organic analytes and five samples for ions and metals were collected from Barton Springs in this reporting period.

Organic analytes in water at Barton Springs were less than detection limits. Petroleum hydrocarbons have been detected in previous samples at Barton Springs at low levels but were not detected in this reporting period. Tetrachloroethene has been detected in water

previously and well samples from other locations in the recharge zone have been evaluated by WPD staff to determine if contaminant plumes may be sourced, potentially related to dry cleaning operations which use the solvent. No detected values of tetrachloroethene were observed in this reporting period.

Additional water quality measures for conventional analytes and physical parameters were conducted five times at Eliza Springs and Old Mill Springs and three times at Upper Barton Springs (see Table below). Some metals are not routinely collected for every event at these sites, but all data is reported. One sample was collected from Eliza and Old Mill Springs for an extended list of analytes including organic and volatile parameters in FY20 (see Table below). All organic analytes in water at Eliza and Old Mill springs were less than detection limits.

**Barton Springs Biweekly Monitoring.** Conventional water quality parameters measured at Barton Springs Pool in the FY 2020 reporting period.

| Date | NH3-N MG/L | E. coli MPN/100ML | NO3+NO2-N MG/L | ORTHO-P MG/L | TSS MG/L | VSS MG/L |
|---|---|---|---|---|---|---|
| 28-Oct-19 | <0.008 | 66.3 | 1.64 | <0.004 | 6.7 | <1 |
| 26-Nov-19 | <0.008 | 1 | 1.37 | <0.004 | <1 | <1 |
| 19-Dec-19 | <0.008 | 5.21 | 1.46 | <0.004 | <1 | . |
| 21-Jan-20 | <0.008 | 11 | 1.47 | <0.004 | <1 | <1 |
| 26-Feb-20 | <0.008 | 6.26 | 1.51 | <0.004 | <1 | <1 |
| 11-Mar-20 | <0.008 | 4.13 | 1.43 | <0.004 | <1 | . |
| 27-Apr-20 | 0.0436 | 2 | 1.27 | <0.004 | <1 | <1 |
| 20-May-20 | 0.0352 | 36.4 | 1.29 | <0.004 | 1.6 | <1 |
| 11-Jun-20 | <0.008 | 1 | 1.13 | <0.004 | 1.72 | <1 |
| 8-Jul-20 | <0.008 | 5.21 | 1.49 | <0.004 | 1.3 | . |
| 12-Aug-20 | <0.008 | 1 | 1.51 | 0.01 | 1.1 | <1 |
| 16-Sep-20 | <0.008 | 14.5 | 1.41 | 0.0109 | <1 | . |

**Table Barton Springs and Associated Springs – Semi-annual and Annual Monitoring.** Expanded analyses at Barton Springs in the FY20 reporting period.

| PARAMETER | UNIT | 19-Dec-2019 | 11-Mar-2020 | 11-Jun-2020 | 08-Jul-2020 | 16-Sep-2020 |
|---|---|---|---|---|---|---|
| 1_1_1-TRICHLOROETHANE | UG/L | . | . | <1.09 | . | . |
| 1_1_2_2-TETRACHLOROETHANE | UG/L | . | . | <0.805 | . | . |
| 1_1_2-TRICHLOROETHANE | UG/L | . | . | <0.92 | . | . |
| 1_1-DICHLOROETHANE | UG/L | . | . | <1.02 | . | . |
| 1_1-DICHLOROETHYLENE | UG/L | . | . | <1.1 | . | . |
| 1_2_3-TRICHLOROBENZENE | UG/L | . | . | <0.688 | . | . |
| 1_2_3-TRICHLOROPROPANE | UG/L | . | . | <0.786 | . | . |

| PARAMETER | UNIT | 19-Dec-2019 | 11-Mar-2020 | 11-Jun-2020 | 08-Jul-2020 | 16-Sep-2020 |
|---|---|---|---|---|---|---|
| 1_2_4-TRICHLOROBENZENE | UG/L | . | . | <0.76 | . | . |
| 1_2-DIBROMO-3-CHLOROPROPANE | UG/L | . | . | <0.555 | . | . |
| 1_2-DIBROMOETHANE | UG/L | . | . | <0.86 | . | . |
| 1_2-DICHLOROBENZENE | UG/L | . | . | <0.877 | . | . |
| 1_2-DICHLOROETHANE | UG/L | . | . | <0.874 | . | . |
| 1_2-DICHLOROPROPANE | UG/L | . | . | <0.993 | . | . |
| 1_2-DIPHENYLHYDRAZINE | UG/L | . | . | <0.661 | . | . |
| 1_3-DICHLOROBENZENE | UG/L | . | . | <1.03 | . | . |
| 1_4-DICHLOROBENZENE | UG/L | . | . | <0.958 | . | . |
| 2_4_5-TP (SILVEX) | UG/L | . | . | <0.218 | . | . |
| 2_4_5-TRICHLOROPHENOL | UG/L | . | . | <0.698 | . | . |
| 2_4_5-TRICHLOROPHENOXYACETIC ACID | UG/L | . | . | <0.233 | . | . |
| 2_4_6-TRICHLOROPHENOL | UG/L | . | . | <0.669 | . | . |
| 2_4-DICHLOROPHENOL | UG/L | . | . | <0.539 | . | . |
| 2_4-DICHLOROPHENOXYACETIC ACID | UG/L | . | . | <0.345 | . | . |
| 2_4-DIMETHYLPHENOL | UG/L | . | . | <2.21 | . | . |
| 2_4-DINITROPHENOL | UG/L | . | . | <7.67 | . | . |
| 2_4-DINITROTOLUENE | UG/L | . | . | <3.18 | . | . |
| 2_6-DINITROTOLUENE | UG/L | . | . | <0.642 | . | . |
| 2-CHLOROETHYL VINYL ETHER | UG/L | . | . | <0.83 | . | . |
| 2-CHLORONAPHTHALENE | UG/L | . | . | <0.317 | . | . |
| 2-CHLOROPHENOL | UG/L | . | . | <0.349 | . | . |
| 2-HEXANONE (BUTYLMETHYLKETONE) | UG/L | . | . | <0.811 | . | . |
| 2-METHYLNAPHTHALENE | UG/L | . | . | <0.362 | . | . |
| 2-METHYLPHENOL (O-CRESOL) | UG/L | . | . | <4.88 | . | . |
| 2-NITROPHENOL | UG/L | . | . | <0.471 | . | . |
| 3_3'-DICHLOROBENZIDINE | UG/L | . | . | <4.55 | . | . |
| 4_6-DINITRO-2-METHYLPHENOL (4_6-DINITRO-O-CRESOL) | UG/L | . | . | <7.49 | . | . |
| 4-BROMOPHENYL PHENYL ETHER | UG/L | . | . | <0.296 | . | . |
| 4-CHLORO-3-METHYLPHENOL (4-CHLORO-M-CRESOL) | UG/L | . | . | <2.23 | . | . |
| 4-CHLOROPHENYL PHENYL ETHER | UG/L | . | . | <0.267 | . | . |
| 4-METHYL-2-PENTANONE (HEXANONE) | UG/L | . | . | <0.69 | . | . |
| 4-NITROPHENOL | UG/L | . | . | <0.886 | . | . |
| 7_12-DIMETHYLBENZO(A)ANTHRACENE | UG/L | . | . | <0.825 | . | . |
| ACENAPHTHENE | UG/L | . | . | <0.132 | . | . |
| ACENAPHTHYLENE | UG/L | . | . | <0.192 | . | . |
| ACETONE | UG/L | . | . | <5.69 | . | . |
| ACROLEIN | UG/L | . | . | <3.67 | . | . |
| ACRYLONITRILE | UG/L | . | . | <1.12 | . | . |
| ALKALINITY (AS CACO3) | MG/L | 277 | 266 | 263 | 276 | 264 |
| ANTHRACENE | UG/L | . | . | <0.511 | . | . |
| ARSENIC | UG/L | <0.7 | <0.7 | <0.0007 | <0.7 | <0.7 |
| ATRAZINE (AATREX) | UG/L | . | . | <0.475 | . | . |
| AZINPHOS METHYL (GUTHION) | UG/L | . | . | <0.0169 | . | . |
| BENZENE | UG/L | . | . | <1.01 | . | . |

| PARAMETER | UNIT | 19-Dec-2019 | 11-Mar-2020 | 11-Jun-2020 | 08-Jul-2020 | 16-Sep-2020 |
|---|---|---|---|---|---|---|
| BENZIDINE | UG/L | . | . | <18.9 | . | . |
| BENZO(A)ANTHRACENE | UG/L | . | . | <0.596 | . | . |
| BENZO(A)PYRENE | UG/L | . | . | <0.454 | . | . |
| BENZO(B)FLUORANTHENE | UG/L | . | . | <0.491 | . | . |
| BENZO(GHI)PERYLENE | UG/L | . | . | <0.713 | . | . |
| BENZO(K)FLUORANTHENE | UG/L | . | . | <0.725 | . | . |
| BIS(2-CHLOROETHOXY)METHANE | UG/L | . | . | <0.297 | . | . |
| BIS(2-CHLOROETHYL)ETHER | UG/L | . | . | <0.413 | . | . |
| BIS(2-CHLOROISOPROPYL)ETHER | UG/L | . | . | <0.426 | . | . |
| BIS(2-ETHYLHEXYL)PHTHALATE | UG/L | . | . | 3.41 | . | . |
| BORON | MG/L | 0.0714 | <0.02 | <0.02 | <0.02 | 0.0706 |
| BROMODICHLOROMETHANE | UG/L | . | . | <0.795 | . | . |
| BROMOFORM | UG/L | . | . | <0.716 | . | . |
| BUTYL BENZYL PHTHALATE | UG/L | . | . | 3.95 | . | . |
| CADMIUM | UG/L | . | <0.4 | <0.4 | <0.4 | <0.4 |
| CALCIUM | MG/L | 91 | 87.7 | 93.2 | 93.9 | 93.6 |
| CARBAZOLE | UG/L | . | . | <0.252 | . | . |
| CARBON DISULFIDE | UG/L | . | . | <1.06 | . | . |
| CARBON TETRACHLORIDE | UG/L | . | . | <0.246 | . | . |
| CHLORIDE | MG/L | 30.4 | 34.6 | 27.4 | 27.3 | 28.4 |
| CHLOROBENZENE | UG/L | . | . | <1.06 | . | . |
| CHLOROETHANE | UG/L | . | . | <1.11 | . | . |
| CHLOROFORM | UG/L | . | . | <0.971 | . | . |
| CHLORPYRIFOS (DURSBAN) | UG/L | . | . | <0.0149 | . | . |
| CHROMIUM | UG/L | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 |
| CHRYSENE | UG/L | . | . | <0.547 | . | . |
| CIS-1_2-DICHLOROETHENE | UG/L | . | . | <1.07 | . | . |
| CIS-1_3-DICHLOROPROPENE | UG/L | . | . | <0.866 | . | . |
| COPPER | UG/L | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 |
| DALAPON | UG/L | . | . | <1 | . | . |
| DEMETON | UG/L | . | . | <0.0204 | . | . |
| DIAZINON | UG/L | . | . | <0.033 | . | . |
| DIBENZ(AH)ANTHRACENE | UG/L | . | . | <0.829 | . | . |
| DIBENZO(AJ)ACRIDINE | UG/L | . | . | <3.3 | . | . |
| DIBROMOCHLOROMETHANE | UG/L | . | . | <0.789 | . | . |
| DIBROMOMETHANE | UG/L | . | . | <0.923 | . | . |
| DICAMBA (BANVEL) | UG/L | . | . | <0.29 | . | . |
| DICHLORODIFLUOROMETHANE | UG/L | . | . | <0.223 | . | . |
| DIETHYL PHTHALATE | UG/L | . | . | <0.685 | . | . |
| DIMETHYL PHTHALATE | UG/L | . | . | <0.472 | . | . |
| DI-N-BUTYL PHTHALATE | UG/L | . | . | <0.793 | . | . |
| DI-N-OCTYL PHTHALATE | UG/L | . | . | <0.743 | . | . |
| DINOSEB | UG/L | . | . | <0.461 | . | . |
| ETHYL METHACRYLATE | UG/L | . | . | <0.769 | . | . |
| ETHYLBENZENE | UG/L | . | . | <1.01 | . | . |
| FLUORANTHENE | UG/L | . | . | <0.734 | . | . |
| FLUORENE (9H-FLUORENE) | UG/L | . | . | <0.487 | . | . |
| FLUORIDE | MG/L | 0.198 | 0.253 | 0.172 | 0.198 | 0.188 |
| HEXACHLOROBENZENE (HCB) | UG/L | . | . | <0.178 | . | . |
| HEXACHLOROBUTADIENE | UG/L | . | . | <0.587 | . | . |

| PARAMETER | UNIT | 19-Dec-2019 | 11-Mar-2020 | 11-Jun-2020 | 08-Jul-2020 | 16-Sep-2020 |
|---|---|---|---|---|---|---|
| HEXACHLOROCYCLOPENTADIENE | UG/L | . | . | <8.26 | . | . |
| HEXACHLOROETHANE | UG/L | . | . | <0.75 | . | . |
| INDENO(1_2_3-CD)PYRENE | UG/L | . | . | <0.754 | . | . |
| IODOMETHANE | UG/L | . | . | <0.842 | . | . |
| IRON | MG/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| ISOPHORONE | UG/L | . | . | <0.445 | . | . |
| LEAD | UG/L | <0.4 | <0.4 | <0.0004 | <0.4 | <0.4 |
| M+P(META+PARA)XYLENE | UG/L | . | . | <1.78 | . | . |
| MAGNESIUM | MG/L | 23.6 | 23.3 | 20.2 | 22.3 | 21.6 |
| MALATHION | UG/L | . | . | <0.0169 | . | . |
| MERCURY | UG/L | . | . | <0.07 | . | . |
| METHYL BROMIDE (BROMOMETHANE) | UG/L | . | . | <0.338 | . | . |
| METHYL CHLORIDE (CHLOROMETHANE) | UG/L | . | . | <0.947 | . | . |
| METHYL ETHYL KETONE (2-BUTANONE) | UG/L | . | . | <0.742 | . | . |
| METHYL PARATHION | UG/L | . | . | <0.0158 | . | . |
| METHYL TERT-BUTYL ETHER (MTBE) | UG/L | . | . | <0.948 | . | . |
| METHYLENE CHLORIDE | UG/L | . | . | <1.62 | . | . |
| MP-CRESOL | UG/L | . | . | <5.85 | . | . |
| NAPHTHALENE | UG/L | . | . | <0.66 | . | . |
| NICKEL | UG/L | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 |
| NITROBENZENE | UG/L | . | . | <0.371 | . | . |
| N-NITROSODIMETHYLAMINE | UG/L | . | . | <6.31 | . | . |
| N-NITROSO-DI-N-BUTYLAMINE | UG/L | . | . | <0.383 | . | . |
| N-NITROSO-DI-N-PROPYLAMINE | UG/L | . | . | <0.739 | . | . |
| N-NITROSODIPHENYLAMINE | UG/L | . | . | <0.406 | . | . |
| ORGANIC CARBON | MG/L | <0.2 | 0.527 | 0.907 | <0.2 | 0.659 |
| O-XYLENE | UG/L | . | . | <1.01 | . | . |
| PARATHION (PARATHION ETHYL) | UG/L | . | . | <0.0154 | . | . |
| PENTACHLOROBENZENE | UG/L | . | . | <0.399 | . | . |
| PENTACHLORONITROBENZENE | UG/L | . | . | <0.473 | . | . |
| PENTACHLOROPHENOL | UG/L | . | . | <0.123 | . | . |
| PETROLEUM HYDROCARBONS >C12-C28 | MG/L | . | . | <0.5 | . | . |
| PETROLEUM HYDROCARBONS >C28-C35 | MG/L | . | . | <0.5 | . | . |
| PETROLEUM HYDROCARBONS C6-C12 | MG/L | . | . | <0.5 | . | . |
| PETROLEUM HYDROCARBONS C6-C35 | MG/L | . | . | <1 | . | . |
| PHENANTHRENE | UG/L | . | . | <0.593 | . | . |
| PHENOL | UG/L | . | . | <1.43 | . | . |
| POTASSIUM | MG/L | 1.36 | 1.42 | 1.4 | 1.37 | 1.54 |
| PYRENE | UG/L | . | . | <0.558 | . | . |
| PYRIDINE | UG/L | . | . | <5.07 | . | . |
| SILVER | MG/L | . | . | <0.0004 | . | . |
| SODIUM | MG/L | 18.1 | 19.8 | 16.3 | 16.5 | 18.5 |
| STRONTIUM | MG/L | 1.41 | 1.59 | . | 1.04 | 1.27 |
| STYRENE | UG/L | . | . | <0.83 | . | . |
| SULFATE | MG/L | 34.5 | 37.9 | 36.8 | 32.8 | 32.4 |

| PARAMETER | UNIT | 19-Dec-2019 | 11-Mar-2020 | 11-Jun-2020 | 08-Jul-2020 | 16-Sep-2020 |
|---|---|---|---|---|---|---|
| TETRACHLOROETHYLENE (TETRACHLOROETHENE) | UG/L | . | . | <1.12 | . | . |
| TOLUENE | UG/L | . | . | <1.01 | . | . |
| TOTAL CRESOLS | UG/L | . | . | <5.85 | . | . |
| TRANS-1_2-DICHLOROETHENE (TRANS-1_2-DICHLOROETHYLENE) | UG/L | . | . | <1.12 | . | . |
| TRANS-1_3-DICHLOROPROPENE | UG/L | . | . | <0.826 | . | . |
| TRANS-1_4-DICHLORO-2-BUTENE | UG/L | . | . | <0.4 | . | . |
| TRICHLOROETHYLENE (TCE) | UG/L | . | . | <1.04 | . | . |
| TRICHLOROFLUOROMETHANE | UG/L | . | . | <0.406 | . | . |
| VINYL ACETATE | UG/L | . | . | <0.838 | . | . |
| VINYL CHLORIDE | UG/L | . | . | <0.426 | . | . |
| XYLENES | UG/L | . | . | <1.78 | . | . |
| ZINC | UG/L | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 |

**Barton Springs and Associate Springs – Semi-annual and Annual Monitoring** Conventional analytes at Eliza, Old Mill and Upper Barton springs in FY2019. (Quality control replicate samples were collected and data is available upon request, but are not shown in this table.)

| | | Eliza Spring | | | | | Old Mill Spring | | | | | Upper Barton Spring | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2019 | 2020 | | | | 2019 | 2020 | | | | 2019 | 2020 | |
| PARAMETER | UNIT | 12-19 | 03-11 | 06-11 | 07-08 | 09-16 | 12-11 | 03-11 | 06-11 | 07-08 | 09-16 | 12-19 | 07-08 | 09-16 |
| ALKALINITY | MG/L | 275 | 267 | 264 | 273 | 263 | 273 | 266 | 263 | 271 | 261 | 281 | 277 | 268 |
| AMMONIA AS N | MG/L | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.008 | <0.08 | <0.008 | <0.008 | <0.008 |
| ARSENIC | UG/L | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 |
| BORON | MG/L | 0.0715 | <0.02 | 0.0509 | <0.02 | 0.0735 | 0.0983 | <0.02 | 0.0741 | 0.0718 | 0.0983 | <0.02 | 0.0772 | <0.02 |
| CALCIUM | MG/L | 91.5 | 86.8 | 92.8 | 92.1 | 94.9 | 92.6 | 88.7 | 92.3 | 92.4 | 95.2 | 95.9 | 103 | 92.8 |
| CHLORIDE | MG/L | 31.4 | 35.6 | 27.8 | 27.8 | 29.6 | 48.6 | 54.6 | 48.8 | 48.6 | 46.6 | 21.7 | 21 | 19.3 |
| CHROMIUM | UG/L | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 |
| CONDUCTIVITY | uS/cm | 677 | 686.8 | 645 | 663 | 660 | 751.3 | 770 | 734 | 746 | 729.9 | 650 | 633 | 599.3 |
| COPPER | UG/L | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 |
| DO | MG/L | 6.27 | 5.75 | 5.93 | 6.1 | 5.5 | 5.93 | 5.36 | 5.51 | 5.42 | 5.1 | 6.63 | 6.92 | 6.15 |
| E COLI | MPN/dL | 3.06 | 3.06 | 1 | 5.16 | 14.6 | 5.16 | 5.16 | 1 | 3.06 | 12.2 | 1 | 1 | 13.5 |
| FLUORIDE | MG/L | 0.2 | 0.257 | 0.171 | 0.198 | 0.205 | 0.216 | 0.273 | 0.198 | 0.226 | 0.221 | 0.174 | 0.202 | 0.176 |
| IRON | MG/L | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| LEAD | UG/L | <0.4 | <0.4 | <0. 4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 |
| MAGNESIUM | MG/L | 24 | 23 | 19.9 | 22.2 | 22.1 | 25.9 | 24.5 | 22.2 | 23.4 | 23.9 | 25.5 | 27.8 | 21.9 |
| NICKEL | UG/L | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 | <0.7 |
| NO3/NO2 AS N | MG/L | 1.42 | 1.38 | 1.09 | 1.43 | 1.32 | 1.5 | 1.37 | 1.22 | 1.5 | 1.29 | 2.17 | 2.32 | 1.9 |
| ORG. CARBON | MG/L | <0.2 | 0.522 | 0.93 | <0.2 | 0.683 | <0.2 | <0.2 | 0.85 | <0.2 | 0.641 | 0.666 | 0.2 | 0.528 |
| ORTHOP. AS P | MG/L | <0.004 | <0.004 | <0.004 | <0.004 | <0.004 | <0.004 | <0.004 | <0.004 | <0.004 | <0.004 | <0.004 | <0.004 | 0.0137 |
| PH | Std Unit | 7.03 | 7 | 7.01 | 6.98 | 6.92 | 7.04 | 7.05 | 6.98 | 6.98 | 7.23 | 7.01 | 6.95 | 7.12 |
| POTASSIUM | MG/L | 1.36 | 1.46 | 1.37 | 1.37 | 1.59 | 1.7 | 1.7 | 1.63 | 1.65 | 1.79 | 1.37 | 1.1 | 1.34 |
| SODIUM | MG/L | 19.1 | 20.3 | 16.5 | 16.4 | 19.5 | 29.8 | 32.7 | 29.8 | 29.8 | 31.4 | 12.3 | 11.3 | 11.8 |
| STRONTIUM | UG/L | 1490 | 1720 | | 1090 | 1330 | 1360 | 1600 | | 1130 | 1260 | 430 | 303 | 248 |
| SULFATE | MG/L | 35.2 | 39 | 37.6 | 33.3 | 34 | 48.7 | 53.1 | 51.5 | 48.2 | 47.7 | 28 | 24 | 20.6 |
| TSS | MG/L | <1 | <1 | 1.15 | 1.1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | 1.1 |
| WATER TEMP. | Deg C | 21.15 | 21.27 | 22.27 | 21.78 | 21.83 | 21.13 | 21.43 | 21.89 | 21.77 | 21.56 | 21.28 | 21.83 | 21.73 |
| ZINC | UG/L | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 | <1.7 |

**Barton Springs and Associate Springs – Semi-annual and Annual Monitoring** Expanded analytes at Eliza and Old Mill Springs in FY2019. Samples collected on July 9, 2019.

| PARAMETER | UNIT | Eliza Spring | Old Mill Spring |
|---|---|---|---|
| 1_1_1-TRICHLOROETHANE | UG/L | <1.09 | <1.09 |
| 1_1_2_2-TETRACHLOROETHANE | UG/L | <0.805 | <0.805 |
| 1_1_2-TRICHLOROETHANE | UG/L | <0.92 | <0.92 |
| 1_1-DICHLOROETHANE | UG/L | <1.02 | <1.02 |
| 1_1-DICHLOROETHYLENE | UG/L | <1.1 | <1.1 |
| 1_2_3-TRICHLOROBENZENE | UG/L | <0.786 | <0.786 |
| 1_2_4-TRICHLOROBENZENE | UG/L | <0.76 | <0.76 |
| 1_2-DIBROMO-3-CHLOROPROPANE | UG/L | <0.555 | <0.555 |
| 1_2-DIBROMOETHANE | UG/L | <0.86 | <0.86 |
| 1_2-DICHLOROBENZENE | UG/L | <0.877 | <0.877 |
| 1_2-DICHLOROBENZENE | UG/L | <0.566 | <0.566 |
| 1_2-DICHLOROETHANE | UG/L | <0.874 | <0.874 |
| 1_2-DICHLOROPROPANE | UG/L | <0.993 | <0.993 |
| 1_2-DIPHENYLHYDRAZINE | UG/L | <0.658 | <0.658 |
| 1_3-DICHLOROBENZENE | UG/L | <1.03 | <1.03 |
| 1_3-DICHLOROBENZENE | UG/L | <0.649 | <0.649 |
| 1_4-DICHLOROBENZENE | UG/L | <0.958 | <0.958 |
| 1_4-DICHLOROBENZENE | UG/L | <0.599 | <0.599 |
| 2_4_5-TP (SILVEX) | UG/L | <0.218 | <0.218 |
| 2_4_5-TRICHLOROPHENOL | UG/L | <0.666 | <0.666 |
| 2_4_5-TRICHLOROPHENOXYACETIC ACID | UG/L | <0.233 | <0.233 |
| 2_4_6-TRICHLOROPHENOL | UG/L | <0.694 | <0.694 |
| 2_4-DICHLOROPHENOL | UG/L | <0.536 | <0.536 |
| 2_4-DICHLOROPHENOXYACETIC ACID | UG/L | <0.345 | <0.345 |
| 2_4-DIMETHYLPHENOL | UG/L | <2.19 | <2.19 |
| 2_4-DINITROPHENOL | UG/L | <7.63 | <7.63 |
| 2_4-DINITROTOLUENE | UG/L | <3.17 | <3.17 |
| 2_6-DINITROTOLUENE | UG/L | <0.639 | <0.639 |
| 2-CHLOROETHYL VINYL ETHER | UG/L | <0.83 | <2.19 |
| 2-CHLORONAPHTHALENE | UG/L | <0.315 | <7.63 |
| 2-CHLOROPHENOL | UG/L | <0.347 | <3.17 |
| 2-HEXANONE (BUTYLMETHYLKETONE) | UG/L | <0.811 | <0.639 |
| 2-METHYLNAPHTHALENE | UG/L | <0.36 | <0.36 |
| 2-METHYLPHENOL (O-CRESOL) | UG/L | <4.85 | <4.85 |
| 2-NITROPHENOL | UG/L | <0.468 | <0.468 |
| 3_3'-DICHLOROBENZIDINE | UG/L | <4.53 | <4.53 |
| 4_6-DINITRO-2-METHYLPHENOL (4_6-DINITRO-O-CRESOL) | UG/L | <7.46 | <7.46 |
| 4-BROMOPHENYL PHENYL ETHER | UG/L | <0.294 | <0.294 |
| 4-CHLORO-3-METHYLPHENOL (4-CHLORO-M-CRESOL) | UG/L | <2.22 | <2.22 |
| 4-CHLOROPHENYL PHENYL ETHER | UG/L | <0.266 | <0.266 |
| 4-METHYL-2-PENTANONE (HEXANONE) | UG/L | <0.69 | <0.69 |
| 4-NITROPHENOL | UG/L | <0.882 | <0.882 |
| 7_12-DIMETHYLBENZO(A)ANTHRACENE | UG/L | <0.821 | <0.821 |
| ACENAPHTHENE | UG/L | <0.132 | <0.132 |
| ACENAPHTHYLENE | UG/L | <0.191 | <0.191 |
| ACETONE | UG/L | <5.69 | <5.69 |
| ACROLEIN | UG/L | <3.67 | <3.67 |

| PARAMETER | UNIT | Eliza Spring | Old Mill Spring |
|---|---|---|---|
| ACRYLONITRILE | UG/L | <1.12 | <1.12 |
| ANTHRACENE | UG/L | <0.509 | <0.509 |
| ATRAZINE (AATREX) | UG/L | <0.473 | <0.473 |
| AZINPHOS METHYL (GUTHION) | UG/L | <0.0175 | <0.0175 |
| BENZENE | UG/L | <1.01 | <1.01 |
| BENZIDINE | UG/L | <18.8 | <18.8 |
| BENZO(A)ANTHRACENE | UG/L | <0.593 | <0.593 |
| BENZO(A)PYRENE | UG/L | <0.452 | <0.452 |
| BENZO(B)FLUORANTHENE | UG/L | <0.489 | <0.489 |
| BENZO(GHI)PERYLENE | UG/L | <0.71 | <0.71 |
| BENZO(K)FLUORANTHENE | UG/L | <0.722 | <0.722 |
| BIS(2-CHLOROETHOXY)METHANE | UG/L | <0.295 | <0.295 |
| BIS(2-CHLOROETHYL)ETHER | UG/L | <0.411 | 0.411 |
| BIS(2-CHLOROISOPROPYL)ETHER | UG/L | <0.424 | <0.424 |
| BIS(2-ETHYLHEXYL)PHTHALATE | UG/L | 3.41 | 3.58 |
| BROMODICHLOROMETHANE | UG/L | <0.795 | <0.795 |
| BROMOFORM | UG/L | <0.716 | <0.716 |
| BUTYL BENZYL PHTHALATE | UG/L | <0.658 | 3.9 |
| CARBAZOLE | UG/L | <0.251 | <0.251 |
| CARBON DISULFIDE | UG/L | <1.06 | <1.06 |
| CARBON TETRACHLORIDE | UG/L | <0.246 | <0.246 |
| CHLOROBENZENE | UG/L | <1.06 | <1.06 |
| CHLOROETHANE | UG/L | <1.11 | <1.11 |
| CHLOROFORM | UG/L | <0.971 | <0.971 |
| CHLORPYRIFOS (DURSBAN) | UG/L | <0.0155 | <0.0155 |
| CHRYSENE | UG/L | <0.544 | <0.544 |
| CIS-1_2-DICHLOROETHENE | UG/L | <1.07 | <1.07 |
| CIS-1_3-DICHLOROPROPENE | UG/L | <0.866 | <0.866 |
| DALAPON | UG/L | <1 | <1 |
| DEMETON | UG/L | <0.0211 | <0.0211 |
| DIAZINON | UG/L | <0.0341 | <0.0341 |
| DIBENZ(AH)ANTHRACENE | UG/L | <0.825 | <0.825 |
| DIBENZO(AJ)ACRIDINE | UG/L | <3.28 | <3.28 |
| DIBROMOCHLOROMETHANE | UG/L | <0.789 | <0.789 |
| DIBROMOMETHANE | UG/L | <0.923 | <0.923 |
| DICAMBA (BANVEL) | UG/L | <0.29 | <0.29 |
| DICHLORODIFLUOROMETHANE | UG/L | <0.223 | <0.223 |
| DIETHYL PHTHALATE | UG/L | <0.682 | <0.682 |
| DIMETHYL PHTHALATE | UG/L | <0.47 | <0.47 |
| DI-N-BUTYL PHTHALATE | UG/L | <0.789 | <0.789 |
| DI-N-OCTYL PHTHALATE | UG/L | <0.74 | <0.74 |
| DINOSEB | UG/L | <0.461 | <0.461 |
| ETHYL METHACRYLATE | UG/L | <0.769 | <0.769 |
| ETHYLBENZENE | UG/L | <1.01 | <1.01 |
| FLUORANTHENE | UG/L | <0.73 | <0.73 |
| FLUORENE (9H-FLUORENE) | UG/L | <0.484 | <0.484 |
| HEXACHLOROBENZENE (HCB) | UG/L | <0.177 | <0.177 |
| HEXACHLOROBUTADIENE | UG/L | <0.585 | <0.585 |
| HEXACHLOROCYCLOPENTADIENE | UG/L | <8.22 | <8.22 |
| HEXACHLOROETHANE | UG/L | <0.746 | <0.746 |

| PARAMETER | UNIT | Eliza Spring | Old Mill Spring |
|---|---|---|---|
| INDENO(1_2_3-CD)PYRENE | UG/L | <0.75 | <0.75 |
| IODOMETHANE | UG/L | <0.842 | <0.842 |
| ISOPHORONE | UG/L | <0.443 | <0.443 |
| M+P(META+PARA)XYLENE | UG/L | <1.78 | <1.76 |
| MALATHION | UG/L | <0.0175 | <0.0175 |
| MERCURY | UG/L | <0.07 | <0.07 |
| METHYL BROMIDE (BROMOMETHANE) | UG/L | <0.338 | <0.338 |
| METHYL CHLORIDE (CHLOROMETHANE) | UG/L | <0.947 | <0.947 |
| METHYL ETHYL KETONE (2-BUTANONE) | UG/L | <0.742 | <0.742 |
| METHYL PARATHION | UG/L | <0.0163 | <0.0163 |
| METHYL TERT-BUTYL ETHER (MTBE) | UG/L | <0.948 | <0.948 |
| METHYLENE CHLORIDE | UG/L | <1.62 | <1.62 |
| MP-CRESOL | UG/L | <5.82 | <5.82 |
| NAPHTHALENE | UG/L | <0.66 | <0.66 |
| NITROBENZENE | UG/L | <0.369 | <0.369 |
| N-NITROSODIMETHYLAMINE | UG/L | <6.28 | <6.28 |
| N-NITROSO-DI-N-BUTYLAMINE | UG/L | <0.381 | <0.381 |
| N-NITROSO-DI-N-PROPYLAMINE | UG/L | <0.735 | <0.735 |
| N-NITROSODIPHENYLAMINE | UG/L | <0.404 | <0.404 |
| O-XYLENE | UG/L | <1.01 | <1.01 |
| PARATHION (PARATHION ETHYL) | UG/L | <0.0159 | <0.0159 |
| PENTACHLOROBENZENE | UG/L | <0.397 | <0.397 |
| PENTACHLORONITROBENZENE | UG/L | <0.471 | <0.471 |
| PENTACHLOROPHENOL | UG/L | <0.122 | <0.122 |
| PETROLEUM HYDROCARBONS >C12-C28 | MG/L | <0.5 | <0.5 |
| PETROLEUM HYDROCARBONS >C28-C35 | MG/L | <0.5 | <0.5 |
| PETROLEUM HYDROCARBONS C6-C12 | MG/L | <0.5 | <0.5 |
| PETROLEUM HYDROCARBONS C6-C35 | MG/L | <1 | <1 |
| PHENANTHRENE | UG/L | <0.59 | <0.59 |
| PHENOL | UG/L | <1.42 | <1.42 |
| PYRENE | UG/L | <0.555 | <0.555 |
| PYRIDINE | UG/L | <5.04 | <5.04 |
| SILVER | MG/L | <0.0004 | <0.0004 |
| STYRENE | UG/L | <0.83 | <0.83 |
| TETRACHLOROETHYLENE (TETRACHLOROETHENE) | UG/L | <1.12 | <1.12 |
| TOLUENE | UG/L | <1.01 | <1.01 |
| TOTAL CRESOLS | UG/L | <5.82 | <5.82 |
| TRANS-1_2-DICHLOROETHENE (TRANS-1_2-DICHLOROETHYLENE) | UG/L | <1.12 | <1.12 |
| TRANS-1_3-DICHLOROPROPENE | UG/L | <0.826 | <0.826 |
| TRANS-1_4-DICHLORO-2-BUTENE | | <0.4 | <0.4 |
| TRICHLOROETHYLENE (TCE) | UG/L | <1.04 | <1.04 |
| TRICHLOROFLUOROMETHANE | UG/L | <0.406 | <0.406 |
| VINYL ACETATE | UG/L | <0.838 | <0.838 |
| VINYL CHLORIDE | UG/L | <0.426 | <0.426 |
| XYLENES | UG/L | <1.78 | <1.78 |

**Critical Environmental Feature Protection**

During the site development permit application process, City of Austin Watershed Protection staff reviewed site plans for large-scale residential and commercial development to ensure that Critical Environmental Features (CEF's) are properly identified and buffered from development. WPD staff identified new CEF's within Austin's jurisdictions, during a review of approximately 814 site development permit applications. Approximately 880 acres of new protective buffers were established by WPD staff, bringing the cumulative citywide total to approximately 8,108 acres.

# Appendix F

# List of Municipal Facilities

# Appendix F

## List of Municipal Facilities

| Name | Address |
|---|---|
| Airport Fire & Rescue | 3300 General Aviation Ave |
| Fire Investigations / Labor Relations Office | 1621 Nash Hernandez |
| Fire Station 01/ EMS 06 | 401 E 5th Street |
| Fire Station 02 | 506 W MLK Blvd |
| Fire Station 03 | 201 W. 30th St. |
| Fire Station 04 | 1000 Blanco |
| Fire Station 05 / EMS 04 | 1202 Webberville Rd |
| Fire Station 06 | 1705 S Congress Ave |
| Fire Station 07 | 201 Chicon |
| Fire Station 08 / EMS 07 | 8989 Research Blvd |
| Fire Station 09 | 4301 Speedway |
| Fire Station 10 | 3009 Windsor Road |
| Fire Station 11 | 1611 Kinney Ave |
| Fire Station 12 | 2109 Hancock Drive |
| Fire Station 14 / Special Operations | 4305 Airport Blvd |
| Fire Station 15 | 829 Airport Blvd |
| Fire Station 16 | 7000 Reese Lane |
| Fire Station 17 | 4128 S 1st Street |
| Fire Station 18 | 6311 Berkman Drive |
| Fire Station 19 / EMS 08 | 5211 Balcones Dr. |
| Fire Station 20 / EMS Station 02 | 6601 Manchaca Rd |
| Fire Station 21 | 4201 Spicewood Sprgs |
| Fire Station 22 / EMS Station 12 | 5309 E Riverside Dr |
| Fire Station 23 / EMS 13 | 1330 E Rundberg Lane |
| Fire Station 24 / EMS Station 28 | 5811 Nuckols Crossing Rd |
| Fire Station 25 / EMS Station 10 | 5228 Duval Rd |
| Fire Station 26 | 6700 Wentworth Road |
| Fire Station 27 | 5401 McCarty Lane |
| Fire Station 28 | 2410 Parmer Lane |
| Fire Station 29 | 3704 Deer Lane |
| Fire Station 30/ EMS 18 | 1021 W. Braker Lane |
| Fire Station 31 | 5507 RR 2222 |
| Fire Station 32 | 2804 Montebello Road |
| Fire Station 33 | 9409 Bluegrass |
| Fire Station 34 / EMS27 | 10041 Lake Creek Pkwy |
| Fire Station 35 | 5500 Burleson Road |
| Fire Station 36/ EMS 15 | 400 Ralph Ablanedo Dr. |
| Fire Station 37 | 8700 Hwy 71 West |
| Fire Station 38 / EMS 19 | 10111 Anderson Mill Rd. |
| Fire Station 39 / EMS 16 | 7701 River Place Blvd. |
| Fire Station 40 / EMS 29 | 12711 Harris Glenn Dr. |
| Fire Station 41 / EMS 35 | 11205 Harris Branch Pkwy |
| Fire Station 42 / EMS 30 | 2454 Cardinal Loop |
| Fire Station 43 / EMS 31 | 11401 Escarpment Blvd |
| Fire Station 44 | 11612 Four Iron Dr. |
| Fire Station 45 / EMS 34 | 9421 Spectrum Blvd. |
| Fire Training Facility | 4800-B Shaw Lane |
| Fire Vehicle Maintenance Shop | 2011 E 51st Street |
| Fire Wellness / Fire Safety / OMD / EMS Clinical Practice | 517 S Pleasant Valley Rd. |
| Operations Annex | 4301 E 5th Street |

| Name | Address |
|---|---|
| St. John's Multi-Purpose Center | 7500 Blessing Ave. |
| Air Support | 4309 E General Aviation Ave. |
| Airport Police | 3601 Bergstrom |
| Austin Park Police | 2215 Westlake Dr. |
| Austin Police Patrol Building | E. 8th Street |
| Austin Ridge | 8501 F.M. 969 Bldg. 512 |
| Community Liason | 4101 S Industrial, #260 |
| CTECC | 5010 Old Manor Rd. |
| Downtown Rangers | 211 E. 7th Street |
| East Substation and Forensics | 812 Springdale Rd. |
| Evidence Warehouse | 4708 E. MLK Bvd. |
| Forensics Vehicle Processing | 8200 South Congress |
| Mental Health Unit / Austin State Hospital | 4110 Guadalupe |
| Mounted Patrol | 8011 Boyce Lane |
| North Substation | 12435 Lamplight Village Ave |
| Police Headquarters | 715 E. 8th Street |
| Police Training Academy / Pistol Range | 4800 Shaw Lane |
| South Substation | 404 Ralph Ablanedo Dr. |
| Travis County Jail - Interlocal Agreement | 509 W 11th Street |
| Austin Transportation Department | 1111 Rio Grande St. |
| Austin Transportation Department | 1501 Toomey Road |
| Austin Transportation Department | 400 Jessie Street |
| Warehouse | 6014 Techni Center |
| Davis Water Treatment Plant | 3500 W 35th Street |
| East Service Center | 6301 Harold Ct. |
| Glen Bell Service Center | 3907 S Industrial Dr |
| Govalle WWTP Office/Administration | 911 Linger Lane |
| Hornsby Bend | 2210 S FM 973 |
| North Service Center | 907 W. Koenig Lane |
| Reicher Ranch (Wildlife Conservation) | 3635 RR 620 South |
| SAR WWTP Administration Bldg | 13009 Fallwell Lane |
| Summit Hill Water Quality Lab | 14050 Summit Drive, #121 |
| Ullrich Water Treatment Plant | 1000 Forest View |
| Ullrich Water Treatment Plant | 1001 Forest View |
| Waller Creek Center | 625 E. 10th St. |
| Walnut Creek WWTP | 7113 E. MLK |
| Watershed Protection - Bldg C | 6301 Harold Ct. |
| Webberville Service Center | 2600 Webberville Rd |
| CTM Administration | 105 East Riverside Dr |
| CTM Wireless Communication services Bldg | Bolm Road |
| City Hall | 201 E. 2nd St. |
| EMS Station 01 Rescue/Dist Cmdr s04 | 3616 South 1st St |
| EMS Station 03 Rescue | 1305 Red River-Brackenridge Hospital |
| EMS Station 04/Dist Cmdr 5 | 1201 Webberville Rd |
| EMS Station 05/Dist Cmdr 2 | 5710 N Lamar |
| EMS Station 09 | 1211 Lohmans Crossing, Lakeway |
| EMS Station 14 / EMS Demand 2 | 7200 Berkman |
| EMS Station 17 | 2507 Foster Ave |
| EMS Station 20 | 911 W. Pfluger Loop, Pflugerville |
| EMS Station 21 | 1295 S Capital of Texas Hwy., Westlake |
| EMS Station 22 Rescue | 3605 Allegiance Cove, Lago Vista |
| EMS Station 23 | 400 W. Parsons Ave., Manor |
| EMS Station 24 | 5412 US 183 South, Travis Co. |
| EMS Station 25 | 18310 Park Drive, Jonestown |
| EMS Station 26 | 22404 Hyw 71 West, Pedernales |

| Name | Address |
|---|---|
| EMS Station 32 | 3621 S. FM 620, Bee Caves |
| EMS Station 34 | 9400 Spectrum |
| Fleet Acquisition | 6400 Bolm Road |
| Fleet Administration | 1190 Hargrave |
| Service Center 01 | 6301 Harold Ct. |
| Service Center 03 | 2011 E. 51st St. |
| Service Center 05 | 714 E. 8th |
| Service Center 06 | 1182 Hargrave |
| Service Center 12 | 4108 Todd Lane |
| Service Center 13 | 2412 Kramer Lane |
| Truck Washing Service Center 6 | 1190 Hargrave |
| Administration Offices | 8301 Cameron Road |
| Bldg Svcs | 301 W. 2nd St. |
| Bldg Svcs | 3600 Manor Rd. |
| Building Services HQ | 411 Chicon St. |
| City Hall | 301 W. 2nd St. |
| Municipal Building | 124 W 8th St. |
| One Texas Center | 505 Barton Spring Rd |
| Purchasing | 13005 Fallwell Lane |
| Purchasing | 2001 E 5th St. |
| Purchasing | 2526 Kramer Lane |
| Purchasing | 721 Barton Springs Rd. |
| Purchasing | 8003 Decker Lane |
| Rebekah Baines Johnson Center (RBJ) | 15 Waller St. |
| RLC | 1520 Rutherford Lane |
| Service Center 8 | 4411 Meinardus |
| Technicenter | 4201 Ed Bluestein Blvd |
| Treasury | 700 Lavaca St. |
| Animal Shelter | 7201 Levander Loop |
| Austin Resource Center for the Homeless (ARCH) | 500 E. 7th Street |
| Bastrop/Elgin WIC | 443 Highway 71 |
| Blackland Neighborhood Center | 2005 Salina |
| Clarksville Health Center | 1000 Toyath |
| Day Labor | 2201 E. Ben White |
| Day Labor (First Workers) | 4916 N. IH-35 |
| Del Valle WIC | 3518 FM 973 |
| Dove Springs WIC | 5405 S Pleasant Valley |
| East Austin Neighborhood Center | 211 Comal St. |
| Elgin WIC | 218 South Main Street |
| Far South Austin Health Center | 405 W. Stassney Lane |
| HIV/STD Prevention Outreach Counseling and Testing | 7901 Cameron Road |
| Homeless Center for Woman & Children | 4523 Tannehill Lane |
| Manor WIC | 600 West Carrie Manor |
| Montopolis Neighborhood Center | 1416 Montopolis |
| Northeast WIC | 7112 Ed Bluestein Road |
| Northwest WIC Mom's Place | 8701 Research Blvd |
| Oak Hill WIC | 8656 Hwy 71 Bldg A Ste B |
| Palm Square | 1000 N. IH 35, #1000 |
| Pflugerville WIC | 15822 Foothill Farms Loop, Ste B |
| Rosewood Zaragoza Neigh Ctr | 2800 Webberville Road |
| South Austin Neighborhood Ctr | 2508 Durwood |
| St. John's Neighborhood Annex (AK Black Clinic Bldg) | 928 Blackson Ave. |
| Street and Jones | 1000 E. 11th St. |
| Todd Lane | 4122 Todd Lane |
| Town Lake Animal Center | 1156 W Cesar Chavez St |

| Name | Address |
|---|---|
| Twin Towers | 1106 Clayton Lane Suite 204 E |
| Housing Dept. | 1050 E 11th Street, Suite 300 |
| Arthur B. Dewitty Center | 2209 Rosewood Ave. |
| Learning and Research Ctr, Building #4218 | 2800 Spirit of Texas Dr |
| Texas Worksource Center | 4175 Freidrich Lane, Suite 200 |
| Texas Worksource Center | 6505 Airport Blvd. Suite 101 |
| Austin History Center | 810 Guadalupe |
| Carver Branch | 1161 Angelina |
| Central Lib./Faulk Central | 800 Guadalupe |
| Daniel E. Ruiz Branch Lib | 1600 Grove Blvd |
| Howson Branch | 2500 Exposition |
| Little Walnut Creek Branch | 835 W Rundberg Lane |
| Manchaca Branch | 5500 Manchaca Rd |
| Milwood Branch | 12500 Amherst Dr. |
| New Twin Oaks/S.A.Lib Warehouse | 1800 S. Fifth St |
| North Village Branch | 2505 Steck Ave. |
| Oak Springs Branch | 3101 Oak Spring Dr. |
| Old Quarry Branch | 7051 Village Center Dr. |
| Pleasant Hill Branch | 211 E. William Cannon Dr. |
| Reycled Reads Book Store | 5335 Burnet Rd |
| Southeast Austin Community Branch | 5803 Nuckols Crossing Rd |
| Spicewood Springs Branch | 8637 Spicewood Sprgs Rd |
| Terrazas Branch | 1105 E Cesar Chavez |
| University Hills Branch | 4721 Loyola Ln. |
| Will Hampton Branch at Oak Hill | 5125 Convict Hill Road |
| Windsor Park Branch Lib. | 5833 Westminster Dr. |
| Yarborough Branch | 2200 Hancock Dr |
| Zaragoza Warehouse | 651 N. Pleasant Valley Rd |
| Court Substation - Cherry Creek Plaza | 5738 Manchaca Road |
| DACC | 719 E. 6th Steet |
| Municipal Courts | 700 E. 7th St |
| Alamo Recreation Center | 2100 Alamo St |
| ANC-Main Bldg | 301 Nature Center Dr. |
| Aquatics Adminstration Facility | 401 Deep Eddy Ave. |
| Austin Memor.Cemet/Off.Complex | 2800 Hancock Dr. |
| Austin Recreation Center | 1301 Shoal Creek Blvd |
| Barton Springs Pool Bath House | 2201 Barton Sprgs Rd |
| Camacho Recreation Center | 34 Robert T. Martinez |
| Central Maintenance Complex | 2525 Lakeshore Blvd |
| Conley Guerrero Sr Activity Ctr | 808 Niles Street |
| Danny G McBeth Rec Ctr | 2502 Columbus Drive |
| Dittmar Recreation Center | 1009 W Dittmar |
| Dottie Jordan Rec Ctr | 2803 Loyola Lane |
| Dougherty Arts Center Complex | 1110 Barton Springs Rd |
| Dove Springs Recreation Ctr | 5801 Ainez Drive |
| Elisabet Ney Museum & Studio | 304 E 44th Street |
| Emma Long Metro Park-Office | 1600 City Park Rd |
| Garrison Park - South District Maintenance Office | 6001 Manchaca Rd. |
| George Washington Carver Museum and Cultural Center | 1165 Angelina Street |
| Givens Recreation Center | 3800 E 12th St |
| Gus Garcia Recreation Center | 1201 Easr Rundberg Lane |
| Hancock Recreation Center | 811 E 41st St |
| Jimmy Clay Golf Course/Residence | 5400 Jimmy Clay Dr |
| Kreig Athletic Office | 515 S Pleasant Valley Rd. |
| Lamar Senior Activity Center | 2874 Shoal Crest Ave |

| Name | Address |
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| Lions Muni G.C Caretakers Residence | 2910 Enfield Rd |
| Metz Recreation Center | 2411 Canterbury |
| Mexican American Cultural Arts Center | 600 River St |
| Montopolis Recreation Center | 1200 Montopolis Drive |
| Morris Wms Residence | 4305 Manor Road |
| Northwest Recreation Center | 2913 Northland Dr |
| O'Henry & Dickenson Museums | 409 E 5th Street |
| Old Lundberg Bakery and Emporium | 1006 Congress Ave |
| Pan American Rec Ctr | 2100 E 3rd Street |
| PARD Annex Building | 919 W. 28th 1/2 Street |
| PARD Headquarters | 200 S Lamar |
| Park 183 | 720 Bastrop Hwy #218 B |
| Pickfair Recreation Center | 10904 Pickfair Drive |
| Rosewood Recreation Center | 1182 N. Pleasant Valley |
| South Austin Recreation Center | 1100 Cumberland |
| South Austin Senior Activity Center | 3911 Manchaca Road |
| Town Lake - Fiesta Gardens Maintenance Building | 2101 Bergman Ave |
| Turner Roberts Rec Center | 7201B Colony Loop Dr |
| W.E Long Lake Metro - NE District Maintenace Building | 6614 Blue Bluff Rd |
| Walnut Creek Metro - Northwest District Maint Bldg | 1401 Cedar Bend Dr |
| Zaragosa Recreation Center | 2608 Gonzales |
| Zilker Caretaker House | 200 Clubhouse Road |
| Zilker Grd. Ctr. Caretaker Residence (Park Ranger Station) | 2200 B Barton Springs Rd. |
| Zilker Grd. Ctr. Maintenance Building | 2200 A Barton Springs Rd. |
| Home Hazardous Waste Office | 2514 Business Center Dr. |
| Landfill Office | 10108 FM 812 |
| Todd Lane Service Center | 4108 Todd Lane |
| Transfer Station - MRF | 3810 Todd Lane |
| Administrative Buildings/South District/Erosion - Bldg H | 6301 Harold Ct. |
| Drainage Maintenance North Service Yard | 2412 Kramer Lane |
| New Field Operations Facility - Ponds/Erosion | 4805 Winnebago |
| Pond Maintenance | 5109 E. Ben White Blvd. |
| Storage unit; emergency response supplies/education materials | 1033 E. 41st Street |
| WPD Education Materials and Miscellaneous Storage | 510 S. Congress; Suite 211 |