



The City of  
**OKLAHOMA CITY**



STORM WATER QUALITY  
**MANAGEMENT PLAN**

Co-Permittees Oklahoma Turnpike Authority  
Oklahoma Department of Transportation  
Permit No. OKS000101

April 2018

**Table of Contents**

Title Page

SWMP Introduction ..... 3

SWMP Component 1: Storm Water Management Plan Document..... 15

SWMP Component 2: Areas of New Development and Significant Re-development Program .... 28

SWMP Component 3: Flood Control Projects and Structural Controls Program..... 36

SWMP Component 4: Construction Site Runoff ..... 46

SWMP Component 5: Industrial and High Risk Runoff ..... 59

SWMP Component 6: Household Hazardous Waste / Used Motor Vehicle Fluids ..... 75

SWMP Component 7: Public Outreach ..... 83

SWMP Component 8: Roadway Operation and Maintenance ..... 94

SWMP Component 9: Pesticide, Herbicide, and Fertilizer Application ..... 101

SWMP Component 10: Pollution Complaint and Spill Response..... 108

SWMP Component 11: Floatables ..... 116

SWMP Component 12: Wet Weather Analytical ..... 124

SWMP Component 13a: Priority Watershed Program..... 133

SWMP Component 13b: Trend and Load Based Monitoring Program (New) ..... 142

SWMP Component 14: Illicit Discharge Detection and Elimination Program ..... 153

SWMP Component 15: Supporting Permit Conditions, Monitoring Programs, and Documents . 164

Appendix A: Oklahoma Department of Transportation SWMP for the OKC Jurisdiction..... 177

Appendix B: Oklahoma Turnpike Authority SWMP ..... 188

Appendix C: Pesticide General Permit (OKC) ..... 203

Appendix D: Oklahoma City Designated Snow and Ice Routes ..... 206

Appendix E: 2014 Water Body Identification Numbers in OKC ..... 213

Appendix F: 2014 303(d) Listed Water Body’s In Oklahoma City..... 217

Appendix G: TMDL Status in Oklahoma City ..... 221

Appendix H: NPDES Discharge Locations in Oklahoma City (Source: ODEQ 2017) ..... 249

Appendix I: Area Specific Construction Requirements: Lake Thunderbird Watershed Total  
Maximum Daily Load (TMDL) Specific Requirements for Construction Stormwater Permits .... 251

Appendix J: Area Specific Industrial Requirements: Lake Thunderbird Watershed Total  
Maximum Daily Load (TMDL) Specific Requirements for Multi-Sector General Permit (Industrial)  
Stormwater Permits..... 252

Appendix K: Administrative Enforcement Remedies Document..... 253

Appendix L: Storm Water Quality Division Organizational Chart ..... 255

Appendix M: Curbs to Creeks Program Forms ..... 256

Appendix N: OKC Regional Snow Route – Bridge Application Locations..... 260

Appendix O: Oklahoma Street Sweeping Route Map ..... 274

Appendix P: Industrial Designated Inspector Areas ..... 292

Appendix Q: Construction Designated Inspector Areas ..... 293

Appendix R: Waterway Clean Sweep Safety Awareness and Precautions ..... 294

Appendix S: Sensitive Waters and Watersheds for Federally Listed Species for the OPDES Multi-Sector General Permit OKR05 for Stormwater Discharges from Industrial Activity and the OKR10

Construction General Permit..... 296

Appendix T: OKR10 Natural Buffer or Equivalent Sediment Control ..... 297

Appendix U: OKC, SWQ Activity Permit for Volunteer Activities ..... 307

Appendix V: Adopt-a-Street Application Packet ..... 308

Appendix W: Adopt-a-Street Event Package ..... 316

Appendix X: Waterway Clean Sweep Program Information Sheet..... 323

Appendix Y: Waterway Clean Sweep Liability Release ..... 324

Appendix Z: Waterway Cleanup Litter Collection Report ..... 326

Appendix AA: Oklahoma City Facilities with Industrial Storm Water Discharge Permits ..... 327

Appendix AB – Interjurisdictional Agreements ..... 329

Appendix AC: OKC Detention Required Areas ..... 396

Appendix AD: Air Permits within Oklahoma City Corporate Boundaries ..... 397

Appendix AE: PDES Permits with Oklahoma City Jurisdiction ..... 404

Appendix AF: Total Retention Facilities within the Oklahoma City Jurisdictional Boundaries .. 408

Appendix AG: Oklahoma City Corporate Boundary Map ..... 411

Appendix AH: Wet Weather Characterization Monitoring Locations and Discharge Routes for  
Outfall 85, 616, and 754 (2013-2018) ..... 412

Appendix AI: Monthly Precipitation Totals (Averages and Annual Sums) from 2013-2017 ..... 416

Appendix AJ: Illicit Discharge Detection and Elimination (IDDE) Monitoring Standard Operating  
Procedure ..... 417

Appendix AK: OKC Population Densities Map (based on 2010 U.S. Census Block Data) ..... 429

Appendix AL: OKC Parks and Recreational Spaces ..... 430

Appendix AM: Runoff Curve Numbers Identified by Hydrologic Soil Type for OKC Land Uses  
Identified Using the NLCD..... 439

Appendix AN: Renewal of the Oklahoma City Municipal Separate Storm Sewer Permit (MS4)  
Correspondence..... 441

Appendix AO: Wet Weather Analytical Monitoring Stations 2012-2017..... 458

Appendix AP: Wet Weather Analytical Monitoring Data – Calculated Loading 2012-2017 ..... 459

Appendix AQ: Wet Weather Analytical (Storm Event) Standard Operating Procedure..... 461

Appendix AR: Wet Weather Analytical Methods (EPA and Standard Methods)..... 472

Appendix AS: Population Prediction - Areas of Growth 2050..... 473

Appendix AT: Municipal Waste Disposal Locations ..... 474

Appendix AU: Detention Structures in Oklahoma City ..... 475

Appendix AV: Map of Detention Facilities in Oklahoma City ..... 478

Appendix AW: List of Outfall Locations to State Waterways ..... 479

Appendix AX: Map of Outfalls to State Waterways in Oklahoma City..... 507

Appendix AY: Renewal of the Oklahoma City MS4 Permit Letter November 15, 2017 ..... 508

## SWMP Introduction

Oklahoma City's (OKC) Storm Water Management Plan (SWMP) is a collaborative planning process between the Oklahoma Department of Environmental Quality and OKC. The primary OKC Department responsible for insuring compliance with the Storm Water Discharge Permit is the Public Works Department, Storm Water Quality Management Division (SWQ). The programs are fully funded and staffed to provide the services required to meet the permit conditions and the objectives defined within this plan. In compliance with the Oklahoma Pollutant Discharge Elimination Systems Act and the rules of the Oklahoma Department of Environmental Quality (ODEQ), OKC, the Oklahoma Turnpike Authority (OTA) and the Oklahoma Department of Transportation (ODOT) were granted authorization to discharge storm water from the Municipal Separate Storm Sewer System (MS4) on March 15, 2013.

The purpose of the Storm Water Quality Division is to provide inspections, enforcement, water quality assessments, public outreach, household hazardous waste services and emergency response for citizens, businesses, and government agencies so they can comply with the Clean Water Act and enjoy a safe and clean environment.

The SWMP covers all areas located within the corporate boundaries of OKC served by municipal separate storm sewers owned or operated by the permittee. The SWMP, together with any attached interagency agreements, management plans, total maximum daily load documents or references to applicable management documents shall clearly identify the roles and responsibilities of each permittee.

Recent review of the OKC Public Works Hydrology Geographic Informations System (GIS) files indicated 27,415 junctions. Junctions are storm water drainage point-based features which include drainage inlet boxes (17,091), junction boxes (2,560), manholes (7,705) and 59 are classified as other. According to the storm drainage line work from the Public Works Hydrology GIS files, 4,427,677 linear feet of conduit, improved channel, roadway crossings, dam inlet/outflow structures, etc. were identified. Some of these structures are identified as privately owned.

OKC is divided into four large drainage basins. The North Canadian (231.6 sq. miles), Canadian River (216.1 sq. miles). Deer Creek (102.3 sq. miles), and the Deep Fork River basin (105.7 sq. miles). An in depth description of OKC's drainage basins and quality of the waters in those basins can be found in the Comprehensive Report for the Watershed Characterization Project published in January 2017.

The permit authorizes the discharge of storm water from the MS4 to the following receiving waters: Canadian River, Oklahoma River, Coon Creek, Deep Fork of the Canadian River, Deer Creek, Hefner Lake, Hog Creek, North Canadian River, Overholser Lake, Pecan Creek, Stanley Draper Lake, and the Little River.

Each permittee shall continue implementing and updating the SWMP, including pollution prevention measures, treatment or removal techniques, storm water monitoring, use of legal authority, and other appropriate means to control the quality of storm water discharged from the MS4, including annual reporting requirements. Controls and activities in the SWMP shall identify

areas of permittee responsibility on a jurisdictional, applicability, or specific-area basis. The SWMP shall include controls necessary to effectively prohibit the discharge of non-storm water into the MS4 and reduce the discharge of pollutants from the MS4 to the Maximum Extent Practicable (MEP).

The SWMP shall cover the term of the permit and shall be updated as necessary, or as required by the Director, to ensure compliance with the statutory requirements of Section 402(p)(3)(B) of the Clean Water Act (CWA). The current permit became effective on March 15, 2013 and expires March 14, 2018. Implementation of the revised and updated SWMP shall begin on the effective date of each permit authorization and may be achieved through participation with co-permittees, public agencies, residents or private entities in cooperative efforts to satisfy the requirements of Part II of the permit.

Each permittee shall ensure legal authority to control discharges to and from those portions of the MS4 over which it has jurisdiction. This legal authority may be a combination of statute, ordinance, permit, contract, order or inter-jurisdictional agreements with permittees having legal authority to:

- Control the contributions of pollutants to, and quality of storm water from industrial sites contributing to the storm sewer system.
- Prohibit illicit discharges to the storm sewer system.
- Control spills, dumping or improper disposal to the storm sewer system.
- Control of the contribution of pollutants from one portion of the storm sewer to the other.
- Require compliance with ordinances.
- Perform site inspections and monitoring.

The OKC MS4 Permit is effective for a five-year permit term. Near the termination of each permit, OKC must submit proposed programmatic and procedural changes. These changes were submitted to ODEQ on September 15, 2017 (see [Appendix AN](#)) and an additional proposed change was submitted on November 15, 2017 (see [Appendix AY](#)). ODEQ reviewed the submitted document and requested additional information pursuant to 40 CFR 122.26(d), incorporated by reference OAC 252:606. This states that the operator of a large MS4 must submit, at a minimum, information regarding MS4 general information, source identification, discharge characterization, the OKC Storm Water Management Plan, fiscal resources and a summary of the City's ordinances. The following paragraphs detail the information or reference to the requested information within this SWMP.

#### Applicant Information

**Applicant Name: City of Oklahoma City**

Applicant Address: 420 West Main Street, Suite 360, Oklahoma City Oklahoma 73102

Primary Contact: Eric J. Wenger, City Engineer / Public Works Director  
 Secondary Contact: Raymond L. Melton, Environmental Protection Manager  
 Primary Contact Telephone: (405) 297-2581  
 Secondary Contact Telephone: (405) 297-2179  
 Ownership Status: Local Government

**Co-Applicant 1– Oklahoma Department of Transportation**

Co-Applicant 1 Primary Contact- Tim Tegeler P.E., Director of Engineering  
 Co-Applicant Primary Contact Telephone – (405) 521-6916  
 Co-Applicant 1 Address – 200 Northeast 21<sup>st</sup> Street, Oklahoma City, Oklahoma 73105

**Co-Applicant 2 – Oklahoma Turnpike Authority**

Co-Applicant Primary Contact – Mr. Edward Diheberg, P.E.  
 Co-Applicant Primary Contact Telephone – (405) 425-7449  
 Co-Applicant 2 Address – P.O. Box 11357, Oklahoma City, Oklahoma 73105

General Information

- Zip Codes

Sixty-six zip codes were identified within OKC.

| OBJECT ID | ZIP CODE | Post Office   | OBJECT ID | ZIP CODE | Post Office   | OBJECT ID | ZIP CODE | Post Office   |
|-----------|----------|---------------|-----------|----------|---------------|-----------|----------|---------------|
| 1         | 74851    | McLoud        | 23        | 73115    | Oklahoma City | 45        | 73109    | Oklahoma City |
| 2         | 73020    | Choctaw       | 24        | 73160    | Oklahoma City | 46        | 73107    | Oklahoma City |
| 3         | 73084    | Spencer       | 25        | 73135    | Oklahoma City | 47        | 73102    | Oklahoma City |
| 4         | 73045    | Harrah        | 26        | 73071    | Norman        | 48        | 73104    | Oklahoma City |
| 5         | 73054    | Luther        | 27        | 73026    | Norman        | 49        | 73129    | Oklahoma City |
| 6         | 73049    | Jones         | 28        | 74857    | Newalla       | 50        | 73103    | Oklahoma City |
| 7         | 73145    | Oklahoma City | 29        | 73099    | Yukon         | 51        | 73106    | Oklahoma City |
| 8         | 73110    | Oklahoma City | 30        | 73020    | Choctaw       | 52        | 73105    | Oklahoma City |
| 9         | 73064    | Mustang       | 31        | 73150    | Oklahoma City | 53        | 73112    | Oklahoma City |
| 10        | 73162    | Oklahoma City | 32        | 73165    | Oklahoma City | 54        | 73118    | Oklahoma City |
| 11        | 73142    | Oklahoma City | 33        | 73149    | Oklahoma City | 55        | 73111    | Oklahoma City |

|    |       |               |    |       |               |    |       |               |
|----|-------|---------------|----|-------|---------------|----|-------|---------------|
| 12 | 73134 | Oklahoma City | 34 | 73150 | Oklahoma City | 56 | 73127 | Oklahoma City |
| 13 | 73013 | Edmond        | 35 | 73165 | Oklahoma City | 57 | 73116 | Oklahoma City |
| 14 | 73013 | Edmond        | 36 | 73149 | Oklahoma City | 58 | 73132 | Oklahoma City |
| 15 | 73141 | Oklahoma City | 37 | 73139 | Oklahoma City | 59 | 73008 | Bethany       |
| 16 | 73151 | Oklahoma City | 38 | 73170 | Oklahoma City | 60 | 73122 | Oklahoma City |
| 17 | 73131 | Oklahoma City | 39 | 73159 | Oklahoma City | 61 | 73114 | Oklahoma City |
| 18 | 73121 | Oklahoma City | 40 | 73169 | Oklahoma City | 62 | 73120 | Oklahoma City |
| 19 | 73117 | Oklahoma City | 41 | 73179 | Oklahoma City | 63 | 73078 | Piedmont      |
| 20 | 73115 | Oklahoma City | 42 | 73128 | Oklahoma City | 64 | 73173 | Oklahoma City |
| 21 | 73115 | Oklahoma City | 43 | 73108 | Oklahoma City | 65 | 73012 | Edmond        |
| 22 | 73115 | Oklahoma City | 44 | 73119 | Oklahoma City | 66 | 73130 | Oklahoma City |

- Counties

Five counties were identified to fall partially or wholly within OKC’s corporate boundaries including Oklahoma, Canadian, Cleveland and to a lesser extent Pottawatomie and Grady.

- Cities

Cities within or adjacent to OKC were researched. Staff identified forty-two cities which corporate boundaries were either within OKC or within 3,000 feet of the OKC Corporate boundary.

| No. | City Name    | No. | City Name     | No. | City Name    |
|-----|--------------|-----|---------------|-----|--------------|
| 1   | Arcadia      | 16  | Bridge Creek  | 31  | Bethany      |
| 2   | Shawnee      | 17  | Shawnee       | 32  | Stockyards   |
| 3   | Bethel Acres | 18  | Newcastle     | 33  | Lake Aluma   |
| 4   | Pink         | 19  | Jones         | 34  | Forest Park  |
| 5   | Piedmont     | 20  | Harrah        | 35  | The Village  |
| 6   | Piedmont     | 21  | Midwest City  | 36  | Bethany      |
| 7   | Piedmont     | 22  | Del City      | 37  | Warr Acres   |
| 8   | Spencer      | 23  | Smith Village | 38  | Valley Brook |
| 9   | Union City   | 24  | Moore         | 39  | Mustang      |

| No. | City Name   | No. | City Name       | No. | City Name      |
|-----|-------------|-----|-----------------|-----|----------------|
| 10  | Edmond      | 25  | Norman          | 40  | Nichols Hills  |
| 11  | Luther      | 26  | Minco           | 41  | Oklahoma City  |
| 12  | Yukon       | 27  | Tuttle          | 42  | Unincorporated |
| 13  | Choctaw     | 28  | Blanchard       | 43  | Unincorporated |
| 14  | Nicoma Park | 29  | Woodlawn Park   | 44  | Unincorporated |
| 15  | McLoud      | 30  | Sportsmans Club | 45  | El Reno        |

- Permits

[Appendix C](#) provides OKC’s Notice of Intent for the 2017 Pesticide General Permit with the Oklahoma Department of Agriculture, Food and Forestry. This permit is for specific pesticide use categories applied to Waters of the United States. Additional information regarding OKC’s Pesticide General AgPDES permit can be found in [Component 9](#) of this report. The information in [Appendix AA](#) provides the Department’s, Division’s and contractors of Oklahoma City which are permitted with an SWQ Industrial Discharge Permit. This list includes airports, applicable OKC contractors, landfills/disposal facilities, equipment yards, materials storage yards, libraries, the OKC Household Hazardous Waste Collection Facility and OKC Wastewater Treatment Plants.

Air permits were researched in OKC. One hundred and eighty four permits were identified. Two air permits are for an Oklahoma Facility, the Southeast Landfill. Air permits are provided in [Appendix AD](#).

Twenty-eight Pollution Discharge Elimination System (PDES) permits were extracted from the ODEQ’s statewide database within Oklahoma City. Two OKC PDES permits (OKC North Canadian and OKC South Canadian WWTPs) were identified within the corporate boundaries. See [Appendix AE](#) to view all PDES permits within OKC.

Staff identified 29 total retention facilities within OKC. These facilities are owned by other municipalities or private entities. Facilities within OKC jurisdictional boundaries are located in [Appendix AF](#).

Source Identification

- Ordinances

This section provides a brief description of the ordinances, guidance, and other controls which limit the discharge of non-stormwater to the MS4. Each SWMP Component in the following sections describes many of the ordinances which apply to that program. These ordinances are the foundation for the protection of storm water infrastructure & downstream flooding, the collection and structure of the storm water utility fee, prohibition of non-storm water discharges, use of best management practices and permit requirements, among others. Although many different ordinances apply to the management of storm water runoff, the main ordinances related to limiting



the discharge of non-storm water are found in the OKC Municipal Code, Chapters 16 Drainage & Detention; Chapter 48 Grading, Erosion, and Sediment Control; and Chapter 57 Permitting & Enforcement.

On September 28, 1999 the City Council passed ordinances that pertain to storm water quality. These ordinances require owners, developers, contractors or facility owners to have a storm water discharge permit and/or land disturbing permit for construction or industrial activities based on 1992 Clean Water Act guidelines.

The purpose of Chapter 16 is stated in §16-1 *“It is the intent of this chapter to protect the general health, safety and welfare of the public from the hazards and damages of flooding from the various drainage areas in the City; to provide clean and sanitary channels for runoff; to prevent pollution of watersheds, streams and natural channels; to prevent the encroachment of buildings or improvements on natural drainage channels; to equitably apportion the costs of improvements; to protect natural scenic areas’ and to provide for the conservation of the natural resources of the area. All subdivisions of land and all developments or improvements of any character which affect drainage in any portion of the City shall be subject to the provisions of this chapter. This chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, or deep restrictions. However, where this chapter and another ordinance conflict or overlap, whichever imposes the more stringent restrictions shall prevail.”*

The purpose of Chapter 57 is stated in §57-130 *“It is the purpose of this article to address the mandates of the Federal Government and establish a stormwater utility to promote health, safety and welfare by providing for studying, designing, operating, construction, equipping, maintaining, acquiring, and owning within the City a stormwater drainage system. The establishment of a stormwater drainage system would:*

- 1) reduce flood and storm losses and inconveniences from uncontrolled stormwater runoff in the City;*
- 2) improve that the movement of emergency vehicles is not prohibited nor inhibited during storm or flood periods; and*
- 3) preserve the City’s watercourses, improve and preserve water quality, minimize water quality degradation, and otherwise facilitate urban water resource management techniques, including both the reduction of pollution and the enhancement of the urban environment, including but not limited to the NPDES permit requirements and such other requirement of the City, State or Federal Governments.”*

Various guidance documents are used to inform the public regarding storm water requirements, pollutant reduction methodologies, and best management practices. [Component 7](#) lists the pamphlets, brochures and other information available to the public. Guidance documents such as OKC’s Best Management Practice Manual for Construction and Land Disturbing Activities and the PlanOKC are described in the [Component 2](#). Notices may be used to inform industrial and

construction permit holders. Examples of these notices can be found in [Appendix I](#) and [Appendix J](#) (Area Specific Construction Requirements: Lake Thunderbird Watershed TMDL Specific Requirements for Construction Stormwater Permits and Area Specific Industrial Requirements: Lake Thunderbird Watershed TMDL Specific Requirements for Multi-Sector General Permits (Industrial) Stormwater Permits, respectively). The methods used to collect water quality data and other environmental information, enforcement procedures, and other common activities are described in the SWQ Standard Operating Procedures (SOPs). Each SWMP component list the SOPs associated with each program. The complete list of the Division SOPs is located in [Component I](#).

- MS4 Boundaries - A map of the OKC MS4 boundaries can be found in [Appendix AG](#). This map displays the location of OKC within the State and provides the location of the City corporate boundaries.

- Land use activities were calculated using the 2011 National Land Cover Database (NLCD). The OKC boundary was used to extract the data for OKC. These data were summarized in the following table. Fourteen land use categories are provided. Herbaceous/grassland, deciduous forest and developed open space account for the highest percentages.

| Land Use                    | No. Records    | Acres          |
|-----------------------------|----------------|----------------|
| Barren Land                 | 292            | 1214.452388    |
| Cultivated Crops            | 1762           | 47727.71143    |
| Deciduous Forest            | 6199           | 60065.84904    |
| Developed, High Intensity   | 9293           | 21718.94373    |
| Developed, Low Intensity    | 42261          | 41144.499      |
| Developed, Medium Intensity | 26624          | 37023.5529     |
| Developed, Open Space       | 25742          | 52413.18       |
| Emergent Herbaceous Wetland | 6              | 11.286167      |
| Evergreen Forest            | 477            | 1347.490175    |
| Grassland / Herbaceous      | 10913          | 114064.2541    |
| Open Water                  | 1039           | 9995.2712      |
| Pasture / Hay               | 620            | 6359.703238    |
| Shrub / Scrub               | 1              | 2.76525        |
| Woody Wetlands              | 22             | 67.920673      |
| <b>Totals</b>               | <b>125,251</b> | <b>393,157</b> |

- Population densities were calculated using the 2010 United States Census data. In OKC, the population was 579,999. A population density map is provided in [Appendix AK](#). Population was further researched using the 2012 Demographic State of the State Report – Oklahoma State and County Population Projections Through 2075 (Oklahoma Department of Commerce). Counties surrounding Oklahoma City are forecasted to see substantial growth. Tulsa and Oklahoma City combined will represent 35.6% of the state’s population. Overall, Oklahoma County is forecast to grow at an average rate of 0.69% over the next 65 years. In the coming decades, growth is anticipated to shift to neighboring counties. Based on the population projections, the 10-year growth of Oklahoma County is estimated at 811,395 by 2028. PlanOKC provides some additional insight to areas within the City which are estimated have growth. This growth prediction is predicted to 2050 (see map located in [Appendix AS](#)). In OKC, the estimated population by 2028 (10-year forecast) is 773,313.

- Research was conducted to determine all landfills or other treatment, storage or disposal

facilities for municipal waste. These include closed and currently operating facilities. Municipal wastes is deposited at the following private landfills in OKC; the Oklahoma Landfill (7600 SW 15<sup>th</sup> Street), Southeast Landfill (7001 South Bryant Avenue), or the East Oak Recycling and Disposal Facility (3201 Mosely Road). The Northeast Landfill (2101 NW Boulevard) is located in Spencer, Oklahoma and is used for construction and demolition debris. OKC's Household Hazardous Waste Facility (1621 South Portland Avenue) is open for residents to dispose of unwanted household hazardous chemicals and is considered a Solid Waste Transfer Station. Further information regarding OKC's municipal waste disposal locations can be found in [Appendix AT](#).

- Using the NLCD as a base to determine land use in OKC, the average runoff curve numbers were compiled. The NLCD does not provide the resolution to specifically categorize all land uses (such as discriminating between row crops with residue versus row crops no residue or high intensity residential versus urban districts). Conservative values were used. Runoff coefficients are presented in [Appendix AM](#).
- The location of the thirty-two NPDES discharges within OKC are identified in [Appendix H](#).
- OKC GIS files were used to identify 6,970 surface water impoundments (lakes, ponds, etc.) which are partially or wholly within OKC. Three low water river dams are located in the Oklahoma River; the May Avenue Dam (near I-40 and May Avenue), the Paul H. Brum dam (near SW 7<sup>th</sup> and Walker Avenue), and the Eastern Avenue Dam (near I-40 and Eastern Avenue). Additionally, dams are located at each of the water reservoirs in OKC (Lake Stanley Draper, Lake Hefner, and Lake Overholser). Detention structures were identified using OKC GIS. 91 structures are listed in [Appendix AU](#) and a map is provided in [Appendix AV](#). OKC is continuing to determine the locations of other types of BMPs such as bio-infiltration, proprietary devices, constructed water quality controls and infiltration surfaces.
- Outfall locations to Waters of the State were identified using the following methodology. The most recent State Integrated Report waterways were superimposed over the storm drain features in ArcGIS. A buffer of 2,000 ft. was drawn around each waterway. Storm drainage features were selected which crossed or were completely within these boundaries. All storm water features which drain directly to these waterways were marked with a point feature. XY Coordinates and other relevant data were generated for each location (when available). OKC identified 600 outfalls which drain to Waters of the State. These locations are listed in [Appendix AW](#) and a map is provided in [Appendix AX](#).
- Public Parks and recreational areas. The OKC GIS was utilized to calculate the area of the 157 park areas in OKC. 4,240 acres of park space were identified. Park types include neighborhood recreational spaces, green spaces, special use areas, dog parks, metropolitan spaces, nature venues, district venues, and community spaces. The list of parks can be found in [Appendix AL](#).
- Wet Weather Characterization Program Monitoring Outfalls are provided in [Appendix AH](#). Individual maps for each outfall were created which display 1) the contributing drainage area; 2) the discharge routing to one mile beyond the corporate boundary; and 3) superimposed over a 1:24,000 scale USGS Quadrangle.

### Discharge Characterization

- Monthly Mean Precipitation March 2013 – March 2017 can be found in [Appendix AI](#). This table displays the monthly precipitation values, annual sums, and monthly mean of the precipitation for 2013-2017.
- Receiving waters are listed in [Appendix E](#). These include all waters within OKC with a water body identification number some of which receive no storm water flows from OKC's MS4. All waters identified are within the corporate boundaries of OKC. Water with known water quality problems are identified in 2014 303(d) list. These impaired stream segments are listed in [Appendix F](#).
- Field Screening – field screening methodology is described in the Illicit Discharge Detection and Elimination (IDDE) Monitoring SOP #16. For convenience, this SOP has been added to [Appendix AJ](#).
- The existing quantitative data was reviewed for most recent 5-year period (2012-2017) from the Wet Weather Analytical Monitoring Program. This program includes measured discharge and flow weighted sample collection for qualifying rainfall events at five monitoring stations in OKC. A total of 32 flow weighted composite samples were collected and analyzed. A calculated 4,848,741 cubic feet of discharge was measured from the outfall locations during the sample collection. Site location descriptions can be found in [Appendix AO](#). Calculated event loading can be found in [Appendix AP](#). The OKC sampling procedures can be found in SOP 16. For convenience, this SOP can be viewed in [Appendix AQ](#). Analytical methods include both EPA and Standard Methods procedures. All laboratory methods used in the Wet Weather Analytical Monitoring Program can be viewed in [Appendix AR](#).
- Characterization Plan – The characterization of waters in OKC is composed of a historic program, existing programs and a proposed program. Historically, the Watershed Characterization Program completed a full assessment (to an extent practicable) of the “state of streams” in OKC in relation to State Water Quality Standards. A subsequent program, the Priority Based Monitoring Program was initiated to further assess stream reaches which were identified as violating one or more water quality standard. A newly proposed program, the Trend and Load Based Monitoring Program is requested to continue a long-term monitoring effort which has the capability of assessing pollutant loads within a stream reach or major outfall and eventually to determine any potential trends. Although this program is measuring few key parameters, these parameters are present in surface waters and are often impacted by management changes in the watershed. Continuous monitoring of discharge and collection of flow weighted composite samples will provide comprehensive water quality data for assessing stream constituent loading, better data for TMDL development and implementation monitoring.

The Wet Weather Analytical Program characterizes runoff waters discharged from the MS4. Currently, the characterization of these waters is based on specific stations, selected from a single land use type (or combined land uses) to determine an event mean

concentration. This excludes contributing sources from base flows and non-storm water discharges and focuses exclusively on elevated discharges. The variability from storm-to-storm is continuously observed with these data. The time, hazards involved, and effort required to obtain this information limits the capability of OKC to collect a significant number of these samples to make decisions based on the data collected. With the proposed sampling program, discharges from low, base, elevated, and high conditions will be sampled on a flow weighted approach. Multiple samples will be collected in any given water year providing a larger sample pool to assess the quality of water within the reach. Stations will be selected from stream reaches with known water quality violations, current and future project areas, and from areas where continuous or additional data is needed. Stations will also be selected from existing Wet Weather Analytical Monitoring stations. These stations may be located anywhere within a drainage basin provided that no deleterious impacts occur from flood water backup or other unforeseen problems. Other considerations include monitoring objectives, safety, and access among others.

Finally, the Illicit Discharge Detection and Elimination Program is used to characterize dry weather flows at over 500 stations in OKC. These stations were selected based on the criteria established in 40 CFR Part 122.26. This monitoring is conducted with strict adherence to weather conditions which exclude storm water precipitation as a contributing source of MS4 flow. As stated in the CFR “in large municipal separate storm sewer systems, no more than 500 cells need to have identified field screening points”. OKC exceeds this required number of monitoring stations and will continue to update as needed to characterize dry weather flows.

The proposed Trend and Load Based Monitoring Program key components are the establishment of stations located throughout the City. These stations will be continuously monitored. Some stations will be located in rural areas (existing Lake Thunderbird TMDL stations) while others will be located in low, medium and high intensity developed areas. The information obtained at the existing stations to date has yielded useful information about the character of pollutant loading in OKC. On review of these data, OKC can review pollutant loadings that are related to non-storm event, combined wet/dry conditions, and at times strictly wet weather discharges. Simple calculations can provide weekly, monthly or annual pollutant loadings. In years five and ten of the program, trend analysis may be performed. Considerable data should be acquired by year five, providing sufficient data pools for monotonic trend analysis (Hirsh, R.M. 1988. *Statistical methods and sampling design for estimating steps trends in surface water quality*). The actual methodology to be used is unknown due to the lack of prior knowledge about the nature of the data sets. Seasonality, exogenous variables, and non-normality are just a few factors which must be considered in the analysis. The following tests will be considered for future trend analysis:

|                | Type of test | Not adjusted for covariate (X) | Adjusted for covariate (X)                          |
|----------------|--------------|--------------------------------|---|
| No Seasonality | Parametric   | Linear regression of Y on t    | Multiple linear regression of Y on X and t          |
|                | Mixed        | -                              | Mann-Kendall on residuals from regression of Y on X |

|                    | Type of test  | Not adjusted for covariate (X)                     | Adjusted for covariate (X)                                      |
|--------------------|---------------|--|---|
|                    | Nonparametric | Mann-Kendall                                       | Mann-Kendall on residuals from LOWESS of Y on X                 |
| <b>Seasonality</b> | Parametric    | Linear regression of Y on t and periodic functions | Multiple linear regression of Y on X, t, and periodic functions |
|                    | Mixed         | Regression of deseasonalized Y on t                | Seasonal Kendall on residuals from regression of Y on X         |
|                    | Nonparametric | Seasonal Kendall on Y                              | Seasonal Kendall on residuals from LOWESS of Y on X             |

Y = dependent variable of interest, X = covariate, t = time

(From Helsel, D.R. and R.M. Hirsch. 1992. *Statistical methods in water resources*)

Fiscal Resources

- Fiscal resources can be found in each SWMP Component. Detailed information can be found in SWMP 1 and 15. [Component 1](#) provides details regarding the Utility Fee charges associated with water meter size and the 5-year performance of the Storm Water Drainage Utility fee. [Component 15](#) displays other revenue sources such as fines, court costs, and permitting fees. An overview of OKC’s financial resources, organization structure, demographics, Wards, Mayor and Council members, expenditures, and much more can be found in the most recent Adopted Budget. The 2018 Adopted Budget can be accessed for review at the following URL: <https://www.okc.gov/home/showdocument?id=9053>

Legal Authority and Interagency Agreements

- Ordinances have been previously discussed within this Section (see Source Identification). Interagency agreements are discussed in the [Component 15](#). A list of the SWQ’s Memorandum of Understandings are provided. Scanned images of the MoUs can be found in [Appendix AB – Interjurisdictional Agreements](#).

The SWMP is organized in order of Part III, Table A of the OKC MS4 Permit, OKS000101. Each SWMP Component is described in the following sections of the SWMP Those sections include: 1) SWMP Document; 2) New and Re-Development; 3) Flood Control Projects and Structural Controls; 4) Construction Site Runoff; 5) Industrial and High Risk Runoff; 6) Household Hazardous Wastes / Used Motor Vehicle Fluids; 7) Public Outreach; 8) Roadway Operations and Maintenance; 9) Pesticide, Herbicide, and Fertilizer Application; 10) Pollution Complaint and Spills Response Program; 11) Floatables; 12) Wet Weather Analytical; 13) Priority Based Monitoring Program; 14) Illicit Discharge Detection and Elimination Program; and 15) Supporting Permit Conditions, Monitoring Programs, and Documents. Attempts have been made to describe the following items in order for each SWMP Component.

- 1. Program Components**  
Describes the permitted activities as detailed in the SWMP, Part III, Table A of OKC’s OKS000101 MS4 Permit.
- 2. Definitions**  
Provides definitions for the consumer which clarify the use of acronyms or

- terminology not commonly used outside of water quality management.
3. **Ordinances**  
Provides ordinances, references, and in some cases when important, the language of the ordinance, or a general description for clarification.
  4. **Standard Operating Procedures (SOP)**  
Identifies any SOPs used for each program.
  5. **Resources**  
Provides a description of the staffing for each SWMP Component. Staffing includes those personnel that are directly working within the scope of the component. Fluctuations in personnel, due to unforeseen events, may occur during the permit term. Efforts have been made to reflect the base personnel for each program. Increases in personnel may be necessary. These positions may be provided through part-time, temporary, contract, or full time position adjustments. Other resources may be identified in this section including field equipment and financial resources. This section is limited to those budgets within the SWQ Division.
  6. **General Program Description**  
Provides a descriptive narrative of a basic intent and scope of the SWMP Component. This section elaborates on program/project objectives as necessary.
  7. **Component Metrics**  
Metrics are used to determine program success and may be simple or analytically derived. Current metrics are subject to change dependent on program evaluation or changes to priorities during the permit duration.
  8. **Narrative Goals**  
Provides an overall statement of the intent of each storm water component.
  9. **Cooperating Departments, Agencies and Communities**  
Includes participating departments, agencies and communities which contribute to the function and operation of the SWMP component execution. Minor contributing partners may not be provided as a cooperating Department, Agency or Community.
  10. **Area-Specific Requirements**  
Describes area within the MS4 jurisdiction which have additional requirements. Although each section will cover this subject, only certain permit components will have any depth of information provided.
  11. **Analysis**  
When appropriate, this section provides analysis of historical trends and future efforts which may enhance the SWMP component.

## SWMP Component 1: Storm Water Management Plan Document

### 1. Program Components:

- A. Review and update the SWMP annually as needed.
- B. Revise the SWMP as necessary to reflect final permit.

### 2. Definitions:

*Co-permittee* – is defined by Oklahoma Administrative Code (OAC) 252:606-1-3(b)(3)(L), which adopts and incorporates by reference 40 CFR 122.26(b)(1).

*MS4 – Municipal Separate Storm Sewer System* is regulated as a point source. 40 CFR Part 122.2 states: “Point source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff (see 40 CFR Part 122.3)”.

*NPDES* – National Pollutant Discharge Elimination System is defined in 40 CFR 122.2 as a national program for issuing, modifying, revoking and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of CWA.

*Permittee* - refers to any “person”, as defined in OAC 252.606-1-3(b)(3)(B), which adopts and incorporates by reference 40 CFR 122.2, authorized by this OPDES permit to discharge to Waters of the United States.

*Stormwater Charge* – the fees levied within the boundaries OKC for the use of the OKC’s stormwater drainage system and facilities, and shall include a stormwater base fee and stormwater utility discharge fee. The stormwater base is hereby established to meet the requirements and regulations of local, State and Federal Governments, including but not limited to the NPDES permit. The stormwater discharge fee is hereby established to develop a stormwater utility to development and maintain a stormwater drainage system.

*Stormwater Management Program* - an overall strategy and framework for the stormwater management activities of the OKC.

*SWMP* – Storm Water Management Plan refers to a comprehensive program to manage the quality of storm water discharged from the MS4. For the purpose of the OKC Storm Water Discharge Permit, the SWMP is considered a single document, but may consist of separate programs (e.g. “sections or chapters”) for each permittee.

*TMDL* – Total Maximum Daily Load is a study which establishes pollutant load reductions necessary to meet State Water Quality Standards. The TMDL takes into account point source



pollution (WLA), non-point source pollution (LA) and a margin of safety (MOS). A TMDL is expressed by the following calculation:

$$\text{TMDL} = \text{WLA} + \text{LA} + \text{MOS}$$

*Violation or Violation of Code* means (1) doing an act that is prohibited or made or declared unlawful or an offense by ordinance or by rule or regulation authorized by ordinance; or (2) failure to perform an act that is required to be performed by ordinance or by rule or regulation authorized by ordinance.

**3. Ordinances:**

| <b>Ordinance</b> | <b>Title</b>                     | <b>Language / Description</b>   |
|------------------|----------------------------------|---|
| §1-6(a-e)        | Penalty for Violations           |   |
| §57-133          | Storm Water Drainage Fund        | (a) A special fund or funds shall be maintained for the purpose of identifying and controlling all revenues and expenses attributable to storm water charges. All storm water charges and all loans, grants or funds received for the administration, operation, construction and improvement of the storm water drainage system and facilities shall be deposited in such fund or funds. Disbursements for costs of data collection, planning, designing, engineering, policing, constructing, maintaining, operating, and improving drainage services and facilities and any other activity provided for by this ordinance shall be made from the appropriate fund or funds. (b) A special Stormwater Management Enterprise Fund shall be established to receive all stormwater charges for the use of the City’s storm water drainage system and facilities to meet applicable local, State and Federal regulations, including but not limited to the NPDES permit. (c) Expenditures and disbursements from the Storm Water Management Enterprise Fund shall be at the direction and discretion of the City Council. |
| §57-134 (a-b)    | Stormwater Charge and Exemptions | Ordinances describe the storm water charges and exempted property types. The ordinance also describes where al proceeds are deposited.  |
| §57-136 (a-b)    | Collection of Stormwater Charge  | The ordinance describes the storm water charge, required deposits and billing frequency. The ordinance also describes the process for non-payment or late payment of the storm water charges.   |
| §57-137          | Appeal or Adjustments of Charge  | Describes the appeal process for users if storm water charges are perceived to be inaccurate or erroneous. The ordinance provides a method review by the Director and City Manager.   |
| §57-138          | City Council Discretion          | Ordinance provides that the Director shall recommend storm water services, improvements and facilities to the City Council.   |

| <b>Ordinance</b> | <b>Title</b>                               | <b>Language / Description</b>  |
|------------------|--|--|
|                  |  | It is the discretion of the City Council to approve these measures.  |
| §57-140          | Purpose                                    | It is the purpose of this article to protect, maintain, and enhance the environmental of the City of Oklahoma City and the short-term and long-term public health, safety, and general welfare of the citizens of Oklahoma City by controlling discharges of pollutants to the City’s Stormwater System and to maintain and improve the quality of the community water into which the stormwater outflows flow, including, without limitation, the lakes, rivers, streams, ponds, wetlands, sinkholes, and groundwater of Oklahoma City. |
| §57-168          | Authority of Stormwater Quality Management | Ordinance identifies the Storm Water Manager and duties authorized to comply with NPDES regulations.   |
| §57-181          | Administrative Enforcement Remedies        | Ordinances describe the administrative enforcement remedies including the Notice of Violation, Consent Order, Show Cause Hearing, Compliance Order, Cease and Desist Order and the appeal process. (See <a href="#">Appendix K</a> )   |
| §60-57-20        | Stormwater Base Fee                        | Provides the General Schedule of Fees including the NPDES permit schedule of charges.  |

**4. Standard Operating Procedures:**

OKC Storm Water Quality Management maintains SOPs for activities covered under the permit. This includes the collection of water samples, testing procedures, operation and maintenance of meters and field equipment, office protocol, household hazardous waste facility procedures, among others. 57 SOPs are currently in place, in draft, or in progress.

| <b>SOP</b> | <b>Standard Operating Procedure Title</b> | <b>Revision</b> |
|------------|---|-----------------|
| 1          | Routine QA/QC                             | 12/20/2016      |
| 2          | Alkalinity Measurement                    | 4/20/2007       |
| 3          | Conductivity Measurement                  | 4/20/2007       |
| 4          | Dissolved Oxygen Measurement              | 4/20/2007       |
| 4a         | DO Measurement, ProODO                    | In progress     |
| 5          | pH Measurement                            | 4/23/2007       |
| 6          | Turbidity Measurement                     | 4/23/2007       |
| 7          | Water Temperature Measurement             | 4/27/2007       |
| 8          | Flow Measurement (SSOM)                   | 7/6/2007        |
| 9          | Flow Measurement (Meter Method)           | 10/10/2007      |
| 10         | Fish Collection                           | 10/31/2007      |
| 11         | Inorganic Sample Collection               | 10/16/2007      |
| 12         | Depth Integrated Sampling Method          | 10/16/2007      |

| <b>SOP</b> | <b>Standard Operating Procedure Title</b>              | <b>Revision</b> |
|------------|--|-----------------|
| 13         | Winkler Dissolved Oxygen Measurement                   | Draft           |
| 14         | Reagent Standards / Shelf Life                         | 10/17/2007      |
| 15         | Macroinvertebrate Collection, Subsampling, and Picking | Draft           |
| 16         | Dry Weather/Illicit Discharge Monitoring               | 12/20/2016      |
| 17         | Wet Weather (Storm Event Monitoring)                   | 10/16/2007      |
| 18         | Ground Water Well Monitoring                           | 10/18/2007      |
| 19         | Chain of Custody and Sample Labeling                   | 12/20/2016      |
| 20         | Floatable Monitoring                                   | 10/15/2007      |
| 21         | Habitat Assessment                                     | 10/29/2007      |
| 22         | Optical Brightener Monitoring                          | 10/10/2007      |
| 23         | Global Positioning System                              | 10/16/2007      |
| 24         | Automatic Sampler Use and Operation (Sigma)            | Draft           |
| 25         | Flow Measurement (Timed Volume Method)                 | 10/9/2007       |
| 26         | Equipment Decontamination                              | 10/9/2007       |
| 27         | Dye Testing  | 10/11/2007      |
| 28         | Mosquito Control                                       | 12/28/2016      |
| 29         | Multimeter Field Unit                                  | In progress     |
| 30         | Storm Drain Markers                                    | 10/19/2007      |
| 31         | Storm Sewer Camera                                     | In progress     |
| 32         | MicroMAX Pro Multi-gas Monitor                         | In progress     |
| 33         | Digital Camera / Pictures                              | In progress     |
| 34         | Data Quality   | 10/15/2007      |
| 35         | Aerosol Can Consolidation                              | 10/11/2007      |
| 36         | Bulb Eater   | 10/11/2007      |
| 37         | Waste Consolidation into 55 Gallon Drum                | 10/12/2007      |
| 38         | Drum Identification Numbers                            | 10/12/2007      |
| 39         | Forklift   | 10/12/2007      |
| 40         | Emergency and Non-emergency Spill Response Procedures  | 12/20/2017      |
| 41         | Labpack  | 10/12/2007      |
| 42         | Lockout Tagout   | 10/12/2007      |
| 43         | Vehicle Unloading                                      | 10/12/2007      |
| 44         | Waste Battery Storage, Handling and Consolidation      | 10/12/2007      |
| 45         | Waste Oil Consolidation                                | 10/12/2007      |
| 46         | StormCeptor  | In progress     |
| 47         | Telephone Etiquette and Operations                     | 10/12/2007      |
| 48         | Construction Section                                   | 10/15/2007      |
| 49         | Industrial Section                                     | 10/15/2007      |
| 50         | Instructions for Recording Field Information           | Draft           |
| 51         | Quarterly Calibration and Maintenance                  | 11/14/2007      |

| <b>SOP</b> | <b>Standard Operating Procedure Title</b>               | <b>Revision</b> |
|------------|---|-----------------|
| 52         | Chlorine Measurement (using HACH Pocket Chlorimeter II) | 12/27/2016      |
| 53         | Oklahoma River Debris Barrier (Canal Zone G)            | Draft           |
| 54         | Storm Drain Insert Monitoring and Maintenance           | In progress     |
| 55         | High Risk Runoff Data Review Process                    | In progress     |
| 56         | Passive Sampler Use and Application                     | 12/20/2016      |
| 57         | Load Based Monitoring Site Development                  | In progress     |

**5. Resources:**

Each permittee shall provide adequate finances, staff, equipment and support capabilities to implement their activities under the SWMP. §57-33 Storm Water Drainage Fund provides the special funds created to provide the financial assurances to implement the SWMP components. §60-57-20 provides the Stormwater Base Fee (Stormwater Charge). This fee is based on water meter size. Incremental increases were programmed from 2010-2014.

| <b>Meter Size</b> | <b>Effective July 1, 2010</b> | <b>Effective July 1, 2011</b> | <b>Effective July 1, 2012</b> | <b>Effective July 1, 2013</b> | <b>Effective July 1, 2014</b> |
|-------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 3/4" or Less      | 4.5                           | 5.06                          | 5.32                          | 5.53                          | 5.69                          |
| 1"                | 5.12                          | 5.76                          | 6.05                          | 6.29                          | 6.48                          |
| 1.5"              | 16.14                         | 18.16                         | 19.07                         | 19.83                         | 20.43                         |
| 2"                | 21.92                         | 24.65                         | 25.89                         | 26.92                         | 27.73                         |
| 3"                | 41.57                         | 46.76                         | 49.1                          | 51.07                         | 52.6                          |
| 4"                | 68.12                         | 76.63                         | 80.47                         | 83.68                         | 86.19                         |
| 6"                | 132.14                        | 148.66                        | 156.09                        | 162.34                        | 167.21                        |
| 8"                | 219.3                         | 246.71                        | 259.04                        | 269.41                        | 277.49                        |
| 10"               | 334.73                        | 376.57                        | 395.4                         | 411.4                         | 423.56                        |
| 16" or Larger     | 520.74                        | 585.83                        | 615.12                        | 639.73                        | 658.92                        |

Storm Water Utility Fee and Other Revenue, 5-Year Performance:

| <b>Year</b> | <b>Drainage Fee</b> | <b>ODOT Reimbursements</b> | <b>Permits</b> | <b>Other</b> | <b>Total</b>    |
|-------------|---------------------|----------------------------|----------------|--------------|-----------------|
| 2016        | \$14,104,870.00     | \$255,760.00               | \$116,200.00   | \$467.00     | \$14,477,297.00 |
| 2015        | \$16,850,160.00     | \$255,760.00               | \$117,690.00   | \$603.00     | \$17,224,213.00 |
| 2014        | \$14,953,993.00     | \$255,766.00               | \$133,355.00   | \$1,701.00   | \$15,344,815.00 |
| 2013        | \$15,008,231.00     | \$261,288.00               | \$108,690.00   | \$497.00     | \$15,378,706.00 |
| 2012        | \$13,963,021.00     | \$255,766.00               | \$111,285.00   | \$2,076.00   | \$14,332,148.00 |

Storm Water Quality Staffing:

| <b>Classification Title</b>      | <b>Range</b> | <b># of Personnel</b> |
|----------------------------------|--------------|-----------------------|
| Environmental Protection Manager | 516          | 1                     |

| <b>Classification Title</b>          | <b>Range</b> | <b># of Personnel</b> |
|--------------------------------------|--------------|-----------------------|
| Environmental Unit Supervisor        | 513          | 4                     |
| Environmental Unit Specialist        | 511 (NE)     | 2                     |
| Environmental Technician             | 509 (NE)     | 17                    |
| Community Relations Coordinator      | 509          | 1                     |
| Administrative Coordinator           | 509 (NE)     | 2                     |
| Office Coordinator                   | 506 (NE)     | 1                     |
| Laborer I                            | PTP          | 0                     |
| Laborer II                           | PTP          | 5                     |
| Contract Labor (Qualified Personnel) | Hourly       | As Needed             |

The Storm Water Quality Management Division Organization Chart is provided in [Appendix L](#).

Storm Water Utility Funding (All Positions Funded)

| <b>Fiscal</b> | <b># Positions</b> | <b>Comments</b>      |
|---------------|--------------------|----------------------|
| FY10-11       | 106.5              | Actual               |
| FY11-12       | 105.65             | Actual               |
| FY12-13       | 106.65             | Actual               |
| FY13-14       | 107.3              | Actual               |
| FY14-15       | 109.95             | Actual               |
| FY15-16       | 113.95             | Actual               |
| FY16-17       | 129.65             | Adopted              |
| FY16-17       | 130.55             | Mid-Year Adjustments |
| FY17-18       | 136.2              | Proposed             |

**6. General Program Description:**

OKC is required to review the SWMP annually (OKC MS4 Permit Part IIG). This chapter of the SWMP provide the financial assurances, standard operating procedures, staffing levels, employee classifications, permit costs and enforcement fees. Modifications to the SWMP are generally provided when a TMDL is adopted (Part II(b) of the OKC MS4 Permit), to capitalize on certain key BMPs to create a more effective management plan, replacement of BMPs with more effective measures, or changes to the schedules Part III of the permit. These changes are considered minor modifications to the SWMP which need not conform with OAC 252.606-1-3(b)(4)(D). Part VII of the OKC MS4 Permit provides *“only those portions of the SWMP specifically required as permit conditions shall be subject to the modification requirements of OAC 252.606-1-3(b)(4)(D) adopting and incorporating by reference 40 CFR 124.5.”*

| <b>Task</b>  | <b>Type</b>       | <b>Staffing</b>   | <b>Comments</b>   |
|--|-------------------|---|---|
| SWMP Annual Review                                   | Management Review | Environmental Manager (1), Environmental Unit Supervisor (4), Environmental Unit Specialist (2), Outreach Coordinator (1) | An annual review of the SWMP will occur after submission of the Annual Report. Tasks and associated metrics should be incorporated to determine if programs are meeting objectives. |
| Revise the SWMP as necessary to reflect final permit | Management Review | Environmental Manager (1), Environmental Unit Supervisor (4), Environmental Unit Specialist (2), Outreach Coordinator (1) | Revisions to the SWMP may be necessary to adjust permitted task and to capitalize on program success. Those programs which have little value should be modified or replaced.        |

**7. Component Metrics:**

| <b>Task</b>  | <b>Metric</b>   | <b>Reporting Figure</b> | <b>Goal</b>   |
|--|---|-------------------------|---|
| SWMP Annual Review                                   | Complete annual review one time each year                       | Reviewed: Y/N           | Identify whether tasks are effective or ineffective and which require additional resources to become effective. |
| Revise the SWMP as necessary to reflect final permit | Compile all annual review results and revise the SWMP as needed | List of changes.        | This list of changes should be provided to the ODEQ for consideration while developing new permit tasks.        |

**8. Narrative Goals:**

The OKC SWMP provides applicable methods, staffing, roles, oversight and responsibilities for the management of storm water quality in OKC’s jurisdiction to meet the discharge goals specified in Part I.D. of the OKS000101 MS4 Discharge Permit for OKC. This section provides that the SWMP must be reviewed annually and addressed each 5-year permit cycle. Additionally, the

SWMP must be addressed when applicable TMDLs are approved by the ODEQ and the United States Environmental Protection Agency (USEPA). The following topics describe the permit area, authorized discharges, permittee responsibilities, discharge goals and categories of non-storm water discharges exempted from prohibition, retention of SWMP records and Municipal Code enforcement.

Permit Area - The OKC MS4 Permit Part I.A. provides the following permit area description.

*“This permit covers all areas located within the corporate boundary of the City of Oklahoma City that are served by municipal separate storm sewers owned or operated by the permittee(s)”*

The permit area description provided in the OKC MS4 permit provides some insight into areas which may be excluded. Those areas may include roadways not owned or operated by OKC. Certain land uses are out of the jurisdiction of the MS4. 40 CFR Part 122.3(e) Exclusion states: *“The following discharges do not require NPDES permits: Any introduction of pollutants from non-point-source agricultural and silvicultural activities, including storm water runoff from orchards, cultivated crops, pastures, range lands, and forest lands...”* Additionally Section 402(I)(1) of the 1987 amendments to the Clean Water act exempts agricultural storm water discharges from NPDES permitting requirements (specifically, the clearing of land from agricultural purposes).

Authorized Discharges - The OKC MS4 Permit Part I.B, provides the following language regarding authorized discharges:

*1. The following discharges, whether discharged separately or commingled with municipal storm water, are not authorized by this permit:*

*a. Non-storm water and Industrial Storm Water: Storm water discharges associated with industrial activity; other storm water discharges required by the Director to be covered under an NPDES permit; and discharges of non-storm water, except where such discharges are identified by and in compliance with Part II.A.6.a.*

*b. Discharges of material resulting from spills: Where discharge of material resulting from a spill is necessary to prevent loss of life, personal injury, or severe property damage, the permittee(s) shall take, or ensure the party responsible for the spill takes, all reasonable steps to minimize or prevent any adverse effects to human health or the environment.*

Permittee Responsibilities – the OKC MS4 Permit Part I.C. provides the following permittee responsibilities:

*1. Each permittee is responsible for:*

*a. Compliance with permit conditions relating to discharges from portions of the MS4 where the permittee is the operator;*

*b. SWMP update revisions on portions of the MS4 where the permittee is the operator;*

*c. Compliance with annual reporting requirements as specified in Part V.D.*

*d. Collection of representative wet weather monitoring data required by Part V.B according to such agreements as may be established between permittees; and*

*e. A plan of action to assume responsibility for updating revisions of storm water management and monitoring programs on their portions of the MS4 should inter-jurisdictional agreements allocating responsibility between permittees be dissolved or in default.*

Discharge Goals – The OKC MS4 Permit Part I.D. provides the discharge goals:

*The following goals are established for discharges from the Oklahoma City MS4:*

- *No discharge of toxics in toxic amounts.*
- *No discharge of pollutants in quantities that would cause a violation of Oklahoma Water Quality Standards.*
- *No discharge of floatable debris, oils, scum, foam, or grease in other than trace amounts.*
- *No discharge of non-storm water from the MS4 (except as provided in Permit)*
- *No degradation or loss of State-designated beneficial uses of receiving waters as a result of storm water discharges from the MS4. (Unless authorized by the State in accordance with the State Anti-Degradation Policy)*
- *Reduction of pollutants discharged to the Maximum Extent Practicable (MEP).*

Exempted Discharges – the OKC MS4 Permit Part II.6.(a)(1)(a-r) provides the allowable non-storm water discharge:

*(a) Permittee(s) shall continue to identify in the SWMP any categories of non-storm water that are not prohibited from being discharged into the MS4, in accordance with conditions described in items (1) and (2) below:*

*(1) Categories of non-storm water discharges that the permittee(s) may exempt from the prohibition on non-storm water entering the MS4 include:*

- (a) Water line flushing;*
- (b) Landscape irrigation;*
- (c) Diverted stream flows;*
- (d) Rising ground waters;*
- (e) Uncontaminated ground water infiltration to separate storm sewers;*
- (f) Uncontaminated pumped ground water;*
- (g) Discharge from potable water sources;*
- (h) Foundation drains;*
- (i) Air conditioning condensate;*
- (j) Irrigation water;*
- (k) Springs;*
- (l) Water from crawl space pumps;*
- (m) Footing drains;*
- (n) Lawn watering;*
- (o) Individual residential car washing;*
- (p) Flows from riparian habitats and wetlands;*
- (q) Dechlorinated swimming pool discharges (excluding filter backwash or discharges associated with salt water pool systems).*



- (r) *Discharges from emergency firefighting activities provided procedures are in place for the Incident Commander, Fire Chief, or other on-scene firefighting official in charge to make an evaluation regarding potential releases of pollutants from the scene. Measures must be taken to reduce any pollutant releases to the maximum extent practicable subject to all appropriate actions necessary to ensure public health and safety. These procedures must be documented in your SWMP. Discharges or flows from firefighting training activities are not authorized by this permit.*
- (s) *Surface water impoundment discharges from draining activities (provided that controls are put into place prior to commencement of any draining activities not associated with precipitation to limit the discharge of any associated pollutants or sediments and to control the quantity of the discharge rate and volume as to not cause or contribute to significant bank erosion, streambed scour or downstream flooding).*

\*Bold items are proposed changes submitted in the permit renewal application submitted September 15, 2017.

Retention of SWMP Records is described Part II.H of the OKC MS4 permit:

*The permittee(s) shall retain the SWMP developed in accordance with Parts II and III for at least three (3) years after the coverage under this permit terminates. A photostatic copy, photograph, microphotograph, photographic film or optical disk of the original records will be acceptable.*

#### Municipal Code Enforcement

Storm water related violations can be found in Chapter 16, 48 and 57 of the OKC Municipal Code. SWQ has multiple approaches to administrative enforcement proceedings. The violation circumstances and internal policy drive the level of enforcement used in each situation. In most cases, the following administrative enforcement remedies will be used; Notice of Violation, Consent Orders, Show Cause Hearing, Compliance Order and associated Appeal procedures (see [Appendix K](#)). Suspected criminal enforcement proceedings may be handled by OKC or referred to the Oklahoma Department of Environmental Quality. Storm water related code violations are defined in 1-6(a-e) of OKC Municipal Code. Item c provides: *“Except as otherwise expressly provided in this Code, all violations of this Code are declared to be misdemeanors and are classified as either a Class “a” offense or a Class “b” offense. In the absence of provisions to the contrary, including but not limited to a specific penalty, violations of this Code are a Class “a” offense. A person convicted of a Class “b” offense shall be punished by a fine not exceeding \$1,200.00 plus costs and fees or imprisonment in the City Jail not exceeding six months or by both such fine and imprisonment. A person convicted of a Class “a” offense shall be punished by a fine not exceeding \$500.00, excluding costs and fees. With respect to violations of this Code that are continuous with respect to time, each day the violation continuous is a separate offense. Item e goes on to state “the imposition of a penalty does not prevent revocation or suspension of a license, permit or franchise.”*

**9. Cooperating Departments, Agencies and Communities:**

| <b>Agency</b>                                  | <b>Roles / Responsibility</b>   |
|--|---|
| OKC Public Works                               | Administration of all Public Works programs, projects, personnel, funding sources and operations.   |
| OKC IT Department                              | Responsible for internal technology programs including data storage, databases, telemetry, cellular capabilities and internet based resources.  |
| OKC Public Information Office                  | Responsible for all public information releases including review of brochures, media announcements, educational campaigns etc.  |
| Municipal Contractors                          | Responsible for various contract aspects of debris cleanup, wastewater operations, spill remediation/cleanup, general maintenance, engineering, construction, demolition, among others. Contractors are accountable to provide a service which is in accordance with City Policies and ordinance. |
| OKC Utilities Department                       | Administration of all Utilities Department projects, programs, contracts, personnel, funding sources and operations.  |
| OKC, Utilities Department Solid Waste Division | Administration of programs to control and properly dispose, recycle, and reduce solid waste from residences and businesses in OKC.  |
| Parks and Recreation Administration            | Administration of all Parks and Recreation Department projects, programs, contracts, personnel, funding sources and operations.   |
| Oklahoma Department of Transportation          | Co-permittee with the City of Oklahoma City with regard to the OKC MS4 Permit   |
| Oklahoma Turnpike Association                  | Co-permittee with the City of Oklahoma City with regard to the OKC MS4 Permit   |

| Agency                                       | Roles / Responsibility   |
|--|--------------------------|
| Oklahoma Department of Environmental Quality | Primary oversight Agency |

**10. Area-Specific Requirements:**

A-B language is taken partially or wholly from the OKC MS4 Permit OKS000101 Part II.B.1-2.

A. Waters identified by the latest CWA § 303(d) list of impaired waters must include all necessary BMPs that will ensure that the impairment caused by identified pollutants in your receiving waters will, in future discharges, not cause, have the reasonable potential to cause, or contribute to an in-stream exceedance of water quality standards.

B. Discharge of a pollutant into any water for which a TMDL or watershed plan in lieu of a TMDL for that pollutant has either been established or approved by the Oklahoma Department of Environmental Quality (ODEQ) or the Environmental Protection Agency (EPA) is prohibited unless your discharge is consistent with that TMDL or watershed plan.

The following listed TMDLs are those which delegate a waste load allocation (WLA) to OKC and contain requirements within the TMDL (such as a Compliance Plan, Bacteria Reduction Plan or Monitoring Plan) to comply with the load reduction necessary to meet the WLA.

Area 1: Lake Thunderbird Report for Nutrient, Turbidity and Dissolved Oxygen TMDLs.

- Lake Thunderbird Watershed in OKC including Hog Creek (OK520810000030\_00); West Branch of Hog Creek (OK520810000040\_00), East Elm Creek (OK520810000110\_00); Elm Creek (OK520810000100\_00); West Elm Creek (OK520810000140\_00); Kitchen Creek (OK520810000150\_00); Kitchen Lake (OK520810000160\_00); North Fork of the Little River (OK520810000170\_00); and Little River (OK52081000080\_00).

Area 2: Bacteria and Turbidity Total Maximum Daily Loads for the Cimarron River Study Area, Oklahoma (OK620900, OK620910)

- Bluff Creek Watershed (OK620910040140\_00) from Lake Hefner downstream to OKC boundary.

OKC waters which are listed on the most recent 303(d) list can be found in [Appendix F](#) of the SWMP. Thirty-nine stream segments and lakes are identified as category 5a, 5b, or 5c waterways. Waters identified in the 2014 Integrated Report within OKC can be found in Appendix D and include 102 waterbodies (streams and lakes).

**11. Analysis:**

The Storm Water Utility Fee, reimbursements, co-permittee annual fees, permit fees and miscellaneous charges fund the operations of storm water management in OKC. However, as

program demands increase, future adjustments to the Stormwater Utility Fee charge may be necessary.

## SWMP Component 2: Areas of New Development and Significant Re-development Program

### 1. Program Components:

- A. Examine all construction projects submitted for plan review. Require all plans to contain a site plan indicating Best Management Practices for sediment and erosion controls and when applicable, require a DEQ Storm Water Discharge Permit (OKR10) to be obtained before receiving final approval.
- B. Continue to partner with the Development Services Department, Development Center in requiring Storm Water Quality's final inspection before a Certificate of Occupancy is issued.
- C. Review local ordinances or regulations: Identify any legal regulatory barriers which prohibit alternative storm water management design practices [e.g., Low Impact Development (LID)] which function as infiltration, pollutant removal, storage, evapotranspiration or alternative conveyance practices.
- D. Develop an educational program which provides information regarding alternative storm water management practices to City staff, engineers, the development community and other stakeholders.
- E. Conduct educational events which include information regarding LID, pollutant removal, storage and other alternative storm water management processes and controls.
- F. Work with the development community, other stakeholders and City staff to propose updates to Municipal Code with regard to remove any legal and regulatory barriers identified in activity C above and allow alternative storm water management practices.
- G. Update SWMP as necessary to include criteria and procedures for determining requirements for structural and non-structural controls on new and significant re-construction of roads and highways.
- H. Update construction Best Management Practices Manual as necessary for use by the regulated development/construction community.

### 2. Definitions:

*OKR10* - General Permit for Construction Activities within the State of Oklahoma. This permit is generally authorized for a 5-year term. This permit defines the requirements of certain land disturbing and construction related activities within the jurisdictions of the State of Oklahoma and applicable MS4's.

*BMP* – Best Management Practice are grouped into two categories; structural and non-structural. Non-structural BMPs are behavioral changes or efforts designed to prevent or reduce waterborne pollutants before they enter the storm drainage network. Structural BMPs are constructed facilities generally designed to treat or remove waterborne pollutants after they enter the MS4. BMPs can also be referred to as a Stormwater Control Measure (SCM).

SWPPP – Storm Water Pollution Prevention Plan is a document that identifies the activities conducted at a site to eliminate or reduce the discharge of pollutants generated from activities at the location. SWPPP include information regarding structural and non-structural control practices, physical features of the site, spill prevention and response, materials storage, site inspections, employee training among other topics. The SWPPP is a living document which should be updated as necessary when site conditions change, control practices become unnecessary and modification is needed to ensure compliance with relevant code.

**3. Ordinances:**

| <b>Ordinance</b> | <b>Title</b> | <b>Language / Description</b>  |
|------------------|--------------|--|
| §59-10250(d)     | Paving       | Ordinance provides requirements for off-street parking, aisles and access driveways and driveway approaches. Item d. specifically details the requirements of alternative pervious surfaces including pervious pavement. |

**4. Standard Operating Procedures:**

| <b>SOP</b> | <b>Name</b>          | <b>Revision</b> |
|------------|----------------------|-----------------|
| SOP #48    | Construction Section | 10/15/2007      |

**5. Resources:**

Administration of the Areas of New Development and Re-Development components for OKC is provided by the Public Works Department, Storm Water Quality Management Division. The program is funded through the Drainage Utility Fee. The Drainage Utility Fee (including reimbursements, permits, interests, etc.) provides ~\$17-21 million for operating and capital expenses related to storm water management.

The Storm Water Permitting Program Account provides the funding for the Industrial and High Risk Runoff Program and the Construction Site Runoff Program. The FY18 budget for this account is \$1,282,164.00.

| <b>Classification Title</b>           | <b>Range</b> | <b># of Personnel</b> |
|---------------------------------------|--------------|-----------------------|
| Environmental Protection Manager      | 516          | 1                     |
| Environmental Unit Supervisor         | 513          | 2                     |
| Environmental Unit Specialist         | 511 (NE)     | 0                     |
| Environmental Technician              | 509 (NE)     | 5                     |
| Laborer II                            | PTP          | 0                     |
| *Contract Labor (Qualified Personnel) | Hourly       | 0                     |

**6. General Program Description:**

Multiple Departments, Divisions, and Sections are involved with this component of the SWMP. The component is initiated through development guidelines, plan submittals to the City,

construction site inspections, final occupancy and ultimately post development controls. The OKC Planning Department, Utilities Department, Development Services Department and Public Works Department are involved with the design criteria, permitting, inspection and approval processes.

### Development Policy, Guidelines and Criteria

OKC Planning Department provides planning and study services to improve the welfare of the people and the community by creating more convenient, equitable, healthful, efficient, and attractive places for present and future generations. Planning plays a crucial role in developing policies which balance new development, essential services, environmental protection and innovative change.

PlanOKC is a comprehensive policy document used by City leaders, developers, business owners, and citizens to make decisions about future growth, development, policy, and capital improvements. PlanOKC provides long range policy direction for land use, transportation, economic development, housing, public services, and natural and cultural resources. The plan provides policy framework which contributes a significant role in reducing storm water contamination. The framework of the plan consists of seven sections. Elements of sustainability, green infrastructure, storm water quality control, preservation, resource enhancement and resource management are identified by the initiatives below.

- Preserve or enhance natural areas and open space connectivity.
- Improve water quality and conserve water resources.
- Establish a comprehensive urban forestry program.
- Reduce the impacts of environmental hazards.
- Improve air quality.
- Promote environmental stewardship.
- Enrich biodiversity and natural habitats in urban, suburban, and agricultural areas.

As a development policy document, this is the largest component of promoting green infrastructure, sustainability and storm water quality enhancement to date. PlanOKC can be accessed online at <http://planokc.org>. OKC's website provides an easy method to evaluate environmental related initiatives throughout the plan. For example, the topic environment will provide all initiatives in each of the seven sections. A discussion is provided to help consumers better understand each initiative researched. OKC's Development Guide can be accessed at the following URL: <http://planokc.org/development-guide/> and was developed to define the overall direction of PlanOKC. The seven "Big Ideas": 1) Transportation Choice & Mobility; 2) Housing Choice; 3) Healthy Citizens; 4) Community Attractiveness; 5) Thriving Neighborhoods; 6) Efficient Development; and 7) Natural Character are each described for the consumer. The land use plan provides revised land use designations which consists of seven land use typology types created through public input and technical analysis regarding housing, transportation, environmental considerations and the efficiency of providing public services. 70% of PlanOKC survey respondents support protecting natural areas, including providing better regulations and incentives to protect environmental and natural resources.

The Public Works Department is in the process of developing a Drainage Criteria Manual. This manual describes the management information relative to drainage policies, procedures for analysis, submittal and review of drainage design, hydrological procedures, hydraulic analysis for channels, storm sewer systems, stormwater storage, culverts and bridges, requirements for pre-and post-construction stormwater pollution protection, and requirements for maintenance and operation of drainage facilities. The intended audience or users are engineers or other professionals with experience in civil engineering, calculating peak storm flows, estimating flood hydrographs and applying hydraulic concepts.

Chapters 10 and 11 provide relevant information regarding storm water quality improvements and low impact development/green infrastructure. Criteria are provided for structural controls such as grass buffers, grass swales, extended detention basins, and other types of structural BMPs. As previously discussed, the OKC Drainage Criteria Manual is currently in draft. A peer review process has been established and the final document will be provided to OKC Council for approval consideration.

#### SWQ Plans through Construction

OKC's Best Management Practices Manual for Construction and Land Disturbing Activities provides engineers, developers, contractors or builders the information necessary to design, install and maintain appropriate BMPs to meet storm water quality regulations. This manual can be accessed online at the following link [www.okc.gov/swq](http://www.okc.gov/swq).

OKC's building and construction permitting system requires a review of all public and private construction plans submitted to Public Works, Utilities and Parks Departments. During this process, check prints are sent to multiple City offices for review, including SWQ. During the review process, check print plans are reviewed for compliance with OKC Municipal Code, Corps of Engineers 404 Permit requirements, 303(d) listed areas of concern, building codes and storm water best management practices to reduce or eliminate sediment erosion and other construction related pollutant sources. Plans are examined to determine compliance with OKC municipal code. Deficiencies are noted and provided back to the submitting entity for correction. The final site plan must indicate the correct installation practices, BMP type and location of BMP's selected for each construction site. Before the final plans are approved by the City and land disturbing activities begin, OKC requires the owner/operator of a construction site to obtain a SWQ Land Disturbance or Construction Discharge Permit by submitting a Notice of Intent (NOI), SWPPP, Erosion Control Site Plan, and permit fee.

Land disturbing activities which have been completed and meet certain condition are qualified for a final inspection or "final". The owner/operator must request a final from the SWQ Manager or designee. OKC will inspect the site to determine if the following conditions have been met for a Notice of Termination (NOT) to be issued:

- The site has been stabilized with a vegetative density of at least 70% per square foot of the original ground cover, or



- All storm water discharges from construction activities have been eliminated, or
- A transfer of owner/operations; operator is no longer in charge of the site and a transfer of coverage to a different operator has been received.

If the conditions have been met, OKC will approve the NOT and submit the final to the Development Services Development Center. If conditions have not been met then the NOT is not accepted and a re-inspection fee is charged for each NOT inspection thereafter until the aforementioned conditions are achieved. From the permit issuance to final termination, OKC conducts regular inspections to insure compliance with the SWPPP.

Post Construction BMP Tracking

Post construction tracking of BMPs is imperative for ensuring the designed pollutant removals are being achieved over time. OKC has created a database which BMPs are identified and relevant information is consolidated. This effort includes multiple Divisions as the information may be gathered by several Departments in the City. Some BMPs are assessed on a complaint basis while other structural BMPs are assessed on a scheduled basis. In cases which the BMP can be measured (such as a sand filter or grit vaults), results will be tracked to ensure that proper maintenance is being conducted.

**7. Component Metrics:**

| <b>Task</b>   | <b>Metric</b>                | <b>Reported Figure</b>               | <b>Goal / Reporting</b>                                  |
|---|------------------------------|--------------------------------------|--|
| Examine All Construction Plans Submitted for Plan Review                              | # Plan Reviewed              | # Plans Reviewed Annually            | Based on Demand/Annually with SWQ Annual Report          |
| Conduct Final Inspection Prior to Issuing Certificate of Occupancy                    | # Construction NOT Submitted | # Construction NOT Approved Annually | Based on Demand/Annually with SWQ Annual Report          |
| Review Ordinances for Regulatory Barriers of LID and Alternative SWQ Control Measures | List Ordinances Reviewed     | Ordinances Reviewed                  | Provide at least one review per year/ Reporting Annually |

| <b>Task</b>   | <b>Metric</b>  | <b>Reported Figure</b>          | <b>Goal / Reporting</b>   |
|---|--|---------------------------------|---|
| Provide Education Regarding LID and Alternative Storm Water Control Measures                                    | Number of Educational Events Where Traditional and Non-Traditional Structural Control Information Is Presented | # of Events and # in Attendance | 1 Presentation or Educational Session Per Year / Reported Annually      |
| Conduct Educational Events Which Include LID, Pollutant Removal, Storage and Alternative SQMs                   | Number of Educational Events Where LID, Pollutant Removal, Storage or Alternative SQMs are Presented           | # of Events / # in Attendance   | Annual Presentation or Educational Session Per Year / Reported Annually |
| Update SWMP to Include Criteria and Procedures for Structural and Non-Structural Controls of Roads and Highways | Provide References within the SWMP to Criteria Related to Roads and Highways                                   | Report Any Updates              | Review 1 Time each Year/Annually  |
| Update the Construction BMP Manual (as needed)  | Record Updates (as needed)   | Report Any Updates              | Review 1 Time each Year/Annually  |

**8. Narrative Goals:**

Provide a description of the policies, procedures, criteria and performance standards for applicable development and re-development in OKC. Provide a review process for the SWMP, BMP documentation, applicable ordinances for enhancement of traditional and innovative structural control measures which may partially or wholly incorporate elements of LID and green infrastructure to enhance the removal of pollutants generated from precipitation runoff.

**9. Cooperating Departments, Agencies and Communities:**

| <b>Agency</b>                           | <b>Roles / Responsibility</b>   |
|---|---|
| OKC, Public Works Dept., Administration | Administration of all Public Works programs, projects, personnel, funding sources and operations. |

| Agency   | Roles / Responsibility   |
|--|--|
| OKC, Public Works Dept., Storm Water Quality Division          | Primary permitting, inspection, enforcement, education/outreach and is the reporting agency for OKC MS4 NPDES compliance.  |
| OKC, Public Works Dept., General Obligation Bond (GOB) Program | Charged with the development of projects funded through General Obligation funds. These funds may be used for specific storm water quality related projects on new or re-development projects or used in the enhancement of existing project scopes to include water quality control features. |
| OKC, Public Works, Field Services                              | Responsible for inspection services of City and private projects to ensure construction and installation is per specification of City codes.   |
| OKC, Public Works Dept. Engineering – Technical Review         | Responsible for development of the Drainage Criteria Manual and drainage related review including detention, retention, storm water control measures, among others.  |
| OKC, Planning Department                                       | Development of Planning Documents and Studies which provide policy and guidance to the development community.  |
| OKC IT Department  | Responsible for internal technology programs including data storage, databases, telemetry, cellular capabilities and internet based resources.   |
| OKC Parks Department   | Responsible for Park Operations (including trash removal and grounds keeping of those facilities). Charged with the design and construction of Park facilities which may have elements of LID, conservation, preservation or other SWCMs.  |

| Agency                                       | Roles / Responsibility  |
|--|---|
| OKC Utilities Department                     | Charged with installation, repair and maintenance of water and wastewater infrastructure which are often located at or near roadways. Responsible for the collection of solid waste and any spills which occur on roadways from the aforementioned collection activities. |
| Oklahoma Department of Environmental Quality | Primary oversight Agency  |

**10. Area Specific Requirements:**

In 2017, the OKC Planning Commission approved the use of a low impact technique, pervious paving, in plans submitted to OKC for Planned Unit Development (PUDs) and Simplified Planned Unit Developments (SPUDs). Applicants seeking to use pervious paving are required to include language in the PUD/SPUD document allowing its use pending staff review and approval of submitted specifications, drawings and technical details.

OKC residents recently approved the 2017 General Obligation Bond Authorization package. This package includes propositions related to street, bridge, traffic control, transit, parks and recreation, drainage control, police and fire improvements and enhancements. Several new or upgraded facilities are proposed including libraries, civic complexes and the downtown City arena. These enhancements or new construction are proposed throughout OKC and will be significant re-development in some cases. OKC will explore opportunities for water quality enhancement features to be added to project scopes.

**11. Analysis:**

Not applicable for this SWMP Component.

## SWMP Component 3: Flood Control Projects and Structural Controls Program

### 1. Program Components:

- A. Update Capital Improvement Program (CIP) list for the City of Oklahoma City proposed General Obligation Bond (G.O. Bond) authorization for 2007.
- B. Submit a list of active Drainage and Paving Improvement projects and the status of each project.
- C. Continue the Drainage Maintenance Program related to repair of drainage structures and creek channel cleaning.
- D. Continue to review plans for the development of retention/detention ponds for compliance with Oklahoma City Drainage and Flood Control Ordinance.
- E. Continue to evaluate, prioritize, and install structural controls on developed areas or retrofitting of existing structures.

### 2. Definitions:

*Flood Control* - controls which are constructed and maintained to prevent a general or temporary condition of partial or complete inundation of normally dry land areas from:

- a) the overflow of inland or tidal waters.
- b) the unusual and rapid accumulation of runoff of surface waters from any source.

### 3. Ordinances:

| Ordinance | Title                           | Language / Description  |
|-----------|---------------------------------|---|
| §16.1     | Purpose and Scope               | It is the intent of this chapter to protect the general health, safety and welfare of the public from the hazards and damages of flooding from the various drainage areas in the City; to provide clean and sanitary channels for runoff; to prevent pollution of watersheds, streams and natural drainage channels; to prevent the encroachment of building or improvements on natural drainage channels; to equitably apportion the cost of improvements; to protect natural scenic areas; and to provide for the conservation of the natural resources of the area. All subdivisions of land and all developments or improvements of any character which affect drainage in any portion of the City shall be subject to the provisions of this chapter. This chapter in not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this chapter and another ordinance conflict or overlap, whichever imposes the more stringent restrictions shall prevail. |
| §16-4     | Responsibility for Improvements | Ordinance establishes the responsibilities of the community and developer for primary and secondary channels for land   |

| <b>Ordinance</b> | <b>Title</b>  | <b>Language / Description</b>  |
|------------------|---|--|
|                  |   | improvements including dedication of any necessary easements.  |
| §16-5            | Methods for Calculating Stream Flow and Runoff                            | Provides the formulas and values for calculating stream flow and runoff for OKC policies and regulations.  |
| §16-6            | Primary Drainage Channel Requirements                                     | Ordinance provides the requirements for primary drainages located within, or immediately adjacent to an improvement, construction area, development or subdivision.  |
| §16-7            | Secondary Drainage Channel Requirements and Surface Drainage Requirements | Ordinance provides the requirements for secondary drainage channels and surface drainage requirements which are within, or immediately adjacent to, an improvement, development or subdivision.  |
| §16-8            | Rural Subdivisions  | Ordinance provides the drainage requirements for rural acreage subdivisions (one acre or larger lots).   |
| §16-10           | Major River Channel Requirements  | Ordinances provide the drainage requirements for all major river channels which are located within or immediately adjacent to an improvement or subdivision.   |
| §16-11           | Requirements Relating to Improvements                                     | Ordinance provides that construction of bridges and culverts at arterial streets and major thoroughfares may be partially or fully funded by the City if certain conditions are met and subject to the availability of funds. A formula is provided to estimate the cost borne by the City. Item b discusses the option of the owner bearing the cost, if desired.                                       |
| §16-12           | Improvements Required by Planning Commission                              | When the Planning Commission, subsequent to the submission by a developer of a preliminary plat, requires a bridge or culvert at a residential street and the required hydraulic cross section is greater than 40 square feet, the City may, but is not required to, participate in the cost of construction of the bridge or culvert in the same manner provided for in Section 16-11.                  |
| §16-13           | Bridge and Culvert Requirements   | All flow of water across continuous streets or alleys shall be through culverts or bridges. Bridges and culverts shall be sized to accommodate a 50-year frequency rain, without increasing the depth of flow in the channel. Design of bridges and culverts shall conform to city construction specifications.  |
| §16-14           | Closed Storm Sewers   | Closed storm sewers shall be constructed of precast or prefabricated pipe or built in place of closed box design to conform with City construction specifications and requirements. Storm sewers carrying runoff from streets may be designed to serve ten-year frequency rain for the drainage area involved, provided that in sump areas the storm sewer shall be designed to ensure that any overflow |

| <b>Ordinance</b> | <b>Title</b>                | <b>Language / Description</b>  |
|------------------|-----------------------------|--|
|                  |                             | can reach a suitable outlet without inundating any building pad.   |
| §16-15           | Open Paved Storm Drainage   | Open paved storm drainage channel shall be constructed in accordance with City specifications and requirements. Side slopes above the paved section shall be shaped and sodded on a slope of three horizontal to one vertical or flatter. Fences shall not be erected closer than one foot (measured horizontally) to the edge of the paved section.   |
| §16-16           | Areas Outside Subdivisions  | The City reserves the right to require improvements to preclude any backup of tail water inundating any areas outside of the dedicated drainage easements in the subdivision as a result of a 50-year frequency flood.   |
| §16-17           | Administration              | This ordinance designated the City Engineer as the Local Floodplain Administer.  |
| §16-18           | Applicability of Provisions | Ordinance provide the provisions that apply to all lands, tracts, parcels, or lots in part or whole which are traversed by, encompassed by or lying within 200 feet of the external boundary of the delineated floodplain for that watercourse as shown in the official floodplain maps or an area deemed floodprone by the City Engineer.   |
| §16-19           | Floodprone Area             | Provides the provisions, review and measures for developing in floodprone areas to assure protection from flooding.  |
| §16-20           | Penalty                     | Any persons who shall violate any of the provisions of this chapter shall be deemed guilty of a Class “a” offense. For any second or subsequent offense and upon proof of prior conviction, said person shall be guilty of a Class “b” offense.  |
| §16-22           | Enforcement                 | The City Engineer, Director, the Utilities Director, the Finance Director, or their designated representatives, have full authority to enforce the provisions of this chapter.   |
| §57-135          | Inspection                  | The Director shall have the right to inspect any on-site detention or retention facility at any reasonable time to determine if it is in compliance with the approved design and is capable of functioning properly. The Director shall have the right to inspect any property within the City to determine the source, quantity, quality or flow rate of stormwater and to determine the source and nature of pollutants, hazards and/or activities creating or promoting same. |

| Ordinance | Title  | Language / Description   |
|-----------|--|--|
| §60-16-1  | Fee In Lieu of On-site Stormwater Detention Facilities | Fee - \$0.075 per square foot of impervious surface installed or constructed from January 24, 1989, to June 30, 1989. Thereafter, the fee shall be adjusted on July 1, 1989, and annually on July 1 of each year thereafter in accordance with the following formula”<br>Fee = (\$0.075)(X)(Y/Z)<br>Where:<br>\$0.075 = The base fee per square foot of impervious surface.<br>X = The number of square feet of impervious surface installed or constructed.<br>Y = “Engineering New Record”: Twenty City Average Construction Cost Index as published the last week of June of the most current year.<br>Z = “Engineering News Record”: Twenty City Average Construction Cost Index as published the last week of June in the year of 1988. |

**4. Standard Operating Procedures:**

Not Applicable

**5. Resources:**

Not Determined

**6. General Program Description:**

Flood control projects and structural controls are maintained by private and public entities. Oklahoma City’s Streets, Traffic and Drainage Maintenance Division is primarily charged with the operation and maintenance of public roadways, curbs, surface and subsurface drainage within Oklahoma City. Exceptions exist for privately owned drainage, common areas, and private right-of-way/easements. Other OKC Departments which provide operation and maintenance of structural controls include the Utilities Department and the Parks and Recreation Department.

Structural control assets include detention ponds, surface and subsurface storage, curblines, channels, conduits and other drainage features designed to carry, hold, contain, remove debris and pollutants or otherwise transport storm water to receiving waters. OKC water reservoirs (Lake Stanley Draper, Lake Overholser, Lake Hefner and aqueduct) may be considered a part of flood protection system and are maintained by the Utilities Department. The Flood and Structural Control component accounts for those applicable Capital Improvement Projects as well as the operation, inspection, and maintenance of these assets.

Inspections of the drainage infrastructure is accomplished by multiple methods including



Citizen complaint/inquiry, flooding reports, Closed Circuit Television (CCTV) inspections, debris accumulation observations, and monitoring system reports, among others.

The Flood and Structural Control Program’s major components include the capital improvements projects funded through the General Obligation Bond packages, capital improvement projects funded through non-bond accounts, paving and drainage improvement projects, drainage maintenance programs, drainage evaluation programs, review of drainage detention for ordinance compliance and evaluation, and prioritization of areas and projects for implementation of structural quantity and quality control measures. Other grants, such as Community Block Development Grants, may be applied for, but these are not considered a long-term funding source.

| <b>Task</b>  | <b>Type</b> | <b>Staffing / Strategic Goal</b>  | <b>Comments</b>  |
|--|-------------|---|--|
| Complaint Response (Storm Water Quality Complaint) | Service     | Environmental Protection Manager (1); Environmental Unit Supervisor (4); Environmental Specialist (2); Environmental Technicians (17) | SWQ responds to various quality complaints at structural controls. Events such as fish kills, standing water, illicit discharge, odors, blockages, or flooding issues may be investigated.   |
| Complaint Response (Engineering Complaint)         | Service     | Drainage Management Staff (as assigned)   | Drainage Management staff respond to problem associated flooding, storm sewer sizing or other issues. Often, quality complaints are referred to SWQ for investigation.   |
| Maintenance  | Service     | Public Works - Streets, Drainage and Traffic Maintenance Division   | Division is responsible for routine and technical repairs and maintenance of flood and other drainage system controls. Programs include but are not limited to street, curb, storm sewer, outfall, rural road ditch repair and upkeep. |

| <b>Task</b>      | <b>Type</b>                           | <b>Staffing / Strategic Goal</b>                                     | <b>Comments</b>   |
|------------------|---------------------------------------|--|---|
| Maintenance      | Service                               | Environmental Technician (1), Environmental Unit Supervisor (1)      | SWQ is responsible for the inspection and maintenance of storm water control devices installed by the City. SWQ works with other Divisions as needed to obtain support for cleaning operations.   |
| Maintenance      | Asset Management                      | OKC IT Department, Public Works Department's GIS/CAD Support Program | OKC assets are identified on GIS shapefiles. This includes the storm sewer network, storm sewer junctions, ponds, streams and other features. The Hydrology network was created to provide a seamless network which combines storm sewer assets with receiving stream network assets. |
| Technical Review | Technical Evaluation of Project Scope | Public Works - Drainage Management                                   | Review of submitted plans and specifications for private and public projects to ensure compliance with drainage code and policy.  |
| Inspection       | Asset Management                      | OKC Public Works Field Services                                      | Responsible for inspecting contractors' work on all infrastructure projects. Also provides survey services and maintains the City's Pavement Management System that tracks all arterial streets and keeps a current rating on each street.  |

| <b>Task</b>                    | <b>Type</b>                 | <b>Staffing / Strategic Goal</b>                 | <b>Comments</b>  |
|--------------------------------|-----------------------------|--|--|
| Capital Improvement - Non-Bond | Project Creation/Management | Public Works – Capital Improvement Program (CIP) | Responsible for the working with various internal and external stakeholders in non-bond related capital improvements (such as libraries, non-bond funded street improvements, etc.). |
| Capital Improvement - Bond     | Project Creation/Management | Public Works – General Obligation Bond Program   | Responsible for working with various internal and external stakeholders for Bond related capital improvements including contracting firms for design and project management.         |

**7. Component Metrics:**

| <b>Task</b>                  | <b>Metric</b>                          | <b>Reported Figure</b>   | <b>Goal / Reporting</b>  |
|------------------------------|--|--|--|
| Capital Improvement Projects | Report All Active Bond Funded Projects | Bond Authorization Year, Proposition, Project Number, Location, Ward, Construction Estimate and Status (Categories include Drainage Design, Drainage Construction, Street Design, and Street Construction) | Goals are set by OKC annually. SWQ will report all active projects annually. |
| Drainage Evaluation          | Miles of CCTV Inspection               | Miles of CCTV inspection conducted by Streets and Drainage Maintenance Division and the Storm Water Quality Division/Year  | Goal is set by demands/Report Annually                                       |

| <b>Task</b>  | <b>Metric</b>   | <b>Reported Figure</b>  | <b>Goal / Reporting</b>                |
|--|---|---|--|
| Drainage Evaluation  | Number of CCTV Operations   | Number of CCTV Inspections conducted by Streets and Drainage Maintenance Division and the Storm Water Quality Division/Year | Goal is set by demands/Report Annually |
| Channel Maintenance – Debris Removal and Maintenance (Contracted)    | Number of Private Companies contracted to maintain public channels. | # Active Contracts/Year   | Report Annually                        |
| Channel Maintenance – Debris Removal and Maintenance (Contracted)    | Miles of channel maintained by contracted private companies.        | Miles of channel, storm drainage structures, number of detention structures.  | Report Annually                        |
| Channel Maintenance – Debris Removal and Maintenance (Contracted)    | Pounds of Debris Removed  | Pounds of Debris Removed/Year   | Report Annually                        |
| Channel Maintenance – Debris Removal and Maintenance (OKC Personnel) | Program Budget/Number Personnel                                     | Annual Budget and Number of Personnel Allocated to Channel Maintenance  | Report Annually                        |
| Channel Maintenance – Debris Removal and Maintenance (OKC Personnel) | Tons or pounds of debris removed                                    | Tons Removed and Properly Disposed/Year   | Report Annually                        |
| Drainage Operation and Repairs (OKC Personnel)                       | Number of Drainage Related Repairs                                  | Number of Repairs/Year (Will be reported categorically by Drainage Structure Repairs and Concrete Channel/Creek repairs)    | Report Annually                        |
| Drainage Technical Review  | Number  | Plans   | Reported                               |

| <b>Task</b>                       | <b>Metric</b>                                   | <b>Reported Figure</b>   | <b>Goal / Reporting</b> |
|-----------------------------------|---|--|-------------------------|
|                                   | Drainage Related Plans Reviewed                 | Reviewed/Year (Will be reported categorically by type Detention, Storm Drainage, Retention, Other) | Annually                |
| Stormwater Control Measures (SCM) | Description of applicable SCMs installed by OKC | Description of any SCMs installed by OKC including location, budget, and receiving watercourse.    | Reported Annually       |

**8. Narrative Goals:**

Provide sound flood control management through the consistent application and review of relevant Oklahoma City codes and standards for the design of storm drainage structures, green infrastructure, storm water quality control measures and other flood control assets. To ensure that storm water quality control structures are designed to reduce pollutants (when applicable) and are protective of life and property. Ensure that the storm drainage system is appropriately sized for the drainage basin characteristics and provide relevant studies related to those systems which are performing poorly.

Provide in-house or contractually supplied labor force to maintain drainage flood control structures and other storm water control measures in good working order to provide safe removal of storm water discharges.

Provide short and long-term funding sources for development of new structures, maintenance or enhancement of existing structures to provide for flood protection.

**9. Cooperating Agencies, Departments and Communities:**

| <b>Agency</b>     | <b>Roles / Responsibility</b>  |
|-------------------|--|
| OKC Public Works  | Administration of all Public Works programs, projects, personnel, funding sources and operations.  |
| OKC IT Department | Responsible for internal technology programs including data storage, databases, telemetry, cellular capabilities and internet based resources. |

| Agency                                | Roles / Responsibility  |
|---------------------------------------|---|
| OKC Public Information Office         | Responsible for all public information releases including review applicable brochures, media announcements, educational campaigns, etc. Additionally responsible for the OKC Action Center. This service provides residents with an easy forum to report issues with a formal response system.                                  |
| Municipal Contractors                 | Responsible for various contract aspects of debris cleanup, wastewater operations, spill remediation/cleanup, general maintenance, design, engineering, construction, demolition, among others. Contractors are accountable to provide a service which is in accordance with City Policies, ordinance and applicable standards. |
| Oklahoma Department of Transportation | Co-permittee with the City of Oklahoma City with regard to the OKC MS4 Permit. Drainage and flood controls may be cooperative with the ODOT.  |
| Oklahoma Turnpike Association         | Co-permittee with the City of Oklahoma City with regard to the OKC MS4 Permit. Drainage and flood control may be cooperative with OTA.  |

**10. Area Specific Requirements:**

The City will continue to evaluate, prioritize and install structural controls on developed areas or retrofitting of existing structures. These structures shall be operated in a manner to reduce flooding hazards and the discharge of pollutants to the MEP. Fee in lieu of detention is considered by OKC on a case-by-case basis. The map in [Appendix AC](#) provides the areas where detention is required. Construction which is within the detention required areas are subject applicable detention regulations, however, the option of fee in lieu can be proposed to OKC.

**11. Analysis:**

No analysis is required for the SWMP component.

## SWMP Component 4: Construction Site Runoff

### 1. Program Components:

- A. Continue the construction site runoff pollution prevention program, through permitting, inspections, and investigations.
- B. Continue the construction site runoff pollution prevention program by regulating runoff from construction sites, including necessary modifications to local ordinances for enforcement.
- C. Continue the construction site runoff pollution prevention program through public outreach and annual workshops.

### 2. Definitions:

*Best Management Practice (BMP)* - shall mean the best available practices or devices that, when used singly or in combination, eliminate or reduce the contamination of surface and/or ground waters.

*Construction activity* - means clearing, grading, mining, and excavation activities except operations which are not part of a common plan of development or sale.

*Construction Storm Water Discharge Permit* - Permits establish the control measures necessary to reduce or eliminate the discharge of non-storm water from construction-sites and related activities to the municipal separate storm sewer system (MS4) and where necessary, contain applicable water quality based controls.

*Land Disturbing Activity* - is defined as any land change which may result in soil erosion from water and wind and the movement of sediments into community waters or onto lands and roadways within the community, including, but not limited to, clearing, dredging, grading, excavating, transporting, storing, stockpiling, mining, disposing, and filling of soil, earth materials, or land.

*Operator* – means a person that: (1) has operational or supervisory control over the premises or equipment; or (2) has the day-to-day operational or supervisory control of activities at a work site or construction location sufficient to comply with or to ensure compliance with plan requirements and permit conditions.

*QAP – Quality Assurance Program* – a program implemented by the Section Manager to provide relevant on the job training and employee review to ensure audits are being conducted in accordance to City policy, standard operating procedures with safety and efficiency.

### 3. Ordinances:

| Ordinance | Title     | Language / Description                         |
|-----------|-----------|--|
| §16-9     | Detention | Includes temporary sediment control detention. |

| <b>Ordinance</b> | <b>Title</b>                                    | <b>Language / Description</b>   |
|------------------|---|---|
| §16-21           | Erosion and Sediment Control                    |   |
| §48-16(a)        | Land Disturbing Activities – Requiring a Permit | No person may perform any land disturbing activity, or cause or allow any land disturbing activities on land owned or controlled by such person without first obtaining a valid site-specific permit. All land disturbing activities must be performed in accordance with this chapter.   |
| §48-17           | Implementation and Enforcement Procedures       | Ordinance covers issuance of permits, implementation of permits-permittee’s duties, and suspension or revocation of a permit.   |
| §48-18           | Penalty   | A penalty is hereby established whereby any person who shall violate any provision of this chapter shall be deemed to be guilty of a Class “a” offense. For any second or subsequent offense and upon proof of conviction, said person shall be guilty of a Class “b” offense. Any person who is required by any provision of this chapter or by any other law to obtain a permit prior to engaging in conduct that is regulated by this chapter, and who fails or neglects to obtain such a permit upon request by a City official, shall be guilty of a Class “b” offense. Each day on which a violation shall occur or continue to occur shall be deemed a separate offense. Upon written certification by the Director of the violation of any section of this article, the Municipal Councilor is authorized to petition any court of competent jurisdiction for an injunction to enjoin the continuance of such violation. This remedy shall be cumulative of and to all other enforcement powers granted to the City by the terms of its charter or any ordinance, or by the laws of the State. If any provisions of this article or the application thereof to any person or circumstance shall be held invalid, the remainder of this article and the application of such provision to other persons and circumstances shall nevertheless be valid, and the City Council hereby declares that this ordinance would have been enacted without such invalid provision. |
| §48-19           | General Land Disturbing Activity                | All land disturbing activities shall be in conjunction with and permitted under the division of this article. Application must be applied for under the “Oklahoma General OPDES Permit for Stormwater Discharged Associated with Construction Activity.” If a General OPDES Permit is applied for a copy of the Notice of Intent (NOI), Stormwater Pollution Prevention Plan (SWPPP), and Erosion Control Site Plan (ECSP) must be sent to the Manager of the Stormwater Quality Management Division and a permit fee must be paid.   |
| §57-147(a-       | New Facility                                    | Ordinance requires all new utilities, industrial, commercial,   |



| <b>Ordinance</b> | <b>Title</b>                               | <b>Language / Description</b>  |
|------------------|--|--|
| d)               | Permits                                    | institutional and multi-family residential facilities and residential subdivisions obtain a Construction Stormwater Permit. The ordinance also provides the minimum standards for issuance of the aforementioned permit.   |
| §57-148          | Permit Application Fees                    | Ordinance provides the permit application fees and re-inspection fees.   |
| §57-149          | Maintenance and Submittal of Records       | Appropriate proof and records of compliance with the provisions of the Oklahoma City Storm Water Discharge Permit or Land Disturbing Permit will be maintained in the office of the designated contact person and be made available for review at any time by the Manager. A notification for a permit re-issuance request will be sent yearly on the anniversary date of the permit to the Manager. |
| §57-150 – 57-161 | Transfer of Permit; Signatory Requirements | Covers multiple land disturbing permit requirements and sediment and erosion control criteria.   |

**4. Standard Operating Procedures:**

| <b>SOP</b> | <b>Name</b>          | <b>Revision</b> |
|------------|----------------------|-----------------|
| SOP #48    | Construction Section | 10/15/2007      |

**5. Resources:**

Administration of the Construction Site Runoff Program components for OKC is provided by the Public Works Department, Storm Water Quality Management Division. The program is funded through the Drainage Utility Fee. The Drainage Utility Fee (including reimbursements, permits, interests, etc.) provides ~\$17-21 million for operating and capital expenses related to storm water management.

The Storm Water Permitting Program Account provides the funding for the Industrial and High Risk Runoff Program and the Construction Site Runoff Program. The FY18 budget for this account is \$1,282,164.00.

| <b>Classification Title</b>           | <b>Range</b> | <b># of Personnel</b> |
|---------------------------------------|--------------|-----------------------|
| Environmental Protection Manager      | 516          | 1                     |
| Environmental Unit Supervisor         | 513          | 1                     |
| Environmental Unit Specialist         | 511 (NE)     | 0                     |
| Environmental Technician              | 509 (NE)     | 5                     |
| Laborer II                            | PTP          | 0                     |
| *Contract Labor (Qualified Personnel) | Hourly       | 0                     |

**6. General Program Description:**

The erosion and sediment control program consists of permitting, inspections, complaint response, data storage, enforcement actions, operator education, and reporting. The OKC Best Management Practices Manual for Construction and Land Disturbing Activities is available online [www.okc.gov/swq](http://www.okc.gov/swq) for engineers, contractors and builders. Five Environmental Technicians are supervised by one Environmental Unit Supervisor. OKC issues construction related storm water quality discharge permits prior to the commencement of construction of new utilities; industrial, commercial or institutional facilities; residential subdivisions; and the demolition of structures. Permit fees are \$55.00 each year for the life of the permit. Construction related activities spanning multiple years are required to remit an additional permit fee of \$55.00 at the anniversary of the date of permit issuance. Late fees of \$15.00 are applied for each month past the expiration date. The owner/operator is responsible for developing, implementing, adjusting and maintaining a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP is a living document which provides the framework, staff, structural and non-structural controls with which sediment and other construction related pollutants will be controlled at the site. This document should be readily available for OKC inspectors to review during routine audits. At the termination of the permitted activity, operators/owners will notify the Manager and submit a Notice of Termination (NOT). OKC will inspect the location to ensure that the following criteria are met:

- Site stabilization of exposed soil to a density of 70% of uniform perennial vegetative cover without large bare areas;
- All storm water discharges from construction activities have been eliminated;
- A change in owner/operator status has been properly transferred

OKC’s goal is to inspect all permitted land development and construction sites monthly. On final inspection, if conditions are met, a Certificate of Occupancy will be issued. If conditions are not met, any additional NOT inspections will be charged a \$35.00 re-inspection fee.

| <b>Task</b> | <b>Type</b>                                      | <b>Staffing / Strategic Goal</b>                            | <b>Comments</b>   |
|-------------|--|---|---|
| Permitting  | Construction Storm Water Discharge Permit        | Administrative Staff (2); Environmental Unit Supervisor (1) | Required documentation: Notice of Intent; Storm Water Pollution Prevention Plan; Erosion Control Site Plan; Permit Application Fees; and NOT. |
| Permitting  | OKC Construction and Land Disturbing BMPs Manual | Administrative Staff (2); Environmental Protection Manager  | The OKC BMP Manual for Construction and   |

| <b>Task</b>        | <b>Type</b>                                 | <b>Staffing / Strategic Goal</b>  | <b>Comments</b>   |
|--------------------|---|---|---|
|                    |   | (1); Environmental Unit Supervisor (1)  | Land Disturbing Activities is updated on an as-needed basis. The manual can be accessed at the OKC website.   |
| City Inspections   | Land Disturbing/Construction                | Construction Technician (5); Environmental Unit Supervisor (1)  | Inspections are conducted every 6-8 weeks (pending current job demands).  |
| Complaint Response | Sediment or Construction Related Complaints | Environmental Technician (5); Administrative Staff (2); Environmental Unit Supervisor (1); Environmental Protection Manager (1) | Filed complaints may originate from several sources: OKC Action Center, field observation, City staff/City project, and resident contact.   |
| Data               | Data Entry / Data Storage                   | Administrative Staff (2); Environmental Technicians (5); Environmental Unit Supervisor (1)                                      | Database, Various Spreadsheets, Other Media (site photographs, scanned images). Accela V360 Automation Permitting Database is the primary permit/inspection database, secondary data storage would be Excel spreadsheets. Photographs and other data sources are housed on the OKC network. |
| Enforcement        | Code Enforcement                            | Environmental Technician (5); Environmental Unit Supervisor (1); Administrative Staff   | Notice of Violation; Stop Work Order; Cease and Desist; Compliance Order; Show Cause  |

| <b>Task</b>            | <b>Type</b>   | <b>Staffing / Strategic Goal</b>   | <b>Comments</b>  |
|------------------------|---|--|--|
|                        |   | (2); Environmental Protection Manager (1); OKC Municipal Courts.   | Hearing; Verbal Communication; Re-inspection Fees; Verbal Warnings; Affidavit of Probable Cause.   |
| Education and Outreach | Workshop(s)   | Environmental Protection Manager (1); Environmental Unit Supervisor (1); Environmental Technician (5); Administrative Staff (1). | OKC will conduct at least one workshop annually. Workshops may be combined with other venues such as the Region 6 EPA MS4 Conference, State or other local municipal venues. |
| Reports                | Oklahoma Department of Environmental Quality (ODEQ) Annual Report | Environmental Protection Manager (1); Environmental Unit Supervisor (1); Administrative Staff (1).                               | Section results are reported annually to the ODEQ in the OKC MS4 Annual Report.  |

**7. Component Metrics:**

| <b>Task</b>                       | <b>Metric</b>  | <b>Reported Figure</b> | <b>Goal / Reporting</b>  |
|-----------------------------------|--|------------------------|--|
| Education and Outreach (External) | Number of Workshops  | Number /Year           | 1 Workshop/Year  |
| Education and Outreach (External) | Number of Workshop Participants  | # Participants / Year  | 60/Year  |
| Education and Outreach (External) | Number of special notifications distributed                                  | # Distributed / Year   | As Needed  |
| Education and Outreach (Internal) | Number of Continuing Education Hours related to Sediment and Erosion Control | # Hours / Year         | 20 Hours / Year (combined per technician). Reported Annually           |
| Permitting                        | Number of Permits Issued (Construction and Land Disturbing)                  | # Permits / Year       | No goal established for this task (based on demand). Reported Annually |

| <b>Task</b>          | <b>Metric</b>  | <b>Reported Figure</b>                                      | <b>Goal / Reporting</b>   |
|----------------------|--|---|---|
| Permitting           | Number of Construction Notice of Termination (Construction and Land Disturbing)  | # NOT / Year  | No goal established for this task (based on demand).<br>Reported Annually |
| Inspections/Audits   | Number of Site Inspections   | # Construction or Land Disturbing Permit Inspections / Year | No goal established for this task (based on demand).<br>Reported Annually |
| Inspections/Audits   | Number of Re-inspections   | # Re-inspections / Year                                     | No goal established for this task (based on demand).<br>Reported Annually |
| Inspections / Audits | Amount of Re-inspection Fees Collected   | Total Monetary Figure                                       | No goal established;<br>Report Annually                                   |
| Complaint/Response   | Number of Construction Related Complaint Response  | # Complaint Response / Year                                 | No goal established for this task (based on demand).<br>Reported Annually |
| Enforcement          | Number of Enforcement Remedies Documents Issued (NOVs, Compliance Orders, Cease and Desists, Show Cause Hearings, Consent Order) | # Enforcement Remedies Documents Issued / Year              | No goal established for this task.<br>Reported Annually                   |

**8. Narrative Goals:**

Provide permitting and consistently applied inspection services to applicable land disturbing and construction sites in OKC to comply with local municipal code and the State OKR10. Provide response and resolution to sediment related complaints which impact the OKC MS4 or other waterways through code enforcement proceedings. Review and improve existing sediment and erosion control BMPs. Provide that land disturbing sites and construction locations are controlling their storm water discharges to the maximum extent practicable. Review existing construction and land disturbing municipal code and recommend changes to OKC Council which improves the quality of applicable discharges. Provide subject related education to developers, contractors, engineers and builders.

Ordinance Review

OKC ordinances related to erosion and sediment control will be reviewed once each permit term. Generally, this review will be conducted during the first two years of the permit. Approval is subject to management review and City Council approval. Efforts will be made to make applicable changes during the permit term of that review. Notification to staff, engineers, developers, contractors or other stakeholders will be conducted through memorandums, letters, and addendums to permit packages, workshops, stakeholder meetings or other forms of communication. All notifications of ordinance changes or changes related to area-specific requirements will be tracked and reported annually.

Quality Assurance Program (QAP)

The QAP is an internal program to ensure that field inspections and associated work is being conducted in a safe, efficient and consistent manner. The Supervisor or designee conducts inspections with Environmental Technicians to provide an interactive audit and training to the inspector to ensure that OKC municipal code is being applied consistently, and to ensure proper documentation and follow-up. Results are documented and discussed with the technician to correct any deficiencies.

Inspector Areas

SWQ inspectors are assigned to designated areas for normal auditing purposes. Special assignments (such as TMDL areas) may be assigned outside of a designated area. Construction Designated Inspector Areas Map can be found in [Appendix Q](#).

**9. Cooperating Departments, Agencies and Communities:**

| Agency   | Roles / Responsibility  |
|--|---|
| OKC Public Works Administration                              | Administration of all Public Works programs, projects, personnel, funding sources and operations.   |
| OKC, Public Works Dept. Storm Water Quality Division         | Primary permitting, inspection, enforcement and reporting agency for sediment and erosion control.  |
| OKC, Public Works, G.O. Bond Program                         | Administers all programs of the G.O. Bond program including the management of design, construction and finalization of Bond funded projects.  |
| OKC, Public Works, Drainage Engineering                      | Administers programs related to storm sewer and waterway enhancement for flood control and alleviation.   |
| OKC, Public Works, Streets and Drainage Maintenance Division | Administers programs related to channel maintenance, storm drainage repairs, street repair and may conduct certain construction related project which would qualify for a storm water discharge permit. |

| Agency                                       | Roles / Responsibility   |
|--|--|
| OKC IT Department                            | Responsible for internal technology programs including data storage, databases, telemetry, cellular capabilities and internet based resources.   |
| OKC Public Information                       | Responsible for all public information releases including review applicable sediment and erosion control brochures, internet based releases, etc.  |
| Municipal Contractors                        | OKC requires contractors working on City projects assume the role as the responsible party and obtain a Storm Water Discharge Permit. The Contractors have “daily operational control” of each project and therefore manage the installation and maintenance of erosion controls. SWQ Environmental Technicians regularly inspect each project until completion. |
| OKC Development Services Department          | Provides inspection services of construction which are partly or wholly owned or operated by OKC.  |
| Oklahoma Department of Environmental Quality | Primary Oversight and Reporting Agency   |

**10. Area Specific Requirements:**

TMDL Waterways

The OKR10 General Permit for Stormwater Discharges from Construction Activities with the State of Oklahoma provides in part 1.2.2.G *“Discharges to Total Maximum Daily Load (TMDL) Watershed: Discharges of pollutants of concern to impaired waterbodies for which there is an approved TMDL or a watershed plan incorporated in Oklahoma’s Water Quality Management Plan in lieu of a TMDL are not eligible for coverage under this permit unless they are consistent with the approved TMDL or watershed plan or local compliance plan. Applicants must comply with the requirements in Part 4.1.5 of this permit.”*

OKR10 4.1.5 provides *“If a TMDL or watershed plan or local compliance plan has been approved for the waterbody, you must also describe how your SWP3 is consistent with any TMDL or watershed plan or local compliance plan applicable to your discharge. Permittees must incorporate any limitations, conditions, or requirements applicable to their discharges into the SWP3 to ensure that the waste load allocations (WLAs) or load allocations (LAs) and/or the TMDL’s associated implementation plan will be met within any timeframe established in the TMDL report or watershed based plan. Monitoring and reporting of the discharges may also be required as appropriate to ensure compliance with the TMDL or watershed based plan.”*

The OKR10 Section 3.5.1 Discharges to Waters Identified as Impaired Waters provides the following information regarding 303(d) listed waterways. The OKR10 Buffer requirements are identified in [Appendix T](#):

*If you discharge to impaired water that is impaired for Sediment and/or Turbidity within 1 mile, you are required to comply with the additional requirements in this part.*

*A. Identify whether you discharge to one or more waterbodies impaired for sediment and/or turbidity. If you discharge to impaired waters, you must indicate so in your NOI and comply with the following requirements in Parts 3.5.1.B, C, and D of this part. If you indicate in your NOI that you do not discharge to impaired water, DEQ may determine, based on additional information, that you are considered to be discharging to an impaired water. If this is the case, you will be notified of DEQ's determination, and be provided with an opportunity to comply with additional requirements as a condition of your permit coverage, consistent with Part 3.5.1.*

*B. Site inspection requirements. You are required to comply with the following modified inspection requirements:*

*You must conduct site inspections once every 7 calendar days at a minimum, and within 24 hours of a storm event of 0.5 inches or greater or within 24 hours of a discharge caused by snowmelt;*

*C. Corrective actions. If the inspection or visual examination results indicate any permit violations, you must implement the corrective actions required in Part 4.3.14. However, a violation would result if you fail to implement the required corrective actions. If you are subject to the numeric limit in Part 3.4 (Table 3.1 for asphalt batch plant) you must implement the monitoring requirement according to Addendum F of this permit. If your sample results indicate that you have exceeded the numeric limit, you must implement the corrective actions according to Part 4.3.14.*

*D. Stabilization requirements. You are required to comply with the following modified stabilization requirements:*

*You are required to comply with the stabilization requirements as specified in Parts 3.3.2.A.1 and 2 within 7 calendar days after the temporary or permanent cessation of earth-disturbing activities.*

Section 4.1.4 of the OKR10 continues the discussion of impaired (303(d) segments and provides the following requirement:

*If your construction site discharges into a receiving water (within 1 mile) which has been listed on the Clean Water Act 303(d) list of impaired waters, and your discharges contain the pollutant(s) for which the waterbody is impaired, you must document in your SWP3 how the BMPs and other controls selected for your site will control the discharge of the pollutant(s) of concern. If Part 3.5.1 applies to your discharge, you must include in your SWP3 the additional requirements specified in that part.*

Section 4.3.10 of the OKR10 Water Quality Impaired Water and TMDL Requirements provides a discussion and SWPPP requirements for impaired or TMDL waterways:



*Include information on whether stormwater discharges or stormwater discharge-related activities would have an effect on water quality impaired receiving waters. The permittee must describe how the BMPs and other controls selected for the site will reduce and avoid the discharges of pollutants of concern into any 303(d) impaired waters, including requirements of Parts 4.1.4 and 3.5.1 of this permit. The permittee must describe and implement any measures necessary to meet the requirements of an approved TMDL or watershed plan and/or associated implementation schedule established in the TMDL or watershed plan. Monitoring and reporting of discharge quality may also be required if necessary to ensure compliance with an approved TMDL or watershed plan (see Part 4.1.5 of this permit).*

#### Outstanding Resource Waters and Aquatic Resources of Concern

The OKR10 Section 3.5.2 Discharges to waters identified as an ORW or ARC provides the following information for waterways listed as Outstanding Resource Waters and Aquatic Resources of Concern:

*If you discharge to waters identified as ORW (see Addendum E of this permit) or your sites are located within areas identified as an ARC and you are relying on option b in Part 1.2.2.E.2 (see Part 10 and Addendum A of this permit), you must implement inspections, corrective actions and stabilization requirements provided in Part 3.5.1 above. Also you must comply with the following additional requirements:*

*A. In order to minimize sediment discharges, if any ORW or ARC is located on or immediately adjacent to your site, you must ensure that a vegetated buffer zone of at least 100 feet is retained or successfully established/planted between the area disturbed and all perennial or intermittent streams. A vegetated buffer zone of at least 50 feet must be retained or successfully established/planted between the areas disturbed during construction and all ephemeral streams or drainages. If the nature of the construction activity or the construction site makes a buffer impossible, you must provide equivalent controls. See Addendum H of this permit for information to assist you in developing equivalent controls.*

*B. For drainage locations serving 5 or more acres disturbed at one time, a temporary (or permanent) sediment basin and/or sediment traps shall be used to minimize sediment discharges within the areas of the ORW or ARC. You may use the information in Parts 3.3.1.L and 4.3.11.A.4 to assist you in complying with this requirement.*

*For common drainage locations that serve an area with 5 or more acres disturbed at one time, a temporary (or permanent) sediment basin(s) that provides overall storage for a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. Where no such calculation has been performed, a temporary (or permanent) sediment basin(s) providing overall storage of 3,600 cubic feet of storage per acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. When computing the number of acres draining into a common location, it is not necessary to include flows from off-site areas and flows*

*from onsite areas that are either undisturbed or have undergone final stabilization where such flows are diverted around both the disturbed area and the sediment basin(s).*

*In determining whether installing a sediment basin(s) is attainable, you may consider factors such as site soils, slope, available area on site, etc. In any event, you must consider public safety, especially as it relates to children, as a design factor for the sediment basin(s) and alternative sediment controls shall be used where site limitations would preclude a safe design. For drainage locations that serve 5 or more disturbed acres at one time and where a temporary sediment basin(s) or equivalent controls are not attainable, smaller sediment basins and/or sediment traps should be used. Where neither the sediment basin(s) nor equivalent controls are attainable due to site limitations, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down-slope boundaries of the construction area and for those side slope boundaries deemed appropriate as dictated by individual site conditions. DEQ encourages the use of a combination of sediment and erosion control measures in order to achieve maximum pollutant removal.*

*C. For any portion of the site that discharges to an ORW or ARC, instead of the inspection frequency specified in Part 4.3.13.B, you must conduct inspections within 7 calendar days and within 24 hours of the occurrence of a storm event of 0.5 inches or greater.*

*D. For initiating and completing stabilization, you are required to complete the stabilization activities within 7 calendar days after the temporary or permanent cessation of earth-disturbing activities.*

#### *4.3.8 Measures to Protect ARC and ORW*

*Include information on whether listed endangered or threatened species or critical habitat are found in proximity to the construction activity, and whether such species may be affected by the stormwater discharges or stormwater discharge-related activities (see Addendum A and Parts 1.2.2.E and 10 of this permit) and on whether discharge to waters identified as ORW (see Addendum E). If your site discharges into the area identified as ARC and ORW, you must describe and implement the measures specified in Part 3.5.2 necessary to protect these endangered species and threatened habitat and resource waters in the SWP3, including any equivalent sediment controls specified in Addendum H (Buffer Requirements).*

#### 303(d) Listed Waterways (Impaired Waters)

*The 303(d) list of Impaired Waters in Oklahoma can be found in Appendix C of the Integrated Report on the DEQ's webpage at [http://www.deq.state.ok.us/WQDnew/305b\\_303d/index.html](http://www.deq.state.ok.us/WQDnew/305b_303d/index.html), or the DEQ GIS Map and Data Viewer at <http://deq.maps.arcgis.com/home/index.html>*

Section 4.3.5(C) provides information regarding the Site Map requirements:

*(C) Locations of all waters of the State within and one mile of the site, including wetlands that exist within or in the immediate vicinity of the site. Indicate which waterbodies are listed as impaired, which lie within a watershed with approved TMDL, and which are identified by the State as ARC or ORW;*

Area 1: Lake Thunderbird Report for Nutrient, Turbidity and Dissolved Oxygen TMDLs.

- Lake Thunderbird Watershed in OKC including Hog Creek (OK520810000030\_00); West Branch of Hog Creek (OK520810000040\_00), East Elm Creek (OK520810000110\_00); Elm Creek (OK520810000100\_00); West Elm Creek (OK520810000140\_00); Kitchen Creek (OK520810000150\_00); Kitchen Lake (OK520810000160\_00); North Fork of the Little River (OK520810000170\_00); and Little River (OK52081000080\_00).

See [Appendix G](#) for the Area Specific Requirements for the Lake Thunderbird Watershed in OKC.

Other site specific criteria include Outstanding Resource Waters (ORW) and Oklahoma Sensitive Waters and Watersheds Harboring Endangered and Threatened Species and Their Critical Habitat of Concern.

- There are no ORW in the OKC jurisdiction.
- South Canadian River – A 2-mile corridor (one mile from each bank) of the main stem from the Eufaula Reservoir flood pool upstream to the northern border of Custer County. This corridor includes river segments in Blaine, Caddo, Canadian, Cleveland, Custer, Grady, Hughes, McClain, McIntosh, Pittsburg, Pontotoc, Pottawatomie, and Seminole counties. See OKC Sensitive Waters and Watersheds for Federally Listed Species for the OPDES Multi-Sector General Permit OKR05 for Stormwater Discharges from Industrial Activity and the OKR10 Construction General Permit in [Appendix S](#). In OKC, this includes the following water body identification segments:
  - Canadian River OK520610020010\_00
  - Canadian River OK520610010010\_20

#### **11. Analysis:**

No analysis is required for this SWMP component.

## **SWMP Component 5: Industrial and High Risk Runoff**

### **1. Program Components:**

- A. Continue the Industrial Program to identify, monitor, and control pollutants from targeted facilities.
- B. Continue the Industrial Program through inspection of facilities.
- C. Continue to develop and implement the Industrial Program through auditing Cosmetic Cleaners for compliance with City ordinance.
- D. Continue the Industrial Program through public outreach and annual workshops.

### **2. Definitions:**

*Affidavit of No Discharge* - An “Affidavit of No Discharge for Storm Water Discharges Associated with Industrial Activities” permit application is utilized to certify that a condition of no discharge exists at a facility and is re-submitted once every five years. The facility must maintain a condition of no-discharge at the facility site. If conditions change, the operator must obtain a storm water discharge permit.

*Inactive or Unstaffed Certification* is a certification used to validate or certify no activity or no staff at an industrial facility. This certification excuses the facility from performing quarterly visual monitoring and employee training, however the facility must perform other required tasks of the permit. The industrial facility/site must maintain conditions of not having any staff or all industrial processes inactive in order to remain applicable. If conditions change, the facility operator must contact the City before any discharges occur.

*Cosmetic Cleaning* – Any system, machine, or substance used to remove undesirable substances from any surface or facade creating free foreign matter.

*Discharge to an Impaired Water* (OKR05) – for the purpose of this Permit (OKR05), a discharge to an impaired water occurs if the first water of the State to which you discharge is identified by the State as not meeting an applicable water quality standard, and requires development of a TMDL (pursuant to Section 303(d) of the CWA), or is addressed by an established TMDL or watershed plan in lieu of a TMDL, or is not in either of the above categories but the waterbody is covered by pollution control requirements that meet the requirements of 40 CFR 130.7(b)(1). For discharges that enter a separate storm sewer system prior to discharge, the water of the State to which you discharge is the waterbody that receives the stormwater discharge from the separate storm sewer system.

*Industrial Storm Water Discharge Permit* – a permit required by OKC to discharge industrial storm water from specific Standard Industrial Classification Code industries. These industries must perform an industrial activity which is identified as one of the ten industrial categories included in the definition of storm water discharges associated with industrial activities as defined in 40 CFR §122.26(b)(1-4)(i)-(ix) and (xi) or as required by the Storm Water Quality Manager.

*No Exposure Certification* – all industrial materials and activities are performed indoors or are protected by a storm-resistant shelter to prevent exposure of rain, snow, snowmelt, and/or runoff. Industrial materials or activities include, but are not limited to, material handling equipment or activities, industrial machinery, raw materials, intermediate products, by-products, final products, or waste products. See 40 CFR §122.26(g).

*OKRO5* – Oklahoma Pollution Discharge Elimination System Multi-Sector General Permit for Stormwater Discharges from Industrial Activity.

*QAP – Quality Assurance Program* – a program implemented by the Environmental Unit Supervisor to provide relevant on the job training and employee review to ensure audits are being conducted in accordance to City policy and standard operating procedures with safety and efficiency.

*SIC* – Standard Industrial Classification are four-digit numerical codes assigned by the US government to business establishments to identify the primary business of the establishment.

**3. Ordinances:**

| <b>Ordinance</b> | <b>Title</b>                                  | <b>Language / Description</b>   |
|------------------|---|---|
| §57-146          | Existing Facilities Required to Obtain Permit | Details the application process and required documentation, including key measures which should be implemented, identified and documented. This section also describes the permit duration, late fees, re-inspection fees and enforcement proceedings.                        |
| §57-147          | New Facility Permits                          | The ordinance primarily describes construction storm water discharge permits, however §57-147(b)(1) provides that for new construction activities which are currently subject to MSGP or other OPDES, the owner/operator shall submit copies of those permits to the Manager. |

| <b>Ordinance</b> | <b>Title</b>                         | <b>Language / Description</b>  |
|------------------|--------------------------------------|--|
| §57-148          | Permit Application Fees              | <p>(a) Each application for the issuance of a New Facility Permit under this article shall be accompanied by a minimum non-refundable fee of \$55.00 plus such additional fees for land disturbing activity or industrial activity as may be required below. (b) Each application for the issuance of a land disturbing permit under this article shall be accompanied by a non-refundable permit fee of \$55.00 per location. (c) Each application for an existing facility permit required by Section 57-146 shall be accompanied by a fee of \$55.00. (d) There is a re-inspection fee of \$35.00 for each additional trip or inspection. The re-inspection fee shall apply to the following inspections:</p> <p>(1) Should the applicant request an inspection and the applicant, facility, project, and/or property not be ready for said inspection on the date of said inspection then the re-inspection fee shall be due for each subsequent inspection until the applicant, facility, project, or property passes inspection; or</p> <p>(2) Upon an inspection for any other purpose, should the applicant, facility, project, and/or property fail to meet established standards, then the re-inspection fee shall be due for each subsequent inspection until the applicant, facility, project, or property passes inspection; or</p> <p>(3) Upon an inspection within a corrective measure or action is directed by the inspector, then the re-inspection fee shall be due for each subsequent inspection until the correction measure or action and the facility, project, or property passes inspection.</p> |
| §57-149          | Maintenance and Submittal of Records | <p>Appropriate proof and records of compliance with the provisions of the Oklahoma City Storm Water Discharge Permit or Land Disturbing Permit will be maintained in the office of the designated contact person and be made available for review at any time by the Manager. A notification for a permit re-issuance request will be sent yearly on the anniversary date of the permit to the Manager.</p>  |
| §57-151          | Signatory Requirements               | <p>Ordinance provides the signatory requirements for a responsible party, corporation, partnership, governmental agency. The ordinance also provides the certification language.</p>   |
| §57-173          | Inspections                          | <p>Ordinance establishes the authority and procedures of the City to inspect facilities other permitted areas.</p>   |

| <b>Ordinance</b> | <b>Title</b>                        | <b>Language / Description</b>   |
|------------------|-------------------------------------|---|
| §57-181          | Administrative Enforcement Remedies | Ordinances describe the administrative enforcement remedies including the Notice of Violation, Consent Order, Show Cause Hearing, Compliance Order, Cease and Desist Order and the appeal process.  |
| §57-190-195      | Cosmetic Cleaning                   | Ordinances define cosmetic cleaning and provide the permitting requirements for the activity including registration, permit application procedures, display of registration numbers and certificates, permit requirements and permit denial or revocation procedures. |
| §60-5            | Payment Required                    | All persons required by the Oklahoma City Municipal Code, 1993, to pay a fee for a license, permit, certificate, inspection, action, use, or other service shall pay to the City the amount established in the General Schedule of Fees.                              |

**4. Standard Operating Procedures:**

| <b>SOP</b> | <b>Name</b>                            | <b>Revision</b>   |
|------------|--|-------------------|
| SOP #49    | Industrial Section                     | 10/15/2007        |
| SOP #55    | Industrial High Risk Runoff Monitoring | Draft in Progress |

**5. Resources:**

Administration of the Industrial and High Risk Runoff components for OKC is provided by the Public Works Department, Storm Water Quality Management Division. The program is funded through the Drainage Utility Fee. The Drainage Utility Fee (including reimbursements, permits, interests, etc.) provides ~\$17-21 million for operating and capital expenses related to storm water management.

The Storm Water Permitting Program Account provides the funding for the Industrial and High Risk Runoff Program and the Construction Site Runoff Program. The FY18 budget for this account is \$1,282,164.00.

| <b>Classification Title</b>      | <b>Range</b> | <b># of Personnel</b> |
|----------------------------------|--------------|-----------------------|
| Environmental Protection Manager | 516          | 1                     |
| Environmental Unit Supervisor    | 513          | 1                     |
| Environmental Unit Specialist    | 511 (NE)     | 0                     |
| Environmental Technician         | 509 (NE)     | 4                     |
| Laborer II                       | PTP          | 1                     |

**6. General Program Description:**

Operators of qualifying industrial facilities with industrial activities which discharge to or have the potential to discharge industrial storm water to the MS4 or directly to Waters of the State, and operate under a specific Standard Industrial Code (SIC) or Industrial Activity Code, require authorization under an OPDES industrial storm water discharge permit. Currently, OKC is operating under the guidelines of the OPDES Multi-Sector General Permit OKR05 for Stormwater Discharges from Industrial Activity within the State of Oklahoma (July 5, 2017) and relevant municipal code.

The Industrial Permitting & Auditing Program is responsible for permitting specific classifications of industry, inspection of those industries, enforcement of municipal code, operator education and reporting for OKC. 40 CFR 122.26(b)(14) defines the ten categories of storm water discharges associated with industrial activity which require authorization.

In addition to permitting the ten industrial classifications, cosmetic cleaning operations require a permit in OKC. This permit type is administered by the Industrial Permitting Section. Self-audits are required annually and sent to SWQ for review.

Permit fees are \$55.00 each year for the life of the permit. Late fees of \$15.00 are applied for each month past the expiration date. At the termination of the permitted activity, operators/owners will notify the Manager and submit a Notice of Termination (NOT).

Quality Assurance Program (QAP)

The QAP is an internal program to ensure that field inspections and associated work are being conducted in a safe, efficient and consistent manner. The Environmental Unit Supervisor conducts monthly inspections with industrial inspectors to provide interactive audits and training to the inspector to ensure that OKC municipal code is being applied consistently, and to ensure proper documentation and follow-up. Results are documented and discussed with the Environmental Technician to correct any deficiencies.

Inspector Areas

SWQ inspectors are assigned to designated areas for normal auditing purposes. Situations may occur that special assignments (such as specific industry classifications) may be assigned outside of a designated area. Industrial Designated Inspector Areas Map can be found in [Appendix P](#).

| <b>Task</b> | <b>Type</b>                 | <b>Task Staffing Resources</b>  | <b>Comments</b>   |
|-------------|-----------------------------|---|---|
| Permitting  | Industrial Discharge Permit | Administrative Staff (2); Environmental Unit Supervisor (1); Environmental Technicians (4); PTP (1) | Required documentation: Notice of Intent; Storm Water Pollution Prevention Plan; Permit |



| <b>Task</b> | <b>Type</b>                      | <b>Task Staffing Resources</b>  | <b>Comments</b>  |
|-------------|----------------------------------|---|--|
|             |                                  |   | Application Fees and NOT.  |
| Permitting  | No Exposure Certification        | Administrative Staff (2); Environmental Unit Supervisor (1); Environmental Technicians (4); PTP (1) | Certificate is required by OKC from the Owner/Operator every five years. An inspection is performed by OKC to confirm the condition of No Exposure.  |
| Permitting  | Cosmetic Cleaning Permit         | Administrative Staff (2); Environmental Unit Supervisor (1); Environmental Technicians (4); PTP (1) | Companies conducting cosmetic cleaning activities in OKC are required to permit. Companies are often encountered in the field. A verbal or written stop work order is generally issued until a permit and BMPs are in place. Permittees conduct self-audits annually and submit on permit renewal. |
| Permitting  | Affidavit of No Discharge        | Administrative Staff (2); Environmental Unit Supervisor (1); Environmental Technicians (4); PTP (1) | Certificate is required by OKC from the Owner/Operator every five years. An inspection is performed by OKC to confirm the condition of No Discharge.   |
| Permitting  | Inactive or Unstaffed Facilities | Administrative Staff (2); Environmental Unit Supervisor (1); Environmental Technicians (4); PTP (1) | Required documentation: Notice of Intent; Storm Water Pollution Prevention Plan; Permit Application Fees and NOT. Inactive and unstaffed facilities  |

| <b>Task</b>                    | <b>Type</b>  | <b>Task Staffing Resources</b>  | <b>Comments</b>   |
|--------------------------------|--|---|---|
|                                |  |   | are inspected twice annually.   |
| Permitting                     | High Risk Runoff   | Administrative Staff (2); Environmental Unit Supervisor (1); Environmental Technicians (4); PTP (1) | Required documentation: Notice of Intent, Storm Water Pollution Prevention Plan; Permit Application Fees and NOT. Facilities are inspected twice each year. Permits are renewed annually. Note: High Risk Runoff facilities may be No Exposure Facilities. In those cases no permit fee is required and re-certification is required every five years. High Risk Runoff facilities are required to perform additional monitoring once every five years and submit results to OKC. |
| Permit Universe Identification | Program uses lists generated from business filing which indicate the type of business conducted. This list is obtained to identify industries which meet specific regulated standard industrial classifications and which require an OKC permit. | Environmental Unit Supervisor (1); Environmental Technicians (4); PTP (1)                           | Research is conducted every 5-years. FTP or PTP are used to conduct this screening to determine businesses which qualify for an Industrial Storm Water Discharge Permit, No Exposure Condition, or Affidavit of No Discharge.   |
| City Inspections               | Industrial Discharge;  | Environmental Unit  | Industrial Discharge  |

| <b>Task</b>            | <b>Type</b>  | <b>Task Staffing Resources</b>  | <b>Comments</b>   |
|------------------------|--|---|---|
|                        | No Exposure; Cosmetic Cleaning; “High Risk” EPCRA and SARA Title III sites     | Supervisor (1), Environmental Technicians (4)   | facilities are inspected twice annually; Cosmetic Cleaners conduct a self-audit annually; No Exposure facilities, Inactive or Unstaffed facilities are inspected semi-annually; and Affidavit of No Discharge facilities are inspected once every five years. |
| City Inspections       | Revocable Permit / Special Permit Inspections                                  | Environmental Unit Supervisor (1), Environmental Technician (4)   | Certain special events or revocable permits issued by OKC are inspected to ensure cleanliness and proper disposal of waste generated.   |
| City Inspections (QAP) | Quality Assurance Program Supervisory Inspections                              | Environmental Unit Supervisor (1), Environmental Technician (4)   | Minimum of one QAP Audit for each Environmental Technician / year. Results are discussed with the Environmental Technician to correct any deficiencies noted.   |
| Complaint Response     | Action Center Requests   | Environmental Unit Supervisor (1), Environmental Technician (4)   | Section is responsible for responding to Action Center Requests and Facility Complaints   |
| Data                   | Database, Various Spreadsheets, Other Media (site photographs, scanned images) | Accela Database permit/inspection database; secondary data storage is MS Access and Excel spreadsheets. | Accela includes: permit data; scheduling inspections; inspection data; and enforcement data.  |

| <b>Task</b>            | <b>Type</b>   | <b>Task Staffing Resources</b>   | <b>Comments</b>   |
|------------------------|---|--|---|
|                        |   | Photographs and other data sources are housed on the City network.   |   |
| Enforcement Action     | Code Enforcement                                    | Environmental Technician (4); Environmental Unit Supervisor (1); Administrative Staff (2); Environmental Protection Manager (1); OKC Municipal Courts. | Notice of Violation; Cease and Desist; Compliance Order; Show Cause Hearing; Re-inspection Fees; Verbal Warnings; Affidavit of Probable Cause |
| Education and Outreach | Workshop(s)   | Oklahoma City will conduct at least four workshops annually.   | Typically, these workshops are conducted in the spring and fall. Multiple sessions are offered.   |
| Reports                | Oklahoma Department of Environmental Quality (ODEQ) | Environmental Unit Supervisor (1), Environmental Protection Manager (1)  | Section results are reported annually to the ODEQ in the OKC MS4 Annual Report.   |

**7. Component Metrics:**

| <b>Task</b>                       | <b>Metric</b>                               | <b>Reported Figure</b>         | <b>Goal / Reporting</b>                      |
|-----------------------------------|---|--------------------------------|--|
| Education and Outreach (External) | Number of Workshops                         | # Workshops / Year             | Four workshops / year; Report Annually       |
| Education and Outreach (External) | Number of Workshop Participants             | # Participants / Year          | 300 / year; Reported Annually                |
| Education and Outreach (External) | Number of special notifications distributed | Individuals Distributed / Year | As needed                                    |
| Education and Outreach (Internal) | Number of Continuing Education Professional | Hours                          | Four hours / staff member; Reported Annually |

| <b>Task</b> | <b>Metric</b>  | <b>Reported Figure</b>                                       | <b>Goal / Reporting</b>  |
|-------------|--|--|--|
|             | Development Hours                                    |  |  |
| Permitting  | Number of Cosmetic Cleaning Permits                  | Total # of Active Cosmetic Cleaning Permits / Year           | 100% of companies performing cosmetic cleaning in OKC; Reported Annually |
| Permitting  | Number of Cosmetic Cleaning Permits Issued/Re-issued | # Cosmetic Cleaning Permits Issued or Re-issued / Year       | No goal established; Reported Annually                                   |
| Permitting  | Number of Cosmetic Cleaning Self Audits Reported     | # Cosmetic Cleaning Self Audits Reported / Year              | 100% permit goal; Reported Annually                                      |
| Permitting  | Number of Industrial Discharge Permits Issued        | # of Industrial Discharge Permits Issued / Year              | No goal established; Reported Annually                                   |
| Permitting  | Number of Active Industrial Discharge Permits        | # Active Industrial Discharge Permits / Year                 | No goal established; Reported Annually                                   |
| Permitting  | Number of No Exposure Certifications Issued/Reissued | Total # of Active No Exposure Certifications Issued / Year   | No goal established; Reported Annually                                   |
| Permitting  | Total Number of Active No Exposure Certifications    | Total # No Exposure Certifications / Permit Year             | No goal established; Reported Annually                                   |
| Permitting  | Total Number of Affidavit of No Discharge Locations  | Total # of Affidavit of No Discharge Locations / Permit Year | No goal established; Reported Annually                                   |
| Permitting  | Total Number of Notice of Terminations               | Total # NOT / Year   | No goal established; Reported Annually                                   |

| <b>Task</b>  | <b>Metric</b>   | <b>Reported Figure</b>   | <b>Goal / Reporting</b>   |
|--|---|--|---|
| Inspections  | Total Number of No Exposure Inspections Conducted   | # No Exposure Inspections / Year   | No goal established; Reported Annually                                      |
| Inspections  | Number of Industrial Discharge Permit Site Inspections  | # Inspections / Year   | Two audits / year; Reported Annually  |
| Inspections  | Number of Re-inspections  | # Re-inspections / Year  | No goal established; Reported Annually                                      |
| Inspections  | Amount of Re-inspections Fees Collected   | Total Monetary Figure  | No goal established; Report Annually  |
| Inspections (QAP)                                      | Number of QAP Audits Performed  | # QAP Audits / Year  | Minimum one audit/year for each Environmental Technician; Reported Annually |
| Inspections (Revocable Permit / Special Permit Events) | Number of Special Permit or Revocable Permit Inspections Conducted  | # Conducted / Year   | No goal established; Reported Annually                                      |
| Complaint/Response                                     | Number of Action Center Request and PS Reports  | Reported Under the Pollution Complaints and Spills Response <a href="#">Component 10</a> | No goal established; Reported Annually                                      |
| Enforcement  | Number of Enforcement Remedies Documents Issued (NOV, Compliance Orders, Cease and Desist, Show Cause Hearing, Consent Order, | # Enforcement Remedies Documents Issued / Permit Year                                    | No goal established; Reported Annually                                      |

| Task | Metric                           | Reported Figure | Goal / Reporting |
|------|----------------------------------|-----------------|------------------|
|      | and Affidavit of Probable Cause) |                 |                  |

**8. Narrative Goals:**

To comply with the OKC MS4 Storm Water Discharge Permit and the OKR05 by providing local permitting services, inspections/facility audits, enforcement actions, investigations, support and education to certain industries and activity types within the corporate boundaries of OKC.

**9. Cooperating Departments, Agencies and Communities:**

OKC Departments, Divisions and associated facilities which are permitted with an Industrial Storm Water Discharge Permit are listed in [Appendix AA](#).

| Agency   | Roles / Responsibility  |
|--|---|
| OKC Public Works Administration                      | Administration of all Public Works programs, projects, personnel, funding sources and operations.   |
| OKC, Public Works Dept. Storm Water Quality Division | Primary permitting, inspection, enforcement, household hazardous waste disposal services, education/outreach, and is the reporting agency for OKC MS4 NPDES compliance. |
| OKC IT Department                                    | Responsible for internal technology programs including data storage, databases, telemetry, cellular capabilities and internet based resources.                          |
| Oklahoma Department of Environmental Quality         | Primary oversight Agency  |

**10. Area Specific Requirements:**

The OPDES Multi-Sector General Permit OKR05 for Stormwater Discharges from Industrial Activity within the State of Oklahoma July 5, 2017 provides the following information regarding impaired stream segments and water bodies with TMDLs. Part 1.8.6 For Discharges to Water Quality-Impaired Waters provides:

- 1. If you are a new discharger or a new source (as defined in Part 10), you are not eligible for coverage under this Permit to discharge stormwater to an impaired water (as defined in Part 10)*

unless you do one of the following:

- a. Prevent all exposure to stormwater of the pollutant(s) for which the waterbody is impaired, and retain documentation of procedures taken to prevent exposure onsite with your SWP3; or
- b. Provide to DEQ appropriate technical information or other documentation to support your claim that the pollutant(s) for which the waterbody is impaired are not present at your site, and retain such documentation with your SWP3.

*If you discharge to an impaired water, where a Total Maximum Daily Load (TMDL) or watershed plan in lieu of a TMDL has not been established, you must take all necessary actions to ensure that future discharges do not cause or contribute to an exceedance of a water quality standard and must document these actions in your SWP3. Oklahoma 303(d) list of impaired water is found in Appendix C of the Integrated Water Quality Assessment report which is available on the DEQ's website.*

2. You are not authorized to discharge any pollutant into any water for which a TMDL or watershed plan in lieu of a TMDL has been established unless your discharge is consistent with the TMDL or watershed plan. This provision applies only to discharges containing the pollutant(s) for which the waterbody is impaired.

- a. If a TMDL or watershed plan in lieu of a TMDL is established for any waterbody into which you discharge prior to the date that you submit an NOI, and if that TMDL or watershed plan includes a wasteload allocation (WLA) or load allocation (LA) for a pollutant likely to be discharged by the facility, your discharges must meet the requirements of the TMDL report or watershed plan and/or its associated implementation plan within any timeframe established in the TMDL report or watershed plan. Monitoring and reporting of the discharges may also be required as appropriate to ensure compliance with the TMDL or watershed plan.

The OKR05 Part 3.2.2 Discharge to Water Quality-Impaired Waters provides:

*You are considered to discharge to an impaired water if your facility or discharge point is located within 1 mile of a receiving waterbody which is identified by DEQ on the 303(d) list as not meeting an applicable water quality standard, and:*

- Requires development of a TMDL or watershed plan in lieu of a TMDL (pursuant to section 303(d) of the CWA); and/or
- Is addressed by an established TMDL or watershed plan in lieu of a TMDL.

### **3.2.2.1 Existing Discharger to an Impaired Water with an Established TMDL**

*If you discharge to an impaired water with an established TMDL or watershed plan in lieu of a TMDL, your discharge must meet any limitations, conditions, or other requirements of the implementation plan associated with that WLA, LA and/or TMDL within any timeframes established in the TMDL or watershed plan. You must monitor all pollutants for which a WLA or LA has been established at the frequencies established in the TMDL or watershed plan, or at a*



minimum of once per year. You must comply with the applicable monitoring requirements of Part 7.2.3.1. DEQ will inform you only if coverage under an individual permit is necessary per Part 1.2.

### **3.2.2.2 Existing Discharger to an Impaired Water without an Established TMDL**

If you discharge to an impaired water without an established TMDL or watershed plan in lieu of a TMDL, you are still required to comply with Part 3.2.1, and you must comply with the monitoring requirements of Part 7.2.3.1. Note that the impaired waters monitoring requirements of Part 7.2.3.1 also apply where DEQ determines that your discharge is not controlled as necessary to meet applicable water quality standards in an impaired downstream water segment, even if your discharge is to a receiving water that is not identified as impaired according to Part 3.2.2.

### **3.2.2.3 New Discharger or New Source to an Impaired Water**

If your authorization to discharge under this Permit relied on Part 1.8.6 for a new discharger or a new source to an impaired water, you must implement and maintain any measures that enabled you to become eligible under Part 1.8.6, and modify such measures as necessary pursuant to any Part 6 corrective actions. You also must comply with Part 3.2.1 and the monitoring requirements of Part 7.2.3.1.

Part 7.2.3 Discharges to Impaired Waters Monitoring provides:

#### **7.2.3.1 Permittees Required to Monitor Discharges to Impaired Waters**

**Discharges to impaired waters without an established TMDL or watershed plan in lieu of a TMDL:** Beginning in the first full quarter following October 1, 2017 or your date of discharge authorization, whichever date comes later, you must monitor all pollutants for which the waterbody is impaired and for which a standard analytical method exists (see 40 CFR Part 136) once per year at each outfall discharging stormwater to impaired waters without an established TMDL or watershed plan in lieu of a TMDL.

For example, if the pollutant of concern for the impaired waterbody is suspended solids, turbidity or sediment/sedimentation, you must monitor for Total Suspended Solids (TSS). If a pollutant of concern is expressed in the form of an indicator or surrogate pollutant, you must monitor for that indicator or surrogate pollutant.

No monitoring is required when a waterbody's biological communities are impaired (i.e., when a waterbody is listed on the 303(d) list as impaired based on fishes bio-assessments, macroinvertebrate bio-assessments, or other biological criteria), but no pollutant, including indicator or surrogate pollutants, is specified as causing the impairment, or when a waterbody's impairment is related to hydrologic modifications, impaired hydrology, or other non-pollutant. Permittees should consult with DEQ for any available guidance regarding required monitoring parameters under this part.

If the pollutant of concern is not detected and not expected to be present in your discharge, or it is detected but you have determined that its presence is caused solely by natural background sources, you may discontinue monitoring for that pollutant. To support a determination that the pollutant's presence is caused solely by natural background sources, you must document and maintain with your SWP3, as required by Part 4.5:

- *An explanation of why you believe that the presence of the pollutant of concern in your discharge is not related to the activities or materials at your facility; and*
- *Data and/or studies that tie the presence of the pollutant of concern in your discharge to natural background sources in the watershed.*

*Natural background pollutants include those that occur naturally as a result of native soils, vegetation, wildlife, and/or groundwater. Natural background pollutants do not include legacy pollutants from earlier activity on your site, or pollutants in run-on from neighboring sources that are not naturally occurring. However, you may be eligible to discontinue annual monitoring for pollutants that occur solely from these sources and should consult DEQ for related guidance (see Part 7 on pages 11 & 12 of the 2017 OKR05 factsheet). You must notify DEQ regarding discontinuation of monitoring due to non-detection of a pollutant or caused solely by natural background sources.*

***Discharges to impaired waters with an established TMDL or watershed plan in lieu of a TMDL:***

*For stormwater discharges to waters for which there is an established TMDL or watershed plan in lieu of a TMDL prior to the date that you submit a NOI, and if that TMDL or watershed plan includes a WLA or LA for a parameter likely to be present in your discharge, your discharge must meet any limitations, conditions, or other requirements of the implementation plan associated with that WLA, LA and/or TMDL within any timeframes established in the TMDL or watershed plan. You must monitor all pollutants for which a WLA or LA has been established at the frequencies established in the TMDL or watershed plan, or at a minimum of once per year. You must adopt any WLAs assigned to your discharges specified in the TMDL, or similar targets in the watershed plan, in your SWP3. If the TMDL or watershed plan relies on a BMP-based approach, effective implementation of additional TMDL or watershed plan-related BMPs or control measures will be sufficient to implement applicable WLAs. If the TMDL or watershed plan specifies additional requirements, you must also meet these additional requirements.*

*If a TMDL or watershed plan in lieu of a TMDL is approved for any waterbody into which you discharge after the date that you submit a NOI, you must incorporate any limitations, conditions, and requirements applicable to the discharges into your SWP3 to ensure that the requirements of the implementation plan associated with the WLA, LA, and/or the TMDL will be met within any timeframes established in the TMDL or watershed plan. You must monitor all pollutants for which a WLA or LA is established for your discharges at the frequencies specified in the TMDL or watershed plan, or at a minimum of once per year. You must adopt any WLAs assigned to your discharges specified in the TMDL, or similar targets in the watershed plan, as measurable goals in your SWP3. If the TMDL or watershed plan relies on a BMP-based approach, effective implementation of additional TMDL or watershed plan-related BMPs or control measures will be sufficient to implement applicable WLAs. If the TMDL or watershed plan specifies additional requirements, you must also meet these additional requirements.*

OKC area TMDLs which are active and have a municipal compliance plan are listed below. 303(d) Listed (impaired) water bodies are identified in [Appendix F](#) and OKC area TMDLs are identified in [Appendix G](#).

Area 1: Lake Thunderbird Report for Nutrient, Turbidity and Dissolved Oxygen TMDLs.

- Lake Thunderbird Watershed in OKC including Hog Creek (OK520810000030\_00); West Branch of Hog Creek (OK520810000040\_00), East Elm Creek (OK520810000110\_00); Elm Creek (OK520810000100\_00); West Elm Creek (OK520810000140\_00); Kitchen Creek (OK520810000150\_00); Kitchen Lake (OK520810000160\_00); North Fork of the Little River (OK520810000170\_00); and Little River (OK52081000080\_00).

See [Appendix I](#) for the Area Specific Requirements for the Lake Thunderbird Watershed in OKC for existing and future permits engaged in activities specified by the SIC Code or Activity Code:

- 2951, 2952: Asphalt Paving and Roofing Materials (production)
- 3271-3275: Concrete, Gypsum and Plaster Products (production)
- 1442, 1446: Sand and Gravel (mineral mining and dressing)
- Other activities deemed to be potential sources of nutrients and sediment to the Lake as determined by the DEQ on a case-by-case basis.

Other site specific criteria include Outstanding Resource Waters (ORW) and Oklahoma Sensitive Waters and Watersheds Harboring Endangered and Threatened Species and Their Critical Habitat of Concern.

- There are no ORWs in the OKC jurisdiction.
- South Canadian River – A 2-mile corridor (one mile from each bank) of the main stem from the Eufaula Reservoir flood pool upstream to the northern border of Custer County. This corridor includes river segments in Blaine, Caddo, Canadian, Cleveland, Custer, Grady, Hughes, McClain, McIntosh, Pittsburg, Pontotoc, Pottawatomie, and Seminole counties. See OKC Sensitive Waters and Watersheds for Federally Listed Species for the OPDES Multi-Sector General Permit OKR05 for Stormwater Discharges from Industrial Activity in [Appendix S](#). In OKC, this includes the following water body identification segments:
  - Canadian River OK520610020010\_00
  - Canadian River OK520610010010\_20

## 11. Analysis:

No analysis is required for this SWMP component.

## SWMP Component 6: Household Hazardous Waste / Used Motor Vehicle Fluids

### 1. Program Components:

- A. Provide a summary evaluation and assessment of results from various collection, recycling and safe disposal events.
- B. Continue the Household Hazardous Waste Collection program, which includes a drop off location that provides for convenient hours of operation.
- C. Continue the Household Hazardous Waste Collection program through neighborhood collection events.
- D. Continue the Household Hazardous Waste Collection program through Memorandum of Understanding with surrounding Phase II cities.

### 2. Definitions:

*Household Hazardous Waste* – leftover or un-used household products which can catch fire, react, explode, or that are corrosive or toxic. Examples include paints, cleaning products, new and used oil, batteries, etc.

### 3. Ordinances:

| Ordinance  | Title                                     | Language / Description   |
|------------|---|--|
| §57-172(b) | Illicit Connections and Improper Disposal | (b) The Manager shall take appropriate steps to detect and eliminate improper discharges, including programs to screen for improper disposal and programs to provide for public education, public information and other appropriate activities to facilitate the proper management and disposal of used oil, toxic materials, and hazardous household waste. |

### 4. Standard Operating Procedures

| SOP      | Name  | Revision  |
|----------|---|-----------|
| SOP # 37 | Waste Consolidation into a 55 Gallon Drum       | 8/30/2017 |
| SOP #38  | Drum Identification Numbers                     | 8/30/2017 |
| SOP #39  | Forklift  | 8/30/2017 |
| SOP #41  | Labpack   | 8/30/2017 |
| SOP #42  | Lockout Tagout                                  | 8/30/2017 |
| SOP #43  | Vehicle Unloading                               | 8/30/2017 |
| SOP #44  | Waste Battery Storage, Handling & Consolidation | 8/30/2017 |
| SOP #45  | Waste Oil Consolidation                         | 8/30/2017 |

### 5. Resources:

Administration of the Household Hazardous Waste Collection Facility for OKC is provided by the Public Works Department, Storm Water Quality Management Division. The program is funded through the Drainage Utility Fee. The Drainage Utility Fee (including reimbursements, permits, interests, etc.) provides ~\$17-21 million for operating and capital expenses related to storm water management.

The Household Hazardous Waste Collection Program account provides the funding for the HHWCF and operations. The FY18 budget for this account is \$1,067,108.00.

| <b>Classification Title</b>           | <b>Range</b> | <b># of Personnel</b> |
|---------------------------------------|--------------|-----------------------|
| Environmental Protection Manager      | 516          | 1                     |
| Environmental Unit Supervisor         | 513          | 1                     |
| Environmental Unit Specialist         | 511 (NE)     | 1                     |
| Environmental Technician              | 509 (NE)     | 4                     |
| Administrative Coordinator            | 509          | 1                     |
| Laborer II                            | PTP          | 0                     |
| *Contract Labor (Qualified Personnel) | Hourly       | TBD                   |

\*A contract is in place to provide qualified personnel in the case that the HHWCF requires personnel to maintain operability or increase work outputs.

**6. General Program Description:**

Since 2003, the Household Hazardous Waste Collection Facility (HHWCF) has provided a safe and economical process for managing a full range of household hazardous materials. Typical types of household hazardous waste received include: cleaning products, automotive products, flammable products, lawn and garden chemicals, indoor pesticides, workshop/painting supplies, lubricants, CFL and fluorescent light bulbs, swimming pool/spa chemicals, mercury and other products containing hazardous materials. Items not accepted at the facility include radioactive wastes, biomedical wastes, commercial hazardous wastes, prescription medications, compressed gas cylinders, tires and computer equipment. The facility is located at;

1621 South Portland Avenue  
Oklahoma City, Oklahoma 73108  
(405) 682-7038

The facility was designed to accommodate a high volume of traffic and manage large quantities of household hazardous waste. The facility serves the residents of Oklahoma City, covering ~620 square miles. The facility is open from 9:30 AM to 6:00 PM Tuesday through Friday and 8:30 AM to 11:30 AM on Saturdays. Residents must provide proof of residency by bringing a recent water bill. Residents from other communities with MoUs (The Village, Yukon, Tinker Air Force Base, Shawnee, El Reno, Edmond, Bethany, Warr Acres and Moore) can use the facility but may be charged for their service through their applicable municipality.

The HHW program also provides additional services such as:

- Special collection events which accept tires, e-waste, medications and ammunition;
- Facility tours for community groups, civic and institutional groups;
- Mobile Neighborhood Collection services held within a neighborhood by request of the neighborhood association;
- Homebound Services – household chemical waste pickup at resident’s homes;
- Disaster Assistance Services – provide support with collection, transportation, and disposal of household hazardous waste from disaster impacted areas.

| <b>Task</b>                                  | <b>Type</b> | <b>Staffing</b>  | <b>Comments</b>   |
|--|-------------|--|---|
| Facility Management                          | Management  | Environmental Unit Supervisor (1),<br>*Environmental Unit Specialist (1)   | *Environmental Unit Specialist Manages on behalf of the Unit Supervisor when absent.  |
| Collection of Household Hazardous Waste      | Service     | Environmental Unit Specialist (1),<br>Environmental Technicians (4)  | Qualified personnel from other SWQ Sections may also collect HHW when needed.   |
| Special Collection Event – State Fairgrounds | Service     | Environmental Manager (1), Environmental Unit Supervisor (3-4),<br>Environmental Specialist (2),<br>Environmental Technician (~17),<br>Administrative Coordinator (2), Office Coordinator (1),<br>Community Relations Coordinator (1),<br>Professional Technician (6), Contractors (~6),<br>Streets and Drainage Maintenance Personnel (10-12) | SWQ staff participate in this event. Staff survey customers, provide information to the customer, check quantities and types of materials delivered. This mobile event collects used tires, ammunition, pharmaceuticals, and computers. |

| Task   | Type           | Staffing   | Comments   |
|--|----------------|--|--|
| <p>Special Collection –<br/>Neighborhood Mobile<br/>Events</p> | <p>Service</p> | <p>**Environmental Unit<br/>Specialist (1);<br/>Environmental<br/>Technicians (1)</p>  | <p>**Staffing may be two Technicians or a Unit Specialist and Technician (depending on availability).</p> <p>These mobile collection events are for residential areas which have active homeowner’s or neighborhood associations. Special collection events are reported as the combined number of disaster related collections, State Fairground collections and Homebound collections.</p> |
| <p>Special Collection –<br/>Homebound Services</p>             | <p>Service</p> | <p>***Environmental Unit<br/>Specialist (1);<br/>Environmental<br/>Technicians (1)</p> | <p>***Staffing may be two Environmental Technicians or an Environmental Unit Specialist and Environmental Technician (depending on availability).</p> <p>These mobile collection events are for residential areas, homebound residents or the elderly. Special collection events are reported as the combined number of disaster related collections, State</p>                              |

| <b>Task</b>                              | <b>Type</b>      | <b>Staffing</b>   | <b>Comments</b>   |
|--|------------------|---|---|
|  |                  |   | Fairground Collections and Homebound Collections.   |
| Special Collection – Disaster Assistance | Service          | As Needed   | Determined by the magnitude of the disaster. Special collection events are reported as the combined number of disaster related collections, State Fairground Collections and Homebound Collections. |
| HHWCF Recycling / “Swap Shop”            | Service          | Environmental Unit Supervisor (1), Administrative Coordinator (1) | Several topic specific news releases are developed and released through OKC's Public Information Office   |
| Advertising Campaigns                    | General Outreach | Community Relations Coordinator (1)                               | Public Outreach campaigns using various media platforms including but not limited to billboards, radio, OKC’s channel 20, internal memorandums, television or pamphlets.                            |

**7. Component Metrics:**



| <b>Task</b>                             | <b>Metric</b>   | <b>Reported Figure</b>                                      | <b>Goal / Reporting</b>                          |
|---|---|---|--|
| Facility Management                     | Number Days Open  | # Days Open / Year  | ~260 Days/Year                                   |
| Facility Management                     | No of Memorandums of Understanding with applicable communities  | # MOU / Permit Year   | Report number and communities; Reported Annually |
| Collection of Household Hazardous Waste | Number of residential loads                                     | # Residential Loads / Year                                  | Reported Annually                                |
| Collection of Household Hazardous Waste | Amount of HHW collected   | Pounds HHW Collected / Year                                 | Reported Annually                                |
| HHWCF Recycling/"Swap Shop"             | Total pounds collected, separated and released for public reuse | Pounds Reused / Year  | Reported Annually                                |
| Special Collection Events               | Number of special collection events                             | # Special Collection Events / Year                          | Report Annually                                  |
| Special Collection Events               | Number of participants for the special collection events        | # Special Collection Participants / Year                    | Report Annually                                  |
| Special Collection Events               | Amount of HHW collected   | Pounds of HHW Collected at Special Collection Events / Year | Report Annually                                  |

**8. Narrative Goals:**

Provide household hazardous waste disposal, exchange and recycling services to qualifying residents and other communities with legal interjurisdictional agreements. To provide education to residents to identify hazardous household chemicals and the proper method of disposal. To conduct special events which provide disposal services for tires, ammunition, pharmaceuticals and computers for residents of OKC. Provide services on special request to homebound residents and neighborhood associations (homeowners associations) through mobile collections.

**9. Cooperating Departments, Agencies and Communities:**

| Agency   | Roles / Responsibility  |
|--|---|
| OKC Public Works Administration                            | Administration of all Public Works programs, projects, personnel, funding sources and operations.   |
| OKC, Public Works Department, Storm Water Quality Division | Primary permitting, inspection, enforcement, household hazardous waste disposal services, education/outreach and is the reporting agency for OKC MS4 NPDES compliance.                            |
| OKC IT Department  | Responsible for internal technology programs including data storage, databases, telemetry, cellular capabilities and internet based resources.  |
| OKC Public Information Office                              | Responsible for all public information releases including review applicable brochures, media announcements, educational campaigns etc.  |
| Municipal Contractors                                      | HHWCF contracts with various vendors to supply services and products which are necessary in the day-to-day operation of the facility including disposal services, supplies and cleaning services. |
| OKC Utilities Department                                   | Billing and utility verification of residency. Periodic information releases through the Utility Department billing system.   |
| *City of Bethany   | Memorandum of Understanding   |
| *City of Edmond  | Memorandum of Understanding   |
| *City of El Reno   | Memorandum of Understanding   |
| *City of Moore   | Memorandum of Understanding   |
| *City of Shawnee   | Memorandum of Understanding   |
| *City of the Village                                       | Memorandum of Understanding   |
| *City of Warr Acres  | Memorandum of Understanding   |
| *City of Yukon   | Memorandum of Understanding   |
| Tinker Airforce Base                                       | Memorandum of Understanding   |
| Oklahoma Department of Environmental Quality               | Primary oversight Agency  |

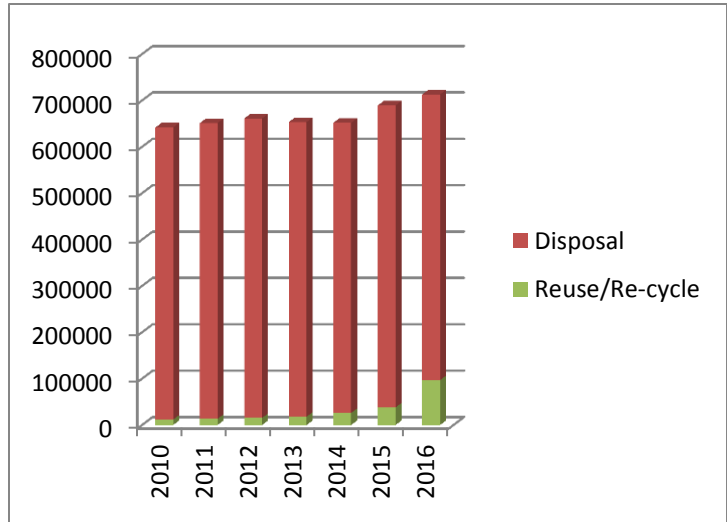
\*See [Appendix AA](#) for OKC MoUs.

**10. Area-Specific Requirements:**

No area-specific requirements exist for this SWMP component.

**11. Analysis:**

Analysis indicates that the HHWCF has exhibited an average annual increase in HHW collected of approximately 1.7% from 2011-2016. An increase in recycling and reuse of collected HHW has also occurred over the aforementioned timeframe, with an average annual increase of over approximately 27%. 2016 results display a significant year-to-year increase in re-use and recycling (60.8% percent increase from 2015). Additionally the 2016 data show that recycling/re-use accounted for 13.6% of the total HHW collected that year. In comparison, 2011-2015 percentages ranged from 2-5.5%.



A second analysis was used to further describe the year-to-year HHWCF reported values, using the median annual percent change. HHW collection totals median annual percent change from 2011-2016 showed an increase of 1.49% and re-use and recycling increased by approximately 22.5%.

Recycling and reuse can offset disposal costs. Additional opportunities to eliminate or reduce these products as a waste stream will further improve the financial impact of an estimated annual increase of 1-2% in total HHW received. On review of the yearly proportion of HHW delivered to the facility which was re-used or recycled from 2011-2016, the average was 5% and the median was 3.4%. The proportion of HHW eliminated from disposal waste streams through recycling and re-use opportunities has increased from 2011 to 2016. Recycling and re-use could become much more significant in future years if continued diversion rates continue.

## SWMP Component 7: Public Outreach

### 1. Program Components:

- A. Continue public outreach program through other agencies and associations, businesses, schools, and the general public.
- B. Install an average of 500 curb markers annually using volunteers and City employees.

### 2. Definitions:

*Municipal Separate Storm Sewer System (MS4)* – means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

- Owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial waste, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under 208 of the CWA that discharges to waters of the United States;
- Designed or used for collecting or conveying storm water;
- Which is not a combined sewer; and
- Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

*Schools (Elementary)* – Pre-kindergarten through 5<sup>th</sup> (sometimes 6<sup>th</sup>) grade, age groups 4 -12 years of age.

*Schools (Middle School or Junior High School)* – schools which span 7 - 8<sup>th</sup> grade but can also span from 5<sup>th</sup> - 9<sup>th</sup>, age groups are between 11 and 16 years of age.

*Schools (High School)* – Grade 9-12, age group is between 14-18 years of age.

*Volunteer Hours* – Volunteer hours are actual hours worked by residents, civic organizations, businesses or other organization at approved City activities.

### 3. Ordinances:

| Ordinance        | Title                                      | Language / Description   |
|------------------|--|--|
| §57-167(9)(c)(5) | Authority of Stormwater Quality Management | Ordinance identifies the Storm Water Manager and duties authorized to comply with NPDES regulations. |

#### 4. Standard Operating Procedures:

No SOPs are available for the Public Outreach SWMP Component. However, the program does provide applications, packets, method instructions, waivers and safety instructions for various outreach efforts and programs.

- Adopt-a-Street Application Packet describes the program and provides an application form, terms & conditions, agreement signature page and liaison checklist. See [Appendix V](#).
- Adopt-a-Street Event Packet provides instructions to obtain event supplies, the event permit request form, release and waiver of liability form, safety tips, event sign in list and litter collection report form. See [Appendix W](#).
- Oklahoma City Activity Permit (Adopt-a-Street and Creek Sweep Program). See [Appendix U](#).
- Waterway Clean Sweep Program Information Sheet provides a description of the program, including who can participate, what volunteers will be doing, and the location of the event. See [Appendix X](#).
- Waterway Clean Sweep Liability Release is a liability release for adult volunteer participants. See [Appendix Y](#).
- Waterway Clean Sweep Litter Collection Report is liability release for minors (18 and under) volunteers. See [Appendix Z](#).
- Waterway Clean Sweep safety awareness information can be found in [Appendix R](#).

#### 5. Resources:

Administration of the Public Outreach components for OKC is provided by the Public Works Department, Storm Water Quality Management Division. The program is funded through the Drainage Utility Fee. The Drainage Utility Fee (including reimbursements, permits, interests, etc.) provides ~\$17-21 million for operating and capital expenses related to storm water management.

The Public Outreach Program account provides the funding for the staff, educational efforts and outreach messaging. The FY18 budget for this account is \$87,923.

#### 6. General Program Description:

The SWQ Public Outreach Program provides education and outreach services through various printed materials, public involvement opportunities, school visitations, adult education opportunities, conventions, involvement with associations, committees, and taskforces, among others. The program also promotes the proper management and disposal of used motor vehicle fluids, household hazardous waste and common household products. Various topics are used to educate residents regarding the drainage system, receiving waterways and how the actions of residents can provide positive or negative consequences to local waterways. These subjects may include lawn management, pesticide management, nutrient management, pet waste management, spill cleanup, and reporting suspected problems. Displays at conventions, environmental workshops and community/civic organizations are used to communicate and distribute educational materials emphasizing ways to keep pollutants out of the MS4. Once annually, inserts

in water bills are used to inform citizens about the special collections.

OKC staff members are provided annual training regarding the proper use, application and disposal of pesticides, herbicides and fertilizers. Personnel targeted include pesticide applicators and technicians in all City Departments which provide vegetation management services.

The program provides relevant news, updates and volunteer opportunities through a quarterly “e-newsletter” to a distribution list of over 2,500. The SWQ web page [www.okc.gov/swq](http://www.okc.gov/swq) is publically available and provides resources such as program descriptions, maps, forms, contacts, manuals, brochures, reports and links to applicable storm water related organizations.

Public involvement is encouraged through volunteer initiatives such as the Curbs-to-Creeks program, Waterway Clean Sweep program, Adopt-a-City Street Program, and internships offered through the Storm Water Quality Management Program.

The Curbs-to-Creeks program promotes the use of a volunteer workforce to assist the City in the installation of 500 curb markers, annually. Permitted industrial facilities, businesses, neighborhood associations and individual resident are encouraged to participate in the Curbs to Creeks program and mark storm drain inlets. SWQ provides the installation supplies, data sheets, instructions, maps of local storm drains, MSDS (SDS) and safety equipment needed to install the markers. The instructions, data sheet and application form is available in [Appendix M](#).

Adopt-a-City Street relies on a voluntary workforce to adopt and remove roadside debris from a segment of OKC roadway. Generally, volunteers sign a two-year commitment to perform a minimum of four cleanup events each year. Volunteers are provided tools, personal protective equipment, designated areas, training, and necessary paperwork.

The Waterway Clean Sweep program uses volunteers to clean streams, wetlands, reservoirs, detention basins, and other locations. Volunteers are provided training, litter bags, personal protective equipment, tools, and paperwork. As an alternative to the contractual adopt-a-street or the adoption of a certain waterway segment, OKC offers “Eco-Cleanups” where groups can clean a designated location one time without agreeing to a long term commitment.

The SWQ internship program provides an opportunity for students to ride along with storm water personnel. This “first hand” experience is an invaluable opportunity to show participants the activities related to a MS4 permit.

OKC may use volunteer and collection totals from other organizations such as OKC Beautiful, neighborhood association cleanup events, or Adopt-a-Park program. Annually, OKC Beautiful partners with OKC and the Great American Clean-up to host the LitterBlitz. Debris collected will be included in [Component 11](#). More information about these programs can be found at the following link. <https://www.okcbeautiful.com/>

### Volunteer Hours

Volunteer hours are calculated by rounding up or down to the nearest 0.5 hour increment. Each volunteer present is totaled into the sum for the hours worked. All efforts are made to reflect the hours worked and staff shall track volunteers that do not work the entire scheduled work period. Volunteer value shall be calculated by using the Oklahoma volunteer value for the most recent year as published by the Independent Sector website:

<https://www.independentsector.org/resource/the-value-of-volunteer-time/>

| <b>Task</b>             | <b>Type</b>                          | <b>Staffing</b>  | <b>Comments</b>   |
|-------------------------|--------------------------------------|--|---|
| Quarterly Newsletter    | General Outreach                     | Community Relations Coordinator (1)  | The Downstream Newsletter has a distribution of over 2,500 quarterly.   |
| School Initiatives      | Education                            | *Environmental Technician (1)  | Additional help is often required. FTP & PTP are often used to assist with school visits.   |
| Curb Markers/Stenciling | Public Involvement                   | Environmental Technician (4), Professional Technician (2), Environmental Unit Supervisor (1), Volunteers | SWQ staff installs the preponderance of markers. Volunteer involvement is increasing.   |
| News Release            | General Outreach                     | Community Relations Coordinator (1)  | Several topic-specific news releases are developed and released through OKC's Public Information Office   |
| Cleanup Projects        | Public Involvement (OKC PW Programs) | Community Relations Coordinator (1), Environmental Unit Supervisor (1), **Environmental Technicians      | **Depending on cleanup type, additional staff may be utilized. Two types of cleanup programs are offered to date; Adopt-a-Street and Waterway Clean Sweep. To provide flexibility, Eco-Cleanups are |

| <b>Task</b>           | <b>Type</b>                        | <b>Staffing</b>  | <b>Comments</b>   |
|-----------------------|------------------------------------|--|---|
|                       |                                    |  | offered through both programs. These one-time cleanups require no agreement with the City to provide long-term efforts.   |
| Cleanup Projects      | Public Involvement (OKC Beautiful) | Environmental Protection Manager (1), Community Relations Coordinator (1), Environmental Unit Supervisor (1)           | Obtain the volunteer quantities, hours and total debris collected through the OKC Beautiful Programs  |
| Advertising Campaigns | General Outreach                   | Environmental Manager (1), Community Relations Coordinator (1), Environmental Unit Supervisor (1), Private Consultants | Advertising campaigns include promoting the HHWCF or subject matter campaigns such as the as “Everyday Environmentalist”.   |
| Special Events        | General Outreach                   | Environmental Protection Manager (1), Community Relations Coordinator (1), other applicable staff (when needed)        | Special Event include booths (at technical conferences, State Fair, trade shows, and workshops), special collection events, rain barrel distribution events, and other educational events (Earth Day) |

**Outreach Topics and Distribution Tools:**

| <b>Outreach Subject</b>  | <b>Elementary Schools</b> | <b>Booths / Displays</b> | <b>Workshops</b> | <b>Presentations</b> | <b>Advertising Campaigns</b> | <b>Brochures</b> | <b>Utility Bill Insert</b> | <b>Downstream Newsletter</b> | <b>Press Release</b> | <b>Media Interview</b> | <b>Social Media (Facebook)</b> | <b>Social Media (Twitter)</b> | <b>Social Media (Nextdoor)</b> | <b>City Website</b> | <b>Comments</b> |
|--|---------------------------|--------------------------|------------------|----------------------|------------------------------|------------------|----------------------------|------------------------------|----------------------|------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|-----------------|
| Disposal of Used Motor Oil and other Household Hazardous Waste | X                         | X                        | X                | X                    | X                            | X                | X                          | X                            | X                    | P                      | X                              | X                             | X                              | X                   |                 |
| Adopt-A-City Street  | X                         | X                        | X                | X                    |                              | X                | X                          | X                            |                      |                        | X                              |                               |                                | X                   |                 |
| Waterway Clean   |                           |                          |                  | X                    |                              | F                |                            | X                            |                      |                        | X                              |                               |                                | F                   |                 |



| <b>Outreach Subject</b>      | <b>Elementary Schools</b> | <b>Booths / Displays</b> | <b>Workshops</b> | <b>Presentations</b> | <b>Advertising Campaigns</b> | <b>Brochures</b> | <b>Utility Bill Insert</b> | <b>Downstream Newsletter</b> | <b>Press Release</b> | <b>Media Interview</b> | <b>Social Media (Facebook)</b> | <b>Social Media (Twitter)</b> | <b>Social Media (Nextdoor)</b> | <b>City Website</b> | <b>Comments</b>                                 |
|------------------------------|---------------------------|--------------------------|------------------|----------------------|------------------------------|------------------|----------------------------|------------------------------|----------------------|------------------------|--------------------------------|-------------------------------|--------------------------------|---------------------|---|
| Sweep Program                |                           |                          |                  |                      |                              |                  |                            |                              |                      |                        |                                |                               |                                |                     |   |
| Nutrients                    | F                         |                          |                  | P                    |                              | X                |                            | *X                           | X                    | X                      | X                              | X                             |                                |                     | *Spring Tips/Fall Tips                          |
| Pet Waste                    | X                         |                          |                  | F                    |                              | F                |                            | F-P                          |                      |                        | F                              | F                             | F                              |                     |   |
| Yard Waste                   | X                         | F                        |                  | F                    |                              | X                |                            | *X                           | X                    |                        | F                              | F                             | F                              |                     | *Spring Tips/Fall Tips                          |
| Fecal Bacteria               |                           |                          |                  | X                    |                              |                  |                            |                              |                      |                        |                                |                               |                                |                     | Subject specific presentations                  |
| Erosion / Sediment           | X                         | X                        | X                | X                    |                              | X                |                            | *F                           |                      |                        |                                |                               |                                |                     | *Award Program / Clean Construction Recognition |
| Heavy Metals                 |                           |                          | X                |                      |                              |                  |                            |                              |                      |                        |                                |                               |                                |                     | Industrial Workshop Subject                     |
| Minerals/Salts               |                           |                          |                  |                      |                              | F                |                            | *X                           | F                    |                        |                                |                               | F                              |                     | * Winter Tips                                   |
| Storm Water Runoff (General) | X                         | X                        | X                | X                    |                              | X                |                            |                              |                      |                        |                                |                               |                                | X                   |   |
| Hydrologic Cycle             | X                         | X                        |                  | X                    |                              |                  |                            |                              |                      |                        |                                |                               |                                |                     |   |
| Pool Maintenance             |                           | X                        | X                | X                    |                              | X                |                            | *F                           | X                    |                        |                                |                               | X                              |                     | *One Time / Permit Cycle                        |
| Pesticides / Herbicides      |                           |                          | X                | X                    |                              |                  |                            |                              |                      |                        |                                |                               |                                |                     |   |
| Storm Drain / Curb Marking   | X                         | X                        | X                | X                    |                              | X                |                            | *F                           |                      |                        |                                |                               |                                | X                   | *Downstream Newsletter                          |

P= Periodically

F = Future

**7. Component Metrics:**

| <b>Task</b> | <b>Metric</b>                        | <b>Reported Figure</b>            | <b>Goal/Reporting</b>         |
|-------------|--------------------------------------|-----------------------------------|-------------------------------|
| Schools     | Number of Elementary Schools Visited | # Elementary Schools Visited/Year | 8 Schools / Reported Annually |

| <b>Task</b>   | <b>Metric</b>   | <b>Reported Figure</b>                | <b>Goal/Reporting</b>   |
|---|---|---------------------------------------|---|
| Schools   | Number Elementary Schools Visited   | # Elementary Student Contacts         | 2,000 Students / Reported Annually  |
| Schools   | Number Other Schools Visited (Secondary Schools, College and Universities)  | # Other Schools Visited/Year          | No Goal Established / Reported Annually   |
| Schools   | Number Other Student Contacts (Secondary Schools, College and Universities) | # Other School Contacts/Year          | No Goal Established / Reported Annually   |
| Adult Education (Community, Technical and Other SWQ Based Engagements)  | Number of Community Engagements, Public Speaking or Presentations           | # Events/Year                         | No goal established. However, the number and type of engagement will be tracked / Reported Annually |
| Special Events (such as rain barrel distribution or other event where brochures, personal communication or other relevant information is provided regarding SWQ management) | Number of Relevant Special Events   | # Special Events/Year                 | No Goals Established / Reported Annually  |
| Advertising Campaigns   | Number of Advertising Campaigns   | # Individual Campaign Releases / Year | No Goals Established / Reported Annually  |

| <b>Task</b>           | <b>Metric</b>  | <b>Reported Figure</b>                | <b>Goal/Reporting</b>                    |
|-----------------------|--|---------------------------------------|--|
| Advertising Campaigns | Estimation of Viewership                                   | # Estimated Consumers / Year          | No Goals Established / Reported Annually |
| Public Involvement    | Number of Waterway Clean Sweep Events                      | # Events / Year                       | 8 Events / Reported Annually             |
| Public Involvement    | Number of Waterway Clean Sweep Volunteers                  | # Volunteers / Year                   | 50 Volunteers/ Reported Annually         |
| Public Involvement    | Number of Waterway Clean Sweep Volunteer Hours             | # Volunteer Hours / Year              | 50 Hours (Minimum) / Reported Annually   |
| Public Involvement    | Number of Adopt-a-Street Events                            | # Events / Year                       | 25 Events / Reported Annually            |
| Public Involvement    | Number of Adopt-a-Street Volunteers                        | # Volunteers / Year                   | 50 Volunteers/ Reported Annually         |
| Public Involvement    | Number of Adopt-a-Street Volunteer Hours                   | # Volunteers Hours / Year             | 50 hours (Minimum) / Reported Annually   |
| Public Involvement    | Number of Curbs-to-Creeks Volunteers                       | # Volunteers / Year                   | No Goals Established / Reported Annually |
| Public Involvement    | Number of Curbs-to-Creeks Markers Placed by Volunteers     | # Markers Placed by Volunteers / Year | No Goals Established / Reported Annually |
| Public Involvement    | Number of Curbs-to-Creeks Volunteer Hours                  | # Volunteer Hours / Year              | No Goals Established / Reported Annually |
| Public Involvement    | Number of OKC Beautiful Volunteers (for debris collection) | # Volunteers / Year                   | No Goals Established/ Reported Annually  |

| <b>Task</b>  | <b>Metric</b>   | <b>Reported Figure</b>                    | <b>Goal/Reporting</b>                    |
|--|---|---|--|
| Public Involvement   | Number of OKC Beautiful Volunteer Hours (for debris collection)   | # Volunteer Hours / Year                  | No Goals Established / Reported Annually |
| Service  | Number of Curbs-to-Creeks Markers Placed by City Personnel  | # Markers Placed by City Personnel / Year | 500 Markers / Reported Annually          |
| Newsletters and Special Notices  | Number of Newsletters or Special Notices Distributed  | # Distributions / Year                    | Four (Quarterly) / Reported Annually     |
| Technical Committees, Professional Meetings, Working Groups and Taskforces | Number of technical committee, professional meetings, workgroup functions or taskforce meetings attended. | # Attended / Year                         | No Goal Established / Reported Annually  |

**8. Narrative Goals:**

Provide Public Outreach services to educate, train and improve environmental awareness through workshops, school programs, volunteer opportunities, and public events to increase environmental stewardship and awareness about the City’s storm water programs. Public outreach may be implemented in part or wholly by SWQ or other City entities. OKC may collaborate with other City MS4 programs, coalitions, private organizations, neighborhood associations, interested stakeholder groups and educational institutions to achieve SWMP goals.

**9. Cooperating Departments, Agencies and Communities:**

| <b>Agency</b>  | <b>Roles / Responsibility</b>   |
|--|---|
| OKC Public Works Administration                      | Administration of all Public Works programs, projects, personnel, funding sources and operations.                                       |
| OKC, Public Works Dept. Storm Water Quality Division | Primary permitting, inspection, enforcement, monitoring, household hazardous waste disposal services, education, outreach and reporting |

| Agency  | Roles / Responsibility  |
|---|---|
|   | agency for OKC MS4 NPDES compliance..   |
| OKC Public Information Office                                 | Responsible for all public information releases including review applicable brochures, media announcements, educational campaigns, etc.                           |
| OKC Utilities Department                                      | Educational campaigns may be distributed as a utility bill insert.  |
| OKC Parks and Recreation Department                           | Parks can be excellent education venues. PW and the Parks and Recreation Departments work together to obtain permits for cleanup (in Parks or River trust areas). |
| OKC Public School System                                      | Provides opportunity for classroom visits for SWQ personnel to provide age appropriate water quality based curriculum.  |
| Oklahoma Department of Environmental Quality (ODEQ)           | Primary regulatory oversight Agency   |
| Oklahoma Department of Agriculture, Food and Forestry (ODAFF) | Primary regulatory oversight Agency for pesticides  |

**10. Area-Specific Requirements:**

Area 1: Lake Thunderbird Report for Nutrient, Turbidity and Dissolved Oxygen TMDLs

The Lake Thunderbird Total Maximum Daily Load Compliance Plan for the Lake Thunderbird Watershed in Oklahoma City Jurisdictional Areas (September 2016) specifies certain education and outreach efforts will be accomplished within the contributing drainage areas.

- Partner and coordinate with watershed stakeholders to create a collaborative and watershed-wide outreach strategy.
- Use applicable demonstration projects for educational purposes.
- Curb-to-Creeks – mark or verify previous marker applications at the 116 identified inlets in the watershed.
- Signage – add signage which identifies the watershed and direct residents to available resources.
- Provide continuing education to OKC staff regarding methods of pollutant removal, nutrients cycles and other TMDL related subjects.
- Add language to construction and industrial workshops presentations regarding 303(d) listed streams and waterways with active or proposed TMDLs.
- Request and visit (pending school approval), schools identified in the Lake Thunderbird watershed.

- Create a web-based outreach program to address storm water pollution runoff in the Lake Thunderbird watershed.

**11. Analyses:**

No analysis is required for this SWMP Component.

## SWMP Component 8: Roadway Operation and Maintenance

### 1. Program Components:

- A. Continue the Roadway and Maintenance Program through panning crews, curb inlet cleaning, and the street sweeping contract.
- B. Update the SWMP to include any roadway operation and management changes.
- C. Provide a summary of activities from the Roadway and Maintenance Program annually.

### 2. Definitions:

*Spill Response* – for the purpose of the storm water quality discharge permit for OKC, spill response is related to the discharge of a material or materials which may cause damage or contribute to MS4 contamination or receiving waters.

### 3. Ordinances:

| Ordinance | Title    | Language / Description  |
|-----------|----------|---|
| 58-10(f)  | Wreckers | Each wrecker driver dispatched to the scene of an accident shall be responsible for clearing from the street all debris existing as a result of such accident, including any ordinary vehicle fluids found at the scene of collisions and absorbing material used to absorb vehicle fluids. |

### 4. Standard Operating Procedures:

| SOP      | Name  | Revision   |
|----------|---|------------|
| SOP # 40 | Emergency and Non-Emergency Spill Response Procedures | 12/20/2017 |

### 5. Resources:

Multiple resources are involved with the Roadway Operation and Maintenance SWMP component. These resources may include Federal, State and City budgets. OKC Departments involved include Public Works, Utilities, Fire, Police and Parks & Recreation.

Roadway maintenance and improvements are funded through several OKC Department budgets and general bond obligation propositions. The General Obligation Bond (GOB) program is instrumental is the most significant initiative to date regarding roadway maintenance and improvements. The 2017 GOB package is made up of thirteen propositions which cover streets & sidewalks, traffic control, bridges, drainage control, parks & recreation, economic community development, fire, police, libraries, transit, a civic center complex, city maintenance facilities and a downtown arena. Streets and sidewalks is the largest component of the bond package with \$491 million dollars allocated to those projects. The 2017 GOB authorization succeeds the near-complete 2007 GOB

authorization. A temporary 27 month continuation of the MAPS3 penny sales tax was authorized for continued funding of \$240 million for street resurfacing, streetscapes, trails, sidewalks and bicycle infrastructure. A permanent ¼ cent sales tax was authorized which will provide an estimated \$26 million of annual funding for police, fire protection and other critical services.

SWQ spill response is funded through the Drainage Utility Fee. The Drainage Utility Fee (including reimbursements, permits, interests, etc.) provides ~\$17-21 million for operating and capital expenses related to storm water management. Contracting services funding is provided through the Storm Water Permitting Program. Approximately \$86,000 is budgeted for spills or other cleanups which impact the MS4 where a responsible party is not identified.

## **6. General Program Description:**

Multiple departments of the City are charged with the aspects of roadway management. The largest proportion of roadway management is implemented by the Public Works Department. Other departments, such as Fire, Police, Utilities and Parks and Recreation also provide services to manage safe and effective transportation routes throughout the City. Roadway storm water management includes assessment of road conditions, inspection of roadway drainage systems, and maintenance of roadway drainage systems, spill response and cleanup, snow and ice control, and roadway vegetative management. Debris from street and roadway surfaces can impact the capacity of the MS4 and quality of storm water discharge from the MS4. Programs such as street sweeping, curb and inlet cleaning provide the bulk removal of debris before entering receiving waters. Spill response and remediation/removal is implemented by Federal, State and Local emergency responders. When storm water may be impacted by spills, leaks or emissions, SWQ on-call personnel are often the on-scene coordinators for short and long-term cleanups (see SWMP Component 10, Pollution Complaint and Spill Response).

Snow and ice control can impact the MS4 and receiving waters. OKC has pre-defined snow and ice routes (regional snow routes) which were designated collaboratively with sixteen cities and four counties <https://www.okc.gov/residents/prepare-okc/know-what-to-do/winter-weather>. These routes are the primary application areas of salt or other materials which assist in traction control, and evaporation or melting of ice and snow to reduce the risk to roadway users in OKC. The materials used to reduce the snow and ice hazards are located at two facilities in OKC, Central Maintenance Facility (3738 SW 15<sup>th</sup> Street) and the North Salt Barn (11633 North Santa Fe Avenue). These facilities are permitted through the SWQ Industrial Program and inspected for storm water compliance two times each year. The regional snow and ice routes in OKC include 119 bridges and overpasses totaling roughly 75 lane miles; and 104 street segments which includes 1,062 lane miles. The OKC area snow routes map and tables are located in [Appendix N](#). Deicing material usage varies from year-to-year. The largest recent quantity used in OKC during the winter of 2007-2008 where 10,557 tons were applied to roadways. The 10-year average (2007-2016) is 4,137 tons/year.

- The Adopt-a-Street Program provides volunteers the opportunity to adopt a section of City streets to periodically clean and properly dispose of roadside trash. The Adopt-a-Street component is discussed in [Component 7](#).



- City panning crews removed an annual average of 467 tons of debris from curbs, inlets, culverts and channels from 2012-2016. These crews provide significant removal of debris which can create hazardous standing water situations and restrict flow through the MS4.
- Street Sweeping provides an average annual removal of 3,217 tons of debris (calculated using 2012-2016 reported values). Street sweeping routes can be viewed in [Appendix O](#).
- Storm drain markers are placed along roadways to educate residents and roadway users that storm water is not treated before entering the MS4. The Curbs-to-Creeks program is discussed in [Component 7](#).
- Storm drain inlet protection, such as storm drain inserts, have been added to multiple areas along streets and neighborhood roadways. These devices capture debris and sediment before entering the inlet box and are periodically cleaned. Storm drain inlets are discussed in [Component 11](#).

| <b>Task</b>             | <b>Type</b>        | <b>Staffing</b>   | <b>Comments</b>  |
|-------------------------|--------------------|---|--|
| Roadway Maintenance     | Inspection Program | Public Works, Field Services Division; 44 employees   | Public Works Inspectors. Furgo-Roadware software is used to evaluate and rate pavement conditions.                                     |
| Curb and Inlet Cleaning | Service            | Public Works Streets and Drainage Maintenance Division; Street and Drainage Maintenance Personnel (8) | Average annual removal of 467 tons of debris and sediments from OKC roadways.  |
| Snow Removal            | Service            | Public Works Streets and Drainage Maintenance Division – Personnel based on operational demands.      | Snow and ice removal is conducted on an as-needed basis. Staffing is subject to the magnitude of the event and equipment availability. |

| Task                             | Type    | Staffing   | Comments  |
|----------------------------------|---------|--|---|
| Salting / Sanding                | Service | Public Works Streets and Drainage Maintenance Division – Personnel based on operational demands. | Salting and Sanding is conducted on an as-needed basis. Staffing is subject to the magnitude of the event and equipment availability.   |
| Street Sweeping (routine sweeps) | Service | Environmental Technician (1), Utilities Department Contract, Contractors                         | SWQ conducts regular street sweeping audits. Private contractors are contracted by OKC to provide this service. ~575 lane miles are swept provided the average annual removal of 3,217 tons of debris and sediment. |
| Street Sweeping (Special Sweeps) | Service | Environmental Technician (1), Utilities Department Contract, Contractors                         | Special sweeps may be warranted at the conclusion of special events to remove debris.   |
| Mowing and Trimming              | Service | Parks and Recreation and Public Works Department   | Parks and Recreation and the Public Works Department collectively maintain right-of-way and City easement   |

**7. Component Metrics:**

| <b>Task</b>          | <b>Metric</b>  | <b>Reported Figure</b>                                 | <b>Goal / Reporting</b>                 |
|----------------------|--|--|---|
| Emergency Operations | Salting / Sanding Operations   | # Tons applied / year                                  | No goal established; Reported annually  |
| Emergency Operations | Salt and Sanding Operations  | # Lane miles to which salt and sand are applied / year | No goal established; Reported annually  |
| Emergency Operations | Emergency Response to Roadway Spills, Leaks and Emissions which could Impact the Storm Drainage System | Metric is provided in SWMP Component # 10 Metrics      | See <a href="#">SWMP Component #10</a>  |
| Inspection           | Paving Inspection (Arterials)  | # Miles inspected / year                               | No goal established; Reported annually  |
| Maintenance          | Curb and Inlet Cleaning Debris Removed   | # Tons removed / year                                  | No goal established; Reported Annually  |
| Maintenance          | Street Sweeping  | # Tons debris removed / year                           | No goal established; Reported annually  |
| Maintenance          | Street Sweeping (Includes routine and special sweep operations)  | # Lane miles swept / year                              | No goals established; Reported annually |

**8. Narrative Goals:**

To provide safe and efficient driving conditions while addressing runoff quality related to roadway operations by the application of consistent spill response, inspections and maintenance of existing City-owned roadways.

**9. Cooperating Departments, Agencies and Communities:**

| Agency  | Roles / Responsibility  |
|---|---|
| OKC, Public Works Department, Administration                            | Administration of all Public Works programs, projects, personnel, contracting, funding sources and operations.  |
| OKC, Public Works Department, Storm Water Quality Division              | Primary permitting, inspection, enforcement, household hazardous waste disposal services, emergency and non-emergency response to spills or discharges which impact the storm drainage system, and is the reporting agency for OKC MS4 NPDES compliance..                 |
| OKC, Public Works Department, Streets and Drainage Maintenance Division | Responsible for maintenance of roadways and drainage systems to include construction, inspection, repair, removal or replacement of roadway related infrastructure. Reduction of hazards through response to roadway debris, poor drainage, ice and snow.                 |
| OKC, Public Information Office  | Responsible for all public information releases including review of applicable brochures, media announcements, educational campaigns etc.   |
| Municipal Contractors   | Storm Water Quality maintains a list of Environmental Contractors which respond to spills, leaks or emissions which may impact roadway user's safety, health or environmental health.   |
| OKC, Utilities Department   | Charged with installation, repair and maintenance of water and wastewater infrastructure which are often located at or near roadways. Responsible for the collection of solid waste and any spills which occur on roadways from the aforementioned collection activities. |
| OKC, Office of Emergency Management                                     | Responsible for OKC's comprehensive emergency management program across all phases and mission areas: Preparedness, Prevention, Protection, Response and Recovery.  |
| OKC, Police Department  | Often the first on-scene responders. A basic awareness of spills or releases which may cause or contribute to human, structural or environmental damage. Police may be on-scene site command.   |

| Agency                                       | Roles / Responsibility  |
|--|---|
| OKC, Fire Department                         | Charged with response to fire and other emergencies which include roadway incidents. The Fire Department is often the first on-scene emergency responders and will reduce or eliminate sources of pollution into the storm drain system. Fire may often be the on-scene site command. |
| State Police                                 | Charged with the response to accidents. State Police may have on-scene site command.  |
| Oklahoma Department of Environmental Quality | Primary oversight Agency  |

**10. Area Specific Requirements:**

No area specific requirements are currently in place for this SWMP component.

**11. Analysis:**

No analysis is required for this SWMP Component.

## SWMP Component 9: Pesticide, Herbicide, and Fertilizer Application

### 1. Program Components:

- A. Continue annual training/education/certification classes on pesticide and fertilizer management techniques.
- B. Include appropriate reference to the Pesticide General Permit Management Plan in the SWMP.
- C. Develop and implement training for integrated pest management.

### 2. Definitions:

*AgPDES* - Agriculture Pollutant Discharge Elimination System is administered through the Oklahoma Department of Agriculture, Food and Forestry (ODAFF). The AgPDES permit which applies to pesticide use in Waters of the United States is the *Pesticide General Permit (PGP) for Discharges from the Application of Pesticides*. This permit authorizes all discharges of pesticides to Waters of the US that are applied in accordance with State laws and rules, the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), and the pesticide label.

*Pesticide* – a substance or mixture of substances intended for defoliating or desiccating plants, preventing fruitdrop, inhibiting sprouting, or for preventing, destroying, repelling, or mitigating any insect, rodents, fungi, bacteria, weeds, or other forms of plant or animal life or viruses, which the State Board of Agriculture declares to be a pest, except viruses on or in humans or animals.

### 3. Ordinances:

| Ordinance | Title                                      | Language / Description  |
|-----------|--|---|
| 57-167(4) | Authority of Stormwater Quality Management | Audit the use of herbicides, fertilizers, and pesticides to determine compliance with Clean Water Act laws and to recommend alternative solutions where practicable for the reduction of their use through education and outreach programs; |

### 4. Standard Operating Procedures:

| SOP     | Name             | Revision   |
|---------|------------------|------------|
| SOP #28 | Mosquito Control | 12/28/2016 |

### 5. Resources:

Administration of the Pesticide, Herbicide and Fertilizer Application Program components for OKC is

provided by the Public Works Department, Storm Water Quality Management Division. The program is funded through the Drainage Utility Fee. The Drainage Utility Fee (including reimbursements, permits, interests, etc.) provides ~\$17-21 million for operating and capital expenses related to storm water management.

The Environmental Water Quality Program Account provides the funding for the Pesticide General Permit. The FY18 budget for this account is \$773,474. The educational components of this SWMP component are partly or wholly implemented through the Public Outreach Section. The Public Outreach Program account provides the funding for the staff, educational efforts and outreach messaging. The FY18 budget for this account is \$87,923.

**6. General Program Description:**

Storm water quality management related to pesticide, herbicide and fertilizer application includes training and certification of City employees, implementation and adherence to the Pesticide General Permit AgPDES permit requirements (see [Appendix C](#) for the OKC Notice of Intent, 2017), subject matter educational efforts, spill response, and proper reporting of spills or adverse impacts. The Household Hazardous Waste Collection Facility provides an opportunity to residents and adjacent communities (with MOUs) to dispose of unused or unwanted pesticides and fertilizer. The HHWCF is discussed in [Component 6](#). Education materials such as lawn management brochures, press releases and newsletters are used to distribute information regarding the proper application and disposal of unused or unwanted pesticides and fertilizers. More information regarding these materials can be found in [Component 7](#). Primary and secondary emergency response personnel respond to spills which involve pesticides and fertilizers. SWQ personnel may be notified when surface waters or the MS4 is or may be impacted. More information on spill response can be found in [Component 10](#).

| <b>Task</b>                          | <b>Type</b>                     | <b>Staffing</b>   | <b>Comments</b>   |
|--------------------------------------|---------------------------------|---|---|
| Training                             | Annual Workshop                 | Outreach Coordinator (1);<br>Subject Matter Experts   | Applicator and Technician training for City employees.  |
| Public Outreach                      | Education and Outreach Material | Outreach Coordinator (1)  | See <a href="#">Component 7</a>   |
| Contract Administration              | Administrative Control          | Environmental Manager (1)   | Continue reviewing City contracts to require contracted vendors to comply with the PGP requirements and storm water quality ordinances. |
| Pesticide General Permit             | Permit Compliance               | Public Works Director (1),<br>Environmental Manager (1),<br>Environmental Unit Supervisor (1) | Permit Compliance, Spill Reporting, Pesticide General Permit Management Plan  |
| Pesticide / Herbicide Spill Response | Service                         | SWQ Division  | See <a href="#">Component 10 Pollution Compliant and Spills Response</a>  |

Pesticide General Permit

OKC submitted a Notice of Intent to the EPA in February 2012 for discharges of pesticides to waters of the United States within the corporate boundaries of OKC (the pesticide management area). OKC’s NPDES permit tracking number is OKG87A006. EPA authorized the ODAFF to issue agricultural-based Clean Water Act discharge permits in 2013. OKC’s NPDES discharge permit is currently under the jurisdiction of the ODAFF’s Agricultural Pollutant Discharge Elimination System (AgPDES).

This permit authorizes pesticide discharges of specific pesticide use categories in certain Waters of the United States with the use of BMPs to reduce impacts associated with those discharges. Use categories include 1) mosquito and other flying insect pest control, 2) aquatic weed and algae control, 3) aquatic nuisance animal control, and 4) forest canopy pest control. Mosquito and other flying insect pest control and aquatic weed and algae control are the two categorical uses currently conducted by OKC.

**PGP Reporting Departments, Divisions and Authorities**

| <b>Department / Authority</b>   | <b>Division</b>   | <b>Program</b>   |
|---------------------------------|---|--|
| Public Works Department         | Storm Water Quality Management  | West Nile Virus / Larvicide Program                        |
| Public Works Department         | Streets and Drainage Maintenance  | Oklahoma River Control House Weed and Pest Control Program |
| Public Works Department         | Streets and Drainage Maintenance  | Guardrail Program  |
| Public Works Department         | Streets and Drainage Maintenance  | Channel Spraying Program                                   |
| Parks and Recreation Department | Grounds Management Division   | Slope Spray Program and the Oklahoma River Basin           |
| OKC Public Property Authority   | James E. Stewart Golf Course, Lake Hefner Golf Course, Trosper Park Golf Course, Earlywine Golf Course, and Lincoln Golf Course | General Grounds Management                                 |
| Utilities Department            | Reservoirs and Canals   | Reservoirs and Canals Maintenance Program                  |

**7. Component Metrics:**

| <b>Task</b> | <b>Metric</b> | <b>Reported Figure</b>            | <b>Goal / Reporting</b>                 |
|-------------|---------------|-----------------------------------|---|
| Training    | Workshop      | # of Workshops / Year             | One workshop each year; Report Annually |
| Training    | Workshop      | # of workshop participants / year | No goal established; Reported annually  |



| <b>Task</b>              | <b>Metric</b>  | <b>Reported Figure</b>                          | <b>Goal / Reporting</b>   |
|--------------------------|--|---|---|
| Contract Administration  | Ensure language is added to vegetative management contracts regarding the PGP requirements | Not reported                                    | No goal established;<br>Internal – Not Reported   |
| Pesticide General Permit | PGP Qualifying Discharges  | # Linear feet or # acres treated / year         | No goal established;<br>Reported annually<br>(unless reporting is not required per the PGP) |
| Pesticide General Permit | PGP Pesticide Use Quantities   | # Pounds or gallons of pure product used / year | No goal established;<br>Reported annually<br>(unless reporting is not required per the PGP) |
| Pesticide General Permit | Mosquito Larvicide Program   | # of larvicide applications / year              | No goal established;<br>Reported annually   |
| Pesticide General Permit | Mosquito Larvicide Program   | Area Treated (ft <sup>2</sup> ) / year          | No goal established;<br>Reported annually   |
| Pesticide General Permit | Mosquito Surveillance  | # Mosquitos captured / mosquito season          | No goal established;<br>Reported annually   |

| <b>Task</b>              | <b>Metric</b>         | <b>Reported Figure</b>  | <b>Goal / Reporting</b>                 |
|--------------------------|-----------------------|---|---|
| Pesticide General Permit | Mosquito Surveillance | # Positive Results in OKC for the West Nile Virus / Mosquito Season | No goals established; Reported annually |

**8. Narrative Goals:**

Provide OKC pesticide applicators and technicians with annual training regarding the proper use of pesticides and fertilizer and provide opportunities for City employees to obtain necessary continuing education credits for applicable licenses and certifications. Developed and distribute information to the residents, businesses, and municipal employees of OKC regarding the proper use and disposal of pesticides and fertilizers. To comply with the Pesticide General Permit and conduct any reporting necessary to meet the Pesticide, Herbicide and Fertilizer Application SWMP Component.

**9. Cooperating Departments, Agencies and Communities:**

| <b>Agency</b>  | <b>Roles / Responsibility</b>   |
|--|---|
| OKC, Public Works Administration                               | Administration of all Public Works programs, projects, personnel, permits, funding sources and operations. Responsible for contracting limited channel spraying.  |
| OKC, Public Works Department, Storm Water Quality Division     | Primary permitting, inspection, monitoring, enforcement, household hazardous waste disposal services, spill and HAZMAT response and reporting agency for OKC MS4 NPDES compliance. Responsible for mosquito surveillance and mosquito larvicide application. Administration of the Pesticide General Permit for OKC.                                      |
| OKC, Public Works Department, Streets and Drainage Maintenance | Responsible for the Oklahoma River Control House and Weed/Pest Control Program; Guardrail Program; and Channel Spraying Program. No PGP annual reporting is required. Applicators must maintain all appropriate records.  |
| OKC, Parks and Recreation Department, Grounds Management       | Responsible for the Slope Spray Program and properties at/near the Oklahoma River. No PGP annual reporting is required. Applicators must maintain all appropriate records.  |
| OKC, Public Property Authority (Multiple Facilities)           | James E. Stewart Golf Course, Lake Hefner Golf Course, Trosper Park Golf Course, Earlywine Golf Course, and Lincoln Golf Course. Responsible for the grounds management including the application of pesticides at/near waterways to control nuisance vegetation. No PGP annual reporting is required. Applicators must maintain all appropriate records. |

| Agency   | Roles / Responsibility   |
|--|--|
| OKC, Utilities Department, Reservoirs and Canals | Responsible for pesticide applications at/near specific infrastructure to maintain aqueduct and reservoirs free of nuisance or invasive plant specimens and algae pests. No PGP annual reporting is required. Applicators must maintain all appropriate records. |
| OKC - Private Contractors                        | Responsible for the application of pesticides on behalf of OKC to control the growth of nuisance or dangerous vegetation. No PGP annual reporting is required. Applicators must maintain all appropriate records.  |

**10. Area Specific Requirements:**

Sensitive Private and Public Water Supplies (and watersheds) are not authorized by the PGP for the application of pesticides to Waters of the United States. Vegetation management at these stream segments must be controlled through mechanical methods. OKC has determined the following waterways, partly or wholly within OKC, are classified as Tier 2 or Sensitive Public and Private Water Supplies (SWS) as defined in OAC 785:46-13-4(b) (see table below). SWS designated stream segments located partly or wholly within OKC include 11 Digit Hydrologic Unit Classifications 11100303010, 11100302040 and 11090203010 (Lower North Canadian and Lower Canadian, respectively). Lake Hefner (OK620910040200\_00) and Lake Overholser (OK520520000260\_00) are not considered SWS waterbodies.

| Name                      | WBID              | Type | Size  | SWS |
|---------------------------|-------------------|------|-------|-----|
| Belle Isle Creek          | OK520710020160_00 | R    | 2.23  | X   |
| Britton Creek             | OK520710020070_00 | R    | 4.72  | X   |
| Nichols Creek             | OK520710020150_00 | R    | 0.97  | X   |
| Canadian River, Deep Fork | OK520710020010_00 | R    | 4.14  | X   |
| Canadian River, Deep Fork | OK520710020060_00 | R    | 10.07 | X   |
| Elm Creek, East           | OK520810000110_00 | R    | 2.4   | X   |
| Elm Creek, West           | OK520810000140_00 | R    | 8     | X   |
| Guy James Creek           | OK520710020140_00 | R    | 1.97  | X   |
| Hog Creek, West Branch    | OK520810000040_00 | R    | 3.69  | X   |
| Kitchen Creek             | OK520810000150_00 | R    | 5.41  | X   |
| Northeast Creek           | OK520710020110_00 | R    | 2.46  | X   |
| Springlake Creek          | OK520710020130_00 | R    | 2.07  | X   |
| Tinker Creek              | OK520710020040_00 | R    | 1.92  | X   |
| Wynn Creek                | OK520710020050_00 | R    | 5.59  | X   |

| Name                 | WBID              | Type | Size  | SWS |
|----------------------|-------------------|------|-------|-----|
| Arcadia Lake         | OK520710020020_00 | L    | 1820  | X   |
| Northeast Lake (Zoo) | OK520710020120_00 | L    | 29    | X   |
| Stanley Draper Lake  | OK520810000130_00 | L    | 2900  | X   |
| Elm Creek            | OK520810000100_00 | R    | 1.44  | X   |
| Hog Creek            | OK520810000030_00 | R    | 11.89 | X   |
| Deer Creek, South    | OK520510000290_00 | R    | 4.4   | X   |
| Forest Park Creek    | OK520710020100_00 | R    | 2.69  | X   |
| Aluma Creek          | OK520710020080_00 | R    | 1.33  | X   |
| Forest Park Creek    | OK520710020100_00 | R    | 2.69  | X   |
| Belle Isle Creek     | OK520710020160_00 | R    | 2.23  | X   |

ODAFF has approved OKC's July 17, 2017 request to authorize pesticide use on the following waterways which are located within SWS watersheds.

- Canadian River, Deep Fork (OK520710020060\_00), Near NE 59<sup>th</sup> Street and Kelly Avenue, Segment Length ~1,626 feet.
- Unnamed Tributary to Deep Fork River (No WBID), near NW 35<sup>th</sup> Street and Independence Avenue, Segment Length 903 feet.
- Lake Stanley Draper (OK520810000130\_00), Btw. SE 89<sup>th</sup> Street and SE 149<sup>th</sup> Street east of Douglas and west of Anderson Road, 2900 acres.

#### 11. Analysis:

No analysis is required for this SWMP Component.

## SWMP Component 10: Pollution Complaint and Spill Response

### 1. Program Components:

- A. Continue to respond to citizen complaints of pollution.
- B. Continue to respond as technical support for the City of Oklahoma City Hazardous Materials Unit on hazardous material incidents.
- C. Provide a summary of pollution complaints and spill responses annually.

### 2. Definitions:

*Operator* - means a person that: (1) has operational or supervisory control over the premises or equipment; or (2) has the day-to-day operational or supervisory control of activities at a work site or construction location sufficient to comply with or to ensure compliance with plan requirements and permit conditions (e.g. is authorized to direct workers at a work site to carry out activities identified in an ordinance, permit or work plan).

*Persons* - means any individual, partnership, co-partnership, firm company, corporation association, joint stock company trust, estate, governmental entity or any other legal entity, or their legal representatives, agents or assigns. This definition includes all Federal, State, or local governments.

*Responsible Party* – are persons or operators who are responsible for the containment, removal, remediation, or reclamation of a spill or release to the MS4 or other surface waters.

*Spills* – shall mean any release that, in the opinion of the Director, negatively impacts the quality of water within or discharges from the City’s municipal separate storm sewer system, or causes damaging or deleterious effects to the City’s municipal separate storm sewer system, including all structures or appurtenances and/or the waters to the storm sewers.

*Spill Response* – in the context of pollution prevention, a response by authorized City personnel for the purpose of:

- A. Complying with the Federal Clean Water Act, the Oklahoma Pollution Discharge Elimination System Act, and the Oklahoma City Municipal Separate Storm Sewer System Oklahoma Pollutant Discharge Elimination System Permit #OKS000101 issued by the ODEQ.
- B. Provide technical support to the OKC Fire Department, OKC Police Department or other City, State and Federal agencies in response to a spill or release that may negatively impact the quality of water within the City’s MS4 or those waters which receive discharge from the OKC MS4.
- C. To assess the extent of the cleanup and assure remedial actions are adequate for the protection of the MS4.
- D. To assure that proper notification requirements have fulfilled and that correct and accurate documentation is maintained.

E. To assure expedited and comprehensive remedial efforts.

**3. Ordinances:**

| <b>Ordinance</b> | <b>Title</b>                               | <b>Language / Description</b>  |
|------------------|--|--|
| §57-141(b)       | Scope                                      | To control the introduction to the municipal storm sewer system of spills, dumping, or the disposal of materials other than stormwater.  |
| §57-167(a)(5)    | Authority of Stormwater Quality Management | Control the discharge of spills and the dumping or disposal of materials other than stormwater (e.g., industrial and commercial waste, trash, motor vehicle fluids, leaf litter, grass clippings, animal waste, etc.) into the MS4; provide technical support for HAZMAT response  |
| §57-172(a-b)     | Illicit Connections and Improper Disposal  | (a) The Manager shall take appropriate steps to detect and eliminate illicit connections to the City Stormwater System, including the adoption of a program to screen illicit discharges and identify their sources. (b) The Manager shall take appropriate steps to detect and eliminate improper discharges, including programs to screen for improper disposal and programs to provide for public education, public information and other appropriate activities to facilitate the proper management and disposal of used oil, toxic materials, and hazardous household waste.  |
| §57-177          | Unauthorized Discharge a Public Nuisance   | No person shall conduct, allow or permit the discharge of stormwater in any manner in violation of this article or of any condition of a permit issued pursuant to this article or a stormwater discharge permit issued by the State. Such discharge is hereby declared a public nuisance and must be corrected or abated by any owner and by any operator.  |
| §57-178          | Illicit Discharge and Illegal Dumping      | Ordinance describes prohibited discharges to the MS4.  |
| §57-180          | Accidental Discharges                      | (a) In the event of any discharge or a hazardous substance in amounts which could cause a threat to public drinking supplies, a "significant spill," or any other discharge which could constitute a threat to human health or the environment, the owner or operator or the facility shall give notice to the Manager and the field office of the Oklahoma Department of Environmental Quality as soon as practicable, but in no event later than the close of business on the day following the accidental discharge or the discharger becomes aware of the circumstances. If an emergency response by governmental agencies is needed, the owner or operator should also call 911 |

| <b>Ordinance</b> | <b>Title</b>          | <b>Language / Description</b>  |
|------------------|-----------------------|--|
|                  |                       | immediately to report the discharge. A written report must be provided within five days of the time the discharger becomes aware of the circumstances, unless this requirement is waived by the Manager for good cause shown on a case-by-case basis, containing the following particulars: 1) a reasonably precise description of the discharge, 2) the exact date and time of discharge, and 3) steps being taken to eliminate and prevent recurrence of the discharge. <b>(b)</b> The owner and operator shall take all reasonable steps to minimize any adverse impact to the Community Waters or the Waters of the State, including such accelerated or additional monitoring as necessary to determine the nature and impact of the discharge. It shall not be a defense for the discharger in an enforcement action that it would have been necessary to halt or reduce the business or activity of the facility in order to maintain water quality and minimize any adverse impact that the discharge may cause. <b>(c)</b> It shall be unlawful for any person to fail to comply with the provisions of this section. |
| §57-201          | Landscape Maintenance | No person shall dump, spill, leak, pump, pour, emit, empty, discharge, leach, dispose, or otherwise introduce or cause, allow, or permit to be introduced any substances into the MS4 (Municipal Separate Storm Sewer System) other than stormwater, including without limitation the following common substances: (1) garbage; (2) rubbish; (3) yard waste; (4) sediment; (5) floatable materials.  |
| §58-10(f)        | Wreckers              | Each wrecker driver dispatched to the scene of an accident shall be responsible for clearing from the street all debris existing as a result of such accident, including any ordinary vehicle fluids found at the scene of collisions and absorbing material used to absorb vehicle fluids.  |

**4. Standard Operating Procedures:**

| <b>SOP</b> | <b>Name</b>         | <b>Revision</b> |
|------------|---------------------|-----------------|
| SOP #40    | HAZMAT Response SWQ | 12/20/2017      |

**5. Resources:**

Administration of the Pollution Complaints and Spill Response Program components for OKC is provided by the Public Works Department, Storm Water Quality Management Division. The program is funded through the Drainage Utility Fee. The Drainage Utility Fee (including reimbursements, permits, interests, etc.) provides ~\$17-21 million for operating and capital expenses related to storm water management. Contracting services funding is provided through the Storm Water Permitting Program.

Approximately \$86,000 is budgeted for spills or other cleanups which impact the MS4 and where a responsible party is not identified.

**6. General Program Description:**

Spills, leaks and hazardous materials incidents are commonly reported in Oklahoma City. The Storm Water Quality Division of the Public Works Department is charged with technical assistance response to these incidents as primary or secondary responders. The Pollution Complaint and Spills Response Program is reported and responded to through multiple sub-programs: OKC Action Center Requests; Pollution Source Reports; HAZMAT and technical response to spills or leaks; and reports to the Public Works Director through the Public Works Response Manager system. A preventative approach has been recently implemented to audit special events which require a Special Event Permit or Revocable Permit through OKC. Staff objectives include insuring proper cleanup of materials and waste, proper disposal of the wastes, reduction of downstream waterway risk and proper documentation. Staff are on-call 24 hours per day, 365 days per year.

Notification of incidents may be provided by the Oklahoma City Fire Department, Oklahoma City Police Department, State Police, Oklahoma City Action Center, Oklahoma Department of Environmental Quality, Oklahoma City contractors, and other Oklahoma City Staff (such as Public Works Streets and Drainage Maintenance, Utilities Department, PW Project Managers, etc.).

| Task           | Type    | Staffing  | Comments   |
|----------------|---------|---|--|
| Spill Response | Service | Environmental Manager (1), Environmental Unit Supervisor (4), Environmental Unit Specialist (2), Environmental Technician (19 ) | Respond to reported spills, emissions and discharges to eliminate, reduce, and remove potentially harmful substances or material from public properties, easements and rights-of-way to protect downstream waterways. Staffing generally includes one Environmental Unit Supervisor and one Environmental Technician on-call on a rotating schedule. |
| Spill Response | Service | Environmental Manager (1), Environmental Unit Supervisor (4), Environmental Unit Specialist (2), Environmental                  | Ensure proper disposal of collected wastes or materials. Staffing generally includes one Environmental Unit Supervisor and one Environmental Technician on-call on a rotating schedule. Private  |



| <b>Task</b>                                     | <b>Type</b>           | <b>Staffing</b>  | <b>Comments</b>   |
|---|-----------------------|--|---|
|   |                       | Technician (19 )   | contractors may be used to remediate spills with no responsible party.  |
| Spill Response (Responsible Party)              | Service               | Environmental Manager (1),<br>Environmental Unit Supervisor (4),<br>Environmental Unit Specialist (2),<br>Environmental Technician (19 )                               | Ensure the identification of the responsible party and provide oversight of any cleanup actions necessary to eliminate or reduce the risks to downstream waterways. Responsible party will be provided with a State approved list of contractors. SWQ personnel will observe all remedial actions to ensure proper cleanup. |
| Spill Response (No Responsible Party)           | Service / Contracting | Environmental Manager (1),<br>Environmental Unit Supervisor (4),<br>Environmental Unit Specialist (2),<br>Environmental Technician (19 ),<br>State and Local Contracts | Ensure proper cleanup if no responsible party is identified. Staffing generally includes one Environmental Unit Supervisor and one Environmental Technician on-call on a rotating schedule. Private contractors may be used to remediate spills with no responsible party.  |
| Ensure Proper Notification of Relevant Agencies | Service               | Environmental Manager (1),<br>Environmental Unit Supervisor (4),<br>Environmental Unit Specialist (2)  | Ensure notification of applicable local, State and Federal agencies.  |
| Ensure Proper Documentation of Event            | Data                  | Environmental Manager (1),<br>Environmental Unit Supervisor (4),<br>Environmental Technician (19)  | Data is entered into an access database. Relevant spill information, pictures, scanned field notes, business cards, and laboratory reports are filed on the OKC network and database.   |

Oklahoma City provides a one-stop citizen assistance office. Citizens can call, report online or email the Oklahoma City Action Center to report problems, including pollution concerns. These reported concerns are forwarded to the appropriate Department for addressing the issue. Storm Water Quality may be notified by phone or email. The request is tracked and upon resolution, a letter is sent to the citizen, if requested, to notify them that the City is addressing the reported issue.

Other pollution concerns are reported directly to SWQ as Pollution Source Investigations. This program functions to reduce the number of illicit discharges by investigating each report, enforcing ordinances and requiring responsible parties to respond to spills for proper cleanup.

SWQ field personnel and supervisors are 40-hour HAZWOPER certified and respond as technical support to the Oklahoma City Fire Department. Personnel are on-call 24 hours a day to respond to spills, discharges or other events which may cause or contribute to accidental or illicit discharges to the MS4 or other waterways. Results include the effective isolation, containment, removal or remediation of spilled or released products or waste materials.

**7. Component Metrics:**

| <b>Task</b>                            | <b>Metric</b>                        | <b>Reported Figure</b> | <b>Goal / Reporting</b>                |
|--|--------------------------------------|------------------------|--|
| Spill Response                         | Number of Spill/HAZMAT Responses     | Number/year            | No goal established; Reported annually |
| Action Center Responses                | Number of Action Center Responses    | Number/year            | No goal established; Reported annually |
| Pollution Source Response              | Number of Pollution Source Responses | Number/year            | No goal established; Reported annually |
| Public Works Response Manager Requests | Number of Responses Manager Request  | Number/year            | No goal established; Reported annually |

**8. Narrative Goals:**

To provide technical assistance to various entities to ensure proper and efficient control of spills and discharges which may cause or contribute to water resource degradation. Provide trained personnel and other resources 24/7/365 to investigate, document and provide technical support to isolate and remove accidental or intentional discharges to the MS4 or receiving waters. Provide pollution investigation services support for the OKC Action Center, residential concerns and Public Works Response Manager requests. Ensure appropriate documentation of spills, fish kills, and other pollution related events. Establish a funding source which establishes financial assurance for spills where no responsible party is established.

**9. Cooperating Departments, Agencies and Communities:**

| <b>Agency</b>  | <b>Roles / Responsibility</b>   |
|--|---|
| OKC, Public Works Administration                               | Administration of all Public Works programs, projects, personnel, funding sources and operations.   |
| OKC, Public Works Dept. Storm Water Quality Division           | Primary permitting, inspection, enforcement, household hazardous waste disposal services, spill and HAZMAT response and reporting agency for OKC MS4 NPDES compliance.  |
| OKC, Public Information Office                                 | Responsible for all public information releases including review applicable brochures, media announcements, educational campaigns etc.  |
| Municipal Contractors  | OKC utilizes the State contract for spills, leaks or other events which materials or wastes must be recovered from City properties or where no responsible parties can be identified. Responsible parties are provided a list of ODEQ Local State Licensed Highway Cleanup Contractors, when needed.                            |
| OKC, Utilities Department                                      | Utilities are responsible for spills or leaks from waste management fleet vehicles.   |
| OKC, Streets and Drainage Maintenance                          | Streets and Drainage maintenance are responsible for leaks, spills or emissions from activities or fleet vehicles. They also provide assistance for spills into the Oklahoma River and provide traffic control or other barricades/signage needed to isolate the area(s) impacted by spills on City easement and rights-of-way. |
| OKC, Traffic Management  | Traffic Management is notified regarding incidents which may block or impede traffic.   |
| OKC, Fire Department   | Primary responders to incidents. The OKC Fire Department is often incident command until hazards are reduced to levels which the cleanup personnel can initiate remediation efforts.  |
| OKC, Police Department   | Primary responders to incidents. Police are in place to assist control of the incident including investigation, immediate traffic management, crowd control, etc. Police may be the on-scene incident command.  |
| State Police   | Often the primary responders at highway accidents. The State Police may be the on-scene incident command.   |
| Oklahoma Turnpike Authority                                    | Primary authority on Turnpike properties in OKC. OKC will work with OTA and other parties to ensure proper cleanup and protection of the MS4 and receiving waters.  |
| Oklahoma Department of Transportation                          | Primary authority on ODOT properties. OKC will work with ODOT and other parties to ensure proper cleanup and protection of the MS4 and receiving waters.  |
| Oklahoma, Cleveland, Pottawatomie, Canadian and Logan Counties | Spills may occur on properties, easements and right-of-way which are owned and operated by a County. In those cases, SWQ will work with County officials to ensure proper cleanup and protection of the MS4 and receiving waters.   |

| <b>Agency</b>                                | <b>Roles / Responsibility</b>   |
|--|---|
| National Response Agency                     | Agency which must be notified when reportable quantities are discharged to Water of the United States.  |
| Oklahoma Department of Environmental Quality | Primary oversight Agency. Agency involvement varies and may be the primary environmental agency or oversight Agency. OKC reports major incidents to ODEQ. |

**10. Specific Area Requirements:**

No specific area requirements are currently in place for this SWMP Component.

**11. Analysis:**

No analysis is required for this SWMP Component.

## SWMP Component 11: Floatables

### 1. Program Components:

- A. Update the study targeting structural controls for floatables, including an update in the annual report.
- B. Continue floatable debris monitoring program for capturing and categorization at twenty-one (21) monitoring locations and continued maintenance at a frequency necessary for maintenance of the removal structures.
- C. Report all floatable debris removal quantities in cubic yards and include categorization of constituents for the permit year in the Annual Report.

### 2. Definitions:

*Floatable Debris* – floatable and semi-floatable materials composed of natural or manmade products which can cause objectionable impacts to the economic, ecological, and other intrinsic values of a waterway. The BEACH Act of 2000 defines floatable materials as any foreign matter that may float or remain suspended in the water column. The term includes plastic, aluminum cans, wood products, bottles and paper products.

### 3. Ordinances:

| Ordinance  | Title                                       | Language / Description  |
|------------|---|---|
| §57-141(d) | Scope                                       | ...to carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with this ordinance;   |
| §57-167    | Authority of Storm Water Quality Management | (a) with respect to the City’s compliance with environmental laws, the Manager and the Manager’s authorized representatives may do the following: (1) carry out all inspections, surveillance, enforcement, and monitoring procedures necessary to determine compliance; administer the City’s compliance with its NPDES MS4 permit to discharge from the municipal separate storm sewer system;... |
| §57-171    | Monitoring                                  | The Manager shall monitor the quantity of, and the concentration of pollutants in stormwater discharges from the areas and locations as designated in the Oklahoma City Storm Water Management Plan.  |

### 4. Standard Operating Procedures:

| SOP    | Name                            | Revision   |
|--------|---------------------------------|------------|
| SOP #8 | Flow Measurement (SSOM)         | 7/6/2007   |
| SOP #9 | Flow Measurement (Meter Method) | 10/10/2007 |

| SOP      | Name  | Revision    |
|----------|---|-------------|
| SOP #20  | Floatable Monitoring                          | 10/15/2007  |
| SOP # 25 | Flow Measurement (Timed Volume Method)        | 10/9/2007   |
| SOP #34  | Data Quality                                  | 10/15/2007  |
| SOP #50  | Instruction for Recording Field Information   | In Progress |
| SOP #53  | Oklahoma River Debris Barrier (Canal Zone G)  | In Progress |
| SOP #54  | Storm Drain Insert Monitoring and Maintenance | In Progress |

## 5. Resources:

Floatable debris removal is primarily funded by the Drainage Utility Fee. The Drainage Utility Fee (including reimbursements, permits, interests, etc.) provides ~\$17-21 million for operating and capital expenses related to storm water management.

The Environmental Water Quality Program account provides the funding for the Floatable Debris Program netting program administered through the SWQ Division. The FY18 budget for this account is \$773,474.

## 6. General Program Description:

The Clean Water Act as amended by the Water Quality Act of 1987 required the USEPA to treat storm water as a point source of pollution. Under Phase I and II of the National Pollution Discharge Elimination System Storm Water Program, EPA issued regulations to certain municipalities and industries to obtain permits. The permit requirements set forth the efforts currently in place by OKC to monitor and control floatable debris. The floatable debris management program includes several City programs and volunteer initiatives. Major program components include the Oklahoma River corridor debris management efforts by the PW Streets, Traffic and Drainage Maintenance Division, PW SWQ Division Floatable Debris Program, Utilities Department contracted street sweeping (see [Component 8](#)), Public Works Department curb, culvert and storm drain catchment cleanout (see SWMP Component 8). OKC provides floating debris control through other efforts such as PW Adopt-a-Street Program & Waterway Cleanup Program (see [Component 7](#)), Utilities Department recycling and solid waste management programs, and Parks & Recreation Department's general grounds maintenance programs. Other organizations such as OKC Beautiful, neighborhood associations and homeowners associations provide for additional debris removal. OKC will work with those organizations to obtain and report volunteer numbers, hours worked and total debris collected. Floatables are addressed through municipal storm water discharge permits at construction sites (see [Component 4](#) and [Component 5](#)). Collectively, these programs significantly reduce the amount of floatable material discharged into and from the MS4.

SWQ has used several capture methods to remove floatables from the MS4. Netting can be highly productive, however collection of the debris is time consuming and at times hazardous. Storm drain inlets of various types have been deployed in the field for two permit cycles. Although productive, the amount of floatable debris captured is typically less than netting structures on a storm event basis. Debris barriers have been installed along the outfalls within the Oklahoma River basins. These barriers effectively hold debris which has accumulated until City crews can collect and properly dispose of the

materials.

## 7. Component Metrics:

| <b>Task</b>                              | <b>Metric</b>  | <b>Reported Figure</b>                                 | <b>Goal / Reporting</b>  |
|--|--|--|--|
| Monitoring                               | Number of Floatable Debris Monitoring Stations               | # Active floatable debris stations / year              | 21 stations; Reported annually   |
| Monitoring                               | Weight of Debris Removed from MS4                            | Pounds removed / year                                  | No goal established; Reported annually                                   |
| Monitoring                               | Number of Site Visits for the Collection of Floatable Debris | # Site visits / year                                   | 21 (Minimum 1 station visit per required 21 stations); Reported annually |
| Monitoring                               | Number of River Debris Barriers                              | # Of active river debris barriers.                     | No goal established; Reported annually                                   |
| Monitoring                               | Pounds of Debris Removed from the Oklahoma River             | Pounds removed from the Oklahoma River corridor / year | No goal established; Reported annually                                   |
| Volunteer (Waterway Clean Sweep Program) | Pounds of Debris Removed by Volunteers                       | Pounds of debris removed by volunteers / year          | No goal established; Reported annually                                   |
| Volunteer (Waterway Clean Sweep Program) | Number of Bags Removed by Volunteers                         | # Bags removed by volunteers / year                    | No goal established; Reported annually                                   |
| Volunteer (Waterway Clean Sweep Program) | Calculated Value of Volunteer Work                           | \$ value of volunteer work / year                      | No goal established; Internal report only                                |
| Volunteer (Adopt-a-Street Program)       | Pounds of Debris Removed by Volunteers                       | Pounds of debris removed by volunteers / year          | No goal established; Reported annually                                   |
| Volunteer (Adopt-a-Street Program)       | Number of Bags Collected by Volunteers                       | # of bags collected by volunteers / year               | No goal established; Reported annually                                   |
| Volunteer (Adopt-a-Street Program)       | Calculated Value of Volunteer Work                           | \$ value of volunteer work / year                      | No goal established; Internal report only                                |

| <b>Task</b>              | <b>Metric</b>                                       | <b>Reported Figure</b>  | <b>Goal / Reporting</b>                |
|--------------------------|---|---|--|
| Volunteer (Adopt-a-Park) | Pounds of Debris Collected                          | Pounds debris collected / year  | No goal established; Reported annually |
| Volunteer (Litter Blitz) | Pounds of Debris Collected                          | Pounds debris collected / year  | No goal established; Reported annually |
| Maintenance              | Number of River Debris Barriers Assessed / Replaced | Number of Oklahoma River debris barriers replaced during each assessed year | No goal established; Reported annually |

**8. Narrative Goals:**

Meet annual permitted objectives of monitoring and collecting debris from floatable catchment structures at a minimum of 21 stations in OKC. OKC must report the amount of debris collected in both volume and weight. OKC annually exceeds the minimum requirements and continues to evaluate other methods of collecting floatable debris. A secondary objective of the program is to comprehensively review all City efforts which involve the collection and removal of floatable debris. Netting structures are one aspect of floatable management. Efforts such as the river debris barrier deployment and cleanout is another aspect of the program which could be enhanced to provide better floatable debris control. Further effort is needed within the contributing watersheds to reduce or remove debris before discharging to the MS4 and to consider mid-basin collection stations within targeted drainage systems.

**9. Cooperating Departments, Agencies and Communities:**

| <b>Agency</b>  | <b>Roles / Responsibility</b>  |
|--|--|
| OKC Public Works Administration                      | Administration of all Public Works programs, projects, personnel, funding sources and operations.  |
| OKC, Public Works Dept. Storm Water Quality Division | Responsible for the implementation of the MS4 Permit required Floatable Debris Program, collection & categorization of debris, inspection & replacement of river debris barriers, identification of BMPs to manage floating debris and reporting all relevant floatable management programs to City Management and is the primary reporting agency for OKC MS4 NPDES compliance. |



| Agency   | Roles / Responsibility   |
|--|--|
| OKC IT Department                              | Responsible for internal technology programs including data storage, databases, telemetry, cellular capabilities and internet based resources.   |
| OKC Public Information Office                  | Responsible for all public information releases including review applicable brochures, media announcements, educational campaigns, etc.  |
| Municipal Contractors                          | The Utilities Department contracts Street Sweeping at designated streets in Oklahoma City.   |
| OKC, Utilities Department Solid Waste Division | Administration of programs to control and properly dispose of, recycle, and reduce solid waste from residents and businesses in OKC.   |
| Residents and Businesses                       | Homeowners associations, businesses, and industries are significant contributors to floatable debris control in OKC. Through neighborhood cleanup events, waterway cleanup events, and the Adopt-a-Street program, residents can provide significant debris removal. |
| Parks and Recreation, Grounds Management       | Responsible for the general upkeep of certain City properties, easements and right-of-ways. This upkeep may include mowing and debris removal.   |
| Oklahoma Department of Transportation          | Co-permitted with the City of Oklahoma City.   |
| Oklahoma Turnpike Association                  | Co-permitted with the City of Oklahoma City.   |
| Oklahoma Department of Environmental Quality   | Primary oversight Agency. ODEQ approves the Floatable Debris SWMP Component and requires OKC to report program results annually.   |

**10. Area Specific Requirements:**

No area specific requirements are currently in place for this SWMP Component.

**11. Analysis:**

OKC has implemented the Floatable Debris Program since 1995. Methods of collection have included the use of cross channel netting, outfall netting, storm drain inserts, debris barriers, and volunteer efforts. Permit requirements have increased with each permit authorization. In response, OKC has increased the number of stations and subsequently the quantity of debris collected.

A. Storm Water Quality Floatable Debris Program

Historical analysis of the data collected from permit year 2001 through 2016 indicate an increase in the number of floatable stations monitored and a general increase in pounds of debris collected.

| <i>Year</i> | <i>Number of Sites</i> | <i>Pounds Collected</i> |
|-------------|------------------------|-------------------------|
| PY2012      | 32                     | 6952.41                 |
| PY2013      | 36                     | 6163.01                 |
| PY2014      | 51                     | 8115.67                 |
| PY2015      | 65                     | 8121.13                 |
| PY2016      | 79                     | 8319.46                 |

Cross channel netting catches a large amount of debris in comparison to storm drain inlet filters. However, netting structures restrict channel flow, often fail or create a hazard for upstream assets. Storm Water Quality Management has increased the number of site visitations to reduce the risk of flooding. In 2016, 680 site visits were conducted for the floatable debris program. To reduce the potential flooding hazard and reduce the risk to personnel, OKC will focus more effort on storm drain inserts, and other methods, technologies and programs versus cross channel and outfall netting structures.

**B. Oklahoma River Corridor Floatable Debris Management**

The Oklahoma River Corridor floatable debris management is implemented through the Public Works Streets and Drainage Maintenance Division and the Storm Water Quality Division. The Oklahoma River Maintenance Section has acquired a fleet of six vessels tailored to maintain the impounded river corridor. These assets include 25 river debris barriers, maintained by four full time personnel. Storm Water Quality conducts regular inspections on the barriers to determine if replacement is needed. Additionally, during high flow events, some barriers may fail and release from the anchor points. SWQ personnel are charged with reconnecting the barriers to the tributary banks.

| <b>Milestone</b>  | <b>2012</b> | <b>2013</b> | <b>2014</b> | <b>2015</b> | <b>2016</b> |
|---|-------------|-------------|-------------|-------------|-------------|
| Pounds of debris removed by the Oklahoma River Maintenance Crew | 355,400     | 655,260     | 457,860     | 577,800     | 578,000     |

Improving the floatable debris program in the Oklahoma River Corridor may include the deployment of additional trash receptacles in high use areas, anti-litter signage, deployment of additional barriers, improved barrier design, and targeted cleanup efforts (City personnel and volunteers) of areas where long-term debris accumulations have occurred.

**C. Street Sweeping**

Implemented by the Utilities Department through private contracts, street sweeping activities at arterial roadways are responsible for the largest proportion of debris removal (by weight). SWQ reviewed seven years of reported lane miles swept and debris removed. Lane miles swept have fluctuated from year-to-

year; however an overall 2% increase in lane miles swept was observed. OKC’s contractors currently use regenerative air street sweepers. Future contracts should specify vacuum assisted street sweeping to maximize street roadway generated pollution removal. The range of debris tons removed/lane mile swept ranged from 0.133 – 0.215 with an average of 0.159 tons/lane mile.

| <b>Milestone</b>  | <b>2012</b> | <b>2013</b> | <b>2014</b> | <b>2015</b> | <b>2016</b> |
|---|-------------|-------------|-------------|-------------|-------------|
| Number of Street Lane Miles Swept.                        | 21,348      | 21,827.20   | 21,881      | 21,773      | 21,723      |
| Tons of Debris Removed through Street Sweeping Activities | 2,856       | 3,079.23    | 2,912       | 3,957       | 3,279       |

Using an average tons of debris removed for each lane mile (average over the 7-year review period) SWQ estimated future removals resulting from increased sweeping activities. Coupled with pollutant concentrations from the debris collected, a locally-specific estimation of pollutant removal may be calculated. Average costs per lane mile was researched and SWQ has determined that each lane mile swept produces roughly 0.159 ton. The following table provides the estimated tons removed and associated costs of increased street sweeping activities.

|                                 |      |       |       |       |         |         |         |         |
|---------------------------------|------|-------|-------|-------|---------|---------|---------|---------|
| Street Sweeping Lane Miles      | 1    | 5     | 10    | 20    | 30      | 40      | 50      | 100     |
| Average Street Sweeping Cost    | \$47 | \$235 | \$470 | \$940 | \$1,410 | \$1,880 | \$2,350 | \$4,700 |
| Median Street Sweeping Cost     | \$36 | \$180 | \$360 | \$720 | \$1,080 | \$1,440 | \$1,800 | \$3,600 |
| Estimated Debris Removal (Tons) | 0.16 | 0.80  | 1.59  | 3.18  | 4.77    | 6.40    | 7.95    | 16.00   |

**D. Storm Inlet Cleaning, Culvert and Roadway Maintenance**

Implemented through the Public Works Department, storm drain inlet and roadway debris removal accounts for a significant portion of floatable debris removal in OKC. These figures include roadway debris removal, storm drain inlet cleaning, channel cleaning and culvert cleaning. Improvement could be made with regard to reporting debris accumulations at bridges and culverts from field observations recorded by SWQ personnel.

| <b>Milestone</b>   | <b>2012</b> | <b>2013</b> | <b>2014</b> | <b>2015</b> | <b>2016</b> |
|--|-------------|-------------|-------------|-------------|-------------|
| Tons of Debris Removed from Storm Drain Inlets through Roadway Maintenance | 355.14      | 477.17      | 604         | 568         | 332         |

E. Volunteer/Public Participation

Programs offered in Oklahoma City include the Lake Overholser Lake Sweep hosted by Oklahoma Department of Environmental Quality, neighborhood cleanups, Adopt-A-City Street Program and the Waterway Clean Sweep Program hosted by OKC.

| <b>Milestone</b>  | <b>2012</b> | <b>2013</b> | <b>2014</b> | <b>2015</b> | <b>2016</b> | <b>2017</b> |
|---|-------------|-------------|-------------|-------------|-------------|-------------|
| Adopt-A-Street Program Bags of Litter Collected               | 512         | 624         | 326         | 645         | 630         | NR          |
| **Adopt-A-Street Program Estimated Pounds of Debris Removed   | 8,192       | 9,984       | 5,216       | 10,320      | 10,080      | NR          |
| *Waterway Cleanup Program Number of Bags Collected            | NR          | NR          | NR          | NR          | 86          | 85          |
| **Waterway Cleanup Program Estimated Pounds of Debris Removed | NR          | NR          | NR          | NR          | 1,382       | 1,365       |

\*Waterway Clean Sweep Program was initiated in 2015.

\*\*Pounds/bag was estimated by randomly weighing bags during several cleanup events. The average weights of these bags were used to calculate the total weight from all bags collected during an event.

These integrated programs make up the comprehensive floatable debris control program which provide significant removal of floating debris in OKC. Certain programs have better collection results than others. For the SWQ Programs, more effort will be placed on storm drain inserts and volunteer cleanup efforts.

## SWMP Component 12: Wet Weather Analytical

### 1. Program Components:

- A. Submit a revised monitoring list of three (3) representative monitoring locations.
- B. Conduct monitoring to characterize storm water discharges at three (3) representative monitoring locations at a frequency of two (2) times per permit year.
- C. Submit, in the annual report, analytical summary reports detailing constituent loadings from representative storm events during the permit year.

### 2. Definitions

*Aliquot* – is an individual sample that is part of a composite sample.

*Automatic Sampler*- is a mechanical device used to sample waterways, water from storm drainages, or other surface waters using pre-programmed criteria. Samples may be collected at certain set point conditions (such as water level or pH) or set to sample source water after a certain time interval or certain volume of water has passed a flow sensor. Adjustments can often be made to acquire specific volumes of water discretely or combined into a single composite sample. Automatic samplers cannot be used for the collection of volatile organic compounds (VOCs), oil & grease, or fecal indicator bacteria.

*Qualifying Storm Event or representative storm events* - are those rainfall events which generate discharge resulting from a storm event of 0.1 inch or larger and that occurs at least 72 hours after a measurable ( $>0.1$  inch) storm event. If the previous rainfall event was  $\geq 0.1$  inch but did not result in measurable storm water discharge, the interval may be waived and the permittee documents less than 72 hours.

*Composite Sample* – shall mean the sample of stormwater run-off resulting from the combination of individual samples taken at selected intervals based on an increment of either flow or time. Although the intervals can be time weighted, storm water regulations require the collection of flow weighted composite samples for the purpose of MS4 regulatory monitoring.

*Flow rate* – is the quantity of storm water discharged at a point per unit of time. For example: cubic feet per second or cubic feet per hour.

*Flow-weighted Composite Sample* – is composed of aliquots with volumes proportional to the measured flow. Currently, OKC collects aliquots at a fixed time interval and uses the flow measured at the time of each aliquot's collection to proportion the volume of each aliquot added to the composite sample. The collection time interval is fixed but the aliquot volume is proportional to discharge. This method works well with manual sampling. An alternative method measures flow constantly and collects each aliquot after a fixed volume has passed. Thus, the collection time interval is proportional to flow but the aliquot volume is consistent. This method works well when using an auto sampler.

*Grab Sample* - shall mean a sample of storm water runoff which is taken on a one-time basis without regard to the flow and consideration of time. The NPDES Storm Water Sampling Guidance Document (EPA, 1992) describes a grab sample as a discrete, individual sample taken within a short period of time

(usually less than 15 minutes). Analysis of grab samples characterizes the quality of a storm water discharge at a given time of the discharge.

*Monitoring* – shall mean the performance of stormwater flow measurement, stormwater sampling, sample analysis, and like procedures necessary to determine compliance with stormwater discharge activity.

**3. Ordinances:**

| <b>Ordinance</b> | <b>Title</b>                                | <b>Language / Description</b>   |
|------------------|---|---|
| §57-141(d)       | Scope                                       | to carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with this ordinance;..  |
| §57-142          | Definitions                                 | Describes the terminology such as composite sample, grab sample, and monitoring.  |
| §57-167          | Authority of Storm Water Quality Management | (a) with respect to the City’s compliance with environmental laws, the Manager and the Manager’s authorized representatives may do the following: (1) carry out all inspections, surveillance, enforcement, and monitoring procedures necessary to determine compliance; administer the City’s compliance with its NPDES MS4 permit to discharge from the municipal separate storm sewer system;...   |
| §57-171          | Monitoring                                  | The Manager shall monitor the quantity of, and the concentration of pollutants in stormwater discharges from the areas and locations as designated in the Oklahoma City Storm Water Management Plan.  |
| §57-172(a-b)     | Illicit Connections and Improper Disposal   | (a) The Manager shall take appropriate steps to detect and eliminate illicit connections to the City Stormwater System, including the adoption of a program to screen illicit discharges and identify their sources. (b) The Manager shall take appropriate steps to detect and eliminate improper discharges, including programs to screen for improper disposal and programs to provide for public education, public information and other appropriate activities to facilitate the proper management and disposal of used oil, toxic materials, and hazardous household waste. |

**4. Standard Operating Procedures:**

| <b>SOP</b> | <b>Name</b>                  | <b>Revision</b> |
|------------|------------------------------|-----------------|
| SOP #2     | Alkalinity Measurement       | 4/20/2007       |
| SOP #3     | Conductivity Measurement     | 4/20/2007       |
| SOP #4     | Dissolved Oxygen Measurement | 4/20/2007       |
| SOP #4a    | DO Measurement, ProODO       | 12/29/2016      |
| SOP #5     | pH Measurement               | 4/23/2007       |

| SOP     | Name  | Revision    |
|---------|---|-------------|
| SOP #6  | Turbidity Measurement                       | 5/30/2017   |
| SOP #7  | Water Temperature Measurement               | 4/27/2007   |
| SOP #8  | Flow Measurement (SSOM)                     | 7/6/2007    |
| SOP #9  | Flow Measurement (Meter Method)             | 10/10/2007  |
| SOP #11 | Inorganic Sample Collection                 | 10/16/2007  |
| SOP #14 | Reagent Standards / Shelf Life              | 10/17/2007  |
| SOP #17 | Wet Weather (Storm Event Monitoring)        | 10/16/2007  |
| SOP #19 | Chain of Custody and Sample Labeling        | 12/20/2016  |
| SOP #24 | Automatic Sampler Use and Operation (Sigma) | In Progress |
| SOP #25 | Flow Measurement (Timed Volume Method)      | 7/12/2007   |
| SOP #26 | Equipment Decontamination                   | 10/9/2007   |
| SOP #34 | Data Quality                                | 10/15/2007  |

## 5. Resources:

The Storm Water Quality component of Wet Weather Analytical is funded through the Drainage Utility Fee. The Drainage Utility Fee (including reimbursements, permits, interests, etc.) provides ~\$17-21 million for operating and capital expenses related to storm water management.

The Environmental Water Quality Program budget provides the funding for the Wet Weather Analytical Program. The FY18 budget for this account is \$773,474. Laboratory services are provided by the Utilities Laboratory (fecal indicator bacteria only) and by contracted laboratories.

The current laboratory contract is a unit-priced service contract not to exceed \$128,000. This service contract was approved by OKC City Council on August 16, 2016 and is authorized for one year with the option for the City to renew for up to four additional years.

## 6. General Program Description:

Storm Water Quality Division has monitored wet weather conditions since 2001. SWQ continued monitoring certain water quality monitoring stations over several 5-year permit terms. The goal has been to comprehensively identify pollutant concentrations and load changes on a storm event basis over time. Although the program is described in detail below, the data acquired through this program is not sufficiently detailed to provide reasonable estimation of loading and certainly cannot provide information regarding long-term water quality change. The OKS000101 MS4 Permit application submitted to the ODEQ on September 15, 2017 proposed the elimination of the Wet Weather Analytical program. OKC also proposed a replacement program, the Trend and Load Based Monitoring (TLBM) Program, which can provide reasonable long-term load estimations and brings the wet weather component in-line with current and future TMDL monitoring methodologies.

Monitoring efforts are conducted at three stations, two times during each permit year. Efforts are made to create seasonal variability; however weather conditions may often preclude this. Other stations may be added to obtain drainage area specific information.

Only qualifying rainfall events may be sampled. Criteria for these events include a period of at least 72 hours of dry weather and a rainfall of 0.10 inch or greater. The sampling process includes the collection of a discrete grab sample at or near the initial rainfall runoff stage which accounts for the “first flush sample”. Nine individual sample collections are conducted at 20 minute intervals. These individual samples are termed aliquots. These aliquots are composited in the field or laboratory and analyzed as a composite result representing a certain portion of the rainfall runoff event. The following calculation is used by laboratory personnel to composite the field collected grab samples.

Quantity of Each Aliquot =  $c*(b/a)$

Where:

- a = Initial aliquot flow volume (liters)
- b = Aliquot discharge volume (liters)
- c = Minimum Aliquot Volume (mL)

Conversion to Liters: Use a conversion factor of 28.32 liter per 1 cubic foot as displayed in the following formula:

Volume (liter) = Volume (cubic feet) x 28.32 liter/1 cubic foot

Example:

Volume (liter) – 0.21 CF x 28.32 liter/1 cubic ft. = 5.947 liters

Example:

| <b>Aliquot</b> | <b>Discharge (CFS)</b> | <b>Discharge (Liters)</b> | <b>Amount / Bottle (mls.)</b> |
|----------------|------------------------|---------------------------|-------------------------------|
| A1             | 0.21                   | 5.95                      | 1000                          |
| A2             | 0.99                   | 28.04                     | 4712                          |
| A3             | 0.55                   | 15.58                     | 2618                          |
| A4             | 0.79                   | 22.37                     | 3759                          |

Total Discharge: 2.54 CFS (71.94 liters)

Minimum Aliquot Volume: 1,000 (mls.)

Composite Volume: 12,089 (mls.)

Multiple methods may be used to obtain the runoff sample volumes necessary to create a composite sample. Each method has certain deficiencies which must be understood when selecting the collection methodology for a monitoring station. Automated sampling devices can be used to collect flow proportioned aliquots which do not require further laboratory compositing. However, this can require the user to provide information to the automatic sampler to determine to correct volume of each proportioned aliquot. Automatic samplers may also be used to collect equal volume aliquots. As with



a manual grab sample, laboratory compositing is necessary. Note: volatile organic compounds (VOCs), oil & grease and fecal bacteria indicators must be collected using grab sample methodology.

The previous Oklahoma City MS4 Permit (effective January 19, 2007 through January 18, 2012) included two different parameters; fecal coliform and diazinon. The current MS4 permit (effective March 15, 2013 through March 14, 2018) omits fecal coliform. *Escherichia coliform* (*E. coli*) was added as the fecal indicator bacteria. Diazinon was removed from the parameter list.

OKC has selected three representative monitoring stations to monitor. The following site descriptions provide the OKC site number, name of stream (if applicable), legal description, closest address, county and a basic narrative description.

**Monitoring Station 616** – Unnamed Tributary to the Oklahoma River  
NE\NW\SE\SW Section 4, T11N R 3W  
Oklahoma County, Oklahoma  
Near 550 SW 12<sup>th</sup> Street

Site Narrative: Reinforced concrete pipe outfall. Station 616 is considered a long-term monitoring site. Storm Water Quality records indicate the station has been monitored since 2003. Station facilities include an automatic sampler with peripheral velocity/depth meter. Continuous discharge is measured at the station. The drainage area is approximately 727.7 acres and consist of roughly 53% impervious surfaces. The station was selected to represent a highly urbanized watershed.

**Monitoring Station 754** – Unnamed Tributary to the Deep Fork River  
NW\NW\NW\NE 31, T13N R4W  
Oklahoma County, Oklahoma  
Located at the SE intersection of Britton Road and I-35 (north bound exit/service rd.)

Site narrative: Open concrete channel. Drainage is directly off Interstate I-35 northbound lanes via a concrete flume from the south. The highway runoff combines with a concrete channel. This concrete channel primarily drains the service roads and ramps. Upland drainage includes low residential and open space. The drainage area is approximately 151 acres and consists of roughly 11% impervious surfaces. The station was selected to represent Interstate/roadway runoff and is a location specifically monitored for the Oklahoma Department of Transportation (Co-permittee).

**Monitoring Station 85** – Walnut Creek  
Section 31, 13N 4W  
Oklahoma County, Oklahoma  
Near 8621 NW Britton – 375 feet west of Rambling Rd. between Council and County Line Rd.

Site narrative: Open concrete channel. Drainage is dominated by residential (medium and high density). The drainage area is approximately 189 acres and consists of roughly 35% impervious surfaces.

The discussed monitoring stations were selected to represent certain aspects of land use or impervious surfaces within OKC. Other stations may be monitored under this permit on as needed bases.

Analysis/Reporting Methods:

Sampling protocol will follow Storm Water Quality Standard Operating Procedures. Analysis methods will adhere to OAC 252.606-1-3(b)(7) adopted and incorporated by reference 40 CFR Part 136.

Reporting will consist of summary data reports displaying the composite and grab sample results. Additionally, field collected information such as turbidity, specific conductance, water temperature, total alkalinity and pH will be summarized and reported for each station.

| MONITORING PARAMETERS                   | REPORT FOR EACH MONITORING PERIOD<br>(each sample type) |      |     | SAMPLE TYPE(S) |           |
|---|---|------|-----|----------------|-----------|
|   | Min.  | Ave. | Max | Grab           | Composite |
| Biochemical Oxygen Demand (BOD5) (mg/L) |   | Yes  | Yes |                | Yes       |
| Chemical Oxygen Demand (COD) (mg/L)     |   | Yes  | Yes |                | Yes       |
| *Oil and Grease (mg/L)                  |   | Yes  | Yes | Yes            |           |
| Total Suspended Solids (TSS) (mg/L)     |   | Yes  | Yes |                | Yes       |
| Total Dissolved Solids (TDS) (mg/L)     |   | Yes  | Yes |                | Yes       |
| Total Nitrogen (mg/L)                   |   | Yes  | Yes |                | Yes       |
| Total Kjeldahl Nitrogen (TKN) (mg/L)    |   | Yes  | Yes |                | Yes       |
| Total Phosphorus (mg/L)                 |   | Yes  | Yes |                | Yes       |
| Dissolved Phosphorus (mg/L)             |   | Yes  | Yes |                | Yes       |
| Total Cadmium (µg/L) (MQL 1 µg/L)       |   | Yes  | Yes |                | Yes       |
| Total Copper (µg/L) (MQL 10 µg/L)       |   | Yes  | Yes |                | Yes       |
| Total Lead (µg/L) (MQL 5 µg/L)          |   | Yes  | Yes |                | Yes       |
| Total Zinc (µg/L) (MQL 20 µg/L)         |   | Yes  | Yes |                | Yes       |
| *E. coli (colonies/100 ml)              |   | Yes  | Yes | Yes            |           |
| *pH (S.U.)                              | Yes   |      | Yes | Yes            |           |
| **Hardness (as CaCO3) (mg/L)            | Yes   | Yes  | Yes | Yes            | Yes       |
| *Water Temperature (°C)                 | Yes   | Yes  | Yes | Yes            |           |
| Total Mercury (µg/L) (MQL 0.2 µg/L)     |   | Yes  | Yes |                | Yes       |
| Total Thallium (µg/L) (MQL 10 µg/L)     |   | Yes  | Yes |                | Yes       |

\*Parameters are acquired as a grab sample result.

\*\*Parameters are acquired as a grab sample result and as a composite sample result.

Each monitored rain event will be tabulated using the following calculations to determine the event loading.

$$\text{Parameter Event Loading} = A * B (1/1000000) * 2.2$$

Total Liters per event = Aliquot 1 + Aliquot 2 + Aliquot 3 + .... Aliquot 9 Conversions:

Discharge is reported as cubic feet per second (CFS).

Conversion from CFS to liters/20 minutes is as follows.

$$\text{Total liters/20 minutes} = C * 60 * 20 * 28.32$$

Where:

A = Reported Parameter Concentration as mg/L

B = Total Calculated Discharge during Monitored Event as Liters

C = Instantaneous Discharge Reading as CFS

For Example:

Nine discharge measurements were acquired at Station 1114. Each discharge represents a 20 minute interval. The instantaneous discharge reading is converted to a volume per 20 minute time interval. Each of the calculated 20 minute intervals are added for a total (estimated) volume during the monitored timeframe. The total volume calculated during this event was 396,593.3 liters.

| <b>Aliquot Number (20 minute intervals)</b> | <b>Discharge per Aliquot (CFS)</b> | <b>Volume per Aliquot (ft<sup>3</sup>)</b> | <b>Volume per Aliquot (L)</b> |
|---|------------------------------------|--|-------------------------------|
| 1   | 3.90                               | 4680                                       | 132,537.60                    |
| 2   | 2.89                               | 3468                                       | 98,213.76                     |
| 3   | 1.00                               | 1200                                       | 33,984.00                     |
| 4   | 1.21                               | 1452                                       | 41,120.64                     |
| 5   | 1.14                               | 1368                                       | 38,741.76                     |
| 6   | 0.94                               | 1128                                       | 31,944.96                     |
| 7   | 0.33                               | 396  | 11,214.72                     |
| 8   | 0.18                               | 216  | 6,117.12                      |
| 9   | 0.08                               | 96   | 2,718.72                      |
| <b>Total Volume (ft<sup>3</sup>) =</b>      |                                    | <b>14,004</b>                              |                               |
| <b>Total Volume (L) =</b>                   |                                    |  | <b>396,593</b>                |

Biochemical oxygen demand (BOD) is analyzed as a flow weighted composite sample. In the same example, the composite result was 8.03 mg/L. Using the equation above, the event loading for BOD can be calculated.

$$\text{Parameter Event Loading} = A * B * 0.000002204 \text{ lb./mg}$$

$$\text{BOD Event Loading} = 8.03 \text{ mg/L} * 396,593.3 \text{ L} * 0.000002204 \text{ lb./mg}$$

The calculated event loading for BOD is 7.01 lbs.

**7. Component Metrics:**

| <b>Task</b> | <b>Metric</b>                             | <b>Reported Figure</b>                          | <b>Goal / Reporting</b>  |
|-------------|---|---|--|
| Monitoring  | Number of Wet Weather stations sampled.   | Number of Wet Weather stations sampled / year   | 3 Stations, sampled 2 times each permit year; Reported annually  |
| Monitoring  | Number of Wet Weather stations attempted. | Number of Wet Weather stations attempted / year | No goal is applicable for this metric. All attempted events must be documented. All conducted and attempted sampling events are reported annually. |

**8. Narrative Goals:**

To generate storm specific event mean concentrations using a standardized and EPA approved methodology to collect, composite and analyze storm water runoff samples from specific MS4 monitoring stations in OKC. To select MS4 drainages which represent specific or mixed land uses typical to the urban drainages in OKC and monitor those land uses at the frequency required by the OKC MS4 permit. Annually provide the ODEQ monitoring reports and results.

**9. Cooperating Departments, Agencies and Communities:**

| <b>Agency</b>  | <b>Roles / Responsibility</b>  |
|--|--|
| OKC, Public Works Administration                     | Administration of all Public Works programs, projects, personnel, funding sources and operations.  |
| OKC, Public Works Dept. Storm Water Quality Division | Primary permitting, inspection, monitoring, enforcement, household hazardous waste disposal services, spill and HAZMAT response and reporting agency for OKC MS4 NPDES compliance. |
| Oklahoma Turnpike Authority                          | Co-Permittee   |
| Oklahoma Department of Transportation                | Co-Permittee   |

| Agency                                       | Roles / Responsibility   |
|--|--|
| Oklahoma Department of Environmental Quality | Primary oversight Agency. OKC submits all relevant data to this Agency. Review of data may provide updates to the Integrated Report including impaired listings or removal based on qualified data collected by OKC. |

**10. Area Specific Requirements**

No area-specific requirements are currently in place for this SWMP Component.

**11. Analysis**

Refer to the SWMP Introduction, Discharge Characterization 5-year review of Wet Weather Analytical. Calculated event loadings can be found in [Appendix AP](#).

## SWMP Component 13a: Priority Watershed Program

### 1. Program Components:

- A. Update the SWMP to include the Priority Based Monitoring Program.
- B. Submit a schedule for completion of each major monitoring milestone.
- C. Complete Part 1 Monitoring Requirement.
- D. Complete Part 2 Monitoring Requirement.
- E. Complete Part 3 Monitoring Requirement.
- F. Complete Part 4 Monitoring Requirement.
- G. Provide a comprehensive compilation of relevant biological collections and water quality information, if applicable, collected for each year.
- H. Based on results of the Priority Based Monitoring Program, submit a list of monitoring locations, collected information, summary data sheets and assessments regarding the status of the assessed reaches within the scope of relevant criteria for data collected through April 30 of odd – numbered years.

### 2. Definitions:

*Composite Sample* – shall mean the sample of stormwater run-off resulting from the combination of individual samples taken at selected intervals based on an increment or either flow or time. Although the intervals can be time weighted, storm water regulations require the collection of flow weighted composite samples for the purpose of MS4 regulatory monitoring.

*Flow rate* – is the quantity of storm water discharged at a set point per unit of time. For example: cubic feet per second or cubic feet per hour.

*Grab Sample* - shall mean a sample of storm water runoff which is taken on a one-time basis without regard to the flow and consideration of time. The NPDES Storm Water Sampling Guidance Document (EPA, 1992) describes a grab sample as a discrete, individual sample taken within a short period of time (usually less than 15 minutes). Analysis of grab samples characterizes the quality of a storm water discharge at a given time of the discharge.

*Monitoring* – shall mean the performance of stormwater flow measurement, stormwater sampling, sample analysis, and like procedures necessary to determine compliance with stormwater discharge activity.

### 3. Ordinances:

| Ordinance  | Title | Language / Description  |
|------------|-------|---|
| §57-141(d) | Scope | ...to carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with this ordinance;.. |

| Ordinance | Title                                       | Language / Description  |
|-----------|---|---|
| §57-142   | Definitions                                 | Describes the terminology such as composite sample, grab sample, and monitoring.  |
| §57-167   | Authority of Storm Water Quality Management | <p>(a) with respect to the City’s compliance with environmental laws, the Manager and the Manager’s authorized representatives may do the following: (1) carry out all inspections, surveillance, enforcement, and monitoring procedures necessary to determine compliance; administer the City’s compliance with its NPDES MS4 permit to discharge from the municipal separate storm sewer system; (2) inspect City and commercial (see SIC Codes, 57-146) properties for the presence of hazardous substances, and develop and administer whatever remediation programs are required; (3) audit City departments to determine whether the City is in compliance with Federal and State Clean Water Act laws; whether the City has obtained all permits required by Federal and State environmental laws; and whether the City is in compliance with the permits it has; (4) audit use of herbicides, fertilizers, and pesticides to determine compliance with Clean Water Act laws and to recommend alternative solutions where practicable for the reduction of their use through education and out-reach programs; (5) control the discharge of spills and the dumping or disposal of materials other than stormwater (e.g., industrial and commercial waste, trash, motor vehicle fluids, leaf litter, grass clippings, animal waste, etc.) into the MS4; provide technical support for HAZMAT response; (6) administer programs to identify and control pollutants from the transportation, storage, treatment, and disposal of hazardous wastes; and monitor hazardous waste facilities which receive the City’s RCRA hazardous waste for treatment or disposal for compliance with NPDES MS4 permit requirements; (7) provide assistance to the Utilities Department regarding the protection of drinking water and surface water bodies, which are a source of the City’s drinking water; (8) provide assistance to the Solid Waste Management Division regarding the collection, transportation and disposal of solid waste, compliance with NPDES MS4 requirements; (9) monitor the City’s compliance with all Federal, State, and local laws; except that: (a) administering the City’s compliance with State and Federal laws relating to discharge from the POTW is the responsibility of the Utilities Department; (b) administering the City’s compliance with State and Federal laws relating to the production and distribution of drinking water is the responsibility of the Utilities Department; (c) administering the City’s compliance with State and Federal laws relating to the operation of the City’s landfill programs are the responsibility</p> |

| Ordinance | Title      | Language / Description   |
|-----------|------------|--|
|           |            | <p>of the Division of Solid Waste Management; and (d) administering the City’s compliance with State and Federal laws relating to risk management and safety operations training; programs are the responsibility of the Department of Finance. (10) Perform such other administrative duties as may be assigned by the Director.</p> <p>(b) with respect to enforcement, the Manager and his authorized representatives may do the following: (1) investigate violations of and enforce those aspects of the Clean Water Act which are within the authority of local governments; (2) investigate violations of and enforce this chapter; (3) investigate violations of and enforce those provisions that relate to hazardous substances and spills although primary enforcement will remain with the Fire Chief; (4) investigate all other violations of and enforce environmental laws within the City and within the City’s extended jurisdiction; (5) perform other environmental activities as may be required to ensure compliance of environmental regulations by City departments and others within The City of Oklahoma City and its extended jurisdiction. (c) with respect to other programs, the Manager and his authorized representatives may do the following: (1) monitor and coordinate with other City departments on the City’s response to releases of hazardous substances; (2) review and assess the environmental hazards of real property involved in City land transactions; (3) monitor the use of City rights-of-way, property, and easements by persons with use agreements for environmental monitoring; (4) establish and supervise a program for the collection of household hazardous waste; (5) create, promote, and publicize educational programs for environmental awareness; and (6) provide quantitative data through field screening programs.</p> |
| §57-171   | Monitoring | The Manager shall monitor the quantity of, and the concentration of pollutants in stormwater discharges from the areas and locations as designated in the Oklahoma City Storm Water Management Plan.   |

**4. Standard Operating Procedures:**

| SOP     | Name                         | Revision   |
|---------|------------------------------|------------|
| SOP #1  | Routine QA/QC                | 12/20/2016 |
| SOP #2  | Alkalinity Measurement       | 4/20/2007  |
| SOP #3  | Conductivity Measurement     | 4/20/2007  |
| SOP #4  | Dissolved Oxygen Measurement | 4/20/2007  |
| SOP #4a | DO Measurement, ProODO       | 12/29/2016 |



| <b>SOP</b> | <b>Name</b>                                 | <b>Revision</b> |
|------------|---|-----------------|
| SOP #5     | pH Measurement                              | 4/23/2007       |
| SOP #6     | Turbidity Measurement                       | 5/30/2017       |
| SOP #7     | Water Temperature Measurement               | 4/27/2007       |
| SOP #8     | Flow Measurement (SSOM)                     | 7/6/2007        |
| SOP #9     | Flow Measurement (Meter Method)             | 10/10/2007      |
| SOP #10    | Fish Collection                             | 10/31/2007      |
| SOP #11    | Inorganic Sample Collection                 | 10/16/2007      |
| SOP #14    | Reagent Standards / Shelf Life              | 10/17/2007      |
| SOP #17    | Wet Weather (Storm Event Monitoring)        | 10/16/2007      |
| SOP #19    | Chain of Custody and Sample Labeling        | 12/20/2016      |
| SOP #22    | Optical Brightener Monitoring               | 10/10/2007      |
| SOP #24    | Automatic Sampler Use and Operation (Sigma) | In Progress     |
| SOP #25    | Flow Measurement (Timed Volume Method)      | 7/12/2007       |
| SOP #26    | Equipment Decontamination                   | 10/9/2007       |
| SOP #34    | Data Quality                                | 10/15/2007      |

## 5. Resources:

The program is funded through the Drainage Utility Fee. The Drainage Utility Fee (including reimbursements, permits, interests, etc.) provides ~\$17-21 million for operating and capital expenses related to storm water management.

The Environmental Water Quality Program Account provides the funding for the Priority Based Monitoring Program. The FY18 budget for this account is \$773,474. Laboratory services are provided by the Utilities Laboratory (fecal indicator bacteria only) and by contracted private laboratories.

The current laboratory contract is a unit priced service contract not to exceed \$128,000. This service contract was approved by OKC City Council on August 16, 2016 and is authorized for 1 year with the option for the City to renew for up to 4 additional years.

## 6. General Program Description:

The Watershed Characterization Monitoring Project was completed in April 2011. This project identified several stream segments which were not meeting one or more beneficial uses as defined in Oklahoma Administrative Code. In addition, the program identified stream segments which require data clarifications, additional parameter monitoring (due to use support assessment protocol changes) or needed additional information for a current assessment of the stream segment due to the age of the existing available information (such as pesticide 303(d) listings).

OKC's March 15, 2013 Municipal Separate Storm Sewer System Permit detailed a new monitoring component: the Priority Based Monitoring Program. Sites selected for monitoring were based on information acquired and assessed during Watershed Characterization Program. This analysis was used to direct the monitoring efforts for the Priority Based Monitoring. The 303(d) list was also

consulted in the site selection process.

The intent of the program is to collect information based on the identified beneficial use failures. Each basin identified as not supporting or as an undetermined status will be revisited. For many stations, two types of support failures were noted and categorized as Level I or Level II segments. Based on standards violation rates, Level I stream segments consist of those applicable segments which exhibited a water quality standards violation rate of  $\geq 10\%$  but  $< 15\%$ . Segments which exhibited a violation rate of  $\geq 15\%$  were considered Level II.

Level I stations will be visited to confirm/refute the original assessments at historical monitoring stations. At a minimum, additional data will be collected for select monitoring parameters. These data will be added to the existing pool of information (when applicable). Certain stations, which previous data was not collected by OKC or the historical data is greater than 5 years will be monitored as part of the Level I strategy to provide more recent information.

Level II stations, as previously described, exhibited a higher water quality standards violation rate. These watersheds are selected for comprehensive monitoring efforts which include multiple station assessments throughout the basin to better describe and define the problem boundaries, more inclusive parameter inclusion and additional programs which may aid in targeting particular segments or tributaries contributing to the water quality or biological impairment.

#### Monitoring Station Selection:

Priority Based Monitoring stations were selected from the Watershed Characterization sites for the Level I monitoring strategy. Level II stations were selected from the Watershed Characterization site pool and new stations were added to comprehensively assess the basins. Historical sites from inactive and active programs were researched to insure that stations with some historical information were used, when appropriate. The 303(d) list was consulted and additional monitoring stations were added in those respective stream segments.

#### Sample Acquisition:

Grab samples, in-situ measurements and/or on sight observations will be conducted every fourteen days for a period of fifteen months. A total of thirty site visits (excluding relevant biological collections, maintenance visits, diurnal dissolved oxygen measurement events or other specialized sampling events) will be conducted during this period. Stations which exhibit fecal indicator bacteria violations will be sampled during the recreational season. These stations may not meet the thirty data point target but will meet or exceed the minimum sample requirements described in OAC 785:46-15-3(d). Other specialized monitoring may be implemented, including caffeine and triclosan monitoring. In these cases, a monitoring schedule will be developed which may not meet the data requirements of OAC 785:46-15-3(d).

Sample acquisition will typically consist of grab samples, however composite based samples or other methods may be used according to any relevant goals established for the stream segment.

Field sampling personnel will meet all quality assurance/quality control measures. For the Priority

Monitoring Program, a 10% quality assurance goal has been designated. The following equation will be used to determine each stations quality assurance requirements.

Amount of Required QC Samples =  $S * P * M$

Where:

S= Total number of required samples/parameter

P= Percentage of QC samples required

M=Number of monitoring locations within the basin

In Example:

Station 616 requires 30 BOD samples over a fifteen month period. The quality assurance requirements of 10% must be achieved. There are three monitoring stations within the Station 616 watershed.

$S * P * M$

$30 * 0.10 * 3 = 9$  QC BOD samples required

A QC event shall consist of one split sample and one blank sample. To describe potential stream segment variability, a replicate (temporal or spatial) may be collected.

#### Documentation

Field visits shall be documented and meet any and all criteria established within the Quality Assurance Project Plan (QAPP) established for the monitoring location(s). The QAPP will describe the project organization, station history, quality objectives/criteria, training/certification, documentation/records, measurements/data acquisition, assessment/oversight and data validation and usability.

#### Analysis/Reporting

The data analyses objectives will vary depending on the categorized level or the impairment listing of each stream segment. However, certain analysis and reporting goals shall be completed for each station. Descriptive statistics such as minimum, maximum, mean and median values will be calculated. Nonparametric trend tests such as Mann-Kendall, Regional Kendall, rank-sum test for step-trend and Hodges-Lehmann estimator of step-trend magnitude may be conducted as-needed to analyze both temporal and spatial trends.

Final analysis will consist of both independent station and a pooled basin analysis. As indicated in OAC 785:46-15-3(b)(3), a single station may be considered representative of no more than ten stream miles for wadable streams. In many cases, several stations may be monitored within ten mile stream segment. The Water Body Identification Number for each stream reach will be researched and all data will be pooled from that segment if the segment length is ten miles or less. If multiple stream segments exist, those stations will be analyzed independently and pooled for additional analysis.

Annually, the information collected for the Priority Based Monitoring Program will be tabulated and reported in the OKC Storm Water Quality Annual Report. A narrative will summarize the key

benchmarks achieved during that permit term. An electronic data file will be included with the tabulated monitoring values.

Comprehensive data summary assessment reports will be generated and submitted to the Oklahoma Department of Environmental Quality by the following dates.

| <b>Program Area</b> | <b>Scheduled Program Completion Date</b> | <b>Status</b> | <b>Report Date</b> |
|---------------------|--|---------------|--------------------|
| Part 1              | 12-Jun-13                                | Complete      | 2016 Annual Report |
| Part 2              | 4-Aug-14                                 | Complete      | 2016 Annual Report |
| Part 3              | 30-Sep-15                                | Complete      | 2016 Annual Report |
| Part 4              | 23-Nov-16                                | Complete      | 2020 Annual Report |
| Part 5              | 17-Jan-18                                | In Progress   | 2020 Annual Report |
| Part 6              | 13-Mar-19                                | In Progress   | 2020 Annual Report |
| Part 7              | 6-May-20                                 | Not Started   | 2020 Annual Report |

**7. Component Metrics:**

| <b>Task</b> | <b>Metric</b>  | <b>Reported Figure</b>                       | <b>Goal / Reporting</b>                                    |
|-------------|--|--|--|
| Monitoring  | Part 1 Completion  | % Completion;<br>Collected data              | Completed monitoring in June 2013; Report data annually.   |
| Monitoring  | Part 2 Completion  | % Completion;<br>Collected data              | Completed monitoring in August 2014; Report data annually. |
| Monitoring  | Part 3 Completion  | % Completion;<br>Collected data              | Completed monitoring September 2015; Report data annually. |
| Monitoring  | Part 4 Completion  | % Completion;<br>Collected data              | Completed monitoring November 2016; Report data annually.  |
| Monitoring  | Part 5 Completion  | % Completion;<br>Collected data              | Completed monitoring January 2018; Report data annually.   |
| Monitoring  | Part 6 Completion  | % Completion;<br>Collected data              | Complete monitoring by March 2019; Report data annually.   |
| Monitoring  | Part 7 Completion  | % Completion;<br>Collected data              | Complete monitoring by May 2020; Report data annually.     |
| Reporting   | Provide a compilation of relevant biological collections and water | All data and narrative summary of milestones | Annually/SWQ MS4 Permit Annual Report                      |

| <b>Task</b> | <b>Metric</b>  | <b>Reported Figure</b>                               | <b>Goal / Reporting</b>  |
|-------------|--|--|--|
|             | quality information collected for each permit year.  |  |  |
| Reporting   | Based on the results of the Priority Based Monitoring Program, submit a list of monitoring locations, collected information, summary data sheets and assessments regarding the status of assessed reaches within the scope of relevant criteria. | All data, lists, narrative summaries and assessments | Parts 1-3 were submitted with the 2016 Annual Report. Part 4-7 will be submitted with the 2020 Annual Report |

**8. Narrative Goals**

To provide water quality assessments at historically monitored drainages within OKC to validate and update previous findings. To assess certain stream segments within the drainages to determine if certain areas should be targeted for further actions.

**9. Cooperating Departments, Agencies and Communities:**

| <b>Agency</b>  | <b>Roles / Responsibility</b>  |
|--|--|
| OKC, Public Works Administration                     | Administration of all Public Works programs, projects, personnel, funding sources and operations.  |
| OKC, Public Works Dept. Storm Water Quality Division | The Environmental Water Quality Section has primary responsibility for conducting monitoring, site assessments, water quality and biological assessments.  |
| Oklahoma Department of Environmental Quality         | Primary oversight Agency. OKC submits all relevant data to this Agency. Review of data may provide updates to the Integrated Report including impaired listings or removal based on qualified data collected by OKC. |
| Oklahoma Water Resources Board                       | Technical support and provides relevant additions or changes to applicable Water Quality Standards and Use Support Assessment Protocol.  |

## 10. Area-Specific Requirements

No area-specific requirements are required for the program.

## 11. Analysis

Parts 1-3 of the Priority Based Monitoring Program are complete. The final reports were submitted with the 2016 SWQ Annual Report. Specific recommendations for corrective actions identified through assessment of these data include the following.

| <b>PW Part</b> | <b>Stream</b>   | <b>Water Body Identification Number</b> | <b>Recommendation</b>                       |
|----------------|-----------------|---|---|
| 1              | Dry Creek       | OK520610020070_00                       | Remove 303(d) listing for Oil & Grease      |
| 1              | Perimeter Creek | OK520530000270_00                       | Remove 303(d) listing for Oil & Grease      |
| 1              | Perimeter Creek | OK520530000270_00                       | Add impairment listing for Dissolved Oxygen |
| 2              | Chisholm Creek  | OK620910040100_00                       | Remove 303(d) listing for Nitrates          |
| 3              | East Elm Creek  | OK520810000110_00                       | Remove 303(d) listing for Dissolved Oxygen  |
| 3              | East Elm Creek  | OK520810000110_00                       | Remove 303(d) listing for Turbidity         |
| 3              | Hog Creek       | OK520810000100_00                       | Remove 303(d) listing for Turbidity         |

Parts 1-3 of the Priority Based Monitoring Program are complete. The final reports were submitted with the 2016 SWQ Annual Report. Specific recommendations for corrective actions identified through assessment of these data include the following.

## SWMP Component 13b: Trend and Load Based Monitoring Program (New)

### 1. Program Components:

- A. Submit a revised monitoring list of fifteen selected monitoring locations with target dates for each station to be activated.
- B. Year 1 – Install, calibrate and activate five water quality monitoring stations.
- C. Year 2 – Install, calibrate and activate five water quality monitoring stations.
- D. Year 3 - Install, calibrate and activate five water quality monitoring stations.
- E. After station installation and calibration, provide continuous monitoring.
- F. Submit, in the annual report, a summary of all analytical results and calculated discharge results for each station monitored.
- G. Provide a comprehensive summary report which details pollutant loadings and any trends observed through statistical analysis.

### 2. Definitions:

*Aliquot* – is an individual sample that is part of a composite sample.

*Automatic Sampler*- is a mechanical device used to sample waterways, water from storm drainages, or other surface waters using pre-programmed criteria. Samples may be collected at certain set point conditions (such as water level or pH) or set to sample source water after a certain time interval or certain volume of water has passed a flow sensor. Adjustments can often be made to acquire specific volumes of water discretely or combined into a single composite sample. Automatic samplers cannot be used for the collection of volatile organic compounds (VOCs), oil & grease, or fecal indicator bacteria.

*Composite Sample* – shall mean the sample of water resulting from the combination of individual samples taken at selected intervals based on an increment of either flow or time. Although the intervals can be time weighted, storm water regulations require the collection of flow weighted composite samples for the purpose of MS4 regulatory monitoring.

*Flow rate* – is the quantity of storm water discharged at a point per unit of time. For example: cubic feet per second or cubic feet per hour.

*Flow-weighted Composite Sample* – is composed of aliquots with volumes proportional to the measured flow. Currently, OKC collects aliquots at a fixed time interval and uses the flow measured at the time of each aliquot's collection to proportion the volume of each aliquot added to the composite sample. The collection time interval is fixed but the aliquot volume is proportional to discharge. This method works well with manual sampling. An alternative method measures flow constantly and collects each aliquot after a fixed volume has passed. Thus, the collection time interval is proportional to flow but the aliquot volume is consistent. This method works well when using an autosampler.

*Grab Sample* - shall mean a sample of storm water runoff which is taken on a one-time basis without regard to the flow and consideration of time. The NPDES Storm Water Sampling Guidance Document

(EPA, 1992) describes a grab sample as a discrete, individual sample taken within a short period of time (usually less than 15 minutes). Analysis of grab samples characterizes the quality of a storm water discharge at a given time of the discharge.

*Monitoring* – shall mean the performance of storm water flow measurement, storm water sampling, sample analysis, and like procedures necessary to determine compliance with storm water discharge activity.

*Pollutant Load* – is a mass of a substance from a discharge point (such as a specific location in a stream or storm sewer outfall) in a specified amount of time. For the purposes of this project, load is the product of measured or estimated water discharge for a specific duration of time and the concentration of a substance tested from a flow weighted composite sample collected from a waterway.

### 3. Ordinances:

| Ordinance  | Title                                       | Language / Description  |
|------------|---|---|
| §57-141(d) | Scope                                       | ...to carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with this ordinance;..   |
| §57-142    | Definitions                                 | Describes the terminology such as composite sample, grab sample, and monitoring.  |
| §57-167    | Authority of Storm Water Quality Management | (a) with respect to the City's compliance with environmental laws, the Manager and the Manager's authorized representatives may do the following: (1) carry out all inspections, surveillance, enforcement, and monitoring procedures necessary to determine compliance; administer the City's compliance with its NPDES MS4 permit to discharge from the municipal separate storm sewer system;... |
| §57-171    | Monitoring                                  | The Manager shall monitor the quantity of, and the concentration of pollutants in stormwater discharges from the areas and locations as designated in the Oklahoma City Storm Water Management Plan.  |

### 4. Standard Operating Procedures:

| SOP     | Name                         | Revision   |
|---------|------------------------------|------------|
| SOP #1  | Routine QAQC                 | 12/20/2016 |
| SOP #2  | Alkalinity Measurement       | 4/20/2007  |
| SOP #3  | Conductivity Measurement     | 4/20/2007  |
| SOP #4  | Dissolved Oxygen Measurement | 4/20/2007  |
| SOP #4a | DO Measurement, ProODO       | 12/29/2016 |
| SOP #5  | pH Measurement               | 4/23/2007  |
| SOP #6  | Turbidity Measurement        | 5/30/2017  |



| <b>SOP</b> | <b>Name</b>   | <b>Revision</b> |
|------------|---|-----------------|
| SOP #7     | Water Temperature Measurement                         | 4/27/2007       |
| SOP #8     | Flow Measurement (SSOM)                               | 7/6/2007        |
| SOP #9     | Flow Measurement (Meter Method)                       | 10/10/2007      |
| SOP #10    | Fish Collection                                       | 10/31/2007      |
| SOP #11    | Inorganic Sample Collection                           | 10/16/2007      |
| SOP #14    | Reagent Standards / Shelf Life                        | 10/17/2007      |
| SOP #15    | Macroinvertebrate Collection, Subsampling and Picking | 2/4/2002        |
| SOP #19    | Chain of Custody and Sample Labeling                  | 12/20/2016      |
| SOP #21    | Habitat Assessment                                    | 10/29/2007      |
| SOP #24    | Automatic Sampler Use and Operation (Sigma)           | In Progress     |
| SOP #25    | Flow Measurement (Timed Volume Method)                | 7/12/2007       |
| SOP #26    | Equipment Decontamination                             | 10/9/2007       |
| SOP #34    | Data Quality  | 10/15/2007      |
| SOP #56    | Passive Sampler Use and Application                   | In Progress     |

## 5. Resources:

The program is funded through the Drainage Utility Fee. The Drainage Utility Fee (including reimbursements, permits, interests, etc.) provides ~\$17-21 million for operating and capital expenses related to storm water management.

The Environmental Water Quality Program Account provides the funding for the Priority Based Monitoring Program. The FY18 budget for this account is \$773,474. Laboratory services are provided by the Utilities Laboratory (fecal indicator bacteria only) and by contracted private laboratories.

The current laboratory contract is a unit priced service contract not to exceed \$128,000. This service contract was approved by OKC City Council on August 16, 2016 and is authorized for 1 year with the option for the City to renew for up to 4 additional years.

## 6. General Program Description:

Programs have been established throughout the nation to provide reasonable estimations of constituent loadings to bodies of water. The TMDL process provides an assessment of the maximum allowable pollutant loadings to a waterbody to still meet applicable water quality standards. The OKC Trend and Load Based Monitoring Program was established to generate watershed constituent loading and to determine potential trends related to constituent loading, biological communities, or other indicators. This program will provide practical load estimations while considering the natural flux which occurs in non-point source pollutant situations. The program provides sample collection representing all hydrologic conditions through flow-paced sampling. Surrogate parameters may be used to establish baseline conditions and identify long-term trends in a watershed. This information can be used for multiple purposes, including calculating annual loads for model calibration and verification, as well as providing long-term assessment of watershed-based storm water control structures and other best management practices.

The program requires continuous, year round sampling efforts and measurement of flow. The current approach developed for OKC includes strategically located permanent monitoring stations located in the urban and semi-urban environment. Quality trends, such as adoption of new structural and non-structural regulations may require several years of data to determine impacts to a system because the BMPs may be installed or instituted gradually and often a lag time exists between implementation and watershed response. Although these changes may be monotypic (gradual changes), in some cases the changes may display definitive and abrupt changes (step trend). Different analysis will be needed in different cases. In most cases, OKC believes that BMPs within a watershed will provide change over a relatively long period of time thus monotypic trend analysis may be warranted.

As this program is intended to calculate annual loads, the approach will provide a much more comprehensive approach towards storm water monitoring. OKC believes that this approach will satisfy the requirements of Wet Weather Analytical Monitoring as described in [Component 12](#) and current fixed interval monitoring ([Component 13a](#)) conducted by OKC. The Wet Weather Monitoring component of the existing permit is proposed to be terminated with the new permit (subject to EPA and ODEQ approval). The Priority Based Monitoring program will be reduced to generating information on streams with a State Water Body Identification Number or at segments where additional information is required prior to installing more permanent facilities.

Station selection will be based on a prioritized matrix which includes historical data, regulatory aspects (TMDL watersheds), and the need for additional data for future TMDLs. The goals of the Trend and Load Based Monitoring Program include:

- Provide relevant and continuous data at selected impaired stream segments for future TMDL development.
- Provide annual load data at representative locations in the MS4 jurisdiction to assess long-term trends of pollutant loadings.
- Collect long-term data which provides a feedback to the current and future iterative BMPs implemented in OKC.
- Satisfy load-based monitoring requirements for existing and future TMDLs excluding those water bodies which require more specialized monitoring protocol.
- Provide biological and other surrogate measures which may further support BMP effectiveness and constituent loading trends.

## 7. Component Metrics:

Baseline information will be established over time. Trends can be difficult to realize over short monitoring timeframes (three years). As trend analysis can be impacted by seasonal cycles, diurnal cycles, and measurement error among others, OKC realizes that a considerable amount of time may be necessary to assess long-term (ten years) impacts of changes to municipal code with regard to structural or non-structural BMPs. The following metrics will be established for reporting needs:

Initial metrics are based on program implementation and station calibration. Each station must be “calibrated” meaning that equipment must be installed properly (and often moved due to unforeseen site constraints), rating curves developed, and telemetry established. Metrics 2-3 may be instituted as soon

as the equipment is installed but much of the data will be quality flagged as the flow, sample pacing and aliquot volumes are adjusted to local conditions. These metrics also establish the benchmark minimum targets for each watershed station (when applicable). Metric 4 describes some of the data reporting efforts which support the data quality objectives of the program.

The initial candidate stations were selected to meet current OKC data needs. Some historical stations were adopted into the program such as the Lake Thunderbird TMDL stations (Station 24, 570, and 568) and two historical Wet Weather Analytical stations (Station 616 and Station 617). Drainage Engineering Section of the Public Works Department has provided a list of storm water control structures which are considered “high hazard dams” that are also potential locations. As this network is developed, the overarching goal is to create a monitoring network which records rainfall, water level, calculated discharge and to provide selected stations with automated sampling ability.

Stations were initially selected from historical or regulated watershed stations (Lake Thunderbird TMDL). A second group of stations is currently being selected from water bodies identified on the 2014 303(d) list as category 5a stream segments. These are segments for which a TMDL is underway or will be scheduled in the near future. In many cases, these segments are listed for the fecal contamination indicators *Enterococcus* or *E. coli* (or both) which require grab sample collection. These stations will be monitored for discharge to provide TMDL developers year-round discharge information for accurate modeling.

**Metric 1:** Install monitoring stations which represent OKC’s diverse land use, storm drainage systems and open channels, geography and pollutant loadings in order to calculate annual loading.

Stations currently anticipated to represent OKC are less than twenty. The list includes the following stream segments which may be expanded or reduced as necessary as the program evolves. SWQ will maintain a minimum active station count of fifteen after Year 3:

| WBID                  | Name                                    | <i>Enterococci</i> | <i>E. coli</i> | Nitrates | DO | Chlorides | Oil & Grease | Selenium | Sulfates | TDS | Turbidity | Category | *Status |
|-----------------------|---|--------------------|----------------|----------|----|-----------|--------------|----------|----------|-----|-----------|----------|---------|
| No WBID Assigned      | SW 12th and Lee (Station 616 – No WBID) |                    |                |          |    |           |              |          |          |     |           |          | I       |
| No WBID Assigned      | Upper Deep Fork River (No WBID)         |                    |                |          |    |           |              |          |          |     |           |          | I       |
| OK52052000<br>0150_00 | Crooked Oak Creek                       | 5a                 | TMDL           |          | 5a | 5b        | 5c           |          |          |     |           | 5        | NI      |
| OK52052000<br>0230_00 | Campbell Creek                          |                    |                |          | 5a |           |              |          | 5b       |     |           | 5        | NI      |
| OK52052000<br>0240_00 | Mustang Creek                           |                    | TMDL           |          | 5a |           |              |          |          |     |           | 5        | I       |
| OK52052000<br>0350_00 | Airport Heights Creek!                  |                    |                |          | 5a |           |              |          |          |     | 5a        | 5        | I       |

| WBID                  | Name                      | <i>Enterococci</i> | <i>E. coli</i> | Nitrates | DO | Chlorides | Oil & Grease | Selenium | Sulfates | TDS | Turbidity | Category | *Status |
|-----------------------|---------------------------|--------------------|----------------|----------|----|-----------|--------------|----------|----------|-----|-----------|----------|---------|
| OK52061001<br>0230_00 | Cow Creek                 |                    |                |          | 5a |           |              | 5a       |          |     |           | 5        | NI      |
| OK52071002<br>0060_00 | Canadian River, Deep Fork | 5a                 | 5a             |          |    |           |              |          |          |     |           | 5        | NI      |
| OK52081000<br>0030_00 | Hog Creek                 | 5a                 | 5a             |          | 5a |           |              |          |          |     | 5a        | 5        | I       |
| OK52081000<br>0100_00 | Elm Creek                 |                    | 5a             |          |    |           |              |          |          | 5b  | 5a        | 5        | I       |
| OK62091004<br>0100_00 | Chisholm Creek            |                    |                | 5a       |    |           |              |          |          |     |           | 5        | NI      |
| OK62091004<br>0140_00 | Bluff Creek               | 4a                 | 5a             |          |    |           |              |          |          |     |           | 5        | NI      |

\*NI- Not Installed; I - Installed

| Task                  | Metric                     | Reported Figure             | Goal / Reporting   |
|-----------------------|----------------------------|-----------------------------|--|
| Year 1 - Installation | Installation & Calibration | # Stations installed / year | 5 stations, calibration not to exceed 6 months; Annual reporting |
| Year 2 - Installation | Installation & Calibration | # Stations installed / year | 5 stations, calibration not to exceed 6 months; Annual reporting |
| Year 3 - Installation | Installation & Calibration | # Stations installed / year | 5 stations, calibration not to exceed 6 months; Annual reporting |

**Metric 2:** Provide a program which collects information which will be used to provide annual loading to assess watershed loading characteristics over time by specifying the sample goals and data representation goals.

| Task                          | Metric  | Reported Figure    | Goal / Reporting            |
|-------------------------------|---|--------------------|-----------------------------|
| Trend & Load Based Monitoring | Number of composite samples used to calculate annual loading / year | # of valid samples | 52 Samples; Report annually |

| <b>Task</b>                   | <b>Metric</b>   | <b>Reported Figure</b>                                      | <b>Goal / Reporting</b>                       |
|-------------------------------|---|---|---|
| Trend & Load Based Monitoring | % of year represented by flow.                            | # of flow intervals missed / # of flow intervals attempted. | 80-90%; Report annually                       |
| Trend & Load Based Monitoring | Minimum number of aliquots used for each composite sample | # aliquots acquired   | 8-20 Samples (75-200 mls.); Internal use only |
| Trend & Load Based Monitoring | Time of no discharge at station                           | % Time = Hours no discharge / Total monitoring hours        | No goal established; Internal use only        |

**Metric 3:** Provide the data necessary for long-term load character analysis and provide any other relevant data which may assess stream health such as biological and habitat assessments.

| <b>Task</b>                   | <b>Metric</b>                      | <b>Reported Figure</b>  | <b>Goal / Reporting</b>  |
|-------------------------------|------------------------------------|---|--|
| Trend & Load Based Monitoring | Rainfall                           | Acquire rainfall data at minimum of one site / basin                            | 15 minute data; Report annually (may be reported as daily, weekly or monthly totals)   |
| Trend & Load Based Monitoring | Flow                               | Acquire water level and discharge information at each station                   | 15 minute data; Report annually (may be reported as daily, weekly or monthly totals)   |
| Trend & Load Based Monitoring | Dissolved Oxygen - Diurnal Studies | Applicable Water Quality Standards  | Two diurnal studies every two years during the critical time periods (when applicable) |
| Trend & Load Based Monitoring | Biological Assessments             | Fish Assessment (Applicable Water Quality Standards and In-house IBI Standards) | Every two Years (when applicable)  |

| <b>Task</b>                   | <b>Metric</b>      | <b>Reported Figure</b>  | <b>Goal / Reporting</b> |
|-------------------------------|--------------------|---|-------------------------|
| Trend & Load Based Monitoring | Sample Acquisition | Determine the flow sample pacing interval which best suits the collection goals identified in Metric 1. | TBD (when applicable)   |

**Metric 4:** Provide calculations and statistical analysis in which the parameter concentration and discharge data will be used to develop the average load and assess trends. Develop a reporting format.

| <b>Task</b>                   | <b>Metric</b>         | <b>Reported Figure</b>  | <b>Goal / Reporting</b>   |
|-------------------------------|-----------------------|---|---|
| Trend & Load Based Monitoring | Total Load            | Total QA accepted discharge measured (during sampling period) X QA accepted constituent concentration | Calculated for each sampling period and summed for each year; Report annually |
| Trend & Load Based Monitoring | Average Sampling Load | Average sampling load = sum of all composite sample loads / total number of sampling events           | No goal established; Report annually  |
| Trend & Load Based Monitoring | Average Monthly Load  | Average monthly load = total monthly loads / 12 months  | No goal established; Report annually  |
| Trend & Load Based Monitoring | Annual Load           | Sum of total loads  | No goal established; Report annually  |
| Trend & Load Based Monitoring | Trend Analysis        | Normalize sample N through random number generator and analyze sample load, monthly and annual loads. | No goal established; Report annually  |
| Trend & Load Based Monitoring | Trend Analysis        | Report annual rainfall trends   | No goal established; Report annually  |

**8. Narrative Goals:**

- Develop a long-term monitoring program which provides consistent methodology of water quality data collection representing instream water quality and the variability created by hydrological, seasonal and temporal changes.
- Develop a long-term database of water quality information provided by continuous sample collection and continuous discharge recordings to calculate pollutant loadings.
- Develop and continuously revise the parameter matrix for applicable monitoring locations which assist in the assessment of long-term trends in water quality. This may include forms of physical and biological monitoring.
- Provide relevant feedback to the OKC Storm Water Manager regarding the quality of receiving waters to determine if long-term changes are occurring at the representative stations.
- Provide near real-time flow and water level data to Drainage Engineering staff.
- Monitor the changes to the drainage areas land use and impervious surfaces.

**9. Cooperating Departments, Agencies and Communities:**

| <b>Agency</b>  | <b>Roles / Responsibility</b>   |
|--|---|
| OKC, Public Works, Administration                    | Administration of all Public Works programs, projects, personnel, funding sources and operations.   |
| OKC, Public Works, Drainage Engineering              | The Drainage Engineering Section will provide calculated flow volumes and discharge rates at each station to assist SWQ personnel in the development of flow-duration curves.   |
| OKC, Public Works Dept. Storm Water Quality Division | The Environmental Water Quality Section has primary responsibility for conducting monitoring, site assessments, water quality and biological assessments. The Section additionally provides sample station installation, calibration and maintenance. |
| Oklahoma Department of Environmental Quality         | Primary oversight Agency. OKC submits all relevant data to this Agency. Review and analysis of these data may provide recommendations to add or remove stream segments from impaired streams listings.  |
| Oklahoma Water Resources Board                       | Technical support and provides relevant additions or changes to applicable Water Quality Standards.   |

**10. Area Specific Requirements:**

This monitoring methodology was applied to the Lake Thunderbird TMDL action area as part of the Pour Point monitoring component identified in the monitoring plan. The sampling process was limited to total suspended solids and total phosphorus. On review of the first partial year of sampling, the method has proven to be effective after the initial station “calibration phase” is completed. The calibration phase includes using engineering estimates and measured discharge values to establish a stage versus discharge relationship, determine the best placement or sensors and placement of automatic sampling intake structures. This program is currently being implemented at three stations in the TMDL area; Hog Creek Station 24, Elm Creek Station 570, and Unnamed Tributary to Little River Station 568.

**11. Analysis:**

Historically, the OKC SWQ monitoring programs have focused on relatively short term monitoring efforts to provide a general assessment of stream health related to applicable State Water Quality Standards. The proposed program, Trend and Load Based Monitoring, is fundamentally different in that the program will provide OKC with a regional approach to determine if instituted BMPs or changes to BMPs create a response within the monitored watersheds. Transitioning from a concentration based sampling program to a calculated load monitoring effort requires stringent methodology which is consistently applied. As specified in the metrics identified in Section 7 Component Metrics, the program success will be measured on the amount of data needed to make defensible statements of water quality change.

The proposed Trend and Load Based Monitoring Program key components are the establishment of stations located throughout the City. These stations will be continuously monitored. Some stations will be located in rural areas (existing Lake Thunderbird TMDL stations) while others will be located in low, medium and high intensity developed areas. The information obtained at the existing stations to date has yielded useful information about the character of pollutant loading in OKC. On review of these data, OKC can review pollutant loadings that are related to non-storm event, combined wet/dry conditions, and at times strictly wet weather discharges. Simple calculations can provide weekly, monthly or annual pollutant loadings. In years five and ten of the program, trend analysis may be performed. Considerable data should be acquired by year five providing sufficient data pools for monotonic trend analysis (Hirsh, R.M. 1988. *Statistical methods and sampling design for estimating steps trends in surface water quality*). The actual methodology to be used is unknown due to the lack of prior knowledge about the nature of the data sets. Seasonality, exogenous variables, and non-normality are just a few factors which must be considered in the analysis. The following tests will be considered for future trend analysis:

|                       | <b>Type of test</b> | <b>Not adjusted for covariate (X)</b> | <b>Adjusted for covariate (X)</b>                   |
|-----------------------|---------------------|---------------------------------------|---|
| <b>No Seasonality</b> | Parametric          | Linear regression of Y on t           | Multiple linear regression of Y on X and t          |
|                       | Mixed               | -                                     | Mann-Kendall on residuals from regression of Y on X |
|                       | Nonparametric       | Mann-Kendall                          | Mann-Kendall on residuals from LOWESS of Y on X     |
| <b>Seasonality</b>    | Parametric          | Linear regression of Y on t and       | Multiple linear regression of Y on X, t,            |



|  | Type of test  | Not adjusted for covariate (X)      | Adjusted for covariate (X)                              |
|--|---------------|-------------------------------------|---|
|  |               | periodic functions                  | and periodic functions                                  |
|  | Mixed         | Regression of deseasonalized Y on t | Seasonal Kendall on residuals from regression of Y on X |
|  | Nonparametric | Seasonal Kendall on Y               | Seasonal Kendall on residuals from LOWESS of Y on X     |

Y = dependent variable of interest, X = covariate, t = time

(From Helsel, D.R. and R.M. Hirsch. 1992. *Statistical methods in water resources*)

## SWMP Component 14: Illicit Discharge Detection and Elimination Program

### 1. Program Components:

- A. Complete field screening, cumulative 25% of the selected 554 monitoring locations (Year 1).
- B. Complete field screening, cumulative 25% of the selected 554 monitoring locations (Year 2).
- C. Complete field screening, cumulative 25% of the selected 554 monitoring locations (Year 3).
- D. Complete field screening, cumulative 25% of the selected 554 monitoring locations (Year 4).
- E. Complete field screening, cumulative 100% of the selected 554 monitoring locations (Year 5).
- F. Submit field screening summaries including follow-up reports and summary statistics in the Annual Report.

### 2. Definitions:

*IDDE – Illicit Discharge Detection and Elimination Program.* MS4 permit component which includes dry weather field screening to discover sources of non-storm water discharges from illicit connections, illegal dumping or other contributing sources. This component of the IDDE program is described in 40 CFR Part 122.26.

*Grab Sample* - shall mean a sample of storm water runoff which is taken on a one-time basis without regard to the flow and consideration of time. The NPDES Storm Water Sampling Guidance Document (EPA, 1992) describes a grab sample as a discrete, individual sample taken within a short period of time (usually less than 15 minutes). Analysis of grab samples characterizes the quality of a storm water discharge at a given time of the discharge.

*Major Outfall* - Major Municipal Separate Storm Sewer Outfalls (Major Outfalls) are defined as a municipal separate storm sewer outfall that discharges from a single pipe with an inside diameter of 36 inches or more or its equivalent (discharge from a single conveyance other than circular pipe which is associated with a drainage area of more than 50 acres); or for municipal separate storm sewers that receive storm water from lands zoned for industrial activity (based on comprehensive zoning plans or equivalent), an outfall that discharges from a single pipe with an inside diameter of 12 inches or more or from its equivalent (discharge from other than a circular pipe associated with a drainage area of 2 acres or more). (Taken in part or wholly from 40 CFR Part 122.26)

### 3. Ordinances:

| Ordinance | Title | Language / Description |
|-----------|-------|------------------------|
|-----------|-------|------------------------|

| Ordinance | Title                                     | Language / Description  |
|-----------|---|---|
| §57-135   | Inspection                                | The Director shall have the right to inspect any on-site detention or retention facility at any reasonable time to determine if it is in compliance with the approved design and is capable of functioning properly. The Director shall have the right to inspect any property within the City to determine the source, quantity, quality or flow rate of stormwater and to determine the source and nature of pollutants, hazards and/or activities creating or promoting same.  |
| §57-172   | Illicit Connections and Improper Disposal | (a) The Manager shall take appropriate steps to detect and eliminate illicit connections to the City Stormwater System, including the adoption of a program to screen illicit discharges and identify their sources. (b) The Manager shall take appropriate steps to detect and eliminate improper discharges, including programs to screen for improper disposal and programs to provide for public education, public information and other appropriate activities to facilitate the proper management and disposal of used oil, toxic materials, and hazardous household waste. |
| §57-178   | Illicit Discharge and Illegal Dumping     | Ordinance describes prohibited discharges to the OKC MS4.   |

#### 4. Standard Operating Procedures:

| SOP     | Name  | Revision    |
|---------|---|-------------|
| SOP #1  | Routine QA/QC   | 12/20/2016  |
| SOP #5  | pH Measurement  | 4/23/2007   |
| SOP #7  | Water Temperature Measurement                           | 4/27/2007   |
| SOP #8  | Flow Measurement (SSOM)                                 | 7/12/2007   |
| SOP #9  | Flow Measurement (Meter Method)                         | 10/10/2007  |
| SOP #11 | Inorganic Sample Collection                             | 10/16/2007  |
| SOP #14 | Reagent Standards / Shelf Life                          | 10/17/2007  |
| SOP #16 | Dry Weather / Illicit Discharge Monitoring              | 12/20/2016  |
| SOP #19 | Chain of Custody and Sample Labeling                    | 12/20/2016  |
| SOP #22 | Optical Brightener Monitoring                           | 10/10/2007  |
| SOP #23 | Global Positioning System                               | 10/16/2007  |
| SOP #25 | Flow Measurement (Timed Volume Method)                  | 10/9/2007   |
| SOP #26 | Equipment Decontamination                               | 10/9/2007   |
| SOP #27 | Dye Testing   | 10/11/2007  |
| SOP #31 | Storm Sewer Camera                                      | In Progress |
| SOP #32 | MicroMAX Pro Multi-gas Monitor                          | In Progress |
| SOP #52 | Chlorine Measurement (using HACH Pocket Chlorimeter II) | 12/27/2016  |

## 5. Resources:

The program is funded through the Drainage Utility Fee. The Drainage Utility Fee (including reimbursements, permits, interests, etc.) provides ~\$17-21 million for operating and capital expenses related to storm water management.

The Environmental Water Quality Program Account provides the funding for the Illicit Discharge Detection and Elimination Monitoring Program. The FY18 budget for this account is \$773,474. Any applicable laboratory services are provided by the Utilities Laboratory (fecal indicator bacteria only) or by contracted private laboratories.

Laboratory services are available, if needed, for the analysis of IDDE samples. The current laboratory contract is a unit priced service contract not to exceed \$128,000. This service contract was approved by OKC City Council on August 16, 2016 and is authorized for 1 year with the option for the City to renew for up to 4 additional years.

## 6. General Program Description:

The Illicit Discharge Detection and Elimination Program (IDDE) functions to locate and eliminate illicit discharges and improper disposals to the MS4. This program shall include dry weather screening activities to locate portions of the MS4 with suspected illicit discharges and improper disposal. Follow-up activities to eliminate illicit discharges and improper disposal may be prioritized on the basis of magnitude and nature of the suspected discharge; sensitivity of the receiving water; and/or other relevant factors.

This program establishes priorities and schedules for screening all monitoring stations two times during the permit term. Years 1-4 consists of screening approximately 25% of the representative stations each permit year to complete one rotation through the 554 monitoring locations. Year 5 is a complete screening of the 554 monitoring stations. SWQ shall require the elimination of illicit discharges and improper disposal practices as expeditiously as reasonably possible. Where the elimination of an illicit discharge within thirty (30) days is not possible, SWQ shall require an expeditious schedule for removal of the discharge. In the interim, SWQ shall require the operator of the illicit discharge to take all reasonable measures to minimize the discharge of pollutants to the MS4.

Illicit Discharges and Improper Disposal: Non-storm water discharge to the MS4 shall be effectively prohibited. The OKC MS4 Permit Part II.6.(a) provides: *“for the purpose of this permit, the following discharges need not be addressed as illicit discharges by the permittee(s) nor prohibited from entering the MS4: discharges regulated by a separate OPDES permit; and non-storm water discharges identified by the permittee as specified in item (a) below.”*

(a) *Permittee(s) shall continue to identify in the SWMP any categories of non-storm water that are not prohibited from being discharged into the MS4, in accordance with conditions described in items (1) and (2) below:*

(1) *Categories of non-storm water discharges that the permittee(s) may exempt from the prohibition on non-storm water entering the MS4 include:*

- (a) *Water line flushing;*
  - (b) *Landscape irrigation;*
  - (c) *Diverted stream flows;*
  - (d) *Rising ground waters;*
  - (e) *Uncontaminated ground water infiltration to separate storm sewers;*
  - (f) *Uncontaminated pumped ground water;*
  - (g) *Discharge from potable water sources;*
  - (h) *Foundation drains;*
  - (i) *Air conditioning condensate;*
  - (j) *Irrigation water;*
  - (k) *Springs;*
  - (l) *Water from crawl space pumps;*
  - (m) *Footing drains;*
  - (n) *Lawn watering;*
  - (o) *Individual residential car washing;*
  - (p) *Flows from riparian habitats and wetlands;*
  - (q) *Dechlorinated swimming pool discharges (excluding filter backwash or discharges associated with salt water pool systems).*
  - (r) *Discharges from emergency firefighting activities provided procedures are in place for the Incident Commander, Fire Chief, or other on-scene firefighting official in charge to make an evaluation regarding potential releases of pollutants from the scene. Measures must be taken to reduce any pollutant releases to the maximum extent practicable subject to all appropriate actions necessary to ensure public health and safety. These procedures must be documented in your SWMP. Discharges or flows from firefighting training activities are not authorized by this permit.*
  - (s) *Surface water impoundment discharges from draining activities (provided that controls are put into place prior to commencement of any draining activities not associated with precipitation to limit the discharge of any associated pollutants or sediments and to control the quantity of the discharge rate and volume as to not cause or contribute to significant bank erosion, streambed scour or downstream flooding).*
- (2) *Categories of non-storm water discharges exempted from the prohibition on non-storm water must not be reasonably expected (based on information available to the permittee[s]) to be significant sources of pollutants to the waters of the United States, because of either:*
- a. *The nature of the discharges; or*
  - b. *Conditions placed on the discharges by the permittee(s).*

### Monitoring Station Selection

Stations were originally selected based on several key criteria addressed in 40 CFR Part 122.26. Sampling may occur from underground conduits including reinforced concrete boxes (RCBs), reinforced concrete pipes (RCPs), PVC or other materials used to transport storm water flows. Stations may be located at natural streams, improved channels, manholes and storm water outfalls. 40 CFR Part 122.26 provides that “in large municipal separate storm sewer systems, no more than 500 cells need to have identified field screening points.” OKC exceeds these requirements and continues to

add additional monitoring stations when appropriate.

### Sample Acquisition

Sampling will generally consist of grab samples and in situ measurements. As previously noted, monitoring stations may include underground storm sewers and surface level channels (natural or otherwise improved). In some cases, extension poles or other devices (such as pumps) may be utilized to acquire a water samples for analysis.

Parameters include but are not limited to field measurements of total chlorine, phenols, detergents, total copper, pH, discharge and water temperature. Field observations include local land use, a site description, odors, water color, water clarity, floatables, deposits/stains, vegetative condition, structural condition and any observations of biological attributes.

Calibration, sampling and documentation shall follow the guidance requirements specified in the Storm Water Quality Standard Operating Procedures (listed in Section 4). Procedures for field screening can be found in OKC SOP #16. 40 CFR Part 122.26 provides *“At a minimum, a screening analysis shall include a narrative description, for either each field screening point or major outfall, of visual observations made during dry weather periods. If any flow is observed, two grab samples shall be collected with a minimum period of 4 hours between samples. For all such samples, a narrative description of the color, odor, turbidity, the presence of an oil sheen or surface scum as well as any other relevant observations regarding the potential presence of non-storm water discharges or illegal dumping shall be provided. In addition, a narrative description of the results of a field analysis using suitable methods to estimate pH, total chlorine, total copper, total phenol, and detergents (or surfactants) shall be provided along with a description of the flow rate.”*

The OKC MS4 Permit Part II.A.13.a provides *“Screening methodology may be modified based on experience gained during actual field screening activities and not need conform to the protocol at OAC 252:606-1-3(b)(3)(L) adopting and incorporating by reference 40 CFR 122.26(d)(1)(iv)(d). Sample collection and analysis need not conform to the requirements of OAC 252:606-1-3(b)(7) adopting and incorporating by reference 40 CFR Part 136. However, samples taken to confirm (e.g. in support of possible legal action) a particular illicit connection or improper disposal practice should conform to the requirements of OAC 252:606-1-3(b)(7).”*

### Documentation

Each field visit will be documented on an Illicit Discharge Field Screening Program Field Form. Follow-up investigations will be documented with a Dry Weather Follow-up Report. All field data will be entered into an Access database. Once site documentation is received and entered into the SWQ database, the documents are scanned and placed onto the OKC network. The original hard copies of all field data are maintained for a period of 3-years from the date of collection. The documents are destroyed after the record hold time is complete.

Stations which require follow-ups are documented using the same field forms, however a Dry Weather Follow-up Report will be completed. This report provides information about the original sampling results, follow-up actions, onsite measurement results, and efforts to remove, reduce or eliminate

applicable sources of pollution.

Analysis and Reporting

Analysis consists of tabulating the information as it is received. Screening values for each parameter were established for follow-up purposes. If the screening values are met or exceeded, a follow-up investigation will be initiated. The table below displays the aforementioned screening values. Annual reporting is required for the IDDE program. Field-collected information is tabulated and reported in a spreadsheet format and narrative format in OKC’s Storm Water Quality Annual Report. Basic program statistics are generated which include the number of scheduled locations monitored, number of site visits, number and type of detections and number of follow-up pollution investigations. Follow-up reports are generated and submitted with the tabulated data annually.

| Parameter                 | Screening Value             |
|---------------------------|-----------------------------|
| pH                        | ≤6.50 or ≥9.00 (SU)         |
| Copper                    | *Any Detection              |
| Phenol                    | *Any Detection              |
| Total Chlorine            | ≥0.2 mg/L                   |
| Detergents                | ≥0.25 mg/L                  |
| Visual /Odor Observations | Any Observed Adverse Impact |

**7. Component Metrics:**

| Task       | Metric  | Reported Figure   | Goal / Reporting   |
|------------|---|---|--|
| Monitoring | Permit Year 1 ~ 25%<br>Permit Year 2 ~ 25%<br>Permit Year 3 ~25%<br>Permit Year 4 ~ 25%<br>Permit Year 5 – 100% | % of required stations completed / year                   | Monitor 100% of the 554 stations, two rotations per 5-year permit cycle: Report annually |
| Monitoring | Total number site visits  | # Site visits / year                                      | 25% years 1-4, 100% of stations year 5; Report Annually                                  |
| Monitoring | Number of dry weather screening parameter detections which require follow-up.                                   | # Detections / year (number and type of detection)        | No goal established; Report annually   |
| Monitoring | Number of stations with screening values which do not require follow-up.  | # Stations screened which do not require follow-up / year | No goal established; internal reporting  |

## 8. Narrative Goals:

Provide the monitoring as required in Part II.A.13 and Part III.A. Component 14 of the Storm Water Discharge Permit for OKC. Provide the screening, detection and elimination of illicit or illegal discharges to the MS4 and to seek resolution through cooperative or administrative actions to remove these discharges to the MS4. Document problems identified, report any resolutions to those problems and provide annual reporting to the ODEQ.

The IDDE Program was developed for screening the MS4 to detect discharges which may be contributing to downstream water quality problems. Visual observations combined with the measured parameters total chlorine, total copper, pH, water temperature, detergents, discharge and total phenol are used to indicate issues within a drainage system. If detections or observations are made which require follow-up, technicians will begin tracking the problem to its source. Once found, voluntary or administrative actions are used to correct the situation.

## 9. Cooperating Departments and Agencies:

The IDDE Program, as described above, is a screening program. However, the screening program is part of the larger IDDE Program efforts which encompasses several OKC Departments. City efforts may include developing response personnel to accidental releases, employee training, proper waste disposal methods and ensuring proper housekeeping and maintenance of infrastructure. The IDDE program can be broken down into four major components: 1) Proper Waste Disposal / Education; 2) Illegal / Illicit Discharge Ordinances; 3) MS4 Field Screening; 4) Response and Reporting.

### 1) Proper Waste Disposal / Education

Proper waste and disposal education involves several City Departments. The Utilities Department provides waste management, potable water distribution and waste water collection. Constant operation and maintenance is required on City infrastructure. Residents may be the first to observe problems associated with this infrastructure and can report problems to the City.

OKC's Household Hazardous Waste Collection Facility provides residents the opportunity to properly dispose of unwanted or unused chemicals.

OKC has developed informational brochures and other media regarding proper disposal of chemicals, lawn management and other contributing factors to illegal dumping and illicit discharges. Examples of programs or information related to IDDE related subjects include:

- Utilities FOGsie Program was developed to address Fats, Oils and Grease (FOGs) discharge to the sanitary sewer system. FOGs can damage receiving sewers by depositing and clogging, which can create surfacing sewage.
- OKC Storm Water Outreach Program Outreach provides multiple educational aspects to educate residents, businesses and civic organizations about the impact of polluted storm water discharges and how each person plays a part in reducing the impact from daily activities. SWQ has developed several brochures which address grass clipping disposal, proper lawn fertilization, proper pesticide use, and floatable debris.



- OKC SWQ Spill Response personnel are on call 24 hours/day to respond to spills or other discharges which may cause or contribute to storm water pollution.
- OKC SWQ’s HHWCF provides an efficient, safe and convenient opportunity for residents to dispose of unused or unwanted chemicals.
- OKC Police Department personnel and recruits are periodically trained to identify issues which may contribute to storm water contamination.
- OKC Fire Department personnel and recruits are periodically trained to identify issues which may contribute to storm water contamination.
- OKC Parks and Recreation Department provide Pet Waste Stations at City parks for the proper disposal of Pet Wastes.

2) Illegal or Illicit Discharge Ordinances

Ordinances are developed which comprehensively address the disposal of solid waste, raw products, spill and accidental release response, and dead animals. These ordinances provide the authority for the City to manage and enforce the proper disposal of waste which may otherwise be discharged to the MS4 or surface waters.

3) MS4 Screening

OKC conducts regular screenings of the MS4 to detect, track and ultimately eliminate non-permitted sources of non-storm water in the MS4. Screening is conducted each year on a scheduled basis. The methodology is described within this SWMP component. Other OKC Departments, State, Federal and volunteer organizations play a significant role in the identification of illicit discharges and the follow-up necessary to eliminate these sources.

| Agency  | Roles / Responsibility   |
|---|--|
| OKC, Public Works Department, Administration                                    | Administration of all Public Works programs, projects, personnel, funding sources and operations.  |
| OKC, PW Storm Water Quality Management Division                                 | Storm Water Quality Division is charged with monitoring the MS4, responding to spills and pollution complaints, facility and construction site inspections, and is the Division responsible for NPDES MS4 reporting. |
| OKC, Public Works Department, Streets Traffic and Drainage Maintenance Division | Charged with the operation and maintenance of storm water infrastructure and streets. These personnel often find issues within the storm water drainage system and report those issues to SWQ.                       |

| Agency                               | Roles / Responsibility   |
|--------------------------------------|--|
| OKC, Development Services Department | Development Services includes Animal Welfare (dead animal disposal) code enforcement, the Development Center (including building and plumbing inspectors) which ensure proper private construction practices are applied through inspection and authorization processes.   |
| OKC, General Services Department     | General Services Department ensures that City owned buildings and the City fleet are properly maintained and operated. This includes multiple City office buildings and Fleet Services buildings.  |
| OKC, Parks and Recreation Department | Parks and Recreation Department maintains City property grounds including the control of floatables debris and reporting of suspected illicit discharges or illegal dumping on those properties.   |
| OKC, Police Department               | Police Department recruits are periodically trained to identify potential illicit discharges to the MS4 and report observations to the SWQ Division. The Police Department may often be the first response to an accident or illicit discharge.  |
| OKC, Fire Department                 | Fire Department recruits are periodically trained to identify potential illicit discharges to the MS4 and report observations to the SWQ Division. The Fire Department may often be the first response to an accident or illicit discharge.  |
| OKC, Utilities Department            | Utilities Department is charged with the operation and maintenance of waste water collection and potable water distribution. Utilities personnel regularly respond to sanitary sewer bypasses and potable water line leaks. The Utilities Department also provides waste collection services and responds to spills or other discharges related to the collection of those solid wastes. |
| OKC, Office of Emergency Management  | Office of Emergency Management Department liaisons play a part in this office by providing clear communication lines between   |

| Agency   | Roles / Responsibility  |
|--|---|
|  | emergency, non- emergency, State and Federal personnel in response to an event.   |
| Oklahoma Department of Environmental Quality                       | ODEQ is the primary NPDES permitting State agency regarding storm water. OKC works interactively with the ODEQ to investigate pollution issues in OKC. Information is shared between the applicable ODEQ Divisions to respond accordingly to spills, complaints and illegal discharges. |
| Oklahoma Corporation Commission                                    | Storm Water Quality works closely with OCC field managers to respond to Oil and Gas related discharges.   |
| Oklahoma Conservation Commission (staff and Blue Thumb Volunteers) | Conservation Commission staff and volunteers may conduct monitoring in OKC. These monitoring efforts may need follow-up investigation to determine causes/sources of problems.  |
| Oklahoma Department of Wildlife Conservation                       | Storm Water Quality works cooperatively with the ODWC with regard to incidents which involve the death of aquatic or terrestrial wildlife.  |
| Oklahoma Water Resources Board (OWRB)                              | Charged with the creation and revision of State Water Quality Standards. Applied Water Quality Standards may be found in OAC Title 785 Chapters 45 and 46 (and appendices).   |
| National Response Center   | Spills of significance which impact Waters of the Nation in reportable quantities are reported to the NRC. The NRC will distribute the report to impacted State, Federal and local agencies for appropriate response.   |

Response and Reporting

The MS4 Screening provides a method for evaluating the MS4 for illicit discharges. OKC tracks discharges to the source(s) and provides any needed investigation and enforcement actions necessary to eliminate the source. This response is documented and reports are generated which detail the outcome of the investigation. Multiple OKC Departments or external agencies may be involved as needed to ensure that the issue is resolved. Responses may be documented by the following reports:

- Dry Weather Field Screening Follow-up Report
- Utilities By-Pass Reports
- OKC MS4 Annual Report
- OKC SWQ Administrative Enforcement Remedies Document (NOV Form) (see [Appendix K](#))
- OKC SWQ Fish Kill Report
- OKC SWQ Pollution, HAZMAT Database and NOV databases (and associated database reports)
- OKC Construction and Industrial Inspection Forms
- Pictures
- Scanned Field Notes
- Laboratory Analytical Reports
- Contractor Invoices
- State and Federal Reports

OKC may receive notification from residents, businesses, other agencies or communities regarding suspected discharges. Several reporting methods are available to provide information to OKC. Some of these reporting methods are described below:

- OKC Action Center (Emergency 911, Non-Emergency (405) 297-2535) <https://www.okc.gov/residents/action-center>
- OKC Police Department (Emergency 911, Non-Emergency (405) 231-2121) <https://www.okc.gov/departments/police>
- OKC Fire Department (Emergency 911, Non-Emergency (405) 297-3314) <https://www.okc.gov/departments/fire>
- OKC Utilities Hotline (405) 297-3334 (for water and wastewater emergencies)
- OKC SWQ Emergency Response (405) 297-6833, Non-Emergency (405) 297-1774
- OKC Development Services <https://www.okc.gov/departments/development-services>

## 10. Area Specific Requirements

Not applicable.

## 11. Analysis:

No analysis is required for this SWMP Component.

## SWMP Component 15: Supporting Permit Conditions, Monitoring Programs, and Documents

### 1. Program Requirements:

- A. Submit completed interjurisdictional agreement(s) between permittees.

### 2. Definitions:

Memorandum of Understanding (MoU) describes a bilateral or multilateral agreement between two or more parties. It expresses a convergence or will between the parties, indicating an intended common line of action. It is often used in cases where parties either do not imply a legal commitment or in situations where the parties cannot create a legally enforceable agreement.

### 3. Ordinances:

No ordinances are required for this SWMP Component.

### 4. Standard Operating Procedures:

No Standard Operating Procedures are required for this SWMP Component.

### 5. Resources:

The program is funded through the Drainage Utility Fee. The Drainage Utility Fee (including reimbursements, permits, interests, etc.) provides ~\$17-21 million for operating and capital expenses related to storm water management. Revenue sources are generally discussed in applicable SWMP Components. A detailed breakdown is provided in [Component 1](#). Other revenue sources not previously discussed include fines, court costs, permitting revenues, and reimbursements. The following table provides a brief five-year overview of the revenue sources associated with the MS4 Permit Programs.

| Fiscal Year | Fine/Court Costs | *Permitting  | Reimbursements | Interests   | Drainage Utility Fee |
|-------------|------------------|--------------|----------------|-------------|----------------------|
| 2013        | \$497.00         | \$108,690.00 | \$261,288.00   | \$22,258.00 | \$15,008,231.00      |
| 2014        | \$1,701.00       | \$133,355.00 | \$255,766.00   | \$46,067.00 | \$14,953,993.00      |
| 2015        | \$603.00         | \$117,690.00 | \$255,760.00   | \$60,197.00 | \$16,850,160.00      |
| 2016        | \$467.00         | \$116,200.00 | \$255,760.00   | \$80,763.00 | \$14,104,870.00      |
| 2017        | \$1,701.00       | \$133,355.00 | \$255,766.00   | **\$128,302 | \$14,953,993.00      |

\*Permitting includes late fees, and re-inspection fees.

\*\*Interest is the adopted value and does not reflect actual interest acquired.

### 6. General Program Description:

The Supporting Permit Conditions, Monitoring Programs, and Documents SWMP Component provides the relevant documentation regarding interjurisdictional agreements, memorandums of understandings, supporting agencies, monitoring programs (outside of the standard permit required monitoring), and TMDL compliance and monitoring plans.

Interjurisdictional agreements for co-permittee status for the OKC MS4 Storm Water Discharge Permit are in place for the Oklahoma Department of Transportation (ODOT) and the Oklahoma Turnpike Association (OTA). ODOT and OTA have each provided SWMPs which are in [Appendix A](#) and [Appendix B](#), respectively. The Memorandums of Understanding are established cooperatively for each entity and proposed to OKC Council for consideration and approval.

OKC also has agreements with some adjacent communities for services offered through the OKC Household Hazardous Waste Facility (see [Component 6](#)).

Historically, MoUs have been used to conduct limited monitoring in adjacent communities and it is anticipated that service agreements (such as monitoring or cooperative educational efforts) will be enacted through the MoU process. The following agreements are in place (see [Appendix AB](#)):

- ODOT, Co-permittee, OKC Council approved August 1, 2006.
- OTA, Co-permittee, OKC Council approved November 14, 2006.
- City of Bethany, HHWCF Services, OKC Council approved June 21, 2016
  - OKC Council approved continuation of MoU on July 18, 2017
- City of Edmond, HHWCF Services, OKC Council approved June 21, 2016
  - OKC Council approved continuation of MoU on July 18, 2017
- City of El Reno, HHWCF Services, OKC Council approved June 21, 2016
  - OKC Council approved continuation of MoU on July 18, 2017
- City of Moore, HHWCF Services, OKC Council approved June 21, 2016
  - OKC Council approved continuation of MoU on July 18, 2017
- City of Shawnee, HHWCF Services, OKC Council approved June 21, 2016
  - OKC Council approved continuation of MoU on July 18, 2017
- City of the Village, HHWCF Services, OKC Council approved July 19, 2016
  - OKC Council approved continuation of MoU on July 18, 2017
- City of Warr Acres, HHWCF Services, OKC Council approved June 21, 2016
  - OKC Council approved continuation of MoU on July 18, 2017
- City of Yukon, HHWCF Services, OKC Council approved July 5, 2016
  - OKC Council approved continuation of MoU on July 18, 2017
- Tinker Airforce Base, HHWCF Services. Does not required City Council approval as Tinker Airforce Base is within OKC boundaries.
- City of Norman, Oklahoma City, and Moore MoU for Joint Public Education Efforts on December 5<sup>th</sup>, 2017

**7. Component Metrics:**

| Task | Metric | Reported Figure | Goal / Reporting |
|------|--------|-----------------|------------------|
|------|--------|-----------------|------------------|

| <b>Task</b>                    | <b>Metric</b>  | <b>Reported Figure</b>  | <b>Goal / Reporting</b>  |
|--------------------------------|--|---|--|
| Interjurisdictional Agreements | Develop Interjurisdictional Agreements for OKC Council Approval                | Submit MoUs with Applicable Co-Permittees to State ODEQ   | One time per 5-year permit cycle; 3 months from effective date of the permit authorization.  |
| Interjurisdictional Agreements | Develop Interjurisdictional Agreements for OKC Council Approval                | Update and submit MoUs to OKC Council for approval for Communities Using the HHWCF                          | No goal established; Report annually   |
| Staffing Levels                | Ensure Appropriate Staffing Levels Which Support MS4 Permit Required Programs  | Report staff numbers and position titles.   | Evaluate staff numbers annually. Report staff numbers annually.  |
| Staffing Levels                | Ensure Appropriate Staffing Levels which Support MS4 Permit Required Programs  | Report any proposed staff increases or decreases.   | Critically evaluate staff numbers at the termination of each 5-year permit cycle. Revise the SWMP as necessary to reflect any staff needs. |
| Budget                         | Identify All Revenue Sources Which Support MS4 Permit Programs                 | Revenue Sources and total monetary figure collected.  | Evaluate all revenue sources and income annually. Report Annually.   |
| Budget                         | Identify any Current or Proposed Changes to Revenue Sources                    | Report any proposed changes which have or will impact revenue sources which support the MS4 Permit Programs | Evaluate changes every five years. Report in major revisions to the SWMP every five years.   |
| TMDL                           | Report Tasks Identified within Applicable TMDL Compliance and Monitoring Plans | TMDL Tasks and Status   | Report Annually.   |

**8. Narrative Goals:**

To provide interjurisdictional agreements for co-permitting agencies and any other types of agreements with agencies, organizations, or communities through legal tools such as a Memorandum of Understanding or contracts. To provide that the Storm Water Management program is supported by appropriate budget and staff levels. To provide that any TMDLs in OKC which indicate storm water runoff as a contributing source and have been identified within that TMDL for pollutant reductions is incorporated into this management plan. Ensure proper monitoring, compliance efforts and reporting

are identified and completed.

**9. Cooperating Departments, Agencies and Communities:**

Each SWMP Component details the specific department, agency or community organizations which implement programs or provide support to managing storm water in OKC. The following listed organizations may be redundant in some cases, however the intent is to provide an understanding of the cooperating organizations that are stakeholders or support to the OKC program.

| Agency                              | Roles / Responsibility   |
|-------------------------------------|--|
| <p>OKC, Public Works Department</p> | <p>The Public Works Department maintains the City’s infrastructure, streets, bridges, drainage, and traffic control facilities. The department reviews and issues construction related permits, works with engineers and contractors on capital improvement projects and improvements to City properties.</p> <p>The Streets and Drainage Maintenance Division is charged with the operation and maintenance of roadways and drainage networks among other duties. Streets emergency response provides early detection of illicit or accidental discharges which may impact the MS4. The Division functions as a key role in the activities associated with the ongoing inspection, maintenance and repair of the drainage system and roadways. The Division is responsible for the Salt Storage Facilities. The existing Central Maintenance Facility storage area holds up to 8,000 tons of salt and was put in service in October 2003. An additional facility has been constructed at 11633 N. Santa Fe Avenue.</p> <p>The Storm Water Quality Management Division is charged with the ongoing maintenance, records retention, reporting, education, collaboration and implementation of the permit required programs. Certain programs are implemented solely by the SWQ Division others are partially or wholly implemented by other programs and residents.</p> <p>The Drainage Engineering Division is charged with various aspects of drainage review and maintenance of the storm drainage network</p> |



| <b>Agency</b>                                      | <b>Roles / Responsibility</b>   |
|--|---|
|  | <p>including drainage plan review, creation and modification of drainage ordinances and approval of drainage related low impact development.</p> <p>The General Obligation Bond Program and Capital Improvement programs work towards the construction of new storm water infrastructure and other building projects such as streets, bridges, municipal facilities etc. These programs may require working with the US Corps of Engineers, the ODEQ and other stakeholders to insure environmental compliance.</p> |
| <p>OKC, Development Services Department</p>        | <p>Development Services includes Animal Welfare (dead animal disposal), Code Enforcement, and the Development Center. The Development Services Department includes building and plumbing inspectors who ensure proper private construction practices are applied through inspection and authorization processes.</p> <p>SWQ and Code Enforcement collaborate on issues that involve the potential contamination of City waterways.</p>  |
| <p>OKC, General Services Department</p>            | <p>Fleet Services Division is charged with the operation and maintenance of the City vehicles and equipment fleet. Facilities are currently permitted through the Storm Water Quality Industrial Program.</p> <p>Building Management Division includes the skilled trades, mechanical and electrical support teams for City facilities. Program managers are aware of storm water regulations and address those regulations for in-house and contracted work performed.</p>   |
| <p>OKC, Information Technology (IT) Department</p> | <p>Responsible for providing organizational support for technology-based communication and information systems. IT provides support related to Storm Water Quality’s databases, Geographic Information Systems, mobile field computers and associated software.</p>   |

| <b>Agency</b>   | <b>Roles / Responsibility</b>  |
|---|--|
| <p>OKC Mayor and City Council</p>                             | <p>The Mayor and OKC Council approve ordinances, changes to ordinances, contracts, fees and annual budgets.</p>  |
| <p>OKC, Municipal Counselor’s Office and Municipal Courts</p> | <p>All SWQ technicians are municipal code enforcement officers. Permit violations which require additional enforcement action are filed at the OKC Municipal Court.</p>  |
| <p>OKC, Parks and Recreation Department</p>                   | <p>The Parks and Recreation Department provides a wide range of facilities, educational events, horticultural and garden experiences, facility management and grounds management services.</p> <p>As part of the Grounds Management Programs, Parks and Recreation employees receive annual pesticide, herbicide and fertilizer applicator training.</p> <p>Parks Administration is charged with the drafting of certain revocable permits for specific venues in OKC. These venues and associated activities may include primary body contact to surface waters. The revocable permits contain specific language regarding indicator bacteria numbers and management criteria to implement with regard to those criteria.</p> <p>OKC golf courses currently participate in compensatory mitigation. The James E. Stewart and Trosper Park golf facilities have ongoing compensatory mitigation projects located along the waterways running through the courses.</p> <p>Multiple Golf Courses are permitted through OKC’s Pesticide General Permit with ODAFF (see SWMP Component 9).</p> |
| <p>OKC, Police Department</p>                                 | <p>The OKC Police Department, with a uniformed force of 1,169 officers and 300 civilian employees, protects citizens and property from criminal activity, keeps the peace, enforces the law, apprehends criminals and helps prepare cases for prosecution.</p> <p>The OKC Police Department may often be the</p>   |

| <b>Agency</b>   | <b>Roles / Responsibility</b>  |
|---|--|
|   | <p>first responders to an accident or incident which could cause or contribute to storm water pollution. Recruit police officers are periodically trained to understand the role and responsibilities of the Storm Water Quality Division.</p>   |
| <p>OKC, Personnel Department</p>                              | <p>Provides employee recruitment, selection, classification, compensation, training and benefit services.</p> <p>The Occupational Health Division provides medical surveillance screening to all SWQ emergency response personnel.</p>   |
| <p>OKC, Planning Department</p>                               | <p>The Planning Department works with residents, businesses and community leaders to shape the appearance, use and development of OKC. The Department places a high priority on implementing new and innovative environmentally friendly development techniques to protect sensitive public and private water supplies.</p> <p>The Comprehensive Planning and Urban Design Division focuses on three primary functions: urban design, comprehensive planning and current planning. Division responsibilities include drafting comprehensive plans and sector plans to provide policymakers, community groups and development interests the policy that ensures growth and development to achieve long-range goals.</p> <p>The Office of Sustainability is responsible for enhancing the City’s energy efficiency efforts and promoting sustainability throughout the organization and the community.</p> |
| <p>OKC, Public Information and Marketing (PIM) Department</p> | <p>The Public Information &amp; Marketing Department produces television, radio, web-based and print media informing the public about the City services such as the Household Hazardous Waste Facility services, hours of operation and types of chemicals accepted at the</p>   |

| Agency                           | Roles / Responsibility  |
|----------------------------------|---|
|                                  | <p>facility.</p> <p>Other types of services provided by PIM include water bill inserts, “News to Know” newsletter, public service announcements (carried on Channel 20) and scheduling interviews with news outlets allow for cost effective program development.</p> <p>PIM also assists with the development of informational brochures for SWQ’s Construction, Industrial, HHWCF, Public Outreach, and Environmental sections.</p>   |
| <p>OKC, Fire Department</p>      | <p>The OKC Fire Department provides fire prevention, fire suppression, rescue and other emergency services. The department’s comprehensive fire prevention programs include code enforcement, arson investigation and public education. The training work section provides state of the art training to fire fighters.</p> <p>Spill prevention and response is a component of OKC’s MS4 permit #OKS000101. SWQ and the OKC Fire Department HAZMAT Unit have worked together for many years to prevent, contain and respond to spills that have a potential to pollute the City’s MS4(s). The spill response program includes a combination of spill response by each permittee and legal requirements for private entities within the permittees municipal jurisdiction.</p> <p>Periodically, SWQ personnel are invited to speak with new Fire Department recruit classes to provide them an understanding of the roles and responsibilities and the Storm Water Quality Division and the MS4 Discharge Permit.</p> |
| <p>OKC, Utilities Department</p> | <p>The Utilities Department provides the monthly customer service billing. The City includes a monthly storm water utility fee on water/sewer usage bills. This fee has created a dependable, dedicated fund for maintaining the City’s MS4 systems. Fees are based on water meter size.</p> <p>Solid Waste Management includes the bulky</p>   |

| <b>Agency</b>  | <b>Roles / Responsibility</b>  |
|--|--|
|  | <p>collections, cart/curbside collections, field inspections and litter/illegal dumping management. In addition, Solid Waste administers the street sweeping contract for OKC. The SWQ conducts periodic contractor audits to insure quality control.</p> <p>Line Maintenance Wastewater Section staff work to eliminate sanitary sewer line breaks and overflows. Personnel respond to resident calls and conduct the necessary repairs to public sewer collection lines.</p> <p>Line Maintenance Water Section staff work to eliminate discharges from potable service lines. Personnel respond to resident calls and conduct the necessary repairs to public potable distribution lines.</p> <p>The Utilities Laboratory provides assistance with regard to surface water testing, wastewater testing and potable water testing. The laboratory provides indicator bacteria testing of SWQ samples from the Oklahoma River, revocable permits (where primary body contact occurs) and various other surface water monitoring needs.</p> |
| <p>OKC, Office of Emergency Management</p>                 | <p>Office of Emergency Management Department liaisons play a part by providing clear communication lines between emergency, non-emergency, State and Federal personnel in response to an event.</p>  |
| <p>Oklahoma Department of Environmental Quality (ODEQ)</p> | <p>ODEQ is the primary NPDES permitting State agency regarding storm water. OKC works interactively with the ODEQ to investigate pollution issues in OKC. Information is shared between the applicable ODEQ Divisions to respond accordingly to spills, complaints and illegal discharges. ODEQ is the leading State agency regarding TMDL development and compliance oversight.</p>   |

| Agency   | Roles / Responsibility  |
|--|---|
| Oklahoma Corporation Commission (OCC)                              | Storm Water Quality works closely with OCC field managers to respond to Oil and Gas related discharges.   |
| Oklahoma Conservation Commission (staff and Blue Thumb Volunteers) | Conservation Commission staff and volunteers may conduct monitoring in OKC. These monitoring efforts may need follow-up investigation to determine causes/sources of problems. Conservation Commission staff are generally part of TMDL work groups.  |
| Oklahoma Department of Wildlife Conservation (ODWC)                | Storm Water Quality works cooperatively with the ODWC with regard to incidents which involve the death of aquatic or terrestrial wildlife.  |
| Oklahoma Water Resources Board (OWRB)                              | Charged with the creation and revision of State Water Quality Standards. The OWRB may conduct monitoring and assessment of water bodies in OKC. These assessments may include Use Attainability Analysis or assessing water bodies in regards to State Water Quality Standards. The OWRB is generally part of TMDL development work groups. |
| National Response Center   | Spills of significance which impact Waters of the Nation in reportable quantities are reported to the NRC. The NRC will distribute the report to impacted State, Federal and local agencies for appropriate response.   |

**10. Area Specific Requirements:**

A-B language is taken partially or wholly from the OKC MS4 Permit OKS000101 Part II.B.1-2.

- A. Waters identified by the latest CWA § 303(d) list of impaired waters must include all necessary BMPs that will ensure that the impairment caused by identified pollutants in your receiving waters will, in future discharges, not cause, have the reasonable potential to cause, or contribute to an in-stream exceedance of water quality standards.
- B. Discharge of a pollutant into any water for which a TMDL or watershed plan in lieu of a TMDL for that pollutant has either been established or approved by the Oklahoma Department of Environmental Quality (ODEQ) or the Environmental Protection Agency (EPA) is prohibited unless your discharge is consistent with that TMDL or watershed plan.

The following listed TMDLs are those which delegate a waste load allocation (WLA) to OKC and contain requirements within the TMDL (such as a Compliance Plan, Bacteria Reduction Plan or Monitoring Plan) to comply with the load reduction necessary to meet the WLA.

Area 1: Lake Thunderbird Report for Nutrient, Turbidity and Dissolved Oxygen TMDLs.

- Lake Thunderbird Watershed in OKC including Hog Creek (OK520810000030\_00); West Branch of Hog Creek (OK520810000040\_00), East Elm Creek (OK520810000110\_00); Elm Creek (OK520810000100\_00); West Elm Creek (OK520810000140\_00); Kitchen Creek (OK520810000150\_00); Kitchen Lake (OK520810000160\_00); North Fork of the Little River (OK520810000170\_00); and Little River (OK520810000080\_00).
- Major compliance submitted on September 7, 2017 include the following:
  - 2016 – 2017
    - Purchase and install monitoring equipment and begin collecting data (all programs).
    - On data collection, initiate analysis methods to determine constituent loading which is directly comparable to TMDL waste load allocation and maximum allowable daily limits.
    - Research BMPs using existing local BMP data and other resources.
    - Develop reporting template to include monitoring, annual load estimates, program milestones, progress towards meeting reduction goals, summary of monitoring efforts, BMPs implemented or modeled.
    - Develop a comprehensive pet waste and lawn management education program.
    - Seek and develop partnerships to present changes and expectations for applicable construction site operators.
    - Seek and develop partnerships to present changes and expectations for applicable site operators.
    - Provide at least two educational events covering topics which can be directly or indirectly applied to the TMDL action area for City staff.
    - Conduct educational visits at schools within the TMDL action area.
    - Develop a TMDL related website.
    - Develop signage for placement within the TMDL action area.
    - Complete the Drainage Criteria Manual.
    - Complete a method for the development community to submit proposed land use changes, BMP establishment and the load associated with those changes.
    - Institute a method of review for applicable construction, industrial and residential properties to ensure compliance with the TMDL.
    - Enhancement of non-structural programs in the TMDL Action area.
    - Create a BMP database (asset management system).
  - 2017 – 2020

- Retain a consulting engineering firm to identify cost-effective locations for potential retrofits or new BMP installation.
- Consider modifications to OKC municipal code for programs enhancement.
- Complete retrofit or new BMP feasibility studies for practices in the TMDL action area.
- Develop and submit a comprehensive five-year TMDL report.
- Continue monitoring efforts.
- 2021– 2025
  - Design and construct Phase I of the structural BMPs in the TMDL Action area.
  - Continue all monitoring efforts.
- 2026– 2030
  - Develop and submit comprehensive ten-year TMDL report.
  - Initiate design and construction of Phase II structural control measures in the TMDL Action area.
  - Continue all monitoring efforts.
- 2030-2031
  - Develop and submit comprehensive fifteen-year TMDL report.
  - Continue all monitoring efforts.

**Lake Thunderbird TMDL Action Area Resources:**

Monitoring, technical review and water quality evaluation is funded through the Storm Water Utility. Proposed structural BMPs are funded through the 2017 General Obligation Bond initiative. Currently, bond sales are projected to be incrementally sold in 2019, 2020, 2021, and 2022 and total \$13,200,000. These funds will provide resources for OKC to retain a consulting firm to establish the locations(s) and type(s) of BMPs suited to meet the WLA and reduce or eliminate any maximum daily violations.

**Lake Thunderbird Annual Report Requirements:**

The OKC MS4 Annual Report shall be used to report the annual efforts to meet the Compliance and Monitoring Plan objectives. These objectives include the following:

- Annual milestones
- Applicable Training (training subjects and hours)
- Meetings attended
- Non-structural load reductions with relevant discussion of non-structural which are not included as a load reduction but may contribute.
- Structural load reductions (whether modeled existing, retrofit or new construction)



- A discussion of any model changes (such as new land cover datasets, population increases, permit increase or decrease).
- Monitoring data summary and estimated annual loading.

Area 2: Bacteria and Turbidity Total Maximum Daily Loads for the Cimarron River Study Area, Oklahoma (OK620900, OK620910)

- Bluff Creek Watershed (OK620910040140\_00) from Lake Hefner downstream to OKC boundary.

OKC waters which are listed on the most recent 303(d) list can be found in [Appendix F](#) of the SWMP. Thirty-nine stream segments and lakes are identified as category 5a, 5b, or 5c waterways. Waters identified in the 2014 Integrated Report within OKC can be found in [Appendix E](#) and include 102 waterbodies (streams and lakes).

#### **11. Analysis:**

No analysis is required for this SWMP Component.

**Appendix A: Oklahoma Department of Transportation  
SWMP for the OKC Jurisdiction**

**OKLAHOMA DEPARTMENT OF  
TRANSPORTATION**

**REVISED STORMWATER MANAGEMENT  
PROGRAM (SWMP)**

**PERMIT NO. OKS000101  
(Oklahoma City)**

**Revised September 9, 2013**

## **1. Introduction**

Under Oklahoma Discharge Elimination System Permit (OPDES) No. OKS000101 the Oklahoma Department of Transportation (ODOT) is authorized to discharge pollutants associated with stormwater from rights of way within the City of Oklahoma City. In accordance with that permit, ODOT is responsible to provide a revised Stormwater Management Program (SWMP) six months from the effective date of the permit which was March 15, 2013 and by April 1 each year annually. This first revised document is due to the Oklahoma Department of Environmental Quality (ODEQ) on September 16, 2013. This document is the revised SWMP prepared in accordance with this requirement. The document is organized into the following sections, outlining ODOT compliance actions under the permit:

- Section 2 New and Re-Development
- Section 3 Flood Control Projects and Structural Controls
- Section 4 Construction Site Runoff
- Section 5 Industrial High Risk Runoff
- Section 6 Household Hazardous Waste / Used Motor Vehicle Fluids
- Section 7 Public Outreach
- Section 8 Roadway Operation and Maintenance
- Section 9 Pesticide, Herbicide, and Fertilizer Application
- Section 10 Pollution Compliant and Spills Response Program
- Section 11 Floatables
- Section 12 Wet Weather Analytical
- Section 13 Watershed Characterization
- Section 14 Illicit Discharge Detection and Elimination Program
- Section 15 Supporting Permit Conditions, Monitoring Programs, and Documents

## 2. New and Re-Development

Required ODOT compliance activities are summarized in Part III.A. of the permit, as noted below:

### **Activity c: Revise ordinances and update SWMP with criteria and procedures.**

ODOT does not have legal authority to pass ordinances or to regulate land development activities by others.

ODOT will consider the use of storm water quality BMP's in new highway construction on a case by case basis. ODOT will also consider the use of storm water quality BMP's in major redevelopment or highway expansion projects on a case by case basis.

### **Activity d: Update SWMP to include criteria and procedures.**

ODOT will consider the use of storm water quality BMP's in new highway construction on a case by case basis. ODOT will also consider the use of storm water quality BMP's in major redevelopment or highway expansion projects on a case by case basis.

### **Activity e: Update Construction BMP Manual.**

ODOT will review construction runoff control procedures and performance from April 2013 to April 2014 and update manual as necessary.

### **3. Flood Control Projects and Structural Controls**

Required ODOT compliance activities are summarized in Part III.A. of the permit, as noted below:

**Activity c: Continue drainage maintenance program related to repair of drainage structures and creek channel crossings.**

ODOT will maintain ODOT drainage facilities in accord with standard operating procedures.

#### **4. Construction Site Runoff**

##### **Activity a: Continue program using permitting, inspections, and investigations**

Because ODOT does not have the legal authority to regulate construction activities, ODOT will not “permit” construction activities, however, ODOT will require adherence to Special Provision 220. ODOT will require contractors to obtain coverage under OKR10. ODOT will conduct construction site inspections and investigations as required.

##### **Activity b: Regulate runoff from construction sites including enforcement provisions**

Because ODOT does not have the legal authority to regulate construction activities or impose enforcement provisions, Oklahoma City conducts this activity within their jurisdiction. ODOT does not allow third parties to construct facilities on our rights of way.

##### **Activity c: Conduct public outreach and annual workshops**

ODOT will collaborate with the Contractor’s Association to conduct one contractor workshop during the permit year ending April 2014.

### **5. Industrial High Risk Runoff**

This permit requirement is not applicable to ODOT. It has been assigned to the City of Oklahoma City.

## **6. Household Hazardous Waste / Used Motor Vehicle Fluids**

**Activity a: Provide summary of evaluation and assessment of results from collection / recycling / safe disposal events.**

ODOT will collect and recycle used oil and automotive fluids generated at our service centers and maintenance yards in Oklahoma City.

**Activity d: Continue the household hazardous waste collection program via MOU's with surrounding Phase II cities.**

ODOT has not entered into any MOU's.



## 7. Public Outreach

### **Activity a: Continue public outreach program**

ODOT will continue our statewide anti-litter campaign, Oklahoma, Keep Our Land Grand and the litter hot-line (1-888-5-LITTER), to report someone littering anywhere across the state.

School-age children will continue to be invited annually to enter a storm water quality poster contest, sponsored by ODOT, Oklahoma Department of Environmental Quality, Oklahoma Department of Education; Keep Oklahoma Beautiful, a non profit organization; and the Cherokee Nation.

ODOT will continue to coordinate the work of over 1,000 Adopt-a-Highway groups (46 in Oklahoma City) who remove litter from their two-mile section of state highways at an interval of four times a year.

ODOT will continue to conduct the “TRASH-OFF”, an annual volunteer spring roadside cleaning event.

## 8. Roadway Operation and Maintenance

### **Activity a: Continue program through panning crews, curb inlet cleaning, and street sweeping.**

ODOT will operate and maintain roadway facilities in accord with existing standard operating procedures. Right of way mowing will be conducted six times per year in the Oklahoma City area.

### **Activity b: Update SWMP to include any roadway operation and maintenance changes.**

ODOT will update SWMP if any changes occur.

### **Activity c: Provide annual summary of activities.** ODOT will provide annual summary.

### **Landscape**

ODOT will continue to operate the Highway Tree Grant Program, which uses ODOT Transportation Enhancement funds to plant landscaping trees throughout the state.

### **Wildflowers**

ODOT will continue to conduct wildflower planting. Drill seeders, specifically designed for wildflower seed, are used by ODOT for planting on highway roadsides. These drills are available for use for Oklahoma communities and organizations.

## **9. Pesticide, Herbicide, and Fertilizer Application**

Required ODOT compliance activities are summarized in Part III.A of the permit, as noted below:

**Activity a: Continue annual training / education / certification classes on management techniques.**

ODOT will continue to conduct training, education, and certification regarding management techniques. ODOT staff will be instructed to apply these chemicals in accord with their manufacturer's instructions.

## **10. Pollution Complaint and Spills Response Program**

Required ODOT compliance activities are summarized in Part III.A. of the permit, as noted below:

### **Activity a: Respond to citizen pollution complaints.**

ODOT will continue to record and respond to citizen pollution complaints.

### **Activity b: Respond as technical support for HMU on hazardous material incidents.**

This permit requirement is not applicable to ODOT. It has been assigned to the City of Oklahoma City.

### **Activity c: Provide summary of pollution complaints and spill responses annually.**

ODOT will summarize complaints and spill response activities annually.

Required ODOT compliance activities are summarized in Part III.A. of the permit, as noted below:

### **Activity a: Submit inter-jurisdictional agreements.**

ODOT has previously submitted our agreement with the City.

## **Appendix B: Oklahoma Turnpike Authority SWMP for the OKC Jurisdiction March 15, 2013 – March 14, 2018 and the Revised Management Plan for March 13, 2013 - March 14, 2018.**



### **STORMWATER MANAGEMENT PROGRAM (SWMP)**

Permit Number OKS000101

Revised November 2017

#### **BACKGROUND**

In compliance with the Oklahoma Pollutant Discharge Elimination System Act (OPDES Act), and the rules of the State of Oklahoma Department of Environmental Quality (DEQ); Federal Clean Water Act; and NPDES Regulations, the Oklahoma Turnpike Authority (OTA), with the City of Oklahoma City and the Oklahoma Department of Transportation (ODOT), became co-permittees and are allowed to discharge stormwater from the Municipal Separate Storm Sewer (MS4) System under Permit Number OKS000101.

The Oklahoma Turnpike Authority has prepared this Stormwater Management Program (SWMP) to comply with the permit requirements and address storm water pollution related to highway planning, design, construction, and maintenance activities throughout the Oklahoma Turnpike system. OTA implements this SWMP to reduce pollution in storm water runoff from the Turnpike facilities, roadways and right-of-ways.

This SWMP shall cover the term of the permit and shall be updated as necessary, or as required, to ensure compliance with statutory requirements of the Clean Water Act, and with the annual reporting requirements of the permit. OTA is required to report the status of the SWMP including any modifications, and the plans for implementing those modifications.

Coverage for this permit will be for OTA roadways within the Oklahoma City MS4 (OKCMS4) area. Currently 12.5 miles of the west end of the Turner Turnpike and the entire 25.3 miles of the

Kilpatrick Turnpike are in the OKCMS4. As part of the Driving Forward initiative, the OTA will be adding 7 miles to the southwest end of the Kilpatrick Turnpike. Construction on the Southwest Kilpatrick Extension will begin in 2018. All 7 miles of the proposed extension will be in the OKCMS4 area. Also as part of the Driving Forward initiative, the OTA will be building the Northeast Oklahoma County Loop to connect the Turner Turnpike with Interstate 40. Construction on the loop will begin in 2018. The loop will be 21 miles long, and the south most 3.5 miles of the loop will be in the OKCMS4 area. When the Driving Forward projects are completed, OTA will have a total of 48.3 miles of roadway within the OKCMS4 area.

### **Permit Enforcement and Oversight**

The City will be the primary lead in construction site inspections, local record keeping, and oversight of Phase I compliance. Since OTA does not have legal authority for enforcement within the Oklahoma City area, OTA will rely on the City for assistance in enforcement on noncompliant parties involved with OTA construction parties. When OTA personnel identify unauthorized non-storm water discharges with a potential to cause pollution, the City will be contacted to investigate.

### **OTA STORMWATER MANAGEMENT PROGRAM**

The following summarizes the major components of OTA's stormwater management program. Any changes to the program will be documented in the annual report submitted to the DEQ. This program takes into account the major construction activities of the OTA. The majority of the monitoring and enforcement activities are undertaken by the City of Oklahoma City. Flood Control is not a part of OTA projects and therefore are not included in OTA's program.

#### **I. Structural Controls and Storm Water Collection System Operations.**

Stormwater is conveyed from OTA roadways via roadside ditches and culverts. Assuring that flow is not impeded because of clogging by accumulated sediments or debris is crucial to its effective operation of these conveyances. Maintenance activities are performed on OTA stormwater conveyances continuously throughout the year. These activities include storm sewer and culvert inspections, cleaning and repairs, open ditch cleaning, and vegetation controls. As part of the vegetation control, regular mowing and proper disposal of mowing debris is practiced, with the objective of avoiding debris accumulation and obstruction of stormwater runoff flow. Roadside ditches are also cleared of deposits that could impede water flow or could end up in the receiving waters.

For construction projects with disturbance area of over an acre, an SWMP is required. This is in conjunction with to the requirements of the following OTA 2010 Standard Specifications:

- Section 107.2 – Storm Water Management
- Section 220 – Management of Erosion, Sedimentation and Storm Water Pollution Prevention and Control
- Section 221 – Temporary Sediment Control

In the SWMP, structural practices which are applicable are marked as recommended for use in the project. Examples of structural practices include:

- stabilized construction exits
- temporary silt fences and dikes
- diversion, interceptor or perimeter dikes
- rock filter dams
- paved ditch with ditch liner protection
- temporary sediment basins and filters
- rip-rap
- sandbag berms
- inlet sediment filters

The effectiveness of controls is a function of variables related to site conditions, highway design, and other stormwater considerations. OTA adopts the most site appropriate measure that conforms to the objectives of minimizing storm water pollution from point and non-point sources.

OTA also has an inventory of all existing culverts along the turnpike systems for reference mapping and inspections. Half of OTA's culverts and other structures are inspected annually (and therefore 100% of these structures are inspected every two years.)

OTA has developed stormwater pollution prevention plans (SWPPPs) for the Maintenance facilities located at the Kilpatrick Turnpike at Eastern Avenue and the Kilpatrick Turnpike at Northwest Expressway. These plans include the following structural controls:

- Road salt is stored indoors
- Sand piles are covered by plastic most of the year
- Magnesium chloride tanks are surrounded by a berm

OTA Maintenance staff conducts monthly inspections to ensure that the structural controls are working.

## **II. Areas of New Development and Significant Redevelopment:**

OTA's program of development is guided by its 5-year Capital Plan. The Capital Plan enumerates projects throughout the entire Oklahoma turnpike system each year, and is updated annually. In its development and re-development projects, OTA tries to minimize vegetation disturbance and changes in on-site natural features such as slopes and filtration areas. The use of Low Impact Development (LID) will also be considered when feasible for turnpike projects.

In addition to the Capital Plan Projects, OTA also has its Driving Forward program which will result in new road construction in the OKCMS4 area starting in 2018. These projects include the Southwest Kilpatrick Turnpike Extension and the Northwest Oklahoma County Loop. The extent of these projects in the OKCMS4 was described previously in the Background section.

All construction plans for development projects of the OTA are required to include a SWMP. OTA Engineering staff review the SWMP for all construction projects. The SWMP includes a site description, soil stabilization practices, structural practices, offsite vehicle tracking requirements, and a list of the contractor's responsibilities. The SWMP is used as a resource for developing the SWPPP.

Contractors are responsible for developing and following the SWPPP. Included in this plan are: descriptions of the project site, erosion and sediment controls, perimeter controls, soil stabilization practices, natural buffers, minimizing sediment trackout, and other required practices. The SWPPP also identifies the parties responsible for the implementation of control measures. The contractor is likewise required to obtain an authorization under DEQ General Permit (OKR10), which authorizes discharges of stormwater associated with construction activities. The SWPPP shall be 1) prepared in accordance with good engineering practices, 2) shall describe and ensure the implementation of practices that will be used to reduce the pollutants in storm water discharges associated with construction activities at the site, and 3) shall ensure compliance with the terms and conditions of the authorization.

OTA shall also incorporate emerging technology for potential inclusion into the contractor's SWPPP as well as overall construction plans for projects. The selection of technology shall be based on feasibility criteria relative to highway design and results shall be reported annually.

### **III. Roadways:**

OTA has a street sweeping program which involves routine sweeping and clean-up after deicing. The John Kilpatrick and Turner Turnpikes are swept twice a year to ensure that the lane miles are operating in a manner that will minimize discharge pollutants from the roadway. During such operation, shoulders are swept to remove accumulated sediment, salt and other debris.

Trash containers are properly maintained for the collection and disposal of trash on turnpikes. Additionally, OTA Maintenance employees periodically remove litter from the Turnpikes.

Construction plans require that all trash and debris be removed daily and that construction sites are to be kept clean. The sites are therefore swept and maintained regularly, as part of good housekeeping, and thus avoiding dust, rocks and other construction debris from getting into the roadways, which are not only hazardous but could also be an impediment to stormwater flow by blocking or clogging the drains.

### **IV. Pesticide, Herbicide, and Fertilizer Application:**

OTA requires all turnpike herbicide applicators together with contract applicators to be licensed and subject to all of the regulations under the Oklahoma Herbicide Applicators Law including re-certification. Applicators receive yearly training on pesticides, herbicides, and fertilizer chemicals from the Oklahoma Vegetation Management Association.



**V. Illicit Discharges and Improper Disposal:**

As part of good housekeeping, a program on the disposal of used motor vehicle fluids, grass clippings, leaf litter and animal wastes within the turnpike limits is observed by the Maintenance personnel. Contents of trash and litter bins are disposed of properly; used oil is collected and recycled by a private contractor who routinely picks up the spent oil. Batteries and non-bio degradable wastes such as tires are returned to stores where they were purchased.

OTA will continue its litter collection program with the addition of a recycling program if feasible. The on-going program will be reviewed and a documentation of the frequency as well as recording of the quantities of litter collected, separated and recycled will be studied. As an added measure, lids on trash receptacles should be always secure to avoid trash from becoming litter and be a source of floatables.

The SWPPPs at the Kilpatrick Turnpike Maintenance facilities include best management practices (BMPs) to prevent the Maintenance facilities from being a source of illicit discharges. This includes spill prevention and response procedures that Maintenance employees are required to follow.

**VI. Construction Site Runoff**

Most of the responsibility for meeting OPDES permitting requirements at construction sites rests with the contractors performing the construction. Section 220 of OTA's Standard Specifications includes specific requirements the contractor has to meet to minimize the discharge of pollutants to waterways during construction.

The OTA provides daily oversight of the contractor's activities through use of an on-site representative (OSR). The OSR can direct the contractors to make changes if any deficiencies are noted with the onsite pollution protection activities.

As stated previously, OTA requires that the contractor apply for, obtain, and comply with an authorization under General Permit (OKR10) for Storm Water Discharges from Construction Activities within the State of Oklahoma. OTA strictly adheres to not issuing a Work Order without the authorization from the DEQ. Part of the permitting process is the preparation of a SWPPP covering the discharges and prepared in accordance with good engineering practices. Identified in the SWPPP document are the potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharges from the construction site. The SWPPP shall describe and ensure the implementation of practices that will be used to reduce the pollutants in stormwater. OTA realizes that construction activities contribute to soil erosion and can result in sediment and pollutant transport to local waterways by stormwater runoff. Sediment transport from soil erosion can be effectively controlled or reduced by the use of several preventive BMP's. OTA tries to implement the following BMP's as preventive processes, among others:

- Inspections: Both the contractor and OSR are required to do weekly inspections to verify effectiveness of sediment and erosion control practices. Inspections are also required after any ½ inch rainfall event.
- OTA engineers do a minimum of three reviews of proposed stormwater management plans for all OTA construction projects.
- Section 220 of The Oklahoma Turnpike Authority Standard Specifications for Turnpike Construction (revised in 2010) include specific requirements for management of erosion, sedimentation, and stormwater pollution prevention and control.
- When possible, OTA schedules construction phases around the weather to better manage erosion and sediment control.
- When possible, OTA schedules work to minimize the extent of site disturbance at any one time.

## **VII. Public Education**

The permit requires a program that has been successful in the past to be revised, updated, and shall provide a description of the how the information would be disseminated to individuals on awareness about storm water.

OTA shall continue to focus on increasing general awareness to their employees, Turnpike Contractors and the general public about the links between land use practice and storm water pollution. Information regarding stormwater runoff and adverse effects of polluted stormwater runoff will be continuously updated and supplemented. OTA's preferred method of contact with the general public is through the agency's website. However, OTA also occasionally uses radio advertising to provide information to the general public.

OTA's website includes an Environmental Programs section that includes links to brochures and bookmarks. These materials include tips that the general public can use to reduce the amounts of pollutants in stormwater. The website also includes links to OTA's Phase 1 and Phase II stormwater permits, as well as information about wildlife and litter control.

## **VIII. Employee Education**

OTA uses a combination of external and in-house training to educate employees about stormwater issues.

### External Training

OTA Engineering Staff attends conferences, training and seminars initiated by the DEQ, EPA, or the City of Oklahoma City to keep up to date with changing regulations and permitting requirements. As stated previously, Maintenance employees attend annual training on the use of herbicides.

### In-house Training

Maintenance employees have regular meetings where stormwater issues can be discussed. The training at these meetings can include the following:

- Good housekeeping practices
- Spill cleanup procedures
- Mowing procedures – height protocol to maintain
- Herbicide spraying – frequency and location of application
- Maintenance of equipment – procedure in handling spent oil, discarded parts (batteries and tires recycling), vehicle wash area drainage and discharge
- Highway and bridge cleaning and sweeping – protocols and procedures in maintaining debris-free roadways and bridges, and proper disposal of debris and/or appurtenance replaced or repaired.
- De-icing programs, salt storage procedures – handling, storage and post event cleanup.

OTA also provides classroom and internet training on various aspects of the MS4 program, including inspection procedures and dealing with illicit discharges.

However, OTA relies on emergency response personnel from the City, the Fire Department, or Oklahoma Highway Patrol to handle spill events and/or accidents that occur within the turnpikes.

## **IX. Public Participation and Involvement**

The toll free litter hotline number and the stormwater comment telephone number are the main avenues for public participation in OTA projects.

### Litter Hotline

OTA has a program encourage members of the public to contact OTA whenever they see acts of littering. This program is summarized on OTA's website. When someone sees littering activity, they can contact the OTA with the license plate number and other identifying information on the party doing the littering. The OTA then sends a postcard to the reported party encouraging them not to litter. The public can report littering via the toll free hotline or using a link on the webpage.

### Stormwater Comments

The OTA provides contact information for the public to provide comments or to ask questions about how stormwater is managed at OTA.

The OTA does not often participate in Federally funded projects; therefore, the public participation required by National Environmental Policy Act (NEPA) generally is not applicable to the OTA. However, the Oklahoma City Phase I permit renewal has a public comment period and OTA will respond to comments as needed. The OTA will occasionally host public information meetings prior to undertaking major project initiatives such as those that occurred for the Driving Forward program.

## **X. Monitoring Programs**

OTA does quarterly visual inspections of the runoff from the Kilpatrick Maintenance facility. Otherwise, OTA relies on Oklahoma City for to implement the monitoring program required by OKS000101.



## STORM WATER MANAGEMENT PROGRAM (SWMP)

Permit Number OKS000101

March 15, 2013 – March 14, 2018

### BACKGROUND

In compliance with the Oklahoma Pollutant Discharge Elimination System Act (OPDES Act), and the rules of the State of Oklahoma Department of Environmental Quality (DEQ); Federal Clean Water Act; and NPDES Regulations, the Oklahoma Turnpike Authority (OTA), with the City of Oklahoma City, and the Oklahoma Department of Transportation (ODOT) became co-permittees and are allowed to discharge stormwater from the Municipal Separate Storm Sewer (MS4) System under Permit Number OKS000101.

The Oklahoma Turnpike Authority has prepared this Stormwater Management Program (SWMP) to comply with the permit requirements and address storm water pollution related to highway planning, design, construction, and maintenance activities throughout the Oklahoma Turnpikes. OTA administers the implementation and ensures enforcement to mitigate pollution in storm water runoff from the Turnpike facilities, roadways and right-of-ways.

This SWMP shall cover the term of the permit and shall be updated as necessary, or as required, to ensure compliance with statutory requirements of the Clean Water Act, and with the annual reporting requirements of the permit. OTA is required to report the status of the SWMP including any modifications, and the plans for implementing those modifications.

Coverage for this permit will be for the Turner and Kilpatrick turnpikes, but components of this SWMP are implemented on all the Turnpikes.

### Permit Enforcement and Oversight

The City will be the primary lead in construction site inspections, local record keeping, and oversight of Phase I compliance. OTA will rely on the City for assistance in enforcement on

noncompliant parties involved with OTA construction parties.

In addition, OTA plans to work closely with the City when off-site storm water enforcement is necessary since OTA does not have the legal authority of enforcement within the Oklahoma City municipal area. Particularly in events that OTA personnel positively identifies a unauthorized non-storm water discharging source with a potential to cause pollution, the City will be contacted to investigate.

### OTA STORMWATER MANAGEMENT PROGRAM

While, majority of the requirements are undertaken by the City as the lead entity under the agreement between the City and OTA, the following summarizes the OTA's stormwater management program, outlined according to the permit. As a requirement, an annual reporting of the status and proposed changes to the program will be submitted to the ODEQ in accordance with the frequency requirements of the permit. This program takes into account the components to which major activities of the OTA are generally focused.

#### I. Structural Controls and Storm Water Collection System Operations.

Culverts, roadside ditches and water detention structures serve as backbone of a stormwater conveyance system. As such, assuring that flow is not impeded because of clogging by accumulated sediments or debris is crucial to its effective operation. Maintenance activities are performed continuously throughout the year. It includes activities such as storm sewer and culverts inspection, cleaning and repairs, open ditch cleaning, and vegetation controls. As part of the vegetation control, regular mowing and proper disposal of mowing debris is practiced, with the objective of avoiding accumulation and obstructing flow of water. Roadside ditches are also cleared of deposits that could impede water flow or could end up in the creeks or lakes.

For development projects with disturbance area of over an acre, a Stormwater Management Plan is a requirement. This is in conjunction with to the requirements of the following OTA 2010 Standard Specifications:

- Section 107.2 – Storm Water Management
- Section 220 – Management of Erosion, Sedimentation and Storm water pollution prevention and Control
- Section 221 – Temporary Sediment Control

In the Storm Water Management Plan for projects, structural practices which are applicable are marked as recommended for use in the project. Examples of structural practices are among others are:

- stabilized construction exits
- temporary silt fences and dikes
- diversion, interceptor or perimeter dikes
- rock filter dams
- paved ditch with ditch liner protection
- temporary sediment basins and filters
- rip-rap
- sandbag berms
- inlet sediment filters.

The effectiveness of controls is a function of variables related to site conditions, highway design, and other stormwater considerations. OTA adopts the most site appropriate measure that conforms to the objectives of minimizing storm water pollution from point and non-point sources.

OTA also has an inventory of all existing culverts along the turnpike systems for reference mapping, and to aid in the outfall determination. The culverts and other structures are inspected annually and whenever there are instances such as floodings, that necessitate a structure check-up.

## II. Areas of New Development and Significant Redevelopment:

OTA's program of development is guided by its 5-year Capital Plan. The Capital Plan enumerates projects throughout the whole Oklahoma turnpike system per year, and is also updated annually. In its development and re-development projects, OTA tries to minimize vegetation disturbance, changes in on-site natural features such as slopes and filtration areas which can greatly alter the peak flows and affect downstream receiving body. The use of Low Impact Development (LID) will also be considered if feasible for turnpike projects.

All construction plans for development projects of the OTA are reviewed and required to include a Stormwater Management Plan. Included in this plan are: descriptions of the project site, erosion and sediment controls enumerating soil stabilization practices, structural practices as well as contractor's responsibility. The contractor is likewise required to submit a Storm Water Pollution Prevention Plan (SWPPP) to obtain a permit, in compliance with ODEQ General Permit (OKR10), which authorizes discharges of stormwater associated with construction activities. The SWPPP shall be prepared in accordance with good engineering practices and shall describe and ensure the implementation of practices that will be used to reduce the pollutants in storm water discharges associated with construction activities at the site and assurance with the terms and conditions of the permit.

OTA shall also incorporate emerging technology for potential inclusion into the contractors

SWPPP as well as the Construction BMP Manual. The selection of technology shall be based on feasibility criteria relative to highway design and results shall be reported annually.

### III. Roadways:

OTA has a street sweeping program which involves routine sweeping and clean-up after deicing. The John Kilpatrick and Turner Turnpikes are swept twice a year to ensure that the lane miles are operating in a manner that will minimize discharge pollutants from the roadway. During such operation, shoulders are swept to remove accumulated sediment, salt and other debris.

In addition, trash containers are properly maintained for the collection and disposal of trash on turnpikes.

Construction sites are required to be swept and maintained regularly, as part of good housekeeping, and thus avoiding dust, rocks and other construction debris from getting into the roadways, which are not only hazardous, could also be an impediment to stormwater flow by blocking or clogging the drains. It could also be intermixed with sheet flow and end up in the receiving body of water thus causing pollution.

### IV. Pesticide, Herbicide, and Fertilizer Application:

OTA requires all turnpike herbicide applicators together with contract applicators to be licensed and subject to all of the regulations under the Oklahoma Herbicide Applicators Law including the re-certification. Applicators receive yearly training on pesticides, herbicides, and fertilizer chemicals from the Oklahoma Vegetation Management Association.

### V. Illicit Discharges and Improper Disposal:

As part of good housekeeping, a program on the discharge or disposal of used motor vehicle fluids, grass clippings, leaf litter and animal wastes within the turnpike limits is observed by the Maintenance personnel. Contents of trash and litter bins are disposed of properly; used oil is collected and recycled by a private contractor who routinely picks up the spent oil. Batteries and non-bio degradable wastes such as tires are returned to stores where they were purchased.

OTA will continue its litter collection program with the addition of a recycling program if feasible. The on-going program will be reviewed and a documentation of the frequency as well as recording of the quantities of litter collected, separated and recycled will be studied. As an added measure, lids on trash receptacles should be always secure to avoid trash from becoming litter and be a source of floatables.

### VI. Construction Site Runoff

Construction is one of the major undertakings of the turnpike as far as storm water is concerned. As mentioned under areas of re-development and new development, OTA requires that the contractor comply with General Permit (OKR10) for Storm Water Discharges from

Construction Activities within the State of Oklahoma. This entails obtaining an authorization from the DEQ to enable to discharge pollutants in storm water runoff associated with construction activities. OTA strictly adheres to not issuing a Work Order without the authorization from the DEQ. Part of the permitting process is the preparation of a Storm Water Pollution Prevention Plan (SWPPP) covering the discharges and prepared in accordance with good engineering practices. Identified in the SWPPP document are the potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharges from the construction site. The SWPPP shall describe and ensure the implementation of practices that will be used to reduce the pollutants in stormwater.

OTA realizes that construction activities contribute to soil erosion and can result in sediment and pollutant transport to local waterways by stormwater runoff. Sediment transport from soil erosion can be effectively controlled or reduced by the use of several preventive measures, BMP's (Best Management Practices). OTA tries to implement the following BMP's as preventive processes, among others :

- Scheduling – Schedule construction phases around the weather to better manage erosion and sediment control. The project schedules usually sequence construction activities with the installation of erosion and sediment control measures. The purpose is to reduce the amount and duration of soil exposed to erosion by wind, rain and vehicle tracking. Planning incorporates the use of schedule or flow chart to layout the construction plans. Work out the sequencing and timetable for starting and completion of each activity such as clearing, grading and excavation, pouring foundations, installing utilities, etc. Within the turnpike rights-of-way, OTA maintains site stabilization year- round, and keeps wet season sediment trapping devices in an operational condition. Whenever possible, OTA schedules work to minimize the extent of site disturbance at any one time. Routinely verify that the work is progressing in accordance with the project schedule. And if progress deviates, corrective actions are taken.
- Erosion Control – Soil stabilization is a key component in the control of erosion. By stabilizing disturbed soil areas with covers or binders, the exposed soils are less likely to erode from the effects of wind or rain. OTA tries to design projects to maintain areas of existing vegetation to reduce the amount of sediment in sheet flow runoff by maximizing existing site vegetation and minimizing the extent of the disturbed area. Fencing is likewise observed. Contractors are also required to control and properly dispose of construction spoils such as discarded building materials, concrete truck washouts, sanitary wastes and litter, especially if construction of project requires resources to be located within the limits of the floodplains. They are required to remove resources from the floodplains at the end of each workday.
- Site Plan Review procedures – OTA recognizes the importance of proper site planning to incorporate consideration of potential water quality impacts. Areas which shall be disturbed and affected by the development should be taken into account; therefore a site assessment should be included as part and parcel of the bid award process and findings of which be included in the SWPPP.
- Accountability procedures – OTA's plan to ensure compliance with its erosion and sediment



control mechanism includes sanctions and enforcement mechanisms. Possible sanctions include stop work orders, fines, bonding requirements, and permit denials.

- Water or environmentally safe soil stabilizer – is required to be sprayed on all exposed earth surfaces during clearing, grading, earth moving and other site preparation. Dry disturbed areas and dry stockpiles of soil is watered throughout the day to minimize dust. Trucks transporting dry soil are required to be covered by tarpaulins. Care should be taken when applying water and stabilizer to prevent washing sediment off-site or storm drains or natural waterways. Grading activities need to be restricted when winds exceed 15 miles per hour or as deemed necessary by the Construction Inspector.

As such, OTA will draft and establish a Construction Stormwater Quality BMP Guidance booklet to recommend practices relating to construction activities for stormwater runoff. This document shall outline procedures for quality assurance/quality control which should be observed in construction sites. Best Management Practices relevant to turnpike development projects, as well as post-construction information will be taken into account in this booklet.

#### VII. Public Education

The permit requires a program that has been successful in the past, to be revised, updated and shall provide a description of the how the information would be disseminated to individuals on awareness about storm water.

OTA shall continue to focus on increasing general awareness to their employees, Turnpike Contractors and the general public of the links between land use practice and storm water pollution. Information regarding stormwater runoff, adverse effects of polluted stormwater runoff will be continuously updated and supplemented. The following activities constitute the OTAs public education campaign:

- A stormwater brochure will be circulated on the pikepass website ([www.pikepass.com](http://www.pikepass.com)) to provide information on effects of polluted stormwater run-off and what each individual can do to minimize if not avoid the adverse effects of pollution to bodies of water. The brochure shall be updated at least once a year to supplement familiarity about wastewater. This material shall also contain updates on OTA projects in relation to stormwater, its best management practices and success in implementation.
- The bookmark which was created containing “10 things you can do to prevent storm water runoff pollution” is still distributed to visitors of the OTA headquarters. This period, OTA intends to come up with a different design and include more information about stormwater. This proposed bookmark shall also be distributed to all turnpike employees, as well as to patrons, contractors and visitors of the turnpike workplaces.
- OTA has allocated a spot on the pikepass website to contain information about stormwater

management. Said Information shall be updated to contain recent information regarding OTA's efforts on stormwater management; as well pikepass contact information on reporting pollution and littering on the turnpike systems.

#### VIII. Employee Education

OTA Engineering Staff attends conferences, training and seminars initiated by the ODEQ as part of its involvement in storm water awareness. Annually, DEQ sponsors the storm water conference, a 2-day event which presents highlights in storm water activities, emerging technology, EPA guidelines and updates and other useful information.

Further, OTA Maintenance has regular training activities relative to good housekeeping, included but not limited to:

- mowing procedures – height protocol to maintain
- herbicide spraying – frequency and location of application
- maintenance of equipment – procedure in handling spent oil, discarded parts (batteries and tires recycling), vehicle wash area drainage and discharge
- Highway and bridge cleaning and sweeping – protocols and procedures in maintaining debris-free roadways and bridges, and proper disposal of debris and/or appurtenance replaced or repaired.
- De-icing programs, salt storage procedures – handling, storage and post event cleanup.
- A pro-active approach will be taken on drains and inlets. It is proposed that there be a check-up on drain inlet barriers and its surrounding areas, before and after storms, at 24-hour intervals during extended storms, and weekly during the rainy season. This is to ensure that no impediments to the flow are present, and no pollutants will be washed with the storm water.

OTA however, relies on emergency response personnel from the City to handle spill events and/or accidents that occur within the turnpikes.

#### IX. Public Participation and Involvement

OTA intends to strengthen its information campaign targeting employees, on-site contractors and individuals using OTA facilities about the steps they can take to reduce storm water pollution and how to become involved in storm water management programs. In general, target pollutant sources along the Turnpike include sediments from erosion as a result of slope changes and development, improperly controlled construction sites, and litter.

Steps which will be taken to involve the public include:


- Print media – including newsletters and brochures
- Website postings – efforts taken by OTA on storm water programs.
- Litter hotline – OTA has a number to be contacted to report pollution and littering within the turnpike systems.

Once the OTA SWMP is accepted and approved, the document will be posted on the website and would be made available for the public to obtain copies.

# Appendix C: Pesticide General Permit (OKC)

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Rev. 5/2017

Rev. # 464 Rec. # \_\_\_\_\_  
Amount Received \$ \_\_\_\_\_

|   |   |   |   |  |   |   |   |   |  |
|---|---|---|---|--|---|---|---|---|--|
|    | <p><b>Oklahoma Department of Agriculture, Food, and Forestry</b></p> <p>Notice of Intent (NOI) of Coverage Under the Pesticide General Permit (PGP) for Discharges from the Application of Pesticides</p> |   |   |  |   |   |   |   |  |
| <p>Submission of this completed Notice of Intent (NOI) constitutes notice that the Operator identified in Section B intends to be authorized to discharge pollutants to Waters of the U.S. within the pest management area identified in Section C under EPA's Pesticide General Permit. Submission of this NOI constitutes notice that the party identified in Section B of this form has read, understands, and meets the eligibility conditions of Part I of the permit; agrees to comply with all applicable terms and conditions of the permit; and understands that continued authorization under the permit is contingent on maintaining eligibility for coverage. To be granted coverage, all information required on this form must be completed. Please read and make sure you comply with all permit requirements.</p>   |   |   |   |  |   |   |   |   |  |
| <p><b>Electronic Submission Waiver (skip if submitting through ODAFF's eNOI system)</b></p> <p><input type="checkbox"/> I hereby acknowledge my waiver request from the use of ODAFF's electronic Notice of Intent system (eNOI) because my use of eNOI will incur undue burden or expense over my use of this paper NOI form, or if eNOI is otherwise unavailable.</p> <p>Briefly describe the reason why use of the electronic system causes undue burden or expense.</p> <p>_____</p> <p>_____</p>   |   |   |   |  |   |   |   |   |  |
| <p><b>A. Notice of Intent Status</b></p> <p>1. Mark whether this is the first time you are requesting coverage under the Pesticide General Permit or if this is a change of information for a discharge already covered under the Pesticide General Permit. If this is a change of information, supply the AgPDES permit tracking number for the discharge.</p> <p><input checked="" type="checkbox"/> Original NOI Submission</p> <p><input type="checkbox"/> NOI Change of Information: _____ (AgPDES Permit Number)</p> <p>Please note: When selecting A.1.b please fill out Section B (Operator Name and Mailing Address) and the fields of the NOI that need to be modified.</p>   |   |   |   |  |   |   |   |   |  |
| <p><b>B. Operator Information</b></p> <p>1. Operator Name: <u>City of Oklahoma City</u></p> <p>2. IRS Employer Identification Number (EIN): <u>73-1334810</u></p> <p>3. Operator Type (check one):</p> <table style="width: 100%;"> <tr> <td><input type="checkbox"/> Federal government</td> <td><input type="checkbox"/> State government</td> </tr> <tr> <td><input checked="" type="checkbox"/> Local government</td> <td><input type="checkbox"/> Mosquito control district (or similar)</td> </tr> <tr> <td><input type="checkbox"/> Irrigation control district (or similar)</td> <td><input type="checkbox"/> Weed control district (or similar)</td> </tr> <tr> <td colspan="2"><input type="checkbox"/> Other: If other, provide brief description of type of operator _____</td> </tr> </table> <p>4. Mailing Address:</p> <p>Street: <u>420 West Main Street, 7th Floor</u> City: <u>Oklahoma City</u> State: <u>OK</u> ZIP Code: <u>73102</u></p> <p>Telephone: <u>(405) 297-2581</u> Ext _____ Fax: <u>(405) 297-2117</u></p> <p>Contact Name: <u>Eric J. Wenger</u> E-mail: <u>eric.wenger@okc.gov</u></p> |   | <input type="checkbox"/> Federal government | <input type="checkbox"/> State government | <input checked="" type="checkbox"/> Local government | <input type="checkbox"/> Mosquito control district (or similar) | <input type="checkbox"/> Irrigation control district (or similar) | <input type="checkbox"/> Weed control district (or similar) | <input type="checkbox"/> Other: If other, provide brief description of type of operator _____ |  |
| <input type="checkbox"/> Federal government   | <input type="checkbox"/> State government   |   |   |  |   |   |   |   |  |
| <input checked="" type="checkbox"/> Local government  | <input type="checkbox"/> Mosquito control district (or similar)   |   |   |  |   |   |   |   |  |
| <input type="checkbox"/> Irrigation control district (or similar)   | <input type="checkbox"/> Weed control district (or similar)   |   |   |  |   |   |   |   |  |
| <input type="checkbox"/> Other: If other, provide brief description of type of operator _____   |   |   |   |  |   |   |   |   |  |

AEMS098  
Rev. 5/2017

Rev. # 464 Rec. # \_\_\_\_\_  
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**C. Pest Management Areas: Complete Section C for each Pest Management Area for which coverage under the AgPDES Pesticide General Permit is desired. Copy this section for non-electronic submissions.**

Pest Management Area # 1 of ## 1

1. Pest Management Area Name: Corporate boundaries of Oklahoma City

Provide a map of the location of the Pest Management Area (attached map) or describe the location of the Pest Management Area in detail below.

Map provided of the Oklahoma City corporate boundaries. Corporate boundaries exclude adjacent communities and communities partly or completely surrounded by Oklahoma City.

2. Are any of your activities for which you are requesting coverage under this NOI occurring on Indian Country Lands? If yes, identify the reservation or otherwise describe those areas:  Yes  No

3. Mailing address and contact information of pesticide applicator (or check here  if same as provided in Section B):

Street: 420 West Main Street City: Oklahoma City State: OK ZIP Code: 73102

Telephone: (405) 297-2581 Ext \_\_\_\_\_ Fax: (405) 297-2117

Contact Name: Eric J. Wenger E-mail: eric.wenger@okc.gov

4. Pesticide Use Patterns to be included in this Pest Management Area (check all that apply):

- Mosquito and Other Flying Insect Pest Control  Animal Pest Control  
 Weed and Algae Pest Control  Forest Canopy Pest Control

5. Receiving Waters (check one):

- Coverage requested for all Waters of the U.S. within the Pest Management Area identified above.  
 Coverage requested specifically for the following Waters of the U.S. within the Pest Management Area identified above.

Coverage requested for all Waters of the U.S. within the Pest Management Area identified above except for:

6. Water Quality Impaired Waters

Operators are not eligible for coverage under this permit for any discharges from a pesticide application to Waters of the U.S. if the waters are identified as impaired by a substance which is either an active ingredient of the pesticide designated for use or is a degradate of such an active ingredient. See Part I.A.2 of the permit. Check one:

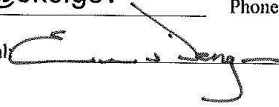
- Waters are NOT impaired by any substance which is either an active ingredient of a pesticide to be discharged or a degradate of such an active ingredient.  
 Waters are on a current state list as being impaired by a substance which is either an active ingredient of a pesticide to be discharged or a degradate of such an active ingredient; however, evidence is attached documenting that the waters are no longer impaired.

AEMS098  
Rev. 5/2017


Rev. # 464 Rec. # \_\_\_\_\_  
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**D. Certification**

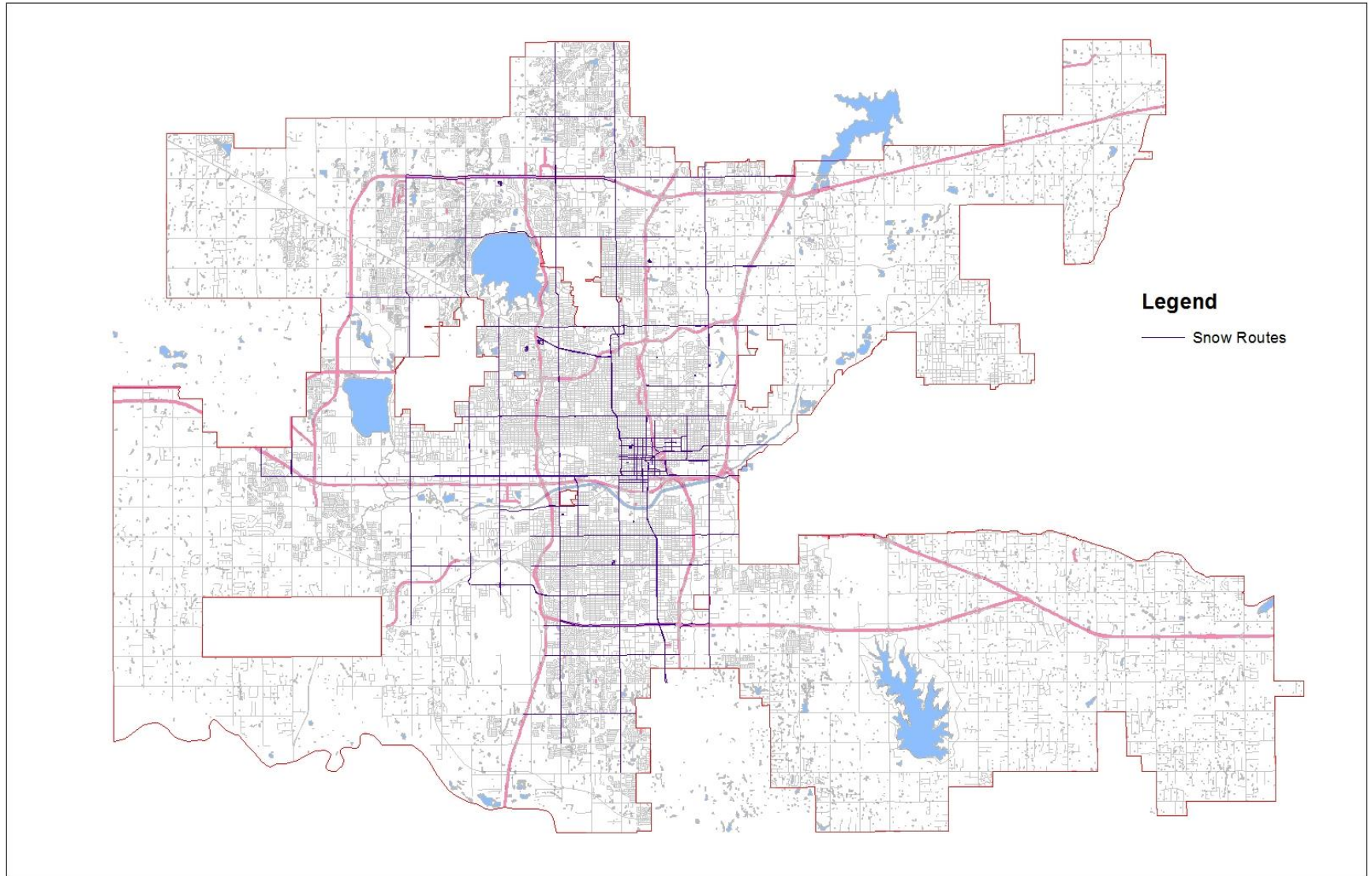
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. On the basis of my inquiry of the person or persons who manage the system, or those 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.

Printed Name: Eric J. Wenger Title: Public Works Director/City Engineer  
E-mail: eric.wenger@okc.gov Phone: (405) 297-2581  
Signature/Responsible Official:  Date: 7/10/17

NOI Preparer (Complete if NOI was prepared by someone other than the certifier)

Preparer Name: Derek Johnson Organization: City of OKC, Public Works  
E-mail: derek.johnson@okc.gov Phone: (405) 297 - 1517  
Signature:  Date: 7-10-17

## Appendix D: Oklahoma City Designated Snow and Ice Routes



| Snow Route ID | Location   | Length (Ft.) |
|---------------|--|--------------|
| 1002          | SUB: 2; LOC: S MacArthur Blvd – SW 54th to W Reno;<br>QUAD: SW; LM: 17               | 21823        |
| 2001          | SUB: 1; LOC: SW 44th St – S MacArthur to S Council Rd;<br>QUAD: SW; LM: 8            | 10501        |
| 3006          | SUB: 6; LOC: SW 44th St – S Portland to S Western Ave;<br>QUAD: SW; LM: 12           | 15824        |
| 3003          | SUB: 3; LOC: SW 89th St – I-44 Hwy to S Western Ave;<br>QUAD: SW; LM: 12             | 13529        |
| 4001          | SUB: 1; LOC: S May Ave – SW 89th to SW 134th St;<br>QUAD: SW; LM: 12                 | 15658        |
| 4002          | SUB: 2; LOC: SW 119th St – I-44 Hwy east to City Limits;<br>QUAD: SW; LM: 16         | 19954        |
| 6002          | SUB: 2; LOC: S 29th St – S Western to S Bryant Ave;<br>QUAD: SE; LM: 20              | 21143        |
| 4004          | SUB: 4; LOC: S 89th St – I-35 Hwy to S Western Ave;<br>QUAD: SW; LM: 8               | 10611        |
| 8005          | SUB: 5; LOC: NE 10th St – MLK to Coltrane Rd; QUAD:<br>NE; LM: 10                    | 11141        |
| 9004          | SUB: 4; LOC: N 63rd St – N Western Ave to N Sooner Rd;<br>QUAD: NE; LM: 24           | 34209        |
| 9001          | SUB: 1; LOC: MLK/N Eastern Ave – E Britton to Smiling<br>Hill Blvd; QUAD: NE; LM: 18 | 18404        |
| 10002         | SUB: 2; LOC: Hefner Rd – N Western to N Kelley Ave;<br>QUAD: NE; LM: 8               | 10529        |
| 12004         | SUB: 4; LOC: N MacArthur Blvd – W Memorial Rd to<br>Wilshire Blvd; QUAD: NW; LM: 16  | 22413        |
| 14005         | SUB: 5; LOC: N MacArthur Blvd – W Reno Ave to NW<br>30th St; QUAD: W; LM: 10         | 14904        |
| 18003         | SUB: 3; LOC: JW Simmons Blvd – NE 8th St to MLK;<br>QUAD: DT; LM: 2                  | 4588         |
| 18006         | SUB: 6; LOC: SL Young Blvd – N Lincoln east to dead<br>end; QUAD: DT; LM: 2          | 4162         |
| 18007         | SUB: 7; LOC: NE 10th St – N Lincoln to Stonewall Ave;<br>QUAD: DT; LM: 2             | 5293         |
| 18008         | SUB: 8; LOC: Stonewall Ave – NE 8th to NE 13th St;<br>QUAD: DT; LM: 1                | 4742         |
| 18009         | SUB: 9; LOC: Phillips Ave – NE 8th to NE 13th St; QUAD:<br>DT; LM: 1                 | 4738         |



| Snow Route ID | Location  | Length (Ft.) |
|---------------|---|--------------|
| 17004         | SUB: 4; LOC: Joe Carter Ave – Reno/Johnny Bench to W Main; QUAD: DT; LM: 2            | 980          |
| 17005         | SUB: 5; LOC: Main St – EK Gaylord to Joe Carter Ave; QUAD: DT; LM: 4                  | 2187         |
| 17006         | SUB: 6; LOC: Mickey Mantle Dr/Walnut – Johnny Bench/Reno to Harrison; QUAD: DT; LM: 5 | 3489         |
| 17007         | SUB: 7; LOC: N 4th St – N Broadway to N Lincoln Blvd; QUAD: DT; LM: 1                 | 3969         |
| 17010         | SUB: 10; LOC: N 10th St – N Broadway to N Lincoln Blvd; QUAD: DT; LM: 3               | 3482         |
| 17012         | SUB: 12; LOC: N Oklahoma Ave – NE 13th to NE 2nd St; QUAD: DT; LM: 4                  | 4666         |
| 4003          | SUB: 3; LOC: S Western Ave – SW 89th to SW 149th St; QUAD: SW; LM: 16                 | 20897        |
| 17009         | SUB: 9; LOC: Walnut Ave – Harrison Ave to NE 13th St; QUAD: DT; LM: 4                 | 2892         |
| 8007          | SUB: 7; LOC: N Walnut Ave – NE 13th to NE 21st St; QUAD: NE; LM: 4                    | 3177         |
| 11004         | SUB: 4; LOC: NW 164th St – N Portland to N Western Ave; QUAD: NW; LM: 6               | 15869        |
| 16003         | SUB: 3; LOC: W Reno Ave – Western Ave to EK Gaylord Blvd; QUAD: DT; LM: 4             | 5075         |
| 16004         | SUB: 4; LOC: W Sheridan Ave – EK Gaylord to N Western Ave; QUAD: DT; LM: 4            | 5132         |
| 16005         | SUB: 5; LOC: NW 4th St – N Western to Broadway Ave; QUAD: DT; LM: 4                   | 4689         |
| 14002         | SUB: 2; LOC: N Czech Hall Rd – W Reno to NW 10th St; QUAD: W; LM: 4                   | 5275         |
| 3002          | SUB: 2; LOC: S May Ave – W Reno to SW 89th St; QUAD: SW; LM: 24                       | 35068        |
| 3004          | SUB: 4; LOC: SW 74th St/I-240 Svc Rd – S Western Ave to I-44 Hwy; QUAD: SW; LM: 12    | 27282        |
| 3005          | SUB: 5; LOC: SW 59th St – S Portland to S Western Ave; QUAD: SW; LM: 12               | 20682        |
| 5001          | SUB: 1; LOC: S Western Ave – W Reno Ave to SW 89th St; QUAD: SE; LM: 24               | 31717        |
| 8001          | SUB: 1; LOC: N MLK/N Eastern – E Reno to E Britton Rd; QUAD: NE; LM: 28               | 41520        |

| Snow Route ID | Location   | Length (Ft.) |
|---------------|--|--------------|
| 8009          | SUB: 9; LOC: NE 23rd St – N Western to I-35 Hwy;<br>QUAD: NE; LM: 14                   | 25769        |
| 11001         | SUB: 1; LOC: N May Ave – NW 63rd St to NW 206th St;<br>QUAD: NW; LM: 34                | 54324        |
| 12003         | SUB: 3; LOC: N Council Rd – NW 50th to W Memorial Rd;<br>QUAD: NW; LM: 22              | 32288        |
| 12005         | SUB: 5; LOC: W Hefner Rd – N Western Ave to N Council<br>Rd; QUAD: NW; LM: 28          | 37712        |
| 14006         | SUB: 6; LOC: NW 23rd St – N Western Ave to Donald<br>Ave; QUAD: W; LM: 21              | 32284        |
| 17003         | SUB: 3; LOC: E Sheridan Ave – EK Gaylord to N Lincoln<br>Blvd; QUAD: DT; LM: 4         | 3543         |
| 15001         | SUB: 1; LOC: EK Gaylord/Broadway – W Reno Ave to NW<br>13th St; QUAD: DT; LM: 6        | 9630         |
| 7001          | SUB: 1; LOC: EMSA Garage – 2323 S Walker Ave; QUAD:<br>SE; LM: 0                       | 629          |
| 5002          | SUB: 2; LOC: Southwest Medical Center – 4401 S<br>Western Ave; QUAD: SE; LM: 0         | 3329         |
| 11003         | SUB: 3; LOC: Mercy Hospital – 4300 W Memorial Rd;<br>QUAD: NW; LM: 0                   | 3856         |
| 13005         | SUB: 5; LOC: Deaconess Hospital – 5501 N Portland Ave;<br>QUAD: W; LM: 0               | 4121         |
| 17001         | SUB: 1; LOC: Reno Ave/Johnny Bench Dr – EK Gaylord to<br>Lincoln Blvd; QUAD: DT; LM: 6 | 3530         |
| 14007         | SUB: 7; LOC: N Meridian Ave – W Reno Ave to NW<br>Expressway; QUAD: W; LM: 21          | 28817        |
| 15007         | SUB: 7; LOC: SW 4th St – Western Ave to Shields Blvd;<br>QUAD: DT; LM: 4               | 5125         |
| 17011         | SUB: 11; LOC: NW 13th St – N Broadway to N Lincoln<br>Blvd; QUAD: DT; LM: 3            | 6334         |
| 13002         | SUB: 2; LOC: NW Grand Blvd – NW 63rd St to N Western<br>Ave; QUAD: W; LM: 2            | 2402         |
| 1003          | SUB: 3; LOC: S Council Rd – W Reno to SW 74th St;<br>QUAD: SW; LM: 18                  | 29385        |
| 8006          | SUB: 6; LOC: N Broadway Ave – NW 13th St to NW 23rd<br>St; QUAD: NE; LM: 4             | 5113         |
| 13006         | SUB: 6; LOC: Will Rogers Briefing Station – 3112 N Grand<br>Blvd; QUAD: W; LM:         | 371          |

| Snow Route ID | Location   | Length (Ft.) |
|---------------|--|--------------|
| 8002          | SUB: 2; LOC: Spring Lake Station – 4116 N Prospect Ave;<br>QUAD: NE; LM:                       | 638          |
| 8003          | SUB: 3; LOC: Regional EOC – 4600 Martin Luther King<br>Ave; QUAD: NE; LM:                      | 632          |
| 15005         | SUB: 5; LOC: ECC/911 – 715 Robert S Kerr Ave; QUAD:<br>DT; LM:                                 | 630          |
| 9002          | SUB: 2; LOC: McBride Orthopedic Hospital – 9600 N<br>Broadway Extension; QUAD: NE; LM: 0       | 2314         |
| 1001          | SUB: 1; LOC: S Meridian Ave – Amelia Earhart Ln to<br>Reno; QUAD: SW; LM: 16                   | 24747        |
| 2002          | SUB: 2; LOC: SW 54th St – S Regina Ave to S Portland<br>Ave; QUAD: SW; LM: 8                   | 10497        |
| 2003          | SUB: 3; LOC: SW 15th St – S Meridian to S Pennsylvania;<br>QUAD: SW; LM: 12                    | 17357        |
| 2004          | SUB: 4; LOC: S Agnew Ave – W Reno to SW 29th St;<br>QUAD: SW; LM: 8                            | 12332        |
| 3007          | SUB: 7; LOC: SW 29th St – S Portland to S Western Ave;<br>QUAD: SW ; LM: 12                    | 17506        |
| 5003          | SUB: 3; LOC: SW 74th St/I-240 Svc Rd – S Western to S<br>Eastern Ave; QUAD: SE; LM: 12         | 28265        |
| 5004          | SUB: 4; LOC: S 44th St – S Western to S Eastern Ave;<br>QUAD: SE; LM: 12                       | 16280        |
| 6001          | SUB: 1; LOC: S Shields Blvd – Reno Ave to SE 104th St;<br>QUAD: SE; LM: 39                     | 74784        |
| 7002          | SUB: 2; LOC: Reno Ave/Johnny Bench Dr – Lincoln Blvd<br>to Bryant PL; QUAD: SE; LM: 6          | 14319        |
| 7003          | SUB: 3; LOC: S Eastern/American Indian Blvd – E Reno<br>south to City Limits; QUAD: SE; LM: 26 | 35640        |
| 8008          | SUB: 8; LOC: N Lottie Ave – NE 13th to NE 23rd St;<br>QUAD: NE; LM: 4                          | 7280         |
| 8010          | SUB: 10; LOC: NE 36th St – I-35 Hwy to I-235 Hwy;<br>QUAD: NE; LM: 10                          | 19316        |
| 9003          | SUB: 3; LOC: Britton Rd – Waverly Ave to N Sooner Rd;<br>QUAD: NE; LM: 23                      | 37148        |
| 10001         | SUB: 1; LOC: N Western Ave – NW 50th St to NW 206th<br>St; QUAD: NE; LM: 41                    | 57252        |
| 10003         | SUB: 3; LOC: E Memorial Rd – N Western Ave to I-35<br>Hwy; QUAD: NE; LM: 24                    | 32046        |

| Snow Route ID | Location  | Length (Ft.) |
|---------------|---|--------------|
| 11002         | SUB: 2; LOC: W Memorial Rd – N Council Rd to N Western Ave; QUAD: NW; LM: 28  | 74356        |
| 12001         | SUB: 1; LOC: NW 63rd St – N Western to N Grove Ave; QUAD: NW; LM: 12          | 26005        |
| 12002         | SUB: 2; LOC: W Wilshire Blvd – NW Expressway to N Morgan Rd; QUAD: NW; LM: 12 | 20389        |
| 13001         | SUB: 1; LOC: N Classen Blvd – W Reno to NW 63rd St; QUAD: W; LM: 32           | 55644        |
| 13003         | SUB: 3; LOC: NW Expressway – Hefner Parkway to Classen Cir; QUAD: W; LM: 18   | 27530        |
| 13004         | SUB: 4; LOC: Baptist Medical Center – 3300 NW Expressway; QUAD: W; LM: 0      | 5106         |
| 13007         | SUB: 7; LOC: N May Ave – NW 63rd St to W Reno Ave; QUAD: W; LM: 24            | 35341        |
| 14001         | SUB: 1; LOC: W Reno Ave – N Western to N Czech Hall Rd; QUAD: W; LM: 40       | 106779       |
| 14004         | SUB: 4; LOC: N Council Rd – W Reno to NW 23rd St; QUAD: W; LM: 8              | 12560        |
| 15002         | SUB: 2; LOC: N Walker Ave – W Reno Ave to NW 13th St; QUAD: DT; LM: 6         | 6901         |
| 15004         | SUB: 4; LOC: Robinson Ave – HWY I-40 to NW 13th St; QUAD: DT; LM: 8           | 11712        |
| 15006         | SUB: 6; LOC: SW 3rd St – Western Ave to Shields Blvd; QUAD: DT; LM: 4         | 5643         |
| 16001         | SUB: 1; LOC: NW 5th St – N Western to N Walnut Ave; QUAD: DT; LM: 5           | 6224         |
| 15003         | SUB: 3; LOC: Hudson Ave – NW 13th St to SW 3rd St; QUAD: DT; LM: 6            | 7376         |
| 16002         | SUB: 2; LOC: NW 6th St – N Western to N Walnut Ave; QUAD: DT; LM: 5           | 6286         |
| 16006         | SUB: 6; LOC: NW 10th St – N Western to N Broadway Ave; QUAD: DT; LM: 4        | 5253         |
| 16007         | SUB: 7; LOC: Saint Anthony Hospital – 1000 NW 10th St; QUAD: DT; LM: 0        | 2785         |
| 16008         | SUB: 8; LOC: EMSA Head Quarters – 515 NW 10th St; QUAD: DT; LM: 0             | 700          |
| 16009         | SUB: 9; LOC: NW 13th St – N Western to N Broadway Ave; QUAD: DT; LM: 6        | 5409         |

| <b>Snow Route ID</b> | <b>Location</b>   | <b>Length (Ft.)</b> |
|----------------------|---|---------------------|
| 17002                | SUB: 2; LOC: Lincoln Blvd – E Reno Ave to NE 4th St;<br>QUAD: DT; LM: 4     | 5429                |
| 18001                | SUB: 1; LOC: NE 4th St – N Lincoln Blvd to MLK; QUAD:<br>DT; LM: 6          | 13373               |
| 17008                | SUB: 8; LOC: Harrison Ave – NE 4th St to N Lincoln Blvd;<br>QUAD: DT; LM: 4 | 3691                |
| 18002                | SUB: 2; LOC: NE 8th St – N Lincoln to JW Simmons Blvd;<br>QUAD: DT; LM: 6   | 10659               |
| 18004                | SUB: 4; LOC: N Lottie Ave – NE 4th to NE 13th St; QUAD:<br>DT; LM: 8        | 8664                |
| 18005                | SUB: 5; LOC: NE 13th St – N Lottie to N Lincoln Blvd;<br>QUAD: DT; LM: 4    | 8446                |
| 14003                | SUB: 3; LOC: N Mustang Rd – W Reno to NW 23rd St;<br>QUAD: W; LM: 8         | 7690                |
| 8004                 | SUB: 4; LOC: North Central OK Dialysis - 200 NE 50th St;<br>QUAD: NE; LM: 0 | 531                 |
| 3001                 | SUB: 1; LOC: City Bus Terminal/Garage - 1900 S May<br>Ave; QUAD: SW; LM: 0  | 878                 |

### Appendix E: 2014 Water Body Identification Numbers in OKC

| WBID              | Name                                | AES | AG | CWAC | HLAC | Trout | WWAC | FISH | NAV | PBCR | SBCR | PPWS | EWS | HQW | ORW | SWS |
|-------------------|-------------------------------------|-----|----|------|------|-------|------|------|-----|------|------|------|-----|-----|-----|-----|
| OK520510000255_00 | Wes Watkins Reservoir               | F   | F  |      |      |       | I    | X    |     | F    |      | X    |     |     |     |     |
| OK520510000290_00 | Deer Creek, South                   | N   | I  |      |      |       | N    | X    |     | I    |      | N    |     |     |     | X   |
| OK520510000310_00 | Deer Creek, North                   | X   | X  |      |      |       | X    | X    |     | X    |      | X    |     |     |     |     |
| OK520520000010_10 | Canadian River, North               | X   | X  |      |      |       | I    | X    |     | N    |      |      | F   |     |     |     |
| OK520520000010_20 | Canadian River, North               | I   | F  |      |      |       | F    | F    |     | N    |      |      | F   |     |     |     |
| OK520520000010_30 | Canadian River, North               | X   | X  |      |      |       | N    | X    |     | N    |      |      | F   |     |     |     |
| OK520520000010_40 | Canadian River, North               | X   | X  |      |      |       | N    | X    |     | N    |      |      | F   |     |     |     |
| OK520520000010_50 | Canadian River, North               | X   | X  |      |      |       | X    | X    |     | X    |      | X    |     |     |     |     |
| OK520520000030_00 | Choctaw Creek                       | I   | I  |      | N    |       |      | X    |     |      | I    |      | F   |     |     |     |
| OK520520000035_00 | Choctaw Creek, Unnamed Tributary of | X   | X  |      | X    |       |      |      |     | X    |      |      |     |     |     |     |
| OK520520000040_00 | Jones Creek                         | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK520520000050_00 | Silver Creek                        | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK520520000060_00 | Crutcho Creek                       | I   | I  |      |      |       | N    | X    |     | I    |      |      |     |     |     |     |
| OK520520000070_00 | Crutcho Creek                       | I   | F  |      |      |       | N    | X    |     | N    |      |      |     |     |     |     |
| OK520520000080_00 | Soldier Creek                       | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK520520000090_00 | Crutcho Creek                       | N   | X  |      | N    |       |      | X    |     |      | X    |      |     |     |     |     |
| OK520520000110_00 | Cherry Creek                        | I   | I  |      | N    |       |      | I    |     |      | X    |      |     |     |     |     |
| OK520520000140_00 | Thompson Lake                       | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK520520000150_00 | Crooked Oak Creek                   | N   | N  |      |      |       | N    | X    |     | N    |      | N    |     |     |     |     |
| OK520520000160_00 | Lightning Creek                     | I   | X  |      |      |       | I    | X    |     | X    |      |      |     |     |     |     |
| OK520520000170_00 | Brock Creek                         | I   | X  |      |      |       | I    | X    |     | X    |      |      |     |     |     |     |
| OK520520000190_00 | Crutcho Creek, Unnamed Tributary of | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK520520000210_00 | Canadian River, North               | N   | X  |      |      |       | N    | X    |     | N    |      | X    |     |     |     |     |
| OK520520000230_00 | Campbell Creek                      | I   | N  |      |      |       | N    | X    |     | I    |      |      |     |     |     |     |
| OK520520000240_00 | Mustang Creek                       | I   | I  |      |      |       | N    | X    |     | N    |      |      |     |     |     |     |

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

| WBID              | Name                           | AES | AG | CWAC | HLAC | Trout | WWAC | FISH | NAV | PBCR | SBCR | PPWS | EWS | HQW | ORW | SWS |
|-------------------|--------------------------------|-----|----|------|------|-------|------|------|-----|------|------|------|-----|-----|-----|-----|
| OK520520000250_00 | Canadian River, North          | I   | F  |      |      |       | N    | I    |     | F    |      | I    |     |     |     |     |
| OK520520000260_00 | Overholser Lake                | I   | N  |      |      |       | N    | F    |     | F    |      | I    |     |     |     |     |
| OK520520000270_00 | Ramsey Lake                    | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK520520000280_00 | Bluff Creek Canal (Hefner L)   | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK520520000290_00 | Soldier Creek, Unnamed Trib of | X   | X  |      |      |       | X    | X    |     |      | X    |      |     |     |     |     |
| OK520520000300_00 | West Ramp Branch!              | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK520520000310_00 | 3001 Branch!                   | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK520520000320_00 | Taxiway Branch!                | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK520520000330_00 | Kuhlman Creek                  | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK520520000350_00 | Airport Heights Creek!         | I   | X  |      |      |       | N    | X    |     | I    |      |      |     |     |     |     |
| OK520530000010_00 | Canadian River, North          | X   | F  |      |      |       | F    | X    |     | N    |      | X    |     |     |     |     |
| OK520530000020_00 | Wilshire Creek                 | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK520530000030_00 | Shell Creek                    | F   | F  |      |      |       | N    | X    |     | N    |      | F    |     |     |     |     |
| OK520530000270_00 | Perimeter Creek!               | N   | I  |      |      |       | N    | X    |     | X    |      |      |     |     |     |     |
| OK520530000280_00 | Neighborhood Creek!            | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK520610010010_20 | Canadian River                 | X   | X  |      |      |       | X    | X    |     |      | X    |      |     |     |     |     |
| OK520610010220_00 | Lost Creek                     | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK520610010230_00 | Cow Creek                      | I   | I  |      |      |       | N    | I    |     | X    |      | I    |     |     |     |     |
| OK520610020010_00 | Canadian River                 | X   | X  |      |      |       | X    | X    |     |      | X    |      |     |     |     |     |
| OK520610020020_00 | Coal Creek                     | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK520610020050_00 | Bennett Creek                  | X   | X  |      |      |       | X    | X    |     | X    |      | X    |     |     |     |     |
| OK520610020060_00 | Foreman Creek                  | I   | I  |      |      |       | N    | X    |     | I    |      |      |     |     |     |     |
| OK520610020070_00 | Dry Creek                      | N   | I  |      |      |       | N    | X    |     | I    |      | N    |     |     |     |     |
| OK520710010010_00 | Canadian River, Deep Fork      | I   | F  |      |      |       | N    | X    |     | N    |      | I    |     |     |     |     |
| OK520710010020_00 | Smith Creek                    | X   | X  |      | X    |       |      | X    |     | X    |      | X    |     |     |     |     |
| OK520710010030_00 | Coon Creek                     | I   | I  |      |      |       | N    | X    |     | I    |      |      |     |     |     |     |
| OK520710010040_00 | Hiwassee Creek                 | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

| WBID              | Name                            | AES | AG | CWAC | HLAC | Trout | WWAC | FISH | NAV | PBCR | SBCR | PPWS | EWS | HQW | ORW | SWS |
|-------------------|---------------------------------|-----|----|------|------|-------|------|------|-----|------|------|------|-----|-----|-----|-----|
| OK520710020010_00 | Canadian River, Deep Fork       | X   | X  |      |      |       | X    | X    |     | X    |      | X    |     |     |     | X   |
| OK520710020020_00 | Arcadia Lake                    | F   | F  |      |      |       | N    | X    |     | F    |      | N    |     |     |     | X   |
| OK520710020040_00 | Tinker Creek                    | X   | X  |      |      |       | X    | X    |     | X    |      | X    |     |     |     | X   |
| OK520710020050_00 | Wynn Creek                      | X   | X  |      |      |       | X    | X    |     | X    |      | X    |     |     |     | X   |
| OK520710020060_00 | Canadian River, Deep Fork       | F   | F  |      |      |       | I    | X    |     | N    |      | I    |     |     |     | X   |
| OK520710020070_00 | Britton Creek                   | X   | X  |      |      |       | X    | X    |     | X    |      | X    |     |     |     | X   |
| OK520710020075_00 | Deep Fork, Unnamed Tributary of | X   | X  |      |      |       | X    | X    |     | X    |      | X    |     |     |     | X   |
| OK520710020080_00 | Aluma Creek                     | X   | X  |      |      |       | X    | X    |     | X    |      | X    |     |     |     | X   |
| OK520710020100_00 | Forest Park Creek               | X   | X  |      |      |       | X    | X    |     | X    |      | X    |     |     |     | X   |
| OK520710020110_00 | Northeast Creek                 | X   | X  |      |      |       | X    | X    |     | X    |      | X    |     |     |     | X   |
| OK520710020120_00 | Northeast Lake (Zoo)            | X   | X  |      |      |       | X    | X    |     | X    |      | X    |     |     |     | X   |
| OK520710020130_00 | Springlake Creek                | X   | X  |      |      |       | X    | X    |     | X    |      | X    |     |     |     | X   |
| OK520710020140_00 | Guy James Creek                 | X   | X  |      |      |       | X    | X    |     | X    |      | X    |     |     |     | X   |
| OK520710020150_00 | Nichols Creek                   | X   | X  |      |      |       | X    | X    |     | X    |      | X    |     |     |     | X   |
| OK520710020160_00 | Belle Isle Creek                | X   | X  |      |      |       | X    | X    |     | X    |      | X    |     |     |     | X   |
| OK520800020080_00 | Pecan Creek                     | N   | I  |      |      |       | N    | X    |     | I    |      |      |     |     |     |     |
| OK520810000030_00 | Hog Creek                       | I   | F  |      |      |       | N    | X    |     | N    |      | X    |     |     |     | X   |
| OK520810000040_00 | Hog Creek, West Branch          | I   | I  |      |      |       | N    | X    |     | I    |      | X    |     |     |     | X   |
| OK520810000100_00 | Elm Creek                       | F   | N  |      |      |       | N    | X    |     | N    |      | F    |     |     |     | X   |
| OK520810000110_00 | Elm Creek, East                 | I   | I  |      |      |       | N    | X    |     | I    |      | X    |     |     |     | X   |
| OK520810000130_00 | Stanley Draper Lake             | F   | F  |      |      |       | N    | N    |     | F    |      | F    |     |     |     |     |
| OK520810000140_00 | Elm Creek, West                 | X   | F  |      |      |       | F    | X    |     | N    |      | X    |     |     |     | X   |
| OK520810000150_00 | Kitchen Creek                   | X   | X  |      |      |       | X    | X    |     | X    |      | X    |     |     |     | X   |
| OK520810000160_00 | Kitchen Lake                    | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK620910040100_00 | Chisholm Creek                  | I   | F  |      |      |       | F    | I    |     | I    |      | N    |     |     |     |     |
| OK620910040110_00 | Edmond Creek                    | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK620910040120_10 | Deer Creek                      | X   | X  |      |      |       | F    | X    |     | X    |      | X    |     |     |     |     |



April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

| WBID              | Name              | AES | AG | CWAC | HLAC | Trout | WWAC | FISH | NAV | PBCR | SBCR | PPWS | EWS | HQW | ORW | SWS |
|-------------------|-------------------|-----|----|------|------|-------|------|------|-----|------|------|------|-----|-----|-----|-----|
| OK620910040140_00 | Bluff Creek       | I   | X  |      |      |       | F    | X    |     | N    |      | I    |     |     |     |     |
| OK620910040150_00 | Dry Creek         | X   | X  |      |      |       | F    | X    |     | X    |      |      |     |     |     |     |
| OK620910040170_00 | Spring Creek      | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK620910040175_00 | Hefner Canal      | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK620910040180_00 | Ski Island Lake   | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK620910040190_00 | Silver Lake       | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK620910040200_00 | Hefner Lake       | F   | F  |      |      |       | F    | F    |     | F    |      | F    |     |     |     |     |
| OK620910040210_00 | Walnut Creek      | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK620910040230_00 | Chapel Hill Creek | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK620910040240_00 | Piedmont Creek    | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK620910040250_00 | Spring Creek      | X   | X  |      |      |       | X    | X    |     | X    |      |      |     |     |     |     |
| OK620910040260_00 | Northwood Lake    | I   | X  |      |      |       | I    | X    |     | X    |      |      |     |     |     |     |

X= Not Assessed, I=Insufficient Data, F=Fully Supporting, and N=Non-Supporting

**Appendix F: 2014 303(d) Listed Water Body's In Oklahoma City**

| WBID                  | Name                        | NH4 | Arsenic | Barium | Benthic Macro | Cadmium | Chloride | Chl_a | Chlorpyrifos | Chromium | Copper | DDT | Diazinon | Dieldrin | Enterococci | E. coli | Fish Biological | Lead | Mercury | Nitrates | Oil & Grease | DO | pH | Phosphorus | Sediment / Silt | Selenium | Silver | Sulfates | TDS | Toxaphene | Turbidity | Zinc | Category |
|-----------------------|-----------------------------|-----|---------|--------|---------------|---------|----------|-------|--------------|----------|--------|-----|----------|----------|-------------|---------|-----------------|------|---------|----------|--------------|----|----|------------|-----------------|----------|--------|----------|-----|-----------|-----------|------|----------|
| OK52051000<br>0290_00 | Deer<br>Creek,<br>South     | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | -           | -       | -               | -    | -       | -        | 5c           | 5a | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK52052000<br>0010_10 | Canadian<br>River,<br>North | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | 4a          | 5a      | -               | -    | -       | -        | -            | -  | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK52052000<br>0010_20 | Canadian<br>River,<br>North | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | 5a       | -           | 5a      | -               | -    | -       | -        | -            | -  | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK52052000<br>0010_30 | Canadian<br>River,<br>North | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | 4a          | 4a      | -               | -    | -       | -        | -            | 5a | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK52052000<br>0010_40 | Canadian<br>River,<br>North | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | 4a          | 5a      | -               | -    | -       | -        | -            | 5a | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK52052000<br>0030_00 | Choctaw<br>Creek            | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | -           | -       | -               | -    | -       | -        | -            | 5a | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK52052000<br>0060_00 | Crutcho<br>Creek            | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | -           | -       | -               | -    | -       | -        | -            | 5a | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK52052000<br>0090_00 | Crutcho<br>Creek            | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | -           | -       | -               | -    | -       | -        | 5c           | -  | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK52052000<br>0110_00 | Cherry<br>Creek             | -   | -       | -      | -             | 5a      | -        | -     | -            | -        | -      | -   | -        | -        | -           | -       | -               | -    | -       | -        | -            | 5a | -  | -          | 5a              | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK52052000            | Crooked                     | -   | -       | -      | -             | -       | 5b       | -     | -            | -        | -      | -   | -        | -        | 5a          | 4a      | -               | -    | -       | -        | 5c           | 5a | 5a | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |

| WBID                  | Name                   | NH4 | Arsenic | Barium | Benthic Macro | Cadmium | Chloride | Chl_a | Chlorpyrifos | Chromium | Copper | DDT | Diazinon | Dieldrin | Enterococci | E. coli | Fish Biological | Lead | Mercury | Nitrates | Oil & Grease | DO | pH | Phosphorus | Sediment / Silt | Selenium | Silver | Sulfates | TDS | Toxaphene | Turbidity | Zinc | Category |
|-----------------------|------------------------|-----|---------|--------|---------------|---------|----------|-------|--------------|----------|--------|-----|----------|----------|-------------|---------|-----------------|------|---------|----------|--------------|----|----|------------|-----------------|----------|--------|----------|-----|-----------|-----------|------|----------|
| 0150_00               | Oak Creek              |     |         |        |               |         |          |       |              |          |        |     |          |          |             |         |                 |      |         |          |              |    |    |            |                 |          |        |          |     |           |           |      |          |
| OK52052000<br>0210_00 | Canadian River, North  | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | 4a          | 5a      | -               | -    | -       | -        | 5c           | 5a | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK52052000<br>0230_00 | Campbell Creek         | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | -           | -       | -               | -    | -       | -        | -            | 5a | -  | -          | -               | -        | 5b     | -        | -   | -         | -         | -    | 5        |
| OK52052000<br>0240_00 | Mustang Creek          | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | -           | 4a      | -               | -    | -       | -        | -            | 5a | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK52052000<br>0250_00 | Canadian River, North  | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | -           | -       | -               | -    | -       | -        | -            | -  | -  | -          | -               | -        | -      | -        | 5a  | -         | -         | -    | 5        |
| OK52052000<br>0260_00 | Overholser Lake        | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | -           | -       | -               | -    | -       | -        | -            | -  | -  | -          | -               | -        | 5b     | -        | 5a  | -         | -         | -    | 5        |
| OK52052000<br>0350_00 | Airport Heights Creek! | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | -           | -       | -               | -    | -       | -        | -            | 5a | -  | -          | -               | -        | -      | -        | 5a  | -         | -         | -    | 5        |
| OK52053000<br>0010_00 | Canadian River, North  | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | 5a          | 5a      | -               | -    | -       | -        | -            | -  | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK52053000<br>0030_00 | Shell Creek            | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | 4a          | 4a      | -               | -    | -       | -        | -            | 5a | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK52053000<br>0270_00 | Perimeter Creek!       | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | -           | -       | -               | -    | -       | -        | 5c           | -  | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK52061001<br>0230_00 | Cow Creek              | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | -           | -       | -               | -    | -       | -        | -            | 5a | -  | -          | 5a              | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK52061002<br>0060_00 | Foreman Creek          | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | -           | -       | -               | -    | -       | -        | -            | 5a | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK52061002            | Dry Creek              | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | -           | -       | -               | -    | -       | -        | 5c           | 5a | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

| WBID                  | Name                      | NH4 | Arsenic | Barium | Benthic Macro | Cadmium | Chloride | Chl_a | Chlorpyrifos | Chromium | Copper | DDT | Diazinon | Dieldrin | Enterococci | E. coli | Fish Biological | Lead | Mercury | Nitrates | Oil & Grease | DO | pH | Phosphorus | Sediment / Silt | Selenium | Silver | Sulfates | TDS | Toxaphene | Turbidity | Zinc | Category |
|-----------------------|---------------------------|-----|---------|--------|---------------|---------|----------|-------|--------------|----------|--------|-----|----------|----------|-------------|---------|-----------------|------|---------|----------|--------------|----|----|------------|-----------------|----------|--------|----------|-----|-----------|-----------|------|----------|
| 0070_00               |                           |     |         |        |               |         |          |       |              |          |        |     |          |          |             |         |                 |      |         |          |              |    |    |            |                 |          |        |          |     |           |           |      |          |
| OK52071001<br>0010_00 | Canadian River, Deep Fork | -   | -       | -      | 5c            | -       | -        | -     | -            | -        | -      | -   | -        | -        | 5a          | 5a      | 5c              | -    | -       | -        | -            | -  | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK52071001<br>0030_00 | Coon Creek                | -   | -       | -      | -             | -       | -        | -     | 5a           | -        | -      | -   | -        | -        | -           | -       | -               | -    | -       | -        | -            | -  | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK52071002<br>0020_00 | Arcadia Lake              | -   | -       | -      | -             | -       | -        | 5a    | -            | -        | -      | -   | -        | -        | -           | -       | -               | -    | -       | -        | -            | -  | -  | -          | -               | -        | -      | -        | -   | 5a        | -         | -    | 5        |
| OK52071002<br>0060_00 | Canadian River, Deep Fork | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | 5a          | 5a      | -               | -    | -       | -        | -            | -  | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK52080002<br>0080_00 | Pecan Creek               | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | -           | -       | -               | -    | -       | -        | 5c           | -  | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK52081000<br>0030_00 | Hog Creek                 | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | 5a          | 5a      | -               | -    | -       | -        | -            | 5a | -  | -          | -               | -        | -      | -        | -   | 5a        | -         | -    | 5        |
| OK52081000<br>0040_00 | Hog Creek, West Branch    | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | -           | -       | -               | -    | -       | -        | -            | 5a | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK52081000<br>0100_00 | Elm Creek                 | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | -           | 5a      | -               | -    | -       | -        | -            | -  | -  | -          | -               | -        | -      | 5b       | -   | 5a        | -         | -    | 5        |
| OK52081000<br>0110_00 | Elm Creek, East           | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | -           | -       | -               | -    | -       | -        | -            | 5a | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK52081000<br>0130_00 | Stanley Draper Lake       | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | -           | -       | -               | -    | 5c      | -        | -            | -  | -  | -          | -               | -        | -      | -        | -   | 5a        | -         | -    | 5        |
| OK52081000            | Elm                       | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | 5a          | 5a      | -               | -    | -       | -        | -            | -  | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

| WBID                  | Name              | NH4 | Arsenic | Barium | Benthic Macro | Cadmium | Chloride | Chl_a | Chlorpyrifos | Chromium | Copper | DDT | Diazinon | Dieldrin | Enterococci | E. coli | Fish Biological | Lead | Mercury | Nitrates | Oil & Grease | DO | pH | Phosphorus | Sediment / Silt | Selenium | Silver | Sulfates | TDS | Toxaphene | Turbidity | Zinc | Category |
|-----------------------|-------------------|-----|---------|--------|---------------|---------|----------|-------|--------------|----------|--------|-----|----------|----------|-------------|---------|-----------------|------|---------|----------|--------------|----|----|------------|-----------------|----------|--------|----------|-----|-----------|-----------|------|----------|
| 0140_00               | Creek, West       |     |         |        |               |         |          |       |              |          |        |     |          |          |             |         |                 |      |         |          |              |    |    |            |                 |          |        |          |     |           |           |      |          |
| OK62091004<br>0100_00 | Chisholm<br>Creek | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | -           | -       | -               | -    | -       | 5a       | -            | -  | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |
| OK62091004<br>0140_00 | Bluff<br>Creek    | -   | -       | -      | -             | -       | -        | -     | -            | -        | -      | -   | -        | -        | 4a          | 5a      | -               | -    | -       | -        | -            | -  | -  | -          | -               | -        | -      | -        | -   | -         | -         | -    | 5        |

**Appendix G: TMDL Status in Oklahoma City (2014 Integrated Report Listing and ODEQ website)**

| Waterbody            | WBID               | Category* | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions      | Segment TMDL             | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments   | Load Reductions                            | Monitoring Required   | Comments   | Action   | Recent Data  | TMDL Type |
|----------------------|--------------------|-----------|---|---------------------|-----------------------------------|--------------------------|-----------------|------------------------|--|--|---|--|--|--|-----------|
| North Canadian River | OK 520510000110_20 | 4a        | PBCR                                    | Enterococci         | Enterococci                       | 38886                    |                 | Completed              | Bacteria Total Maximum Daily Load (TMDL) for North Canadian River Area (OK520520). Outside of but downstream of OKC. | Instantaneous = 93.6%,<br>Geo Mean = 86.4% | Unknown - Appendix E is missing from the April 6, 2010 TMDL on ODEQ website | Segment is east of OKC. However, contributing drainage does impact some area inside OKC.                               | Schedule bacteria monitoring in the segment to determine current status. | Cannot find data in Appendix A of the ACOG TMDL. Unknown listing agency. | LDC       |
|                      |                    | 5a        | WWAC                                    | Dissolved Oxygen    | Nutrients, CBOD, SOD <sup>2</sup> | Pending                  |                 | 2016                   | 2014 303d listing. Outside of but downstream of OKC.   |  |   |  |  |  |           |
|                      |                    | 5a        | PBCR                                    | E. coli             | E. coli                           | Pending                  |                 | 2016                   | 2014 303d listing. Outside of but downstream of OKC.   |  |   |  |  |  |           |
| South Deer Creek     | OK 520510000290_00 | 5a        | WWAC                                    | Dissolved Oxygen    | Nutrients, CBOD, SOD <sup>2</sup> | Pending                  |                 | 2016                   | 2014 303d listing  |  | Needs scheduling  | Station 580 represents northern drainage coming from OKC. Approx. 2,285.5 acres in OKC. Must calculate south drainage. | Monitoring not currently scheduled. Need to develop QAPP                 | 2002-2004 (Watershed Characterization Site 580 (NS))                     |           |
|                      |                    | 5c        | AES, WWAC, PPWS                         | Oil and Grease      | Oil and Grease                    | Requires additional data |                 | 2016                   | 2014 303d listing  |  | Needs scheduling  | Station 580 represents northern drainage coming from OKC.  | Monitoring not currently scheduled. Need to develop QAPP                 | 2002-2004 (Watershed Characterization Site 580 (NS))                     |           |

| Waterbody                    | WBID               | Category* | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions | Segment TMDL | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments   | Load Reductions                         | Monitoring Required   | Comments   | Action   | Recent Data  | TMDL Type |
|------------------------------|--------------------|-----------|---|---------------------|------------------------------|--------------|-----------------|------------------------|--|---|---|--|--|--|-----------|
|                              |                    |           |   |                     |                              |              |                 |                        |  |   |   | Approx. 2,285.5 acres in OKC. Must calculate south drainage.   |  |  |           |
| Shawnee Twin Lake #2 (North) | OK 520510000300_00 | 5a        | WWAC                                    | Turbidity           | TSS                          | Pending      |                 | 2016                   | 2014 303d listing. Outside of but downstream of OKC.                               |   | Needs scheduling  | Station 580 represents northern drainage coming from OKC. Approx. 2,285.5 acres in OKC. Must calculate south drainage.             | Measure percentage of watershed in OKC. Deer Creek South monitoring station should represent the majority of the watershed contributed by OKC. Must measure turbidity. | 2002-2004 (Watershed Characterization on Site 580 (FS - turbidity)). |           |
| North Canadian River         | OK 520520000010_00 | 4a        | PBCR                                    | Enterococci         | Enterococci                  | 38869        |                 | Completed              | Bacteria Total Maximum Daily Load (TMDL) for North Canadian River Area (OK520520). | Instantaneous = 96.6%, Geo Mean = 91.6% | Unknown - Appendix E is missing from the April 6, 2010 TMDL on ODEQ website | Segment is directly upstream of Lake Overholser. Some urban development but limited.   | Schedule bacteria monitoring in the segment to determine current status.   | OWRB 2001-2006 (ACOG used to develop TMDL)                           | LDC       |
|                              |                    | 5a        | WWAC                                    | Turbidity           | TSS                          | Pending      |                 | 2016                   | 2014 303d listing  |   |   |  |  |  |           |
|                              |                    | 5a        | PBCR                                    | E. coli             | E. coli                      | Pending      |                 | 2016                   | 2014 303d listing  |   |   |  |  |  |           |
| North Canadian River         | OK 520520000010_10 | 4a        | PBCR                                    | Enterococci         | Enterococci                  | 38885        |                 | Completed              | Bacteria Total Maximum Daily Load (TMDL) for North Canadian River Area (OK520520). | Instantaneous = 99.3%, Geo Mean = 97.0% | Unknown - Appendix E is missing from the April 6, 2010 TMDL on ODEQ website | Segment is largely outside of OKC jurisdiction. Very limited urban drainage. OKC WWTP discharges to segment. Could impact bacteria | No Action  | ACOG 2003 and 2006   | LDC       |

| Waterbody            | WBID               | Category*       | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions | Segment TMDL   | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments  | Load Reductions                          | Monitoring Required   | Comments   | Action   | Recent Data        | TMDL Type |
|----------------------|--------------------|-----------------|---|---------------------|------------------------------|----------------|-----------------|------------------------|---|--|---|--|--|--------------------|-----------|
|                      |                    |                 |   |                     |                              |                |                 |                        |   |  |   | permit loads in treatment facility.  |  |                    |           |
|                      |                    | 5a              | PBCR                                    | <i>E. coli</i>      | <i>E. coli</i>               | Pending        |                 | 2016                   | 2014 303d listing   |  |   |  |  |                    |           |
| North Canadian River | OK 520520000010_20 | 4a <sup>3</sup> | PBCR                                    | <i>Enterococci</i>  | <i>Enterococci</i>           | Status Unknown |                 | Completed              | Bacteria Total Maximum Daily Load (TMDL) for North Canadian River Area (OK520520). <i>No longer listed for Enterococci in 2014 303d.</i> 2012 Integrated Report has a delisting justification : no Enterococci samples were taken on this segment due to a site location error. | Instantaneous = 99.97%, Geo Mean = 98.9% | Unknown - Appendix E is missing from the April 6, 2010 TMDL on ODEQ website | Segment is near Westminister and NE 122nd Street upstream to near Midwest Blvd. Most is rural watershed. | Schedule bacteria monitoring in the segment to determine current status. | ACOG 2003 and 2006 | LDC       |
|                      |                    | 5a              | PBCR                                    | <i>E. coli</i>      | <i>E. coli</i>               | Pending        |                 | 2016                   | 2014 303d listing   |  |   |  |  |                    |           |
|                      |                    | 5a              | FC                                      | Dieldrin            | Dieldrin                     | Pending        |                 | 2016                   | 2014 303d listing   | Unknown                                  | Needs scheduling  | Monitoring should be accomplished to add recent and sufficient data for current assessment               | Monitor before a TMDL is developed.                                      |                    |           |



| Waterbody            | WBID             | Category* | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions      | Segment TMDL | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments   | Load Reductions                                     | Monitoring Required  | Comments  | Action   | Recent Data   | TMDL Type |
|----------------------|------------------|-----------|---|---------------------|-----------------------------------|--------------|-----------------|------------------------|--|---|--|---|--|---|-----------|
| North Canadian River | OK52052000010_30 | 4a        | PBCR                                    | <i>Enterococci</i>  | <i>Enterococci</i>                | 38883        |                 | Completed              | Bacteria Total Maximum Daily Load (TMDL) for North Canadian River Area (OK520520). | Ent: Instantaneous = 99.8%, Geo Mean = 98.0%        | Unknown - Appendix E is missing from the April 6, 2010 TMDL on ODEQ website  | Segment from Coltrane to Midwest Blvd. Some urbanization. Watershed includes Forest Park (limited)  | No Action  | ACOG 2003 and 2006  | LDC       |
|                      |                  | 4a        | PBCR                                    | <i>E. coli</i>      | <i>E. coli</i>                    | 38883        |                 | Completed              | Bacteria Total Maximum Daily Load (TMDL) for North Canadian River Area (OK520520). | <i>E. coli</i> : Instantaneous = 95.6%, GEO = 37.6% | Unknown - Appendix E is missing from the April 6, 2010 TMDL on ODEQ website  | Segment from Coltrane to Midwest Blvd. Some urbanization. Watershed includes Forest Park (limited)  | No Action  | ACOG 2003 and 2006  | LDC       |
|                      |                  | 5a        | WWAC                                    | Dissolved Oxygen    | Nutrients, CBOD, SOD <sup>2</sup> | Pending      |                 | 2016                   | 2014 303d listing  |   | Additional monitoring should be accomplished. River conditions have changed significantly since the ACOG monitoring. | Segment from Coltrane to Midwest Blvd. Some urbanization. Watershed includes Forest Park (limited) Additional monitoring should be accomplished. River conditions have changed significantly since the ACOG monitoring. | Develop monitoring plan for this segment.  | ACOG 2003 and 2006  |           |
| North Canadian River | OK52052000010_40 | 4a        | PBCR                                    | <i>Enterococci</i>  | <i>Enterococci</i>                | 38882        |                 | Completed              | Bacteria Total Maximum Daily Load (TMDL) for North Canadian                        | Instantaneous = 99.9%, Geo Mean = 98.1%             | Unknown - Appendix E is missing from the April 6, 2010 TMDL on ODEQ  | Segment near Coltrane and NE 10th Street and ends near Portland and SW 15th   | Analyze data to determine if standards are being met or improvements have been made. | ACOG 2003 and 2006. OKC (several stations periodically-revocable permits) and | LDC       |

| Waterbody | WBID | Category* | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions      | Segment TMDL | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments       | Load Reductions | Monitoring Required | Comments   | Action   | Recent Data  | TMDL Type |
|-----------|------|-----------|---|---------------------|-----------------------------------|--------------|-----------------|------------------------|------------------------|-----------------|---------------------|--|--|--|-----------|
|           |      |           |   |                     |                                   |              |                 |                        | River Area (OK520520). |                 | website             | Street. This encompasses most of the Oklahoma River. Sporadic monitoring has been conducted at several sites. Long-term monitoring has been conducted at the Byers Bridge.   |  | continuous data to current date.   |           |
|           |      | 5a        | PBCR                                    | <i>E. coli</i>      | <i>E. coli</i>                    | Pending      |                 | 2016                   | 2014 303d listing      |                 |                     |  | Analyze data to determine if standards are being met or improvements have been made.       | ACOG 2003 and 2006. OKC (several stations periodically-revocable permits) and continuous data to current date. |           |
|           |      | 5a        | WWAC                                    | Dissolved Oxygen    | Nutrients, CBOD, SOD <sup>2</sup> | Pending      |                 | 2016                   | 2014 303d listing      |                 |                     | Oklahoma River Area. Significant urban storm water contributes to this segment of the North Canadian River. Original studies were completed greater than 5 years. Changes to the river (dams) may have impacted the DO | Immediate monitoring needed to establish baseline levels of dissolved oxygen in the river. | ACOG 2003 and 2006   |           |

| Waterbody     | WBID               | Category* | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions      | Segment TMDL | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments                                     | Load Reductions | Monitoring Required    | Comments   | Action  | Recent Data | TMDL Type |
|---------------|--------------------|-----------|---|---------------------|-----------------------------------|--------------|-----------------|------------------------|--|-----------------|------------------------|--|---|-------------|-----------|
|               |                    |           |   |                     |                                   |              |                 |                        |  |                 |                        | concentrations.  |   |             |           |
| Choctaw Creek | OK 520520000030_00 | 5a        | HLAC                                    | Dissolved Oxygen    | Nutrients, CBOD, SOD <sup>2</sup> | Pending      |                 | 2016                   | 2014 303d listing                                    |                 | No monitoring required | Watershed in OKC is ~177 acres. The complete watershed is 22,189.5 acres. OKC has 0.8% of the watershed. | Do not believe this TMDL will impact OKC. However, development guidelines should apply in this watershed. Not listed by OKC data. | Unknown     |           |
| Crutcho Creek | OK 520520000060_00 | 5a        | WWAC                                    | Dissolved Oxygen    | Nutrients, CBOD, SOD <sup>2</sup> | Pending      |                 | 2016                   | 2014 303d listing                                    |                 |                        | Crutcho Creek Watershed is 26,345.8 Acres, 11,880.3 Acres in OKC (45%).                                  |   |             |           |
| Crutcho Creek | OK 520520000070_00 | 5a        | PBCR                                    | <i>Enterococci</i>  | <i>Enterococci</i>                | Pending      |                 | 2016                   | 2014 303d listing. Outside of but downstream of OKC. |                 |                        | Crutcho Creek Watershed is 26,345.8 Acres, 11,880.3 Acres in OKC (45%).                                  |   |             |           |
|               |                    | 5a        | PBCR                                    | <i>E. coli</i>      | <i>E. coli</i>                    | Pending      |                 | 2016                   | 2014 303d listing. Outside of but downstream of OKC. |                 |                        | Crutcho Creek Watershed is 26,345.8 Acres, 11,880.3 Acres in OKC (45%).                                  |   |             |           |
|               |                    | 5a        | WWAC                                    | Dissolved Oxygen    | Nutrients, CBOD, SOD <sup>2</sup> | Pending      |                 | 2016                   | 2014 303d listing. Outside of but downstream of OKC. |                 |                        | Crutcho Creek Watershed is 26,345.8 Acres, 11,880.3 Acres in   |   |             |           |

| Waterbody         | WBID               | Category* | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions      | Segment TMDL              | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments   | Load Reductions                         | Monitoring Required | Comments  | Action  | Recent Data   | TMDL Type |
|-------------------|--------------------|-----------|---|---------------------|-----------------------------------|---------------------------|-----------------|------------------------|--|---|---------------------|---|---|---|-----------|
|                   |                    |           |   |                     |                                   |                           |                 |                        |  |   |                     | OKC (45%).  |   |   |           |
| Crutcho Creek     | OK 520520000090_00 | 5c        | AES, HLAC                               | Oil and Grease      | Oil and Grease                    | Requires additional data  |                 | 2016                   | 2014 303d listing.   |   |                     | Crutcho Creek Watershed is 26,345.8 Acres, 11,880.3 Acres in OKC (45%). |   |   |           |
| Cherry Creek      | OK 520520000110_00 | 5a        | HLAC                                    | Cadmium             | Cadmium                           | Pending                   |                 | 2016                   | 2014 303d listing  |   |                     | 1,049.3 Acres is in OKC.  | No action   | OKC did not collect data for cadmium. Research must be conducted to determine listing agency. |           |
|                   |                    | 5a        | HLAC                                    | Selenium            | Selenium                          | Pending                   |                 | 2016                   | 2014 303d listing  |   |                     | 1,049.3 Acres is in OKC.  |   |   |           |
|                   |                    | 5a        | HLAC                                    | Dissolved Oxygen    | Nutrients, CBOD, SOD <sup>2</sup> | Pending                   |                 | 2016                   | 2014 303d listing  |   |                     | 1,049.3 Acres is in OKC.  |   |   |           |
| Crooked Oak Creek | OK 520520000150_00 | 5b        | AG                                      | Chloride            | Chloride                          | Awaiting standards review |                 | 2016                   | 2014 303d listing, probably see new site-specific criteria.            |   |                     | 5902.6 Acre watershed. 5,548.3 Acres in OKC (94%).                      |   |   |           |
|                   |                    | 5c        | AES, WWAC, PPWS                         | Oil and Grease      | Oil and Grease                    | Requires additional data  |                 | 2016                   | 2014 303d listing. Definitely has oil and grease problems.             |   |                     | 5902.6 Acre watershed. 5,548.3 Acres in OKC (94%).                      |   |   |           |
|                   |                    | 5a        | PBCR                                    | Enterococci         | Enterococci                       | Pending                   |                 | 2016                   | 2014 303d listing  |   |                     | 5902.6 Acre watershed. 5,548.3 Acres in OKC (94%).                      |   |   |           |
|                   |                    | 4a        | PBCR                                    | <i>E. coli</i>      | <i>E. coli</i>                    | 38875                     |                 | Completed              | Bacteria Total Maximum Daily Load (TMDL) for North Canadian River Area | Instantaneous = 75.7%, Geo Mean = 66.6% | Yes                 | Appendix E - Stormwater permitting and presumptive BMP approach.        | Bacteria reduction plan, bacteria monitoring plan, annual reporting |   |           |

| Waterbody            | WBID               | Category* | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions      | Segment TMDL             | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments   | Load Reductions                         | Monitoring Required   | Comments   | Action  | Recent Data  | TMDL Type |
|----------------------|--------------------|-----------|---|---------------------|-----------------------------------|--------------------------|-----------------|------------------------|--|---|---|--|---|--|-----------|
|                      |                    |           |   |                     |                                   |                          |                 |                        | (OK520520). Crooked Oak Creek specifically listed in TMDL.                         |   |   |  |   |  |           |
|                      |                    | 5a        | WWAC                                    | Dissolved Oxygen    | Nutrients, CBOD, SOD <sup>2</sup> | In development           |                 | 2016                   | <i>Data requested by State, TMDL in development.</i>                               |   |   | 5902.6 Acre watershed. 5,548.3 Acres in OKC (94%).   |   |  |           |
| North Canadian River | OK 520520000210_00 | 4a        | PBCR                                    | <i>Enterococci</i>  | <i>Enterococci</i>                | 38881                    |                 | Completed              | Bacteria Total Maximum Daily Load (TMDL) for North Canadian River Area (OK520520). | Instantaneous = 99.7%, Geo Mean = 92.9% | Unknown - Appendix E is missing from the April 6, 2010 TMDL on ODEQ website | Segment crosses Council between I-40 and SW 15th Street. Additional sampling should be conducted. Two wastewater treatment plants have been worked on by ODEQ. | Schedule bacteria monitoring in the segment to determine current status.  | ACOG 2003  | LDC       |
|                      |                    | 5a        | PBCR                                    | <i>E. coli</i>      | <i>E. coli</i>                    | Pending                  |                 | 2022                   | 2014 303d listing  |   |   |  |   |  |           |
|                      |                    | 5a        | WWAC                                    | Dissolved Oxygen    | Nutrients, CBOD, SOD <sup>2</sup> | Pending                  |                 | 2022                   | 2014 303d listing  |   |   |  |   |  |           |
|                      |                    | 5c        | AES, WWAC                               | Oil and Grease      | Oil and Grease                    | Requires additional data |                 | 2022                   | 2014 303d listing.   |   |   | Segment crosses Council between I-40 and SW 15th Street. Unknown listing agency. Should conduct monitoring to determine if Oil and                             | OKC should immediately schedule a monitoring program to determine if Oil and Grease is still a problem at the location. | Unknown listing Agency (need to research this segment) |           |

| Waterbody      | WBID               | Category* | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions      | Segment TMDL              | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments   | Load Reductions                         | Monitoring Required   | Comments  | Action  | Recent Data   | TMDL Type |
|----------------|--------------------|-----------|---|---------------------|-----------------------------------|---------------------------|-----------------|------------------------|--|---|---|---|---|---|-----------|
|                |                    |           |   |                     |                                   |                           |                 |                        |  |   |   | Grease issue is still present at location.  |   |   |           |
| Campbell Creek | OK 520520000230_00 | 5a        | WWAC                                    | Dissolved Oxygen    | Nutrients, CBOD, SOD <sup>2</sup> | Pending                   |                 | 2022                   | Priority Watershed sampling in 2016-2017. <i>Data must be reviewed for possible delisting.</i>   |   |   | Campbell Creek is a 4,984.4 acre watershed. 4,386.7 acres are in OKC (88%). Impacted communities: OKC and Mustang | Stations are being monitored 2016-2017. New data should provide additional information to determine the current status of stream segment. | OKC 2003-2005 (Watershed Characterization Project)  |           |
|                |                    | 5b        | AG                                      | Sulfates            | Sulfates                          | Awaiting standards review |                 | 2022                   | 2014 303d listing, probably see new site-specific criteria. Priority Watershed sampling in 2016-2017. <i>Data must be reviewed for possible delisting.</i> |   |   | Campbell Creek is a 4,984.4 acre watershed. 4,386.7 acres are in OKC (88%). Impacted communities: OKC and Mustang | Stations are being monitored 2016-2017. New data should provide additional information to determine the current status of stream segment. | OKC 2003-2005 (Watershed Characterization Project)  |           |
| Mustang Creek  | OK 520520000240_00 | 4a        | PBCR                                    | <i>E. coli</i>      | <i>E. coli</i>                    | 38874                     |                 | Completed              | Bacteria Total Maximum Daily Load (TMDL) for North Canadian River Area (OK520520).   | Instantaneous = 88.8%, Geo Mean = 42.6% | Unknown - Appendix E is missing from the April 6, 2010 TMDL on ODEQ website | 15,228.1 acres in OKC. Impacted communities: OKC, Mustang   | Critically assess basin-wide data recently collected in develop funding for BMP implementation in impacted areas.                         | OKC 2003-2005 (Watershed Characterization Project Site 654). OKC 2012 -2013 (Priority Watershed Project Sites 654, 908, 914 and 926.) | LDC       |
|                |                    | 5a        | WWAC                                    | Dissolved Oxygen    | Nutrients, CBOD, SOD <sup>2</sup> | Pending                   |                 | 2022                   | 2014 303d listing  |   |   | 15,228.1 acres in OKC. Impacted communities:  | Critically assess basin-wide data recently collected in develop funding for BMP   | OKC 2003-2005 (Watershed Characterization Project Site  |           |

| Waterbody             | WBID               | Category* | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions      | Segment TMDL              | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments  | Load Reductions | Monitoring Required | Comments  | Action   | Recent Data   | TMDL Type |
|-----------------------|--------------------|-----------|---|---------------------|-----------------------------------|---------------------------|-----------------|------------------------|---|-----------------|---------------------|---|--|---|-----------|
|                       |                    |           |   |                     |                                   |                           |                 |                        |   |                 |                     | OKC, Mustang  | implementation in impacted areas.                      | 654). OKC 2012 -2013 (Priority Watershed Project Site 654 (FS), 908 (NS), 914 (NS) and 926 (FS) |           |
| North Canadian River  | OK 520520000250_00 | 5a        | WWAC                                    | Turbidity           | TSS                               | Pending                   |                 | 2022                   | 2014 303d listing.  |                 |                     | Segment near SW 15th and County Line to Overholser. USGS gauging station. SWQ has not monitored this segment of the NCR. Future monitoring efforts should be directed to determine if the segment is impaired by turbidity. | Develop a monitoring program to assess current status. | Must research to determine listing agency. (Possibly USGS)                                      |           |
| Overholser Lake       | OK 520520000260_00 | 5a        | WWAC                                    | Turbidity           | TSS                               | Pending                   |                 | 2022                   | 2014 303d listing   |                 |                     | Undetermined  | Need to communicate with Utilities Department          | No data collected by SWQ  |           |
|                       |                    | 5b        | AG                                      | Sulfates            | Sulfates                          | Awaiting standards review |                 | 2022                   | 2014 303d listing, probably see new site-specific criteria. |                 |                     | Undetermined  | Need to communicate with Utilities Department          | No data collected by SWQ  |           |
| Airport Heights Creek | OK 520520000350_00 | 5a        | WWAC                                    | Turbidity           | TSS                               | In development            |                 | 2016                   | <i>Data requested by State, TMDL in development.</i>        |                 |                     | 1,486.4 Acres in OKC (100%)   | Scheduled to start monitoring January 2019-2020        | 2003-2005 (Watershed Characterization Project)  |           |
|                       |                    | 5a        | WWAC                                    | Dissolved Oxygen    | Nutrients, CBOD, SOD <sup>2</sup> | In development            |                 | 2016                   | <i>Data requested by State,</i>                             |                 |                     | 1,486.4 Acres in OKC (100%)   | Scheduled to start monitoring January 2019-2020        | 2003-2005 (Watershed Characterization Project)  |           |

| Waterbody            | WBID               | Category* | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions | Segment TMDL | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments   | Load Reductions | Monitoring Required    | Comments   | Action                                | Recent Data  | TMDL Type |
|----------------------|--------------------|-----------|---|---------------------|------------------------------|--------------|-----------------|------------------------|--|-----------------|------------------------|--|---------------------------------------|--|-----------|
|                      |                    |           |   |                     |                              |              |                 |                        | <i>TMDL in development.</i>  |                 |                        |  |                                       | on Project)  |           |
| North Canadian River | OK 520530000010_00 | 5a        | PBCR                                    | <i>Enterococci</i>  | <i>Enterococci</i>           | Pending      |                 | 2022                   | 2014 303d listing  |                 |                        |  |                                       |  |           |
|                      |                    | 5a        | PBCR                                    | <i>E. coli</i>      | <i>E. coli</i>               | Pending      |                 | 2022                   | 2014 303d listing  |                 |                        |  |                                       |  |           |
| Shell Creek          | OK 520530000030_00 | 4a        | PBCR                                    | <i>Enterococci</i>  | <i>Enterococci</i>           | 33889        |                 | Completed              | Bacteria Total Maximum Daily Loads for North Canadian River and Shell Creek, in the North Canadian River Basin (OKWBID 52053). | 0%              | No Monitoring Required | TMDL was developed by Parson's engineering based for the North Canadian River. Shell was violating fecal coliform criteria. This criteria has been removed from State WQ standards. The TMDL has been removed. 2014 303(d) has the segment as Cat 4a for <i>Enterococci</i> and <i>E. coli</i> . | No MS4 Requirements listed. No Action | OKC 2003-2005 (Watershed Characterization Project Site 640) (NS). Priority Monitoring Project 2012-2013 (Sites 640 (NS), 932 (NS), 939 (NS), and 942 (NS)) |           |
|                      |                    | 4a        | PBCR                                    | <i>E. coli</i>      | <i>E. coli</i>               | 33889        |                 | Completed              | Bacteria Total Maximum Daily Loads for North Canadian River and Shell Creek, in the North Canadian River Basin (OKWBID         | 0%              | No Monitoring Required | TMDL was developed by Parson's engineering based for the North Canadian River. Shell was violating fecal coliform criteria. This criteria has been removed from State  | No MS4 Requirements listed. No Action | OKC 2003-2005 (Watershed Characterization Project Site 640) (NS). Priority Monitoring Project 2012-2013 (Sites 640 (NS), 932 (NS), 939 (NS), and 942 (NS)) |           |



| Waterbody              | WBID               | Category* | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions      | Segment TMDL             | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments                               | Load Reductions  | Monitoring Required | Comments   | Action  | Recent Data   | TMDL Type         |
|------------------------|--------------------|-----------|---|---------------------|-----------------------------------|--------------------------|-----------------|------------------------|--|--|---------------------|--|---|---|-------------------|
|                        |                    |           |   |                     |                                   |                          |                 |                        | 52053).  |  |                     | WQ standards. The TMDL has been removed. 2014 303(d) has the segment as Cat 4a for Entero and E. coli. |   |   |                   |
|                        |                    | 5a        | WWAC                                    | Dissolved Oxygen    | Nutrients, CBOD, SOD <sup>2</sup> | Draft                    |                 | 2022                   | <i>Draft TMDL in review.</i>                   | TN = 56.3%<br>TP=67.5%<br>OM Dry = 62%<br>OM Wet = 64% | Yes                 | Pre-TMDL in review   | Legal - Ag issue. Considering placement of long-term monitoring station if TMDL commences | OKC 2003-2005 (Watershed Characterization on Project Site 640) (NS). Priority Monitoring Project 2012-2013 (Sites 640 (NS), 932 (NS), 939 (NS), and 942 (NS)); OKC/ODEQ TMDL support monitoring | LDC (and QUAL2 K) |
| <b>Perimeter Creek</b> | OK 520530000270_00 | 5c        | AES, WWAC                               | Oil and Grease      | Oil and Grease                    | Requires additional data |                 | 2022                   | <i>Submission of recent data could delist.</i> |  |                     | New data suggest no listing needed.  | Letter must be issued regarding current status to the State of Oklahoma                   | OKC 2003-2005 (Watershed Characterization on Site 641) (NS). OKC 2012-2013 (Priority Based Monitoring Program Site 641) (NS)  |                   |
| <b>Cow Creek</b>       | OK 520610010230_00 | 5a        | WWAC                                    | Dissolved Oxygen    | Nutrients, CBOD, SOD <sup>2</sup> | Pending                  |                 | 2022                   | 2014 303d listing                              |  |                     | Will impact the City Facilities (FAA/Airports)   | Data currently not analysed. Priority to work up and finish reports.                      | OKC 2002-2004 (Watershed Characterization on Site 561 and 562).   |                   |

| Waterbody            | WBID               | Category* | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions      | Segment TMDL | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments  | Load Reductions | Monitoring Required | Comments   | Action   | Recent Data  | TMDL Type |
|----------------------|--------------------|-----------|---|---------------------|-----------------------------------|--------------|-----------------|------------------------|-------------------|-----------------|---------------------|--|--|--|-----------|
|                      |                    |           |   |                     |                                   |              |                 |                        |                   |                 |                     |  |  | OKC 2015-2016 (Priority Based Monitoring - Sites 561 and 562)  |           |
|                      |                    | 5a        | WWAC                                    | Selenium            | Selenium                          | Pending      |                 | 2022                   | 2014 303d listing |                 |                     | Will impact the City Facilities (FAA/Airports)   | Data currently not analyzed. Priority to work up and finish reports.   | OKC 2002-2004 (Watershed Characterization on Site 561 and 562 - did not monitor selenium). OKC 2015-2016 (Priority Based Monitoring - Sites 561 and 562 - selenium measured) |           |
| <b>Foreman Creek</b> | OK 520610020060_00 | 5a        | WWAC                                    | Dissolved Oxygen    | Nutrients, CBOD, SOD <sup>2</sup> | Pending      |                 | 2022                   | 2014 303d listing |                 |                     | Will impact OKC and Mustang. 3869.55 acre watershed. 3861.6 acres in OKC (99.8%). ~78% Agriculture | Must analyze all information to determine if segment pooled data is meeting State WQ standards. Upstream segment may be intermittent/ephemeral. If so, letter must be issued to State of Oklahoma. | OKC 2002-2004 (Watershed Characterization on Site 28 (NS)). OKC 2012-2013 (Priority Based Monitoring - Sites 28 (FS) and 1179 (NS))  |           |
| <b>Dry Creek</b>     | OK 520610020070_00 | 5a        | WWAC                                    | Dissolved Oxygen    | Nutrients, CBOD, SOD <sup>2</sup> | Pending      |                 | 2022                   | 2014 303d listing |                 |                     | Will impact OKC and Union City. 4298 acres in OKC. ~97% is agricultural based land use.            | No Action  | OKC 2002-2004 (Watershed Characterization on Project Site 555 (NS)). OKC 2012-2013 (Priority Based Monitoring Site 555 (NS) and 1187 (NS)).                                  |           |

| Waterbody       | WBID               | Category* | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment   | Required/Probable Reductions | Segment TMDL             | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments                               | Load Reductions | Monitoring Required | Comments   | Action   | Recent Data   | TMDL Type |
|-----------------|--------------------|-----------|---|-----------------------|------------------------------|--------------------------|-----------------|------------------------|--|-----------------|---------------------|--|--|---|-----------|
|                 |                    | 5c        | AES, WWAC, PPWS                         | Oil and Grease        | Oil and Grease               | Requires additional data |                 | 2022                   | <i>Submission of recent data could delist.</i> |                 |                     | New data suggest no listing needed.  | Issue letter to State of Oklahoma regarding Oil and Grease meeting State WQ standards. | OKC 2002-2004 (Watershed Characterization on Project Site 555 (NS)). OKC 2012-2013 (Priority Based Monitoring Site 555 (FS) and 1187 (FS)). |           |
| Deep Fork River | OK 520710010010_00 | 5a        | PBCR                                    | <i>Enterococci</i>    | <i>Enterococci</i>           | Pending                  |                 | 2019                   | 2014 303d listing                              |                 |                     | Limited segment in OKC. Very rural conditions. Area extends into OKC from largely rural land use. Stopped potential TMDL area at Lake Arcadia. |  |   |           |
|                 |                    | 5a        | PBCR                                    | <i>E. coli</i>        | <i>E. coli</i>               | Pending                  |                 | 2019                   | 2014 303d listing                              |                 |                     | Limited segment in OKC. Very rural conditions. Area extends into OKC from largely rural land use. Stopped potential TMDL area at Lake Arcadia. |  |   |           |
|                 |                    | 5c        | WWAC                                    | Fishes Bioassessments | Unknown                      | Requires additional data |                 | 2019                   | 2014 303d listing                              |                 |                     | Limited segment in OKC. Very rural conditions. Area extends into OKC   | Need to find listing agency  |   |           |

| Waterbody    | WBID               | Category* | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment   | Required/Probable Reductions | Segment TMDL             | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments   | Load Reductions | Monitoring Required | Comments   | Action   | Recent Data  | TMDL Type |
|--------------|--------------------|-----------|---|-----------------------|------------------------------|--------------------------|-----------------|------------------------|--|-----------------|---------------------|--|--|--|-----------|
|              |                    |           |   |                       |                              |                          |                 |                        |  |                 |                     | from largely rural land use. Stopped potential TMDL area at Lake Arcadia.  |  |  |           |
|              |                    | 5c        | WWAC                                    | Macroinvertebrate Bio | Unknown                      | Requires additional data |                 | 2019                   | 2014 303d listing  |                 |                     | Limited segment in OKC. Very rural conditions. Area extends into OKC from largely rural land use. Stopped potential TMDL area at Lake Arcadia. | Need to find listing agency                          |  |           |
| Coon Creek   | OK 520710010030_00 | 5a        | WWAC                                    | Chlorpyrifos          | Chlorpyrifos                 | Pending                  |                 | 2019                   | Chlorpyrifos monitoring scheduled for 2018 Priority Watershed. |                 |                     | Very limited area in OKC. Rural land use. 374 acres in OKC.  | Scheduled to start monitoring January 2018-2020      | 2009-2011 (Watershed Characterization Site 1322). Meeting all BU. Not assessed for chlorpyrifos. |           |
| Arcadia Lake | OK 520710020020_00 | 5a        | PPWS                                    | Chlorophyll-a         | Nutrients*                   | In development           |                 | 2019                   | <i>Data requested by State, TMDL in development.</i>           |                 |                     | This will impact OKC. Large watershed which drains a significant portion of the City (43,792.8 acres). OWRB conducting the monitoring.         | Work with the State in the TMDL development process. | Unknown Listing Agency (probably OWRB BUMP Program)  |           |
|              |                    | 5a        | WWAC                                    | Turbidity             | TSS                          | In development           |                 | 2019                   | <i>Data requested by State, TMDL in development.</i>           |                 |                     | This will impact OKC. Large watershed  | Work with the State in the TMDL development process. | Unknown Listing Agency (probably   |           |

| Waterbody        | WBID               | Category* | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions | Segment TMDL             | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments            | Load Reductions               | Monitoring Required | Comments   | Action  | Recent Data        | TMDL Type  |
|------------------|--------------------|-----------|---|---------------------|------------------------------|--------------------------|-----------------|------------------------|-----------------------------|-------------------------------|---------------------|--|---|--------------------|------------|
|                  |                    |           |   |                     |                              |                          |                 |                        | <i>development.</i>         |                               |                     | which drains a significant portion of the City (43,792.8 acres). OWRB conducting the monitoring.   |   | OWRB BUMP Program) |            |
| Deep Fork River  | OK 520710020060_00 | 5a        | PBCR                                    | <i>Enterococci</i>  | <i>Enterococci</i>           | Pending                  |                 | 2019                   | 2014 303d listing           |                               |                     | This will impact OKC. Large watershed which drains a significant portion of the City (43,792.8 acres). OWRB <b>may be</b> conducting the monitoring. | Need to determine if OWRB is monitoring for bacteria for the Arcadia TMDL |                    |            |
|                  |                    | 5a        | PBCR                                    | <i>E. coli</i>      | <i>E. coli</i>               | Pending                  |                 | 2019                   | 2014 303d listing           |                               |                     | This will impact OKC. Large watershed which drains a significant portion of the City (43,792.8 acres). OWRB <b>may be</b> conducting the monitoring. | Need to determine if OWRB is monitoring for bacteria for the Arcadia TMDL |                    |            |
| Pecan Creek      | OK 520800020080_00 | 5c        | AES, WWAC                               | Oil and Grease      | <i>Oil and Grease</i>        | Requires additional data |                 | 2025                   | 2014 303d listing.          |                               |                     |  |   |                    |            |
| Thunderbird Lake | OK 520810000020_00 | 4a        | PPWS                                    | Chlorophyll-a       | <b>Nutrients</b>             | 55040                    |                 | Completed              | Lake Thunderbird Report for | Annual WLAs for TN, TP, CBOD, | Yes                 | Impacts OKC with WLA and required reductions.  | Load Reductions, Monitoring, Reporting                                    |                    | EFDC, HSPF |

| Waterbody | WBID | Category*       | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions | Segment TMDL | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments  | Load Reductions                   | Monitoring Required | Comments                                      | Action                                 | Recent Data | TMDL Type  |
|-----------|------|-----------------|---|---------------------|------------------------------|--------------|-----------------|------------------------|---|-----------------------------------|---------------------|---|--|-------------|------------|
|           |      |                 |   |                     |                              |              |                 |                        | Nutrient, Turbidity, and Dissolved Oxygen TMDLs   | TSS                               |                     |   |  |             |            |
|           |      | 4a              | WWAC                                    | Dissolved Oxygen    | None                         | 55040        |                 | Completed              | Lake Thunderbird Report for Nutrient, Turbidity, and Dissolved Oxygen TMDLs. No actual reductions required for CBOD in TMDL.  |                                   |                     |   |  |             | EFDC, HSPF |
|           |      | 4a <sup>3</sup> | WWAC                                    | Turbidity           | TSS                          | 55040        |                 | Completed              | Lake Thunderbird Report for Nutrient, Turbidity, and Dissolved Oxygen TMDLs. <i>No longer listed for turbidity in 2014 303d.</i> 2014 Integrated report delisting justification states: WQS attained, only 7% of values during 10 year period | Annual WLAs for TN, TP, CBOD, TSS | Yes                 | Impacts OKC with WLA and required reductions. | Load Reductions, Monitoring, Reporting |             | EFDC, HSPF |

| Waterbody | WBID              | Category*       | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions | Segment TMDL | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments   | Load Reductions                   | Monitoring Required | Comments  | Action                                  | Recent Data   | TMDL Type  |
|-----------|-------------------|-----------------|---|---------------------|------------------------------|--------------|-----------------|------------------------|--|-----------------------------------|---------------------|---|---|---|------------|
|           |                   |                 |   |                     |                              |              |                 |                        | exceed 25 NTU.   |                                   |                     |   |   |   |            |
| Hog Creek | OK 52081000030_00 | 4a              | PPWS                                    | Chlorophyll-a       | Nutrients                    |              | 55040           | Completed              | Hog Creek discharges to Thunderbird Lake, which is subject to TMDL reductions.   | Annual WLAs for TN, TP, CBOD, TSS | Yes                 | Probably covered by Lake T-Bird TMDL Appendix E | Ongoing Monitoring for Lake T-Bird TMDL | 2002-2004 (Watershed Characterization on Site 24), 2016 TMDL Monitoring | EFDC, HSPF |
|           |                   | 4a              | WWAC                                    | Dissolved Oxygen    | None                         |              | 55040           | Completed              | Hog Creek discharges to Thunderbird Lake, which is subject to TMDL reductions. No actual reductions required for CBOD in TMDL.   | Annual WLAs for TN, TP, CBOD, TSS | Yes                 | Probably covered by Lake T-Bird TMDL Appendix E | Ongoing Monitoring for Lake T-Bird TMDL | 2002-2004 (Watershed Characterization on Site 24), 2016 TMDL Monitoring | EFDC, HSPF |
|           |                   | 4a <sup>3</sup> | WWAC                                    | Turbidity           | TSS                          |              | 55040           | Completed              | Hog Creek discharges to Thunderbird Lake, which is subject to TMDL reductions. <i>T-bird no longer listed for turbidity in 2014 303d.</i> 2014 Integrated report delisting | Annual WLAs for TN, TP, CBOD, TSS | Yes                 | Probably covered by Lake T-Bird TMDL Appendix E | Ongoing Monitoring for Lake T-Bird TMDL | 2002-2004 (Watershed Characterization on Site 24), 2016 TMDL Monitoring | EFDC, HSPF |

| Waterbody              | WBID               | Category* | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions      | Segment TMDL | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments   | Load Reductions | Monitoring Required | Comments   | Action  | Recent Data   | TMDL Type |
|------------------------|--------------------|-----------|---|---------------------|-----------------------------------|--------------|-----------------|------------------------|--|-----------------|---------------------|--|---|---|-----------|
|                        |                    |           |   |                     |                                   |              |                 |                        | justification states: WQS attained, only 7% of values during 10 year period exceed 25 NTU. |                 |                     |  |   |   |           |
|                        |                    | 5a        | PBCR                                    | <i>Enterococci</i>  | <i>Enterococci</i>                | Pending      |                 | 2016                   | 2014 303d listing  |                 |                     | Bacterial indicators are not covered under the existing Lake T-Bird TMDL. It is likely that BMPs for nutrients and turbidity would reduce bacterial numbers. | Most recent data was collected under the Watershed Characterization Project. No recent available. City should add additional bacteria monitoring for E. coli and enterococcus | 2002-2004 (Watershed Characterization on Site 24), 2016 TMDL Monitoring |           |
|                        |                    | 5a        | PBCR                                    | <i>E. coli</i>      | <i>E. coli</i>                    | Pending      |                 | 2016                   | 2014 303d listing  |                 |                     | Bacterial indicators are not covered under the existing Lake T-Bird TMDL. It is likely that BMPs for nutrients and turbidity would reduce bacterial numbers. | Most recent data was collected under the Watershed Characterization Project. No recent available. City should add additional bacteria monitoring for E. coli and enterococcus | 2002-2004 (Watershed Characterization on Site 24), 2016 TMDL Monitoring |           |
|                        |                    | 5a        | WWAC                                    | Dissolved Oxygen    | Nutrients, CBOD, SOD <sup>2</sup> | Pending      |                 | 2016                   | 2014 303d listing  |                 |                     |  |   |   |           |
|                        |                    | 5a        | WWAC                                    | Turbidity           | TSS                               | Pending      |                 | 2016                   | 2014 303d listing  |                 |                     |  |   |   |           |
| Hog Creek, West Branch | OK 520810000040_00 | 4a        | PPWS                                    | Chlorophyll-a       | Nutrients                         |              | 55040           | Completed              | Indirectly discharges to Thunderbir  |                 |                     |  |   |   |           |



| Waterbody | WBID | Category*       | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions | Segment TMDL | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments   | Load Reductions | Monitoring Required | Comments | Action | Recent Data | TMDL Type |
|-----------|------|-----------------|---|---------------------|------------------------------|--------------|-----------------|------------------------|--|-----------------|---------------------|----------|--------|-------------|-----------|
|           |      |                 |   |                     |                              |              |                 |                        | d Lake, which is subject to TMDL reductions.   |                 |                     |          |        |             |           |
|           |      | 4a              | WWAC                                    | Dissolved Oxygen    | None                         |              | 55040           | Completed              | Indirectly discharges to Thunderbird Lake, which is subject to TMDL reductions. No actual reductions required for CBOD in TMDL.  |                 |                     |          |        |             |           |
|           |      | 4a <sup>3</sup> | WWAC                                    | Turbidity           | TSS                          |              | 55040           | Completed              | Indirectly discharges to Thunderbird Lake, which is subject to TMDL reductions. <i>T-bird no longer listed for turbidity in 2014 303d.</i> 2014 Integrated report delisting justification states: WQS attained, only 7% of values during 10 year period exceed 25 NTU. |                 |                     |          |        |             |           |

| Waterbody | WBID               | Category*       | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions      | Segment TMDL | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments   | Load Reductions                   | Monitoring Required | Comments                             | Action | Recent Data  | TMDL Type  |
|-----------|--------------------|-----------------|---|---------------------|-----------------------------------|--------------|-----------------|------------------------|--|-----------------------------------|---------------------|--------------------------------------|--------|--|------------|
|           |                    | 5a              | WWAC                                    | Dissolved Oxygen    | Nutrients, CBOD, SOD <sup>2</sup> | Pending      |                 | 2016                   | 2014 303d listing  |                                   |                     |                                      |        |  |            |
| Elm Creek | OK 520810000100_00 | 4a              | PPWS                                    | Chlorophyll-a       | Nutrients                         |              | 55040           | Completed              | Elm Creek discharges to Thunderbird Lake, which is subject to TMDL reductions.   |                                   |                     |                                      |        |  |            |
|           |                    | 4a              | WWAC                                    | Dissolved Oxygen    | None                              |              | 55040           | Completed              | Elm Creek discharges to Thunderbird Lake, which is subject to TMDL reductions. No actual reductions required for CBOD in TMDL.   | Annual WLAs for TN, TP, CBOD, TSS | Yes                 | Probably covered by Lake T-Bird TMDL |        | 2002-2004 (Watershed Characterization on Site 573) | EFDC, HSPF |
|           |                    | 4a <sup>3</sup> | WWAC                                    | Turbidity           | TSS                               |              | 55040           | Completed              | Elm Creek discharges to Thunderbird Lake, which is subject to TMDL reductions. <i>T-bird no longer listed for turbidity in 2014 303d.</i> 2014 Integrated report delisting justification states: WQS |                                   |                     |                                      |        |  |            |

| Waterbody       | WBID               | Category* | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions | Segment TMDL              | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments  | Load Reductions  | Monitoring Required | Comments  | Action  | Recent Data  | TMDL Type |
|-----------------|--------------------|-----------|---|---------------------|------------------------------|---------------------------|-----------------|------------------------|---|------------------|---------------------|---|---|--|-----------|
|                 |                    |           |   |                     |                              |                           |                 |                        | attained, only 7% of values during 10 year period exceed 25 NTU.                |                  |                     |   |   |  |           |
|                 |                    | 5a        | PBCR                                    | <i>E. coli</i>      | <i>E. coli</i>               | Draft                     |                 | 2016                   | <i>Draft TMDL in review.</i>  | WQS with 10% MOS | Yes                 | Elm Creek segment receives direct influence from Elm Creek West which has a draft TMDL. | OKC is currently monitoring the segment for the Lake T-Brid TMDL (Station 570). Bacteria can be added to the schedule during the recreational season after the TMDL is approved by EPA. | 2002-2004 (Watershed Characterization Site 570). Recent monitoring 2014-2015 did not sample for E. coli. |           |
|                 |                    | 5a        | WWAC                                    | Turbidity           | TSS                          | Pending                   |                 | 2016                   | <i>Priority Watershed Data was fully supporting.</i>                            |                  |                     | Probably covered by Lake T-Bird TMDL  | Recommend delisting for Turbidity based on OKC data   | 2002-2004 (Watershed Characterization Site 570)  |           |
|                 |                    | 5b        | AG                                      | TDS                 | TDS                          | Awaiting standards review |                 | 2016                   | 2014 303d listing   |                  |                     | Appropriate listing.  | TDS monitored during the Priority Monitoring Program. TDS data not supporting WQ Standards.   | Unknown original listing agency. Priority Monitoring conducted 2014-2015 supports original listing.      |           |
| Elm Creek, East | OK 520810000110_00 | 4a        | PPWS                                    | Chlorophyll-a       | Nutrients                    |                           | 55040           | Completed              | Indirectly discharges to Thunderbird Lake, which is subject to TMDL reductions. |                  |                     |   |   |  |           |
|                 |                    | 4a        | WWAC                                    | Dissolved Oxygen    | None                         |                           | 55040           | Completed              | Indirectly discharges to Thunderbird Lake,                                      |                  |                     |   |   |  |           |

| Waterbody | WBID | Category*       | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions      | Segment TMDL | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments   | Load Reductions | Monitoring Required | Comments  | Action  | Recent Data   | TMDL Type |
|-----------|------|-----------------|---|---------------------|-----------------------------------|--------------|-----------------|------------------------|--|-----------------|---------------------|---|---|---|-----------|
|           |      |                 |   |                     |                                   |              |                 |                        | which is subject to TMDL reductions. No actual reductions required for CBOD in TMDL.   |                 |                     |   |   |   |           |
|           |      | 4a <sup>3</sup> | WWAC                                    | Turbidity           | TSS                               |              | 55040           | Completed              | Indirectly discharges to Thunderbird Lake, which is subject to TMDL reductions. <i>T-bird no longer listed for turbidity in 2014 303d.</i> 2014 Integrated report delisting justification states: WQS attained, only 7% of values during 10 year period exceed 25 NTU. |                 |                     |   |   |   |           |
|           |      | 5a              | WWAC                                    | Dissolved Oxygen    | Nutrients, CBOD, SOD <sup>2</sup> | Pending      |                 | 2016                   | <i>Priority Watershed Data was fully supporting.</i>   |                 |                     | Meeting State Standards but probably covered under Lake T-Bird TMDL | OK Issue Letter to State regarding segment meeting water quality standards. | 2002-2004 (Watershed Characterization on Site 571). 2014-2015 (Priority Based Watershed ) |           |

| Waterbody           | WBID               | Category*       | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions | Segment TMDL             | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments  | Load Reductions | Monitoring Required | Comments  | Action    | Recent Data | TMDL Type |
|---------------------|--------------------|-----------------|---|---------------------|------------------------------|--------------------------|-----------------|------------------------|---|-----------------|---------------------|---|-----------|-------------|-----------|
| Stanley Draper Lake | OK 520810000130_00 | 5a              | WWAC                                    | Turbidity           | TSS                          | Pending                  |                 | 2016                   | 2014 303d listing   |                 |                     | 7,589.4 Acre watershed. Lake accounts for 2,561 Acres (33.8%). May be an internal issue with regard to source waters. | No Action | Unknown     |           |
|                     |                    | 5c              | FC                                      | Mercury             | Mercury                      | Requires additional data |                 | 2016                   | 2014 303d listing.  |                 |                     | Do not believe this will be a storm water issue.  | No Action | Unknown     |           |
| Elm Creek, West     | OK 520810000140_00 | 4a              | PPWS                                    | Chlorophyll-a       | Nutrients                    |                          | 55040           | Completed              | Indirectly discharges to Thunderbird Lake, which is subject to TMDL reductions.   |                 |                     |   |           |             |           |
|                     |                    | 4a              | WWAC                                    | Dissolved Oxygen    | None                         |                          | 55040           | Completed              | Indirectly discharges to Thunderbird Lake, which is subject to TMDL reductions. No actual reductions required for CBOD in TMDL. |                 |                     |   |           |             |           |
|                     |                    | 4a <sup>3</sup> | WWAC                                    | Turbidity           | TSS                          |                          | 55040           | Completed              | Indirectly discharges to Thunderbird Lake, which is subject to TMDL   |                 |                     |   |           |             |           |

| Waterbody | WBID | Category* | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions | Segment TMDL | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments  | Load Reductions  | Monitoring Required | Comments  | Action  | Recent Data | TMDL Type |
|-----------|------|-----------|---|---------------------|------------------------------|--------------|-----------------|------------------------|---|------------------|---------------------|---|---|-------------|-----------|
|           |      |           |   |                     |                              |              |                 |                        | reductions. <i>T-bird no longer listed for turbidity in 2014 303d.</i><br>2014 Integrated report delisting justification states: WQS attained, only 7% of values during 10 year period exceed 25 NTU. |                  |                     |   |   |             |           |
|           |      | 5a        | PBCR                                    | <i>Enterococci</i>  | <i>Enterococci</i>           | Draft        |                 | 2016                   | 2015 Bacterial Total Maximum Daily Loads for Oklahoma Streams in the Canadian River Area (OK520810)   | WQS with 10% MOS | Yes                 | TMDL is currently in draft. Waiting for EPA approval. | Will be required to develop a bacteria monitoring plan and bacteria reduction plan. |             |           |
|           |      | 5a        | PBCR                                    | <i>E. coli</i>      | <i>E. coli</i>               | Draft        |                 | 2016                   | 2015 Bacterial Total Maximum Daily Loads for Oklahoma Streams in the Canadian River Area (OK520810)   | WQS with 10% MOS | Yes                 | TMDL is currently in draft. Waiting for EPA approval. | Will be required to develop a bacteria monitoring plan and bacteria reduction plan. |             |           |

| Waterbody      | WBID               | Category* | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions | Segment TMDL | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments   | Load Reductions | Monitoring Required | Comments   | Action  | Recent Data   | TMDL Type |
|----------------|--------------------|-----------|---|---------------------|------------------------------|--------------|-----------------|------------------------|--|-----------------|---------------------|--|---|---|-----------|
| Chisholm Creek | OK 620910040100_00 | 5a        | PPWS                                    | Nitrates            | Nitrates                     | Pending      |                 | 2019                   | <i>Recent Priority Watershed Data could cause delisting, although this would require breaking Chisholm Creek into more segments.</i>                             | No OKC MS4 WLA  | No                  | Meeting State Standards at City limits. This is a WWTP issue. Recommend adding a water body segment. Discussions with Utilities Dept. related that upgrades to a City owned WWTF are required to meet discharge and downstream standards. Monitoring data provides that nitrate levels at the MS4 boundary are meeting State WQ Standards. | OK Issue Letter to State regarding data findings 2013-2014. Meeting Nitrate WQ standards at monitoring station. | 2007-2009 (Watershed Characterization on Project Site 622). 2013-2014 Priority Based Monitoring Program   |           |
| Deer Creek     | OK 620910040120_00 | 4a        | PBCR                                    | Enterococci         | Enterococci                  | 37408        |                 | Completed              | Bacteria Total Maximum Daily Loads for the Lower Cimarron River-Skeleton Creek Area (OK620910). <i>This TMDL lists reductions for fecal coliforms but not E.</i> |                 |                     | TMDL will impact a large portion of NW OKC (50,551.7 acres). Segment includes Bluff, Walnut, Deer, Soldier, and Piedmont Creeks  | Provide recent data when TMDL development process begins.   | 2007-2009 (Watershed Characterization on Project Sites 741, 46, 44, 769, 772) and Priority Based Monitoring Program 109, 741). OWRB has sampled E. coli in 2001, 02, 07, and 09 to total 13 samples. OWRB has |           |

| Waterbody | WBID | Category* | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions | Segment TMDL | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments   | Load Reductions | Monitoring Required | Comments  | Action  | Recent Data   | TMDL Type |
|-----------|------|-----------|---|---------------------|------------------------------|--------------|-----------------|------------------------|--|-----------------|---------------------|---|---|---|-----------|
|           |      |           |   |                     |                              |              |                 |                        | <i>coli or enterococci</i>   |                 |                     |   |   | sampled for Ent. 01, 02 (5 samples). OKC 2013-2014 Priority Monitoring is NS for E. coli or Enterococci at all sites in Bluff Creek.  |           |
|           |      | 4a        | PBCR                                    | <i>E. coli</i>      | <i>E. coli</i>               | 37408        |                 | Completed              | Bacteria Total Maximum Daily Loads for the Lower Cimarron River-Skeleton Creek Area (OK620910). <i>This TMDL lists reductions for fecal coliforms but not E. coli or enterococci</i> |                 |                     | TMDL will impact a large portion of NW OKC (50,551.7 acres). Segment includes Bluff, Walnut, Deer, Soldier, and Piedmont Creeks | Provide recent data when TMDL development process begins. | 2007-2009 (Watershed Characterization Project Sites 741, 46, 44, 769, 772) and Priority Based Monitoring Program 109, 741). OWRB has sampled E. coli in 2001, 02, 07, and 09 to total 13 samples. OWRB has sampled for Ent. 01, 02 (5 samples). OKC 2013-2014 Priority Monitoring is NS for E. coli or Enterococci at all sites in Bluff Creek. |           |
|           |      | 4a        | WWAC                                    | Turbidity           | <b>TSS</b>                   | 38654        |                 | Completed              | Turbidity Maximum Daily Loads for the Lower Cimarron River-Skeleton Creek Area (OK620910)  | 18%             | No                  | Stormwater MS4s are not considered in this TMDL   | No Action   |   |           |



| Waterbody          | WBID                      | Category* | Impaired Beneficial Use(s) <sup>1</sup> | Cause of Impairment | Required/Probable Reductions | Segment TMDL | Downstream TMDL | TMDL Date <sup>4</sup> | Listing Comments   | Load Reductions | Monitoring Required | Comments   | Action  | Recent Data | TMDL Type |
|--------------------|---------------------------|-----------|---|---------------------|------------------------------|--------------|-----------------|------------------------|--|-----------------|---------------------|--|---|-------------|-----------|
|                    |                           |           |   |                     |                              |              |                 |                        | ).   |                 |                     |  |   |             |           |
|                    |                           | 5a        | WWAC                                    | Chlorpyrifos        | Chlorpyrifos                 | Pending      |                 | 2019                   | 2014 303d listing  |                 |                     |  |   |             |           |
| <b>Bluff Creek</b> | OK<br>620910040140<br>_00 | 4a        | PBCR                                    | Enterococci         | Enterococci                  | 42517        |                 | Completed              | 2012 Bacteria and Turbidity Total Maximum Daily Loads for the Cimarron River Study Area (OK620900, OK620910) | 93%             | Yes                 | Appendix E - Stormwater permitting and presumptive BMP approach. | Bacteria reduction plan, bacteria monitoring plan, annual reporting. Recent data (2013-2014) Enterococci - failed 4 sites. <i>E. coli</i> failed 2 sites. |             |           |
|                    |                           | 5a        | PBCR                                    | <i>E. coli</i>      | <i>E. coli</i>               | Pending      |                 | 2019                   | 2014 303d listing  |                 |                     |  |   |             |           |

## Appendix H: NPDES Discharge Locations in Oklahoma City (Source: ODEQ 2017)

| Permit Name                         | NPDES ID  | Outfall | Location                 | City          | Permit Status   | Facility Type                      | Major-Minor | Latitude  | Longitude  |
|-------------------------------------|-----------|---------|--------------------------|---------------|-----------------|------------------------------------|-------------|-----------|------------|
| 7725 Reno #1                        | OK0045187 | 001A    | 7725 W RENO, STE 398     | OKLAHOMA CITY | Terminated      | Privately Owned Facility           | Minor       | 35.464435 | -97.648757 |
| 7725 Reno #1                        | OK0045187 | 002A    | 7725 W RENO, STE 398     | OKLAHOMA CITY | Terminated      | Privately Owned Facility           | Minor       | 35.464435 | -97.648757 |
| 7725 Reno #1                        | OK0045187 | 003A    | 7725 W RENO, STE 398     | OKLAHOMA CITY | Terminated      | Privately Owned Facility           | Minor       | 35.464435 | -97.648757 |
| 7725 Reno #1                        | OK0045187 | 004A    | 7725 W RENO, STE 398     | OKLAHOMA CITY | Terminated      | Privately Owned Facility           | Minor       | 35.464435 | -97.648757 |
| Acme Brick Co-OKC Plant             | OK0038253 | 001A    | 500 E MEMORIAL ROAD      | OKLAHOMA CITY | Admin Continued | Privately Owned Facility           | Minor       | 35.60913  | -97.50485  |
| Acme Brick Co-OKC Plant             | OK0038253 | 002A    | 500 E MEMORIAL ROAD      | OKLAHOMA CITY | Admin Continued | Privately Owned Facility           | Minor       | 35.60913  | -97.50485  |
| Belger Cartage Service, Inc.        | OKG750009 | 001A    | 3837 W. RENO             | OKLAHOMA CITY | Effective       | Privately Owned Facility           | Minor       | 35.46438  | -97.586381 |
| Coreslab Structures, Inc.           | OKG110065 | 007A    | 817 SE 55TH ST           | OKLAHOMA CITY | Effective       | Privately Owned Facility           | Minor       | 35.409877 | -97.496781 |
| Flash N Dash                        | OKG270041 | 001A    | 8002 NE 36TH             | MIDWEST CITY  | Terminated      | Privately Owned Facility           | Minor       | 35.427389 | -97.654    |
| Holiday Outt MHP                    | OK0039136 | 001A    | 604 MUSTANG PLANT ROAD   | OKLAHOMA CITY | Admin Continued | Privately Owned Facility           | Minor       | 35.472944 | -97.669528 |
| Iron Horse Car Wash, LLC            | OKG750003 | 001A    | 719 E. HIGHWAY 152       | MUSTANG       | Effective       | Privately Owned Facility           | Minor       | 35.4023   | -97.648487 |
| Mustang Improvement Authority       | OK0026816 | 001A    | 224 W. SH 152            | MUSTANG       | Admin Continued | Municipal or Water District        | Major       | 35.325194 | -97.731861 |
| OG&E-Mustang                        | OK0000477 | 001A    | 501 MUSTANG PLANT ROAD   | OKLAHOMA CITY | Effective       | Privately Owned Facility           | Minor       | 35.471111 | -97.673333 |
| OK City, City of-North Canadian     | OK0036978 | 001A    | 420 W. MAIN, SUITE 500   | OKLAHOMA CITY | Admin Continued | Municipal or Water District        | Major       | 35.596833 | -97.312556 |
| OK City, City of-South Canadian     | OK0038385 | 001A    | 420 W. MAIN, SUITE 500   | OKLAHOMA CITY | Admin Continued | Municipal or Water District        | Major       | 35.307528 | -97.558917 |
| Oklahoma City, City of- Dunjee Park | OK0030520 | 001A    | 420 WEST MAIN, SUITE 500 | OKLAHOMA CITY | Effective       | Municipal or Water District        | Minor       | 35.467806 | -97.51985  |
| Spencer, City of                    | OK0022535 | 001A    | 6401 N DOUGLAS BLVD      | SPENCER       | Admin Continued | Municipal or Water District        | Minor       | 35.537972 | -97.373222 |
| US FAA Mike Monroney Aero. Center   | OK0043931 | 001A    | 6500 S. MCARTHUR BLVD    | OKLAHOMA CITY | Admin Continued | Federal Facility (U.S. Government) | Minor       | 35.42467  | -97.618683 |
| US FAA Mike Monroney Aero. Center   | OK0043931 | 002A    | 6500 S. MCARTHUR BLVD    | OKLAHOMA CITY | Admin Continued | Federal Facility (U.S. Government) | Minor       | 35.42467  | -97.618683 |
| US FAA Mike Monroney Aero. Center   | OK0043931 | 003A    | 6500 S. MCARTHUR BLVD    | OKLAHOMA CITY | Admin Continued | Federal Facility (U.S. Government) | Minor       | 35.42467  | -97.618683 |
| US FAA Mike Monroney Aero. Center   | OK0043931 | 004A    | 6500 S. MCARTHUR BLVD    | OKLAHOMA CITY | Admin Continued | Federal Facility (U.S. Government) | Minor       | 35.42467  | -97.618683 |
| USAF-Tinker AFB-OKC                 | OK0000809 | 005A    | 7701 ARNOLD ST, STE 204  | OKLAHOMA CITY | Effective       | Federal Facility (U.S. Government) | Major       | 35.424722 | -97.377778 |
| USAF-Tinker AFB-OKC                 | OK0000809 | 006A    | 7701 ARNOLD ST, STE 204  | OKLAHOMA CITY | Effective       | Federal Facility (U.S. Government) | Major       | 35.424722 | -97.377778 |
| USAF-Tinker AFB-OKC                 | OK0000809 | 007A    | 7701 ARNOLD ST, STE 204  | OKLAHOMA CITY | Effective       | Federal Facility (U.S. Government) | Major       | 35.424722 | -97.377778 |
| USAF-Tinker AFB-OKC                 | OK0000809 | 008A    | 7701 ARNOLD ST, STE 204  | OKLAHOMA CITY | Effective       | Federal Facility (U.S. Government) | Major       | 35.424722 | -97.377778 |

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

|                                   |           |      |                              |               |           |                                    |       |           |            |
|-----------------------------------|-----------|------|------------------------------|---------------|-----------|------------------------------------|-------|-----------|------------|
| USAF-Tinker AFB-OKC               | OK0000809 | 009A | 7701 ARNOLD ST, STE 204      | OKLAHOMA CITY | Effective | Federal Facility (U.S. Government) | Major | 35.424722 | -97.377778 |
| USAF-Tinker AFB-OKC               | OK0000809 | 010A | 7701 ARNOLD ST, STE 204      | OKLAHOMA CITY | Effective | Federal Facility (U.S. Government) | Major | 35.424722 | -97.377778 |
| USAF-Tinker AFB-OKC               | OK0000809 | 011A | 7701 ARNOLD ST, STE 204      | OKLAHOMA CITY | Effective | Federal Facility (U.S. Government) | Major | 35.424722 | -97.377778 |
| USAF-Tinker AFB-OKC               | OK0000809 | 012A | 7701 ARNOLD ST, STE 204      | OKLAHOMA CITY | Effective | Federal Facility (U.S. Government) | Major | 35.424722 | -97.377778 |
| USAF-Tinker AFB-OKC               | OK0000809 | 013A | 7701 ARNOLD ST, STE 204      | OKLAHOMA CITY | Effective | Federal Facility (U.S. Government) | Major | 35.424722 | -97.377778 |
| USAF-Tinker AFB-OKC               | OK0000809 | 014A | 7701 ARNOLD ST, STE 204      | OKLAHOMA CITY | Effective | Federal Facility (U.S. Government) | Major | 35.424722 | -97.377778 |
| Veolia Energy Oklahoma City, Inc. | OK0002453 | 001A | ONE NORTH E.K. GAYLORD BLVD. | OKLAHOMA CITY | Effective | Privately Owned Facility           | Minor | 35.466472 | -97.513057 |

## Appendix I: Area Specific Construction Requirements: Lake Thunderbird Watershed Total Maximum Daily Load (TMDL) Specific Requirements for Construction Stormwater Permits



The City of  
**OKLAHOMA CITY**  
Department of Public Works  
Storm Water Quality Management



### LAKE THUNDERBIRD WATERSHED TOTAL MAXIMUM DAILY LOAD (TMDL) SPECIFIC REQUIREMENTS FOR CONSTRUCTION STORMWATER PERMITS

*In addition to the general provisions of the OKR10 General Permit for Storm Water Discharges from Construction Activities within the State of Oklahoma, construction activities authorized which are located in the Lake Thunderbird watershed will be required to:*

- A. Comply with any additional pollutant prevention or discharge monitoring requirements established by the local MS4 municipalities.
- B. Submit to the DEQ all Storm Water Pollution Prevention Plans (SWP3) for sites of five acres or larger.

*The following provisions will be included as site-specific requirements in all authorizations issued by DEQ or The City of Oklahoma City for construction activities located in the Lake Thunderbird watershed:*

- A. **Vegetated buffer.** You must ensure that a vegetated buffer of at least 100 feet is retained or successfully established/planted between the area disturbed and all receiving streams. If the nature of the construction activity or the construction site makes a buffer impossible, you must provide equivalent controls. There are exceptions from this requirement for water crossings, limited water access, and stream restoration authorized under a CWA Section 404 permit.
- B. **Sediment basins.** For all drainage locations serving 5 or more acres disturbed at one time, you must use a temporary or permanent sediment basin and/or sediment traps to minimize sediment discharges.
- C. **Site inspections.** You must conduct site inspections once every 7 calendar days at a minimum, and within 24 hours of a storm event of 0.5 inches or greater and within 24 hours of a discharge caused by snowmelt.
- D. **Corrective actions.** You must implement the corrective actions (e.g., repair, modify, or replace any stormwater control used at the site, clean up and dispose of spills, releases, or other deposits, or remedy a permit violation) by no later than 7 calendar days from the time of discovery. If it is infeasible to complete the installation or repair within 7 calendar days, you must document in your records why it is infeasible to complete the installation or repair within the 7 calendar day timeframe and document your schedule for installing the stormwater controls and making it operational as soon as practicable after the 7 day timeframe.
- E. **Stabilization.** You must initiate stabilization measures immediately whenever earth-disturbing activities have permanently or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. You are required to complete the stabilization activities within 7 calendar days after the permanent or temporary cessation.
- F. **Soil nutrient testing.** You are required to conduct a soil nutrient test to determine actual nutrient needs before applying fertilizer on your site. Fertilizer application must be limited to that necessary to meet actual needs on the site. If fertilizing is not conducted during the vegetation re-establishment, the SWP3 must clearly indicate that no fertilizer was used.

If you have any questions, contact Storm Water Quality at 297-1774.

## Appendix J: Area Specific Industrial Requirements: Lake Thunderbird Watershed Total Maximum Daily Load (TMDL) Specific Requirements for Multi-Sector General Permit (Industrial) Stormwater Permits



The City of  
**OKLAHOMA CITY**  
Department of Public Works  
Storm Water Quality Management



### LAKE THUNDERBIRD WATERSHED TOTAL MAXIMUM DAILY LOAD (TMDL) SPECIFIC REQUIREMENTS FOR MULTI-SECTOR GENERAL PERMIT (INDUSTRIAL) STORMWATER PERMITS

In addition to the general provisions of the OKR05 General Permit (General Permit for Storm Water Discharges from Industrial Facilities under the Multi-Sector Industrial General Permit [MSGP] within the State of Oklahoma), specific requirements will be added to existing and future permits for MSGP permittees in the Lake Thunderbird watershed engaged in activities specified by the Standard Industrial Classification (SIC) Code or Activity Code as:



- 2951,2952: Asphalt Paving and Roofing Materials (production).
- 3271-3275: Concrete, Gypsum and Plaster Products (production).
- 1442,1446: Sand and Gravel (mineral mining and dressing).
- Other activities deemed to be potential sources of nutrients and sediment to the Lake as determined by the DEQ on a case-by-case basis.

The following provisions will be included as site-specific requirements in existing and future authorizations under OKR05 and the City of Oklahoma City:

- A. Revise the Storm Water Pollution Prevention Plan (SWP3) for additional Total Suspended Solids and nutrient reduction measures and submit the SWP3 for DEQ review.
- B. Perform monthly inspection and maintenance of stormwater management devices, facility equipment and systems to avoid breakdowns or failures.
- C. If the permit is for an activity that includes numeric effluent limits (see Table 1-3 of the MSGP), monitoring and reporting of the discharge is required once per month rather than once per year.
- D. Comply with any additional pollutant prevention or discharge monitoring requirements established by the local MS4 municipalities. Compliance with these specific requirements must be reflected in the permittee's Annual Comprehensive Site Compliance Evaluation Report (ACSCER), in addition to documents within the SWP3.

If you have any questions, contact Storm Water Quality at 297-1774.

# Appendix K: Administrative Enforcement Remedies Document


 City of Oklahoma City  
 Storm Water Quality Division  
 420 West Main / 6th Floor  
 Oklahoma City, Oklahoma  
 73102  
 Phone 297-1774 Fax 297-1770
 

Notice of Violation  
 Show Cause Hearing
 
 Cease and Desist  
 Compliance Order

**General Information**

Name: \_\_\_\_\_  
 Home Address: \_\_\_\_\_  
 Home Phone: \_\_\_\_\_  
 Drivers License/I.D. # \_\_\_\_\_  
 State: \_\_\_\_\_ D.O.B. \_\_\_\_\_ Eyes: \_\_\_\_\_  
 Hair Color: \_\_\_\_\_ Height: \_\_\_\_\_ Weight: \_\_\_\_\_  
 Bus. Name: \_\_\_\_\_  
 Bus. Address: \_\_\_\_\_ Bus. Phone: \_\_\_\_\_  
 Job Site Name / Address: \_\_\_\_\_  
 Violation: \_\_\_\_\_

**NOTICE OF VIOLATION**

Chapter / Section \_\_\_\_\_ / \_\_\_\_\_ Paragraph(s) \_\_\_\_\_

You are hereby notified that you have violated section(s) of the THE CITY OF OKLAHOMA CITY Municipal Code.

Other: \_\_\_\_\_

You will be compelled to abate the violation by \_\_\_\_\_ or the penalty of the ordinance will be enforced.

\_\_\_\_\_  
 (Investigator - Print Name) / \_\_\_\_\_ (Comm. Number) \_\_\_\_\_ (Investigator - Signature)

**CEASE AND DESIST ORDER**

You are hereby notified and ordered under Chapter 57-181(e) to \_\_\_\_\_ cease and desist all activities specified by the Manager or representatives thereof that are in violation with the provision set forth by City Ordinance.

Date Issued \_\_\_\_\_ Time Issued \_\_\_\_\_

\_\_\_\_\_  
 (Investigator - Print Name) / \_\_\_\_\_ (Comm. Number) \_\_\_\_\_ (Investigator - Signature)

**SHOW CAUSE HEARING**

You are hereby notified and ordered under Chapter 57-181(c) to be present for a Show Cause Hearing scheduled for \_\_\_\_\_ a.m. / p.m. (circle one) on the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, at the above address of the SWQ Division office.

(day) (month) (year)

**COMPLIANCE ORDER**

You are hereby notified and ordered under Chapter 57-181(d) to comply fully with the letter and intent of the below specified items to insure that proper structures or devices be installed or procedures implemented and properly operated, supervised and administrated.

Working without a permit  
 Non Compliance with SWQ Permit  
 Unauthorized Discharge a Public Nuisance  
 Noncompliance with SWP3  
 Illicit Discharge and Illegal Dumping  
 Potential to Pollute

Other (as specified): \_\_\_\_\_

You shall \_\_\_\_\_ by the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ or penalty of the ordinance will be enforced.

Date Issued \_\_\_\_\_ Time Issued \_\_\_\_\_

\_\_\_\_\_  
 (Investigator - Print Name) / \_\_\_\_\_ (Comm. Number) \_\_\_\_\_ (Investigator - Signature)

Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_



City of Oklahoma City  
Storm Water Quality Division  
420 West Main / 6th Floor  
Oklahoma City, Oklahoma  
73102  
Phone 297-1774 Fax 297-1770



Oklahoma City Municipal Code

§ 57-181. Administrative enforcement remedies.

(a) **Notification of violation.** Whenever the Manager finds that any permittee or any person discharging stormwater has violated or is violating this article, or a Stormwater permit or order issued hereunder, the Manager or his designee may serve upon said person or permittee written notice of the violation. Within ten calendar days of the receipt date of this notice, an explanation of the violation and a plan for the satisfactory correction and prevention thereof, to include specific required actions, shall be submitted to the Manager. Submission of this plan in no way relieves the discharger of liability or criminal prosecution for any violations occurring before or after receipt of the notice of violation.

(b) **Consent orders.** The Manager is hereby empowered to enter into consent orders, assurances of voluntary compliance, or other similar documents establishing an agreement with the person responsible for the compliance and for the noncompliance. Such orders will include specific action to be taken by the discharger, operator and owner to correct the noncompliance within a time period also specified by the order. Consent orders shall have the same force and effect as administrative orders issued pursuant to paragraph (d) below.

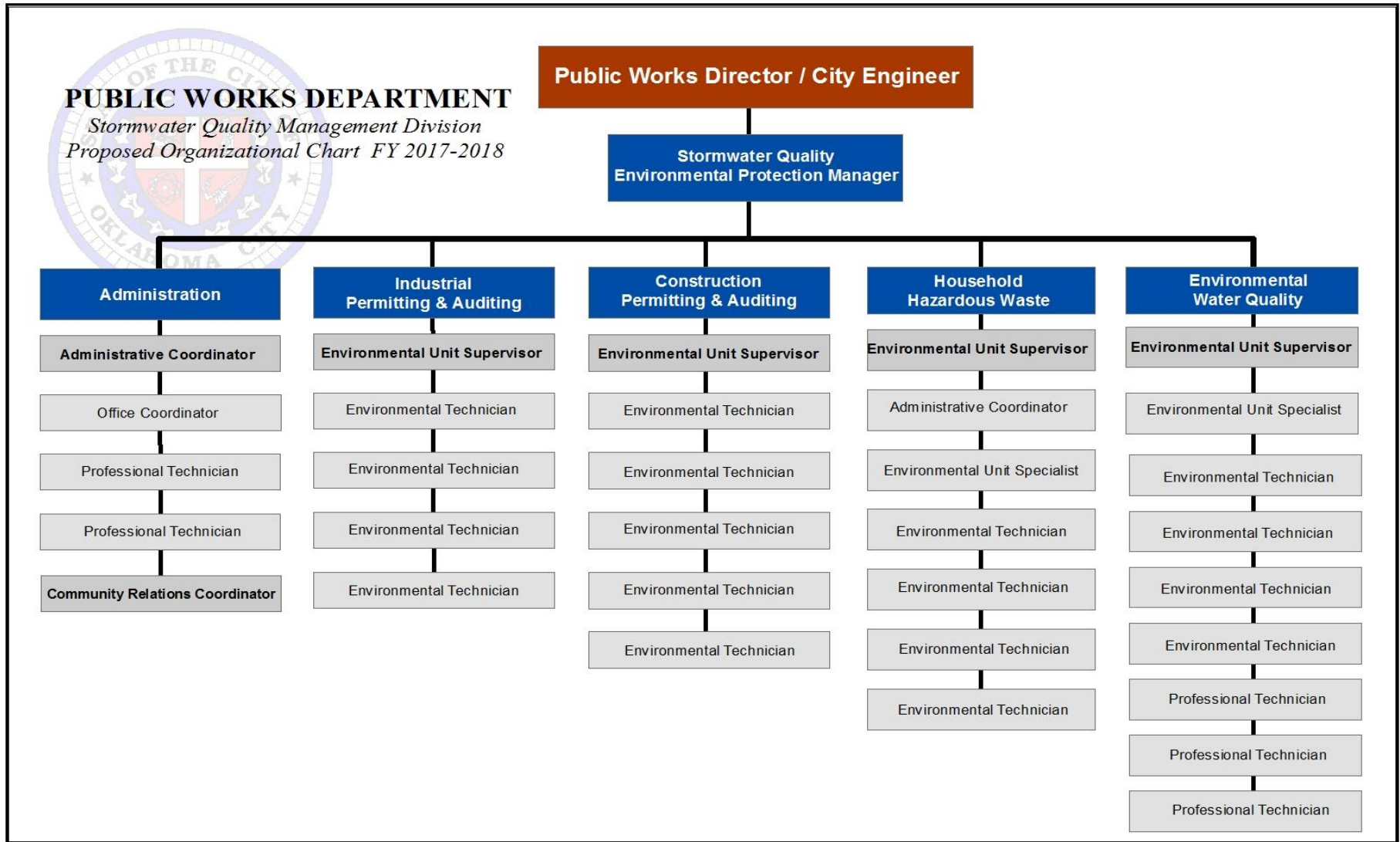
(c) **Show cause hearing.** The Manager may order any person who causes or contributes to violation of this article or Stormwater permit or order issued hereunder, to show cause why a proposed enforcement action should not be taken. Notice shall be served specifying the time and place for the meeting, the proposed enforcement action and the reasons for such action, and a request that the violator show cause why this proposed enforcement action should not be taken. The notice of the meeting shall be served personally or by registered or certified mail (return receipt requested) at least ten calendar days prior to the hearing. Such notice may be served on any individual or the individual or the principal executive, general partner or manager of any legal entity or person of legal age at the office or business address of the permittee.

(d) **Compliance order.** When the Manager finds that any person has violated or continues to violate this article or a permit or order issued thereunder, the Manager may issue an order to the violator directing that, following a specified time period, adequate structures or devices be installed or procedures implemented and properly operated, supervised and administrated. Orders may also contain such other requirements as might be reasonably necessary and appropriate to address the noncompliance, including the construction of appropriate structures, installation of devices, self-monitoring, and best management practices.

(e) **Cease and desist orders.** Notwithstanding any other notice, order or administrative process provided by this section. When the Manager finds that any person has violated or continues to violate this article or any permit or order issued hereunder, and also finds that such violation may cause an impairment of water quality or that a permit is required and has not been issued, the Manager may issue an order to cease and desist all such violations and direct those persons in noncompliance to: (1) comply forthwith; or (2) take such appropriate remedial or preventive action as may be needed to properly address a continuing or threatened violation, including halting operations or terminating the discharge or both.

(f) **Appeal.** A person receiving an order may file a written notice of appeal with the Director and Manager who issued it, no later than the 10th calendar day after receipt of the order. Such notice shall include an explanation as to why the person believes the enforcement action should not be taken. A person receiving a cease and desist order may file a written notice of appeal with the Director and Manager who issued it and obtain relief from such order upon a showing that the alleged violation will not cause an impairment of water quality or that a permit is not required. A hearing on the appeal will be scheduled within a reasonable time after receipt of the notice of appeal and the required explanation. All notices of appeal shall be signed by the owner or operator of the premises or activities in controversy, and shall include name and address of the person filing the notice of appeal. Notice of hearing on the appeal may be served by facsimile or first-class mail at the number or address given in the written notice of appeal.

## Appendix L: Storm Water Quality Division Organizational Chart





## Appendix M: Curbs to Creeks Program Forms



Oklahoma City, Storm Water Quality Division  
Curbs to Creeks Program



### Curb Marking Instructions

1. Put on all safety equipment provided (latex gloves, safety glasses and safety vest).



2. Use provided wire brush to scrape the curbside clean of any dirt or debris.



For questions or concerns, please call SWQ offices at 297-1774



3. Apply adhesive to the back of the curb marker.



4. Apply the marker to the curb (make sure the marker is right side up).



5. On provided map, make sure to mark the drains that you have marked so we can keep track in our records.

**Make sure that above all else your safety comes first. If you don't feel safe,  
don't apply the marker.**

|   |                |   |  |
|---|----------------|---|--|
| <b>Group Name/Facility Name:</b>                                  |                |   |  |
| <b>Primary Contact:</b>   |                |   |  |
| <b>Group Members:</b>   |                |   |  |
| <b>Total Number of Curb Markers Applied:</b>                      |                | <i>If multiple sheets are used, please number below (i.e. - 1 of 2)</i> |  |
|   |                | of  |  |
| <b>Description of Area(s) Marked (E/W/N/S Street Boundaries):</b> |                |   |  |
| Nearest location (address or number on site map)                  | Number Applied |   | Nearest location (address or number on site map) |
| 1   |                |   | 23   |
| 2   |                |   | 24   |
| 3   |                |   | 25   |
| 4   |                |   | 26   |
| 5   |                |   | 27   |
| 6   |                |   | 28   |
| 7   |                |   | 29   |
| 8   |                |   | 30   |
| 9   |                |   | 31   |
| 10  |                |   | 32   |
| 11  |                |   | 33   |
| 12  |                |   | 34   |
| 13  |                |   | 35   |
| 14  |                |   | 36   |
| 15  |                |   | 37   |
| 16  |                |   | 38   |
| 17  |                |   | 39   |
| 18  |                |   | 40   |
| 19  |                |   | 41   |
| 20  |                |   | 42   |
| 21  |                |   | 43   |
| 22  |                |   | 44   |



## **CURBS TO CREEKS**

### Application Report Form

Individual or group name: \_\_\_\_\_

Date of event: \_\_\_\_\_

Number of volunteers: \_\_\_\_\_

Number of markers placed: \_\_\_\_\_

Were there enough supplies: \_\_\_\_\_

Other comments: \_\_\_\_\_

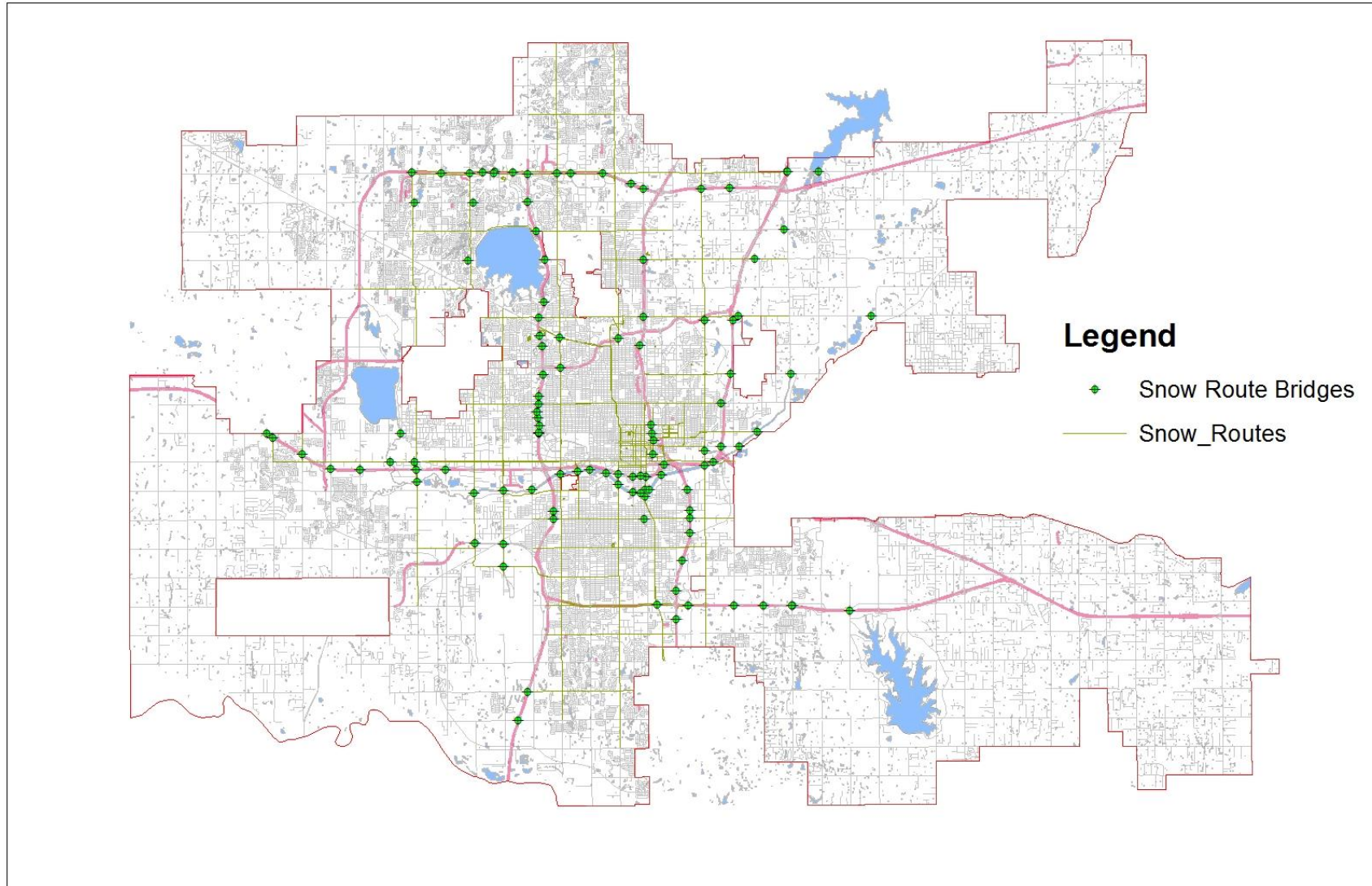
- Use the map to indicate the location of new markers applied
- Return supplies within three (3) days of the event

**Andrea Shelton | Community Relations Coordinator**

Public Works Department - Storm Water Quality Division

Desk: (405) 297-1797 | Fax: (405) 297-1770 | 420 W. Main Street, Suite 360 | OKC, OK 73102

## Appendix N: OKC Regional Snow Route - Bridge Application Locations



**OKC Regional Snow Route - Bridges**

| SNOW ROUTE ID | SN ROUTE | SN SUB ROUTE | QUADRANT | LANE MILES | RELOAD | FACILITY ID | LOCATION   |
|---------------|----------|--------------|----------|------------|--------|-------------|--|
| 1901          | 1B       | 1            | SW       | 1          | CMF    | 11-1901     | SUB: 1; LOC: Exchange – over Oklahoma River/I-40/RR; QUAD: SW; LM: 1 |
| 1902          | 1B       | 2            | SW       | 0.5        | CMF    | 11-1902     | SUB: 2; LOC: Penn – over Oklahoma River; QUAD: SW; LM: 0.5           |
| 1903          | 1B       | 3            | SW       | 0.5        | CMF    | 11-1903     | SUB: 3; LOC: Agnew – over Oklahoma River; QUAD: SW; LM: 0.5          |
| 1904          | 1B       | 4            | SW       | 0.5        | CMF    | 11-1904     | SUB: 4; LOC: May – over Oklahoma River; QUAD: SW; LM: 0.5            |
| 1904          | 1B       | 4            | SW       | 0.5        | CMF    | 11-1904     | SUB: 4; LOC: May – over Oklahoma River; QUAD: SW; LM: 0.5            |
| 1905          | 1B       | 5            | SW       | 0.5        | CMF    | 11-1905     | SUB: 5; LOC: Portland – over Oklahoma River; QUAD: SW; LM: 0.5       |
| 1906          | 1B       | 6            | SW       | 0.5        | CMF    | 11-1906     | SUB: 6; LOC: Meridian – over Oklahoma River; QUAD: SW; LM: 0.5       |
| 1907          | 1B       | 7            | SW       | 0.5        | CMF    | 11-1907     | SUB: 7; LOC: Meridian – over Airport Rd; QUAD: SW; LM: 0.5           |
| 1908          | 1B       | 8            | SW       | 0.5        | CMF    | 11-1908     | SUB: 8; LOC: Meridian – over SW 54th; QUAD: SW; LM: 0.5              |
| 1909          | 1B       | 9            | SW       | 0.5        | CMF    | 11-1909     | SUB: 9; LOC: MacArthur – over Airport Rd; QUAD: SW; LM: 0.5          |
| 1910          | 1B       | 10           | SW       | 0.5        | CMF    | 11-1910     | SUB: 10; LOC: MacArthur – over N Canadian River; QUAD: SW; LM: 0.5   |
| 1911          | 1B       | 11           | SW       | 0.5        | CMF    | 11-1911     | SUB: 11; LOC: Council – over N Canadian River; QUAD: SW; LM: 0.5     |
| 2901          | 2B       | 1            | SW       | 0.5        | CMF    | 11-2901     | SUB: 1; LOC: Rockwell – over I-40; QUAD: SW; LM: 0.5                 |
| 2902          | 2B       | 2            | SW       | 0.5        | CMF    | 11-2902     | SUB: 2; LOC: Council – over I-40; QUAD: SW; LM: 0.5                  |
| 2903          | 2B       | 3            | SW       | 0.5        | CMF    | 11-2903     | SUB: 3; LOC: Morgan – over I-40; QUAD: SW; LM: 0.5                   |
| 2903          | 2B       | 3            | SW       | 0.5        | CMF    | 11-2903     | SUB: 3; LOC: Morgan – over I-40; QUAD: SW; LM: 0.5                   |

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

| SNOW ROUTE ID | SN ROUTE | SN SUB ROUTE | QUADRANT | LANE MILES | RELOAD     | FACILITY ID | LOCATION   |
|---------------|----------|--------------|----------|------------|------------|-------------|--|
| 2904          | 2B       | 4            | SW       | 0.5        | CMF        | 11-2904     | SUB: 4; LOC: Mustang Rd – over I-40; QUAD: SW; LM: 0.5       |
| 2905          | 2B       | 5            | SW       | 0.5        | CMF        | 11-2905     | SUB: 5; LOC: Czech Hall – over I-40; QUAD: SW; LM: 0.5       |
| 2906          | 2B       | 6            | SW       | 0.5        | CMF        | 11-2906     | SUB: 6; LOC: NW 10th – over I-40; QUAD: SW; LM: 0.5          |
| 2907          | 2B       | 7            | SW       | 0.5        | CMF        | 11-2907     | SUB: 7; LOC: Reno – over N Canadian River; QUAD: SW; LM: 0.5 |
| 2907          | 2B       | 7            | SW       | 0.5        | CMF        | 11-2907     | SUB: 7; LOC: Reno – over N Canadian River; QUAD: SW; LM: 0.5 |
| 2907          | 2B       | 7            | SW       | 0.5        | CMF        | 11-2907     | SUB: 7; LOC: Reno – over N Canadian River; QUAD: SW; LM: 0.5 |
| 2907          | 2B       | 7            | SW       | 0.5        | CMF        | 11-2907     | SUB: 7; LOC: Reno – over N Canadian River; QUAD: SW; LM: 0.5 |
| 2908          | 2B       | 8            | SW       | 0.5        | CMF        | 11-2908     | SUB: 8; LOC: Sara Rd – over I-40; QUAD: SW; LM: 0.5          |
| 2909          | 2B       | 9            | SW       | 0.5        | CMF        | 11-2909     | SUB: 9; LOC: SW 25th – over I-44; QUAD: SW; LM: 0.5          |
| 2910          | 2B       | 10           | SW       | 0.5        | CMF        | 11-2910     | SUB: 10; LOC: SW 29th – over I-44; QUAD: SW; LM: 0.5         |
| 2911          | 2B       | 11           | SW       | 0.5        | CMF        | 11-2911     | SUB: 11; LOC: SW 119th – over I-44; QUAD: SW; LM: 0.5        |
| 2912          | 2B       | 12           | SW       | 0.5        | CMF        | 11-2912     | SUB: 12; LOC: SW 134th – over I-44; QUAD: SW; LM: 0.5        |
| 3901          | 3B       | 1            | SE       | 0.5        | River Yard | 11-3901     | SUB: 1; LOC: Shields – over I-240; QUAD: SE; LM: 0.5         |
| 3902          | 3B       | 2            | SE       | 0.5        | River Yard | 11-3902     | SUB: 2; LOC: Pole Rd – over I-240; QUAD: SE; LM: 0.5         |
| 3903          | 3B       | 3            | SE       | 0.5        | River Yard | 11-3903     | SUB: 3; LOC: Bryant – over I-240; QUAD: SE; LM: 0.5          |
| 3904          | 3B       | 4            | SE       | 0.5        | River Yard | 11-3904     | SUB: 4; LOC: Sunnyslane – over I-240; QUAD: SE; LM: 0.5      |
| 3905          | 3B       | 5            | SE       | 0.5        | River Yard | 11-3905     | SUB: 5; LOC: Sooner – over I-240; QUAD: SE; LM: 0.5          |
| 3905          | 3B       | 5            | SE       | 0.5        | River Yard | 11-3905     | SUB: 5; LOC: Sooner – over I-240; QUAD: SE; LM: 0.5          |

| SNOW ROUTE ID | SN ROUTE | SN SUB ROUTE | QUADRANT | LANE MILES | RELOAD     | FACILITY ID | LOCATION  |
|---------------|----------|--------------|----------|------------|------------|-------------|---|
| 3906          | 3B       | 6            | SE       | 0.5        | River Yard | 11-3906     | SUB: 6; LOC: Midwest Blvd – over I-240; QUAD: SE; LM: 0.5                 |
| 4901          | 4B       | 1            | SE       | 0.5        | River Yard | 11-4901     | SUB: 1; LOC: Western – over Oklahoma River; QUAD: SE; LM: 0.5             |
| 4903          | 4B       | 3            | SE       | 0.5        | River Yard | 11-4903     | SUB: 3; LOC: Walker – over Oklahoma River; QUAD: SE; LM: 0.5              |
| 4905          | 4B       | 5            | SE       | 6          | River Yard | 11-4905     | SUB: 5; LOC: Shields – over Oklahoma River; QUAD: SE; LM: 6               |
| 4905          | 4B       | 5            | SE       | 6          | River Yard | 11-4905     | SUB: 5; LOC: Shields – over Oklahoma River; QUAD: SE; LM: 6               |
| 5901          | 5B       | 1            | SE       | 0.5        | River Yard | 11-5901     | SUB: 1; LOC: Robinson – over Oklahoma River; QUAD: SE; LM: 0.5            |
| 5903          | 5B       | 3            | SE       | 0.5        | River Yard | 11-5903     | SUB: 3; LOC: SE 15th – over Oklahoma River; QUAD: SE; LM: 0.5             |
| 5904          | 5B       | 4            | SE       | 2          | River Yard | 11-5904     | SUB: 4; LOC: Lincoln/Central – over Oklahoma River; QUAD: SE; LM: 2       |
| 5905          | 5B       | 5            | SE       | 0.5        | River Yard | 11-5905     | SUB: 5; LOC: SE 15th – over I-35; QUAD: SE; LM: 0.5                       |
| 5906          | 5B       | 6            | SE       | 0.5        | River Yard | 11-5906     | SUB: 6; LOC: SE 25th – over I-35; QUAD: SE; LM: 0.5                       |
| 6901          | 6B       | 1            | SE       | 0.5        | CMF        | 11-6901     | SUB: 1; LOC: SE 51st – over I-35; QUAD: SE; LM: 0.5                       |
| 6903          | 6B       | 3            | SE       | 0.5        | CMF        | 11-6903     | SUB: 3; LOC: SE 82nd – over I-35; QUAD: SE ; LM: 0.5                      |
| 6904          | 6B       | 4            | SE       | 0.5        | CMF        | 11-6904     | SUB: 4; LOC: SE 36th – over I-35; QUAD: SE; LM: 0.5                       |
| 6905          | 6B       | 5            | SE       | 0.5        | CMF        | 11-6905     | SUB: 5; LOC: SE 29th – over I-35; QUAD: SE; LM: 0.5                       |
| 6906          | 6B       | 6            | SE       | 0.5        | CMF        | 11-6906     | SUB: 6; LOC: SE 29th – over Lightning Creek; QUAD: SE; LM: 0.5            |
| 7901          | 7B       | 1            | DT       | 0.5        | River Yard | 11-7901     | SUB: 1; LOC: Walnut (Finley Bridge) – over Main Street; QUAD: DT; LM: 0.5 |
| 7902          | 7B       | 2            | DT       | 1          | River Yard | 11-7902     | SUB: 2; LOC: Reno Ave – over I-40; QUAD: DT; LM: 1                        |



| SNOW ROUTE ID | SN ROUTE | SN SUB ROUTE | QUADRANT | LANE MILES | RELOAD     | FACILITY ID | LOCATION  |
|---------------|----------|--------------|----------|------------|------------|-------------|---|
| 7903          | 7B       | 3            | DT       | 1          | River Yard | 11-7903     | SUB: 3; LOC: MLK – North of Reno; QUAD: DT; LM: 1               |
| 7904          | 7B       | 4            | DT       | 0.5        | River Yard | 11-7904     | SUB: 4; LOC: NW 6th (Harrison) – over I-235; QUAD: DT; LM: 0.5  |
| 7905          | 7B       | 5            | DT       | 0.5        | River Yard | 11-7905     | SUB: 5; LOC: NW 10th – over I-235; QUAD: DT; LM: 0.5            |
| 7906          | 7B       | 6            | DT       | 0.5        | River Yard | 11-7906     | SUB: 6; LOC: NW 13th – over I-235; QUAD: DT; LM: 0.5            |
| 7907          | 7B       | 7            | DT       | 0.5        | River Yard | 11-7907     | SUB: 7; LOC: NW 50th – over I-235; QUAD: DT; LM: 0.5            |
| 8910          | 8B       | 10           | NE       | 0.5        | River Yard | 11-8910     | SUB: 10; LOC: NW 63rd – over Broadway Ext; QUAD: NE; LM: 0.5    |
| 8911          | 8B       | 11           | NE       | 0.5        | River Yard | 11-8911     | SUB: 11; LOC: MLK – over Deep Fork; QUAD: NE; LM: 0.5           |
| 8911          | 8B       | 11           | NE       | 0.5        | River Yard | 11-8911     | SUB: 11; LOC: MLK – over Deep Fork; QUAD: NE; LM: 0.5           |
| 8912          | 8B       | 12           | NE       | 0.5        | River Yard | 11-8912     | SUB: 12; LOC: Britton – over Broadway Ext; QUAD: NE; LM: 0.5    |
| 8902          | 8B       | 2            | NE       | 1          | River Yard | 11-8902     | SUB: 2; LOC: NE 4th – over N Canadian River; QUAD: NE; LM: 1    |
| 8903          | 8B       | 3            | NE       | 0.5        | River Yard | 11-8903     | SUB: 3; LOC: NE 10th – over N Canadian River; QUAD: NE; LM: 0.5 |
| 8904          | 8B       | 4            | NE       | 0.5        | River Yard | 11-8904     | SUB: 4; LOC: NE 23rd – over Railroad Tracks; QUAD: NE; LM: 0.5  |
| 8906          | 8B       | 6            | NE       | 0.5        | River Yard | 11-8906     | SUB: 6; LOC: NE 36th – over N Canadian River; QUAD: NE; LM: 0.5 |
| 8907          | 8B       | 7            | NE       | 0.5        | River Yard | 11-8907     | SUB: 7; LOC: Bryant – over Deep Fork; QUAD: NE; LM: 0.5         |
| 8908          | 8B       | 8            | NE       | 0.5        | River Yard | 11-8908     | SUB: 8; LOC: NE 63rd – over Deep Fork; QUAD: NE; LM: 0.5        |
| 8909          | 8B       | 9            | NE       | 0.5        | River Yard | 11-8909     | SUB: 9; LOC: NE 63rd – over N Canadian River; QUAD: NE; LM: 0.5 |
| 9901          | 9B       | 1            | NE       | 0.5        | CMF        | 11-9901     | SUB: 1; LOC: Britton Rd – over Deep Fork; QUAD: NE; LM: 0.5     |
| 9902          | 9B       | 2            | NE       | 0.5        | CMF        | 11-9902     | SUB: 2; LOC: Hefner – over Deep Fork; QUAD: NE; LM: 0.5         |

| SNOW ROUTE ID | SN ROUTE | SN SUB ROUTE | QUADRANT | LANE MILES | RELOAD | FACILITY ID | LOCATION   |
|---------------|----------|--------------|----------|------------|--------|-------------|--|
| 9903          | 9B       | 3            | NE       | 0.5        | CMF    | 11-9903     | SUB: 3; LOC: Memorial Rd – over Deep Fork; QUAD: NE; LM: 0.5                         |
| 9904          | 9B       | 4            | NE       | 0.5        | CMF    | 11-9904     | SUB: 4; LOC: Memorial Rd – over I-35; QUAD: NE; LM: 0.5                              |
| 9904          | 9B       | 4            | NE       | 0.5        | CMF    | 11-9904     | SUB: 4; LOC: Memorial Rd – over I-35; QUAD: NE; LM: 0.5                              |
| 9905          | 9B       | 5            | NE       | 0.5        | CMF    | 11-9905     | SUB: 5; LOC: Bryant – over Kilpatrick; QUAD: NE; LM: 0.5                             |
| 9906          | 9B       | 6            | NE       | 0.5        | CMF    | 11-9906     | SUB: 6; LOC: Eastern Ave – over Kilpatrick; QUAD: NE; LM: 0.5                        |
| 9907          | 9B       | 7            | NE       | 0.5        | CMF    | 11-9907     | SUB: 7; LOC: Santa Fe – over Kilpatrick; QUAD: NE; LM: 0.5                           |
| 9908          | 9B       | 8            | NE       | 0.5        | CMF    | 11-9908     | SUB: 8; LOC: Bridge west of Santa Fe – over Kilpatrick; QUAD: NE; LM: 0.5            |
| 10903         | 10B      | 3            | NW       | 0.5        | CMF    | 11-10903    | SUB: 3; LOC: May – over NW Expressway; QUAD: NW; LM: 0.5                             |
| 10904         | 10B      | 4            | NW       | 0.5        | CMF    | 11-10904    | SUB: 4; LOC: Grand Blvd/S Lake Hefner Drive – over Hefner Parkway; QUAD: NW; LM: 0.5 |
| 10905         | 10B      | 5            | NW       | 0.5        | CMF    | 11-10905    | SUB: 5; LOC: Britton Rd – over Hefner Parkway; QUAD: NW; LM: 0.5                     |
| 10906         | 10B      | 6            | NW       | 0.5        | CMF    | 11-10906    | SUB: 6; LOC: Hefner – over Hefner Parkway; QUAD: NW; LM: 0.5                         |
| 10907         | 10B      | 7            | NW       | 0.5        | CMF    | 11-10907    | SUB: 7; LOC: Britton – west of N MacArthur; QUAD: NW; LM: 0.5                        |
| 10908         | 10B      | 8            | NW       | 0.5        | CMF    | 11-10908    | SUB: 8; LOC: NW 122nd – over Hefner Parkway; QUAD: NW; LM: 0.5                       |
| 10909         | 10B      | 9            | NW       | 0.5        | CMF    | 11-10909    | SUB: 9; LOC: NW 122nd – east of N MacArthur; QUAD: NW; LM: 0.5                       |
| 10910         | 10B      | 10           | NW       | 0.5        | CMF    | 11-10910    | SUB: 10; LOC: NW 122nd – east of N Council; QUAD: NW; LM: 0.5                        |
| 11901         | 11B      | 1            | NW       | 0.5        | CMF    | 11-11901    | SUB: 1; LOC: Pawnee Dr – over Kilpatrick; QUAD: NW; LM: 0.5                          |
| 11902         | 11B      | 2            | NW       | 0.5        | CMF    | 11-11902    | SUB: 2; LOC: Highland Park Blvd – over Kilpatrick; QUAD: NW; LM: 0.5                 |

| SNOW ROUTE ID | SN ROUTE | SN SUB ROUTE | QUADRANT | LANE MILES | RELOAD | FACILITY ID | LOCATION   |
|---------------|----------|--------------|----------|------------|--------|-------------|--|
| 11903         | 11B      | 3            | NW       | 0.5        | CMF    | 11-11903    | SUB: 3; LOC: May Ave – over Kilpatrick; QUAD: NW; LM: 0.5          |
| 11904         | 11B      | 4            | NW       | 0.5        | CMF    | 11-11904    | SUB: 4; LOC: Memorial Rd – over Hefner Parkway; QUAD: NW; LM: 0.5  |
| 11905         | 11B      | 5            | NW       | 0.5        | CMF    | 11-11905    | SUB: 5; LOC: Memorial Rd – west of N Meridian; QUAD: NW; LM: 0.5   |
| 11905         | 11B      | 5            | NW       | 0.5        | CMF    | 11-11905    | SUB: 5; LOC: Memorial Rd – west of N Meridian; QUAD: NW; LM: 0.5   |
| 11906         | 11B      | 6            | NW       | 0.5        | CMF    | 11-11906    | SUB: 6; LOC: Tulsa Ave – over Kilpatrick; QUAD: NW; LM: 0.5        |
| 11907         | 11B      | 7            | NW       | 0.5        | CMF    | 11-11907    | SUB: 7; LOC: Martin Park Blvd – over Kilpatrick; QUAD: NW; LM: 0.5 |
| 11908         | 11B      | 8            | NW       | 0.5        | CMF    | 11-11908    | SUB: 8; LOC: MacArthur Blvd – over Kilpatrick; QUAD: NW; LM: 0.5   |
| 11909         | 11B      | 9            | NW       | 0.5        | CMF    | 11-11909    | SUB: 9; LOC: Rockwell Ave – over Kilpatrick; QUAD: NW; LM: 0.5     |
| 11910         | 11B      | 10           | NW       | 0.5        | CMF    | 11-11910    | SUB: 10; LOC: Council Rd – over Kilpatrick; QUAD: NW; LM: 0.5      |
| 12902         | 12B      | 2            | W        | 0.5        | CMF    | 11-12902    | SUB: 2; LOC: NW 10th – over I-44; QUAD: W; LM: 0.5                 |
| 12902         | 12B      | 2            | W        | 0.5        | CMF    | 11-12902    | SUB: 2; LOC: NW 10th – over I-44; QUAD: W; LM: 0.5                 |
| 12903         | 12B      | 3            | W        | 0.5        | CMF    | 11-12903    | SUB: 3; LOC: NW 12th – over I-44; QUAD: W; LM: 0.5                 |
| 12904         | 12B      | 4            | W        | 0.5        | CMF    | 11-12904    | SUB: 4; LOC: NW 16th – over I-44; QUAD: W; LM: 0.5                 |
| 12905         | 12B      | 5            | W        | 0.5        | CMF    | 11-12905    | SUB: 5; LOC: NW 19th – over I-44; QUAD: W; LM: 0.5                 |
| 12905         | 12B      | 5            | W        | 0.5        | CMF    | 11-12905    | SUB: 5; LOC: NW 19th – over I-44; QUAD: W; LM: 0.5                 |
| 12906         | 12B      | 6            | W        | 0.5        | CMF    | 11-12906    | SUB: 6; LOC: NW 23rd – over I-44; QUAD: W; LM: 0.5                 |
| 12907         | 12B      | 7            | W        | 0.5        | CMF    | 11-12907    | SUB: 7; LOC: NW 27th – over I-44; QUAD: W; LM: 0.5                 |
| 12908         | 12B      | 8            | W        | 0.5        | CMF    | 11-12908    | SUB: 8; LOC: NW 36th – over I-44; QUAD: W; LM: 0.5                 |

| SNOW ROUTE ID | SN ROUTE | SN SUB ROUTE | QUADRANT | LANE MILES | RELOAD     | FACILITY ID | LOCATION  |
|---------------|----------|--------------|----------|------------|------------|-------------|---|
| 12909         | 12B      | 9            | W        | 0.5        | CMF        | 11-12909    | SUB: 9; LOC: NW 50th – over Hefner Parkway; QUAD: W; LM: 0.5      |
| 12910         | 12B      | 10           | W        | 0.5        | CMF        | 11-12910    | SUB: 10; LOC: NW 56th – over Hefner Parkway; QUAD: W; LM: 0.5     |
| 12911         | 12B      | 11           | W        | 0.5        | CMF        | 11-12911    | SUB: 11; LOC: NW 63rd – over Hefner Parkway; QUAD: W; LM: 0.5     |
| 5907          | 5B       | 7            | SE       | 1          | River Yard | 11-5907     | SUB: 7; LOC: South Eastern – over Oklahoma River; QUAD: SE; LM: 1 |
| 6902          | 6B       | 2            | SE       | 0.5        | CMF        | 11-6902     | SUB: 2; LOC: SE 66th – over I-35; QUAD: SE; LM: 0.5               |
| 8901          | 8B       | 1            | NE       | 0.5        | River Yard | 11-8901     | SUB: 1; LOC: NE 4th – over I-35; QUAD: NE; LM: 0.5                |
| 10901         | 10B      | 1            | NW       | 0.5        | CMF        | 11-10901    | SUB: 1; LOC: Western – over I-44; QUAD: NW; LM: 0.5               |
| 10902         | 10B      | 2            | NW       | 0.5        | CMF        | 11-10902    | SUB: 2; LOC: May – over I-44; QUAD: NW; LM: 0.5                   |
| 12901         | 12B      | 1            | W        | 0.5        | CMF        | 11-12901    | SUB: 1; LOC: NW 10th – over N Canadian River; QUAD: W; LM: 0.5    |
| 8905          | 8B       | 5            | NE       | 0.5        | River Yard | 11-8905     | SUB: 5; LOC: NE 36th – over I-35; QUAD: NE; LM: 0.5               |
| 4904          | 4B       | 4            | SE       | 0.5        | River Yard | 11-4904     | SUB: 4; LOC: Walker – Over I-40/RR; QUAD: SE; LM: 0.5             |
| 4902          | 4B       | 2            | SE       | 0.5        | River Yard | 11-4902     | SUB: 2; LOC: Western – Over I-40/RR; QUAD: SE; LM: 0.5            |
| 4906          | 4B       | 6            | SE       | 0.5        | River Yard | 11-4906     | SUB: 6; LOC: Shields – Over I-40; QUAD: SE; LM: 0.5               |
| 5902          | 5B       | 2            | SE       | 0.5        | River Yard | 11-5902     | SUB: 2; LOC: Robinson – over I-40; QUAD: SE; LM: 0.5              |
| 4907          | 4B       | 7            | SE       | 0.5        |            | 11-4907     | SUB: 7; LOC: Lincoln/Central over I-40; QUAD: SE; LM: 0.5         |

**OKC Snow and Ice Regional Routes – Streets**

| SN ROUTE | SN SUBROUTE | QUADRANT | LANE MILES | FACILITY ID | LOCATION |
|----------|-------------|----------|------------|-------------|----------|
|----------|-------------|----------|------------|-------------|----------|

| SN ROUTE | SN SUBROUTE | QUADRANT | LANE MILES | FACILITY ID | LOCATION  |
|----------|-------------|----------|------------|-------------|---|
| 1        | 2           | SW       | 17         | 15-1002     | SUB: 2; LOC: S MacArthur Blvd – SW 54th to W Reno; QUAD: SW; LM: 17               |
| 2        | 1           | SW       | 8          | 15-2001     | SUB: 1; LOC: SW 44th St – S MacArthur to S Council Rd; QUAD: SW; LM: 8            |
| 3        | 6           | SW       | 12         | 15-3006     | SUB: 6; LOC: SW 44th St – S Portland to S Western Ave; QUAD: SW; LM: 12           |
| 3        | 3           | SW       | 12         | 15-3003     | SUB: 3; LOC: SW 89th St – I-44 Hwy to S Western Ave; QUAD: SW; LM: 12             |
| 4        | 1           | SW       | 12         | 15-4001     | SUB: 1; LOC: S May Ave – SW 89th to SW 134th St; QUAD: SW; LM: 12                 |
| 4        | 2           | SW       | 16         | 15-4002     | SUB: 2; LOC: SW 119th St – I-44 Hwy east to City Limits; QUAD: SW; LM: 16         |
| 6        | 2           | SE       | 20         | 15-6002     | SUB: 2; LOC: S 29th St – S Western to S Bryant Ave; QUAD: SE; LM: 20              |
| 4        | 4           | SW       | 8          | 15-4004     | SUB: 4; LOC: S 89th St – I-35 Hwy to S Western Ave; QUAD: SW; LM: 8               |
| 8        | 5           | NE       | 10         | 15-8005     | SUB: 5; LOC: NE 10th St – MLK to Coltrane Rd; QUAD: NE; LM: 10                    |
| 9        | 4           | NE       | 24         | 15-9004     | SUB: 4; LOC: N 63rd St – N Western Ave to N Sooner Rd; QUAD: NE; LM: 24           |
| 9        | 1           | NE       | 18         | 15-9001     | SUB: 1; LOC: MLK/N Eastern Ave – E Britton to Smiling Hill Blvd; QUAD: NE; LM: 18 |
| 10       | 2           | NE       | 8          | 15-10002    | SUB: 2; LOC: Hefner Rd – N Western to N Kelley Ave; QUAD: NE; LM: 8               |
| 12       | 4           | NW       | 16         | 15-12004    | SUB: 4; LOC: N MacArthur Blvd – W Memorial Rd to Wilshire Blvd; QUAD: NW; LM: 16  |
| 14       | 5           | W        | 10         | 15-14005    | SUB: 5; LOC: N MacArthur Blvd – W Reno Ave to NW 30th St; QUAD: W; LM: 10         |
| 18       | 3           | DT       | 2          | 15-18003    | SUB: 3; LOC: JW Simmons Blvd – NE 8th St to MLK; QUAD: DT; LM: 2                  |
| 18       | 6           | DT       | 2          | 15-18006    | SUB: 6; LOC: SL Young Blvd – N Lincoln east to dead end; QUAD: DT; LM: 2          |
| 18       | 7           | DT       | 2          | 15-18007    | SUB: 7; LOC: NE 10th St – N Lincoln to Stonewall Ave; QUAD: DT; LM: 2             |
| 18       | 8           | DT       | 1          | 15-18008    | SUB: 8; LOC: Stonewall Ave – NE 8th to NE 13th St; QUAD: DT; LM: 1                |
| 18       | 9           | DT       | 1          | 15-18009    | SUB: 9; LOC: Phillips Ave – NE 8th to NE 13th St; QUAD: DT; LM: 1                 |

| SN ROUTE | SN SUBROUTE | QUADRANT | LANE MILES | FACILITY ID | LOCATION  |
|----------|-------------|----------|------------|-------------|---|
| 17       | 4           | DT       | 2          | 15-17004    | SUB: 4; LOC: Joe Carter Ave – Reno/Johnny Bench to W Main; QUAD: DT; LM: 2            |
| 17       | 5           | DT       | 4          | 15-17005    | SUB: 5; LOC: Main St – EK Gaylord to Joe Carter Ave; QUAD: DT; LM: 4                  |
| 17       | 6           | DT       | 5          | 15-17006    | SUB: 6; LOC: Mickey Mantle Dr/Walnut – Johnny Bench/Reno to Harrison; QUAD: DT; LM: 5 |
| 17       | 7           | DT       | 1          | 15-17007    | SUB: 7; LOC: N 4th St – N Broadway to N Lincoln Blvd; QUAD: DT; LM: 1                 |
| 17       | 10          | DT       | 3          | 15-17010    | SUB: 10; LOC: N 10th St – N Broadway to N Lincoln Blvd; QUAD: DT; LM: 3               |
| 17       | 12          | DT       | 4          | 15-17012    | SUB: 12; LOC: N Oklahoma Ave – NE 13th to NE 2nd St; QUAD: DT; LM: 4                  |
| 4        | 3           | SW       | 16         | 15-4003     | SUB: 3; LOC: S Western Ave – SW 89th to SW 149th St; QUAD: SW; LM: 16                 |
| 17       | 9           | DT       | 4          | 15-17009    | SUB: 9; LOC: Walnut Ave – Harrison Ave to NE 13th St; QUAD: DT; LM: 4                 |
| 8        | 7           | NE       | 4          | 15-8007     | SUB: 7; LOC: N Walnut Ave – NE 13th to NE 21st St; QUAD: NE; LM: 4                    |
| 11       | 4           | NW       | 6          | 15-11004    | SUB: 4; LOC: NW 164th St – N Portland to N Western Ave; QUAD: NW; LM: 6               |
| 16       | 3           | DT       | 4          | 15-16003    | SUB: 3; LOC: W Reno Ave – Western Ave to EK Gaylord Blvd; QUAD: DT; LM: 4             |
| 16       | 4           | DT       | 4          | 15-16004    | SUB: 4; LOC: W Sheridan Ave – EK Gaylord to N Western Ave; QUAD: DT; LM: 4            |
| 16       | 5           | DT       | 4          | 15-16005    | SUB: 5; LOC: NW 4th St – N Western to Broadway Ave; QUAD: DT; LM: 4                   |
| 14       | 2           | W        | 4          | 15-14002    | SUB: 2; LOC: N Czech Hall Rd – W Reno to NW 10th St; QUAD: W; LM: 4                   |
| 3        | 2           | SW       | 24         | 15-3002     | SUB: 2; LOC: S May Ave – W Reno to SW 89th St; QUAD: SW; LM: 24                       |
| 3        | 4           | SW       | 12         | 15-3004     | SUB: 4; LOC: SW 74th St/I-240 Svc Rd – S Western Ave to I-44 Hwy; QUAD: SW; LM: 12    |
| 3        | 5           | SW       | 12         | 15-3005     | SUB: 5; LOC: SW 59th St – S Portland to S Western Ave; QUAD: SW; LM: 12               |
| 5        | 1           | SE       | 24         | 15-5001     | SUB: 1; LOC: S Western Ave – W Reno Ave to SW 89th St; QUAD: SE; LM: 24               |
| 8        | 1           | NE       | 28         | 15-8001     | SUB: 1; LOC: N MLK/N Eastern – E Reno to E Britton Rd; QUAD: NE; LM: 28               |

| SN ROUTE | SN SUBROUTE | QUADRANT | LANE MILES | FACILITY ID | LOCATION  |
|----------|-------------|----------|------------|-------------|---|
| 8        | 9           | NE       | 14         | 15-8009     | SUB: 9; LOC: NE 23rd St – N Western to I-35 Hwy; QUAD: NE; LM: 14                   |
| 11       | 1           | NW       | 34         | 15-11001    | SUB: 1; LOC: N May Ave – NW 63rd St to NW 206th St; QUAD: NW; LM: 34                |
| 12       | 3           | NW       | 22         | 15-12003    | SUB: 3; LOC: N Council Rd – NW 50th to W Memorial Rd; QUAD: NW; LM: 22              |
| 12       | 5           | NW       | 28         | 15-12005    | SUB: 5; LOC: W Hefner Rd – N Western Ave to N Council Rd; QUAD: NW; LM: 28          |
| 14       | 6           | W        | 21         | 15-14006    | SUB: 6; LOC: NW 23rd St – N Western Ave to Donald Ave; QUAD: W; LM: 21              |
| 17       | 3           | DT       | 4          | 15-17003    | SUB: 3; LOC: E Sheridan Ave – EK Gaylord to N Lincoln Blvd; QUAD: DT; LM: 4         |
| 15       | 1           | DT       | 6          | 15-15001    | SUB: 1; LOC: EK Gaylord/Broadway – W Reno Ave to NW 13th St; QUAD: DT; LM: 6        |
| 7        | 1           | SE       | 0          | 15-7001     | SUB: 1; LOC: EMSA Garage – 2323 S Walker Ave; QUAD: SE; LM: 0                       |
| 5        | 2           | SE       | 0          | 15-5002     | SUB: 2; LOC: Southwest Medical Center – 4401 S Western Ave; QUAD: SE; LM: 0         |
| 11       | 3           | NW       | 0          | 15-11003    | SUB: 3; LOC: Mercy Hospital – 4300 W Memorial Rd; QUAD: NW; LM: 0                   |
| 13       | 5           | W        | 0          | 15-13005    | SUB: 5; LOC: Deaconess Hospital – 5501 N Portland Ave; QUAD: W; LM: 0               |
| 17       | 1           | DT       | 6          | 15-17001    | SUB: 1; LOC: Reno Ave/Johnny Bench Dr – EK Gaylord to Lincoln Blvd; QUAD: DT; LM: 6 |
| 14       | 7           | W        | 21         | 15-14007    | SUB: 7; LOC: N Meridian Ave – W Reno Ave to NW Expressway; QUAD: W; LM: 21          |
| 15       | 7           | DT       | 4          | 15-15007    | SUB: 7; LOC: SW 4th St – Western Ave to Shields Blvd; QUAD: DT; LM: 4               |
| 17       | 11          | DT       | 3          | 15-17011    | SUB: 11; LOC: NW 13th St – N Broadway to N Lincoln Blvd; QUAD: DT; LM: 3            |
| 13       | 2           | W        | 2          | 15-13002    | SUB: 2; LOC: NW Grand Blvd – NW 63rd St to N Western Ave; QUAD: W; LM: 2            |
| 1        | 3           | SW       | 18         | 15-1003     | SUB: 3; LOC: S Council Rd – W Reno to SW 74th St; QUAD: SW; LM: 18                  |
| 8        | 6           | NE       | 4          | 15-8006     | SUB: 6; LOC: N Broadway Ave – NW 13th St to NW 23rd St; QUAD: NE; LM: 4             |
| 13       | 6           | W        | 0          | 15-13006    | SUB: 6; LOC: Will Rogers Briefing Station – 3112 N Grand Blvd; QUAD: W; LM:         |

| SN ROUTE | SN SUBROUTE | QUADRANT | LANE MILES | FACILITY ID | LOCATION  |
|----------|-------------|----------|------------|-------------|---|
| 8        | 2           | NE       | 0          | 15-8002     | SUB: 2; LOC: Spring Lake Station – 4116 N Prospect Ave; QUAD: NE; LM:                       |
| 8        | 3           | NE       | 0          | 15-8003     | SUB: 3; LOC: Regional EOC – 4600 Martin Luther King Ave; QUAD: NE; LM:                      |
| 15       | 5           | DT       | 0          | 15-15005    | SUB: 5; LOC: ECC/911 – 715 Robert S Kerr Ave; QUAD: DT; LM:                                 |
| 9        | 2           | NE       | 0          | 15-9002     | SUB: 2; LOC: McBride Orthopedic Hospital – 9600 N Broadway Extension; QUAD: NE; LM: 0       |
| 1        | 1           | SW       | 16         | 15-1001     | SUB: 1; LOC: S Meridian Ave – Amelia Earhart Ln to Reno; QUAD: SW; LM: 16                   |
| 2        | 2           | SW       | 8          | 15-2002     | SUB: 2; LOC: SW 54th St – S Regina Ave to S Portland Ave; QUAD: SW; LM: 8                   |
| 2        | 3           | SW       | 12         | 15-2003     | SUB: 3; LOC: SW 15th St – S Meridian to S Pennsylvania; QUAD: SW; LM: 12                    |
| 2        | 4           | SW       | 8          | 15-2004     | SUB: 4; LOC: S Agnew Ave – W Reno to SW 29th St; QUAD: SW; LM: 8                            |
| 3        | 7           | SW       | 12         | 15-3007     | SUB: 7; LOC: SW 29th St – S Portland to S Western Ave; QUAD: SW ; LM: 12                    |
| 5        | 3           | SE       | 12         | 15-5003     | SUB: 3; LOC: SW 74th St/I-240 Svc Rd – S Western to S Eastern Ave; QUAD: SE; LM: 12         |
| 5        | 4           | SE       | 12         | 15-5004     | SUB: 4; LOC: S 44th St – S Western to S Eastern Ave; QUAD: SE; LM: 12                       |
| 6        | 1           | SE       | 39         | 15-6001     | SUB: 1; LOC: S Shields Blvd – Reno Ave to SE 104th St; QUAD: SE; LM: 39                     |
| 7        | 2           | SE       | 6          | 15-7002     | SUB: 2; LOC: Reno Ave/Johnny Bench Dr – Lincoln Blvd to Bryant PL; QUAD: SE; LM: 6          |
| 7        | 3           | SE       | 26         | 15-7003     | SUB: 3; LOC: S Eastern/American Indian Blvd – E Reno south to City Limits; QUAD: SE; LM: 26 |
| 8        | 8           | NE       | 4          | 15-8008     | SUB: 8; LOC: N Lottie Ave – NE 13th to NE 23rd St; QUAD: NE; LM: 4                          |
| 8        | 10          | NE       | 10         | 15-8010     | SUB: 10; LOC: NE 36th St – I-35 Hwy to I-235 Hwy; QUAD: NE; LM: 10                          |
| 9        | 3           | NE       | 23         | 15-9003     | SUB: 3; LOC: Britton Rd – Waverly Ave to N Sooner Rd; QUAD: NE; LM: 23                      |
| 10       | 1           | NE       | 41         | 15-10001    | SUB: 1; LOC: N Western Ave – NW 50th St to NW 206th St; QUAD: NE; LM: 41                    |
| 10       | 3           | NE       | 24         | 15-10003    | SUB: 3; LOC: E Memorial Rd – N Western Ave to I-35 Hwy; QUAD: NE; LM: 24                    |



April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

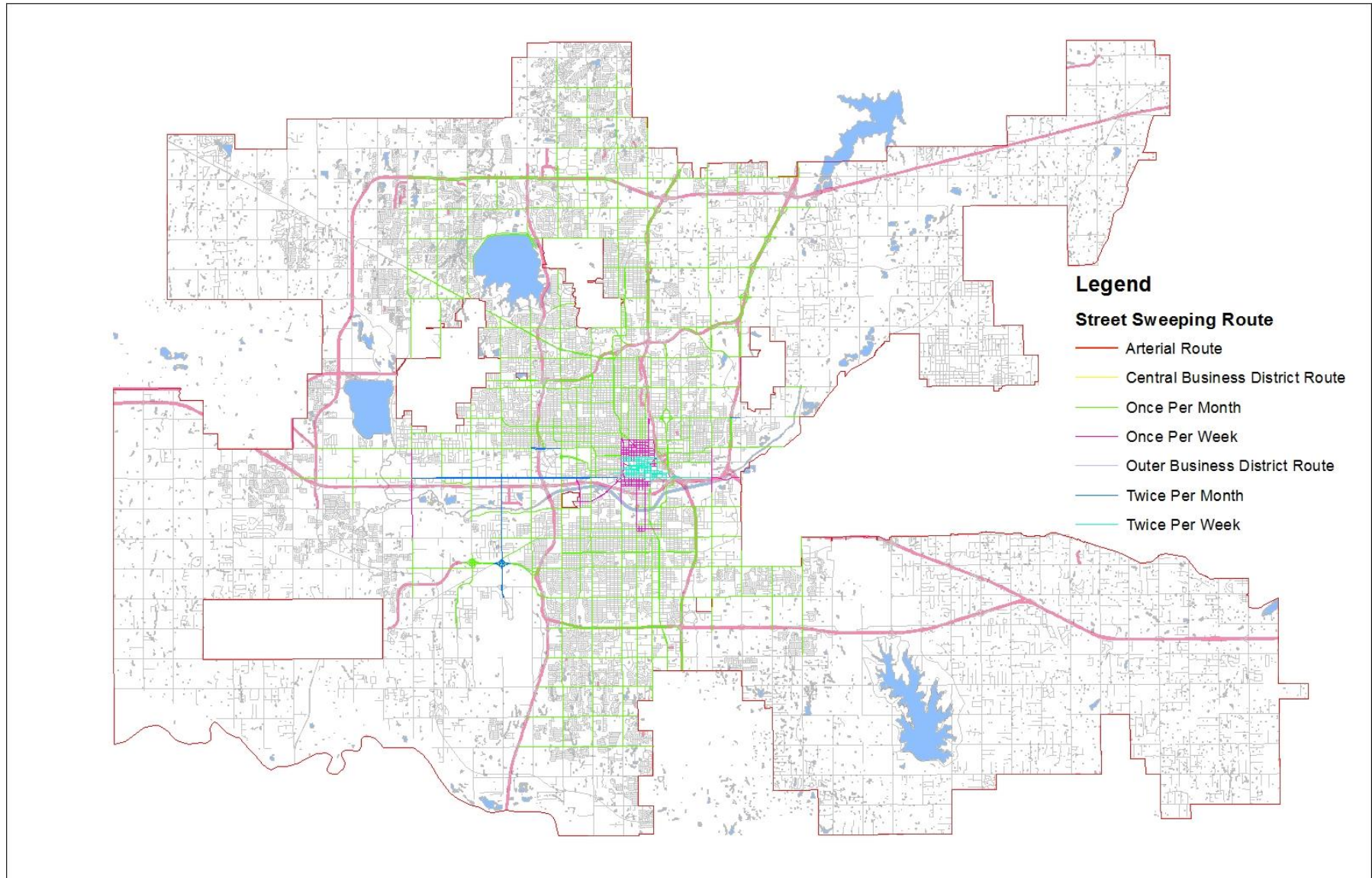
| SN ROUTE | SN SUBROUTE | QUADRANT | LANE MILES | FACILITY ID | LOCATION  |
|----------|-------------|----------|------------|-------------|---|
| 11       | 2           | NW       | 28         | 15-11002    | SUB: 2; LOC: W Memorial Rd – N Council Rd to N Western Ave; QUAD: NW; LM: 28  |
| 12       | 1           | NW       | 12         | 15-12001    | SUB: 1; LOC: NW 63rd St – N Western to N Grove Ave; QUAD: NW; LM: 12          |
| 12       | 2           | NW       | 12         | 15-12002    | SUB: 2; LOC: W Wilshire Blvd – NW Expressway to N Morgan Rd; QUAD: NW; LM: 12 |
| 13       | 1           | W        | 32         | 15-13001    | SUB: 1; LOC: N Classen Blvd – W Reno to NW 63rd St; QUAD: W; LM: 32           |
| 13       | 3           | W        | 18         | 15-13003    | SUB: 3; LOC: NW Expressway – Hefner Parkway to Classen Cir; QUAD: W; LM: 18   |
| 13       | 4           | W        | 0          | 15-13004    | SUB: 4; LOC: Baptist Medical Center – 3300 NW Expressway; QUAD: W; LM: 0      |
| 13       | 7           | W        | 24         | 15-13007    | SUB: 7; LOC: N May Ave – NW 63rd St to W Reno Ave; QUAD: W; LM: 24            |
| 14       | 1           | W        | 40         | 15-14001    | SUB: 1; LOC: W Reno Ave – N Western to N Czech Hall Rd; QUAD: W; LM: 40       |
| 14       | 4           | W        | 8          | 15-14004    | SUB: 4; LOC: N Council Rd – W Reno to NW 23rd St; QUAD: W; LM: 8              |
| 15       | 2           | DT       | 6          | 15-15002    | SUB: 2; LOC: N Walker Ave – W Reno Ave to NW 13th St; QUAD: DT; LM: 6         |
| 15       | 4           | DT       | 8          | 15-15004    | SUB: 4; LOC: Robinson Ave – HWY I-40 to NW 13th St; QUAD: DT; LM: 8           |
| 15       | 6           | DT       | 4          | 15-15006    | SUB: 6; LOC: SW 3rd St – Western Ave to Shields Blvd; QUAD: DT; LM: 4         |
| 16       | 1           | DT       | 5          | 15-16001    | SUB: 1; LOC: NW 5th St – N Western to N Walnut Ave; QUAD: DT; LM: 5           |
| 15       | 3           | DT       | 6          | 15-15003    | SUB: 3; LOC: Hudson Ave – NW 13th St to SW 3rd St; QUAD: DT; LM: 6            |
| 16       | 2           | DT       | 5          | 15-16002    | SUB: 2; LOC: NW 6th St – N Western to N Walnut Ave; QUAD: DT; LM: 5           |
| 16       | 6           | DT       | 4          | 15-16006    | SUB: 6; LOC: NW 10th St – N Western to N Broadway Ave; QUAD: DT; LM: 4        |
| 16       | 7           | DT       | 0          | 15-16007    | SUB: 7; LOC: Saint Anthony Hospital – 1000 NW 10th St; QUAD: DT; LM: 0        |
| 16       | 8           | DT       | 0          | 15-16008    | SUB: 8; LOC: EMSA Head Quarters – 515 NW 10th St; QUAD: DT; LM: 0             |
| 16       | 9           | DT       | 6          | 15-16009    | SUB: 9; LOC: NW 13th St – N Western to N Broadway Ave; QUAD: DT; LM: 6        |

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

| SN ROUTE | SN SUBROUTE | QUADRANT | LANE MILES | FACILITY ID | LOCATION   |
|----------|-------------|----------|------------|-------------|--|
| 17       | 2           | DT       | 4          | 15-17002    | SUB: 2; LOC: Lincoln Blvd – E Reno Ave to NE 4th St; QUAD: DT; LM: 4     |
| 18       | 1           | DT       | 6          | 15-18001    | SUB: 1; LOC: NE 4th St – N Lincoln Blvd to MLK; QUAD: DT; LM: 6          |
| 17       | 8           | DT       | 4          | 15-17008    | SUB: 8; LOC: Harrison Ave – NE 4th St to N Lincoln Blvd; QUAD: DT; LM: 4 |
| 18       | 2           | DT       | 6          | 15-18002    | SUB: 2; LOC: NE 8th St – N Lincoln to JW Simmons Blvd; QUAD: DT; LM: 6   |
| 18       | 4           | DT       | 8          | 15-18004    | SUB: 4; LOC: N Lottie Ave – NE 4th to NE 13th St; QUAD: DT; LM: 8        |
| 18       | 5           | DT       | 4          | 15-18005    | SUB: 5; LOC: NE 13th St – N Lottie to N Lincoln Blvd; QUAD: DT; LM: 4    |
| 14       | 3           | W        | 8          | 15-14003    | SUB: 3; LOC: N Mustang Rd – W Reno to NW 23rd St; QUAD: W; LM: 8         |
| 8        | 4           | NE       | 0          | 15-8004     | SUB: 4; LOC: North Central OK Dialysis - 200 NE 50th St; QUAD: NE; LM: 0 |
| 3        | 1           | SW       | 0          | 15-3001     | SUB: 1; LOC: City Bus Terminal/Garage - 1900 S May Ave; QUAD: SW; LM: 0  |

## Appendix O: Oklahoma Street Sweeping Route Map



| Street Name             | Sweep Frequency | Length (ft.) |
|-------------------------|-----------------|--------------|
|                         | 1PM             | 1897         |
| AIRPORT RD              | 1PM             | 19739        |
| ALTADENA AVE            | 1PM             | 204          |
| BELLE ISLE BLVD         | 1PM             | 3230         |
| BELLE ISLE BLVD MEDIAN  | 1PM             | 37           |
| BELLFOUNTAIN DR         | 1PM             | 63           |
| BRANDON PL              | 1PM             | 451          |
| BROADWAY EXTENSION      | 1PM             | 51881        |
| BROCK DR                | 1PM             | 307          |
| BROOKSIDE DR            | 1PM             | 48           |
| CLASSEN CIR             | 1PM             | 3583         |
| CLASSEN DR              | 1PM             | 3020         |
| CLEARBROOK RD           | 1PM             | 450          |
| E BRITTON RD            | 1PM             | 20479        |
| E HEFNER RD             | 1PM             | 5491         |
| E I-240 SERVICE RD      | 1PM             | 7460         |
| E I-44 SERVICE RD       | 1PM             | 8675         |
| E MEMORIAL RD           | 1PM             | 26732        |
| E WILSHIRE BLVD         | 1PM             | 5028         |
| E WILSHIRE BLVD MEDIAN  | 1PM             | 129          |
| GENERAL PERSHING BLVD   | 1PM             | 11338        |
| GLADE AVE               | 1PM             | 58           |
| HARRISON AVE            | 1PM             | 1327         |
| HIGHLAND PARK BLVD      | 1PM             | 448          |
| J W SIMMONS BLVD        | 1PM             | 2922         |
| J W SIMMONS BLVD MEDIAN | 1PM             | 108          |
| LINWOOD BLVD            | 1PM             | 9634         |
| MARTIN PARK BLVD        | 1PM             | 404          |
| N ANN ARBOR AVE         | 1PM             | 73           |
| N BLACKWELDER AVE       | 1PM             | 48           |
| N BRAUER AVE            | 1PM             | 51           |
| N CLASSEN BLVD          | 1PM             | 62882        |
| N CLASSEN BLVD MEDIAN   | 1PM             | 246          |
| N COUNCIL RD            | 1PM             | 31249        |
| N DOUGLAS AVE           | 1PM             | 43           |
| N DREXEL BLVD           | 1PM             | 4017         |
| N EASTERN AVE           | 1PM             | 23702        |
| N ELLISON AVE           | 1PM             | 48           |
| N GRAND BLVD            | 1PM             | 11470        |

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

| <b>Street Name</b>        | <b>Sweep Frequency</b> | <b>Length (ft.)</b> |
|---------------------------|------------------------|---------------------|
| N HARVARD AVE             | 1PM                    | 105                 |
| N I-44 SERVICE RD         | 1PM                    | 1387                |
| N INDIANA AVE             | 1PM                    | 42                  |
| N KELLEY AVE              | 1PM                    | 11886               |
| N KENTUCKY AVE            | 1PM                    | 44                  |
| N KLEIN AVE               | 1PM                    | 40                  |
| N LIBBY AVE               | 1PM                    | 55                  |
| N LOTTIE AVE              | 1PM                    | 7968                |
| N MACARTHUR BLVD          | 1PM                    | 36677               |
| N MAY AVE                 | 1PM                    | 73465               |
| N MAY AVE MEDIAN          | 1PM                    | 68                  |
| N MCKINLEY AVE            | 1PM                    | 43                  |
| N MERIDIAN AVE            | 1PM                    | 33039               |
| N MISSOURI AVE            | 1PM                    | 49                  |
| N MORGAN RD               | 1PM                    | 4461                |
| N PENNSYLVANIA AVE        | 1PM                    | 58692               |
| N PENNSYLVANIA AVE MEDIAN | 1PM                    | 168                 |
| N PORTLAND AVE            | 1PM                    | 30248               |
| N ROCKWELL AVE            | 1PM                    | 39456               |
| N SANTA FE AVE            | 1PM                    | 21235               |
| N SHARTEL AVE             | 1PM                    | 11245               |
| N SHARTEL AVE MEDIAN      | 1PM                    | 130                 |
| N ST CLAIR AVE            | 1PM                    | 61                  |
| N TULSA AVE               | 1PM                    | 542                 |
| N VILLA AVE               | 1PM                    | 16923               |
| N VIRGINIA AVE            | 1PM                    | 8848                |
| N WALKER AVE              | 1PM                    | 14579               |
| N WALNUT AVE              | 1PM                    | 2851                |
| N WESTERN AVE             | 1PM                    | 61916               |
| N YOUNGS BLVD             | 1PM                    | 213                 |
| NE 10TH ST                | 1PM                    | 20393               |
| NE 122ND ST               | 1PM                    | 8633                |
| NE 13TH ST                | 1PM                    | 6552                |
| NE 23RD ST                | 1PM                    | 17536               |
| NE 23RD ST MEDIAN         | 1PM                    | 39                  |
| NE 36TH ST                | 1PM                    | 19529               |
| NE 4TH ST                 | 1PM                    | 10049               |
| NE 50TH ST                | 1PM                    | 12338               |
| NE 63RD ST                | 1PM                    | 15869               |
| NE 71ST ST                | 1PM                    | 531                 |

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

| <b>Street Name</b> | <b>Sweep Frequency</b> | <b>Length (ft.)</b> |
|--------------------|------------------------|---------------------|
| NE 8TH ST          | 1PM                    | 8550                |
| NE GRAND BLVD      | 1PM                    | 14797               |
| NEWCASTLE RD       | 1PM                    | 7630                |
| NORTHWEST PASSAGE  | 1PM                    | 55                  |
| NW 11TH ST         | 1PM                    | 40                  |
| NW 122ND ST        | 1PM                    | 43124               |
| NW 12TH ST         | 1PM                    | 6524                |
| NW 14TH ST         | 1PM                    | 32                  |
| NW 150TH ST        | 1PM                    | 15868               |
| NW 164TH ST        | 1PM                    | 12985               |
| NW 16TH ST         | 1PM                    | 37097               |
| NW 178TH ST        | 1PM                    | 13171               |
| NW 17TH ST         | 1PM                    | 88                  |
| NW 18TH ST         | 1PM                    | 53                  |
| NW 19TH ST         | 1PM                    | 17719               |
| NW 1ST ST          | 1PM                    | 52                  |
| NW 20TH ST         | 1PM                    | 42                  |
| NW 21ST ST         | 1PM                    | 44                  |
| NW 22ND ST         | 1PM                    | 54                  |
| NW 24TH ST         | 1PM                    | 73                  |
| NW 25TH ST         | 1PM                    | 68                  |
| NW 26TH ST         | 1PM                    | 66                  |
| NW 27TH ST         | 1PM                    | 61                  |
| NW 28TH ST         | 1PM                    | 54                  |
| NW 29TH ST         | 1PM                    | 53                  |
| NW 30TH ST         | 1PM                    | 9359                |
| NW 31ST ST         | 1PM                    | 57                  |
| NW 32ND ST         | 1PM                    | 57                  |
| NW 33RD ST         | 1PM                    | 58                  |
| NW 34TH ST         | 1PM                    | 60                  |
| NW 35TH ST         | 1PM                    | 59                  |
| NW 36TH ST         | 1PM                    | 29428               |
| NW 37TH ST         | 1PM                    | 63                  |
| NW 38TH ST         | 1PM                    | 65                  |
| NW 39TH ST         | 1PM                    | 33645               |
| NW 39TH ST MEDIAN  | 1PM                    | 543                 |
| NW 3RD ST          | 1PM                    | 52                  |
| NW 40TH ST         | 1PM                    | 2265                |
| NW 41ST ST         | 1PM                    | 64                  |
| NW 42ND ST         | 1PM                    | 66                  |

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

| <b>Street Name</b>   | <b>Sweep Frequency</b> | <b>Length (ft.)</b> |
|----------------------|------------------------|---------------------|
| NW 43RD ST           | 1PM                    | 66                  |
| NW 44TH ST           | 1PM                    | 64                  |
| NW 45TH ST           | 1PM                    | 62                  |
| NW 46TH ST           | 1PM                    | 62                  |
| NW 47TH ST           | 1PM                    | 49                  |
| NW 4TH DR            | 1PM                    | 49                  |
| NW 4TH ST            | 1PM                    | 53                  |
| NW 50TH ST           | 1PM                    | 22590               |
| NW 51ST ST           | 1PM                    | 55                  |
| NW 63RD ST           | 1PM                    | 26989               |
| NW 7TH ST            | 1PM                    | 46                  |
| NW 8TH ST            | 1PM                    | 54                  |
| NW 9TH ST            | 1PM                    | 50                  |
| NW EXPRESSWAY        | 1PM                    | 71310               |
| NW EXPRESSWAY MEDIAN | 1PM                    | 1148                |
| NW GRAND BLVD        | 1PM                    | 8836                |
| PAWNEE DR            | 1PM                    | 454                 |
| REGINA AVE           | 1PM                    | 14961               |
| REMINGTON PL         | 1PM                    | 3612                |
| S AGNEW AVE MEDIAN   | 1PM                    | 132                 |
| S BLACKWELDER AVE    | 1PM                    | 84                  |
| S BRYANT AVE         | 1PM                    | 8120                |
| S CENTRAL AVE        | 1PM                    | 5283                |
| S DOUGLAS AVE        | 1PM                    | 177                 |
| S EASTERN AVE MEDIAN | 1PM                    | 41                  |
| S HARVEY AVE         | 1PM                    | 1133                |
| S I-35 SERVICE RD    | 1PM                    | 40305               |
| S INDIANA AVE        | 1PM                    | 145                 |
| S LINN AVE           | 1PM                    | 151                 |
| S MACARTHUR BLVD     | 1PM                    | 13998               |
| S MAY AVE            | 1PM                    | 48467               |
| S MCKINLEY AVE       | 1PM                    | 84                  |
| S MILLER AVE         | 1PM                    | 157                 |
| S MORGAN RD          | 1PM                    | 6167                |
| S PENNSYLVANIA AVE   | 1PM                    | 48386               |
| S PORTLAND AVE       | 1PM                    | 19898               |
| S PROSPECT AVE       | 1PM                    | 1032                |
| S ROCKWELL AVE       | 1PM                    | 456                 |
| S ROSS AVE           | 1PM                    | 205                 |
| S SANTA FE AVE       | 1PM                    | 28787               |

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

| <b>Street Name</b>    | <b>Sweep Frequency</b> | <b>Length (ft.)</b> |
|-----------------------|------------------------|---------------------|
| S SHIELDS BLVD        | 1PM                    | 66331               |
| S SHIELDS BLVD MEDIAN | 1PM                    | 513                 |
| S SOONER RD           | 1PM                    | 22286               |
| S SUNNYLANE RD        | 1PM                    | 11118               |
| S VILLA AVE           | 1PM                    | 2008                |
| S VIRGINIA AVE        | 1PM                    | 1102                |
| S WALKER AVE          | 1PM                    | 27311               |
| S WESTERN AVE         | 1PM                    | 42515               |
| S YOUNGS BLVD         | 1PM                    | 151                 |
| SE 15TH ST            | 1PM                    | 15872               |
| SE 23RD ST            | 1PM                    | 1681                |
| SE 25TH ST            | 1PM                    | 55                  |
| SE 27TH ST            | 1PM                    | 58                  |
| SE 28TH ST            | 1PM                    | 59                  |
| SE 29TH ST            | 1PM                    | 15876               |
| SE 30TH ST            | 1PM                    | 57                  |
| SE 31ST ST            | 1PM                    | 56                  |
| SE 32ND ST            | 1PM                    | 52                  |
| SE 33RD ST            | 1PM                    | 51                  |
| SE 34TH ST            | 1PM                    | 52                  |
| SE 35TH ST            | 1PM                    | 53                  |
| SE 37TH ST            | 1PM                    | 55                  |
| SE 38TH ST            | 1PM                    | 53                  |
| SE 39TH ST            | 1PM                    | 54                  |
| SE 40TH ST            | 1PM                    | 51                  |
| SE 41ST ST            | 1PM                    | 51                  |
| SE 42ND ST            | 1PM                    | 53                  |
| SE 43RD ST            | 1PM                    | 51                  |
| SE 44TH ST            | 1PM                    | 26506               |
| SE 45TH ST            | 1PM                    | 63                  |
| SE 46TH ST            | 1PM                    | 63                  |
| SE 47TH ST            | 1PM                    | 63                  |
| SE 49TH ST            | 1PM                    | 61                  |
| SE 50TH ST            | 1PM                    | 62                  |
| SE 51ST ST            | 1PM                    | 80                  |
| SE 54TH ST            | 1PM                    | 63                  |
| SE 55TH ST            | 1PM                    | 63                  |
| SE 57TH ST            | 1PM                    | 67                  |
| SE 58TH ST            | 1PM                    | 61                  |
| SE 59TH ST            | 1PM                    | 26427               |



April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

| <b>Street Name</b>   | <b>Sweep Frequency</b> | <b>Length (ft.)</b> |
|----------------------|------------------------|---------------------|
| SE 62ND ST           | 1PM                    | 64                  |
| SE 64TH ST           | 1PM                    | 62                  |
| SE 66TH ST           | 1PM                    | 64                  |
| SE 79TH ST           | 1PM                    | 66                  |
| SE 89TH ST           | 1PM                    | 2654                |
| SE GRAND BLVD        | 1PM                    | 12910               |
| SILVER CROSSING      | 1PM                    | 117                 |
| SW 104TH ST          | 1PM                    | 20538               |
| SW 119TH ST          | 1PM                    | 19966               |
| SW 134TH ST          | 1PM                    | 24069               |
| SW 15TH ST           | 1PM                    | 24167               |
| SW 23RD ST           | 1PM                    | 2664                |
| SW 25TH ST           | 1PM                    | 9889                |
| SW 29TH ST           | 1PM                    | 28359               |
| SW 3RD ST            | 1PM                    | 5609                |
| SW 44TH ST           | 1PM                    | 32913               |
| SW 54TH ST           | 1PM                    | 4928                |
| SW 54TH ST MEDIAN    | 1PM                    | 60                  |
| SW 59TH ST           | 1PM                    | 21024               |
| SW 74TH ST           | 1PM                    | 5467                |
| SW 89TH ST           | 1PM                    | 18775               |
| SW GRAND BLVD        | 1PM                    | 31345               |
| SW GRAND BLVD MEDIAN | 1PM                    | 590                 |
| W BRITTON RD         | 1PM                    | 8551                |
| W HEFNER RD          | 1PM                    | 43239               |
| W I-240 SERVICE RD   | 1PM                    | 31957               |
| W I-44 SERVICE RD    | 1PM                    | 1573                |
| W MAIN ST            | 1PM                    | 5575                |
| W MEMORIAL RD        | 1PM                    | 79609               |
| W WILSHIRE BLVD      | 1PM                    | 14784               |
| WILLOW SPRINGS AVE   | 1PM                    | 95                  |
| 152 HWY OFFRAMP      | 1PM                    | 2264                |
| 152 HWY ONRAMP       | 1PM                    | 1709                |
| AIRPORT RD ONRAMP    | 1PM                    | 1863                |
| AIRPORT RD OFFRAMP   | 1PM                    | 1830                |
| S AGNEW AVE          | 1PM                    | 15862               |
| N ROBINSON AVE       | 1PM                    | 442                 |
| N ROBINSON AVE       | 1PM                    | 372                 |
| N ROBINSON AVE       | 1PM                    | 363                 |
| N ROBINSON AVE       | 1PM                    | 353                 |

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

| <b>Street Name</b> | <b>Sweep Frequency</b> | <b>Length (ft.)</b> |
|--------------------|------------------------|---------------------|
| N ROBINSON AVE     | 1PM                    | 365                 |
| N ROBINSON AVE     | 1PM                    | 343                 |
| N ROBINSON AVE     | 1PM                    | 311                 |
| N ROBINSON AVE     | 1PM                    | 328                 |
| N ROBINSON AVE     | 1PM                    | 344                 |
| N ROBINSON AVE     | 1PM                    | 373                 |
| N ROBINSON AVE     | 1PM                    | 142                 |
| N ROBINSON AVE     | 1PM                    | 382                 |
| N ROBINSON AVE     | 1PM                    | 378                 |
| N ROBINSON AVE     | 1PM                    | 383                 |
| N ROBINSON AVE     | 1PM                    | 393                 |
| N ROBINSON AVE     | 1PM                    | 94                  |
| N ROBINSON AVE     | 1PM                    | 119                 |
| N ROBINSON AVE     | 1PM                    | 151                 |
| N ROBINSON AVE     | 1PM                    | 389                 |
| N ROBINSON AVE     | 1PM                    | 389                 |
| N ROBINSON AVE     | 1PM                    | 373                 |
| N ROBINSON AVE     | 1PM                    | 373                 |
| N ROBINSON AVE     | 1PM                    | 373                 |
| N ROBINSON AVE     | 1PM                    | 373                 |
| N ROBINSON AVE     | 1PM                    | 385                 |
| N ROBINSON AVE     | 1PM                    | 384                 |
| N ROBINSON AVE     | 1PM                    | 387                 |
| N ROBINSON AVE     | 1PM                    | 387                 |
| N ROBINSON AVE     | 1PM                    | 418                 |
| N ROBINSON AVE     | 1PM                    | 369                 |
| N ROBINSON AVE     | 1PM                    | 369                 |
| N ROBINSON AVE     | 1PM                    | 365                 |
| N ROBINSON AVE     | 1PM                    | 365                 |
| N ROBINSON AVE     | 1PM                    | 232                 |
| N ROBINSON AVE     | 1PM                    | 372                 |
| N ROBINSON AVE     | 1PM                    | 380                 |
| N ROBINSON AVE     | 1PM                    | 382                 |
| N ROBINSON AVE     | 1PM                    | 379                 |
| N ROBINSON AVE     | 1PM                    | 379                 |
| N HARVEY AVE       | 1PM                    | 3970                |
| N HUDSON AVE       | 1PM                    | 3958                |
| S COUNCIL RD       | 1PM                    | 10563               |
| S EASTERN AVE      | 1PM                    | 13195               |
| S EASTERN AVE      | 1PM                    | 3142                |

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

| <b>Street Name</b>       | <b>Sweep Frequency</b> | <b>Length (ft.)</b> |
|--------------------------|------------------------|---------------------|
| S EASTERN AVE            | 1PM                    | 10029               |
| S ROBINSON AVE           | 1PM                    | 6406                |
| NE 23RD ST               | 1PM                    | 2598                |
| NW 10TH ST               | 1PM                    | 11986               |
| NW 10TH ST               | 1PM                    | 5727                |
| NW 10TH ST               | 1PM                    | 20466               |
| NW 10TH ST               | 1PM                    | 4672                |
| NW 10TH ST               | 1PM                    | 1195                |
| NW 10TH ST               | 1PM                    | 579                 |
| NW 10TH ST               | 1PM                    | 4171                |
| NW 10TH ST               | 1PM                    | 4178                |
|                          | 1PM                    | 1987                |
|                          | 1PM                    | 3587                |
|                          | 1PM                    | 2578                |
|                          | 1PM                    | 2590                |
|                          | 1PM                    | 581                 |
|                          | 1PM                    | 633                 |
|                          | 1PM                    | 778                 |
|                          | 1PM                    | 725                 |
| OLD LAKESHORE DR         | 1PM                    | 2054                |
| N LINCOLN BLVD           | 1PM                    | 23155               |
| N LINCOLN BLVD           | 1PM                    | 23151               |
| N MARTIN LUTHER KING AVE | 1PM                    | 4816                |
| N MARTIN LUTHER KING AVE | 1PM                    | 26211               |
| W RENO AVE               | 1PM                    | 32534               |
| N BRYANT AVE             | 1PM                    | 5660                |
| N PORTLAND AVE           | 1PM                    | 1903                |
| W LAKE HEFNER DR         | 1PM                    | 16191               |
| N I-35 SERVICE RD        | 1PM                    | 835                 |
| N I-35 SERVICE RD        | 1PM                    | 4342                |
| N I-35 SERVICE RD        | 1PM                    | 20622               |
| N BRYANT AVE             | 1PM                    | 1287                |
| N BRYANT AVE             | 1PM                    | 40                  |
| N BRYANT AVE             | 1PM                    | 1247                |
| N I-35 SERVICE RD        | 1PM                    | 17933               |
| N I-35 SERVICE RD        | 1PM                    | 2674                |
| N BRYANT AVE             | 1PM                    | 7948                |
| NE 23RD ST OFFRAMP       | 1PM                    | 784                 |
| N LINCOLN BLVD OFFRAMP   | 1PM                    | 965                 |
| NE 23RD ST OFFRAMP       | 1PM                    | 1040                |

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

| <b>Street Name</b>  | <b>Sweep Frequency</b> | <b>Length (ft.)</b> |
|---------------------|------------------------|---------------------|
| NE 23RD ST ONRAMP   | 1PM                    | 992                 |
| NW 23RD ST          | 1PM                    | 6968                |
| S LINCOLN BLVD      | 1PM                    | 363                 |
| S LINCOLN BLVD      | 1PM                    | 647                 |
| S LINCOLN BLVD      | 1PM                    | 82                  |
| S LINCOLN BLVD      | 1PM                    | 702                 |
| S LINCOLN BLVD      | 1PM                    | 1315                |
| S LINCOLN BLVD      | 1PM                    | 1726                |
| S CENTRAL AVE       | 1PM                    | 474                 |
| S CENTRAL AVE       | 1PM                    | 519                 |
| S CENTRAL AVE       | 1PM                    | 549                 |
| S CENTRAL AVE       | 1PM                    | 452                 |
| S CENTRAL AVE       | 1PM                    | 325                 |
| S CENTRAL AVE       | 1PM                    | 500                 |
| S CENTRAL AVE       | 1PM                    | 778                 |
| CLASSEN DR          | 1PW                    | 1867                |
| EXCHANGE AVE        | 1PW                    | 13406               |
| EXCHANGE AVE MEDIAN | 1PW                    | 284                 |
| HARRISON AVE        | 1PW                    | 1178                |
| N BROADWAY AVE      | 1PW                    | 3049                |
| N BROADWAY CIR      | 1PW                    | 922                 |
| N CLASSEN BLVD      | 1PW                    | 12166               |
| N DEWEY AVE         | 1PW                    | 3195                |
| N FRANCIS AVE       | 1PW                    | 2403                |
| N HARVEY AVE        | 1PW                    | 3032                |
| N HUDSON AVE        | 1PW                    | 3018                |
| N LEE AVE           | 1PW                    | 2877                |
| N OKLAHOMA AVE      | 1PW                    | 4680                |
| N ROBINSON AVE      | 1PW                    | 3038                |
| N SHARTEL AVE       | 1PW                    | 3244                |
| N WALKER AVE        | 1PW                    | 3189                |
| N WESTERN AVE       | 1PW                    | 11338               |
| NE 10TH ST          | 1PW                    | 456                 |
| NE 13TH ST          | 1PW                    | 522                 |
| NE 2ND ST           | 1PW                    | 965                 |
| NE 3RD ST           | 1PW                    | 816                 |
| NE 7TH ST           | 1PW                    | 469                 |
| NE 8TH ST           | 1PW                    | 431                 |
| NE 9TH ST           | 1PW                    | 467                 |
| NW 10TH ST          | 1PW                    | 5961                |

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

| <b>Street Name</b> | <b>Sweep Frequency</b> | <b>Length (ft.)</b> |
|--------------------|------------------------|---------------------|
| NW 11TH ST         | 1PW                    | 2857                |
| NW 12TH ST         | 1PW                    | 2581                |
| NW 13TH ST         | 1PW                    | 6537                |
| NW 3RD ST          | 1PW                    | 909                 |
| NW 7TH ST          | 1PW                    | 4903                |
| NW 8TH ST          | 1PW                    | 5381                |
| NW 9TH ST          | 1PW                    | 5383                |
| ROBERT S KERR AVE  | 1PW                    | 1063                |
| S AGNEW AVE        | 1PW                    | 2285                |
| S BROADWAY AVE     | 1PW                    | 772                 |
| S CLASSEN BLVD     | 1PW                    | 1720                |
| S DEWEY AVE        | 1PW                    | 388                 |
| S HARVEY AVE       | 1PW                    | 3085                |
| S HUDSON AVE       | 1PW                    | 3093                |
| S KLEIN AVE        | 1PW                    | 743                 |
| S LEE AVE          | 1PW                    | 1543                |
| S SHARTEL AVE      | 1PW                    | 1542                |
| S WALKER AVE       | 1PW                    | 9445                |
| SE 25TH ST         | 1PW                    | 1693                |
| SW 25TH ST         | 1PW                    | 2658                |
| SW 26TH ST         | 1PW                    | 1577                |
| SW 2ND ST          | 1PW                    | 4114                |
| SW 3RD ST          | 1PW                    | 5481                |
| SW 4TH ST          | 1PW                    | 5079                |
| SW 5TH ST          | 1PW                    | 5067                |
| SW 3RD ST          | 1PW                    | 948                 |
| S AGNEW AVE        | 1PW                    | 1513                |
| S AGNEW AVE        | 1PW                    | 1619                |
| S AGNEW AVE        | 1PW                    | 1636                |
| N BROADWAY AVE     | 1PW                    | 2736                |
| N BROADWAY AVE     | 1PW                    | 357                 |
| N BROADWAY AVE     | 1PW                    | 166                 |
| N BROADWAY AVE     | 1PW                    | 793                 |
| N BROADWAY AVE     | 1PW                    | 315                 |
| N BROADWAY AVE     | 1PW                    | 216                 |
| N BROADWAY AVE     | 1PW                    | 176                 |
| N BROADWAY AVE     | 1PW                    | 63                  |
| NW 22ND ST         | 1PW                    | 111                 |
| N BROADWAY AVE     | 1PW                    | 128                 |
| N BROADWAY AVE     | 1PW                    | 126                 |

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

| <b>Street Name</b>       | <b>Sweep Frequency</b> | <b>Length (ft.)</b> |
|--------------------------|------------------------|---------------------|
| N BROADWAY AVE           | 1PW                    | 152                 |
| N COUNCIL RD             | 1PW                    | 20916               |
| S LINCOLN BLVD           | 1PW                    | 787                 |
| S LINCOLN BLVD           | 1PW                    | 788                 |
| N MARTIN LUTHER KING AVE | 1PW                    | 7826                |
| E RENO AVE               | 1PW                    | 5110                |
| S ROBINSON AVE           | 1PW                    | 8646                |
| N WALKER AVE             | 1PW                    | 120                 |
| S CLASSEN BLVD           | 1PW                    | 1566                |
| AIRPORT RD OFFRAMP       | 2PM                    | 1888                |
| AIRPORT RD ONRAMP        | 2PM                    | 1510                |
| AIRPORT RD ONRAMP        | 2PM                    | 1881                |
| AIRPORT RD OFFRAMP       | 2PM                    | 1779                |
| NE 23RD ST               | 2PM                    | 1795                |
| NW 10TH ST               | 2PM                    | 5262                |
| W RENO AVE               | 2PM                    | 336                 |
| W RENO AVE               | 2PM                    | 120                 |
| W RENO AVE               | 2PM                    | 655                 |
| W RENO AVE               | 2PM                    | 166                 |
| W RENO AVE               | 2PM                    | 369                 |
| W RENO AVE               | 2PM                    | 640                 |
| W RENO AVE               | 2PM                    | 655                 |
| W RENO AVE MEDIAN        | 2PM                    | 53                  |
| W RENO AVE MEDIAN        | 2PM                    | 54                  |
| W RENO AVE MEDIAN        | 2PM                    | 73                  |
| W RENO AVE MEDIAN        | 2PM                    | 99                  |
| W RENO AVE MEDIAN        | 2PM                    | 102                 |
| W RENO AVE MEDIAN        | 2PM                    | 99                  |
| W RENO AVE MEDIAN        | 2PM                    | 100                 |
| W RENO AVE               | 2PM                    | 774                 |
| W RENO AVE               | 2PM                    | 1089                |
| W RENO AVE               | 2PM                    | 337                 |
| W RENO AVE MEDIAN        | 2PM                    | 99                  |
| W RENO AVE               | 2PM                    | 53                  |
| W RENO AVE               | 2PM                    | 51                  |
| W RENO AVE               | 2PM                    | 586                 |
| W RENO AVE MEDIAN        | 2PM                    | 99                  |
| W RENO AVE               | 2PM                    | 510                 |
| W RENO AVE               | 2PM                    | 585                 |
| W RENO AVE MEDIAN        | 2PM                    | 52                  |

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

| <b>Street Name</b> | <b>Sweep Frequency</b> | <b>Length (ft.)</b> |
|--------------------|------------------------|---------------------|
| W RENO AVE         | 2PM                    | 43                  |
| W RENO AVE         | 2PM                    | 43                  |
| W RENO AVE         | 2PM                    | 220                 |
| W RENO AVE         | 2PM                    | 338                 |
| W RENO AVE         | 2PM                    | 638                 |
| W RENO AVE         | 2PM                    | 639                 |
| W RENO AVE MEDIAN  | 2PM                    | 53                  |
| W RENO AVE         | 2PM                    | 340                 |
| W RENO AVE         | 2PM                    | 326                 |
| W RENO AVE         | 2PM                    | 328                 |
| W RENO AVE MEDIAN  | 2PM                    | 57                  |
| W RENO AVE MEDIAN  | 2PM                    | 54                  |
| W RENO AVE         | 2PM                    | 55                  |
| W RENO AVE         | 2PM                    | 400                 |
| W RENO AVE         | 2PM                    | 401                 |
| W RENO AVE         | 2PM                    | 261                 |
| W RENO AVE         | 2PM                    | 263                 |
| W RENO AVE         | 2PM                    | 510                 |
| W RENO AVE         | 2PM                    | 997                 |
| W RENO AVE         | 2PM                    | 511                 |
| W RENO AVE         | 2PM                    | 943                 |
| W RENO AVE         | 2PM                    | 607                 |
| W RENO AVE         | 2PM                    | 552                 |
| W RENO AVE         | 2PM                    | 355                 |
| W RENO AVE         | 2PM                    | 273                 |
| W RENO AVE         | 2PM                    | 351                 |
| W RENO AVE         | 2PM                    | 272                 |
| W RENO AVE MEDIAN  | 2PM                    | 53                  |
| W RENO AVE         | 2PM                    | 962                 |
| W RENO AVE         | 2PM                    | 414                 |
| W RENO AVE         | 2PM                    | 195                 |
| W RENO AVE         | 2PM                    | 492                 |
| W RENO AVE         | 2PM                    | 1368                |
| W RENO AVE         | 2PM                    | 484                 |
| W RENO AVE         | 2PM                    | 1402                |
| W RENO AVE MEDIAN  | 2PM                    | 153                 |
| W RENO AVE         | 2PM                    | 1400                |
| W RENO AVE MEDIAN  | 2PM                    | 146                 |
| W RENO AVE MEDIAN  | 2PM                    | 100                 |
| W RENO AVE MEDIAN  | 2PM                    | 95                  |

| Street Name       | Sweep Frequency | Length (ft.) |
|-------------------|-----------------|--------------|
| W RENO AVE        | 2PM             | 566          |
| W RENO AVE        | 2PM             | 398          |
| W RENO AVE        | 2PM             | 399          |
| W RENO AVE        | 2PM             | 563          |
| W RENO AVE        | 2PM             | 1325         |
| W RENO AVE        | 2PM             | 288          |
| W RENO AVE        | 2PM             | 980          |
| W RENO AVE        | 2PM             | 600          |
| W RENO AVE        | 2PM             | 600          |
| W RENO AVE        | 2PM             | 981          |
| W RENO AVE MEDIAN | 2PM             | 101          |
| W RENO AVE        | 2PM             | 338          |
| W RENO AVE        | 2PM             | 216          |
| W RENO AVE        | 2PM             | 771          |
| W RENO AVE        | 2PM             | 491          |
| W RENO AVE        | 2PM             | 666          |
| W RENO AVE        | 2PM             | 665          |
| W RENO AVE        | 2PM             | 674          |
| W RENO AVE        | 2PM             | 969          |
| W RENO AVE        | 2PM             | 599          |
| W RENO AVE        | 2PM             | 597          |
| W RENO AVE        | 2PM             | 851          |
| W RENO AVE        | 2PM             | 848          |
| W RENO AVE        | 2PM             | 712          |
| W RENO AVE        | 2PM             | 500          |
| W RENO AVE MEDIAN | 2PM             | 103          |
| W RENO AVE MEDIAN | 2PM             | 101          |
| W RENO AVE MEDIAN | 2PM             | 98           |
| W RENO AVE MEDIAN | 2PM             | 101          |
| W RENO AVE        | 2PM             | 574          |
| W RENO AVE        | 2PM             | 691          |
| W RENO AVE        | 2PM             | 665          |
| W RENO AVE MEDIAN | 2PM             | 101          |
| W RENO AVE        | 2PM             | 632          |
| W RENO AVE        | 2PM             | 633          |
| W RENO AVE        | 2PM             | 781          |
| S VERMONT AVE     | 2PM             | 101          |
| W RENO AVE        | 2PM             | 508          |
| W RENO AVE        | 2PM             | 508          |
| W RENO AVE        | 2PM             | 599          |



April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

| <b>Street Name</b>     | <b>Sweep Frequency</b> | <b>Length (ft.)</b> |
|------------------------|------------------------|---------------------|
| W RENO AVE             | 2PM                    | 1312                |
| W RENO AVE MEDIAN      | 2PM                    | 99                  |
| W RENO AVE MEDIAN      | 2PM                    | 99                  |
| W RENO AVE MEDIAN      | 2PM                    | 102                 |
| W RENO AVE MEDIAN      | 2PM                    | 104                 |
| W RENO AVE             | 2PM                    | 485                 |
| W RENO AVE             | 2PM                    | 472                 |
| W RENO AVE             | 2PM                    | 1159                |
| W RENO AVE             | 2PM                    | 1159                |
| S GREENFIELD CENTER DR | 2PM                    | 102                 |
| W RENO AVE             | 2PM                    | 1411                |
| W RENO AVE             | 2PM                    | 482                 |
| W RENO AVE             | 2PM                    | 1411                |
| W RENO AVE             | 2PM                    | 481                 |
| W RENO AVE MEDIAN      | 2PM                    | 99                  |
| W RENO AVE MEDIAN      | 2PM                    | 98                  |
| W RENO AVE             | 2PM                    | 726                 |
| W RENO AVE             | 2PM                    | 501                 |
| W RENO AVE             | 2PM                    | 729                 |
| W RENO AVE             | 2PM                    | 884                 |
| W RENO AVE             | 2PM                    | 629                 |
| W RENO AVE             | 2PM                    | 51                  |
| W RENO AVE             | 2PM                    | 511                 |
| W RENO AVE             | 2PM                    | 50                  |
| W RENO AVE             | 2PM                    | 511                 |
| W RENO AVE             | 2PM                    | 444                 |
| W RENO AVE             | 2PM                    | 447                 |
| W RENO AVE             | 2PM                    | 632                 |
| W RENO AVE             | 2PM                    | 883                 |
| W RENO AVE             | 2PM                    | 1120                |
| W RENO AVE             | 2PM                    | 60                  |
| W RENO AVE             | 2PM                    | 471                 |
| W RENO AVE             | 2PM                    | 560                 |
| W RENO AVE             | 2PM                    | 559                 |
| W RENO AVE             | 2PM                    | 61                  |
| W RENO AVE             | 2PM                    | 58                  |
| W RENO AVE             | 2PM                    | 465                 |
| W RENO AVE             | 2PM                    | 57                  |
| W RENO AVE             | 2PM                    | 466                 |
| W RENO AVE             | 2PM                    | 183                 |

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

| <b>Street Name</b>        | <b>Sweep Frequency</b> | <b>Length (ft.)</b> |
|---------------------------|------------------------|---------------------|
| W RENO AVE                | 2PM                    | 757                 |
| W RENO AVE                | 2PM                    | 56                  |
| W RENO AVE                | 2PM                    | 56                  |
| W RENO AVE                | 2PM                    | 55                  |
| W RENO AVE                | 2PM                    | 24                  |
| W RENO AVE                | 2PM                    | 24                  |
| W RENO AVE                | 2PM                    | 327                 |
| W RENO AVE                | 2PM                    | 455                 |
| W RENO AVE                | 2PM                    | 1017                |
| W RENO AVE                | 2PM                    | 178                 |
| W RENO AVE                | 2PM                    | 197                 |
| W RENO AVE                | 2PM                    | 472                 |
| W RENO AVE                | 2PM                    | 546                 |
| W RENO AVE                | 2PM                    | 237                 |
| S MERIDIAN AVE            | 2PM                    | 24703               |
|                           | 2PM                    | 2150                |
|                           | 2PM                    | 2243                |
| TERMINAL DR               | 2PM                    | 3054                |
| NW 10TH ST                | 2PM                    | 3783                |
| CHARLIE CHRISTIAN AVE     | 2PW                    | 782                 |
| COLCORD DR                | 2PW                    | 1887                |
| COMPRESS ST               | 2PW                    | 283                 |
| COUCH DR                  | 2PW                    | 3416                |
| DEAN A MCGEE AVE          | 2PW                    | 2339                |
| E CALIFORNIA AVE          | 2PW                    | 748                 |
| E MAIN ST                 | 2PW                    | 1892                |
| E RENO AVE                | 2PW                    | 2383                |
| E RENO AVE                | 2PW                    | 8677                |
| E SHERIDAN AVE            | 2PW                    | 3104                |
| FLAMING LIPS ALLEY        | 2PW                    | 1772                |
| JOHNNY BENCH DR           | 2PW                    | 924                 |
| N BROADWAY AVE            | 2PW                    | 4303                |
| N BROADWAY AVE MEDIAN     | 2PW                    | 33                  |
| N DEWEY AVE               | 2PW                    | 498                 |
| N E K GAYLORD BLVD        | 2PW                    | 4211                |
| N E K GAYLORD BLVD MEDIAN | 2PW                    | 156                 |
| N FRED JONES AVE          | 2PW                    | 920                 |
| N HARVEY AVE              | 2PW                    | 2876                |
| N HARVEY AVE MEDIAN       | 2PW                    | 60                  |
| N HUDSON AVE              | 2PW                    | 3575                |

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

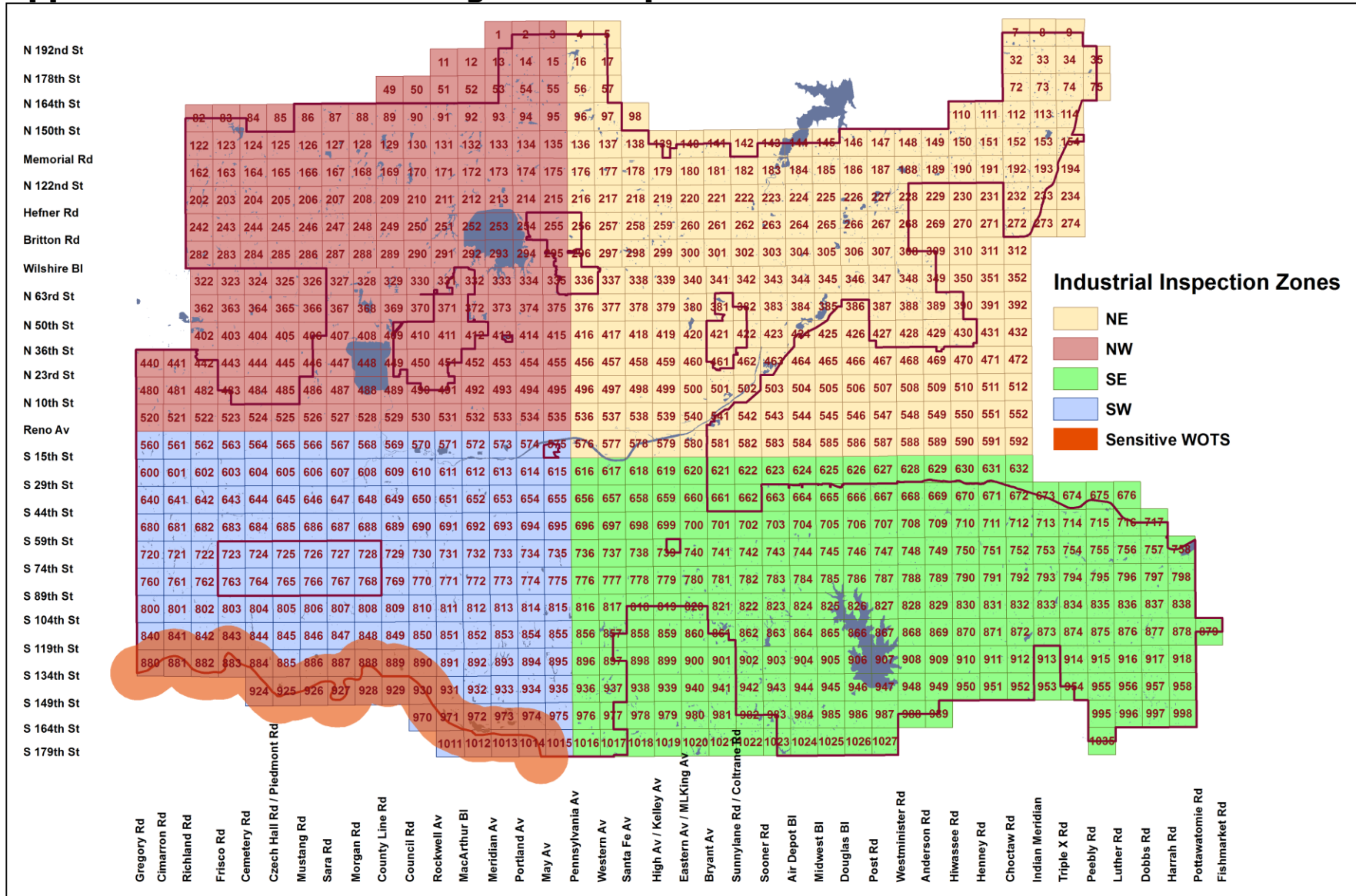
| <b>Street Name</b>        | <b>Sweep Frequency</b> | <b>Length (ft.)</b> |
|---------------------------|------------------------|---------------------|
| N JOE CARTER AVE          | 2PW                    | 186                 |
| N LEE AVE                 | 2PW                    | 1325                |
| N MICKEY MANTLE DR        | 2PW                    | 389                 |
| N OKLAHOMA AVE            | 2PW                    | 426                 |
| N ROBINSON AVE            | 2PW                    | 2456                |
| N SHARTEL AVE             | 2PW                    | 2063                |
| N WALKER AVE              | 2PW                    | 2021                |
| N WALNUT AVE              | 2PW                    | 2289                |
| NE 4TH ST                 | 2PW                    | 518                 |
| NE 5TH ST                 | 2PW                    | 961                 |
| NE 6TH ST                 | 2PW                    | 925                 |
| NW 1ST ST                 | 2PW                    | 867                 |
| NW 4TH ST                 | 2PW                    | 5333                |
| NW 6TH ST                 | 2PW                    | 5361                |
| PARK AVE                  | 2PW                    | 2033                |
| PATIENCE LATTING CIR      | 2PW                    | 579                 |
| ROBERT S KERR AVE         | 2PW                    | 3910                |
| RON NORICK BLVD           | 2PW                    | 1591                |
| S DEWEY AVE               | 2PW                    | 803                 |
| S E K GAYLORD BLVD        | 2PW                    | 1606                |
| S E K GAYLORD BLVD        | 2PW                    | 2336                |
| S E K GAYLORD BLVD MEDIAN | 2PW                    | 46                  |
| S FRED JONES AVE          | 2PW                    | 627                 |
| S JOE CARTER AVE          | 2PW                    | 794                 |
| S LEE AVE                 | 2PW                    | 802                 |
| S MICKEY MANTLE DR        | 2PW                    | 798                 |
| S OKLAHOMA AVE            | 2PW                    | 1762                |
| S OKLAHOMA AVE MEDIAN     | 2PW                    | 61                  |
| S ROBINSON AVE            | 2PW                    | 1589                |
| S SHARTEL AVE             | 2PW                    | 809                 |
| S SHIELDS BLVD            | 2PW                    | 770                 |
| S WALKER AVE              | 2PW                    | 798                 |
| SE 2ND ST                 | 2PW                    | 291                 |
| VINCE GILL AVE            | 2PW                    | 315                 |
| W CALIFORNIA AVE          | 2PW                    | 2242                |
| W MAIN ST                 | 2PW                    | 6202                |
| W MAIN ST MEDIAN          | 2PW                    | 154                 |
| W RENO AVE                | 2PW                    | 6002                |
| W SHERIDAN AVE            | 2PW                    | 6752                |
| WANDA JACKSON WAY         | 2PW                    | 814                 |

April 30, 2018

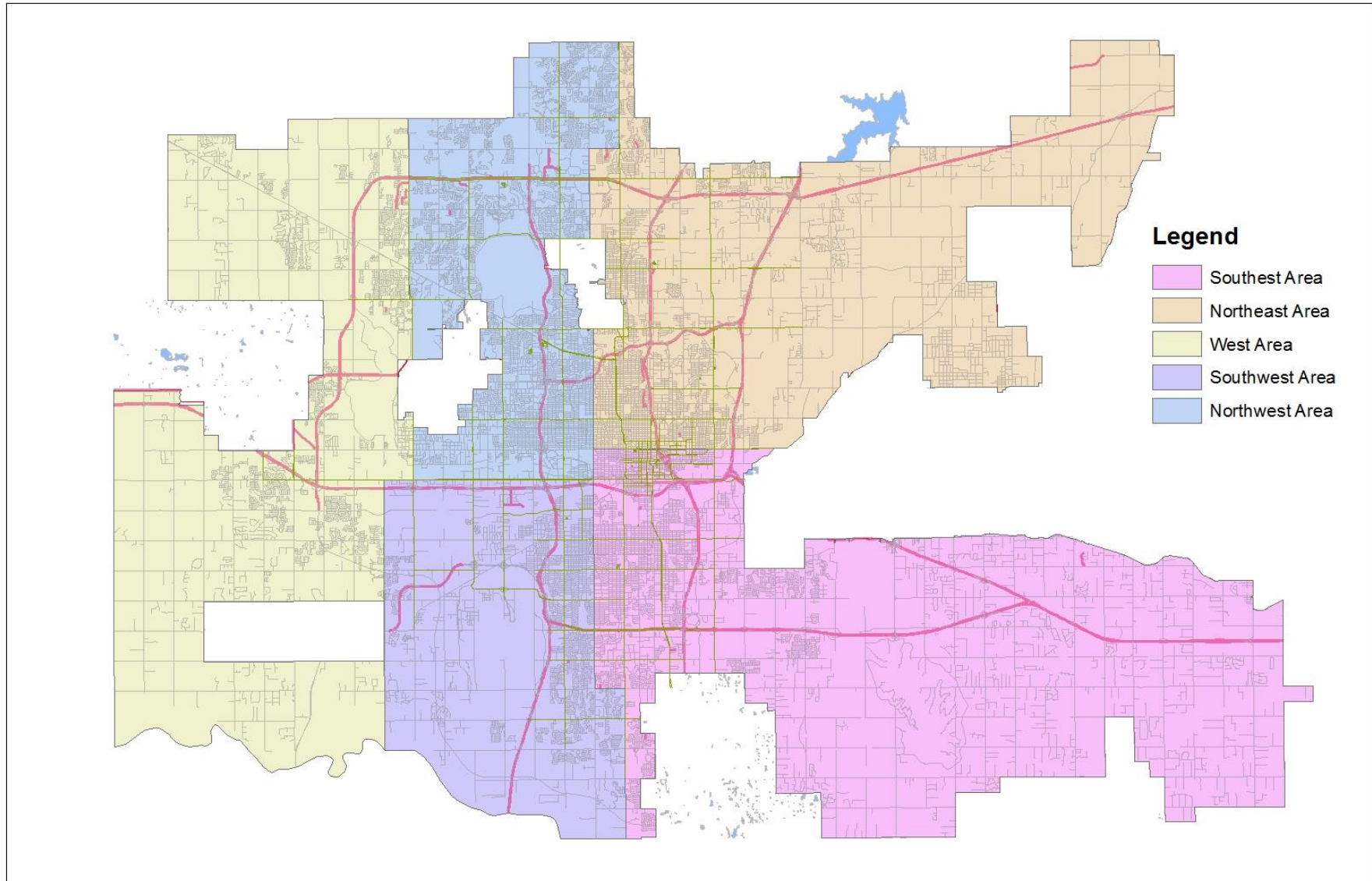
**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

| <b>Street Name</b> | <b>Sweep Frequency</b> | <b>Length (ft.)</b> |
|--------------------|------------------------|---------------------|
| SW 4TH ST          | 2PW                    | 47                  |
| SW 5TH ST          | 2PW                    | 48                  |
| NW 5TH ST          | 2PW                    | 1229                |
| NW 5TH ST          | 2PW                    | 3644                |
| E RENO AVE MEDIAN  | 2PW                    | 81                  |
| RAMP               | 2PW                    | 84                  |
| N ROBINSON AVE     | 2PW                    | 768                 |
| N SHARTEL AVE      | 2PW                    | 751                 |
| N WALKER AVE       | 2PW                    | 762                 |
| TERMINAL DR        |                        | 98                  |
| TERMINAL DR        |                        | 309                 |
| NE 59TH ST         |                        | 65                  |

# Appendix P: Industrial Designated Inspector Areas



## Appendix Q: Construction Designated Inspector Areas



## Appendix R: Waterway Clean Sweep Safety Awareness and Precautions



### WATERWAY CLEAN SWEEP PROGRAM



### Safety Awareness and Precautions

1. Assure that all participants are responsible individuals and that participating minors under the age of eighteen are provided with adequate adult supervision. There should be a one (1) to four (4) adult to child ratio.
2. Children under the age of eleven (11) may not be present along the designated cleanup area.
3. All participants must read and sign the 'Release and Waiver of Liability' agreement. Participants under the age of 18 must have the agreement reviewed and signed by a parent or legal guardian.
4. Leaders will review safety measures with crew members prior to work.
5. Use safety equipment and follow safety precautions at all times. Wear safety vests at all times. When safety vests are not available, wear brightly colored shirts. Wear other clothing that may be appropriate for your work area and the weather, such as boots, long-sleeve shirt, long pants, and a hat.
6. Work during daylight hours. Stop working during inclement weather.
7. Avoid overexertion. Provide water, sunscreen, and insect repellent.

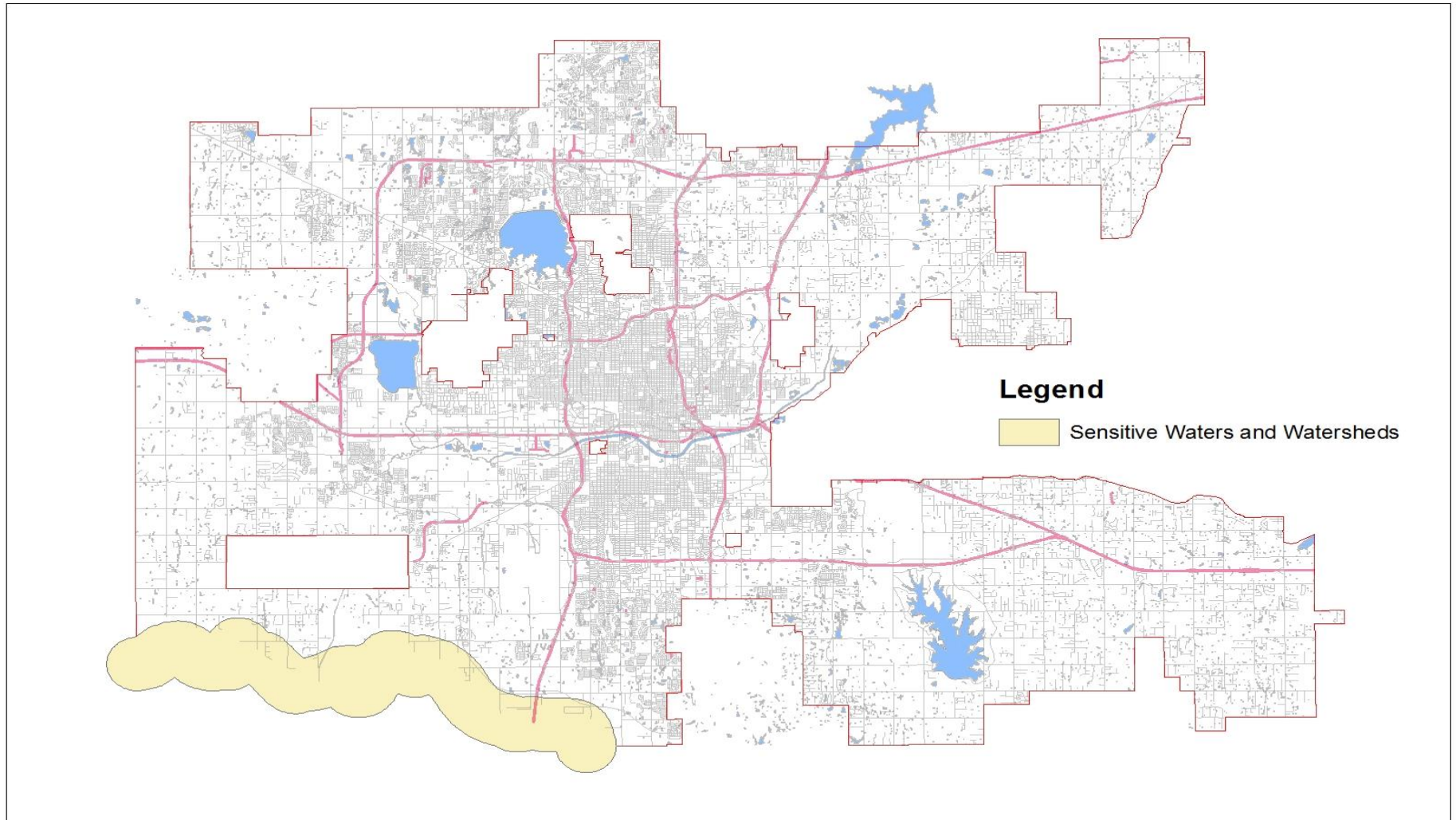
8. Avoid areas with noxious weeds such as poison oak, poison ivy, sumac, etc.
9. Use caution when walking on slopes and be alert for holes and obstacles.
10. Bridges and rip-rap are limits.
11. **Be alert for snakes, stinging insects, spiders, fire ants, etc.**
12. Stay clear of any construction projects.
13. Seek assistance with heavy lifting.
14. Do not remove any hazardous substance. When in doubt, contact Andrea Shelton at **(405) 297-1797** or [andrea.shelton@okc.gov](mailto:andrea.shelton@okc.gov). If after hours, contact the Oklahoma City Police Department (911).
15. Park vehicles in legal parking spaces or off roadside, not on the shoulder. Do not obstruct traffic. Groups are also encouraged to work with nearby businesses, schools, and churches to utilize their parking lots.

### **Always be prepared for an emergency**

- Have a first aid kit available
- Have transportation available at all times
- Know the location of the nearest hospital or emergency room



## Appendix S: Sensitive Waters and Watersheds for Federally Listed Species for the OPDES Multi-Sector General Permit OKR05 for Stormwater Discharges from Industrial Activity and the OKR10 Construction General Permit



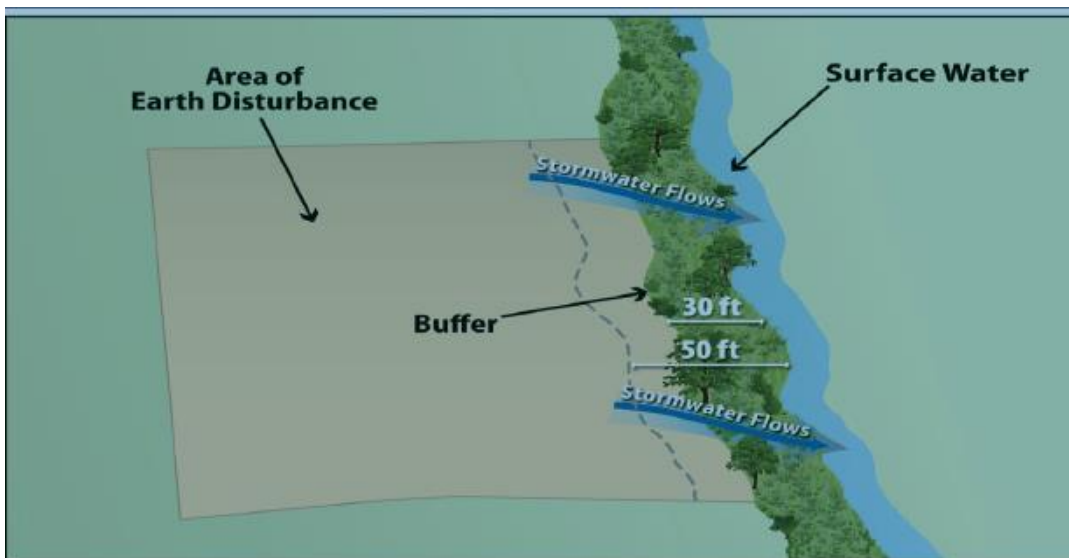
## Appendix T: OKR10 Natural Buffer or Equivalent Sediment Control

The following information was taken wholly or in part from the General Permit OKR10 for Stormwater Discharges from Construction Activities within the State of Oklahoma, October 18, 2017.

### H.1 Sites that are required to provide and maintain natural buffers and/or equivalent erosion and sediment controls

If the land disturbing activities will occur within the Aquatic Resources of Concern (ARC) which are identified by USFWS and ODWC, a vegetated buffer of at least 100 feet is required between the area disturbed and all perennial or intermittent streams on or adjacent to the construction site, or a vegetated buffer of at least 50 feet is required between the area disturbed and all ephemeral streams. If your disturbing activities will be adjacent to the waters of the State, a vegetated buffer of at least 50 feet is required. Figure H – 1 illustrates when a site would be required to comply with the requirements in Part 3.3.1.D due to their proximity to surface waters. If the surface water is not located within 50 feet of the earth-disturbing activities, Part 3.3.1 does not apply. If you determine that the buffer requirements apply to your site and those buffer requirements cannot be met, you may continue on to Part H. 2 of this Addendum.

Figure H - 1. Example of Earth-Disturbing Activities within 50 feet of surface water.



### H.2 Compliance Alternatives to the Buffer Requirements

The following are 3 compliance alternatives from which permittees can choose, unless you qualify for any of the exceptions in Part H.3 of the Addendum:

1. Provide and maintain a 100-foot or 50-foot undisturbed natural buffer; or

2. Provide and maintain an undisturbed natural buffer that is less than 100-feet or 50-feet and is supplemented by additional erosion and sediment controls that achieve the sediment load reduction equivalent to a 100-foot or 50-foot undisturbed natural buffer; or
3. If infeasible to provide and maintain an undisturbed natural buffer of any size, implement erosion and sediment controls to achieve the sediment load reduction equivalent to a 100-foot or 50-foot undisturbed natural buffer.

The compliance alternative selected must be maintained throughout the duration of permit coverage.

### **H.3 Exceptions to the Compliance Alternatives**

The following exceptions apply to the requirement of Parts 3.3.1.B and 3.5.2.A

- Construction approved under a CWA Section 404 permit; or
- Construction of a water-dependent structure or water access areas (e.g., pier, boat ramp, trail); or
- If there is no discharge of stormwater to waters of the State through the area between the disturbed portions of the site and any waters of the State located within 100-feet or 50-feet of the site; or
- Where no natural buffer exists due to preexisting development disturbances (e.g., structures, impervious surfaces) that occurred prior to the initiation of planning for the current development of the site.

You must document in your SWP3 if any disturbances related to any of the above exceptions occurs within the buffer area on your site.

### **H.4 Requirements for Providing and Maintaining Natural Buffers**

This part of the Addendum applies to you if you choose either Compliance Alternative 1 (100-foot or 50-foot buffer) or Compliance Alternative 2 (a buffer of < 100 feet or < 50 feet supplemented by additional erosion and sediment controls that achieve the equivalent sediment load reduction as the 100-foot or 50-foot buffer).

#### **A. Buffer Width Measurement**

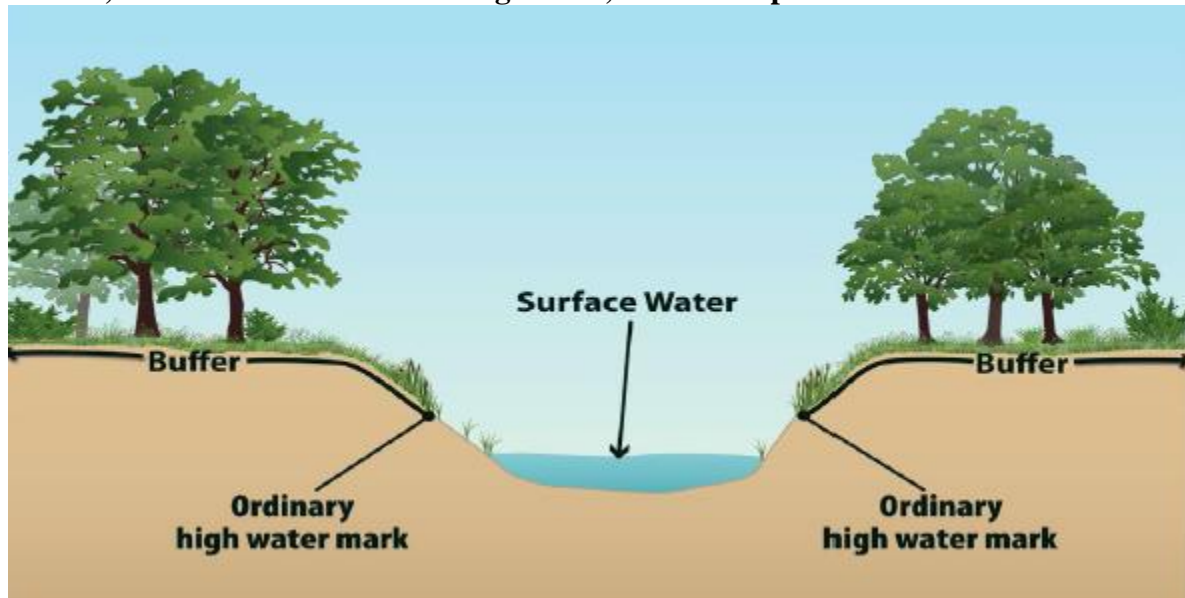
Where you are retaining a buffer of any size, the buffer should be measured perpendicularly from any of the following points, whichever is further landward from the water:

1. The ordinary high water mark of the water body, defined as the line on the shore established by fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, and/or the presence of litter and debris; or
2. The edge of the stream or river bank, bluff, or cliff, whichever is applicable.

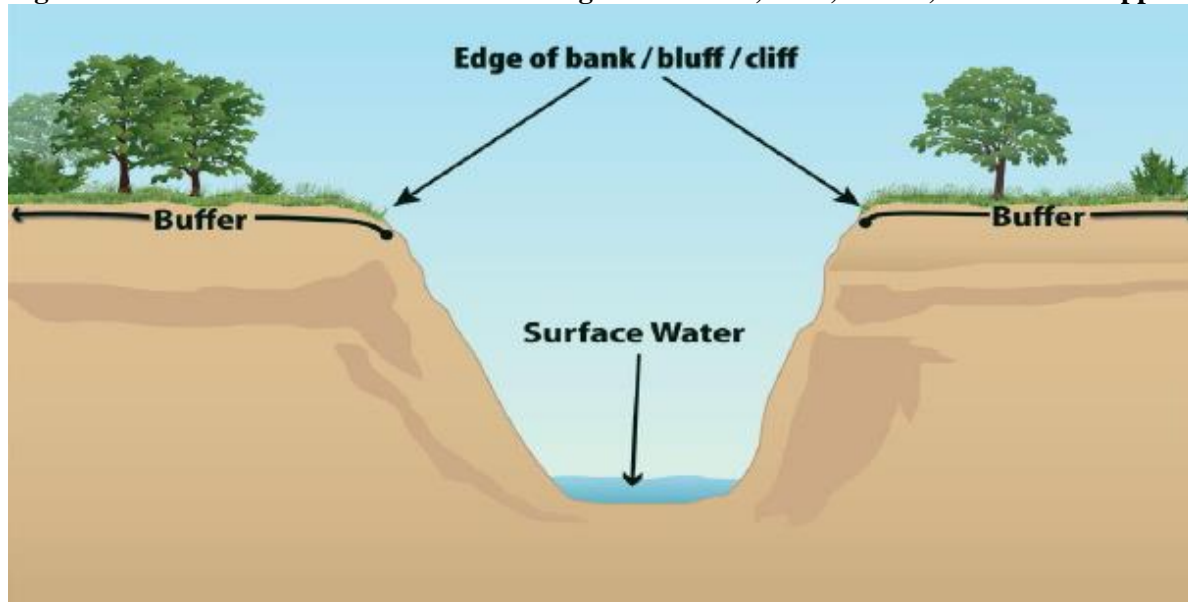
Refer to Figure H-2 and Figure H-3. You may find that specifically measuring these points is

challenging if the flow path of the surface water changes frequently, thereby causing the measurement line for the buffer to fluctuate continuously along the path of the waterbody. Where this is the case, DEQ suggests that rather than measuring each change or deviation along the water's edge, it may be easier to select regular intervals from which to conduct your measurement. For instance, you may elect to conduct your buffer measurement every 5 to 10 feet along the length of the water.

**Figure H - 2 Buffer measurement from the ordinary high water mark of the water body, as indicated by a clear natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, and/or the presence of litter/debris.**



**Figure H - 3 Buffer measurement from the edge of the bank, bluff, or cliff, whichever is applicable.**



B. Limits to Disturbance within the Buffer

You are considered to be in compliance with this requirement to provide and maintain a natural buffer if you retain and protect from construction activities the natural buffer that existed prior to the commencement of construction. If the buffer area contains no vegetation prior to the commencement of construction (e.g., sand or rocky surface), you are not required to plant vegetation. As noted above, any preexisting structures or impervious surfaces are allowed in the buffer provided you retain and protect from disturbance the vegetation in the buffer outside the preexisting disturbance.

To ensure that the water quality protection benefits of the buffer are retained during construction, you are prohibited from conducting any earth-disturbing activities within the buffer during permit coverage.

#### C. Discharges to the Buffer

You must ensure that all discharges from the area of earth disturbance to the natural buffer are first treated by the site's erosion and sediment controls (*for example, you must comply with the Part 3.3.1.C requirement to establish sediment controls along any perimeter areas of the site that will receive pollutant discharges*), and if necessary to prevent erosion caused by stormwater flows within the buffer, you must use velocity dissipation devices.

#### D. SWP3 Documentation

You are required to document in your SWP3 the natural buffer width that is retained. For example, if you are complying with Compliance Alternative 1, you must specify in your SWP3 that you are providing a 100-foot or 50-foot buffer. Or, if you will be complying with Compliance Alternative 2, you must document the reduced width of the buffer you will be retaining (and you must also describe the erosion and sediment controls you will use to achieve an equivalent sediment reduction, as required in Part H.5 below. Note that you must also show any buffers on your site map in your SWP3. Additionally, if any disturbances related to the exceptions in Part H. occur within the buffer area, you must document this in the SWP3.

### **H.5 Guidance for Providing the Equivalent Sediment Reduction as the 100-foot or 50-foot Buffer**

If you are selecting Compliance Alternative 2 (provide and maintain a buffer that is less than 100 feet or 50 feet that is supplemented by erosion and sediment controls that achieve the sediment load reduction equivalent to a 100-foot or 50-foot buffer) or Compliance Alternative 3 (implement erosion and sediment controls to achieve the sediment load reduction equivalent to a 100-foot or 50-foot buffer).

#### A. Determine Whether it is Feasible to Provide a Reduced Buffer

DEQ recognizes that there will be a number of situations in which it will be infeasible to provide and maintain a buffer of any width. While some of these situations may exempt you from the buffer requirement entirely (See H.3), if you do not qualify for one of these exemptions, there still may be conditions or circumstances at your site that make it infeasible to provide a natural

buffer. For example, there may be sites where a significant portion of the property on which the earth-disturbing activities will occur is located within the buffer area, thereby precluding the retention of natural buffer areas.

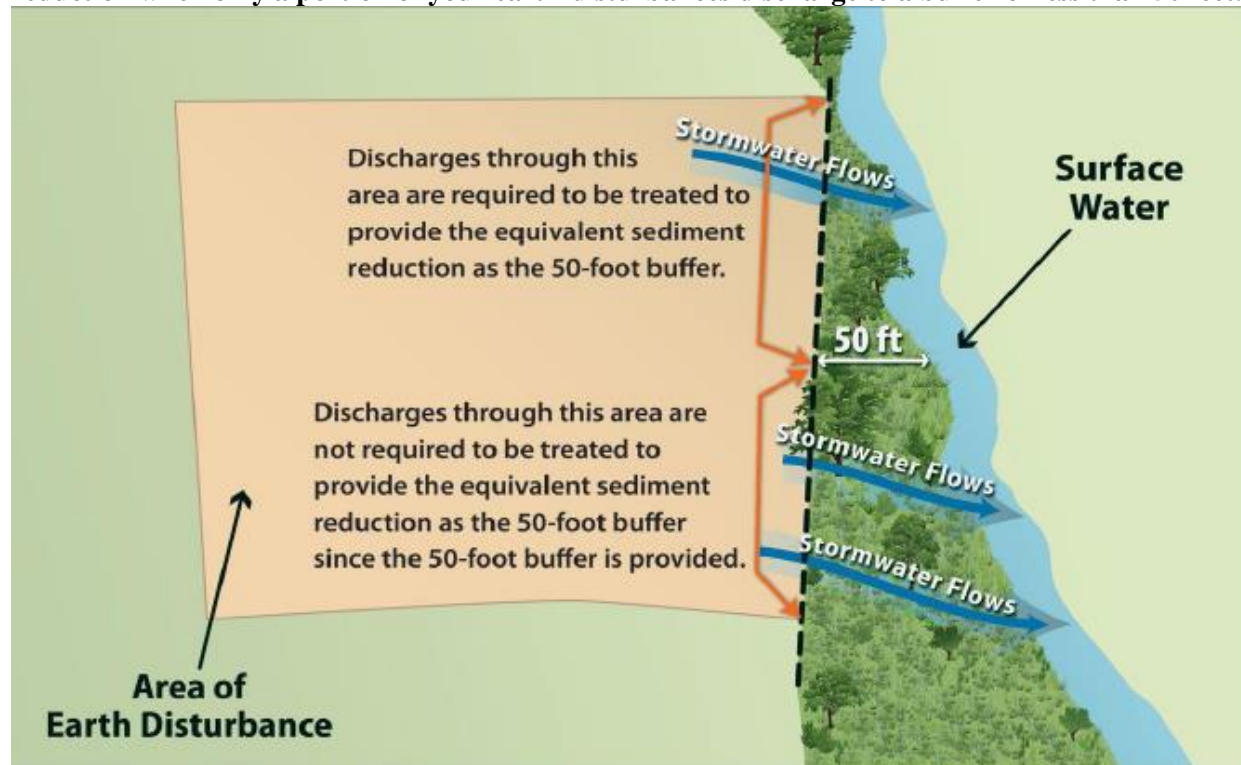
Therefore, you should choose Compliance Alternative 2 if it is feasible for you to retain some natural buffer on your site. (Note: For any buffer width retained, you are required to comply with the requirements in Part H.4, above, concerning the retention of vegetation and restricting earth disturbances.) Similarly, if you determine that it is infeasible to provide a natural buffer of any size during construction, you should choose Compliance Alternative 3.

#### B. Design Controls That Provide Equivalent Sediment Reduction as 100-foot or 50-foot Buffer

You must next determine what additional controls must be implemented on your site that, alone or in combination with any retained natural buffer, achieve a reduction in sediment equivalent to that achieved by a 100-foot or 50-foot buffer.

Note that if only a portion of the natural buffer is less than 50 feet, you are only required to implement erosion and sediment controls that achieve the sediment load reduction equivalent to the 50-foot buffer for discharges through that area. You would not be required to provide additional treatment of stormwater discharges that flow through 50 feet or more of natural buffer. See Figure H - 4.

**Figure H - 4 Example of how to comply with the requirement to provide the equivalent sediment reduction when only a portion of your earth-disturbances discharge to a buffer of less than 50 feet.**



Steps to help you meet Compliance Alternative 2 and 3 requirements are provided below:

**Step 1 - Estimate the Sediment Reduction from the 100-foot or 50-foot Buffer**

In order to design controls that match the sediment removal efficiency of a 100-foot or 50-foot buffer, you first need to know what this efficiency is for your site. The sediment removal efficiencies of natural buffers vary according to a number of site-specific factors, including precipitation, soil type, land cover, slope length, width, steepness, and the types of sediment controls used to reduce the discharge of sediment prior to the buffer. DEQ has simplified this calculation by developing buffer performance tables covering a range of vegetation and soil types for the areas covered by the permit. See Attachment 1, Tables H - 1 through H - 4.

Note: buffer performance values in Tables H - 1 through H - 4 represent the percent of sediment captured through the use of perimeter controls (e.g., silt fences) and 100-foot or 50-foot buffers at disturbed sites of fixed proportions and slopes. Using Tables H - 1 through H - 4 (see Attachment 1), you can determine the sediment removal efficiency of a 100-foot or 50-foot buffer for your geographic area by matching the vegetative cover type and the type of soils that predominate at your site. For example, if your site is located in Oklahoma City (see Table H - 1), and your buffer vegetation corresponds most closely with that of fescue grass, and the soil type at your site is best typified as sand, your site's sediment removal efficiency would be 90 percent.

In this step, you should choose the vegetation type in the tables that most closely matches the vegetation that would exist naturally in the buffer area on your site regardless of the condition of the buffer. However, because you are not required to plant any additional vegetation in the buffer area, in determining what controls are necessary to meet this sediment removal equivalency in Step 2 below, you will be able to take credit for this area as a fully vegetated "natural buffer."

Similarly, if a portion of the buffer area adjacent to the surface water is owned by another party and is not under your control, you can treat the area of land not under control as having the equivalent

vegetative cover and soil type that predominates on the portion of the property on which your construction activities are occurring. *For example, if your earth-disturbances occur within 50 feet of a surface water, but the 10 feet of land immediately adjacent to the surface water is owned by a different party than the land on which your construction activities are taking place and you do not have control over that land, you can treat the 10 foot area adjacent to the stream as having the equivalent soil and vegetation type that predominates in the 40 foot area under your control. You would then make the same assumption in Step 2 for purposes of determining the equivalent sediment removal.*

Alternatively, you may do your own calculation of the effectiveness of the 50-foot buffer based upon your site-specific conditions, and may use this number as your sediment removal equivalency standard to meet instead of using Tables H - 1 through H - 4. This calculation must be documented in your SWP3.

**Step 2 - Design Controls That Match the Sediment Removal Efficiency of the 100-foot or 50-foot Buffer**

In Steps 1 and 2, you determined both the expected sediment removal efficiency of a 100-foot or 50-foot buffer at your site, and you used this number as a performance standard to design controls to be installed at your site, which alone or in combination with any retained natural buffer, achieves the expected sediment removal efficiency of a 100-foot or 50-foot buffer at your site. The final step is to document in your SWP3 the information you relied on to calculate the equivalent sediment reduction as an undisturbed natural buffer. DEQ will consider your documentation to be sufficient if it generally meets the following:

For Step 1: refer to the Table in Attachment 1 that you used to derive your estimated 100-foot or 50-foot buffer sediment removal efficiency performance. Include information about the buffer vegetation and soil type that predominate at your site, which you used to select the sediment load reduction value in Tables H - 1 through H - 4. Or, if you conducted a site-specific calculation for sediment removal efficiency, provide the specific removal efficiency, and the information you relied on to make your site-specific calculation.

For Step 2: (1) Specify a single designed stormwater control (see Table H-1 – H-4) or other stormwater controls that you used to estimate sediment load reductions from your site. Specify a model or other type of calculator that you used to support your calculation if any; and (2) the results of calculations showing how your controls will meet or exceed the sediment removal efficiency from Step 1. If you choose Compliance Alternative 3, you must also include in your SWP3 a description of why it is infeasible for you to provide and maintain an undisturbed natural buffer of any size.

### **Step 3 - Document How Site-Specific Controls Will Achieve the Sediment Removal Efficiency of the 100-foot or 50-foot Buffer**

In Steps 1 and 2, you determined both the expected sediment removal efficiency of a 100-foot or 50-foot buffer at your site, and you used this number as a performance standard to design controls to be installed at your site, which alone or in combination with any retained natural buffer, achieves the expected sediment removal efficiency of a 100-foot or 50-foot buffer at your site. The final step is to document in your SWP3 the information you relied on to calculate the equivalent sediment reduction as an undisturbed natural buffer. DEQ will consider your documentation to be sufficient if it generally meets the following:

For Step 1: refer to the Table in Attachment 1 that you used to derive your estimated 100-foot or 50-foot buffer sediment removal efficiency performance. Include information about the buffer vegetation and soil type that predominate at your site, which you used to select the sediment load reduction value in Tables H - 1 through H - 4. Or, if you conducted a site-specific calculation for sediment removal efficiency, provide the specific removal efficiency, and the information you relied on to make your site-specific calculation.

For Step 2: (1) Specify a single designed stormwater control (see Table H-1 – H-4) or other stormwater controls that you used to estimate sediment load reductions from your site. Specify a model or other type of calculator that you used to support your calculation if any; and (2) the results of calculations showing how your controls will meet or exceed the sediment removal efficiency from Step 1. If you choose Compliance Alternative 3, you must also include in your



SWP3 a description of why it is infeasible for you to provide and maintain an undisturbed natural buffer of any size.

## ATTACHMENT 1

Sediment Removal Efficiency Tables: Percent of sediment removal was calculated for a 200-foot runoff area with a 100-foot buffer, and a 100-foot runoff area with a 50-foot buffer. DEQ recognizes that very high removal efficiencies, even where theoretically achievable by a 50-foot or 100-foot buffer, may be very difficult to achieve in practice using alternative controls. Therefore in the tables below, DEQ has limited the removal efficiencies to a maximum of 90%. Efficiencies that were calculated at greater than 90% are shown as 90%, and this is the minimum percent removal that must be achieved by alternative controls. When more than one alternative BMP must be used to compensate for the loss of the buffer strip, this amount should be calculated using the following formula:

$$\text{Removal Rate}_{total} = \text{Removal Rate}_1 + (1 - \text{Removal Rate}_1)(\text{Removal Rate}_2)$$

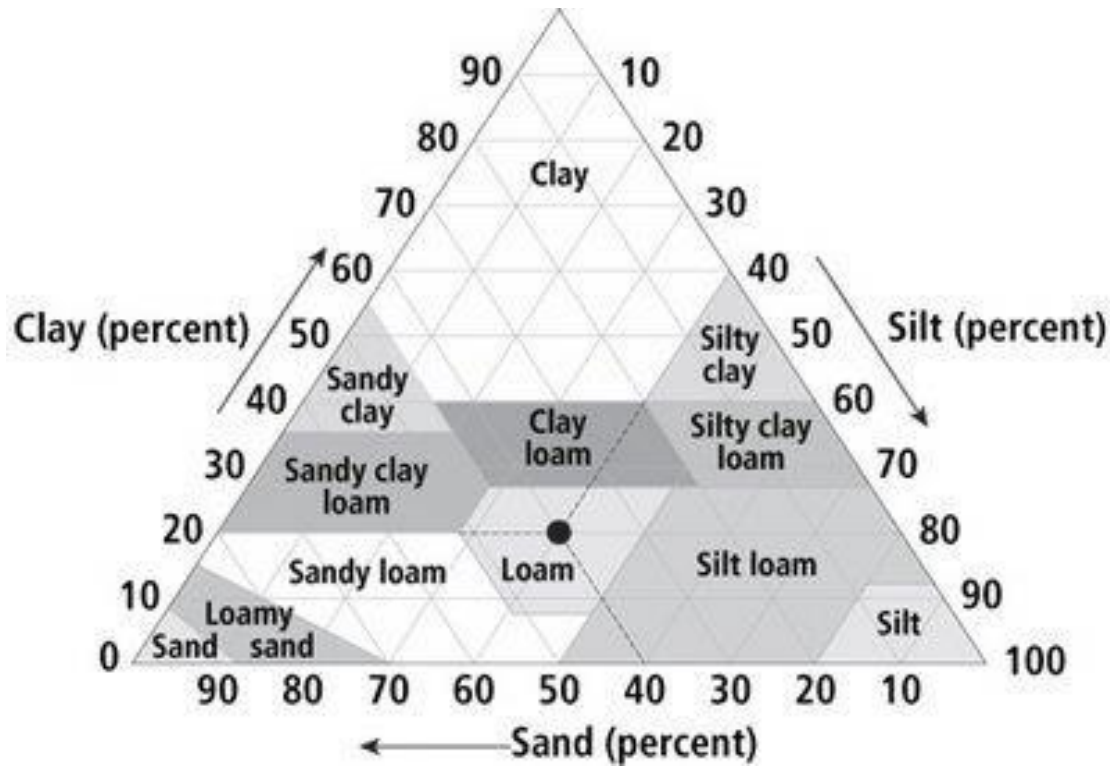
For example, if we are installing two BMPs that both have a 70% removal rate, the total removal rate is:

$$0.70 + (1 - 0.70)(0.70) = 0.91 = 91\%$$

### Best Management Practices Defined:

- Fescue: Buffer strip (100 feet or 50 feet) at the end of the overland flow path of Fescue grass, the area has not been grazed
- Grama Grass: Buffer strip (100 feet or 50 feet) at the end of the overland flow path of Grama grass, at least the third year after seeding
- Range Grass: Buffer zone (100 feet or 50 feet) at the end of the overland flow path of a generic low production range grass
- Weeds: Buffer zone (100 feet or 50 feet) at the end of the overland flow path of at least 5 years of growth of generic weeds started from volunteer germination
- 12" Wattle: 12 inch straw sock or wattle installed at the base of the runoff area
- 6" Wattle: 6 inch straw sock or wattle installed at the end of the overland flow path
- Roll Material: Erosion control blanket placed over the disturbed area
- Silt Fence: Full retardance fabric silt fence installed at the end of the overland flow path
- Straw Mulch: Straw mulch applied over the disturbed area, 4000 lbs./acre
- Gravel Berm: Gravel bag berm installed on a level contour to intercept sheet flows.

### Soils Defined:



**Table H-1 Estimated Buffer Performance of Blade Fill in Oklahoma County, Oklahoma \***

| Best Management Practices** | Estimated % Sediment Removal |            |                 |           |           |      |            |      |                 |            |      |
|-----------------------------|------------------------------|------------|-----------------|-----------|-----------|------|------------|------|-----------------|------------|------|
|                             | Clay                         | Silty Clay | Silty Clay Loam | Clay Loam | Silt Loam | Loam | Sandy Loam | Silt | Sandy Clay Loam | Loamy Sand | Sand |
| Fescue (100' Buffer)        | 90                           | 90         | 90              | 90        | 90        | 90   | 90         | 90   | 90              | 90         | 90   |
| Fescue (50' Buffer)         | 90                           | 90         | 90              | 90        | 90        | 90   | 90         | 90   | 90              | 90         | 90   |
| Grama Grass (100' Buffer)   | 80                           | 83         | 81              | 82        | 81        | 81   | 80         | 79   | 82              | 85         | 87   |
| Grama Grass (50' Buffer)    | 79                           | 79         | 82              | 80        | 81        | 80   | 80         | 79   | 80              | 83         | 76   |
| Range Grass (100' Buffer)   | 89                           | 87         | 90              | 90        | 90        | 90   | 90         | 90   | 90              | 90         | 89   |
| Range Grass (50' Buffer)    | 88                           | 86         | 90              | 90        | 90        | 90   | 90         | 90   | 90              | 98         | 87   |
| Weeds (100' Buffer)         | 68                           | 67         | 70              | 71        | 71        | 72   | 73         | 72   | 73              | 73         | 63   |
| Weeds (50' Buffer)          | 67                           | 65         | 69              | 68        | 70        | 71   | 71         | 70   | 72              | 67         | 53   |
| 12" Wattle                  | 71                           | 61         | 56              | 67        | 45        | 57   | 70         | 20   | 76              | 82         | 73   |
| 6" Wattle                   | 61                           | 52         | 48              | 59        | 41        | 52   | 68         | 20   | 73              | 66         | 29   |
| Roll Material               | 90                           | 90         | 90              | 90        | 90        | 90   | 90         | 90   | 90              | 90         | 90   |
| Silt Fence                  | 61                           | 52         | 48              | 59        | 41        | 52   | 68         | 20   | 73              | 66         | 66   |
| Straw Mulch                 | 76                           | 75         | 77              | 73        | 78        | 75   | 77         | 81   | 76              | 77         | 88   |
| Gravel Bag Berm             | 80                           | 68         | 64              | 75        | 50        | 62   | 74         | 27   | 80              | 84         | 86   |

\* Applicable for sites less than nine percent slope

\*\* Characterization focuses on the under-story vegetation

**Table H-2 Estimated Buffer Performance of Blade Cut in Oklahoma County, Oklahoma \***

| Best Management Practices** | Estimated % Sediment Removal |            |                 |           |           |      |            |      |                 |            |      |
|-----------------------------|------------------------------|------------|-----------------|-----------|-----------|------|------------|------|-----------------|------------|------|
|                             | Clay                         | Silty Clay | Silty Clay Loam | Clay Loam | Silt Loam | Loam | Sandy Loam | Silt | Sandy Clay Loam | Loamy Sand | Sand |
| Fescue (100' Buffer)        | 90                           | 90         | 90              | 90        | 90        | 90   | 90         | 90   | 90              | 90         | 90   |
| Fescue (50' Buffer)         | 90                           | 90         | 90              | 90        | 90        | 90   | 90         | 90   | 90              | 90         | 90   |
| Grama Grass (100' Buffer)   | 60                           | 58         | 74              | 69        | 78        | 77   | 73         | 74   | 72              | 57         | 16   |
| Grama Grass (50' Buffer)    | 59                           | 53         | 67              | 62        | 74        | 30   | 69         | 74   | 70              | 38         | 11   |
| Range Grass (100' Buffer)   | 87                           | 85         | 89              | 90        | 90        | 90   | 90         | 89   | 89              | 86         | 86   |
| Range Grass (50' Buffer)    | 85                           | 84         | 88              | 89        | 90        | 90   | 90         | 89   | 87              | 84         | 84   |
| Weeds (100' Buffer)         | 57                           | 52         | 62              | 63        | 64        | 64   | 66         | 62   | 26              | 52         | 43   |
| Weeds (50' Buffer)          | 53                           | 51         | 58              | 58        | 62        | 64   | 66         | 62   | 58              | 46         | 39   |
| 12" Wattle                  | 63                           | 53         | 55              | 65        | 46        | 62   | 75         | 20   | 77              | 54         | 11   |
| 6" Wattle                   | 28                           | 26         | 45              | 46        | 42        | 58   | 63         | 17   | 38              | 7          | 1    |
| Roll Material               | 83                           | 84         | 85              | 83        | 86        | 85   | 85         | 90   | 85              | 86         | 86   |
| Silt Fence                  | 28                           | 26         | 45              | 46        | 42        | 58   | 63         | 17   | 38              | 7          | 1    |
| Straw Mulch                 | 44                           | 42         | 45              | 42        | 46        | 44   | 46         | 55   | 43              | 48         | 47   |
| Gravel Bag Berm             | 76                           | 65         | 61              | 72        | 48        | 62   | 73         | 22   | 77              | 82         | 82   |

\* Applicable for sites less than nine percent slope

\*\* Characterization focuses on the under-story vegetation

# Appendix U: OKC, SWQ Activity Permit for Volunteer Activities



## ACTIVITY PERMIT

The City of  
**OKLAHOMA CITY**  
Public Works Department - Storm Water Quality Management Division  
PHONE (405) 297-1774      FAX (405) 297-1770

Adopt a City Street Clean-up

Organization: \_\_\_\_\_

Date of event: \_\_\_\_\_ Time of event: \_\_\_\_\_ Date to pick-up supplies at HHW: \_\_\_\_\_

Location: \_\_\_\_\_ Expected number of participants: \_\_\_\_\_

**REQUIREMENTS:**

1. The Liaison will assure that all participants are responsible individuals and participating minors under the age of 18 years must be provided with adequate adult supervision.
2. The liaison must provide safety training for other members in the group.
3. The liaison must distribute and collect signed release and waiver of liability forms from all participants.
4. All participants must sign in for each clean-up event.
5. All participants must be properly dressed, including but not limited to closed toed shoes, long pants, shirts, safety vests and work gloves.
6. The group must notify the City of any big, heavy or hazardous trash not placed in a trash bag by the Group.
7. All borrowed safety vests and unused supplies must be returned to the City following the completion of each clean-up event unless otherwise provided pursuant to the contracted agreement within two days.
8. Children under 11 years of age may not be present along the adopted street, in the street or along the street right of way.
9. Groups need to clean up one side of the street at a time to maximize supervision, safety of participants and to minimize confusion and distraction to drivers.
10. The Group must park all vehicles well clear of the adopted street's roadway and at least ten feet from any shoulder or curb in an agricultural area. Groups are encouraged to work with nearby businesses, schools, churches or others to utilize parking off of city streets.

Applicant Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Applicant Address: \_\_\_\_\_

Application Date: \_\_\_\_\_

THIS SPACE FOR OFFICIAL USE ONLY

APPROVALS AND NOTIFICATIONS

*Raymond L. Mattias*  
Division Head Approval

Approval Counter signature

Approval Comments: \_\_\_\_\_

## Appendix V: Adopt-a-Street Application Packet



### Welcome Packet

Welcome and thank you for your interest in Adopt a City Street! This packet contains everything your organization needs to get started. Your organization will need to designate a liaison to complete these forms and contact the program coordinator to schedule litter collection events. Once the necessary forms in this packet are complete, the liaison will need to submit them to the project coordinator.

Table of Contents

|   |   |
|---|---|
| How the program works .....               | 1 |
| Application .....                         | 2 |
| Agreement .....                           | 3 |
| Organizations request for AACs Sign ..... | 6 |
| Liaison's checklist .....                 | 7 |
| Submit Forms .....                        | 8 |

Program Coordinator

Andrea Shelton  
420 W. Main, Suite 360  
Oklahoma City, OK 73102  
PH 405/297-1797  
FAX 405/297-1770  
andrea.shelton@okc.gov

How The Program Works

- 1) Organization designates a liaison.
- 2) Liaison contacts program coordinator (PC) and submits welcome packet by email, fax, or mail.
- 3) PC approves submitted forms and orders street signs.
- 4) Organization schedules clean up event and submits Activity Permit Request form (*see event packet*) to PC. Once request approved, Activity Permit is sent to organization.
- 5) Liaison collects supplies at the Household Hazardous Waste Collection Facility (HHW) (*see event packet for instructions*).
- 6) Organization must have all participants sign a release and waiver of liability form (*see event packet*) prior to event.
- 7) Clean-up event occurs and liaison submits Litter Collection Report form to PC.
- 8) PC arranges for trash bags to be removed by Solid Waste Management Division.
- 9) Organization returns supplies to HHW within two business days.



Application for Adopt a City Street

The City of Oklahoma City will work with the adopting group to determine the specific section of roadway to be adopted.

Organization \_\_\_\_\_

Date of Application \_\_\_\_\_

Organization's Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Liaison \_\_\_\_\_

Phone \_\_\_\_\_

Email \_\_\_\_\_

Approximate number of people participating in each clean-up \_\_\_\_\_

Oklahoma City Street(s) you are interested in adopting (in order of preference)

1) \_\_\_\_\_

\_\_\_\_\_

2) \_\_\_\_\_

\_\_\_\_\_

3) \_\_\_\_\_

\_\_\_\_\_



**ADOPTION AGREEMENT  
Terms and Conditions**

The City of Oklahoma City (hereinafter called "The City"), and the volunteer organization named

\_\_\_\_\_ (hereinafter called "The Group") recognize the need and the desirability of litter-free city streets and roads (hereinafter collectively called "City Streets") and are entering this Agreement to permit The Group to contribute toward the effort of maintaining litter-free City Streets.

**The Group agrees to the following terms and conditions:**

1. The Group agrees to obey abide by and to assure that each participant obeys all laws and regulations relating to pedestrian and traffic safety; all recommendations, terms and conditions set forth in the Oklahoma City Adopt A City Street Safety Training and such terms and conditions as may be required by the City Engineer, Program Coordinator or other designee (hereinafter collectively called "City Engineer") for such special conditions on particular adopted City Streets.
2. The Group must notify and remind each participant of the hazardous nature of a litter clean-up.
3. The Group has designated a contact person (hereinafter called "Liaison") on its Application for the Adopt A City Street Program who will:
  - (a) assure that all participants are responsible individuals and that participating minors under the age of eighteen (18) years are provided with adequate adult supervision;
  - (b) be trained and provide safety training of other members of The Group who wish to participate;
  - (c) distribute and collect signed RELEASE AND WAIVER OF LIABILITY forms from all participants;
  - (d) assure that all participants have signed in for each clean-up event;
  - (e) assure that all participants are properly dressed, including but not limited to closed toe shoes, long pants, shirts (preferably light, bright and long sleeved), safety vest and work gloves;
  - (f) notify The City before each clean-up event, when the clean-up event is complete and notify The City of any big, heavy or hazardous trash not placed in a trash bag by The Group; and
  - (g) assure that all borrowed safety vests and unused supplies are returned to The City following the completion of each clean-up event unless otherwise provided pursuant to this Agreement within two days.
4. The Group must keep the City Engineer's office informed throughout the term of this agreement of the current address and telephone numbers for its Liaison. The Liaison shall notify the City Engineer in writing prior to changing its Liaison and/or prior to the Liaison changing his or her address and/or telephone number (s).
5. When participants are under the age of eighteen (18) years (hereinafter called "Young Participants"), The Group must furnish adult supervision using at least one (1) adult participant for every four (4) young participants. Adult supervisors of young participants must be consistently present at the clean-up site and in the presence of the young participants during all activities relating to the clean-up event.
6. Children under eleven (11) years of age may not be present along the adopted street, in the street or along the street right of way.

7. To maximize supervision, safety of participants and to minimize confusion and distraction to drivers, Groups need to clean up one side of the street at a time.
8. The Group must park all vehicles well clear of the adopted Street's roadway and at least ten (10) feet from any shoulder or curb in an agricultural area. Groups are encouraged to work with nearby businesses, schools, churches or others to utilize parking off of the City Streets.
9. The Group must adopt at least one (1) mile of adjacent, connected or adjoining City Streets unless agreed upon with the City Engineer and it must be both sides of the street.
10. The Group will adopt a City Street for a minimum of two (2) years.
11. The Group will pick up litter a minimum of four (4) times a year. No two pick ups will be more than four months apart. If a pick up date is set and poor weather conditions cause the event to NOT take place, it is the responsibility of The Group to reschedule as soon as possible.
12. The Group may obtain, to the extent same are available, safety vests and supplies from The City through the City Engineer's office.
13. Each participant must read and comply with the City of Oklahoma City's Safety Tips.
14. The Group shall return the safety vests furnished by The City within two (2) working days following the clean-up event unless authorized by the City Engineer.

**The City of Oklahoma City agrees to the following terms:**

1. The City shall create and install the Adopt A City Street recognition signs. These signs (one for each direction of traffic) shall have The Group's name on each sign.
3. The City shall permit The Group to utilize City safety vests to be worn by the participants during the clean-up event. The Group must return the City's safety vests within two (2) working days after completion of the clean-up event.
4. The City shall provide The Group with trash bags to be utilized for the clean-up event only. The City agrees to pick up filled trash bags as soon as practicable after being notified of their location after the completion of the clean-up event by the Liaison.
5. The City agrees to provide safety training to The Group or just the Liaison, who will in turn train The Group as required in this Agreement.
6. The City agrees to provide coverage on the Public Works website or newsletter for The Group, photos and clean-up event news. Such information should be provided by the Liaison to the City Engineer's office.



This Agreement shall be effective as provided herein for two (2) years from the date of the first clean-up event. The City Engineer or The Group upon written notice may terminate this Agreement. The City Engineer reserves the right to modify or cancel this program and this contract at any time upon notice sent to the contact person at the address last provided in accordance with this Agreement.

Name of Group: \_\_\_\_\_

Print Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

|                 |                          |
|-----------------|--------------------------|
| _____           | _____                    |
| CONTACT PERSON  | DAYTIME TELEPHONE NUMBER |
| _____           | _____                    |
| MAILING ADDRESS | EVENING TELEPHONE NUMBER |
| _____           |                          |
| E-MAIL ADDRESS  |                          |

Organizations Request for AACS Sign

For every mile adopted, the group will receive two recognition signs

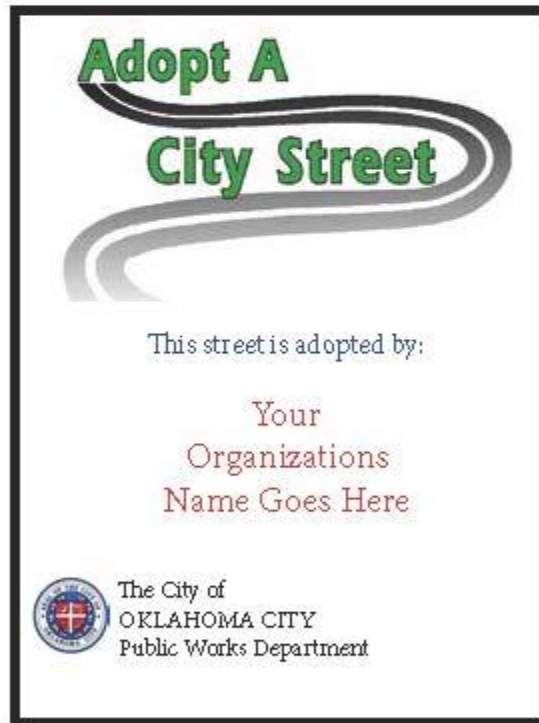
MAXIMUM 3 lines, 15 spaces per line

1 letter, number, symbol or space per box

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□ □ □ □ □ □ □ □ □ □ □ □ □ □ □



I have reviewed the above information and verify that it is correct



### Liaison's Check List

**Two weeks prior to each clean-up day:** Send the project coordinator the Activity Permit Request form (*see Event Packet*). Remind all volunteers with a written notice to save the date and review safety tips handout (*see Event Packet*).

**On the clean-up day:** Have a clipboard with extra Release forms for new participants to sign. Keep a running list of prior participants; if they have completed a release form or not. Have all volunteers sign the SIGN IN SHEET located in the event packet. Do a quick review of the safety tips. Arrange for a box to place hazardous waste items in, a pair of tongs to grab unsafe items, a first-aid kit and a mobile phone in case of an emergency. Have all volunteers pick a buddy to walk with and have fun making Oklahoma City Shine!

**On the next business day:** Email ([andrea.shelton@okc.gov](mailto:andrea.shelton@okc.gov)) or fax (405-297-1770) the Litter Collection Report form. Make arrangements to return supply box within two business days.

- Submit Activity Permit Request
- Volunteers: Save the date and safety tips
- ALL participants have signed a release form
- Sign in sheet
- Review safety tips
- Submit Trash Pick-up Report Form
- Return supplies to HHW

## Submit Forms

**You can submit forms via email, fax, or US mail.**

**Important:** The signature field, found on page 5, is not supported with all Adobe versions. If you are unable to sign the digital form then you will need to print and sign the form. All contact information appears on page one.

# Appendix W: Adopt-a-Street Event Package



## Event Packet

### Table of Contents

|                                       |   |
|---------------------------------------|---|
| Litter Collection Event Steps .....   | 1 |
| Activity Permit Request .....         | 2 |
| Release and Waiver of Liability ..... | 3 |
| Supply Bin Information .....          | 4 |
| Safety Tips .....                     | 5 |
| Event Sign-in Sheet .....             | 6 |
| Litter Collection Report .....        | 7 |

### Program Coordinator

Andrea Shelton  
 420 W. Main, Suite 360  
 Oklahoma City, OK 73102  
 (405) 297-1797  
 fax (405) 297-1770  
 andrea.shelton@okc.gov

### Litter Collection Event

- 1) Complete and submit Activity Permit Request at least one week prior to event.
- 2) Pick up supplies at Household Hazardous Waste (HHW), 1621 S. Portland.
- 3) All new participants sign the “release and waiver of liability” form.
- 4) Complete Litter Collection Report form following litter collection event and send to the project coordinator.
- 5) Return supplies to HHW within two business days.



Activity Permit Request

To schedule an Adopt a City Street litter collection event please complete the information below and send to the program coordinator.

Organization \_\_\_\_\_

Applicant's Name \_\_\_\_\_

Application Date \_\_\_\_\_

Date of Event \_\_\_\_\_

Time of Event \_\_\_\_\_

Location \_\_\_\_\_

Expected number of participants \_\_\_\_\_

Date of pick up for supplies at HHW \_\_\_\_\_  
(prior to event)

Program Coordinator  
Andrea Shelton  
420 W. Main, Suite 360  
Oklahoma City, OK 73102  
PH 405/297-1797  
FAX 405/297-1770  
andrea.shelton@okc.gov

Household Hazardous Waste (HHW)  
1621 S. Portland  
Oklahoma City, OK 73108



**RELEASE AND WAIVER OF LIABILITY**

**CITY OF OKLAHOMA CITY - PUBLIC WORKS DEPARTMENT  
ADOPT A CITY STREET PROGRAM**

I DO HEREBY RELEASE the City of Oklahoma City and its officers, agents and employees from all claims and causes of action for any damages and/or injuries which may result from my participation in the City of Oklahoma City Adopt A City Street Program.

I AGREE TO HOLD HARMLESS the City of Oklahoma City and its officers, agents and employees from liability for any damages or injuries resulting from any acts or failure to act on my part during my participation in the City of Oklahoma City Adopt A City Street Program.

I UNDERSTAND in regards to my volunteer activities under the Adopt A City Street Program, am not employed or an agent of the City of Oklahoma City and I am not covered by any insurance or workmen's compensation coverage by virtue of the Adopt A City Street Agreement or by my participation in the Adopt A City Street Program.

I FULLY UNDERSTAND that there is a risk whenever I am in the street right-of-way or near traffic and streets. I FURTHER FULLY UNDERSTAND the risks of picking up litter along City streets; the proximity to vehicular traffic; hidden and latent objects, insects and holes.

I AGREE to stay off of City streets while collecting trash; to be alert to traffic on, entering and exiting City streets; to avoid grass cutting and construction activities on or nearby City streets; and to follow the instructions, terms, conditions and recommendations on the safety tips handout.

BY SIGNING THIS RELEASE AND WAIVER I AM INDICATING THAT I HAVE READ AND UNDERSTAND THIS RELEASE AND WAIVER AND AGREE TO ABIDE BY ITS PROVISIONS.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Print Name: \_\_\_\_\_ Date of Birth: \_\_\_\_\_  
Address: \_\_\_\_\_

Parent or Legal Guardian (If participant is under eighteen years of age)  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Print Name: \_\_\_\_\_ Relationship: \_\_\_\_\_  
Address: \_\_\_\_\_



Supply Bin Information

Location:

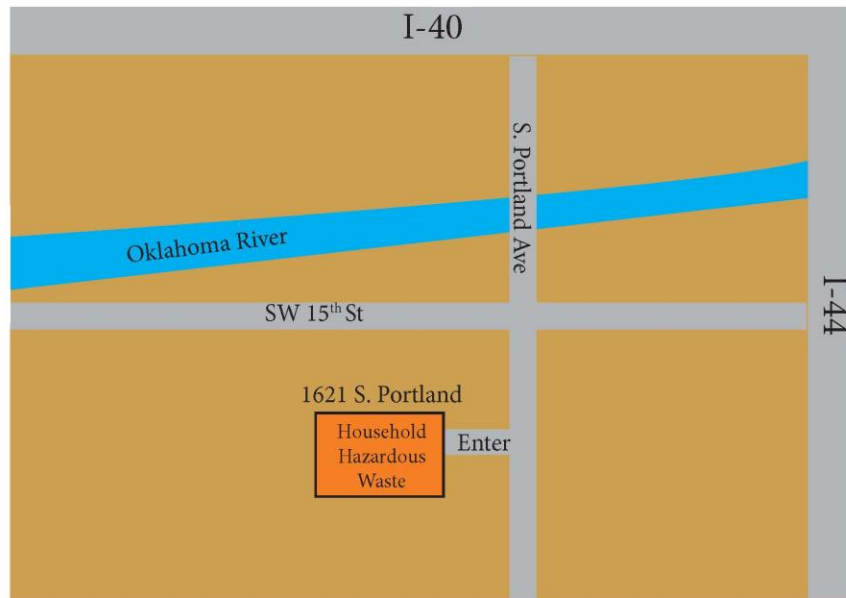
Household Hazardous Waste Collection Facility  
1621 S. Portland Avenue

Hours of operation:

Sunday & Monday: Closed  
Tuesday - Friday: 9:30 AM - 6:00 PM  
Saturday: 8:30 AM - 11:30 AM

Important:

Supply bin(s) should be returned to HHW within two (2) business days following event. Please submit the Activity Permit Request to the program coordinator at least one week prior to event.







Please review with all volunteers prior to EACH cleanup event.

1. Have good common sense, mental alertness and physical condition, including sight and hearing.
2. Have a sense of responsibility for safety of the public and obey all Oklahoma City municipal codes for pedestrians.
3. Park all vehicles clear of street traffic and work on one side of the street at the same time.
4. Work only in daylight hours and discontinue work in inclement weather, including fog, rain, lightning and when streets are wet or icy.
5. Adult supervision shall be provided for participants under the age of 18. Have a ratio of one adult for every four children. Children under the age of 11 should not be present at the pickup site.
6. Avoid over-exertion and areas where there is poison ivy, poison oak and other noxious weeds.
7. Wear light colored clothing, long sleeve shirts, pants, safety vest, a hat, heavy duty work gloves, and closed-toe, leather shoes or boots with ankle support.
8. Drink water and use plenty of sunscreen and bug repellent.
9. Do not attempt to remove known or suspected toxic, hazardous or dangerous substances. Immediately notify the Group Leader who will then take care of the substance or contact the Oklahoma City Police Department (911).
10. Do not try to compact trash bags to gain room for more trash. Injuries from broken or jagged objects often result from this practice. Fill the bag with what goes in easily, and get another bag.
11. Do not pick up items on bridges, ramps, railroad tracks or overpasses, heavy objects, or dead animals (call 297-3100 for removal and 297-2255 after hours).
12. Knives, machetes, axes, etc. should not be carried while picking up litter.
13. Be alert for places where snakes may be located, such as tall grass, inside boxes/sacks or near water and avoid these areas or hit the box/sack with a stick or pole prior to removing the trash item.
14. Be alert for stinging insects, spiders and fire ants. Have a first aid kit available.
15. Remove all temporary signs along easements, medians or poles on your adopted street or call the Action Center and they will have them removed.



Adopt A City Street  
Event Sign-in Sheet

Name of Organization: \_\_\_\_\_ Date: \_\_\_\_\_

| Volunteer's Name | Release and Waiver of Liability Signed |                             | Safety Tips Reviewed         |                             |
|------------------|--|-----------------------------|------------------------------|-----------------------------|
|                  | <input type="checkbox"/> Yes           | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|                  | <input type="checkbox"/> Yes           | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|                  | <input type="checkbox"/> Yes           | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|                  | <input type="checkbox"/> Yes           | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|                  | <input type="checkbox"/> Yes           | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|                  | <input type="checkbox"/> Yes           | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|                  | <input type="checkbox"/> Yes           | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|                  | <input type="checkbox"/> Yes           | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|                  | <input type="checkbox"/> Yes           | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|                  | <input type="checkbox"/> Yes           | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|                  | <input type="checkbox"/> Yes           | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|                  | <input type="checkbox"/> Yes           | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|                  | <input type="checkbox"/> Yes           | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|                  | <input type="checkbox"/> Yes           | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|                  | <input type="checkbox"/> Yes           | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|                  | <input type="checkbox"/> Yes           | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|                  | <input type="checkbox"/> Yes           | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|                  | <input type="checkbox"/> Yes           | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|                  | <input type="checkbox"/> Yes           | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|                  | <input type="checkbox"/> Yes           | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|                  | <input type="checkbox"/> Yes           | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|                  | <input type="checkbox"/> Yes           | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |



Litter Collection Report Form

Email completed form to [andrea.shelton@okc.gov](mailto:andrea.shelton@okc.gov)

GROUP NAME \_\_\_\_\_

DATE OF LITTER COLLECTION EVENT \_\_\_\_\_

NUMBER OF VOLUNTEERS \_\_\_\_\_

NUMBER OF FILLED BAGS \_\_\_\_\_

WERE THERE ENOUGH SUPPLIES?    Yes \_\_\_\_\_    No \_\_\_\_\_

LOCATION OF FILLED BAGS \_\_\_\_\_

\_\_\_\_\_

OTHER ITEMS FOUND \_\_\_\_\_

\_\_\_\_\_

OTHER COMMENTS \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**City of Oklahoma City , Public Works**  
**Andrea Shelton**  
420 W. Main, Suite 360  
Oklahoma City, OK 73102  
PH 405/297-1797  
FAX 405/297-1770  
[andrea.shelton@okc.gov](mailto:andrea.shelton@okc.gov)

## Appendix X: Waterway Clean Sweep Program Information Sheet



City of Oklahoma City  
Waterway Cleanup Program



### What is a waterway cleanup?

A waterway cleanup is an organized event during which volunteers spend part of a day removing trash from the banks of local waterways and nearby lands and taking it to a central location for proper disposal and recycling. Success means the targeted area is noticeably cleaner at the end of the day. It is important that participants feel they have accomplished something meaningful.

### Who participates?

The framework will be provided by the City of Oklahoma City Storm Water Quality Management. SWQ employees will direct teams. Volunteers will complete the work.

### When will the event occur?

Saturday, November 4, 2017. The event will start at 9:00 a.m. and end at 11:00 a.m.

|                                       |                                |
|---------------------------------------|--------------------------------|
| <b>Registration &amp; Orientation</b> | <b>8:30 a.m. – 9:00 a.m.</b>   |
| <b>Cleanup event</b>                  | <b>9:00 a.m. – 11:00 a.m.</b>  |
| <b>Wrap-up &amp; supply check-in</b>  | <b>11:00 a.m. – 11:30 a.m.</b> |

**The event will not be held during inclement weather such as heavy rain, lightening, flooding, extremely high winds, extreme temperatures, etc.**

### Where will the event occur?

We will meet at **the area in blue on the map** for orientation and registration (see page two for map). Then walk over to the wetland area together (**circled in blue**). This site should provide meaningful work for volunteers.

**Supplies provided by City of Oklahoma City:** rubber gloves, jersey gloves, safety vests, bags, and litter grabbers

**Suggested supplies:** hat, long sleeve shirt, long pants, closed-toe shoes, water, sunscreen, and insect repellent

## Appendix Y: Waterway Clean Sweep Liability Release

### ACKNOWLEDGEMENT AND GENERAL RELEASE

I acknowledge that I am a volunteer of The City of Oklahoma City Public Works Department, Storm Water Quality Division (City) and have agreed to assist in a litter-pickup event at multiple locations along the Oklahoma River Corridor (Site). I acknowledge that I am not an employee of, nor under any employment contract with, the City to perform work at the Site. I further acknowledge that I am at least eighteen (18) years of age, of sound body and mind, and have no physical or other impairments that prevent or limit me from performing such work.

**I understand that this activity may involve strenuous physical exertion and carries inherent risks, including, but not limited to, property damage or loss, personal injury, or death, and that I can avoid these inherent risks by not participating.** I understand that factors beyond my control, *including negligence*, may affect my safety and well-being. In signing this Acknowledgement and General Release (Release), I acknowledge that neither the City nor the Oklahoma City Riverfront Redevelopment Authority (OCRRA) can guarantee my safety and well-being and that I participate willingly. I agree to rely solely on my own insurance or resources to cover any medical bills or other expenses or losses. I understand that no workers' compensation or third-party insurance benefits will be available to me.

I hereby release the City and OCRRA, and their officers, agents, employees, affiliates, successors, and assigns, from all liability related, in any way, to my volunteer activities at the Site.

Signed this \_\_\_ day of \_\_\_\_\_, 2017.

Print Name: \_\_\_\_\_

Signature: \_\_\_\_\_

NOTE: Copies of signed Releases shall be provided to the Oklahoma City Parks and Recreation Department upon request.

ACKNOWLEDGMENT AND GENERAL RELEASE  
(For Children Under Eighteen (18) Years of Age)

I acknowledge that I am a volunteer of The City of Oklahoma City Public Works Department, Storm Water Quality Division (City) and have agreed to assist in a litter-pickup event at multiple locations along the Oklahoma River Corridor (Site). I acknowledge that neither I nor my child(ren) are employees of, nor under any employment contract with, the City to perform work at the Site. I further acknowledge that I am at least eighteen (18) years of age, of sound body and mind, and that neither I nor my child(ren) have any physical or other impairments that prevent or limit us from performing such work.

**I understand that this activity may involve strenuous physical exertion and carries inherent risks, including, but not limited to, property damage or loss, personal injury, or death, and that I and my child(ren) can avoid these inherent risks by not participating.** I understand that factors beyond my control, *including negligence*, may affect our safety and well-being. In signing this Acknowledgement and General Release (Release), I acknowledge that neither the City nor the Oklahoma City Riverfront Redevelopment Authority (OCRRA) can guarantee my and my child(ren)'s safety and well-being and that we participate willingly. I agree to rely solely on my own insurance or resources to cover any medical bills or other expenses or losses. I understand that no workers' compensation or third-party insurance benefits will be available to us.

I hereby release the City and OCRRA, and their officers, agents, employees, affiliates, successors, and assigns, from all liability related, in any way, to our volunteer activities at the Site.

Signed this \_\_\_\_ day of \_\_\_\_\_, 2017.

Print Name (Parent or Guardian): \_\_\_\_\_

Signature of Parent or Guardian: \_\_\_\_\_

|                          |            |
|--------------------------|------------|
| Names of Children: _____ | Age: _____ |
| _____                    | Age: _____ |
| _____                    | Age: _____ |
| _____                    | Age: _____ |

NOTE: Copies of signed Releases shall be provided to the Oklahoma City Parks and Recreation Department upon request.

# Appendix Z: Waterway Cleanup Litter Collection Report



## Waterway Cleanup Program



### Litter Collection Report

Submit completed form using the submit button below or email to  
andrea.shelton@okc.gov

GROUP NAME \_\_\_\_\_

DATE OF CLEAN UP EVENT \_\_\_\_\_

NUMBER OF VOLUNTEERS \_\_\_\_\_

NUMBER OF FILLED BAGS \_\_\_\_\_

WERE THERE ENOUGH SUPPLIES?    Yes \_\_\_\_\_    No \_\_\_\_\_

LOCATION OF FILLED BAGS \_\_\_\_\_

OTHER ITEMS FOUND \_\_\_\_\_

OTHER COMMENTS *none* \_\_\_\_\_



City of Oklahoma City , Public Works  
Andrea Shelton  
420 W. Main, Suite 360  
Oklahoma City, OK 73102  
PH 405/297-1797  
FAX 405/297-1770  
andrea.shelton@okc.gov



## Appendix AA: Oklahoma City Facilities with Industrial Storm Water Discharge Permits

| Facility Name                                | Address                       | Type                 | Permit Number | Permit Type       |
|--|-------------------------------|----------------------|---------------|-------------------|
| Will Rogers World Airport                    | 7100 Terminal Drive           | Airport              | IND1398       | Industrial        |
| Wiley Post Airport                           | 5915 Phillip J. Rhodes Avenue | Airport              | IND1399       | Industrial        |
| CE Page Airport                              | 2303 South Cimarron Road      | Airport              | IND1400       | Industrial        |
| All American Waste Control (City Contractor) | 7540 SW 59th Street           | Contractor           | IND1325       | Industrial        |
| First Vehicle Services                       | 11501 North Portland          | Contractor           | IND1824       | Industrial        |
| First Maintenance Company                    | 208 NW 60th                   | Contractor           | CCIND1470     | Cosmetic Cleaning |
| Southeast Landfill                           | 7001 South Bryant             | Landfill             | IND1138       | Industrial        |
| East Oak Recycling and Disposal Facility     | 3201 Mosley Road              | Landfill             | IND1157       | Industrial        |
| Oklahoma City Landfill                       | 7600 SW 15th Street           | Landfill             | IND1235       | Industrial        |
| OKC Equipment Services                       | 115 North Shartel             | Maintenance Facility | IND1312       | Industrial        |
| OKC Central Maintenance Facility             | 3738 SW 15th Street           | Maintenance Facility | IND1638       | Industrial        |
| Central Maintenance Facility                 | 3738 SW 15th Street           | Maintenance Facility | IND2598       | Industrial        |
| OKC Street Maintenance Division              | 3738 SW 15th Street           | Maintenance Facility | IND1388       | Industrial        |
| COPTA  | 2000 South May Avenue         | Maintenance Facility | IND1455       | Industrial        |
| OKC Solid Waste Maintenance                  | 11501 North Portland          | Maintenance Facility | IND1388       | Industrial        |
| OKC Traffic Operations                       | 1400 South Shartel            | Maintenance Facility | CCIND1694     | Cosmetic Cleaning |
| COPTA/Metro Transit                          | 2000 South May Avenue         | Maintenance Facility | CCIND1710     | Cosmetic Cleaning |
| Trosper Park Golf Course                     | 2301 SE 29th Street           | Recreational Venue   | IND1729       | Industrial        |
| Metropolitan Library System                  | 1364 NE 3rd Street            | Recreational Venue   | CCIND2584     | Cosmetic Cleaning |
| Household Hazardous Waste Facility           | 3738 SW 15th Street           | Special              | NEC2828       | No Exposure       |
| Witcher Pump Station                         | 5520 NE 108th Street          | Transfer Station     | IND1597       | Industrial        |
| Oklahoma State Fairgrounds                   | 500 Land Rush Street          | Venue                | IND1727       | Industrial        |



April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

| Facility Name              | Address                    | Type  | Permit Number | Permit Type       |
|----------------------------|----------------------------|-------|---------------|-------------------|
| OKC Arts Museum            | 415 Couch Drive            | Venue | CCIND1610     | Cosmetic Cleaning |
| Oklahoma State Fairgrounds | 500 Land Rush Street       | Venue | CCIND1663     | Cosmetic Cleaning |
| OKC National Memorial      | 620 Harvey                 | Venue | CCIND1719     | Cosmetic Cleaning |
| Deer Creek WWTP            | 20600 North Portland       | WWTP  | IND1594       | Industrial        |
| North Canadian WWTP        | 12800 North Anderson Road  | WWTP  | IND1596       | Industrial        |
| South Canadian WWTP        | 15924 South May Avenue     | WWTP  | IND1598       | Industrial        |
| Chisholm Creek WWTP        | 22000 North Western Avenue | WWTP  | IND1599       | Industrial        |
| Southside Treatment Plant  | 2701 NE 4th Street         | WWTP  | IND1839       | Industrial        |

# Appendix AB – Interjurisdictional Agreements



## MEMORANDUM

The City of  
**OKLAHOMA CITY**

Council Agenda  
Item No. VI. H.  
11/14/06

TO: Mayor and City Council  
FROM: James D. Couch, City Manager *JDC*

Memorandum of Understanding Concerning the Implementation and Enforcement of an Oklahoma Pollutant Discharge Elimination System Permit with the Oklahoma Turnpike Authority.

**Purpose** This confirms the City of Oklahoma City and the Oklahoma Turnpike Authority have completed the Interjurisdictional agreements to be co-permittees in the final NPDES Municipal Permit.

**Background** The Oklahoma Turnpike Authority has requested that the City amend its permit application to allow the Oklahoma Turnpike Authority to be a co-applicant and co-permittee. The City has agreed to supplement its permit application to allow the Oklahoma Turnpike Authority to be a co-applicant and co-permittee.

The Oklahoma Turnpike Authority will participate in maintaining the City's storm water management program by contributing annually to cover the City's costs of program services provided by the City. The Oklahoma Turnpike Authority's share of funding shall be paid on the first day of its fiscal year, or within ten (10) days after funding becomes legally available.

**Revenue** \$79,766 to be paid on the first day of the fiscal year or within ten (10) days after funding becomes legally available. Revenue to be deposited in: Stormwater Drainage – Operations - Reimbursements (330-0075-43750004)

**Review** Public Works Department and Municipal Counselor's Office

**Recommendation:** Approve the Memorandum of Understanding

**Attachment**

MEMORANDUM OF UNDERSTANDING CONCERNING THE  
IMPLEMENTATION AND  
ENFORCEMENT OF AN OPDES PERMIT

This Memorandum is entered into the 14 day of Nov, 2006, by and between the CITY OF OKLAHOMA CITY, hereinafter referred to as the "City" and the OKLAHOMA TURNPIKE AUTHORITY, hereinafter referred to as the "OTA."

WHEREAS, large municipalities are required to obtain an Oklahoma Pollutant Discharge Elimination System (OPDES) permit for their municipal separate storm sewer systems; and

WHEREAS, the City has submitted the mandated OPDES permit application to the Oklahoma Department of Environmental Quality, hereinafter referred to as "DEQ"; and

WHEREAS, the OTA has requested that the City amend its permit application to allow the OTA to be a co-applicant and co-permittee; and

WHEREAS, the City has agreed to supplement its permit application to allow the OTA to be a co-applicant and co-permittee,

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. This Memorandum becomes effective as of the above mentioned date and will remain in effect for the duration of the OPDES permit issued by the DEQ that names all parties hereto as co-applicants or co-permittees.
2. The responsibilities that each party agrees to assume under this Memorandum extend to the corporate limits of the City, but not beyond.
3. In consideration of the City agreement to supplement its submitted OPDES permit application to include the OTA to be a co-applicant, the OTA will:
  - a. Comply with the City's Stormwater Management Plan.
  - b. Comply with the applicable Best Management Practices (BMPs) to the Maximum Extent Practicable as submitted in the OPDES permit application inasmuch as such BMPs apply to the OTA's municipal storm sewer system (MS4) and any discharge or spill on property owned, operated or maintained by the OTA.
  - c. Comply with the OPDES permit as issued by the DEQ as it relates to the OTA's MS4 and the impact of the OTA's MS4 upon the City's MS4.

- d. Make available to the City research data and results including design procedures and standard details developed by the OTA as BMPs.
- e. Notify the City of any suspicious activities or illicit discharges within the OTA's collection area.
- f. Cooperate with the City in providing any available data such as plans that pertain to any stormwater runoff from any real property in which the OTA has an interest, control or maintenance responsibility.
- g. Prior to any new construction on any real property in which the OTA has an interest, or any modification of the present facilities of any inlets for the discharge of stormwater into any of the City's drain locations, the OTA must obtain prior approval from the City. The OTA shall copy the City's Stormwater Manager with summaries of comments on reviews of "plans in hand" of each such project. The OTA shall ensure that no stormwater discharge structures are constructed on City rights-of-way without prior written approval of the City. Before the City approves stormwater discharges into City facilities, the OTA shall ensure proper measures have been taken to ensure the quality of the water and the maintenance of the facilities.
- h. Coordinate and cooperate where there is a mutual concern or overlap of responsibility as submitted in the OPDES permit application.
- i. Take the appropriate enforcement actions against illicit stormwater discharges, to ensure compliance with the OPDES permit. The OTA shall notify the City in writing of any enforcement actions that it takes within the boundaries of the City and shall copy the City on any report to the DEQ or other state or federal authorities.  
  
These actions must meet DEQ regulations, requirements and goals.
- j. Where the OTA stormwater collection areas are involved, the City and the OTA shall consult with each other on water quality problems attributable to a third party. Where an illegal stormwater discharge is identified or suspected, the City and the OTA will coordinate so as to arrive at a mutually acceptable response to minimize or eliminate the water quality problem.
- k. Both the City and the OTA will inspect for and investigate illicit connections and discharges to their collection areas and their separate storm sewer systems. The City shall have access to OTA right-of-way to investigate water quality problems. If the investigative actions of the City will interfere with highway operations or pose a hazard to the traveling

public, the OTA will coordinate traffic control for the City at the City's request. The OTA hereby confers permission for the City to enter its rights-of-way and MS4s for any lawful purpose under this Memorandum.

- l. Prohibit any connections to the City's or the OTA's MS4s without prior approval of the City.
  - m. Provide information needed for annual reporting not less than 60 days prior to reporting deadlines.
  - n. If the OTA fails to correct any condition which is the OTA's responsibility as stated in this Memorandum or as represented in the OPDES permit as approved by DEQ, within 30 days after receipt of written notice from the City, the OTA agrees to pay for the cost of maintenance or other actions taken by the City within 30 days of receipt of billing, should the City have to complete maintenance or take the action which is the OTA's responsibility as stated in this Memorandum and permits as approved by DEQ.
  - o. The OTA shall participate administratively in the public awareness program with the City. This cooperative effort will include the use of OTA resources to develop programs aimed at public involvement and public education.
  - p. The OTA will participate in maintaining the City's stormwater management program by contributing annually the sum of \$79,766 to cover the City's costs of program services provided by the City. The OTA's share of funding shall be paid on the first day of its fiscal year, or within ten (10) days after funding becomes legally available.
4. The City, in consideration of the preceding paragraph, agrees to amend its OPDES permit application to include the OTA as a co-applicant.
  5. Except to the extent specifically prohibited by statute, the OTA shall, as between the parties, be solely responsible for all claims and liabilities due directly or indirectly to activities or omissions of itself, its agents, employees, contractors or officers for damages, fines, costs, expenses, losses, injury to persons, damage or loss of property and injury or endangerment of species listed in the OPDES Permit. Except to the extent specifically prohibited by statute, the OTA shall, as between the parties, be solely responsible for any and all costs or expenses actually incurred by the City in defense during litigation alleging wrongful discharge or contamination by pollutants through or ancillary to stormwater discharge through negligence of the OTA, its agents, employees and/or officers. In addition the OTA shall, as between parties, be responsible for any monetary fines or penalties assessed against the City due to OPDES permit violations

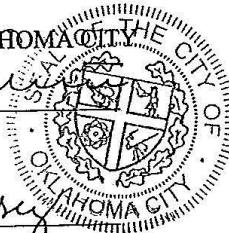
stemming from discharges for which the OTA, its agents, employees and/or officers is found by administrative proceeding or court of law to be liable.

6. The OTA agrees to abide by all applicable federal, state and local laws, ordinances, and regulations pertaining to pollution control and environmental protection and including but not limited to the terms and conditions of the OPDES permit as approved by DEQ or as amended in the future.
7. Except as provided in this Memorandum, responsibility and supervision of the OTA's real property interests, including but not limited to its rights-of-way, are not assigned, assumed or surrendered by this Memorandum.
8. This Memorandum may be terminated by any of the following conditions:
  - a. By mutual consent of the parties with the approval of DEQ.
  - b. By either party, upon the failure of the other party to fulfill its responsibilities and obligations as set forth in this Memorandum.
  - c. By either party with the approval of DEQ.
  - d. By the City for failure of the OTA to perform any obligation in the OPDES permit(s) or any DEQ regulation or requirements.

Termination of this Memorandum shall extinguish all unaccrued rights, future duties, future obligations, and subsequently accruing liabilities of the City and OTA to each other under this Memorandum. The City will notify the OTA that an alleged breach of contract has occurred prior to seeking termination of this Memorandum for breach. Within a reasonable time but in no event more than 30 days from the City's written notification, the OTA must address the alleged breach or situation as outlined by the City. In the event the OTA does not address the situation in accordance with this Memorandum, the OPDES permit and applicable DEQ regulations and requirements, the City may terminate this Memorandum or suspend performance thereunder and the parties shall conclude their activities relating to this Memorandum. The OTA shall notify the City that an alleged breach of contract has occurred prior to seeking termination of this Memorandum for breach. Within a reasonable time but in no event more than 30 days from the OTA's written notification, the City must address the situation as outlined by the OTA. In the event the City does not address the alleged breach or situation in accordance with this Memorandum, the OPDES permit and applicable DEQ regulations and requirements, the OTA may terminate this Memorandum or suspend performance thereunder and the parties shall conclude their activities relating to this Memorandum.

9. Changes to the time frame, character, cost or obligations authorized hereunder shall be addressed by written amendment before additional work may be performed or additional costs incurred.
10. The City and OTA shall comply with all applicable laws and regulations, orders and final decrees of any court of final jurisdiction in any manner affecting the performance of this Memorandum. Venue shall be in the courts of Oklahoma County, Oklahoma.
11. In case one or more of the provisions contained in this Memorandum shall for any reason be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceable provision thereof in this Memorandum shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.
12. This Memorandum contains the entire agreement between the parties hereto and no modification of this Memorandum shall be valid until it is agreed upon by the City and the OTA in writing.
13. This Memorandum constitutes the sole and only agreement of the parties hereto and supersedes any prior understanding or agreements written or oral between the City and the OTA respecting the within subject matter.

WITNESS the following signatures and seals:

|   |   |
|---|---|
| <p>THE CITY OF OKLAHOMA CITY</p>  <p><i>Phil Kerney</i></p> <hr/> <p>Mayor</p> <p><i>Drauce Kerney</i></p> <hr/> <p>City Clerk</p> | <p>OKLAHOMA TURNPIKE AUTHORITY</p> <p>By: <i>[Signature]</i></p> <hr/> <p>Chairman</p> <p><i>Phil Tomlinson</i></p> <hr/> <p>Director</p> |
|---|---|

APPROVED AS TO FORM

*[Signature]*

---

Assistant Municipal Counselor

APPROVED AS TO FORM

*[Signature]*

---

General Counsel



# MEMORANDUM

The City of  
**OKLAHOMA CITY**

Council Agenda  
Item No. VI. Q.  
8/1/06

TO: Mayor and City Council  
FROM: James D. Couch, City Manager *JDC*

Memorandum of Understanding Concerning the Implementation and Enforcement of an Oklahoma Pollutant Discharge Elimination System Permit with the Oklahoma Department of Transportation, annual revenue of \$176,000.

- Purpose** To confirm that the City of Oklahoma City and the Oklahoma Department of Transportation have completed the interjurisdictional agreements to be co-permittees in the final NPDES Municipal Permit.
- Background** Oklahoma City received the final NPDES Municipal Permit from the U.S. Environmental Protection Agency with the condition of cooperative efforts of Oklahoma Department of Transportation as owners of small portions of the Municipal Separate Storm Sewer System (MS4). Oklahoma City, as principal owner will serve as primary administrator of the program. The Environmental Protection Agency requires documentation of co-permitting terms as a provision of permit compliance.
- Revenue Source** Annual Revenue of \$176,000 to be paid on the first day of its fiscal year, or within ten (10) days after funding becomes legally available. 330-0075-43750004
- Review** Public Works Department and the Municipal Counselor's Office.

**Recommendation:** Approve the Memorandum of Understanding

**Attachment**

RLM\bu\agenda\OPDES.Co-Permit



MEMORANDUM OF UNDERSTANDING  
CONCERNING THE IMPLEMENTATION AND  
ENFORCEMENT OF AN OPDES PERMIT

This Agreement is entered into the 15<sup>th</sup> day of July, 2006, by and between the CITY OF OKLAHOMA CITY, hereinafter referred to as the "City" and the STATE OF OKLAHOMA, acting by and through the OKLAHOMA DEPARTMENT OF TRANSPORTATION, hereinafter referred to as the "ODOT".

WHEREAS, large municipalities are required to obtain an Oklahoma Pollutant Discharge Elimination System (OPDES) permit for their municipal separate storm sewer systems; and

WHEREAS, the City has submitted the mandated OPDES permit application to the Oklahoma Department of Environmental Quality, hereinafter referred to as "DEQ"; and

WHEREAS, the ODOT has requested that the City amend its permit application to allow the ODOT to be a co-applicant and co-permittee; and

WHEREAS, the City has agreed to supplement its permit application to allow the ODOT to be a co-applicant and co-permittee,

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. This Agreement becomes effective as of the above mentioned date and will remain in effect for the duration of the OPDES permit issued by the DEQ that names all parties hereto as co-applicants or co-permittees.
2. The responsibilities that each party agrees to assume under this Agreement extend to the corporate limits of the City, but not beyond.
3. In consideration of the City agreement to supplement its submitted OPDES permit application to include the ODOT to be a co-applicant, the ODOT will:
  - a. Comply with the City's Stormwater Management Plan.
  - b. Comply with the applicable Best Management Practices (BMPs) to the Maximum Extent Practicable as submitted in the OPDES permit application inasmuch as such BMPs apply to the ODOT's municipal separate storm sewer system (MS4) and any discharge or spill on property owned, operated or maintained by the ODOT.

- c. Comply with the OPDES permit as issued by the DEQ, as it relates to the ODOT's MS4 and the impact of the ODOT's MS4 upon the City's MS4.
- d. Make available to the City research data and results including design procedures and standard details developed by the ODOT as BMPs.
- e. Notify the City of any suspicious activities or illicit discharges within the ODOT's collection area.
- f. Cooperate with the City in providing any available data such as plans that pertain to any stormwater runoff from any real property in which the ODOT has an interest, control or maintenance responsibility.
- g. Prior to any new construction on any real property in which the ODOT has an interest, or any modification of the present facilities of any inlets for the discharge of stormwater into any of the City's drain locations, the ODOT must obtain prior approval from the City. The ODOT shall copy the City's Stormwater Manager with summaries of comments on reviews of "plans in hand" of each such project. The ODOT shall ensure that no stormwater discharge structures are constructed on City rights-of-way without prior written approval of the City. Before the City approves stormwater discharges into City facilities, the ODOT shall ensure proper measures have been taken to ensure the quality of the water and the maintenance of the facilities.
- h. Coordinate and cooperate where there is a mutual concern or overlap of responsibility under this Agreement.
- i. Take the appropriate enforcement actions against illicit stormwater discharges, to ensure compliance with the OPDES permit. The ODOT shall notify the City in writing of any enforcement actions that it takes within the boundaries of the City and shall copy the City on any report to the DEQ or other state or federal authorities.  
  
These actions must meet DEQ regulations, requirements and goals.
- j. Where the ODOT stormwater collection areas are involved, the City and the ODOT shall consult with each other on water quality problems attributable to a third party. Where an illegal stormwater discharge is identified or suspected, the City and the ODOT will coordinate so as to arrive at a mutually acceptable response to minimize or eliminate the water quality problem.
- k. Both the City and the ODOT will inspect for and investigate illicit connections and discharges to their collection areas and their separate storm sewer systems. The City shall have access to ODOT right-of-way to

investigate water quality problems. If the investigative actions of the City will interfere with highway operations or pose a hazard to the traveling public, the ODOT will provide traffic control for the City at the City's request. The ODOT hereby confers permission for the City to enter its rights-of-way and MS4s for any lawful purpose under this Agreement.

1. Prohibit any connections to the City's or the ODOT's MS4s without prior approval of the City.
  - m. Provide information needed for annual reporting not less than 60 days prior to reporting deadlines.
  - n. If the ODOT fails to correct any condition which is the ODOT's responsibility as stated in this Agreement or as represented in the OPDES permit as approved by DEQ, within 30 days after receipt of written notice from the City, the ODOT agrees to pay for the cost of maintenance or other actions taken by the City within 30 days of receipt of billing, should the City have to complete maintenance or take the action which is the ODOT's responsibility as stated in this Agreement and permits as approved by DEQ.
  - o. The ODOT shall participate administratively in the public awareness program with the City. This cooperative effort will include the use of ODOT resources to develop programs aimed at public involvement and public education.
  - p. The ODOT will participate in maintaining the City's stormwater management program by contributing annually the sum of \$176,000 to cover the City's costs of program services provided by the City. The ODOT's share of funding shall be paid on the first day of its fiscal year, or within ten (10) days after funding becomes legally available.
4. The City, in consideration of the preceding paragraph, agrees to amend its OPDES permit application to include the ODOT as a co-applicant.
  5. Except to the extent specifically prohibited by statute, the ODOT shall, as between the parties, be solely responsible for all claims and liabilities due directly or indirectly to activities or omissions of itself, its agents, employees, contractors or officers for damages, fines, costs, expenses, losses, injury to persons, damage or loss of property and injury or endangerment of species listed in the OPDES Permit. Except to the extent specifically prohibited by statute, the ODOT shall, as between the parties, be solely responsible for any and all costs or expenses actually incurred by the City in defense during litigation alleging wrongful discharge or contamination by pollutants through or ancillary to stormwater discharge through negligence of the ODOT, its agents, employees and/or officers. In addition the ODOT shall, as between parties, be responsible for any monetary

finances or penalties assessed against the City due to OPDES permit violations stemming from discharges for which the ODOT, its agents, employees and/or officers is found by administrative proceeding or court of law to be liable and only as to that portion or percentage as may be found during such administrative or court proceeding, that the State, its agents, employees and/or officers was a contributor in violation of this Agreement, the OPDES permit or permits or OPDES application or from property which is owned or controlled by the State.

6. The ODOT agrees to abide by all applicable federal, state and local laws, ordinances, and regulations pertaining to pollution control and environmental protection and including but not limited to the terms and conditions of the OPDES permit as approved by DEQ, or as amended in the future.
7. Except as provided in this Agreement, responsibility and supervision of the ODOT's real property interests, including but not limited to its rights-of-way, are not assigned, assumed or surrendered by this Agreement.
8. This Agreement may be terminated by any of the following conditions:
  - a. By mutual consent of the parties with the approval of DEQ.
  - b. By either party, upon the failure of the other party to fulfill its responsibilities and obligations as set forth in this Agreement.
  - c. By either party with the approval of DEQ.
  - d. By the City for failure of the ODOT to perform any obligation in the OPDES permit(s) or any DEQ regulation or requirements.

Termination of this Agreement shall extinguish all unaccrued rights, future duties, future obligations, and subsequently accruing liabilities of the City and ODOT to each other under this Agreement. The City will notify the ODOT that an alleged breach of contract has occurred prior to seeking termination of this Agreement for breach. Within a reasonable time but in no event more than 30 days from the City's written notification, the ODOT must address the alleged breach or situation as outlined by the City. In the event the ODOT does not address the situation in accordance with this Agreement, the OPDES permit and applicable DEQ regulations and requirements, the City may terminate this Agreement or suspend performance thereunder and the parties shall conclude their activities relating to this Agreement. The ODOT shall notify the City that an alleged breach of contract has occurred prior to seeking termination of this Agreement for breach. Within a reasonable time but in no event more than 30 days from the ODOT's written notification, the City must address the situation as outlined by the ODOT. In the event the City does not address the alleged breach or situation in accordance with this Agreement, the OPDES permit and applicable DEQ regulations and requirements, the ODOT may terminate this Agreement or suspend performance

thereunder and the parties shall conclude their activities relating to this Agreement.

9. Changes to the time frame, character, cost or obligations authorized hereunder shall be addressed by written amendment before additional work may be performed or additional costs incurred.
10. The City and the ODOT shall comply with all applicable laws and regulations, orders and final decrees of any court of final jurisdiction in any manner affecting the performance of this Agreement. Venue shall be in the courts of Oklahoma County, Oklahoma.
11. In case one or more of the provisions contained in this Agreement shall for any reason be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceable provision thereof in this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.
12. This Agreement contains the entire agreement between the parties hereto and no modification of this Agreement shall be valid until it is agreed upon by the City and the ODOT in writing.
13. This Agreement constitutes the sole and only agreement of the parties hereto and supersedes any prior understanding or agreements written or oral between the City and the ODOT respecting the within subject matter.

THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK.

WITNESS the following signatures and seals:

THE CITY OF OKLAHOMA CITY

*Phil Cantu*

Mayor



*Shawna Perry*  
City Clerk

*Brenda U...*  
APPROVED AS TO FORM

*Brenda U...*  
Assistant Municipal Counselor

STATE OF OKLAHOMA, acting by and  
through the OKLAHOMA DEPARTMENT OF  
TRANSPORTATION

By: *David Stutz*  
Asst. Director

APPROVED AS TO FORM

*Brenda U...*  
General Counsel

P: SWQ/BrendaU/Word/mou.odt

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**



# City of Bethany

A great place to live, work, shop, and grow a business!

June 13, 2017

The City of Oklahoma City  
Eric J. Wenger, Director  
Department of Public Works  
3738 SW 15<sup>th</sup> St, Bldg 1  
Oklahoma City OK 73108

Dear Mr. Wenger:

The City of Bethany desires to renew the Inter-Governmental Agreement with the City of Oklahoma City concerning household hazardous waste disposal for the year ending June 30, 2018.

Thank you for your kind assistance in this matter.

Sincerely,

J. D. Cox  
City Manager

JDC/lw

**APPROVED**  
7-18-17

BY THE CITY COUNCIL  
*Sharon Lewis*, CITY CLERK

PO Box 219 • 6700 NW 36<sup>th</sup> St  
Bethany OK 73008 • (405) 789-5005 • FAX (405) 787-5467  
[www.cityofbethany.org](http://www.cityofbethany.org)

**An Inter-Governmental Agreement for a Regional  
Household Hazardous Waste  
Collection, and Management Project (the Project)**

THIS AGREEMENT, made and entered into this the 21st day of June, 2016, by, between and among City of Bethany (hereinafter referred to as "Participant" or "Participants") and The City of Oklahoma City (hereinafter referred to as "Oklahoma City").

**WITNESSETH:**

**WHEREAS**, the parties, referenced above, with The City of Oklahoma City acting as Lead Party, have resolved to enter into this Agreement to define the participation and expectations of each party and to coordinate the collection and management of household hazardous waste (HHW) and the implementation of a joint program; and

**WHEREAS**, the EPA Clean Water Act of 1987 requires the establishment of Hazardous Waste Collection and Disposal Programs for MS4 permits; and

**WHEREAS**, hazardous household waste is "a waste which would be chemically or physically classified as a hazardous waste but is excluded from regulation as a hazardous waste pursuant to the regulations of the Environment Protect Agency because it is generated by a household;" such HHW consisting of numerous products common to the average household, such as pesticides, paints, polishes, cleaners, and automotive supplies; and

**WHEREAS**, each party to this Agreement has independently researched the possible benefits and obligations of participating in and coordinate activities under the Project; and

**WHEREAS**, each party has determined that a regional cooperative HHW Education, Collection and Management Project will provide increased convenience/participation and possibly result in a lower cost per participant and cost savings to all parties; and

**NOW, THEREFORE**, in consideration of the mutual goals and covenants contained herein, and the mutual benefits to result therefrom, the parties agree as follows,

1. The purpose of this Agreement is to establish a Regional HHW Collection and Management Project to affect cost savings, increase public convenience and participation, and educate the public about the proper management of HHW.

2. The term of this Agreement shall commence upon its effective date and conclude June 30, 2017 (which term shall be referred to as the "Initial Term" or the "Demonstration Period").

**THE REMAINDER OF THIS PAGE IS LEFT INTENTIONALLY BLANK**



3. Each Participant shall have the right to terminate its participation under this Agreement at any time during the term of the Agreement for any reason, including, but not limited to, its own convenience. If any Participant under this Agreement elects to withdraw or terminate its participation under the Agreement prior to June 30, 2017, the withdrawing Party shall give Oklahoma City thirty (30) days prior written notice of the termination. Any Participant withdrawing from this Agreement must meet all financial commitments and other obligations up to the point of the termination or withdrawal. Withdrawal or termination shall not be effective until all financial commitments and other obligations shall be satisfied.

4. Each Participant may independently renew this Agreement beyond the Initial Term upon mutual agreement of Oklahoma City and the renewing Participant. Request for renewal shall be in the form of a letter from the authorized representative of the Participant must be received in July and may be accepted by the City Public Works Director on behalf of Oklahoma City. Each such renewal shall be for one fiscal year, July 1 to the following June 30. Provided however that no Participant in arrears in payment of charges for services render pursuant to this Agreement shall be permitted to renew this Agreement.

5. The City of Oklahoma City agrees to accept HHW from residents of Participant, with the understanding that The City of Oklahoma will maintain an accounting of these cross-jurisdictional amounts and reimbursement for their management. The residents will be required to comply with ordinances and policies for the disposition of HHW established by Oklahoma City, as may be amended from time to time.

6. The City of Oklahoma City, will bill each Participant (the city or county from which a participating **resident** has originated as such proof of residency is presented to Oklahoma City) separately after each collection occurrence and the participating Party will reimburse Oklahoma City in accordance with the terms of this Agreement. The Participant hereby agrees to establish and/or encumber funding for this Agreement and the services to be provided, and to timely pay for services provided. The Participant agrees that Oklahoma City may but is not required to inquire or investigate the residency of any person dropping off HHW beyond the address on the resident's driver's license.

7. Billings are considered due forty-five (45) calendar days after issuance of billing. If payment is not received by the due date a ten (10%) percent late fee will be assessed to the Participant and service to residents of any delinquent Participants will be subject to termination ninety (90) calendar days after the bill issuance date.

8. Oklahoma City shall assess a rate (based on national surveys) per equivalent rate unit (ERU) of fifteen (15) gallons per household. The fee structure per each resident per arrival or entry shall be evaluated by the following scale:

|                              |         |          |
|------------------------------|---------|----------|
| ≤ 7.5 gallons                | .5 ERU  | \$ 39.50 |
| > 7.5 gallons to 15 gallons  | 1.0 ERU | \$ 79.00 |
| > 15 gallons to 22.5 gallons | 1.5 ERU | \$118.50 |
| > 22.5 gallons               | 2.0 ERU | \$158.00 |

[Note:] Minimum charge per vehicle per arrival = .5 ERU  
 Maximum charge per vehicle per arrival = 2.0 ERU

9. Pursuant to the permit issued by the Oklahoma Department of Environmental Quality, Oklahoma City is prohibited from taking any waste other than products expressly produced for home use. No commercial products will be accepted. No products from commercial business or institutions will be accepted. No products from commercial vehicles shall be accepted.

10. This Agreement shall be deemed effective and legally binding upon execution by each of the parties hereto.

11. This Agreement may be amended upon the mutual agreement of the parties or their authorized representatives.

12. All notices required to be given hereunder, shall be in writing and shall be: delivered in person (and a confirming copy sent by first class mail); or shall be mailed by registered mail; or delivered by facsimile with a return receipt showing delivery (and a confirming copy sent by first class mail), to the following addresses:

(a) Notices to Oklahoma City:  
City Clerk  
The City of Oklahoma City  
200 North Walker Avenue, 2nd Floor  
Oklahoma City, Oklahoma 73102

and

Public Works Department  
Storm Water Quality Manager  
420 West Main Street, 3<sup>th</sup> Floor  
Oklahoma City, Oklahoma 73102

(b) Notices to the Participant:

The parties may hereafter designate, in writing and as provided herein, other or different persons or addresses for receipt of notice.

13. When any word in this Agreement is used in the singular number, it shall include the plural and the plural, the singular, except where contrary intention plainly appears. When any word is used in the masculine, it shall include the feminine, and the feminine, the masculine, except where a contrary intention plainly appears.

14. The parties hereto, acting under authority of their respective governing bodies, have caused this Agreement to be executed in multiple counterparts, each of which shall constitute an original.

15. The parties hereto agree that it is not their intent to create any rights or benefits to any third parties and that no third party beneficiaries shall be created or shall be deemed to be created by this Agreement.

**THE REMAINDER OF THIS PAGE IS LEFT INTENTIONALLY BLANK.**

16. The parties hereto agree to abide by the applicable and constitutionally valid laws of the State of Oklahoma and the United States of America. The parties further agree that any action to enforce the provisions of this Agreement or any dispute over the interpretation of this Agreement shall be resolved and in a court of competent jurisdiction in Oklahoma County, Oklahoma.

17. This is the complete Agreement between the parties and no statements, representations or discussions not set forth herein shall be binding upon the parties and no party is or shall be bound by any statement or representation that does not conform with this document. No agent or any party to this Agreement has authority to alter, modify or change this Agreement except as expressly provided herein. This Agreement shall be read as a whole and shall not be interpreted either for or against any party. This Agreement may only be amended in writing as approved and executed by all parties hereto.

18. Time shall be deemed to be of the essence of this Agreement.

19. A breach of any provision of this Agreement shall be deemed to be a breach of the entire Agreement provided however the breaching party or parties shall be given thirty (30) days notice as provided herein during which to cure any breach prior to the termination of this Agreement. Provided however, the failure of any party hereto to provide notice of a breach of this Agreement shall not be deemed a waiver of that breach or any subsequent breach of a similar or different kind or nature.

20. A determination that any provision or application of any provision of this Agreement to any party is prohibited or contrary to law shall be limited to the specific language and/or party so construed, and shall not effect the validity of the remaining provisions of the Agreement or its binding effect on any other party or parties.

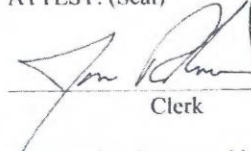
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April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

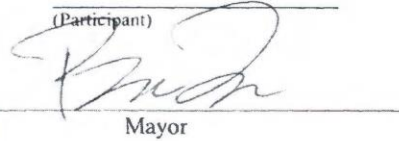
Approved and executed by \_\_\_\_\_ this 17<sup>th</sup> day of May,  
20 16.  
(Participant)

ATTEST: (Seal)

  
Clerk



(Participant)

  
Mayor

Approved and executed by The City of Oklahoma City this 21st day of June,  
20 16.

THE CITY OF OKLAHOMA CITY

ATTEST: (Seal)

  
City Clerk



  
Mayor

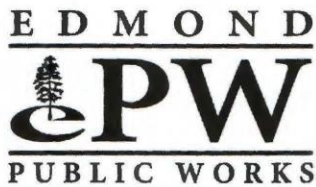
REVIEWED for form and legality.

  
Assistant Municipal Counselor

P:\Other Cities\Intergovernmental Agreement

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**



**APPROVED**  
7-18-17

BY THE CITY COUNCIL  
*Sharon Lewis*, CITY CLERK

May 9, 2017

Mr. Eric Wenger, Public Works Director  
City of Oklahoma City  
Household Hazardous Waste Facility  
3738 SW 15<sup>th</sup> Building #1  
Oklahoma City, OK 73108  
Attention: Brenda Underwood

Re: City of Edmond Public Works Authority/City of Oklahoma City  
Inter-Governmental Agreement – Hazardous Waste

The term of the above-cited Agreement will conclude June 30, 2017. According to Article 4 of the Agreement, each Participant may request a renewal, which would be for one fiscal year beginning July 1 to the following June 30. We hereby request a renewal of this Agreement under the same terms and conditions as imposed under terms of the current Agreement. The term for this renewal would be from July 1, 2017 to June 30, 2018.

On May 8, 2017, the Edmond Public Work Authority approved renewal of this Agreement upon concurrence of the city of Oklahoma City.

We appreciate the opportunity to participate in an effort to protect the metro community's environment, and if we are in mutual agreement as to the terms of a renewal, please forward your approval.

Sincerely,

A handwritten signature in blue ink that reads "Charles Lamb".

Charles Lamb, Chairman  
Edmond Public Works Authority

cc: Herb Blomquist,  
Edmond Public Works Director  
Bobby Masterson,  
Solid Waste Superintendent

City of Edmond  
Dept. of Public Works  
2004 Old Timbers Drive  
Edmond, OK 73034

Office (405) 216-7770  
Fax (405) 216-7619

[www.edmondok.com](http://www.edmondok.com)



TREE CITY USA

**An Inter-Governmental Agreement for a Regional  
Household Hazardous Waste  
Collection, and Management Project (the Project)**

THIS AGREEMENT, made and entered into this the 21st day of **June**, 2016, by, between and among *City of Edmond* (hereinafter referred to as "Participant" or "Participants") and The City of Oklahoma City (hereinafter referred to as "Oklahoma City").

**WITNESSETH:**

**WHEREAS**, the parties, referenced above, with The City of Oklahoma City acting as Lead Party, have resolved to enter into this Agreement to define the participation and expectations of each party and to coordinate the collection and management of household hazardous waste (HHW) and the implementation of a joint program; and

**WHEREAS**, the EPA Clean Water Act of 1987 requires the establishment of Hazardous Waste Collection and Disposal Programs for MS4 permits; and

**WHEREAS**, hazardous household waste is "a waste which would be chemically or physically classified as a hazardous waste but is excluded from regulation as a hazardous waste pursuant to the regulations of the Environment Protect Agency because it is generated by a household;" such HHW consisting of numerous products common to the average household, such as pesticides, paints, polishes, cleaners, and automotive supplies; and

**WHEREAS**, each party to this Agreement has independently researched the possible benefits and obligations of participating in and coordinate activities under the Project; and

**WHEREAS**, each party has determined that a regional cooperative HHW Education, Collection and Management Project will provide increased convenience/participation and possibly result in a lower cost per participant and cost savings to all parties; and

**NOW, THEREFORE**, in consideration of the mutual goals and covenants contained herein, and the mutual benefits to result therefrom, the parties agree as follows,

1. The purpose of this Agreement is to establish a Regional HHW Collection and Management Project to affect cost savings, increase public convenience and participation, and educate the public about the proper management of HHW.

2. The term of this Agreement shall commence upon its effective date and conclude June 30, *2017* (which term shall be referred to as the "Initial Term" or the "Demonstration Period").

**THE REMAINDER OF THIS PAGE IS LEFT INTENTIONALLY BLANK**

3. Each Participant shall have the right to terminate its participation under this Agreement at any time during the term of the Agreement for any reason, including, but not limited to, its own convenience. If any Participant under this Agreement elects to withdraw or terminate its participation under the Agreement prior to June 30, 2017, the withdrawing Party shall give Oklahoma City thirty (30) days prior written notice of the termination. Any Participant withdrawing from this Agreement must meet all financial commitments and other obligations up to the point of the termination or withdrawal. Withdrawal or termination shall not be effective until all financial commitments and other obligations shall be satisfied.

4. Each Participant may independently renew this Agreement beyond the Initial Term upon mutual agreement of Oklahoma City and the renewing Participant. Request for renewal shall be in the form of a letter from the authorized representative of the Participant must be received in July and may be accepted by the City Public Works Director on behalf of Oklahoma City. Each such renewal shall be for one fiscal year, July 1 to the following June 30. Provided however that no Participant in arrears in payment of charges for services rendered pursuant to this Agreement shall be permitted to renew this Agreement.

5. The City of Oklahoma City agrees to accept HHW from residents of Participant, with the understanding that The City of Oklahoma will maintain an accounting of these cross-jurisdictional amounts and reimbursement for their management. The residents will be required to comply with ordinances and policies for the disposition of HHW established by Oklahoma City, as may be amended from time to time.

6. The City of Oklahoma City, will bill each Participant (the city or county from which a participating resident has originated as such proof of residency is presented to Oklahoma City) separately after each collection occurrence and the participating Party will reimburse Oklahoma City in accordance with the terms of this Agreement. The Participant hereby agrees to establish and/or encumber funding for this Agreement and the services to be provided, and to timely pay for services provided. The Participant agrees that Oklahoma City may but is not required to inquire or investigate the residency of any person dropping off HHW beyond the address on the resident's driver's license.

7. Billings are considered due forty-five (45) calendar days after issuance of billing. If payment is not received by the due date a ten (10%) percent late fee will be assessed to the Participant and service to residents of any delinquent Participants will be subject to termination ninety (90) calendar days after the bill issuance date.

8. Oklahoma City shall assess a rate (based on national surveys) per equivalent rate unit (ERU) of fifteen (15) gallons per household. The fee structure per each resident per arrival or entry shall be evaluated by the following scale:

|                              |         |          |
|------------------------------|---------|----------|
| ≤ 7.5 gallons                | .5 ERU  | \$ 39.50 |
| > 7.5 gallons to 15 gallons  | 1.0 ERU | \$ 79.00 |
| > 15 gallons to 22.5 gallons | 1.5 ERU | \$118.50 |
| > 22.5 gallons               | 2.0 ERU | \$158.00 |

[Note:] Minimum charge per vehicle per arrival = .5 ERU  
 Maximum charge per vehicle per arrival = 2.0 ERU

9. Pursuant to the permit issued by the Oklahoma Department of Environmental Quality, Oklahoma City is prohibited from taking any waste other than products expressly produced for home use. No commercial products will be accepted. No products from commercial business or institutions will be accepted. No products from commercial vehicles shall be accepted.

10. This Agreement shall be deemed effective and legally binding upon execution by each of the parties hereto.

11. This Agreement may be amended upon the mutual agreement of the parties or their authorized representatives.

12. All notices required to be given hereunder, shall be in writing and shall be: delivered in person (and a confirming copy sent by first class mail); or shall be mailed by registered mail; or delivered by facsimile with a return receipt showing delivery (and a confirming copy sent by first class mail), to the following addresses:

(a) Notices to Oklahoma City:  
City Clerk  
The City of Oklahoma City  
200 North Walker Avenue, 2nd Floor  
Oklahoma City, Oklahoma 73102

and

Public Works Department  
Storm Water Quality Manager  
420 West Main Street, 3<sup>rd</sup> Floor  
Oklahoma City, Oklahoma 73102

(b) Notices to the Participant:

The parties may hereafter designate, in writing and as provided herein, other or different persons or addresses for receipt of notice.

13. When any word in this Agreement is used in the singular number, it shall include the plural and the plural, the singular, except where contrary intention plainly appears. When any word is used in the masculine, it shall include the feminine, and the feminine, the masculine, except where a contrary intention plainly appears.

14. The parties hereto, acting under authority of their respective governing bodies, have caused this Agreement to be executed in multiple counterparts, each of which shall constitute an original.

15. The parties hereto agree that it is not their intent to create any rights or benefits to any third parties and that no third party beneficiaries shall be created or shall be deemed to be created by this Agreement.

**THE REMAINDER OF THIS PAGE IS LEFT INTENTIONALLY BLANK.**



16. The parties hereto agree to abide by the applicable and constitutionally valid laws of the State of Oklahoma and the United States of America. The parties further agree that any action to enforce the provisions of this Agreement or any dispute over the interpretation of this Agreement shall be resolved and in a court of competent jurisdiction in Oklahoma County, Oklahoma.

17. This is the complete Agreement between the parties and no statements, representations or discussions not set forth herein shall be binding upon the parties and no party is or shall be bound by any statement or representation that does not conform with this document. No agent or any party to this Agreement has authority to alter, modify or change this Agreement except as expressly provided herein. This Agreement shall be read as a whole and shall not be interpreted either for or against any party. This Agreement may only be amended in writing as approved and executed by all parties hereto.

18. Time shall be deemed to be of the essence of this Agreement.

19. A breach of any provision of this Agreement shall be deemed to be a breach of the entire Agreement provided however the breaching party or parties shall be given thirty (30) days notice as provided herein during which to cure any breach prior to the termination of this Agreement. Provided however, the failure of any party hereto to provide notice of a breach of this Agreement shall not be deemed a waiver of that breach or any subsequent breach of a similar or different kind or nature.

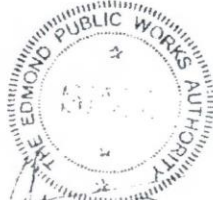
20. A determination that any provision or application of any provision of this Agreement to any party is prohibited or contrary to law shall be limited to the specific language and/or party so construed, and shall not effect the validity of the remaining provisions of the Agreement or its binding effect on any other party or parties.

**THE REMAINDER OF THIS PAGE IS LEFT INTENTIONALLY BLANK.**

Approved and executed by Edmond Public Works Authority this 23 day of May 20 16.  
(Participant)

ATTES: (Seal)

*Kory [Signature]*  
Clerk



(Participant)  
*Charles [Signature]*  
Mayor

Approved and executed by The City of Oklahoma City this 21st day of June 20 16.

THE CITY OF OKLAHOMA CITY

ATTEST: (Seal)

*Maven [Signature]*  
City Clerk



*Neil [Signature]*  
Mayor

REVIEWED for form and legality.

*Dawn [Signature]*  
Assistant Municipal Counselor

P: Other Cities/Intergovernmental Agreement

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**



The City of

*El Reno*

Where History Meets the Future

June 13, 2017

City of Oklahoma City, Oklahoma  
Household Hazardous Waste Facility  
Attn: Eric J. Wenger, PW Director  
3738 SW 15<sup>th</sup>  
Building #1  
Oklahoma City, OK 73108

**Re: City of El Reno/City of Oklahoma City: Inter-Governmental Agreement for a Regional Household Hazardous Waste Collection, and Management**

The term of the above-cited Agreement will conclude on June 30, 2017. According to Article 4 of the Agreement, each Participant may request a renewal, which would be for one fiscal year beginning July 1 to the following June 30. We hereby request a renewal of this Agreement under the same terms and conditions as imposed under terms of the current Agreement. The term for this renewal would be from July 1, 2017 to June 30, 2018.

We appreciate the opportunity to participate in an effort to protect the environment in our area, and if we are in mutual agreement as to the terms of a renewal, please forward your approval.

Sincerely,

**Matt White, Mayor – El Reno, Oklahoma**

**Cc: Dan Galloway – City Manager  
Marsha Leck – Finance Director/City Treasurer**

**APPROVED**

7-18-17

BY THE CITY COUNCIL  
*Anna K...* CITY CLERK

**An Inter-Governmental Agreement for a Regional  
Household Hazardous Waste  
Collection, and Management Project (the Project)**

THIS AGREEMENT, made and entered into this the 21st day of June, 2016, by, between and among City of El Reno (hereinafter referred to as "Participant" or "Participants") and The City of Oklahoma City (hereinafter referred to as "Oklahoma City").

**WITNESSETH:**

**WHEREAS**, the parties, referenced above, with The City of Oklahoma City acting as Lead Party, have resolved to enter into this Agreement to define the participation and expectations of each party and to coordinate the collection and management of household hazardous waste (HHW) and the implementation of a joint program; and

**WHEREAS**, the EPA Clean Water Act of 1987 requires the establishment of Hazardous Waste Collection and Disposal Programs for MS4 permits; and

**WHEREAS**, hazardous household waste is "a waste which would be chemically or physically classified as a hazardous waste but is excluded from regulation as a hazardous waste pursuant to the regulations of the Environment Protect Agency because it is generated by a household;" such HHW consisting of numerous products common to the average household, such as pesticides, paints, polishes, cleaners, and automotive supplies; and

**WHEREAS**, each party to this Agreement has independently researched the possible benefits and obligations of participating in and coordinate activities under the Project; and

**WHEREAS**, each party has determined that a regional cooperative HHW Education, Collection and Management Project will provide increased convenience/participation and possibly result in a lower cost per participant and cost savings to all parties; and

**NOW, THEREFORE**, in consideration of the mutual goals and covenants contained herein, and the mutual benefits to result therefrom, the parties agree as follows,

1. The purpose of this Agreement is to establish a Regional HHW Collection and Management Project to affect cost savings, increase public convenience and participation, and educate the public about the proper management of HHW.

2. The term of this Agreement shall commence upon its effective date and conclude June 30, 2017 (which term shall be referred to as the "Initial Term" or the "Demonstration Period").

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3. Each Participant shall have the right to terminate its participation under this Agreement at any time during the term of the Agreement for any reason, including, but not limited to, its own convenience. If any Participant under this Agreement elects to withdraw or terminate its participation under the Agreement prior to June 30, 2017, the withdrawing Party shall give Oklahoma City thirty (30) days prior written notice of the termination. Any Participant withdrawing from this Agreement must meet all financial commitments and other obligations up to the point of the termination or withdrawal. Withdrawal or termination shall not be effective until all financial commitments and other obligations shall be satisfied.

4. Each Participant may independently renew this Agreement beyond the Initial Term upon mutual agreement of Oklahoma City and the renewing Participant. Request for renewal shall be in the form of a letter from the authorized representative of the Participant must be received in July and may be accepted by the City Public Works Director on behalf of Oklahoma City. Each such renewal shall be for one fiscal year, July 1 to the following June 30. Provided however that no Participant in arrears in payment of charges for services render pursuant to this Agreement shall be permitted to renew this Agreement.

5. The City of Oklahoma City agrees to accept HHW from residents of Participant, with the understanding that The City of Oklahoma will maintain an accounting of these cross-jurisdictional amounts and reimbursement for their management. The residents will be required to comply with ordinances and policies for the disposition of HHW established by Oklahoma City, as may be amended from time to time.

6. The City of Oklahoma City, will bill each Participant (the city or county from which a participating **resident** has originated as such proof of residency is presented to Oklahoma City) separately after each collection occurrence and the participating Party will reimburse Oklahoma City in accordance with the terms of this Agreement. The Participant hereby agrees to establish and/or encumber funding for this Agreement and the services to be provided, and to timely pay for services provided. The Participant agrees that Oklahoma City may but is not required to inquire or investigate the residency of any person dropping off HHW beyond the address on the resident's driver's license.

7. Billings are considered due forty-five (45) calendar days after issuance of billing. If payment is not received by the due date a ten (10%) percent late fee will be assessed to the Participant and service to residents of any delinquent Participants will be subject to termination ninety (90) calendar days after the bill issuance date.

8. Oklahoma City shall assess a rate (based on national surveys) per equivalent rate unit (ERU) of fifteen (15) gallons per household. The fee structure per each resident per arrival or entry shall be evaluated by the following scale:

|                              |         |          |
|------------------------------|---------|----------|
| ≤ 7.5 gallons                | .5 ERU  | \$ 39.50 |
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| > 15 gallons to 22.5 gallons | 1.5 ERU | \$118.50 |
| > 22.5 gallons               | 2.0 ERU | \$158.00 |

**[Note:]** Minimum charge per vehicle per arrival = .5 ERU  
 Maximum charge per vehicle per arrival = 2.0 ERU

9. Pursuant to the permit issued by the Oklahoma Department of Environmental Quality, Oklahoma City is prohibited from taking any waste other than products expressly produced for home use. No commercial products will be accepted. No products from commercial business or institutions will be accepted. No products from commercial vehicles shall be accepted.

10. This Agreement shall be deemed effective and legally binding upon execution by each of the parties hereto.

11. This Agreement may be amended upon the mutual agreement of the parties or their authorized representatives.

12. All notices required to be given hereunder, shall be in writing and shall be: delivered in person (and a confirming copy sent by first class mail); or shall be mailed by registered mail; or delivered by facsimile with a return receipt showing delivery (and a confirming copy sent by first class mail), to the following addresses:

- (a) Notices to Oklahoma City:  
City Clerk  
The City of Oklahoma City  
200 North Walker Avenue, 2nd Floor  
Oklahoma City, Oklahoma 73102

and

- Public Works Department  
Storm Water Quality Manager  
420 West Main Street, 3<sup>th</sup> Floor  
Oklahoma City, Oklahoma 73102

- (b) Notices to the Participant:

The parties may hereafter designate, in writing and as provided herein, other or different persons or addresses for receipt of notice.

13. When any word in this Agreement is used in the singular number, it shall include the plural and the plural, the singular, except where contrary intention plainly appears. When any word is used in the masculine, it shall include the feminine, and the feminine, the masculine, except where a contrary intention plainly appears.

14. The parties hereto, acting under authority of their respective governing bodies, have caused this Agreement to be executed in multiple counterparts, each of which shall constitute an original.

15. The parties hereto agree that it is not their intent to create any rights or benefits to any third parties and that no third party beneficiaries shall be created or shall be deemed to be created by this Agreement.

**THE REMAINDER OF THIS PAGE IS LEFT INTENTIONALLY BLANK.**

16. The parties hereto agree to abide by the applicable and constitutionally valid laws of the State of Oklahoma and the United States of America. The parties further agree that any action to enforce the provisions of this Agreement or any dispute over the interpretation of this Agreement shall be resolved and in a court of competent jurisdiction in Oklahoma County, Oklahoma.

17. This is the complete Agreement between the parties and no statements, representations or discussions not set forth herein shall be binding upon the parties and no party is or shall be bound by any statement or representation that does not conform with this document. No agent or any party to this Agreement has authority to alter, modify or change this Agreement except as expressly provided herein. This Agreement shall be read as a whole and shall not be interpreted either for or against any party. This Agreement may only be amended in writing as approved and executed by all parties hereto.

18. Time shall be deemed to be of the essence of this Agreement.

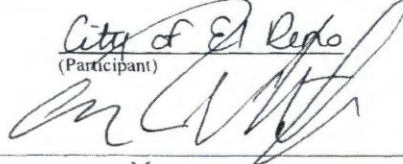
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20. A determination that any provision or application of any provision of this Agreement to any party is prohibited or contrary to law shall be limited to the specific language and/or party so construed, and shall not effect the validity of the remaining provisions of the Agreement or its binding effect on any other party or parties.

**THE REMAINDER OF THIS PAGE IS LEFT INTENTIONALLY BLANK.**

Approved and executed by City of El Reno this 10 day of May,  
20 16.  
(Participant)

City of El Reno  
(Participant)

  
\_\_\_\_\_  
Mayor

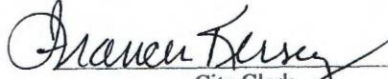


\_\_\_\_\_  
Clerk

Approved and executed by The City of Oklahoma City this 21st day of June,  
20 16.

**THE CITY OF OKLAHOMA CITY**

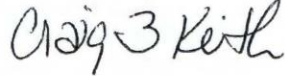
ATTEST: (Seal)

  
\_\_\_\_\_  
City Clerk



  
\_\_\_\_\_  
Mayor

**REVIEWED** for form and legality.



  
\_\_\_\_\_  
El Reno Assistant Municipal Counselor



April 30, 2018

[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]



City of Moore  
Oklahoma

Office of the City Manager | 301 N. Broadway, Moore, OK 73160 | (405) 793-5200 | www.cityofmoore.com

May 31, 2017

**APPROVED**  
7-18-17

Mr. Lyndel Gibson  
Hazardous Household Waste Supervisor  
OKC Dept. of Public Works-Stormwater Quality  
3738 SW 15<sup>th</sup> Street, Building 1  
Oklahoma City, OK 73108

BY THE CITY COUNCIL  
*Anna K. ...* CITY CLERK

Re: Household Hazardous Waste Collection  
Inter-Governmental Agreement

Dear Mr. Gibson,

As provided in the approved 2016 Intergovernmental Agreement for the collection and disposal of household hazardous waste, the City of Moore is respectfully requesting a one-year renewal for the 2017-18 Fiscal Year under the same terms and conditions as the current agreement.

If you should need additional information to process this request, please do not hesitate to contact me at the number listed below.

Respectfully,

A handwritten signature in black ink that reads "Brooks Mitchell".

Brooks Mitchell  
City Manager

Ph. 405-793-5200  
[bmitchell@cityofmoore.com](mailto:bmitchell@cityofmoore.com)

**An Inter-Governmental Agreement for a Regional  
Household Hazardous Waste  
Collection, and Management Project (the Project)**

THIS AGREEMENT, made and entered into this the 21st day of June, 20 16 by, between and among The City of Moore (hereinafter referred to as "Participant" or "Participants") and The City of Oklahoma City (hereinafter referred to as "Oklahoma City").

**WITNESSETH:**

**WHEREAS**, the parties, referenced above, with The City of Oklahoma City acting as Lead Party, have resolved to enter into this Agreement to define the participation and expectations of each party and to coordinate the collection and management of household hazardous waste (HHW) and the implementation of a joint program; and

**WHEREAS**, the EPA Clean Water Act of 1987 requires the establishment of Hazardous Waste Collection and Disposal Programs for MS4 permits; and

**WHEREAS**, hazardous household waste is "a waste which would be chemically or physically classified as a hazardous waste but is excluded from regulation as a hazardous waste pursuant to the regulations of the Environment Protect Agency because it is generated by a household;" such HHW consisting of numerous products common to the average household, such as pesticides, paints, polishes, cleaners, and automotive supplies; and

**WHEREAS**, each party to this Agreement has independently researched the possible benefits and obligations of participating in and coordinate activities under the Project; and

**WHEREAS**, each party has determined that a regional cooperative HHW Education, Collection and Management Project will provide increased convenience/participation and possibly result in a lower cost per participant and cost savings to all parties; and

**NOW, THEREFORE**, in consideration of the mutual goals and covenants contained herein, and the mutual benefits to result therefrom, the parties agree as follows,

1. The purpose of this Agreement is to establish a Regional HHW Collection and Management Project to affect cost savings, increase public convenience and participation, and educate the public about the proper management of HHW.
2. The term of this Agreement shall commence upon its effective date and conclude June 30, 2017 (which term shall be referred to as the "Initial Term" or the "Demonstration Period").

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3. Each Participant shall have the right to terminate its participation under this Agreement at any time during the term of the Agreement for any reason, including, but not limited to, its own convenience. If any Participant under this Agreement elects to withdraw or terminate its participation under the Agreement prior to June 30, 2017, the withdrawing Party shall give Oklahoma City thirty (30) days prior written notice of the termination. Any Participant withdrawing from this Agreement must meet all financial commitments and other obligations up to the point of the termination or withdrawal. Withdrawal or termination shall not be effective until all financial commitments and other obligations shall be satisfied.

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5. The City of Oklahoma City agrees to accept HHW from residents of Participant, with the understanding that The City of Oklahoma will maintain an accounting of these cross-jurisdictional amounts and reimbursement for their management. The residents will be required to comply with ordinances and policies for the disposition of HHW established by Oklahoma City, as may be amended from time to time.

6. The City of Oklahoma City, will bill each Participant (the city or county from which a participating **resident** has originated as such proof of residency is presented to Oklahoma City) separately after each collection occurrence and the participating Party will reimburse Oklahoma City in accordance with the terms of this Agreement. The Participant hereby agrees to establish and/or encumber funding for this Agreement and the services to be provided, and to timely pay for services provided. The Participant agrees that Oklahoma City may but is not required to inquire or investigate the residency of any person dropping off HHW beyond the address on the resident's driver's license.

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| > 15 gallons to 22.5 gallons | 1.5 ERU | \$118.50 |
| > 22.5 gallons               | 2.0 ERU | \$158.00 |

[Note:] **Minimum charge per vehicle per arrival = .5 ERU**  
**Maximum charge per vehicle per arrival = 2.0 ERU**

9. Pursuant to the permit issued by the Oklahoma Department of Environmental Quality, Oklahoma City is prohibited from taking any waste other than products expressly produced for home use. No commercial products will be accepted. No products from commercial business or institutions will be accepted. No products from commercial vehicles shall be accepted.

10. This Agreement shall be deemed effective and legally binding upon execution by each of the parties hereto.

11. This Agreement may be amended upon the mutual agreement of the parties or their authorized representatives.

12. All notices required to be given hereunder, shall be in writing and shall be: delivered in person (and a confirming copy sent by first class mail); or shall be mailed by registered mail; or delivered by facsimile with a return receipt showing delivery (and a confirming copy sent by first class mail), to the following addresses:

(a) Notices to Oklahoma City:  
City Clerk  
The City of Oklahoma City  
200 North Walker Avenue, 2nd Floor  
Oklahoma City, Oklahoma 73102

and

Public Works Department  
Storm Water Quality Manager  
420 West Main Street, 3<sup>rd</sup> Floor  
Oklahoma City, Oklahoma 73102

(b) Notices to the Participant:

The parties may hereafter designate, in writing and as provided herein, other or different persons or addresses for receipt of notice.

13. When any word in this Agreement is used in the singular number, it shall include the plural and the plural, the singular, except where contrary intention plainly appears. When any word is used in the masculine, it shall include the feminine, and the feminine, the masculine, except where a contrary intention plainly appears.

14. The parties hereto, acting under authority of their respective governing bodies, have caused this Agreement to be executed in multiple counterparts, each of which shall constitute an original.

15. The parties hereto agree that it is not their intent to create any rights or benefits to any third parties and that no third party beneficiaries shall be created or shall be deemed to be created by this Agreement.

**THE REMAINDER OF THIS PAGE IS LEFT INTENTIONALLY BLANK.**

16. The parties hereto agree to abide by the applicable and constitutionally valid laws of the State of Oklahoma and the United States of America. The parties further agree that any action to enforce the provisions of this Agreement or any dispute over the interpretation of this Agreement shall be resolved and in a court of competent jurisdiction in Oklahoma County, Oklahoma.

17. This is the complete Agreement between the parties and no statements, representations or discussions not set forth herein shall be binding upon the parties and no party is or shall be bound by any statement or representation that does not conform with this document. No agent or any party to this Agreement has authority to alter, modify or change this Agreement except as expressly provided herein. This Agreement shall be read as a whole and shall not be interpreted either for or against any party. This Agreement may only be amended in writing as approved and executed by all parties hereto.

18. Time shall be deemed to be of the essence of this Agreement.

19. A breach of any provision of this Agreement shall be deemed to be a breach of the entire Agreement provided however the breaching party or parties shall be given thirty (30) days notice as provided herein during which to cure any breach prior to the termination of this Agreement. Provided however, the failure of any party hereto to provide notice of a breach of this Agreement shall not be deemed a waiver of that breach or any subsequent breach of a similar or different kind or nature.

20. A determination that any provision or application of any provision of this Agreement to any party is prohibited or contrary to law shall be limited to the specific language and/or party so construed, and shall not effect the validity of the remaining provisions of the Agreement or its binding effect on any other party or parties.

**THE REMAINDER OF THIS PAGE IS LEFT INTENTIONALLY BLANK.**

Approved and executed by The City of Moore this 16<sup>th</sup> day of May  
(Participant)  
20 16.



THE CITY OF MOORE  
(Participant)

Blair Lewis  
Mayor

ATTEST: (Seal)

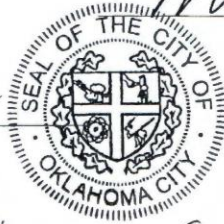
Bruce Mitchell  
Clerk

Approved and executed by The City of Oklahoma City this 21st day of June  
20 16

**THE CITY OF OKLAHOMA CITY**

ATTEST: (Seal)

Travis Kelsey  
City Clerk



Neil Curtis  
Mayor

**REVIEWED** for form and legality.

Paul Brunner  
Assistant Municipal Counselor



May 18, 2017

**APPROVED**  
7-18-17

BY THE CITY COUNCIL  
*Shawnee Finley* CITY CLERK

Mr. Lyndel Gibson  
Supervisor  
City of Oklahoma City  
3738 SW 15<sup>th</sup> Street, Building 1  
Oklahoma City, OK 73104

Re: *Renewal of Hazardous Waste MOU*

Dear Mr. Gibson:

Pursuant to Article 4 of the Memorandum of Understanding between our cities, notice is required of our intent regarding this contract. Please be advised the City of Shawnee would like to continue participation with Oklahoma City regarding hazardous waste disposal.

Please send a copy of the renewal agreement to the Office of the City Clerk, P.O. Box 1448, Shawnee, OK 74802-1448 so that we may present it to our City Commission for approval.

Thank you for your assistance in this regard. Should you have any questions, please don't hesitate to contact me.

Sincerely,

Richard Finley  
Mayor

**An Inter-Governmental Agreement for a Regional  
Household Hazardous Waste  
Collection, and Management Project (the Project)**

**THIS AGREEMENT**, made and entered into this the 21st day of June, 2016, by, between and among City of Shawnee (hereinafter referred to as "Participant" or "Participants") and The City of Oklahoma City (hereinafter referred to as "Oklahoma City").

**WITNESSETH:**

**WHEREAS**, the parties, referenced above, with The City of Oklahoma City acting as Lead Party, have resolved to enter into this Agreement to define the participation and expectations of each party and to coordinate the collection and management of household hazardous waste (HHW) and the implementation of a joint program; and

**WHEREAS**, the EPA Clean Water Act of 1987 requires the establishment of Hazardous Waste Collection and Disposal Programs for MS4 permits; and

**WHEREAS**, hazardous household waste is "a waste which would be chemically or physically classified as a hazardous waste but is excluded from regulation as a hazardous waste pursuant to the regulations of the Environment Protect Agency because it is generated by a household;" such HHW consisting of numerous products common to the average household, such as pesticides, paints, polishes, cleaners, and automotive supplies; and

**WHEREAS**, each party to this Agreement has independently researched the possible benefits and obligations of participating in and coordinate activities under the Project; and

**WHEREAS**, each party has determined that a regional cooperative HHW Education, Collection and Management Project will provide increased convenience/participation and possibly result in a lower cost per participant and cost savings to all parties; and

**NOW, THEREFORE**, in consideration of the mutual goals and covenants contained herein, and the mutual benefits to result therefrom, the parties agree as follows,

1. The purpose of this Agreement is to establish a Regional HHW Collection and Management Project to affect cost savings, increase public convenience and participation, and educate the public about the proper management of HHW.

2. The term of this Agreement shall commence upon its effective date and conclude June 30, 2017 (which term shall be referred to as the "Initial Term" or the "Demonstration Period").

**THE REMAINDER OF THIS PAGE IS LEFT INTENTIONALLY BLANK**



3. Each Participant shall have the right to terminate its participation under this Agreement at any time during the term of the Agreement for any reason, including, but not limited to, its own convenience. If any Participant under this Agreement elects to withdraw or terminate its participation under the Agreement prior to June 30, 2017, the withdrawing Party shall give Oklahoma City thirty (30) days prior written notice of the termination. Any Participant withdrawing from this Agreement must meet all financial commitments and other obligations up to the point of the termination or withdrawal. Withdrawal or termination shall not be effective until all financial commitments and other obligations shall be satisfied.

4. Each Participant may independently renew this Agreement beyond the Initial Term upon mutual agreement of Oklahoma City and the renewing Participant. Request for renewal shall be in the form of a letter from the authorized representative of the Participant must be received in July and may be accepted by the City Public Works Director on behalf of Oklahoma City. Each such renewal shall be for one fiscal year, July 1 to the following June 30. Provided however that no Participant in arrears in payment of charges for services render pursuant to this Agreement shall be permitted to renew this Agreement.

5. The City of Oklahoma City agrees to accept HHW from residents of Participant, with the understanding that The City of Oklahoma will maintain an accounting of these cross-jurisdictional amounts and reimbursement for their management. The residents will be required to comply with ordinances and policies for the disposition of HHW established by Oklahoma City, as may be amended from time to time.

6. The City of Oklahoma City, will bill each Participant (the city or county from which a participating **resident** has originated as such proof of residency is presented to Oklahoma City) separately after each collection occurrence and the participating Party will reimburse Oklahoma City in accordance with the terms of this Agreement. The Participant hereby agrees to establish and/or encumber funding for this Agreement and the services to be provided, and to timely pay for services provided. The Participant agrees that Oklahoma City may but is not required to inquire or investigate the residency of any person dropping off HHW beyond the address on the resident's driver's license.

7. Billings are considered due forty-five (45) calendar days after issuance of billing. If payment is not received by the due date a ten (10%) percent late fee will be assessed to the Participant and service to residents of any delinquent Participants will be subject to termination ninety (90) calendar days after the bill issuance date.

8. Oklahoma City shall assess a rate (based on national surveys) per equivalent rate unit (ERU) of fifteen (15) gallons per household. The fee structure per each resident per arrival or entry shall be evaluated by the following scale:

|                              |         |          |
|------------------------------|---------|----------|
| ≤ 7.5 gallons                | .5 ERU  | \$ 39.50 |
| > 7.5 gallons to 15 gallons  | 1.0 ERU | \$ 79.00 |
| > 15 gallons to 22.5 gallons | 1.5 ERU | \$118.50 |
| > 22.5 gallons               | 2.0 ERU | \$158.00 |

[Note:] Minimum charge per vehicle per arrival = .5 ERU  
 Maximum charge per vehicle per arrival = 2.0 ERU

**An Inter-Governmental Agreement for a Regional  
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Collection, and Management Project (the Project)**

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**WITNESSETH:**

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9. Pursuant to the permit issued by the Oklahoma Department of Environmental Quality, Oklahoma City is prohibited from taking any waste other than products expressly produced for home use. No commercial products will be accepted. No products from commercial business or institutions will be accepted. No products from commercial vehicles shall be accepted.

10. This Agreement shall be deemed effective and legally binding upon execution by each of the parties hereto.

11. This Agreement may be amended upon the mutual agreement of the parties or their authorized representatives.

12. All notices required to be given hereunder, shall be in writing and shall be: delivered in person (and a confirming copy sent by first class mail); or shall be mailed by registered mail; or delivered by facsimile with a return receipt showing delivery (and a confirming copy sent by first class mail), to the following addresses:

(a) Notices to Oklahoma City:  
City Clerk  
The City of Oklahoma City  
200 North Walker Avenue, 2nd Floor  
Oklahoma City, Oklahoma 73102

and

Public Works Department  
Storm Water Quality Manager  
420 West Main Street, 3<sup>th</sup> Floor  
Oklahoma City, Oklahoma 73102

(b) Notices to the Participant:

The parties may hereafter designate, in writing and as provided herein, other or different persons or addresses for receipt of notice.

13. When any word in this Agreement is used in the singular number, it shall include the plural and the plural, the singular, except where contrary intention plainly appears. When any word is used in the masculine, it shall include the feminine, and the feminine, the masculine, except where a contrary intention plainly appears.

14. The parties hereto, acting under authority of their respective governing bodies, have caused this Agreement to be executed in multiple counterparts, each of which shall constitute an original.

15. The parties hereto agree that it is not their intent to create any rights or benefits to any third parties and that no third party beneficiaries shall be created or shall be deemed to be created by this Agreement.

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16. The parties hereto agree to abide by the applicable and constitutionally valid laws of the State of Oklahoma and the United States of America. The parties further agree that any action to enforce the provisions of this Agreement or any dispute over the interpretation of this Agreement shall be resolved and in a court of competent jurisdiction in Oklahoma County, Oklahoma.

17. This is the complete Agreement between the parties and no statements, representations or discussions not set forth herein shall be binding upon the parties and no party is or shall be bound by any statement or representation that does not conform with this document. No agent or any party to this Agreement has authority to alter, modify or change this Agreement except as expressly provided herein. This Agreement shall be read as a whole and shall not be interpreted either for or against any party. This Agreement may only be amended in writing as approved and executed by all parties hereto.

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20. A determination that any provision or application of any provision of this Agreement to any party is prohibited or contrary to law shall be limited to the specific language and/or party so construed, and shall not effect the validity of the remaining provisions of the Agreement or its binding effect on any other party or parties.

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Approved and executed by City of Shawnee this 21st day of May,  
(Participant)



2016.  
Reggie Loftis  
Clerk

(Participant)

Wes Mauder  
Mayor

Reviewed for form and legality:

Joseph K. Workman  
Joseph K. Workman, Interim City Attorney  
City of Shawnee

Approved and executed by The City of Oklahoma City this 21st day of June,  
20 16.

**THE CITY OF OKLAHOMA CITY**

ATTEST: (Seal)

Travis Kersey  
City Clerk



Phil Curtis  
Mayor

**REVIEWED** for form and legality.

Daryl Brunner  
Assistant Municipal Counselor

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**



**CITY OF THE VILLAGE**

2304 MANCHESTER DR.  
THE VILLAGE, OK 73120-3729  
PHONE (405) 751-8861 V/TDD  
FAX 748-7352 - EMAIL [city\\_hall@thevillageok.org](mailto:city_hall@thevillageok.org)

OFFICE OF THE CITY MANAGER  
BRUCE K. STONE

June 22, 2017

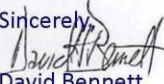
Mr. Eric Wenger, Public Works Director  
3738 SW 15th, Bldg. 1  
Oklahoma City, OK 73108

Re: Renewal of Hazardous Waste Agreement for FY 2017-18.

Dear Mr. Wenger:


The City of The Village wishes to renew the Hazardous Waste Agreement with the City of Oklahoma City for the period of July 1, 2017 to June 30, 2018.

Sincerely,

  
David Bennett  
Mayor

**APPROVED**

7-18-17

BY THE CITY COUNCIL  
 CITY CLERK

**An Inter-Governmental Agreement for a Regional  
Household Hazardous Waste  
Collection, and Management Project (the Project)**

THIS AGREEMENT, made and entered into this the 19th day of July, 16, by, between and among the City of The Village (hereinafter referred to as "Participant" or "Participants") and The City of Oklahoma City (hereinafter referred to as "Oklahoma City").

**WITNESSETH:**

WHEREAS, the parties, referenced above, with The City of Oklahoma City acting as Lead Party, have resolved to enter into this Agreement to define the participation and expectations of each party and to coordinate the collection and management of household hazardous waste (HHW) and the implementation of a joint program; and

WHEREAS, the EPA Clean Water Act of 1987 requires the establishment of Hazardous Waste Collection and Disposal Programs for MS4 permits; and

WHEREAS, hazardous household waste is "a waste which would be chemically or physically classified as a hazardous waste but is excluded from regulation as a hazardous waste pursuant to the regulations of the Environment Protect Agency because it is generated by a household;" such HHW consisting of numerous products common to the average household, such as pesticides, paints, polishes, cleaners, and automotive supplies; and

WHEREAS, each party to this Agreement has independently researched the possible benefits and obligations of participating in and coordinate activities under the Project; and

WHEREAS, each party has determined that a regional cooperative HHW Education, Collection and Management Project will provide increased convenience/participation and possibly result in a lower cost per participant and cost savings to all parties; and

NOW, THEREFORE, in consideration of the mutual goals and covenants contained herein, and the mutual benefits to result therefrom, the parties agree as follows,

1. The purpose of this Agreement is to establish a Regional HHW Collection and Management Project to affect cost savings, increase public convenience and participation, and educate the public about the proper management of HHW.

2. The term of this Agreement shall commence upon its effective date and conclude June 30, 2017 (which term shall be referred to as the "Initial Term" or the "Demonstration Period").

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3. Each Participant shall have the right to terminate its participation under this Agreement at any time during the term of the Agreement for any reason, including, but not limited to, its own convenience. If any Participant under this Agreement elects to withdraw or terminate its participation under the Agreement prior to June 30, 2017, the withdrawing Party shall give Oklahoma City thirty (30) days prior written notice of the termination. Any Participant withdrawing from this Agreement must meet all financial commitments and other obligations up to the point of the termination or withdrawal. Withdrawal or termination shall not be effective until all financial commitments and other obligations shall be satisfied.

4. Each Participant may independently renew this Agreement beyond the Initial Term upon mutual agreement of Oklahoma City and the renewing Participant. Request for renewal shall be in the form of a letter from the authorized representative of the Participant must be received in July and may be accepted by the City Public Works Director on behalf of Oklahoma City. Each such renewal shall be for one fiscal year, July 1 to the following June 30. Provided however that no Participant in arrears in payment of charges for services render pursuant to this Agreement shall be permitted to renew this Agreement.

5. The City of Oklahoma City agrees to accept HHW from residents of Participant, with the understanding that The City of Oklahoma will maintain an accounting of these cross-jurisdictional amounts and reimbursement for their management. The residents will be required to comply with ordinances and policies for the disposition of HHW established by Oklahoma City, as may be amended from time to time.

6. The City of Oklahoma City, will bill each Participant (the city or county from which a participating resident has originated as such proof of residency is presented to Oklahoma City) separately after each collection occurrence and the participating Party will reimburse Oklahoma City in accordance with the terms of this Agreement. The Participant hereby agrees to establish and/or encumber funding for this Agreement and the services to be provided, and to timely pay for services provided. The Participant agrees that Oklahoma City may but is not required to inquire or investigate the residency of any person dropping off HHW beyond the address on the resident's driver's license.

7. Billings are considered due forty-five (45) calendar days after issuance of billing. If payment is not received by the due date a ten (10%) percent late fee will be assessed to the Participant and service to residents of any delinquent Participants will be subject to termination ninety (90) calendar days after the bill issuance date.

8. Oklahoma City shall assess a rate (based on national surveys) per equivalent rate unit (ERU) of fifteen (15) gallons per household. The fee structure per each resident per arrival or entry shall be evaluated by the following scale:

|                              |         |          |
|------------------------------|---------|----------|
| < 7.5 gallons                | .5 ERU  | \$ 39.50 |
| > 7.5 gallons to 15 gallons  | 1.0 ERU | \$ 79.00 |
| > 15 gallons to 22.5 gallons | 1.5 ERU | \$118.50 |
| > 22.5 gallons               | 2.0 ERU | \$158.00 |

[Note:] Minimum charge per vehicle per arrival = .5 ERU  
Maximum charge per vehicle per arrival = 2.0 ERU



9. Pursuant to the permit issued by the Oklahoma Department of Environmental Quality, Oklahoma City is prohibited from taking any waste other than products expressly produced for home use. No commercial products will be accepted. No products from commercial business or institutions will be accepted. No products from commercial vehicles shall be accepted.

10. This Agreement shall be deemed effective and legally binding upon execution by each of the parties hereto.

11. This Agreement may be amended upon the mutual agreement of the parties or their authorized representatives.

12. All notices required to be given hereunder, shall be in writing and shall be: delivered in person (and a confirming copy sent by first class mail); or shall be mailed by registered mail; or delivered by facsimile with a return receipt showing delivery (and a confirming copy sent by first class mail), to the following addresses:

(a) Notices to Oklahoma City:  
City Clerk  
The City of Oklahoma City  
200 North Walker Avenue, 2nd Floor  
Oklahoma City, Oklahoma 73102

and

Public Works Department  
Storm Water Quality Manager  
420 West Main Street, 3<sup>rd</sup> Floor  
Oklahoma City, Oklahoma 73102

(b) Notices to the Participant:

The parties may hereafter designate, in writing and as provided herein, other or different persons or addresses for receipt of notice.

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15. The parties hereto agree that it is not their intent to create any rights or benefits to any third parties and that no third party beneficiaries shall be created or shall be deemed to be created by this Agreement.

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Approved and executed by the City of The Village this 5th day of July,  
(Participant)

20 16

CITY OF THE VILLAGE  
(Participant)

ATTEST: (Seal)

Bruce K. Stone Clerk



Hutch Hibbard  
Hutch Hibbard, Mayor

Approved and executed by The City of Oklahoma City this \_\_\_ day of \_\_\_\_\_,  
20 \_\_\_\_.

THE CITY OF OKLAHOMA CITY

ATTEST: (Seal)

Sharon Berry  
City Clerk



James G...  
Vice Mayor

REVIEWED for form and legality

Paul Brunner  
Assistant Municipal Counselor

P:\Other Cities\Intergovernmental Agreement



# MEMORANDUM

Council Agenda  
Item No. VII.AB.6.  
7/18/2017

## The City of OKLAHOMA CITY

TO: Mayor and City Council

FROM: James D. Couch, City Manager

Renewal of Inter-Governmental Agreement with the City of The Village, Regional Household Hazardous Waste Collection and Management Project, retroactive to July 1, 2017 through June 30, 2018.

**Purpose** Renewal of Inter-Governmental Agreement with the City of The Village, to continue providing a Regional Hazardous Waste Collection and Management Service.

**Background** An Inter-Governmental Agreement with the City of The Village was approved July 19, 2016 (Item No. VII.AN.) Pursuant to Article 4 of the Agreement and at the request of the City of The Village, this Agreement may be renewed for each subsequent year.

To continue providing a Household Hazardous Waste Collection and Management Service to residents of The Village, the City of The Village has requested a renewal Agreement for the period of July 1, 2017 through June 30, 2018.

The City of Oklahoma City will continue to maintain an accounting of the cross-jurisdictional accounts and bill the City of The Village for reimbursement.

**Term** July 1, 2017 through June 30, 2018.

**Revenue Account** Storm Water Drainage Utility Fund - Hazardous Materials Services - 330-0075-42250000.

**Review** Public Works Department

**Recommendation:** Renewal of Inter-Governmental Agreement be approved.

## City of Warr Acres

5930 N.W. 49th Street  
Warr Acres, Oklahoma 73122-4123  
City Hall – 789-2892  
Fax – 787-5432

June 15, 2017

Oklahoma City Public Works Director  
Eric J. Wenger  
3738 SW 15<sup>th</sup> Street, Bldg. 1  
Oklahoma City, OK 73108

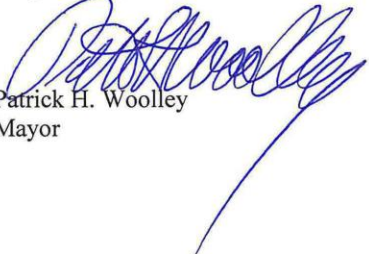
**APPROVED**  
7-18-17

BY THE CITY COUNCIL  
*Sharon Brown* CITY CLERK

RE: Hazardous Waste MOU Renewal

Please consider this to be the City Of Warr Acres formal request to renew the Hazardous Waste Inter-Governmental Agreement with the City Of Oklahoma City. Warr Acres wishes to renew for the period of July 1, 2017-June 30, 2018. If there are any questions please feel free to call, my office number is 789-2892. Thank you for your consideration.

Respectfully,

  
Patrick H. Woolley  
Mayor

**An Inter-Governmental Agreement for a Regional  
Household Hazardous Waste  
Collection, and Management Project (the Project)**

THIS AGREEMENT, made and entered into this the 21st day of June, 2016 by, between and among City of Warr Acres (hereinafter referred to as "Participant" or "Participants") and The City of Oklahoma City (hereinafter referred to as "Oklahoma City").

**WITNESSETH:**

**WHEREAS**, the parties, referenced above, with The City of Oklahoma City acting as Lead Party, have resolved to enter into this Agreement to define the participation and expectations of each party and to coordinate the collection and management of household hazardous waste (HHW) and the implementation of a joint program; and

**WHEREAS**, the EPA Clean Water Act of 1987 requires the establishment of Hazardous Waste Collection and Disposal Programs for MS4 permits; and

**WHEREAS**, hazardous household waste is "a waste which would be chemically or physically classified as a hazardous waste but is excluded from regulation as a hazardous waste pursuant to the regulations of the Environment Protect Agency because it is generated by a household;" such HHW consisting of numerous products common to the average household, such as pesticides, paints, polishes, cleaners, and automotive supplies; and

**WHEREAS**, each party to this Agreement has independently researched the possible benefits and obligations of participating in and coordinate activities under the Project; and

**WHEREAS**, each party has determined that a regional cooperative HHW Education, Collection and Management Project will provide increased convenience/participation and possibly result in a lower cost per participant and cost savings to all parties; and

**NOW, THEREFORE**, in consideration of the mutual goals and covenants contained herein, and the mutual benefits to result therefrom, the parties agree as follows,

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2. The term of this Agreement shall commence upon its effective date and conclude June 30, 2017 (which term shall be referred to as the "Initial Term" or the "Demonstration Period").

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3. Each Participant shall have the right to terminate its participation under this Agreement at any time during the term of the Agreement for any reason, including, but not limited to, its own convenience. If any Participant under this Agreement elects to withdraw or terminate its participation under the Agreement prior to June 30, 2017, the withdrawing Party shall give Oklahoma City thirty (30) days prior written notice of the termination. Any Participant withdrawing from this Agreement must meet all financial commitments and other obligations up to the point of the termination or withdrawal. Withdrawal or termination shall not be effective until all financial commitments and other obligations shall be satisfied.

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The City of Oklahoma City  
200 North Walker Avenue, 2nd Floor  
Oklahoma City, Oklahoma 73102

and

Public Works Department  
Storm Water Quality Manager  
420 West Main Street, 3<sup>th</sup> Floor  
Oklahoma City, Oklahoma 73102

(b) Notices to the Participant:

The parties may hereafter designate, in writing and as provided herein, other or different persons or addresses for receipt of notice.

13. When any word in this Agreement is used in the singular number, it shall include the plural and the plural, the singular, except where contrary intention plainly appears. When any word is used in the masculine, it shall include the feminine, and the feminine, the masculine, except where a contrary intention plainly appears.

14. The parties hereto, acting under authority of their respective governing bodies, have caused this Agreement to be executed in multiple counterparts, each of which shall constitute an original.

15. The parties hereto agree that it is not their intent to create any rights or benefits to any third parties and that no third party beneficiaries shall be created or shall be deemed to be created by this Agreement.

**THE REMAINDER OF THIS PAGE IS LEFT INTENTIONALLY BLANK.**

16. The parties hereto agree to abide by the applicable and constitutionally valid laws of the State of Oklahoma and the United States of America. The parties further agree that any action to enforce the provisions of this Agreement or any dispute over the interpretation of this Agreement shall be resolved and in a court of competent jurisdiction in Oklahoma County, Oklahoma.

17. This is the complete Agreement between the parties and no statements, representations or discussions not set forth herein shall be binding upon the parties and no party is or shall be bound by any statement or representation that does not conform with this document. No agent or any party to this Agreement has authority to alter, modify or change this Agreement except as expressly provided herein. This Agreement shall be read as a whole and shall not be interpreted either for or against any party. This Agreement may only be amended in writing as approved and executed by all parties hereto.

18. Time shall be deemed to be of the essence of this Agreement.

19. A breach of any provision of this Agreement shall be deemed to be a breach of the entire Agreement provided however the breaching party or parties shall be given thirty (30) days notice as provided herein during which to cure any breach prior to the termination of this Agreement. Provided however, the failure of any party hereto to provide notice of a breach of this Agreement shall not be deemed a waiver of that breach or any subsequent breach of a similar or different kind or nature.

20. A determination that any provision or application of any provision of this Agreement to any party is prohibited or contrary to law shall be limited to the specific language and/or party so construed, and shall not effect the validity of the remaining provisions of the Agreement or its binding effect on any other party or parties.

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Approved and executed by City of Warr Acres this 17<sup>th</sup> day of May,  
(Participant)  
2016.

City of Warr Acres  
(Participant)

[Signature]  
Mayor



[Signature]  
Clerk

Approved and executed by The City of Oklahoma City this 21st day of June,  
2016.

THE CITY OF OKLAHOMA CITY

[Signature]  
Mayor

ATTEST: (Seal)

[Signature]  
City Clerk



REVIEWED for form and legality.

[Signature]  
Assistant Municipal Counselor

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**



June 8, 2017

**APPROVED**  
7-18-17

Mr. Lyndel Gibson  
Hazardous Household Waste Supervisor  
ODC Dept. of Public Works-Stormwater Quality  
3738 SW 15<sup>th</sup> Street, Building 1  
Oklahoma City, OK 73108

BY THE CITY COUNCIL  
*Anna Kelly* CITY CLERK

Re: City of Yukon/City of Oklahoma City Inter-Governmental Agreement for  
Regional Household Hazardous Waste

As provided in the approved 2016 Intergovernmental Agreement for the collection and disposal of household hazardous waste, the City of Yukon is respectfully requesting a one-year renewal for the 2017-18 Fiscal Year under the same terms and conditions as the current agreement.

If you should need additional information to process this request, please do not hesitate to contact Mitchell Hort, Development Services Director – 405-354-6676.

Respectfully,

A handwritten signature in black ink that reads "Michael McEachem".

Michael McEachem  
Mayor

**An Inter-Governmental Agreement for a Regional  
Household Hazardous Waste  
Collection, and Management Project (the Project)**

**THIS AGREEMENT**, made and entered into this the 5th day of July, 20 16, by, between and among City of Yukon (hereinafter referred to as "Participant" or "Participants") and The City of Oklahoma City (hereinafter referred to as "Oklahoma City").

**WITNESSETH:**

**WHEREAS**, the parties, referenced above, with The City of Oklahoma City acting as Lead Party, have resolved to enter into this Agreement to define the participation and expectations of each party and to coordinate the collection and management of household hazardous waste (HHW) and the implementation of a joint program; and

**WHEREAS**, the EPA Clean Water Act of 1987 requires the establishment of Hazardous Waste Collection and Disposal Programs for MS4 permits; and

**WHEREAS**, hazardous household waste is "a waste which would be chemically or physically classified as a hazardous waste but is excluded from regulation as a hazardous waste pursuant to the regulations of the Environment Protect Agency because it is generated by a household;" such HHW consisting of numerous products common to the average household, such as pesticides, paints, polishes, cleaners, and automotive supplies; and

**WHEREAS**, each party to this Agreement has independently researched the possible benefits and obligations of participating in and coordinate activities under the Project; and

**WHEREAS**, each party has determined that a regional cooperative HHW Education, Collection and Management Project will provide increased convenience/participation and possibly result in a lower cost per participant and cost savings to all parties; and

**NOW, THEREFORE**, in consideration of the mutual goals and covenants contained herein, and the mutual benefits to result therefrom, the parties agree as follows,

1. The purpose of this Agreement is to establish a Regional HHW Collection and Management Project to affect cost savings, increase public convenience and participation, and educate the public about the proper management of HHW.

2. The term of this Agreement shall commence upon its effective date and conclude June 30, 2017 (which term shall be referred to as the "Initial Term" or the "Demonstration Period").

**THE REMAINDER OF THIS PAGE IS LEFT INTENTIONALLY BLANK**

3. Each Participant shall have the right to terminate its participation under this Agreement at any time during the term of the Agreement for any reason, including, but not limited to, its own convenience. If any Participant under this Agreement elects to withdraw or terminate its participation under the Agreement prior to June 30, 2017, the withdrawing Party shall give Oklahoma City thirty (30) days prior written notice of the termination. Any Participant withdrawing from this Agreement must meet all financial commitments and other obligations up to the point of the termination or withdrawal. Withdrawal or termination shall not be effective until all financial commitments and other obligations shall be satisfied.

4. Each Participant may independently renew this Agreement beyond the Initial Term upon mutual agreement of Oklahoma City and the renewing Participant. Request for renewal shall be in the form of a letter from the authorized representative of the Participant must be received in July and may be accepted by the City Public Works Director on behalf of Oklahoma City. Each such renewal shall be for one fiscal year, July 1 to the following June 30. Provided however that no Participant in arrears in payment of charges for services render pursuant to this Agreement shall be permitted to renew this Agreement.

5. The City of Oklahoma City agrees to accept HHW from residents of Participant, with the understanding that The City of Oklahoma will maintain an accounting of these cross-jurisdictional amounts and reimbursement for their management. The residents will be required to comply with ordinances and policies for the disposition of HHW established by Oklahoma City, as may be amended from time to time.

6. The City of Oklahoma City, will bill each Participant (the city or county from which a participating **resident** has originated as such proof of residency is presented to Oklahoma City) separately after each collection occurrence and the participating Party will reimburse Oklahoma City in accordance with the terms of this Agreement. The Participant hereby agrees to establish and/or encumber funding for this Agreement and the services to be provided, and to timely pay for services provided. The Participant agrees that Oklahoma City may but is not required to inquire or investigate the residency of any person dropping off HHW beyond the address on the resident's driver's license.

7. Billings are considered due forty-five (45) calendar days after issuance of billing. If payment is not received by the due date a ten (10%) percent late fee will be assessed to the Participant and service to residents of any delinquent Participants will be subject to termination ninety (90) calendar days after the bill issuance date.

8. Oklahoma City shall assess a rate (based on national surveys) per equivalent rate unit (ERU) of fifteen (15) gallons per household. The fee structure per each resident per arrival or entry shall be evaluated by the following scale:

|                              |         |          |
|------------------------------|---------|----------|
| ≤ 7.5 gallons                | .5 ERU  | \$ 39.50 |
| > 7.5 gallons to 15 gallons  | 1.0 ERU | \$ 79.00 |
| > 15 gallons to 22.5 gallons | 1.5 ERU | \$118.50 |
| > 22.5 gallons               | 2.0 ERU | \$158.00 |

[Note:] **Minimum charge per vehicle per arrival = .5 ERU**  
**Maximum charge per vehicle per arrival = 2.0 ERU**

9. Pursuant to the permit issued by the Oklahoma Department of Environmental Quality, Oklahoma City is prohibited from taking any waste other than products expressly produced for home use. No commercial products will be accepted. No products from commercial business or institutions will be accepted. No products from commercial vehicles shall be accepted.

10. This Agreement shall be deemed effective and legally binding upon execution by each of the parties hereto.

11. This Agreement may be amended upon the mutual agreement of the parties or their authorized representatives.

12. All notices required to be given hereunder, shall be in writing and shall be: delivered in person (and a confirming copy sent by first class mail); or shall be mailed by registered mail; or delivered by facsimile with a return receipt showing delivery (and a confirming copy sent by first class mail), to the following addresses:

(a) Notices to Oklahoma City:  
City Clerk  
The City of Oklahoma City  
200 North Walker Avenue, 2nd Floor  
Oklahoma City, Oklahoma 73102

and

Public Works Department  
Storm Water Quality Manager  
420 West Main Street, 3<sup>th</sup> Floor  
Oklahoma City, Oklahoma 73102

(b) Notices to the Participant:

The parties may hereafter designate, in writing and as provided herein, other or different persons or addresses for receipt of notice.

13. When any word in this Agreement is used in the singular number, it shall include the plural and the plural, the singular, except where contrary intention plainly appears. When any word is used in the masculine, it shall include the feminine, and the feminine, the masculine, except where a contrary intention plainly appears.

14. The parties hereto, acting under authority of their respective governing bodies, have caused this Agreement to be executed in multiple counterparts, each of which shall constitute an original.

15. The parties hereto agree that it is not their intent to create any rights or benefits to any third parties and that no third party beneficiaries shall be created or shall be deemed to be created by this Agreement.

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16. The parties hereto agree to abide by the applicable and constitutionally valid laws of the State of Oklahoma and the United States of America. The parties further agree that any action to enforce the provisions of this Agreement or any dispute over the interpretation of this Agreement shall be resolved and in a court of competent jurisdiction in Oklahoma County, Oklahoma.

17. This is the complete Agreement between the parties and no statements, representations or discussions not set forth herein shall be binding upon the parties and no party is or shall be bound by any statement or representation that does not conform with this document. No agent or any party to this Agreement has authority to alter, modify or change this Agreement except as expressly provided herein. This Agreement shall be read as a whole and shall not be interpreted either for or against any party. This Agreement may only be amended in writing as approved and executed by all parties hereto.

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20. A determination that any provision or application of any provision of this Agreement to any party is prohibited or contrary to law shall be limited to the specific language and/or party so construed, and shall not effect the validity of the remaining provisions of the Agreement or its binding effect on any other party or parties.

**THE REMAINDER OF THIS PAGE IS LEFT INTENTIONALLY BLANK.**

Approved and executed by CITY OF YUKON this 3rd day of May  
(Participant)

20 16



ATTEST:

[Signature]  
Clerk

CITY OF YUKON  
(Participant)

[Signature]  
Mayor

Approved and executed by The City of Oklahoma City this 5th day of July  
20 16

THE CITY OF OKLAHOMA CITY

ATTEST: (Seal)

[Signature]  
City Clerk



[Signature]  
Mayor

REVIEWED for form and legality.

[Signature]  
Assistant Municipal Counselor

P:\Other Cities\Intergovernmental Agreement

Contract No. K-1718-85

**MEMORANDUM OF UNDERSTANDING  
between Norman, Oklahoma City, and Moore  
for Joint Public Education Efforts**

This Memorandum of Understanding (“MOU”) is entered into by and among the City of Norman, Oklahoma, a municipal corporation, hereinafter referred to as “NORMAN”, the City of Oklahoma City, Oklahoma, a municipal corporation, hereinafter referred to as “OKLAHOMA CITY”, and the City of Moore, Oklahoma, a municipal corporation, hereinafter referred to as “MOORE”, which together, NORMAN, OKLAHOMA CITY, and MOORE shall be referred to as the “Parties”.

**WHEREAS**, Lake Thunderbird is located east of Norman, Oklahoma, and includes a drainage area covering large parts of Norman, Oklahoma City, and Moore; and

**WHEREAS**, Lake Thunderbird was designated as a Sensitive Water Supply Lake by the State of Oklahoma in 2002 and a 303(d) impaired water body in 2008; and

**WHEREAS**, because there are no major point source discharges in the lake watershed, nutrients and sediment loadings from nonpoint sources during runoff events through tributary streams are assumed by Oklahoma Department of Environmental Quality (“ODEQ”) to be a major sources of impairment; and

**WHEREAS**, the federal Clean Water Act requires total maximum daily loads (“TMDLs”) to be developed for impaired water bodies; and

**WHEREAS**, as a result of being designated a 303(d) impaired water body, the ODEQ developed a Total Maximum Daily Load (“TMDL”) for Lake Thunderbird that established waste load allocations and load allocations for reducing turbidity and chlorophyll-a levels and maintain sufficient oxygen levels in Lake Thunderbird to attain water quality targets, to restore impaired beneficial uses, and to protect the public health; and

**WHEREAS**, the Parties in the Lake Thunderbird watershed are required by ODEQ to develop its own compliance and monitoring plan to meet the waste load allocations set forth in the TMDL; and

**WHEREAS**, public education and outreach is one of the primary mechanisms of the Parties’ monitoring plans for management of stormwater pollution and for TMDL compliance and

**WHEREAS**, the Parties desire to collaborate on public education efforts for the TMDL.

**NOW THEREFORE**, in consideration of the mutual covenants and agreements herein contained to be kept and performed Parties mutually agreed as follows:

**MEMORANDUM OF UNDERSTANDING  
between Norman, Oklahoma City, and Moore  
for Joint Public Education Efforts**



Contract No. K-1718-85

- I. Contract with Compa Creative. The Parties hereby acknowledge that NORMAN has contracted with Compa Creative for the creation of a logo, theme, color scheme, a website and other related marketing items to assist in creating a cohesive branding scheme for the public education and outreach efforts of the Parties.
- II. Use of Branding Scheme. NORMAN agrees to make all elements of the branding scheme, including but not limited to logo, theme, color scheme, a website and other related marketing items, developed by Compa Creative may be used by NORMAN, MOORE and OKLAHOMA CITY for its own TMDL related public education and outreach efforts. This MOU is a license for the Parties which have paid its allotted costs to Compa Creative to so use completed elements of the branding scheme.
- III. Payment.
  - A. In exchange for the ongoing use of the branding scheme, as set forth in paragraph II above, developed by Compa Creative, NORMAN, MOORE and OKLAHOMA CITY each agree to pay to Compa Creative an amount equal to one-third (1/3) of the initial and ongoing costs contingent on annual appropriations to fund such costs.  
  

Initial Costs: \$ 2,750 per Party
  - B. OKLAHOMA CITY authorizes its City Manager to approve payment of one-third of the additional ongoing costs up to and not to exceed a total cost of \$5,000, including the initial costs. MOORE authorizes its City Manager to approve payment of one-third of the additional ongoing costs up to and not to exceed a total cost of \$5,000, including the initial costs. NORMAN authorizes its City Manager to approve payment of one-third of the additional ongoing costs up to and not to exceed a total cost of \$5,000, including the initial costs.
  - C. Any such payments shall be made by NORMAN, MOORE and OKLAHOMA CITY, respectively, within thirty (30) days of receipt of the elements of the branding scheme and an invoice for such work by NORMAN, MOORE and OKLAHOMA CITY, respectively.
- IV. Notice. Any notice given pursuant to this MOU shall be considered as having been legally given when deposited in the United States Post Office with postage thereon fully prepaid, addressed as follows:

NORMAN:                   City of Norman  
                                  Attn: Carrie Evenson, Stormwater Program Manager  
                                  P.O. Box 370  
                                  Norman, Oklahoma 73070

**MEMORANDUM OF UNDERSTANDING  
between Norman, Oklahoma City, and Moore  
for Joint Public Education Efforts**

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY MANAGEMENT PLAN]**

Contract No. K-1718-85

MOORE: City of Moore  
Attn: Mike Harlan, Environmental Services Manager  
301 N. Broadway  
Moore, OK 73160

OKLAHOMA CITY: City of Oklahoma City  
Attn: Raymond Melton  
420 West Main Street, 3<sup>rd</sup> Floor  
Oklahoma City, Oklahoma 73102

- V. Termination. This MOU may be terminated by either party hereto by giving notice to the other(s) in writing at least thirty (30) calendar days prior to the date of termination.
- VI. This MOU shall be in full force and effect on the date signed by the last party to this MOU.

**IN WITNESS WHEREOF**, the parties hereto have caused these presents to be executed the day and year set forth below.

**APPROVED** by the City of Norman and **SIGNED** by the Mayor this  
5<sup>th</sup> day of December, 2017.

**ATTEST:**

**THE CITY OF NORMAN**

  
Deputy City Clerk

Reviewed for form and legality

  
Assistant Municipal Counselor

  
MAYOR



MEMORANDUM OF UNDERSTANDING  
between Norman, Oklahoma City, and Moore  
for Joint Public Education Efforts

April 30, 2018

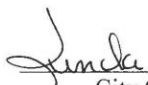
**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**


Contract No. K-1718-85

APPROVED by the City of Moore and SIGNED by the Mayor this  
20<sup>th</sup> day of November, 2017.

ATTEST:

THE CITY OF MOORE

  
City Clerk



  
MAYOR

Reviewed for form and legality

  
Assistant Municipal Counselor

MEMORANDUM OF UNDERSTANDING  
between Norman, Oklahoma City, and Moore  
for Joint Public Education Efforts

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

Contract No. K-1718-85

APPROVED by the City of Oklahoma City and SIGNED by the Mayor this  
16th day of January, 2018

ATTEST: THE CITY OF OKLAHOMA CITY

*Frances Terry*  
City Clerk



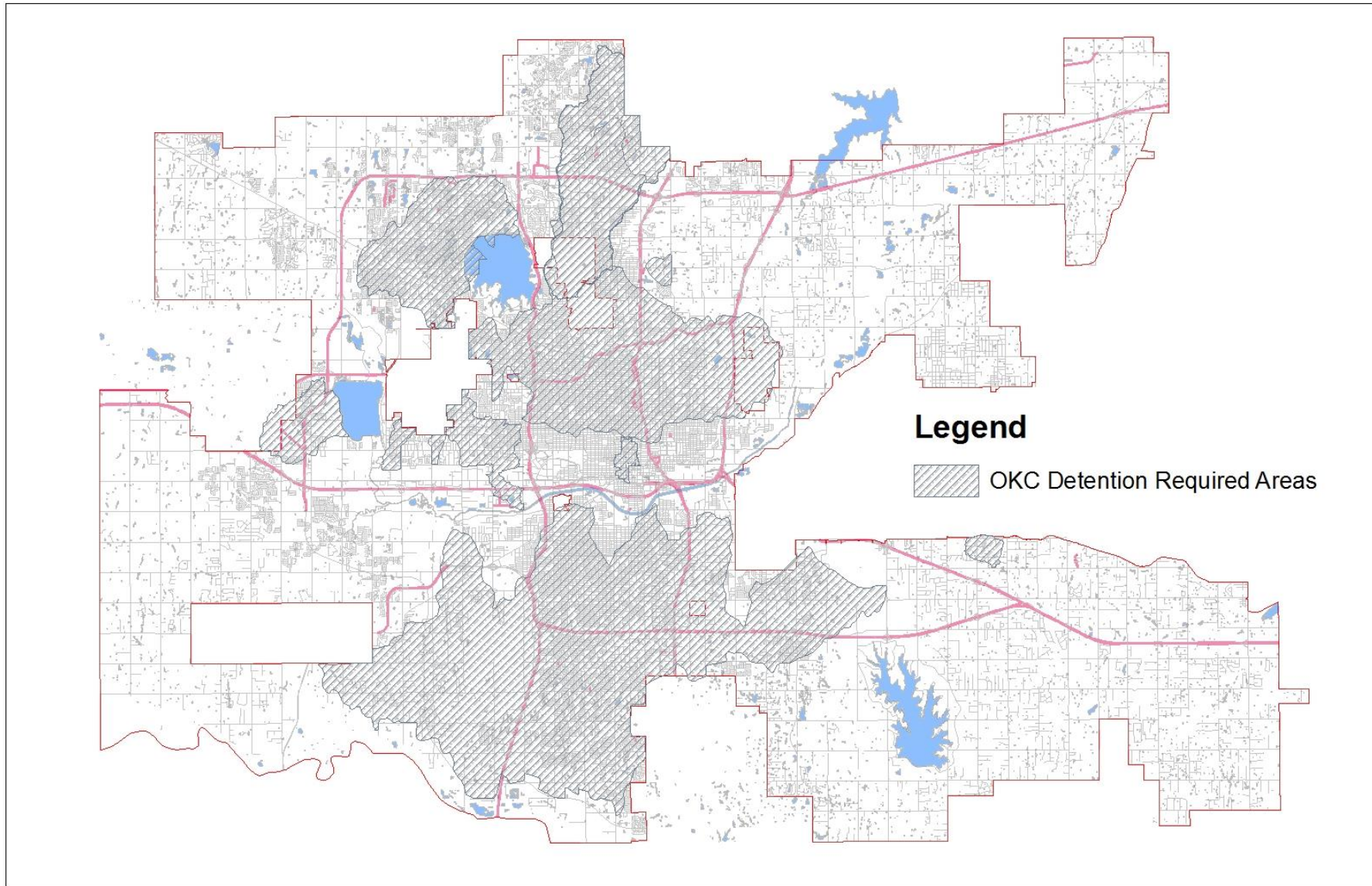
*Phil Cantrell*  
MAYOR

Reviewed for form and legality  
*David Brummett*  
Assistant Municipal Counselor

t:\public works\stormwater\thunderbird\tmdl cooperative agreements\cbk rm ew mou with okc and moore for sw education outreach 10102017 102517.docx

MEMORANDUM OF UNDERSTANDING  
between Norman, Oklahoma City, and Moore  
for Joint Public Education Efforts

## Appendix AC: OKC Detention Required Areas



**Appendix AD: Air Permits within Oklahoma City Corporate Boundaries**

| Company ID | Company Name                                | ID    | Facility Name   | SIC  | County    | Address                      | City           | State | Zip Code  | Latitude | Longitude | Sox (Tons) | Nox (Tons) | CO (Tons) | PM10 (Tons) | PM25 (Tons) | HAPs (Tons) | VOC (Tons) | Ammonia (Tons) | Classification |
|------------|---|-------|---|------|-----------|------------------------------|----------------|-------|-----------|----------|-----------|------------|------------|-----------|-------------|-------------|-------------|------------|----------------|----------------|
| 2          | AAR INC                                     | 4     | 6611 S MERIDIAN   | 4581 | OKLAHOMA  | 6611 S MERIDIAN ST           | OKLAHOMA CITY  | OK    | 73159     | 35.44387 | -97.51587 | 0          | 0          | 0         | 1.145       | 0           | 10.874      | 27.122     | 0              | Syn-Min        |
| 3          | ACME BRICK CO                               | 7     | 500 E MEMORIAL RD   | 3251 | OKLAHOMA  | 500 E MEMORIAL RD            | OKLAHOMA CITY  | OK    | 73083     | 35.60887 | -97.50517 | 8.64       | 15.79      | 80.24     | 13.31       | 0           | 9.09        | 16.96      | 0              | Major          |
| 22         | ATLAS ASPHALT PRODUCTS INC                  | 128   | 701 N PORTLAND  | 2951 | OKLAHOMA  | 701 N PORTLAND AVE           | OKLAHOMA CITY  | OK    | 73107     | 35.47331 | -97.58474 | 0.288      | 2.408      | 11.37     | 4.62        | 0.311       | 0.262       | 8.689      | 0              | Syn-Min        |
| 71         | EARTHGRAINS BAKING CO INC                   | 461   | RAINBO BAKING DIV   | 2051 | OKLAHOMA  | 1916 N BROADWAY              | OKLAHOMA CITY  | OK    | 73103     | 35.48868 | -97.51354 | 0.016      | 2.683      | 2.253     | 0.683       | 0.204       | 0.896       | 157.368    | 0              | Major          |
| 91         | ENABLE OKLAHOMA INTRASTATE TRANSMISSION LLC | 10241 | ENABLE MIDSTREAM CORP HQ  |      | OKLAHOMA  | 211 N ROBINSON AVE           | OKLAHOMA CITY  | OK    | 73102     | 35.46974 | -97.51746 | 0          | 0          | 0.01      | 0           | 0           | 0           | 0          | 0              | Min            |
| 112        | HASKELL LEMON CONSTRCTN CO                  | 817   | EAST PLT  | 2951 | OKLAHOMA  | 1400 NE 2ND ST               | OKLAHOMA CITY  | OK    | 73117     | 35.46949 | -97.48566 | 0.24       | 1.8        | 8.99      | 2.7         | 1.33        | 0           | 2.21       | 0              | Syn-Min        |
| 116        | HASKELL LEMON CONSTRCTN CO                  | 818   | WEST PLT  | 2951 | OKLAHOMA  | 6401 SW 15TH ST              | OKLAHOMA CITY  | OK    | 73128     | 35.45002 | -97.62547 | 3.4        | 3.3        | 7.8       | 4.66        | 2.5         | 0           | 1.9        | 0              | Syn-Min        |
| 120        | INTEGRIS BAPTIST MEDICAL CTR                | 835   | 3300 NW EXPY  | 8062 | OKLAHOMA  | 3300 NW EXPY                 | OKLAHOMA CITY  | OK    | 73112     | 35.53071 | -97.57712 | 0.19       | 15.09      | 6.87      | 0.697       | 0.697       | 1.897       | 2.486      | 0              | Syn-Min        |
| 121        | INTEGRIS SOUTHWEST MEDICAL CTR              | 836   | 4401 S WESTERN  | 8062 | OKLAHOMA  | 4401 S WESTERN               | Oklaohoma City | OK    | 73109     | 35.42307 | -97.53339 | 0.046      | 4.27       | 2.469     | 0.238       | 0.238       | 0.157       | 0.345      | 0              | Min            |
| 142        | METAL CONTAINER CORP                        | 940   | ALUMINUM BEVERAGE CAN LID MFG FACLT                               | 3411 | OKLAHOMA  | 3713 S HARMON                | OKLAHOMA CITY  | OK    | 73179     | 35.42715 | -97.60853 | 0          | 0          | 0         | 0           | 0           | 1.72        | 183.8      | 0              | Major          |
| 143        | METHENY CONCRETE PRODUCTS INC               | 5203  | 7700 W WILSHIRE   | 3273 | OKLAHOMA  | 7700 W WILSHIRE              | OKLAHOMA CITY  | OK    | 73132     | 35.55088 | -97.64804 | 0          | 0          | 0         | 4.83        | 0           | 0           | 0          | 0              | Min            |
| 144        | METHENY CONCRETE PRODUCTS INC               | 943   | MEMORIAL RD AND KELLY AVE   | 3273 | OKLAHOMA  | 12110 NORTH SANTA FE AVENUE  | OKLAHOMA CITY  | OK    | 73114     | 35.60938 | -97.49914 | 0          | 0          | 0         | 10.86       | 0           | 0           | 0          | 0              | Min            |
| 146        | METHENY CONCRETE PRODUCTS INC               | 944   | S E 89TH AND POLE RD  | 3273 | CLEVELAND | 9200 South Pole Road         | Oklaohoma City | OK    | 73160     | 35.37469 | -97.48578 | 0          | 0          | 0         | 2.44        | 0           | 0           | 0          | 0              | Min            |
| 164        | OG AND E                                    | 1205  | MUSTANG GNRNG STA   | 4911 | CANADIAN  | 501 S MUSTANG PLT RD         | OKLAHOMA CITY  | OK    | 73127     | 35.47074 | -97.67227 | 1.563      | 812.973    | 206.574   | 18.587      | 18.585      | 0.202       | 13.457     | 0              | Major          |
| 178        | OKLAHOMA COGENERATION LLC                   | 1407  | OKLAHOMA COGENERATION PLT   | 4961 | OKLAHOMA  | 7425 SW 29TH ST              | OKLAHOMA CITY  | OK    | 73179     | 35.44181 | -97.64826 | 0.8        | 132        | 0.9       | 12.7        | 12.7        | 0.7         | 1.9        | 0              | Major          |
| 179        | PRODUCERS COOP OIL MILL                     | 1411  | 6 SE 4TH ST   | 2074 | OKLAHOMA  | 6 SE 4TH ST                  | OKLAHOMA CITY  | OK    | 731291000 | 35.46063 | -97.51203 | 0.045      | 7.528      | 6.323     | 176.998     | 0.572       | 140.932     | 206.089    | 0              | Major          |
| 194        | STANDARD IRON AND METAL CO                  | 1467  | 1501 E RENO   | 5093 | OKLAHOMA  | 1501 E RENO ST               | OKLAHOMA CITY  | OK    | 73101     | 35.46426 | -97.48606 | 0          | 0          | 0         | 2.61        | 1.34        | 0           | 0          | 0              | Min            |
| 200        | TJ CAMPBELL CONSTRCTN CO                    | 1487  | HOT MIX PLT 1   | 2951 | OKLAHOMA  | 6900 S SUNNYLANE             | OKLAHOMA CITY  | OK    | 73155     | 35.39968 | -97.44073 | 0.054      | 2.477      | 2.487     | 19.744      | 0.157       | 0.227       | 0.435      | 0              | Syn-Min        |
| 202        | TJ CAMPBELL CONSTRCTN CO                    | 3718  | SOUTH YARD  | 1429 | OKLAHOMA  | 6900 S SUNNYLANE             | OKLAHOMA CITY  | OK    | 73135     | 35.45766 | -97.56552 | 0          | 0          | 0         | 0.488       | 0           | 0           | 0          | 0              | Syn-Min        |
| 219        | UNIV OF OK HEALTH SCIENCES CTR              | 1662  | OKC CAMPUS SVCS   | 8221 | OKLAHOMA  | 800 NE 15TH ST               | OKLAHOMA CITY  | OK    | 73104     | 35.48447 | -97.49865 | 0.24       | 36.842     | 29.725    | 2.707       | 2.707       | 0.67        | 2.89       | 0              | Major          |
| 221        | W AND W STEEL CO                            | 1678  | 1730 W RENO OKLAHOMA CITY PLT                                     | 3441 | OKLAHOMA  | 1730 W RENO                  | OKLAHOMA CITY  | OK    | 73106     | 35.4641  | -97.54498 | 0.002      | 0.306      | 0.257     | 14.408      | 1.181       | 14.926      | 19.263     | 0              | Major          |
| 227        | XEROX CORP                                  | 1784  | OKC SITE  | 3861 | CANADIAN  | 100 N MUSTANG ROAD, BLDG 200 | YUKON          | OK    | 730995104 | 35.4691  | -97.719   | 0          | 3.7        | 2.7       | 0.4         | 0.3         | 1.711       | 1.911      | 0              | Major          |
| 266        | WASTE MGMT OF OK                            | 2061  | EAST OAK LNDFL  | 4953 | OKLAHOMA  | 3201 MOSLEY RD               | OKLAHOMA CITY  | OK    | 73141     | 35.5074  | -97.41469 | 3.595      | 11.8       | 64.23     | 7.3         | 3.89        | 7.115       | 9.26       | 0              | Major          |
| 283        | DEVON ENGRY CORP                            | 6931  | 4442 NEWCASTLE RD   | 1389 | OKLAHOMA  | 4442 NEWCASTLE RD            | OKLAHOMA CITY  | OK    | 73119     | 35.427   | -97.596   | 0          | 4.502      | 0.912     | 0.066       | 0.066       | 0.004       | 0.12       | 0              | Min            |
| 284        | DEVON ENGRY CORP                            | 7614  | DEVON HQ  |      | OKLAHOMA  | 333 W SHERIDAN AVE           | OKLAHOMA CITY  | OK    | 73102     | 35.46677 | -97.51876 | 0          | 5.577      | 0.733     | 0.051       | 0.051       | 0.012       | 0.095      | 0              | Min            |
| 292        | INTERNATIONAL ENVIR CORP                    | 2299  | AIR CONDITIONING MFG PLT  | 3585 | OKLAHOMA  | 5000 SW 7TH ST               | OKLAHOMA CITY  | OK    | 73128     | 35.45918 | -97.60897 | 0.004      | 1.081      | 0.922     | 0.089       | 0.083       | 0.347       | 17.914     | 0              | Min            |
| 522        | MARATHON OIL CO                             | 11474 | WILL ROGERS UNIT 23 CTR BATT 8000 MELROSE LN DRY MIX CONCRETE PLT | 4612 | OKLAHOMA  | 4401 AMELIA EARHART LANE     | OKLAHOMA CITY  | OK    | 73159     | 35.4072  | -97.5961  | 0.003      | 0.645      | 0.54      | 0.048       | 0.048       | 1.275       | 11.514     | 0              | Syn-Min        |
| 535        | QUIKRETE                                    | 2908  | 8000 MELROSE LN DRY MIX CONCRETE PLT                              | 3273 | OKLAHOMA  | 8000 MELROSE LN              | OKLAHOMA CITY  | OK    | 73127     | 35.47145 | -97.65687 | 0.008      | 1.307      | 1.098     | 8.378       | 3.493       | 0.011       | 0.063      | 0              | Syn-Min        |

| Company ID | Company Name                       | ID   | Facility Name  | SIC  | County    | Address                       | City          | State | Zip Code  | Latitude | Longitude | Sox (Tons) | Nox (Tons) | CO (Tons) | PM10 (Tons) | PM25 (Tons) | HAPs (Tons) | VOC (Tons) | Ammonia (Tons) | Classification |
|------------|------------------------------------|------|--|------|-----------|-------------------------------|---------------|-------|-----------|----------|-----------|------------|------------|-----------|-------------|-------------|-------------|------------|----------------|----------------|
| 537        | SOUTHWEST ELEC CO                  | 2943 | 6501 SE 74TH ST PAINTING FACLTY                              | 3612 | OKLAHOMA  | 6501 SE 74TH ST               | OKLAHOMA CITY | OK    | 73135     | 35.39198 | -97.41239 | 0.006      | 0.958      | 0.804     | 0.073       | 0.007       | 8.128       | 13.248     | 0              | Min            |
| 597        | BALON CORP                         | 3208 | HATTIE VALVE MFG FACLTY                                      | 3491 | OKLAHOMA  | 3245 S HATTIE ST              | OKLAHOMA CITY | OK    | 73129     | 35.43232 | -97.48932 | 0          | 0          | 0         | 6.509       | 0           | 4.317       | 45.05      | 0              | Syn-Min        |
| 625        | JOHNS MANVILLE                     | 1441 | 812 N BRYANT AVE   | 2952 | OKLAHOMA  | 812 N BRYANT                  | OKLAHOMA CITY | OK    | 73117     | 35.47494 | -97.45902 | 0.004      | 0.684      | 0.576     | 9.093       | 9.093       | 0.098       | 6.292      | 0              | Syn-Min        |
| 630        | BOB MOORE BODY SHOP NORTH          | 3586 | 13004 N BROADWAY EXT AUTO PAINT SHOP                         | 7532 | OKLAHOMA  | 13004 N BROADWAY EXT          | OKLAHOMA CITY | OK    | 73114     | 35.60144 | -97.49913 | 0          | 0          | 0         | 0           | 0           | 0           | 3.7        | 0              | Min            |
| 631        | DEALERS AUTO AUCTION OF OKC        | 3591 | 1028 S PORTLAND AUTO PAINTING FACLTY                         | 7532 | OKLAHOMA  | 1028 S PORTLAND               | OKLAHOMA CITY | OK    | 73147     | 35.45502 | -97.58069 | 0          | 0          | 0         | 0           | 0           | 0           | 2.34       | 0              | Min            |
| 641        | DCI IND                            | 3629 | 5716 NW 4TH ST   | 3471 | OKLAHOMA  | 5716 NW 4TH ST                | OKLAHOMA CITY | OK    | 73127     | 35.46949 | -97.61784 | 0          | 0.031      | 0.008     | 3.97        | 0           | 0.008       | 0          | 0              | Syn-Min        |
| 755        | CAMERON INTL - COMPRESSION         | 3774 | CAMERON COMPRESSION SYSTEMS                                  | 3563 | OKLAHOMA  | 2102 SE 18TH ST               | OKLAHOMA CITY | OK    | 73129     | 35.44706 | -97.47323 | 0          | 1.025      | 0.17      | 0.189       | 0           | 0.883       | 8.485      | 0              | Min            |
| 764        | UNIQUE CLNR                        | 3878 | 5021 S PENN UNIQUE CLNRS                                     | 7216 | OKLAHOMA  | 5021 S PENNSYLVANIA           | OKLAHOMA CITY | OK    | 73119     | 35.4214  | -97.56882 | 0          | 0          | 0         | 0           | 0           | 0.544       | 0.544      | 0              | Syn-Min        |
| 766        | CAMELOT CLNR OKLAHOMA CITY         | 3908 | 6722 S WESTERN CAMELOT CLNR                                  | 7216 | OKLAHOMA  | 6722 S WESTERN                | OKLAHOMA CITY | OK    | 73139     | 35.39921 | -97.53012 | 0          | 0          | 0         | 0           | 0           | 0           | 0.169      | 0              | Min            |
| 769        | METRO CLNRS LLC DBA EMBASSY CLNRS  | 3953 | 6511 N MAY EMBASSY CLNR                                      | 7216 | OKLAHOMA  | 6511 N MAY                    | OKLAHOMA CITY | OK    | 73116     | 35.53813 | -97.56561 | 0          | 0          | 0         | 0           | 0           | 0           | 1.232      | 0              | Min            |
| 771        | MAGIC SVCS                         | 3956 | 1111 SE 25TH MAGIC SVCS                                      | 7216 | OKLAHOMA  | 1111 S E 25TH                 | OKLAHOMA CITY | OK    | 73129     | 35.43357 | -97.48608 | 0          | 0          | 0         | 0           | 0           | 3.869       | 4.818      | 0              | Syn-Min        |
| 772        | ELITE CLNR AND LAUNDRY INC         | 3980 | 2535 SW 59TH ELITE CLNR                                      | 7216 | OKLAHOMA  | 2535 SW 59TH                  | OKLAHOMA CITY | OK    | 73119     | 35.4062  | -97.5578  | 0          | 0          | 0         | 0           | 0           | 0.102       | 0.102      | 0              | Syn-Min        |
| 773        | PMG ONE LC                         | 3990 | 8031 N CLASSEN AMERICAN CLNR                                 | 7216 | OKLAHOMA  | 8031 N CLASSEN                | OKLAHOMA CITY | OK    | 73116     | 35.55231 | -97.52747 | 0          | 0          | 0         | 0           | 0           | 5.092       | 5.431      | 0              | Syn-Min        |
| 776        | FREEDOM CLNR                       | 4031 | 2907 NW 122ND FREEDOM CLNR                                   | 7216 | OKLAHOMA  | 2907 NW 122ND                 | OKLAHOMA CITY | OK    | 73120     | 35.5946  | -97.5674  | 0          | 0          | 0         | 0           | 0           | 0.476       | 0.476      | 0              | Syn-Min        |
| 777        | SWISS CLNR AND LAUNDRY INC         | 4035 | 3737 NW 50TH SWISS CLNR                                      | 7216 | OKLAHOMA  | 3737 NW 50TH ST               | OKLAHOMA CITY | OK    | 73112     | 35.52231 | -97.58394 | 0          | 0          | 0         | 0           | 0           | 4.522       | 4.522      | 0              | Syn-Min        |
| 779        | GENES CLNS                         | 4090 | 3020 S WESTERN GENES CLNR                                    | 7216 | OKLAHOMA  | 3020 S WESTERN AVE            | OKLAHOMA CITY | OK    | 73109     | 35.43398 | -97.53022 | 0          | 0          | 0         | 0           | 0           | 0.632       | 0.632      | 0              | Syn-Min        |
| 782        | ROUND UP CLNR INC                  | 4075 | 3009 N PENN ROUND UP CLNR                                    | 7216 | OKLAHOMA  | 3009 N PENN                   | OKLAHOMA CITY | OK    | 73101     | 35.46782 | -97.52129 | 0          | 0          | 0         | 0           | 0           | 0           | 0.625      | 0              | Syn-Min        |
| 786        | FRONTIER CLNR                      | 4095 | 10605 S WESTERN FRONTIER CLNR                                | 7216 | OKLAHOMA  | 10605 S WESTERN               | OKLAHOMA CITY | OK    | 73170     | 35.36232 | -97.5301  | 0          | 0          | 0         | 0           | 0           | 0.442       | 0.442      | 0              | Syn-Min        |
| 787        | CENTURY ENTERPRISES MGMT LTD       | 4094 | 2837 W WILSHIRE NICHOLS HILLS CLNR                           | 7216 | OKLAHOMA  | 2837 W WILSHIRE               | OKLAHOMA CITY | OK    | 73116     | 35.551   | -97.564   | 0          | 0          | 0         | 0           | 0           | 0           | 1.763      | 0              | Syn-Min        |
| 788        | PRO CLNR INC                       | 4093 | 7020 N WESTERN PRO CLNR                                      | 7216 | OKLAHOMA  | 7020 N WESTERN STE 100        | OKLAHOMA CITY | OK    | 73116     | 35.54256 | -97.52966 | 0          | 0          | 0         | 0           | 0           | 3.162       | 3.162      | 0              | Min            |
| 789        | MANHATTAN CLNR                     | 4092 | 10805 N MAY MANHATTAN CLNR                                   | 7216 | OKLAHOMA  | 10805 N MAY AVE               | OKLAHOMA CITY | OK    | 73120     | 35.58029 | -97.56712 | 0          | 0          | 0         | 0           | 0           | 0           | 8.624      | 0              | Min            |
| 793        | FASHION CLNR LAUNDRY INC           | 4103 | 106 NW 6TH FASHION CLNR                                      | 7216 | OKLAHOMA  | 106 NW 6TH ST                 | OKLAHOMA CITY | OK    | 73102     | 35.474   | -97.515   | 0          | 0          | 0         | 0           | 0           | 1.462       | 1.462      | 0              | Syn-Min        |
| 803        | VA MEDICAL CTR                     | 4187 | 921 NE 13TH ST   | 8062 | OKLAHOMA  | 921 NE 13TH ST                | OKLAHOMA CITY | OK    | 73104     | 35.483   | -97.505   | 0.05       | 0.555      | 0.123     | 0.039       | 0.001       | 0           | 0.044      | 0              | Min            |
| 806        | EXCELL CUSTOM CLNR AND LAUNDRY INC | 4189 | 8900 S PENN EXCEL CLNR                                       | 7216 | OKLAHOMA  | 8900 S PENNSYLVANIA           | OKLAHOMA CITY | OK    | 73159     | 35.3784  | -97.54802 | 0          | 0          | 0         | 0           | 0           | 0.714       | 0.714      | 0              | Syn-Min        |
| 811        | OKC WASTE DISPOSAL INC             | 2511 | OKLAHOMA CITY LND FLL  | 4953 | OKLAHOMA  | 7600 SW 15TH ST               | OKLAHOMA CITY | OK    | 73128     | 35.45    | -97.648   | 1.918      | 2          | 5.99      | 19.74       | 10.56       | 13.364      | 21.707     | 0              | Major          |
| 815        | API ENTRPRS INC                    | 4431 | 4901 S I35   | 3089 | OKLAHOMA  | 4901 S I35                    | OKLAHOMA CITY | OK    | 73101     | 35.41666 | -97.49156 | 0.008      | 0.75       | 0.6       | 0.05        | 0.05        | 0.08        | 4.21       | 0.4            | Min            |
| 816        | SHARPS CLNRS OF MOORE INC          | 4338 | 9100 S WALKER  | 7216 | CLEVELAND | 9100 S WALKER                 | OKLAHOMA CITY | OK    | 73139     | 35.37509 | -97.52129 | 0          | 0          | 0         | 0           | 0           | 0           | 0.016      | 0              | Syn-Min        |
| 1013       | QUAD GRAPHICS INC                  | 4490 | QUAD GRAPHICS OKC FACLTY                                     | 2752 | OKLAHOMA  | 6801 S SUNNYLANE RD           | OKLAHOMA CITY | OK    | 73135     | 35.40035 | -97.44289 | 0.087      | 6.77       | 10.01     | 0.925       | 0.925       | 38.321      | 159.058    | 0              | Major          |
| 1019       | CAPITAL AVIATION INC               | 5056 | WILEY POST ARPRT HANGER NO 12 MIKE MONRONEY AERONAUTICAL CTR | 3721 | OKLAHOMA  | 5500 PHILLIP RHODES HANGER 17 | BETHANY       | OK    | 73008     | 35.52935 | -97.64147 | 0          | 0          | 0         | 0           | 0           | 0.39        | 3.38       | 0              | Min            |
| 1260       | FAA                                | 5141 | MIKE MONRONEY AERONAUTICAL CTR                               | 9621 | OKLAHOMA  | 6500 S MACARTHUR BLVD         | OKLAHOMA CITY | OK    | 731696901 | 35.39657 | -97.61836 | 0.144      | 4.14       | 2.614     | 2.945       | 2.945       | 3.313       | 10.941     | 0              | Min            |

**[OKLAHOMA CITY STORM WATER QUALITY MANAGEMENT PLAN]**

| Company ID | Company Name                                  | ID    | Facility Name                                 | SIC  | County   | Address                       | City          | State | Zip Code | Latitude | Longitude | Sox (Tons) | Nox (Tons) | CO (Tons) | PM10 (Tons) | PM25 (Tons) | HAPs (Tons) | VOC (Tons) | Ammonia (Tons) | Classification |
|------------|---|-------|---|------|----------|-------------------------------|---------------|-------|----------|----------|-----------|------------|------------|-----------|-------------|-------------|-------------|------------|----------------|----------------|
| 1261       | ATHENIAN MARBLE CORP                          | 5140  | 7724 W MELROSE LN ATHENIAN MARBLE             | 3088 | OKLAHOMA | 7724 W MELROSE LN             | OKLAHOMA CITY | OK    | 73127    | 35.47087 | -97.64931 | 0          | 0          | 0         | 0           | 0           | 3.276       | 4.153      | 0              | Major          |
| 1263       | NESTLE PURINA PETCARE CO                      | 1424  | 13900 N LINCOLN                               | 2047 | OKLAHOMA | 13900 N LINCOLN BLVD          | EDMOND        | OK    | 73013    | 35.6121  | -97.50434 | 0.089      | 15.064     | 12.592    | 26.61       | 26.501      | 0.11        | 8.08       | 0              | Syn-Min        |
| 1277       | OKLAHOMA CITY LNDFFLL LLC                     | 4582  | SE OKC LNDFFLL FLARE STA AND ENGINE PLT       | 4953 | OKLAHOMA | 7001 S BRYANT STREET          | OKLAHOMA CITY | OK    | 73149    | 35.39591 | -97.45937 | 2.7        | 24.72      | 78.65     | 3.82        | 3.82        | 1.72        | 0.45       | 0              | Major          |
| 1278       | OKLAHOMA CITY LNDFFLL LLC                     | 2141  | SOUTHEAST OKLAHOMA CITY LNDFFLL               | 4953 | OKLAHOMA | 7001 S BRYANT                 | OKLAHOMA CITY | OK    | 73149    | 35.39594 | -97.45938 | 1.995      | 6.63       | 40.4      | 17.22       | 8.95        | 3.438       | 4.375      | 0              | Major          |
| 1279       | TEREX USA LLC                                 | 258   | CMI TEREX CORP                                | 3531 | CANADIAN | 140 AND MORGAN RD             | OKLAHOMA CITY | OK    | 73128    | 35.45798 | -97.6827  | 0.01       | 3.046      | 1.54      | 2.341       | 1.181       | 1.007       | 10.897     | 0              | Syn-Min        |
| 1289       | SUNOCO PIPELINE LP                            | 981   | NOBLE CRUDE OIL PIPELINE STA 1400 N BRYANT ST | 4612 | OKLAHOMA | 1400 N BRYANT                 | OKLAHOMA CITY | OK    | 73117    | 35.4811  | -97.4595  | 0          | 0          | 0         | 0           | 0           | 0.275       | 10.659     | 0              | Min            |
| 1450       | MUSKET CORP                                   | 6442  | SUNNYLANE AND I240 TRANSLOADING FACLTY        | 5172 | OKLAHOMA | SUNNYLAND AND I240            | DEL CITY      | OK    | 73135    | 35.394   | -97.447   | 0.13       | 1.91       | 0.41      | 0.14        | 0           | 0.084       | 6.294      | 0              | Syn-Min        |
| 1481       | PLAINS PIPELINE LP                            | 2391  | MORGAN RD CRUDE OIL STA                       | 4612 | CANADIAN | 0.5 MI WEST SW 104 AND MORGAN | MUSTANG       | OK    | 73064    | 35.368   | -97.701   | 0          | 0          | 0         | 0.497       | 0           | 0.164       | 5.222      | 0              | Syn-Min        |
| 1523       | NEWFIELD EXPLORATION MID CONTINENT INC        | 9217  | GRANT 1H 23                                   | 1311 | CANADIAN | 0.3 MI W OF SW59TH & RICHLAND | MUSTANG       | OK    | 73099    | 35.407   | -97.8     | 0.005      | 2.774      | 7.436     | 0.393       | 0.393       | 0.237       | 7.249      | 0              | Min            |
| 1689       | NOMACO INC                                    | 5877  | NOMACO OKLAHOMA FACLTY                        | 3086 | CANADIAN | 524 N SARA RD                 | YUKON         | OK    | 73099    | 35.47226 | -97.70353 | 0.005      | 0.83       | 0.7       | 0.201       | 0.06        | 0.001       | 215.827    | 0              | Major          |
| 1693       | CITY CLNR INC                                 | 4124  | COWBOY CLNR                                   | 7216 | OKLAHOMA | 1011 S MERIDIAN               | OKLAHOMA CITY | OK    | 73108    | 35.45582 | -97.60128 | 0          | 0          | 0         | 0           | 0           | 0.986       | 0.986      | 0              | Syn-Min        |
| 1708       | MAGELLAN PIPELINE CO LP                       | 1775  | T A353 HIGH ST TERM                           | 4613 | OKLAHOMA | 1250 S HIGH ST                | OKLAHOMA CITY | OK    | 73129    | 35.45286 | -97.49428 | 0          | 0          | 0         | 0           | 0           | 0.581       | 11.819     | 0              | Min            |
| 1717       | TARGA PIPELINE MIDCONTINENT LLC               | 12044 | OKC CORPORATE OFFICE                          |      | OKLAHOMA | 14000 QUAIL SPRINGS PARKWAY   | OKLAHOMA CITY | OK    | 73134    | 35.61224 | 97.574153 | 0          | 0          | 0         | 0           | 0           | 0           | 0.001      | 0              | Min            |
| 1723       | LEGACY CLNR AND LAUNDRY                       | 4989  | 4917 N WESTERN LEGACY CLNR                    | 7216 | OKLAHOMA | 4917 N WESTERN                | OKLAHOMA CITY | OK    | 73118    | 35.52063 | -97.52984 | 0          | 0          | 0         | 0           | 0           | 0           | 0.657      | 0              | Syn-Min        |
| 1726       | 7725 RENO NO1 LLC                             | 127   | 7725 W RENO NO1 LLC                           | 3661 | OKLAHOMA | 7725 W RENO AVE               | OKLAHOMA CITY | OK    | 73127    | 35.46866 | -97.65045 | 0.225      | 0.355      | 0.074     | 0.241       | 0.241       | 0           | 0.279      | 0              | Min            |
| 1728       | SOUTHERN DOME LLC                             | 6008  | SOUTHERN DOME NATURAL GAS PROCESSING PLT      | 1321 | OKLAHOMA | 6924 S BRYANT AVE             | OKLAHOMA CITY | OK    | 73149    | 35.3972  | -97.4566  | 0          | 25.966     | 33.007    | 0.591       | 0.591       | 5.615       | 18.122     | 0              | Syn-Min        |
| 1733       | LAND O LAKES PURINA FEED LLC                  | 1416  | LAND O LAKES PURINA FEED                      | 2048 | OKLAHOMA | 1108 NW 3RD ST                | OKLAHOMA CITY | OK    | 73034    | 35.47159 | -97.53093 | 0.003      | 0.533      | 0.463     | 4.68        | 0.04        | 0           | 0.03       | 0              | Min            |
| 1784       | LOVE BOX CO INC - SUBSIDIARY OF PRATT IND USA | 2347  | CORRUGATED CONTAINER MFG FACLTY               | 2653 | OKLAHOMA | 305 N ROCKWELL                | OKLAHOMA CITY | OK    | 73127    | 35.46998 | -97.63686 | 0.028      | 4.711      | 3.957     | 0.376       | 0.362       | 0.147       | 1.069      | 0.014          | Min            |
| 2581       | SCHWARZ ASPHALT LLC                           | 925   | 8251 W RENO                                   | 2951 | OKLAHOMA | 8251 W RENO                   | OKLAHOMA CITY | OK    | 73127    | 35.46572 | -97.66195 | 0.335      | 5.058      | 9.795     | 4.456       | 4.456       | 0.935       | 4.317      | 0              | Syn-Min        |
| 2636       | DCP MIDSTREAM LP                              | 680   | BUTTON STA                                    | 1311 | CANADIAN | SW 89TH ST AT CIMARRON        | MUSTANG       | OK    | 73064    | 35.36868 | -97.80601 | 0.063      | 97.155     | 97.155    | 2.062       | 2.062       | 1.099       | 76.081     | 0              | Syn-Min        |
| 2673       | DCP MIDSTREAM LP                              | 705   | EDMOND STA                                    | 1311 | OKLAHOMA | 2445 NW 164TH ST              | EDMOND        | OK    | 73013    | 35.63904 | -97.55817 | 0          | 26.804     | 26.804    | 0.61        | 0.61        | 0.155       | 21.957     | 0              | Major          |
| 2711       | DCP MIDSTREAM LP                              | 733   | KATY STA                                      | 1311 | OKLAHOMA | NE 1ST ST AT BATH             | OKLAHOMA CITY | OK    | 73125    | 35.46719 | -97.48433 | 0          | 98.645     | 93.175    | 0.603       | 0.603       | 0.346       | 34.055     | 0              | Syn-Min        |
| 2735       | DCP MIDSTREAM LP                              | 747   | MUSTANG BOOSTER                               | 1311 | CANADIAN | 3 MI S ON HWY 92 AND 1 MI W   | YUKON         | OK    | 73085    | 35.44021 | -97.78578 | 0.023      | 80.598     | 80.598    | 0.744       | 0.744       | 0.79        | 33.366     | 0              | Syn-Min        |
| 2746       | DCP MIDSTREAM LP                              | 1192  | OEXCO ENOGEX BOOSTER STA                      | 1311 | OKLAHOMA | BRITTON RD AT WESTMINISTER    | OKLAHOMA CITY | OK    | 73151    | 35.56595 | -97.33223 | 0          | 3.23       | 3.93      | 0.022       | 0.022       | 0.038       | 8.452      | 0              | Min            |
| 2760       | DCP MIDSTREAM LP                              | 761   | RAILROAD BOOSTER                              | 1311 | CANADIAN | 1 MI N MUSTANG RD AND 10TH    | YUKON         | OK    | 73085    | 35.4849  | -97.7206  | 0.042      | 51.009     | 51.009    | 1.364       | 1.364       | 0.729       | 34.731     | 0              | Syn-Min        |
| 2766       | DCP MIDSTREAM LP                              | 767   | RICH BOOSTER                                  | 1311 | CANADIAN | 5.5 MI SW OF PIEDMONT         | PIEDMONT      | OK    | 73078    | 35.61424 | -97.79628 | 0.025      | 90.791     | 90.791    | 0.823       | 0.823       | 0.887       | 31.325     | 0              | Syn-Min        |
| 2820       | CARGILL ANML NUTRITION - OKLAHOMA CITY        | 5     | 2100 S ROBINSON AVE                           | 2048 | OKLAHOMA | 2100 S ROBINSON ST            | OKLAHOMA CITY | OK    | 73109    | 35.40017 | -97.60155 | 0.001      | 0.5        | 0.272     | 1.388       | 0.002       | 0           | 0          | 0              | Syn-Min        |
| 2821       | ALLIANCE STEEL INC                            | 6273  | STEEL FABRICATION FACLTY                      | 3448 | OKLAHOMA | 3333 South Council Road       | OKLAHOMA CITY | OK    | 73179    | 35.43193 | -97.65609 | 0          | 0.3        | 0.3       | 3.5         | 0           | 0.062       | 60.915     | 0              | Min            |
| 2826       | LEGACY AVIATION SVC INC                       | 2578  | C E PAIGE ARPRT                               | 3721 | CANADIAN | 1701-A North Cimarron Road    | YUKON         | OK    | 73099    | 35.48794 | -97.8149  | 0          | 0          | 0         | 0           | 0           | 0.11        | 0.529      | 0              | Min            |
| 2827       | TRINITY TANK CAR INC                          | 1637  | PLT 18  | 3743 | OKLAHOMA | 2033 SW 22ND ST               | OKLAHOMA CITY | OK    | 73108    | 35.43692 | -97.64646 | 0.02       | 3.13       | 2.62      | 1.193       | 0.24        | 2.219       | 39.879     | 0              | Major          |
| 2911       | UNIVAR USA INC                                | 222   | OKLAHOMA CITY FACLTY                          | 5169 | OKLAHOMA | 7301 SW 29TH ST               | OKLAHOMA CITY | OK    | 73179    | 35.4355  | -97.64093 | 0          | 0          | 0         | 0           | 0           | 0.122       | 0.222      | 0              | Min            |



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| Company ID | Company Name         | ID    | Facility Name                  | SIC  | County    | Address                        | City          | State | Zip Code | Latitude | Longitude | Sox (Tons) | Nox (Tons) | CO (Tons) | PM10 (Tons) | PM25 (Tons) | HAPs (Tons) | VOC (Tons) | Ammonia (Tons) | Classification |
|------------|----------------------|-------|--------------------------------|------|-----------|--------------------------------|---------------|-------|----------|----------|-----------|------------|------------|-----------|-------------|-------------|-------------|------------|----------------|----------------|
| 2913       | TIMBERLINE ENGRY LLC | 6409  | TIMBERLINE ENGRY AT OKC LNDFFL | 4953 | OKLAHOMA  | 2140 S ROCKWELL AVE            | OKLAHOMA CITY | OK    | 73128    | 35.44336 | -97.63463 | 2.27       | 5.56       | 5.334     | 0.35        | 0           | 1.212       | 0.128      | 0              | Major          |
| 2955       | VERIZON WIRELESS     | 7267  | 104TH AND WESTERN              | 4812 | CLEVELAND | 412 SW 104TH ST                | OKLAHOMA CITY | OK    | 73129    | 35.36118 | -97.52015 | 0          | 0.002      | 0         | 0           | 0           | 0           | 0          | 0              | Min            |
| 2956       | VERIZON WIRELESS     | 7231  | 150TH AND SANTA FE             | 4812 | OKLAHOMA  | 229 NW 150TH STREET            | EDMOND        | OK    | 73013    | 35.62408 | -97.51759 | 0.003      | 0.038      | 0.008     | 0.003       | 0.003       | 0           | 0.003      | 0              | Min            |
| 2959       | VERIZON WIRELESS     | 11434 | 3RD AND SHARTEL                | 4812 | OKLAHOMA  | SW 3RD ST / S SHARTEL AVE      | OKLAHOMA CITY | OK    | 73109    | 35.4621  | -97.5261  | 0          | 0.006      | 0.001     | 0           | 0           | 0           | 0          | 0              | Min            |
| 2960       | VERIZON WIRELESS     | 8105  | 40TH AND EASTERN               | 4812 | OKLAHOMA  | 4341 S NEBRASKA AVE            | OKLAHOMA CITY | OK    | 73129    | 35.42196 | -97.47965 | 0.003      | 0.04       | 0.009     | 0.003       | 0.003       | 0           | 0.003      | 0              | Min            |
| 2962       | VERIZON WIRELESS     | 8111  | 48TH AND SHIELDS               | 4812 | OKLAHOMA  | 5007 S SHIELDS BLVD            | OKLAHOMA CITY | OK    | 73129    | 35.4151  | -97.5092  | 0.005      | 0.066      | 0.014     | 0.005       | 0.005       | 0           | 0.004      | 0              | Min            |
| 2963       | VERIZON WIRELESS     | 7269  | 56TH AND PENN                  | 4812 | OKLAHOMA  | 1448 SW 59TH ST                | OKLAHOMA CITY | OK    | 73119    | 35.40532 | -97.54329 | 0.012      | 0.15       | 0.032     | 0.011       | 0.011       | 0           | 0.01       | 0              | Min            |
| 2972       | VERIZON WIRELESS     | 7038  | ARCADIA CELL SITE              | 4812 | OKLAHOMA  | 6109 E MEMORIAL RD             | OKLAHOMA CITY | OK    | 73134    | 35.609   | -97.416   | 0.003      | 0.04       | 0.009     | 0.003       | 0.003       | 0           | 0.003      | 0              | Min            |
| 2981       | VERIZON WIRELESS     | 11663 | BETHANY WOS 1                  | 4812 | OKLAHOMA  | 0.2 MI W OF SW8TH&S COUNCIL RD | OKLAHOMA CITY | OK    | 73128    | 35.45889 | -97.65767 | 0          | 0.004      | 0.001     | 0           | 0           | 0           | 0          | 0              | Min            |
| 2991       | VERIZON WIRELESS     | 7066  | BRITTON AND WESTERN            | 4812 | OKLAHOMA  | 930 NW 94TH ST                 | OKLAHOMA CITY | OK    | 73114    | 35.566   | -97.53    | 0.006      | 0.073      | 0.016     | 0.005       | 0.005       | 0           | 0.005      | 0              | Min            |
| 2992       | VERIZON WIRELESS     | 11665 | BROADWAY                       | 4812 | OKLAHOMA  | 0.4 MI NE OF KELLEY/KILPATRICK | OKLAHOMA CITY | OK    | 73131    | 35.6012  | -97.48956 | 0          | 0.004      | 0.001     | 0           | 0           | 0           | 0          | 0              | Min            |
| 2999       | VERIZON WIRELESS     | 7230  | CAPITOL HILL                   | 4812 | OKLAHOMA  | 1145 SW 29TH STREET            | OKLAHOMA CITY | OK    | 73109    | 35.4354  | -97.53613 | 0.01       | 0.122      | 0.026     | 0.009       | 0.009       | 0           | 0.008      | 0              | Min            |
| 3032       | VERIZON WIRELESS     | 7129  | DOWNTOWN 201 CELL SITE         | 4812 | OKLAHOMA  | 1123 IRVING ST                 | OKLAHOMA CITY | OK    | 73129    | 35.453   | -97.475   | 0.002      | 0.026      | 0.006     | 0.002       | 0.002       | 0           | 0.002      | 0              | Min            |
| 3033       | VERIZON WIRELESS     | 10874 | DT PARKING GARAGE              | 4812 | OKLAHOMA  | NE ROBERT S. KERR / BROADWAY   | OKLAHOMA CITY | OK    | 73102    | 35.47009 | -97.5142  | 0.001      | 0.015      | 0.003     | 0.001       | 0.001       | 0           | 0.001      | 0              | Min            |
| 3048       | VERIZON WIRELESS     | 9739  | FAIRGROUNDS OK                 | 4812 | OKLAHOMA  | 4065 NW 3RD ST                 | OKLAHOMA CITY | OK    | 73107    | 35.4696  | -97.5891  | 0.011      | 0.133      | 0.029     | 0.009       | 0.009       | 0           | 0.009      | 0              | Min            |
| 3053       | VERIZON WIRELESS     | 7067  | FOREST PARK                    | 4812 | OKLAHOMA  | 3000 I-35 SVC RD               | OKLAHOMA CITY | OK    | 73111    | 35.499   | -97.461   | 0.006      | 0.069      | 0.015     | 0.005       | 0.005       | 0           | 0.005      | 0              | Min            |
| 3071       | VERIZON WIRELESS     | 11320 | HEFNER PARKWAY                 | 4812 | OKLAHOMA  | .22MI SW OF NW122ND/LAKE HEFN  | OKLAHOMA CITY | OK    | 73134    | 35.5915  | -97.58588 | 0          | 0.004      | 0.001     | 0           | 0           | 0           | 0          | 0              | Min            |
| 3072       | VERIZON WIRELESS     | 8121  | HIGHWAY 37 AND WESTERN         | 4812 | CLEVELAND | 226 SW 134TH ST                | MOORE         | OK    | 73170    | 35.33241 | -97.51766 | 0.009      | 0.117      | 0.025     | 0.008       | 0.008       | 0           | 0.008      | 0              | Min            |
| 3073       | VERIZON WIRELESS     | 8106  | HOBBY LOBBY                    | 4812 | OKLAHOMA  | 3800 S COUNCIL RD              | OKLAHOMA CITY | OK    | 73179    | 35.42527 | -97.65111 | 0.01       | 0.125      | 0.027     | 0.009       | 0.009       | 0           | 0.008      | 0              | Min            |
| 3081       | VERIZON WIRELESS     | 11129 | I 240 AND DOUGLAS              | 4812 | OKLAHOMA  | 9112 SE 74TH                   | OKLAHOMA CITY | OK    | 73150    | 35.3916  | -97.36845 | 0.001      | 0.011      | 0.002     | 0.001       | 0.001       | 0           | 0.001      | 0              | Min            |
| 3082       | VERIZON WIRELESS     | 7068  | I 240 AND SANTA FE             | 4812 | OKLAHOMA  | 7748 S HARVEY AVE              | OKLAHOMA CITY | OK    | 73139    | 35.389   | -97.518   | 0.005      | 0.064      | 0.014     | 0.005       | 0.005       | 0           | 0.004      | 0              | Min            |
| 3084       | VERIZON WIRELESS     | 8122  | I 40 AND MUSTANG RD            | 4812 | CANADIAN  | 11108 SW 15TH ST               | OKLAHOMA CITY | OK    | 73099    | 35.448   | -97.72    | 0.005      | 0.061      | 0.013     | 0.004       | 0.004       | 0           | 0.004      | 0              | Min            |
| 3085       | VERIZON WIRELESS     | 7266  | I 44 AND I 240                 | 4812 | OKLAHOMA  | 6359 S INDEPENDENCE            | OKLAHOMA CITY | OK    | 73159    | 35.40237 | -97.57522 | 0.007      | 0.081      | 0.017     | 0.006       | 0.006       | 0           | 0.005      | 0              | Min            |
| 3119       | VERIZON WIRELESS     | 7120  | LUTHER 211 CELL SITE           | 4812 | OKLAHOMA  | 15712 HOGBACK RD               | LUTHER        | OK    | 73054    | 35.63    | -97.238   | 0.004      | 0.047      | 0.01      | 0.003       | 0.003       | 0           | 0.003      | 0              | Min            |
| 3120       | VERIZON WIRELESS     | 8113  | LUTHER ARCADIA                 | 4812 | OKLAHOMA  | 11224 NE 141ST ST              | JONES         | OK    | 73049    | 35.61561 | -97.33235 | 0.004      | 0.045      | 0.01      | 0.003       | 0.003       | 0           | 0.003      | 0              | Min            |
| 3126       | VERIZON WIRELESS     | 8112  | MED TOWER EAST                 | 4812 | OKLAHOMA  | 2725 NW 50TH ST                | OKLAHOMA CITY | OK    | 73112    | 35.52365 | -97.5633  | 0.004      | 0.048      | 0.01      | 0.003       | 0.003       | 0           | 0.003      | 0              | Min            |
| 3128       | VERIZON WIRELESS     | 11254 | MELTON PARK                    | 4812 | OKLAHOMA  | 140 NW 44TH ST                 | OKLAHOMA CITY | OK    | 73118    | 35.5168  | -97.51555 | 0          | 0.005      | 0.001     | 0           | 0           | 0           | 0          | 0              | Min            |
| 3156       | VERIZON WIRELESS     | 7418  | OKC E BRITTON                  | 4812 | OKLAHOMA  | 9020 N I-35 SERVICE RD         | OKLAHOMA CITY | OK    | 73131    | 35.563   | -97.451   | 0.002      | 0.029      | 0.006     | 0.002       | 0.002       | 0           | 0.002      | 0              | Min            |
| 3209       | VERIZON WIRELESS     | 8109  | ROSE HILL                      | 4812 | OKLAHOMA  | 6032 N PENNSYLVANIA AV         | OKLAHOMA CITY | OK    | 73118    | 35.5333  | -97.53873 | 0.003      | 0.034      | 0.007     | 0.002       | 0.002       | 0           | 0.002      | 0              | Min            |
| 3222       | VERIZON WIRELESS     | 7407  | SE 104TH AND SOONER RD         | 4812 | CLEVELAND | 6420 SE 104TH ST               | OKLAHOMA CITY | OK    | 73165    | 35.36285 | -97.41317 | 0.003      | 0.039      | 0.008     | 0.003       | 0.003       | 0           | 0.003      | 0              | Min            |
| 3229       | VERIZON WIRELESS     | 11039 | SHILLING PARK                  | 4812 | OKLAHOMA  | 0.61 MI NE SE29THST/S CENTRAL  | OKLAHOMA CITY | OK    | 73129    | 35.44203 | -97.4993  | 0.001      | 0.015      | 0.003     | 0.001       | 0.001       | 0           | 0.001      | 0              | Min            |

| Company ID | Company Name   | ID    | Facility Name                                     | SIC  | County    | Address                        | City          | State | Zip Code | Latitude | Longitude | Sox (Tons) | Nox (Tons) | CO (Tons) | PM10 (Tons) | PM25 (Tons) | HAPs (Tons) | VOC (Tons) | Ammonia (Tons) | Classification |
|------------|--|-------|---|------|-----------|--------------------------------|---------------|-------|----------|----------|-----------|------------|------------|-----------|-------------|-------------|-------------|------------|----------------|----------------|
| 3230       | VERIZON WIRELESS                                     | 7569  | SILVER SPRINGS                                    | 4812 | OKLAHOMA  | 7431 NW 85TH STREET            | OKLAHOMA CITY | OK    | 73132    | 35.557   | -97.647   | 0.002      | 0.029      | 0.006     | 0.002       | 0.002       | 0           | 0.002      | 0              | Min            |
| 3236       | VERIZON WIRELESS                                     | 11090 | SOONER ROAD                                       | 4812 | CLEVELAND | 2497 9TH AVE NE                | NORMAN        | OK    | 73026    | 35.42528 | -97.65111 | 0.002      | 0.022      | 0.005     | 0.002       | 0.002       | 0           | 0.001      | 0              | Min            |
| 3250       | VERIZON WIRELESS                                     | 10865 | SW 119TH AND MAY                                  | 4812 | CLEVELAND | 12203 S. MAY AVE               | OKLAHOMA CITY | OK    | 73170    | 35.34636 | -97.567   | 0.001      | 0.018      | 0.004     | 0.001       | 0.001       | 0           | 0.001      | 0              | Min            |
| 3258       | VERIZON WIRELESS                                     | 7071  | TARGET  | 4812 | OKLAHOMA  | 13415 N PENN                   | EDMOND        | OK    | 73013    | 35.605   | -97.551   | 0.046      | 0.573      | 0.123     | 0.041       | 0.041       | 0           | 0.038      | 0              | Min            |
| 3265       | VERIZON WIRELESS                                     | 11105 | TINKER AFB  | 4812 | OKLAHOMA  | 5903 SE 61ST                   | OKLAHOMA CITY | OK    | 73135    | 35.40522 | -97.41982 | 0.001      | 0.011      | 0.002     | 0.001       | 0.001       | 0           | 0.001      | 0              | Min            |
| 3283       | VERIZON WIRELESS                                     | 8110  | TV 9  | 4812 | OKLAHOMA  | 7401 N KELLY AVE               | OKLAHOMA CITY | OK    | 73064    | 35.5495  | -97.4972  | 0.003      | 0.042      | 0.009     | 0.003       | 0.003       | 0           | 0.003      | 0              | Min            |
| 3294       | VERIZON WIRELESS                                     | 11134 | WARR ACRES  | 4812 | OKLAHOMA  | 6901 NW 63RD ST                | OKLAHOMA CITY | OK    | 73132    | 35.53882 | -97.6331  | 0.001      | 0.009      | 0.002     | 0.001       | 0.001       | 0           | 0.001      | 0              | Min            |
| 3295       | VERIZON WIRELESS                                     | 11669 | WASHINGTON PK                                     | 4812 | OKLAHOMA  | 916 NE 1ST ST                  | OKLAHOMA CITY | OK    | 73102    | 35.46683 | -97.49595 | 0.001      | 0.015      | 0.003     | 0.001       | 0.001       | 0           | 0.001      | 0              | Min            |
| 3307       | VERIZON WIRELESS                                     | 11463 | WILL ROGERS AP                                    | 4812 | CLEVELAND | 0.29MI NE SW119TH ST/S ROCKWEL | OKLAHOMA CITY | OK    | 73173    | 35.34961 | -97.63058 | 0          | 0.002      | 0         | 0           | 0           | 0           | 0          | 0              | Min            |
| 3308       | VERIZON WIRELESS                                     | 11089 | WILL ROGERS PARK                                  | 4812 | OKLAHOMA  | 3003 N. GRAND BLVD.            | OKLAHOMA CITY | OK    | 73107    | 35.49911 | -97.58036 | 0          | 0.001      | 0         | 0           | 0           | 0           | 0          | 0              | Min            |
| 3352       | NEW CINGULAR WIRELESS PCS LLC DBA AT AND T MOBILITY  | 11001 | BRANDON PL OKC CELL TOWER CLLC10097886            | 4812 | OKLAHOMA  | 13550 BRANDON PLACE            | OKLAHOMA CITY | OK    | 73142    | 35.60781 | 97.627656 | 0          | 0.003      | 0.001     | 0           | 0           | 0           | 0          | 0              | Min            |
| 3373       | NEW CINGULAR WIRELESS PCS LLC DBA AT AND T MOBILITY  | 10996 | E MEMORIAL OKC CELL TOWER CLLC10000535            | 4812 | OKLAHOMA  | 2501 EAST MEMORIAL ROAD        | OKLAHOMA CITY | OK    | 73131    | 35.61305 | -97.475   | 0          | 0.005      | 0.001     | 0           | 0           | 0           | 0          | 0              | Min            |
| 3406       | NEW CINGULAR WIRELESS PCS LLC DBA AT AND T MOBILITY  | 11257 | NW 10TH ST AND COUNCIL OK 1874                    | 4812 | OKLAHOMA  | 7804 NW 10TH ST                | OKLAHOMA CITY | OK    | 73127    | 35.47843 | -97.65034 | 0          | 0.003      | 0.001     | 0           | 0           | 0           | 0          | 0              | Min            |
| 3407       | NEW CINGULAR WIRELESS PCS LLC DBA AT AND T MOBILITY  | 10997 | NW 138 OKC CELL TOWER CLLC10000555                | 4812 | OKLAHOMA  | 2736 NORTHWEST 138TH STREET    | OKLAHOMA CITY | OK    | 73134    | 35.61127 | 97.562953 | 0          | 0.001      | 0         | 0           | 0           | 0           | 0          | 0              | Min            |
| 3410       | NEW CINGULAR WIRELESS PCS LLC DBA AT AND T MOBILITY  | 8312  | OKC OK MTSO                                       | 4812 | OKLAHOMA  | 3800 S DOUGLAS AVE             | OKLAHOMA CITY | OK    | 73109    | 35.427   | -97.534   | 0.332      | 5.022      | 1.082     | 0.356       | 0.356       | 0           | 0.407      | 0              | Min            |
| 3422       | NEW CINGULAR WIRELESS PCS LLC DBA AT AND T MOBILITY  | 10998 | S MAY OKC CELL TOWER CLLC10009450                 | 4812 | CLEVELAND | 12203 SOUTH MAY AVENUE         | OKLAHOMA CITY | OK    | 73170    | 35.34635 | 97.566998 | 0          | 0.001      | 0         | 0           | 0           | 0           | 0          | 0              | Min            |
| 3423       | NEW CINGULAR WIRELESS PCS LLC DBA AT AND T MOBILITY  | 10999 | S WESTERN OKC CELL TOWER CLLC10029452             | 4812 | CLEVELAND | 11704 SOUTH WESTERN AVENUE     | OKLAHOMA CITY | OK    | 73170    | 35.35109 | 97.527286 | 0          | 0.002      | 0         | 0           | 0           | 0           | 0          | 0              | Min            |
| 3437       | NEW CINGULAR WIRELESS PCS LLC DBA AT AND T MOBILITY  | 11000 | W BRITTON OKC CELL TOWER CLLC10030092             | 4812 | OKLAHOMA  | 8303 WEST BRITTON ROAD         | OKLAHOMA CITY | OK    | 73132    | 35.56605 | -97.6614  | 0          | 0.001      | 0         | 0           | 0           | 0           | 0          | 0              | Min            |
| 3441       | NEW CINGULAR WIRELESS PCS LLC DBA AT AND T MOBILITY  | 10978 | WESTERN EDMOND CELL TOWER CLLC10111126            | 4812 | OKLAHOMA  | 17650 NORTH WESTERN AVENUE     | EDMOND        | OK    | 73003    | 35.6513  | 97.529194 | 0          | 0.004      | 0.001     | 0           | 0           | 0           | 0          | 0              | Min            |
| 3449       | FRESENIUS MEDICAL CARE NORTH AMERICA                 | 7256  | FMC SITE 6988 NW OKC                              | 8092 | OKLAHOMA  | 3107 NW 50TH STREET            | OKLAHOMA CITY | OK    | 73112    | 35.523   | -97.57    | 0.008      | 0.026      | 0.023     | 0.001       | 0.001       | 0           | 0.026      | 0              | Min            |
| 3451       | LOWES HOME CTR INC                                   | 6521  | MOORE FACLTY 2655                                 | 5211 | CLEVELAND | 1501 S I35 SVC RD              | MOORE         | OK    | 73160    | 35.451   | -97.488   | 0.04       | 0.6        | 0.1       | 0.04        | 0.04        | 0           | 0.05       | 0              | Min            |
| 3456       | INTERNATIONAL PAPER - OKC                            | 4476  | CONTAINERBOARD PKG FACLTY                         | 2653 | OKLAHOMA  | 4901 WEST POINT BLVD           | OKLAHOMA CITY | OK    | 73179    | 35.41565 | -97.64347 | 0.013      | 2.18       | 1.74      | 6.16        | 0.165       | 0.041       | 5.259      | 0              | Syn-Min        |
| 3466       | APPLIED IND COATINGS INC                             | 6727  | APPLIED IND COATINGS INC                          | 3471 | CLEVELAND | 13920 S MERIDIAN AVE           | OKLAHOMA CITY | OK    | 73173    | 35.33    | -97.599   | 0          | 0.002      | 0.001     | 3.272       | 0           | 0.004       | 0          | 0              | Syn-Min        |
| 3468       | CAPITAL CITY PROCESSORS                              | 6802  | CAPITAL CITY PROCESSORS                           | 2077 | OKLAHOMA  | 2228 S SANTA FE                | OKLAHOMA CITY | OK    | 73109    | 35.443   | -97.511   | 0.004      | 0.691      | 0.581     | 0.053       | 0.053       | 0           | 0.038      | 0              | Min            |
| 3705       | US CELLULAR  | 10291 | LINCOLN AND RENO SITE RELO 851562                 | 4812 | OKLAHOMA  | 200 SE 4TH ST                  | OKLAHOMA CITY | OK    | 73104    | 35.45998 | -97.50726 | 0.002      | 0.031      | 0.007     | 0.002       | 0.002       | 0           | 0.003      | 0              | Min            |
| 3901       | CIMAREX ENGRY CO                                     | 10665 | PICKETT UNIT B 3 18 AND PICKETT UNIT B 4 18       | 1311 | GARVIN    | 0.4 MI NW OF E1700 RD/N3120 RD | PERNELL       | OK    | 73433    | 35.55268 | -97.44621 | 0          | 0.099      | 0.099     | 0           | 0           | 0           | 9.45       | 0              | Syn-Min        |
| 3921       | VEOLIA ENGRY OKLAHOMA CITY INC                       | 1635  | HEATING AND COOLING PLT                           | 4961 | OKLAHOMA  | ONE NORTH EK GAYLORD BLVD      | OKLAHOMA CITY | OK    | 73102    | 35.4671  | -97.51294 | 0.108      | 44.615     | 14.069    | 1.274       | 1.274       | 0.318       | 1.24       | 0.545          | Major          |
| 3923       | XEROX SERVICES                                       | 7634  | COMMUNICATIONS WEST CALL CTR                      | 7389 | CANADIAN  | 100 N MUSTANG RD               | YUKON         | OK    | 73099    | 35.469   | -97.719   | 0          | 0.2        | 0         | 0           | 0           | 0           | 0          | 0              | Min            |
| 3925       | FRONTIER LOGISTICAL SVC LLC                          | 5074  | SOLVENT DISTRIBUTION TERML                        | 5169 | OKLAHOMA  | 600 N BRYANT                   | OKLAHOMA CITY | OK    | 73117    | 35.47    | -97.46    | 0          | 0          | 0         | 0           | 0           | 0.345       | 0.887      | 0              | Min            |
| 3931       | SOUTHWESTERN BELL TELEPHONE CO DBA AT AND T OKLAHOMA | 7850  | GREENFIELD CTL OFFICE                             | 4812 | OKLAHOMA  | 9300 N EASTERN AVE             | OKLAHOMA CITY | OK    | 73131    | 35.564   | -97.478   | 0.006      | 0.095      | 0.021     | 0.007       | 0.007       | 0           | 0.008      | 0              | Min            |
| 3941       | AT AND T CORP  | 8373  | OK 1014 ROCKWELL OKC PORTABLE GENERATOR WAREHOUSE | 4812 | OKLAHOMA  | 235 N ROCKWELL                 | OKLAHOMA CITY | OK    | 73127    | 35.467   | -97.636   | 0          | 0.65       | 0.14      | 0.05        | 0.05        | 0           | 0.05       | 0              | Min            |

**[OKLAHOMA CITY STORM WATER QUALITY MANAGEMENT PLAN]**

| Company ID | Company Name  | ID    | Facility Name                        | SIC  | County    | Address                        | City          | State | Zip Code  | Latitude | Longitude | Sox (Tons) | Nox (Tons) | CO (Tons) | PM10 (Tons) | PM25 (Tons) | HAPs (Tons) | VOC (Tons) | Ammonia (Tons) | Classification |     |
|------------|---|-------|--------------------------------------|------|-----------|--------------------------------|---------------|-------|-----------|----------|-----------|------------|------------|-----------|-------------|-------------|-------------|------------|----------------|----------------|-----|
| 3947       | CITY PAINT WORKS LLC                                  | 7806  | CITY PAINT WORKS                     | 7532 | CANADIAN  | 10220 W RENO                   | OKLAHOMA CITY | OK    | 731370604 | 35.46421 | -97.69594 | 0          | 0          | 0         | 0           | 0           | 1.5         | 2.8        | 0              | Min            |     |
| 4386       | AMERICAN TOWER CORP                                   | 11041 | 8TH AND PORTLAND OK SITE 307994      | 4813 | OKLAHOMA  | 0.08 MI SW OF NW8TH/N PORTLAND | OKLAHOMA CITY | OK    | 73107     | 35.47441 | -97.5844  | 0          | 0.004      | 0.001     | 0           | 0           | 0           | 0          | 0              | 0              | Min |
| 4391       | AMERICAN TOWER CORP                                   | 11685 | BELLE ISLE OK 308089                 | 4813 | OKLAHOMA  | 5520 BELLE ISLE BLVD           | OKLAHOMA CITY | OK    | 73118     | 35.52711 | -97.5349  | 0          | 0.001      | 0         | 0           | 0           | 0           | 0          | 0              | 0              | Min |
| 4397       | AMERICAN TOWER CORP                                   | 11035 | BROOKWOOD OK SITE 308000             | 4813 | OKLAHOMA  | .16MI NE OF SWESTERN/SW89TH ST | OKLAHOMA CITY | OK    | 73139     | 35.37875 | -97.5282  | 0          | 0.004      | 0.001     | 0           | 0           | 0           | 0          | 0              | 0              | Min |
| 4412       | AMERICAN TOWER CORP                                   | 11564 | CROSS CREEK OK 274888                | 4813 | OKLAHOMA  | 2250 NW 192ND ST.              | OKLAHOMA CITY | OK    | 73003     | 35.66698 | -97.55378 | 0          | 0.003      | 0.001     | 0           | 0           | 0           | 0          | 0              | 0              | Min |
| 4417       | AMERICAN TOWER CORP                                   | 11567 | DRAPER LAKE OK SITE 308029           | 4813 | CLEVELAND | 11515 SE 109TH STREET          | OKLAHOMA CITY | OK    | 73165     | 35.3588  | -97.3256  | 0          | 0.001      | 0         | 0           | 0           | 0           | 0          | 0              | 0              | Min |
| 4421       | AMERICAN TOWER CORP                                   | 11566 | EAST MOORE OK SITE 308015            | 4813 | CLEVELAND | 9220 S SUNNY LANE              | OKLAHOMA CITY | OK    | 73165     | 35.37475 | -97.4392  | 0          | 0.001      | 0         | 0           | 0           | 0           | 0          | 0              | 0              | Min |
| 4427       | AMERICAN TOWER CORP                                   | 11591 | FLEMING OK SITE 308093               | 4813 | OKLAHOMA  | 13624 RAILWAY DR               | OKLAHOMA CITY | OK    | 73114     | 35.60813 | -97.5022  | 0          | 0.001      | 0         | 0           | 0           | 0           | 0          | 0              | 0              | Min |
| 4443       | AMERICAN TOWER CORP                                   | 11301 | MADISON OK6 307988                   | 4813 | OKLAHOMA  | 0.1 MI NE23RD ST & KELLY AVE   | OKLAHOMA CITY | OK    | 73111     | 35.49446 | -97.4931  | 0          | 0.003      | 0.001     | 0           | 0           | 0           | 0          | 0              | 0              | Min |
| 4449       | AMERICAN TOWER CORP                                   | 10258 | NEWALLA 307999                       | 4813 | OKLAHOMA  | 7506 S. Indian Meridian        | Choctaw       | OK    | 73020     | 35.3914  | -97.24707 | 0          | 0.004      | 0.001     | 0           | 0           | 0           | 0          | 0              | 0              | Min |
| 4458       | AMERICAN TOWER CORP                                   | 7925  | QUAIL SPRINGS 30818                  | 4813 | OKLAHOMA  | 13316 N BLACKWELDER            | OKLAHOMA CITY | OK    | 73114     | 35.605   | -97.54    | 0          | 0.013      | 0.004     | 0           | 0           | 0           | 0          | 0              | 0              | Min |
| 4462       | AMERICAN TOWER CORP                                   | 11680 | SARA OK 308254                       | 4813 | CANADIAN  | 10220 W RENO AVE               | OKLAHOMA CITY | OK    | 73127     | 35.46263 | -97.70041 | 0          | 0.002      | 0.001     | 0           | 0           | 0           | 0          | 0              | 0              | Min |
| 4468       | AMERICAN TOWER CORP                                   | 11716 | SW 64TH AND MAY OK 308026            | 4813 | OKLAHOMA  | 6615 S MAY AVE                 | OKLAHOMA CITY | OK    | 73159     | 35.3978  | -97.5663  | 0          | 0.001      | 0         | 0           | 0           | 0           | 0          | 0              | 0              | Min |
| 4474       | AMERICAN TOWER CORP                                   | 11563 | TOLAN PARK OK 308091                 | 4813 | OKLAHOMA  | 112 N. BLACKWELDER             | OKLAHOMA CITY | OK    | 73106     | 35.46805 | -97.5388  | 0          | 0.001      | 0         | 0           | 0           | 0           | 0          | 0              | 0              | Min |
| 4484       | UE MFG  | 7944  | 10000 NW 2ND ST                      | 3561 | CANADIAN  | 10000 NW 2ND ST                | OKLAHOMA CITY | OK    | 731297149 | 35.47    | -97.692   | 0          | 0          | 0         | 0.14        | 0.05        | 3.87        | 8.27       | 0              | Min            |     |
| 4485       | UE MFG  | 7940  | 1545 SE 29TH ST                      | 3533 | OKLAHOMA  | 1545 SE 29TH ST                | OKLAHOMA CITY | OK    | 731297617 | 35.435   | -97.483   | 0          | 0          | 0         | 0.13        | 0.05        | 3.05        | 6.38       | 0              | Min            |     |
| 4486       | UE MFG  | 7943  | 3301 GILSON WAY                      | 3533 | OKLAHOMA  | 3301 GILSON WAY                | OKLAHOMA CITY | OK    | 731795215 | 35.433   | -97.639   | 0          | 0          | 0         | 0.01        | 0.005       | 0.28        | 0.59       | 0              | Min            |     |
| 4487       | GE OIL AND GAS ESP INC                                | 7558  | OKLAHOMA CITY WEST MFG FACLTY        | 3533 | OKLAHOMA  | 6205 SOONER RD                 | OKLAHOMA CITY | OK    | 73135     | 35.4053  | -97.4334  | 0.003      | 0.039      | 0.071     | 0.03        | 0.019       | 0.004       | 0.025      | 0              | Min            |     |
| 4490       | MASTER CLNR   | 6886  | 2717 N CLASSEN AVE                   | 7216 | OKLAHOMA  | 2717 N CLASSEN AVE             | OKLAHOMA CITY | OK    | 73106     | 35.49702 | -97.53479 | 0          | 0          | 0         | 0           | 0           | 1.496       | 1.496      | 0              | Syn-Min        |     |
| 4491       | CUSTOM COMPOSITES LLC                                 | 4218  | 1018 E MADISON FIBERGLASS MFG FACLTY | 3089 | OKLAHOMA  | 1018 E MADISON ST              | OKLAHOMA CITY | OK    | 731112608 | 35.49408 | -97.49422 | 0          | 0          | 0         | 0           | 0           | 8.68        | 8.68       | 0              | Syn-Min        |     |
| 4492       | MALARKEY ROOFING                                      | 8304  | OKLAHOMA CITY PLT                    | 2952 | OKLAHOMA  | 3400 S COUNCIL RD              | OKLAHOMA CITY | OK    | 73179     | 35.43119 | -97.65337 | 0          | 6.012      | 7.416     | 5.994       | 5.254       | 0.735       | 22.698     | 0              | Min            |     |
| 4514       | AMERICAN PREPARED FOODS LLC                           | 2641  | 7300 SW 29TH ST                      | 2013 | OKLAHOMA  | 7300 SW 29TH ST                | OKLAHOMA CITY | OK    | 73179     | 35.43503 | -97.64086 | 0.095      | 20.866     | 17.352    | 2.075       | 1.586       | 0           | 1.146      | 0              | Min            |     |
| 4549       | AAA FIBERGLASS SVC INC                                | 9261  | AAA PLT                              | 3089 | CLEVELAND | 10519 SUNNYLANE RD             | OKLAHOMA CITY | OK    | 73160     | 35.36204 | -97.44199 | 0          | 0          | 0         | 0           | 0           | 1.066       | 1.066      | 0              | Min            |     |
| 4568       | CHESAPEAKE ENRGY CORP                                 | 7292  | MAIN CAMPUS                          | 8741 | OKLAHOMA  | 6100 N WESTERN AVE             | OKLAHOMA CITY | OK    | 73118     | 35.53448 | -97.52957 | 0.374      | 15.057     | 6.129     | 0.51        | 0.51        | 0           | 0.895      | 0              | Min            |     |
| 4628       | OG AND E - TD AND TS                                  | 9934  | GENERAL SVC CTR                      | 4911 | OKLAHOMA  | 7700 S HIGH STREET             | OKLAHOMA CITY | OK    | 73129     | 35.3904  | -97.49286 | 0          | 0.009      | 0.01      | 0           | 0           | 0           | 0          | 0              | 0              | Min |
| 4637       | OG AND E - TD AND TS                                  | 9938  | METRO SVC CTR                        | 4911 | OKLAHOMA  | 3220 S HIGH AVE                | OKLAHOMA CITY | OK    | 731295030 | 35.43312 | -97.49473 | 0          | 0.13       | 0.11      | 0.006       | 0           | 0           | 0          | 0              | 0              | Min |
| 4642       | OG AND E - TD AND TS                                  | 9939  | NORTH DISTRICT SVC CTR               | 4911 | OKLAHOMA  | 220 E WILSHIRE BLVD            | OKLAHOMA CITY | OK    | 731051006 | 35.55112 | -97.50896 | 0          | 0.004      | 0.008     | 0           | 0           | 0           | 0          | 0              | 0              | Min |
| 4643       | OG AND E - TD AND TS                                  | 7804  | NW SUBSTATION                        | 4911 | OKLAHOMA  | 7422 NW 164TH                  | EDMOND        | OK    | 73034     | 35.63849 | -97.64566 | 0          | 0.006      | 0.12      | 0           | 0           | 0           | 0.002      | 0              | 0              | Min |
| 4675       | COMPASS MANUFACTURING LLC                             | 10137 | OKC COMPASS SHOP                     | 3533 | CLEVELAND | 0.18 MI N OF HW 44 / SW 119TH  | OKLAHOMA CITY | OK    | 73154     | 35.35108 | -97.58616 | 0.063      | 0.801      | 0.271     | 0.863       | 0.512       | 3.02        | 14.793     | 0              | Min            |     |
| 4757       | FEDEX GROUND PACKAGE SYSTEM INC                       | 12029 | FEDEX GROUND PACKAGE SYSTEM INC      | 4215 | OKLAHOMA  | 0.04 MI NW OF SW18 ST/S MILLER | OKLAHOMA CITY | OK    | 73108     | 35.44689 | -97.56182 | 0          | 0.07       | 0.01      | 0           | 0           | 0           | 0          | 0              | 0              | Min |
| 4778       | NATIONAL OILWELL VARCO LP - TUBOSCOPE SUCKER ROD INSP | 5841  | TUBOSCOPE SUCKER ROD INSPECTION      | 1389 | OKLAHOMA  | 1820 SE 40TH ST                | OKLAHOMA CITY | OK    | 73129     | 35.424   | -97.48    | 0          | 0          | 0         | 2.242       | 0           | 0.001       | 19.429     | 0              | Syn-Min        |     |

| Company ID | Company Name                                 | ID    | Facility Name                    | SIC  | County   | Address                      | City          | State | Zip Code | Latitude | Longitude | Sox (Tons) | Nox (Tons) | CO (Tons) | PM10 (Tons) | PM25 (Tons) | HAPs (Tons) | VOC (Tons) | Ammonia (Tons) | Classification |
|------------|--|-------|----------------------------------|------|----------|------------------------------|---------------|-------|----------|----------|-----------|------------|------------|-----------|-------------|-------------|-------------|------------|----------------|----------------|
| 4779       | NATIONAL OILWELL VARCO LP - MISSION PRODUCTS | 11949 | NOV MISSION PRODUCTS             | 3533 | OKLAHOMA | 0.1MI W 29TH ST & COUNCIL RD | OKLAHOMA CITY | OK    | 73179    | 35.43565 | -97.6545  | 0          | 0.001      | 0         | 0.091       | 0           | 0.372       | 0.457      | 0              | Syn-Min        |
| 4801       | SCHWARZ SAND LLC                             | 9405  | DOUGLAS SAND AND GRAVEL FACILITY | 1446 | OKLAHOMA | 8900 E HEFNER RD             | OKLAHOMA CITY | OK    | 73049    | 35.58    | -97.373   | 1.042      | 5.419      | 2.912     | 0.168       | 0.168       | 0.009       | 1.285      | 0              | Min            |

**Appendix AE: PDES Permits with Oklahoma City Jurisdiction**

| OBJECT ID | Permit Number                | NPDES ID  | Outfall ID | Location             | City          | Zip   | Permit Issued            | Permit Effective Date    | Permit Expiration        | Permit Status   | Facility Type               | Permit Type                     | Program Type          | County   | Major / Minor | Facility Latitude | Facility Longitude | Outfall Latitude | Outfall Longitude | Monitoring |
|-----------|------------------------------|-----------|------------|----------------------|---------------|-------|--------------------------|--------------------------|--------------------------|-----------------|-----------------------------|---------------------------------|-----------------------|----------|---------------|-------------------|--------------------|------------------|-------------------|------------|
| 1         | 7725 Reno #1                 | OK0045187 | 001A       | 7725 W RENO, STE 398 | OKLAHOMA CITY | 73127 | 2013-02-27T00:00:00.000Z | 2013-03-01T00:00:00.000Z | 2018-02-28T00:00:00.000Z | Terminated      | Privately Owned Facility    | NPDES Individual Permit         | Industrial Wastewater | Oklahoma | Minor         | 35.464435         | 97.648757          | 35.4645          | 97.644667         | Effluent   |
| 2         | 7725 Reno #1                 | OK0045187 | 002A       | 7725 W RENO, STE 398 | OKLAHOMA CITY | 73127 | 2013-02-27T00:00:00.000Z | 2013-03-01T00:00:00.000Z | 2018-02-28T00:00:00.000Z | Terminated      | Privately Owned Facility    | NPDES Individual Permit         | Industrial Wastewater | Oklahoma | Minor         | 35.464435         | 97.648757          | 35.464306        | 97.652306         | Effluent   |
| 3         | 7725 Reno #1                 | OK0045187 | 003A       | 7725 W RENO, STE 398 | OKLAHOMA CITY | 73127 | 2013-02-27T00:00:00.000Z | 2013-03-01T00:00:00.000Z | 2018-02-28T00:00:00.000Z | Terminated      | Privately Owned Facility    | NPDES Individual Permit         | Industrial Wastewater | Oklahoma | Minor         | 35.464435         | 97.648757          | 35.464556        | 97.648444         | Effluent   |
| 4         | 7725 Reno #1                 | OK0045187 | 004A       | 7725 W RENO, STE 398 | OKLAHOMA CITY | 73127 | 2013-02-27T00:00:00.000Z | 2013-03-01T00:00:00.000Z | 2018-02-28T00:00:00.000Z | Terminated      | Privately Owned Facility    | NPDES Individual Permit         | Industrial Wastewater | Oklahoma | Minor         | 35.464435         | 97.648757          | 35.464556        | 97.65025          | Effluent   |
| 10        | Acme Brick Co-OKC Plant      | OK0038253 | 001A       | 500 E MEMORIAL ROAD  | OKLAHOMA CITY | 73114 | 2011-07-08T00:00:00.000Z | 2011-08-01T00:00:00.000Z | 2016-07-31T00:00:00.000Z | Admin Continued | Privately Owned Facility    | NPDES Individual Permit         | Industrial Wastewater | Oklahoma | Minor         | 35.60913          | 97.50485           | 35.60375         | 97.507139         | Effluent   |
| 11        | Acme Brick Co-OKC Plant      | OK0038253 | 002A       | 500 E MEMORIAL ROAD  | OKLAHOMA CITY | 73114 | 2011-07-08T00:00:00.000Z | 2011-08-01T00:00:00.000Z | 2016-07-31T00:00:00.000Z | Admin Continued | Privately Owned Facility    | NPDES Individual Permit         | Industrial Wastewater | Oklahoma | Minor         | 35.60913          | 97.50485           | 35.600361        | 97.508306         | Effluent   |
| 79        | Belger Cartage Service, Inc. | OKG750009 | 001A       | 3837 W. RENO         | OKLAHOMA CITY | 73107 | 2013-09-20T00:00:00.000Z | 2013-10-01T00:00:00.000Z | 2018-09-30T00:00:00.000Z | Effective       | Privately Owned Facility    | General Permit Covered Facility | Industrial Wastewater | Oklahoma | Minor         | 35.46438          | 97.586381          | 35.465611        | 97.586639         | Effluent   |
| 140       | Choctaw Co. RW & SD #1-Grant | OK0037826 | 001A       | 510 EVERIDGE         | GRANT         | 74738 | 2010-09-16T00:00:00.000Z | 2010-10-01T00:00:00.000Z | 2015-09-30T00:00:00.000Z | Expired         | Municipal or Water District | NPDES Individual Permit         | Municipal Wastewater  | Choctaw  | Minor         | 33.924494         | 95.508236          | 35.325401        | 97.732225         | Effluent   |
| 163       | Coreslab Structures, Inc.    | OKG110065 | 007A       | 817 SE 55TH ST       | OKLAHOMA CITY | 73129 | 2014-02-12T00:00:00.000Z | 2014-03-01T00:00:00.000Z | 2019-02-28T00:00:00.000Z | Effective       | Privately Owned Facility    | General Permit Covered Facility | Industrial Wastewater | Oklahoma | Minor         | 35.409877         | 97.496781          | 35.411667        | 97.499056         | Effluent   |
| 358       | Holliday Outt MHP            | OK0039136 | 001A       | 604 MUSTANG PLANT    | OKLAHOMA CITY | 73127 | 2008-12-10T00:00:00.000Z | 2009-01-01T00:00:00.000Z | 2013-12-31T00:00:00.000Z | Admin Continued | Privately Owned Facility    | NPDES Individual                | Municipal Wastewater  | Oklahoma | Minor         | 35.472944         | 97.669528          | 35.473031        | 97.669354         | Effluent   |

| OBJECT ID | Permit Number                     | NPDES ID  | Outfall ID | Location                | City          | Zip   | Permit Issued            | Permit Effective Date    | Permit Expiration        | Permit Status   | Facility Type                      | Permit Type             | Program Type          | County    | Major / Minor | Facility Latitude | Facility Longitude | Outfall Latitude | Outfall Longitude | Monitoring |
|-----------|-----------------------------------|-----------|------------|-------------------------|---------------|-------|--------------------------|--------------------------|--------------------------|-----------------|------------------------------------|-------------------------|-----------------------|-----------|---------------|-------------------|--------------------|------------------|-------------------|------------|
|           |                                   |           |            | ROAD                    |               |       |                          |                          |                          |                 |                                    | Permit                  |                       |           |               |                   |                    |                  |                   |            |
| 478       | Moore, City of                    | OK0027391 | 001A       | 4000 S. I35 SERVICE RD. | MOORE         | 73160 | 2010-04-09T00:00:00.000Z | 2010-05-01T00:00:00.000Z | 2015-04-30T00:00:00.000Z | Admin Continued | Municipal or Water District        | NPDES Individual Permit | Municipal Wastewater  | Cleveland | Major         | 35.290667         | 97.551389          | 35.290878        | 97.551577         | Effluent   |
| 516       | OG&E-Mustang                      | OK0000477 | 001A       | 501 MUSTANG PLANT ROAD  | OKLAHOMA CITY | 73127 | 2012-04-23T00:00:00.000Z | 2012-06-01T00:00:00.000Z | 2017-05-31T00:00:00.000Z | Effective       | Privately Owned Facility           | NPDES Individual Permit | Industrial Wastewater | Oklahoma  | Minor         | 35.471111         | 97.673333          | 35.471472        | 97.673278         | Effluent   |
| 527       | OK City, City of-North Canadian   | OK0036978 | 001A       | 420 W. MAIN, SUITE 500  | OKLAHOMA CITY | 73102 | 2010-12-01T00:00:00.000Z | 2011-01-01T00:00:00.000Z | 2015-12-31T00:00:00.000Z | Admin Continued | Municipal or Water District        | NPDES Individual Permit | Municipal Wastewater  | Oklahoma  | Major         | 35.596833         | 97.312556          | 35.597056        | 97.312889         | Effluent   |
| 528       | OK City, City of-South Canadian   | OK0038385 | 001A       | 420 W. MAIN, SUITE 500  | OKLAHOMA CITY | 73102 | 2009-04-30T00:00:00.000Z | 2009-05-01T00:00:00.000Z | 2014-04-30T00:00:00.000Z | Admin Continued | Municipal or Water District        | NPDES Individual Permit | Municipal Wastewater  | Oklahoma  | Major         | 35.307528         | 97.558917          | 35.307639        | 97.559306         | Effluent   |
| 759       | Spencer, City of                  | OK0022535 | 001A       | 6401 N DOUGLAS BLVD     | SPENCER       | 73084 | 2011-05-24T00:00:00.000Z | 2011-06-01T00:00:00.000Z | 2016-05-31T00:00:00.000Z | Admin Continued | Municipal or Water District        | NPDES Individual Permit | Municipal Wastewater  | Oklahoma  | Minor         | 35.537972         | 97.373222          | 35.538039        | 97.373539         | Effluent   |
| 838       | US FAA Mike Monroney Aero. Center | OK0043931 | 001A       | 6500 S. MCARTHUR BLVD   | OKLAHOMA CITY | 73169 | 2011-05-10T00:00:00.000Z | 2011-06-01T00:00:00.000Z | 2016-05-31T00:00:00.000Z | Admin Continued | Federal Facility (U.S. Government) | NPDES Individual Permit | Industrial Wastewater | Oklahoma  | Minor         | 35.42467          | 97.618683          | 35.390306        | 97.618444         | Effluent   |
| 839       | US FAA Mike Monroney Aero. Center | OK0043931 | 002A       | 6500 S. MCARTHUR BLVD   | OKLAHOMA CITY | 73169 | 2011-05-10T00:00:00.000Z | 2011-06-01T00:00:00.000Z | 2016-05-31T00:00:00.000Z | Admin Continued | Federal Facility (U.S. Government) | NPDES Individual Permit | Industrial Wastewater | Oklahoma  | Minor         | 35.42467          | 97.618683          | 35.3925          | 97.615861         | Effluent   |
| 840       | US FAA Mike Monroney Aero. Center | OK0043931 | 003A       | 6500 S. MCARTHUR BLVD   | OKLAHOMA CITY | 73169 | 2011-05-10T00:00:00.000Z | 2011-06-01T00:00:00.000Z | 2016-05-31T00:00:00.000Z | Admin Continued | Federal Facility (U.S. Government) | NPDES Individual Permit | Industrial Wastewater | Oklahoma  | Minor         | 35.42467          | 97.618683          | 35.392806        | 97.61575          | Effluent   |
| 841       | US FAA Mike Monroney Aero. Center | OK0043931 | 004A       | 6500 S. MCARTHUR BLVD   | OKLAHOMA CITY | 73169 | 2011-05-10T00:00:00.000Z | 2011-06-01T00:00:00.000Z | 2016-05-31T00:00:00.000Z | Admin Continued | Federal Facility (U.S. Government) | NPDES Individual Permit | Industrial Wastewater | Oklahoma  | Minor         | 35.42467          | 97.618683          | 35.393111        | 97.6155           | Effluent   |

| OBJECT ID | Permit Number        | NPDES ID  | Outfall ID | Location                | City          | Zip   | Permit Issued            | Permit Effective Date    | Permit Expiration        | Permit Status | Facility Type                      | Permit Type             | Program Type          | County   | Major / Minor | Facility Latitude | Facility Longitude | Outfall Latitude | Outfall Longitude | Monitoring |
|-----------|----------------------|-----------|------------|-------------------------|---------------|-------|--------------------------|--------------------------|--------------------------|---------------|------------------------------------|-------------------------|-----------------------|----------|---------------|-------------------|--------------------|------------------|-------------------|------------|
| 848       | USAF-Tinker AFB-OKC  | OK0000809 | 005A       | 7701 ARNOLD ST, STE 204 | OKLAHOMA CITY | 73145 | 2012-08-31T00:00:00.000Z | 2012-09-01T00:00:00.000Z | 2017-08-31T00:00:00.000Z | Effective     | Federal Facility (U.S. Government) | NPDES Individual Permit | Industrial Wastewater | Oklahoma | Major         | 35.424722         | -97.377778         | 35.42625         | -97.371944        | Effluent   |
| 849       | USAF-Tinker AFB-OKC  | OK0000809 | 006A       | 7701 ARNOLD ST, STE 204 | OKLAHOMA CITY | 73145 | 2012-08-31T00:00:00.000Z | 2012-09-01T00:00:00.000Z | 2017-08-31T00:00:00.000Z | Effective     | Federal Facility (U.S. Government) | NPDES Individual Permit | Industrial Wastewater | Oklahoma | Major         | 35.424722         | -97.377778         | 35.426861        | -97.371611        | Effluent   |
| 850       | USAF-Tinker AFB-OKC  | OK0000809 | 007A       | 7701 ARNOLD ST, STE 204 | OKLAHOMA CITY | 73145 | 2012-08-31T00:00:00.000Z | 2012-09-01T00:00:00.000Z | 2017-08-31T00:00:00.000Z | Effective     | Federal Facility (U.S. Government) | NPDES Individual Permit | Industrial Wastewater | Oklahoma | Major         | 35.424722         | -97.377778         | 35.425694        | -97.407611        | Effluent   |
| 851       | USAF-Tinker AFB-OKC  | OK0000809 | 008A       | 7701 ARNOLD ST, STE 204 | OKLAHOMA CITY | 73145 | 2012-08-31T00:00:00.000Z | 2012-09-01T00:00:00.000Z | 2017-08-31T00:00:00.000Z | Effective     | Federal Facility (U.S. Government) | NPDES Individual Permit | Industrial Wastewater | Oklahoma | Major         | 35.424722         | -97.377778         | 35.427417        | -97.380083        | Effluent   |
| 852       | USAF-Tinker AFB-OKC  | OK0000809 | 009A       | 7701 ARNOLD ST, STE 204 | OKLAHOMA CITY | 73145 | 2012-08-31T00:00:00.000Z | 2012-09-01T00:00:00.000Z | 2017-08-31T00:00:00.000Z | Effective     | Federal Facility (U.S. Government) | NPDES Individual Permit | Industrial Wastewater | Oklahoma | Major         | 35.424722         | -97.377778         | 35.413333        | -97.399056        | Effluent   |
| 853       | USAF-Tinker AFB-OKC  | OK0000809 | 010A       | 7701 ARNOLD ST, STE 204 | OKLAHOMA CITY | 73145 | 2012-08-31T00:00:00.000Z | 2012-09-01T00:00:00.000Z | 2017-08-31T00:00:00.000Z | Effective     | Federal Facility (U.S. Government) | NPDES Individual Permit | Industrial Wastewater | Oklahoma | Major         | 35.424722         | -97.377778         | 35.426833        | -97.371444        | Effluent   |
| 856       | USAF-Tinker AFB-OKC  | OK0000809 | 013A       | 7701 ARNOLD ST, STE 204 | OKLAHOMA CITY | 73145 | 2012-08-31T00:00:00.000Z | 2012-09-01T00:00:00.000Z | 2017-08-31T00:00:00.000Z | Effective     | Federal Facility (U.S. Government) | NPDES Individual Permit | Industrial Wastewater | Oklahoma | Major         | 35.424722         | -97.377778         | 35.405611        | -97.400611        | Effluent   |
| 857       | USAF-Tinker AFB-OKC  | OK0000809 | 014A       | 7701 ARNOLD ST, STE 204 | OKLAHOMA CITY | 73145 | 2012-08-31T00:00:00.000Z | 2012-09-01T00:00:00.000Z | 2017-08-31T00:00:00.000Z | Effective     | Federal Facility (U.S. Government) | NPDES Individual Permit | Industrial Wastewater | Oklahoma | Major         | 35.424722         | -97.377778         | 35.417333        | -97.368361        | Effluent   |
| 861       | Veolia Energy Oklaho | OK0002453 | 001A       | ONE NORTH E.K.          | OKLAHOMA CITY | 73102 | 2013-08-08T00:00:00.000Z | 2013-09-01T00:00:00.000Z | 2018-08-31T00:00:00.000Z | Effective     | Privately Owned Facility           | NPDES Individual        | Industrial Wastewater | Oklahoma | Minor         | 35.466472         | -97.513057         | 35.452944        | -97.523556        | Effluent   |

| OBJECT ID | Permit Number | NPDES ID | Outfall ID | Location      | City | Zip | Permit Issued | Permit Effective Date | Permit Expiration | Permit Status | Facility Type | Permit Type | Program Type | County | Major / Minor | Facility Latitude | Facility Longitude | Outfall Latitude | Outfall Longitude | Monitoring |
|-----------|---------------|----------|------------|---------------|------|-----|---------------|-----------------------|-------------------|---------------|---------------|-------------|--------------|--------|---------------|-------------------|--------------------|------------------|-------------------|------------|
|           | ma City, Inc. |          |            | GAYLORD BLVD. |      |     |               |                       |                   |               |               | Permit      |              |        |               |                   |                    |                  |                   |            |



**Appendix AF: Total Retention Facilities within the Oklahoma City Jurisdictional Boundaries**

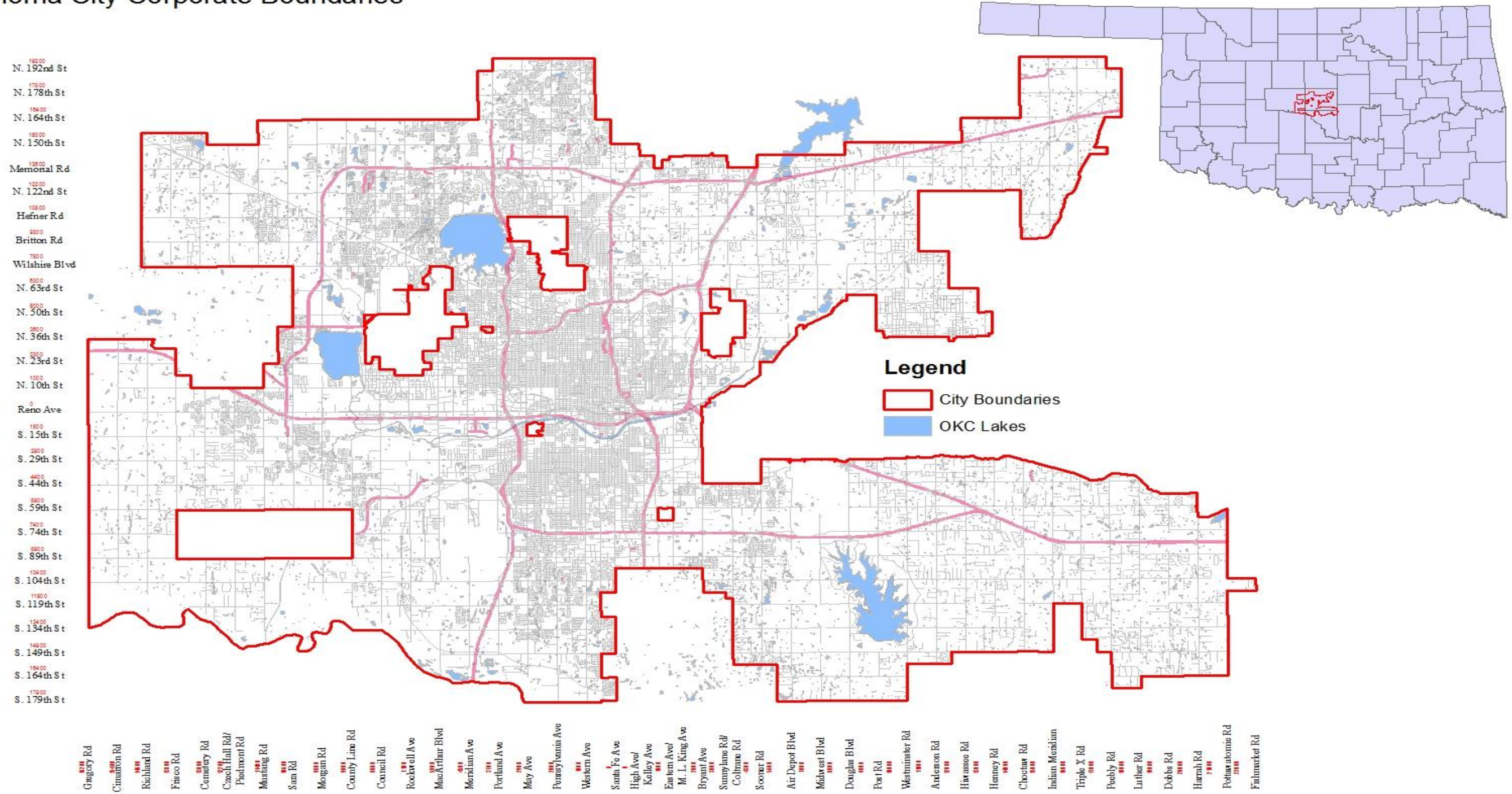
| FACILITY                      | Facility No. | Industrial ID | Authorization No. | County   | Facility Type            | Facility Address            | City          | Zip Code  | Phone         | Owner Name                     | Owner Address          | Owner City      | Type       | LATITUDE     | LONGITUDE      |
|-------------------------------|--------------|---------------|-------------------|----------|--------------------------|-----------------------------|---------------|-----------|---------------|--------------------------------|------------------------|-----------------|------------|--------------|----------------|
| ADVANCED AIR SYSTEMS          |              | 55004890      |                   | OKLAHOMA | TOTAL RETENTION          | 8009 S. I-35 SERVICE ROAD   | OKLAHOMA CITY | 73149     | (405) 632-583 | INTEGRATED RAILWAY PRODUCTS IN | 1806 WEST GARRETT      | HUGO            | INDUSTRIAL | 35.386955942 | - 97.496465094 |
| AMERICAN SANITATION           |              | 55004830      |                   | OKLAHOMA | TOTAL RETENTION          | 1801 SOUTH SANTA FE         | OKLAHOMA CITY | 731091418 | (405) 235-860 | AMERICAN SANITATION, INC       | 1801 SOUTH SANTA FE    | OKLAHOMA CITY   | INDUSTRIAL | 35.446971031 | - 97.512585944 |
| APPLEWOOD MHP WWT             | S20579       |               |                   | OKLAHOMA | LAGOON (TOTAL RETENTION) | 2844 NE 23 LOT 6 A          | OKC           | 73121     |               | APPLEWOOD MHP/PIERRE BARNABA   | 3421 ROYAL WOOD CIRCLE | DEL CITY        | MUNICIPAL  | 35.490272669 | - 97.455804364 |
| BAPTIST CHILDREN'S HOME - OKC | S20655       |               |                   | OKLAHOMA | LAGOON (TOTAL RETENTION) | 16301 S WESTERN             | OKLAHOMA CITY | 73170     |               | South Baptist Conference       | 16301 S Western        | OKLAHOMA CITY   | MUNICIPAL  | 35.306988853 | - 97.534764592 |
| BARNES SCHOOL                 | S20813       |               |                   | OKLAHOMA | LAGOON (TOTAL RETENTION) | 10551 SE 29TH               | Oklahoma City | 73105     |               | BARNES SCHOOL                  | 10551 SE 29TH          | OKLAHOMA CITY   | MUNICIPAL  | 35.408382467 | - 97.341067133 |
| BLUE BEACON TRUCK WASH NORTH  |              | 55004990      |                   | OKLAHOMA | TOTAL RETENTION          | 7720 N. BRYANT RD.          | OKLAHOMA CITY | 73111     | (405) 478-083 | BLUE BEACON TRUCK WASH SOUTH   | PO BOX 15185           | OKLAHOMA CITY   | INDUSTRIAL | 35.549702    | -97.459193     |
| BLUE BEACON TRUCK WASH SOUTH  |              | 55004980      |                   | OKLAHOMA | TOTAL RETENTION          | 20 SOUTH MARTIN LUTHER KING | OKLAHOMA CITY | 73117     | (405) 235-107 | BLUE BEACON TRUCK WASH SOUTH   | PO BOX 15185           | OKLAHOMA CITY   | INDUSTRIAL | 35.466746    | -97.476864     |
| CEDAR LAKE TP                 | S20652       |               |                   | OKLAHOMA | LAGOON (TOTAL RETENTION) | 500 SW 134                  | OKC           | 73170     |               | CEDAR LAKE TP                  | 500 SW 134             | OKLAHOMA CITY   | MUNICIPAL  | 35.332508244 | - 97.525323011 |
| DEWEY RWSD # 2 WWT            | S20644       |               |                   | DEWEY    | LAGOON (TOTAL RETENTION) | PO BOX 45                   | CAMARGO       | 73835     |               | DEWEY RWSD #2                  | PO BOX 45              | CAMARGO         | MUNICIPAL  | 35.474439325 | - 97.516599022 |
| EASTSIDE CAR WASH OF SPIRO    |              | 40000940      |                   | LEFLORE  | TOTAL RETENTION          | ROUTE 4 BOX 205             | SPIRO         | 74959     | (918) 962-589 | EASTSIDE CAR WASH              | ROUTE 4 BOX 205        | SPIRO           | INDUSTRIAL | 35.507803    | -97.488852     |
| GODDARD CONCRETE (BASE PLANT) |              | 55004960      |                   | OKLAHOMA | TOTAL RETENTION          | 3101 N.E. 10TH STREET       | OKLAHOMA CITY | 73117     | (405) 424-438 | GODDARD CONCRETE COMPANY, INC. | 3101 N.E. 10TH STREET  | OKLAHOMA CITY   | INDUSTRIAL | 35.478653    | -97.457236     |
| HILLSIDE #1 MHP WWT           | S20596       |               |                   | OKLAHOMA | LAGOON (TOTAL RETENTION) | 9628 SE 29TH                | OKLAHOMA CITY | 73130     |               | ATTENTION: MARY JO STEWART     | 7744 EVANSTON AVE      | TULSA, OKLAHOMA | MUNICIPAL  | 35.431543303 | - 97.358894933 |
| IMPERIAL OAKS MHP             | S20814       |               |                   | OKLAHOMA | LAGOON (TOTAL RETENTION) |                             |               |           |               | IMPERIAL OAKS MHP              | 10001 DONNA CIRCLE     | OKLAHOMA CITY   | MUNICIPAL  | 35.426930603 | - 97.351455467 |
| JANUARY ENVIRONMENTAL         |              | 55004930      |                   | OKLAHOMA | TOTAL RETENTION          | 2701 SOUTH PROSPECT         | OKLAHOMA CITY | 73129     | (405) 670-    | JANUARY ENVIRONMENTAL          | 2701 SOUTH PROSPECT    | OKLAHOMA CITY   | INDUSTRIAL | 35.438148181 | - 97.487973711 |

| FACILITY                       | Facility No. | Industrial ID | Authorization No. | County   | Facility Type            | Facility Address          | City          | Zip Code | Phone         | Owner Name                           | Owner Address       | Owner City    | Type       | LATITUDE     | LONGITUDE    |
|--------------------------------|--------------|---------------|-------------------|----------|--------------------------|---------------------------|---------------|----------|---------------|--------------------------------------|---------------------|---------------|------------|--------------|--------------|
| SVCS INC                       |              |               |                   |          |                          |                           |               |          | 203           | SVCS.INC                             |                     |               |            |              |              |
| JANUARY ENVIRONMENTAL SVCS INC |              | 55004930      |                   | OKLAHOMA | TOTAL RETENTION          | 2701 SOUTH PROSPECT       | OKLAHOMA CITY | 73129    | (405) 670-203 | JANUARY ENVIRONMENTAL SVCS.INC       | 2701 SOUTH PROSPECT | OKLAHOMA CITY | INDUSTRIAL | 35.438150578 | 97.488015511 |
| KOCO TV WWT                    | S20735       |               |                   | OKLAHOMA | LAGOON (TOTAL RETENTION) | 1300 E Britton            | OKC           | 73131    |               | KOCO TV                              | 1300 East BRITTON   | OKLAHOMA CITY | MUNICIPAL  | 35.562780894 | 97.488904258 |
| LAKEVIEW LDGNG WWT             | S20537       |               |                   | OKLAHOMA | LAGOON (TOTAL RETENTION) | PO BOX 848                | BETHANY       | 73008    |               | LAKEVIEW LODGING, ATTN: MARTHA FLINT | PO BOX 848          | BETHANY       | MUNICIPAL  | 35.514046125 | 97.682939833 |
| LUTHER WWT                     | S20707       |               |                   | OKLAHOMA | LAND APPLICATION         |                           |               | 73054    |               | Luther PWA                           | PO Box 56           | Luther        | MUNICIPAL  | 35.652234978 | 97.209307322 |
| METHENY CONCRETE EDMOND PLANT  |              | 55004300      |                   | OKLAHOMA | TOTAL RETENTION          |                           |               |          | (405) 947-556 | METHENY CONCRETE PRODUCTS INC        | PO BOX 270248       | OKLAHOMA CITY | INDUSTRIAL | 35.375433347 | 97.484994414 |
| METHENY CONCRETE EDMOND PLANT  |              | 55004300      |                   | OKLAHOMA | TOTAL RETENTION          |                           |               |          | (405) 947-556 | METHENY CONCRETE PRODUCTS INC        | PO BOX 270248       | OKLAHOMA CITY | INDUSTRIAL | 35.375160756 | 97.484836706 |
| MP READY MIX OKC WILSHIRE PLNT |              | 55004700      | OKG11T043         | OKLAHOMA | TOTAL RETENTION          | 7716 W WILSHIRE BLVD      | OKLAHOMA CITY | 73132    | (405) 721-799 | M P READY MIX, INC.                  | PO BOX 850450       | YUKON         | INDUSTRIAL | 35.54954565  | 97.649149392 |
| MP READY MIX OKC WILSHIRE PLNT |              | 55004700      | OKG11T043         | OKLAHOMA | TOTAL RETENTION          | 7716 W WILSHIRE BLVD      | OKLAHOMA CITY | 73132    | (405) 721-799 | M P READY MIX, INC.                  | PO BOX 850450       | YUKON         | INDUSTRIAL | 35.54948935  | 97.649349694 |
| PRO-AM                         | S20816       |               |                   | OKLAHOMA | LAGOON (TOTAL RETENTION) | ROUTE 2 BOX 544           | CHOCTAW       | 73020    |               | PRO AM                               | ROUTE 2 BOX 544     | CHOCTAW       | MUNICIPAL  | 35.390708511 | 97.266745964 |
| RAINBO SERVICES CO.            |              | 55004920      |                   | OKLAHOMA | TOTAL RETENTION          | 2640 S. HIGH              | OKLAHOMA CITY | 73129    | (405) 677-535 | HAULAWAY, INC.                       | 2640 SOUTH HIGH     | OKLAHOMA CITY | INDUSTRIAL | 35.438316603 | 97.494069183 |
| SCHWARTZ SCHOOL                | S20815       |               |                   | OKLAHOMA | LAGOON (TOTAL RETENTION) | 12001 SE 104              | OKC           | 73156    |               | SCHWARTZ SCHOOL                      | 12001 Southeast 104 | OKLAHOMA CITY | MUNICIPAL  | 35.363576147 | 97.315967856 |
| SCHWARZ READY MIX - RIVER BOTT |              | 09000500      | OKG11T017         | CANADIAN | TOTAL RETENTION          | 9001 WEST RENO            | OKLAHOMA CITY | 73128    | (405) 354-206 | SCHWARZ READY MIX CO.                | PO BOX 850450       | YUKON         | INDUSTRIAL | 35.464318    | -97.671168   |
| SOUTHWEST ELECTRIC COMPANY     |              | 55003020      |                   | OKLAHOMA | TOTAL RETENTION          | 6501 SE 74TH ST           | OKLAHOMA CITY | 73135    | (405) 737-569 | SOUTHWEST ELECTRIC COMPANY           | PO BOX 82639        | OKLAHOMA CITY | INDUSTRIAL | 35.393880036 | 97.411622772 |
| TJ CAMPBELL CONSTRUCTION CO.-S |              | 55004570      |                   | OKLAHOMA | TOTAL RETENTION          | 6900 SOUTH SUNNYLANE ROAD | OKLAHOMA CITY | 73155    | (405) 672-676 | T.J. CAMPBELL CONSTRUCTION CO.       | PO BOX 15129        | OKLAHOMA CITY | INDUSTRIAL | 35.399074792 | 97.437839164 |
| TJ CAMPBELL CONSTRUCTION       |              | 55004570      |                   | OKLAHOMA | TOTAL RETENTION          | 6900 SOUTH SUNNYLANE      | OKLAHOMA CITY | 73155    | (405) 672-    | T.J. CAMPBELL CONSTRUCTION CO.       | PO BOX 15129        | OKLAHOMA CITY | INDUSTRIAL | 35.399173789 | 97.437711461 |

| FACILITY | Facility No. | Industrial ID | Authorization No. | County | Facility Type | Facility Address | City | Zip Code | Phone | Owner Name | Owner Address | Owner City | Type | LATITUDE | LONGITUDE |
|----------|--------------|---------------|-------------------|--------|---------------|------------------|------|----------|-------|------------|---------------|------------|------|----------|-----------|
| CO.-S    |              |               |                   |        |               | ROAD             |      |          | 676   |            |               |            |      |          |           |

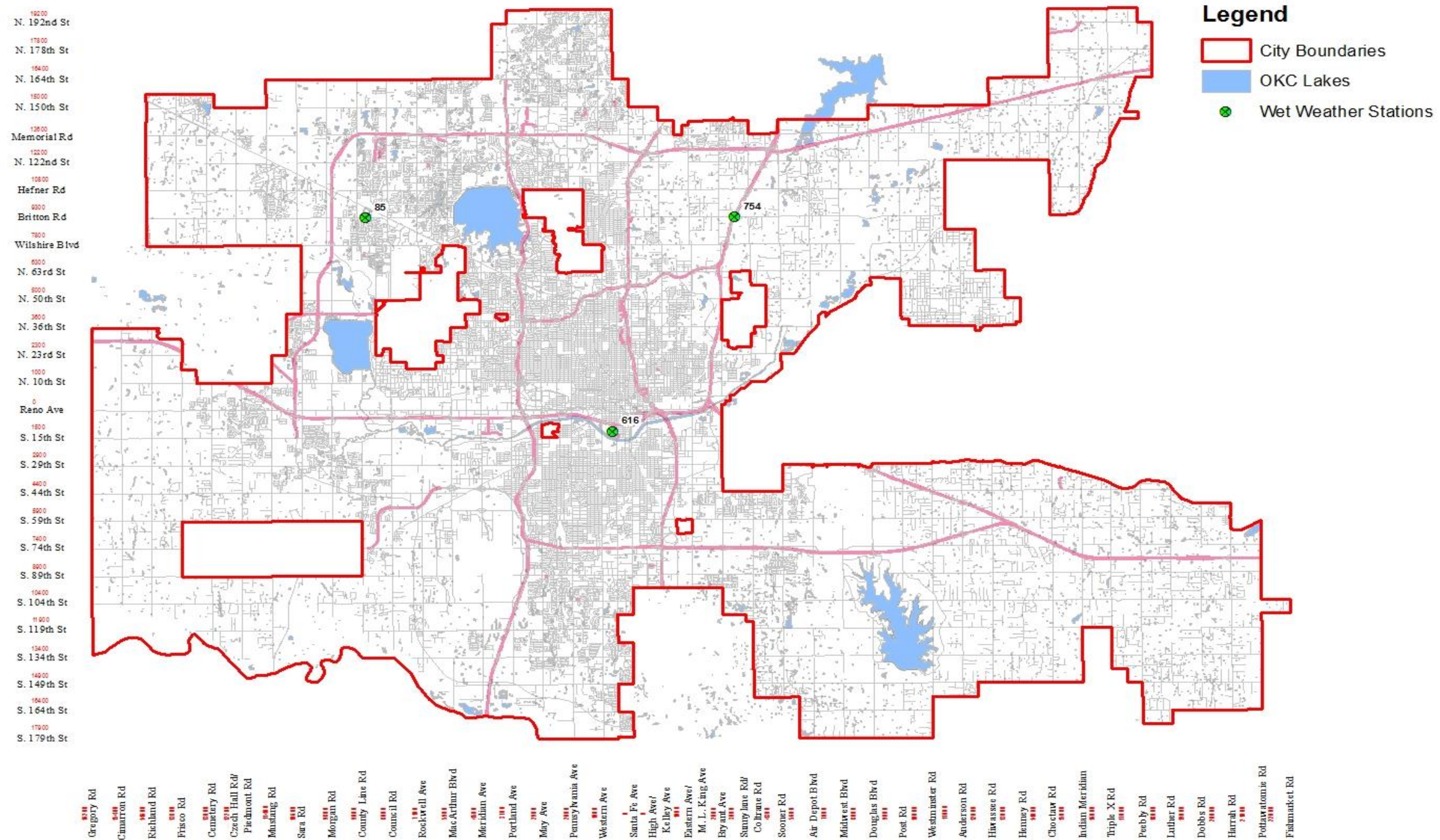
### Appendix AG: Oklahoma City Corporate Boundary Map

#### Oklahoma City Corporate Boundaries

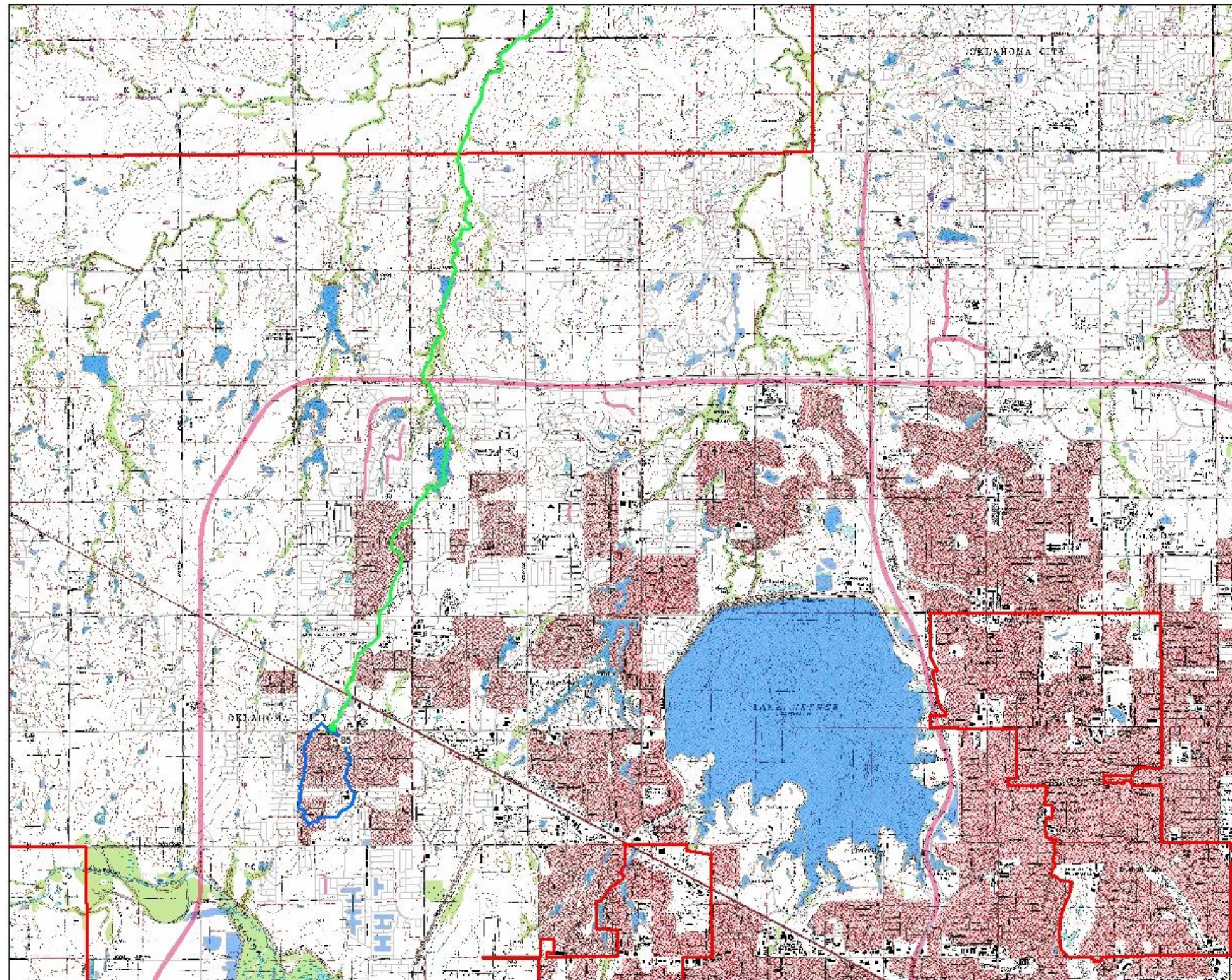


### Appendix AH: Wet Weather Characterization Monitoring Locations and Discharge Routes for Outfall 85, 616, and 754 (2013-2018)





#### Wet Weather Characterization Program Stations



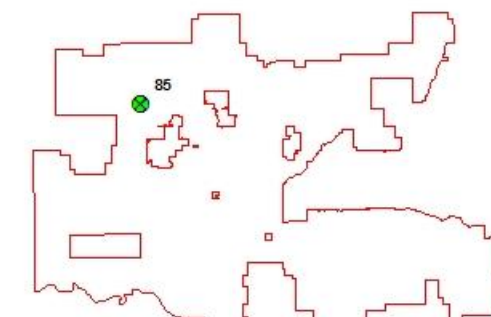
### Wet Weather Characterization Program Station 85 Discharge Route



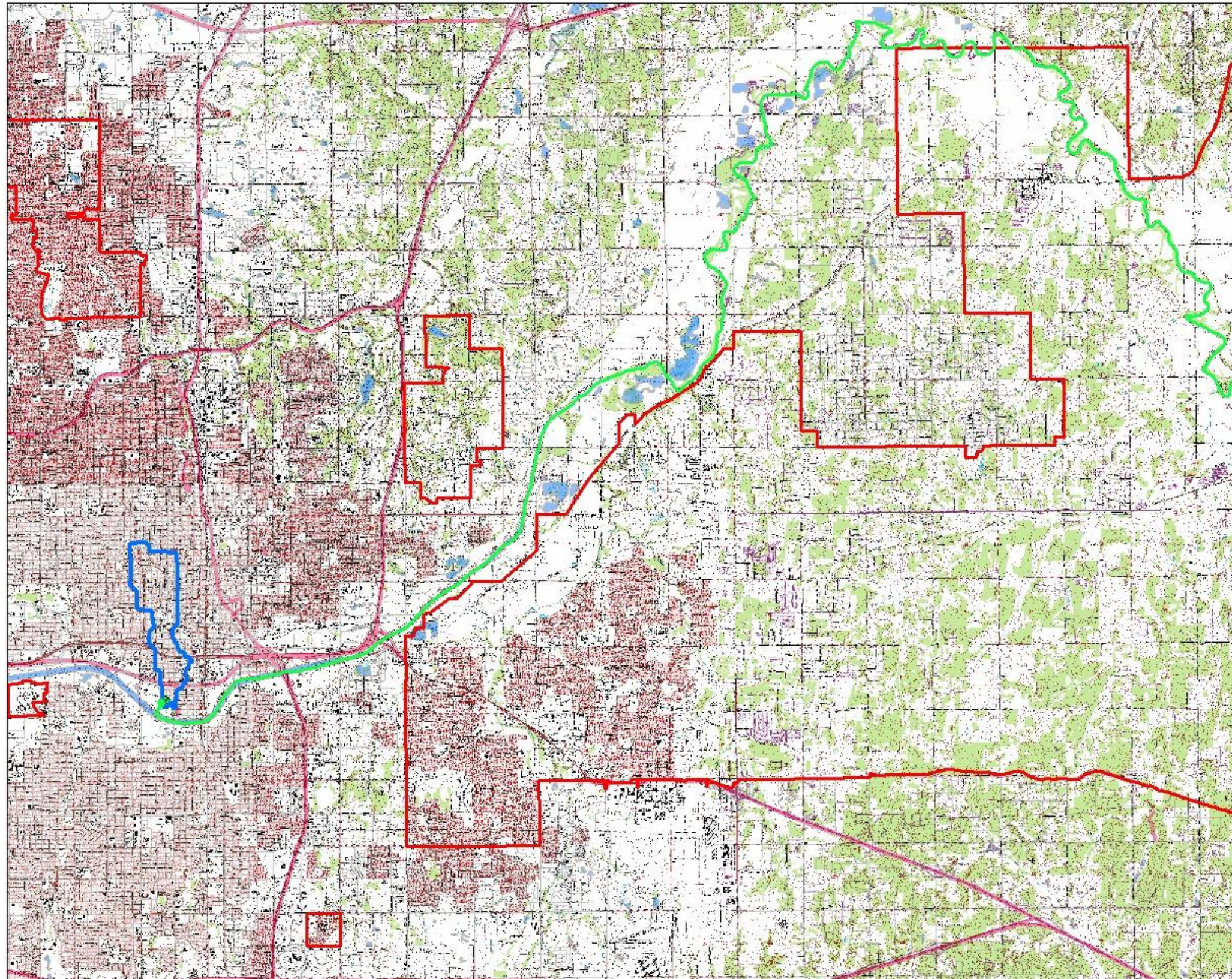
#### Legend

-  85 Drainage Area
-  City Boundaries
-  OKC Lakes
-  Wet Weather Stations





Note: The Wet Weather Characterization Program Station delineation of discharge route is indicated by a green line superimposed over a USGS Quadangle 1:24,000 scale.



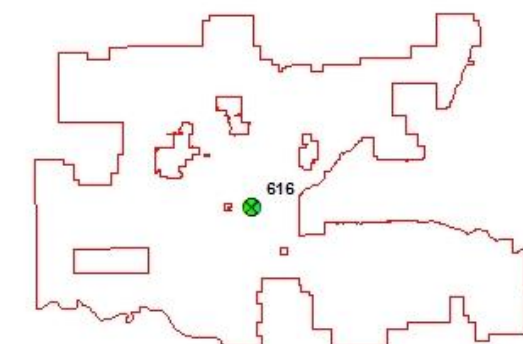
### Wet Weather Characterization Program Station 616 Discharge Route



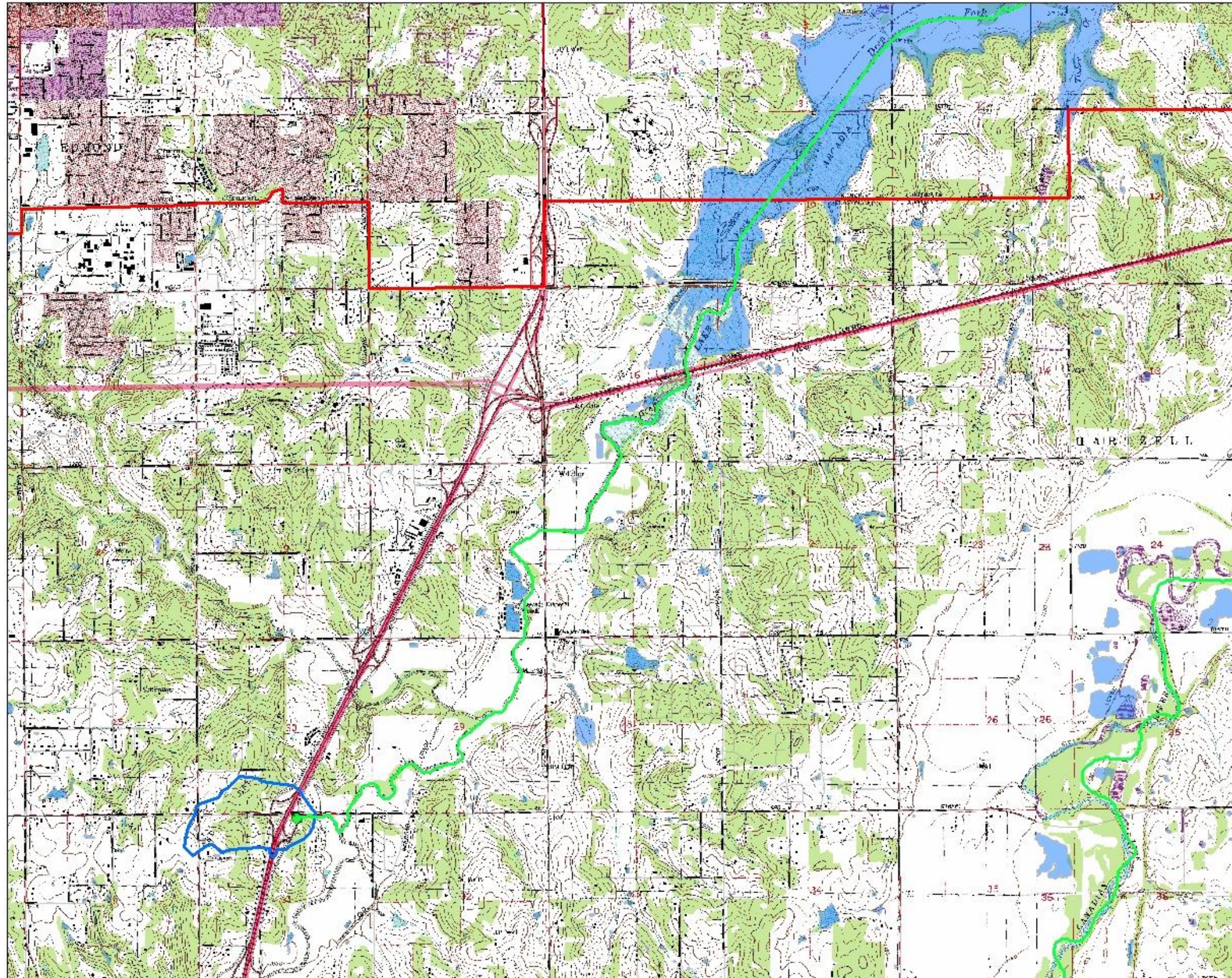
#### Legend

-  616 Drainage Area
-  City Boundaries
-  OKC Lakes
-  Wet Weather Stations

Note: The Wet Weather Characterization Program Station delineation of discharge route is indicated by a green line superimposed over a USGS Quadrangle 1:24,000 scale.



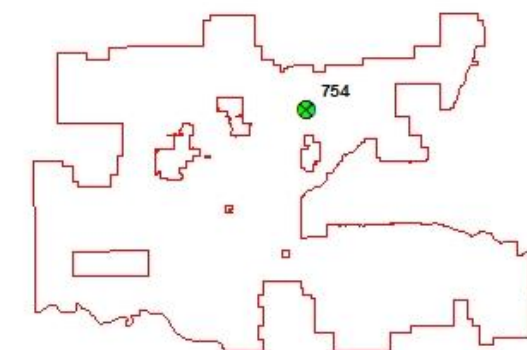
### Wet Weather Characterization Program Station 754 Discharge Route



#### Legend

-  754 Drainage Area
-  City Boundaries
-  OKC Lakes
-  Wet Weather Stations

Note: The Wet Weather Characterization Program Station delineation of discharge route is indicated by a green line superimposed over a USGS Quadrangle 1:24,000 scale.





**Appendix AI: Monthly Precipitation Totals (Averages and Annual Sums) from 2013-2017**

| Year           | Jan.        | Feb.        | Mar.        | Apr.        | May.        | Jun.        | Jul.        | Aug.        | Sep.        | Oct.        | Nov.        | Dec.        | Annual       |
|----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| 2013           | 1.14        | 2.72        | 1.09        | 7.57        | 14.52       | 4.81        | 9.84        | 3.50        | 1.95        | 3.42        | 0.96        | 1.26        | 52.78        |
| 2014           | 0.07        | 0.36        | 1.26        | 1.00        | 4.44        | 8.60        | 4.18        | 0.82        | 2.13        | 2.44        | 2.38        | 0.70        | 28.38        |
| 2015           | 1.80        | 0.41        | 2.62        | 4.35        | 19.48       | 5.77        | 7.31        | 1.17        | 1.06        | 3.44        | 4.57        | 3.07        | 55.05        |
| 2016           | 0.11        | 1.35        | 1.02        | 7.31        | 2.62        | 3.30        | 3.65        | 0.55        | 4.25        | 0.82        | 0.52        | 0.79        | 26.29        |
| 2017           | 1.57        | 3.12        | 2.60        | 6.27        | 1.10        | 0.11        | 1.31        | 7.13        | 3.71        | 6.05        | 0.07        | 0.68        | 33.72        |
| <b>Average</b> | <b>0.94</b> | <b>1.59</b> | <b>1.72</b> | <b>5.30</b> | <b>8.43</b> | <b>4.52</b> | <b>5.26</b> | <b>2.63</b> | <b>2.62</b> | <b>3.23</b> | <b>1.70</b> | <b>1.30</b> | <b>39.24</b> |

## **Appendix AJ: Illicit Discharge Detection and Elimination (IDDE) Monitoring Standard Operating Procedure**

**City of Oklahoma City, Public Works Department, Storm Water Quality  
Division**

### **STANDARD OPERATING PROCEDURE**

**Illicit Discharge Detection and Elimination (IDDE) Monitoring  
SOP #16**

## 1.0 PROCEDURAL SECTION

### 1.1 Scope and Application

The City of Oklahoma City, Public Works Department, Storm Water Quality Division currently monitors the municipal separate storm sewer system (MS4) at specific locations to detect illicit discharges into the storm drainage network. City ordinances mandate that only storm water will be discharged into the MS4 and/or a receiving waterbody. Illicit sources of non-storm water discharges shall be identified to the best extent possible and mitigated, redirected, or otherwise prohibited upon discovery. Exemptions or allowable discharges are identified in OKC's MS4 Permit Part II(A)(6)(a)(1)(a-r). –

### 1.2 Summary of Method

All sampling should be conducted efficiently and in accordance with OKC's Health and Safety Plan and any additional safety management practices not explicitly stated therein. Sampling containers should be composed of HDPE (high density polyethylene) and must be pre-cleaned with Alconox and deionized water prior to use. Sampling may be conducted from a bridge structure if the sampling site is not safely accessible. Sampling of manholes must be conducted from the road surface. Field investigators are not to enter a manhole or any other confined space for any purpose unless the investigator has met all training requirements for permitted confined entry and rescue and is supported by additional on-site personnel with appropriate confined entry and rescue training. The temporal period (index period) in which the Dry Weather/Illicit Discharge Monitoring Program must be completed is May 1 through October 31 of each permit year, although some exceptions may occur.

The guidance contained in this SOP should be followed at all times while collecting data for the IDDE Monitoring Program.

#### 1.2.1 Definitions

**Discharger** means any person who causes, allows, permits, or is otherwise responsible for a discharge, including, without limitation, any operator of a construction site or industrial facility. Owner of a commercial, residential or agricultural property and owner or transporter of a source discharge.<sup>1</sup>

**Illicit Discharge** means any discharge to the MS4 that is not composed entirely of storm water, except discharges pursuant to any NPDES permit, or discharges resulting from fire fighting activities.<sup>1</sup>

**LD50** means Lethal Dose 50, the amount of a chemical, given all at once, which causes the death of 50% (one half) of a group of test animals.<sup>2</sup>

**LDlo** means Lethal Dose Low, the lowest dose (lower than LD50) of a substance introduced by any route, other than inhalation, over any given period of time, in one or more divided portions and reported to have caused death in humans and animals.<sup>3</sup>

**Stormwater** means any rainwater run-off, surface run-off and drainage related to rain or storm events or snow melt.<sup>1</sup>

**TCLo** means Toxic Concentration Low, the lowest concentration of substance in air to which humans or animals have been exposed for any given period of time, that has produced any toxic effect in humans, or has produced a tumorigenic or reproductive effect in animals or humans.<sup>3</sup>

**Toxicity** is a relative property of a chemical agent that refers to a harmful effect on some biological mechanism and the conditions under which this effect occurs.<sup>2</sup>

### 1.3 Health and Safety Warnings

The following chemicals are components of the Storm Water LaMotte Kit employed by field technicians for the collection of dry weather samples:

#### Aminoantipyrene Reagent

- Toxicity: ORAL RAT LD50: 1700 mg/kg (4-Aminoantipyrene)
- Signs and symptoms of exposure: Harmful if swallowed, may irritate eyes, nose, skin, and respiratory system.
- Medical condition aggravated by exposure: Not applicable

#### Ammonium Hydroxide Solution

- Toxicity: Unknown
- Signs and symptoms of exposure: Vapors and liquid may be irritating
- Medical condition aggravated by exposure: Respiratory conditions

#### Copper Reagent

- Toxicity: Unknown
- Signs and symptoms of exposure: Vapor irritating eyes and nose
- Medical condition aggravated by exposure: Respiratory conditions

#### Detergent Reagent Number 1

- Toxicity: oral man LDlo: 20mg/kg
- Signs and symptoms of exposure: Dust may irritate eyes and mucous membranes
- Medical condition aggravated by exposure: Not applicable

#### Detergent Reagent Number 2

- Toxicity: inhalation human TCLo 200 ppm. Warning!Contains toluene, a chemical known to the state of Calif. to cause birth defects or other reproductive harm.
- Signs and symptoms of exposure: Eye and respiratory irritant. Inhalation of the vapors may cause death by paralysis of the respiratory system. May also be fatal if swallowed.
- Medical condition aggravated by exposure: Respiratory condition

#### Detergent Reagent Number 3

- Toxicity: inhalation human TCLo 200 ppm. Warning!Contains toluene, a chemical known to the state of Calif. to cause birth defects or other reproductive harm.
- Signs and symptoms of exposure: Eye and respiratory irritant. Inhalation of the vapors may cause death by paralysis of the respiratory system. May also be fatal if swallowed.
- Medical condition aggravated by exposure: Respiratory condition
- Not applicable

#### DPD 4

- Toxicity: ORAL RAT LD50: 195 mg/kg for N,N diethyl-p-phenylenediamine sulfate
- Signs and symptoms of exposure: May be harmful by inhalation, ingestion, skin absorption. May irritate skin.
- Medical condition aggravated by exposure: Not applicable

**pH 7 Buffer**

- |  |   |
|--|---|
| - Toxicity:                                | ORAL RAT LD50: >90 mL/kg  |
| - Signs and symptoms of exposure:<br>cause | May irritate eyes and respiratory tract. Ingestion may<br>gastric disturbances and electrolyte imbalance. |
| - Medical condition aggravated by exposure | Not applicable  |

**pH 10 Buffer**

- |  |   |
|--|---|
| - Toxicity:                                | ORAL RAT LD50: >90 mL/kg  |
| - Signs and symptoms of exposure:<br>cause | May irritate eyes and respiratory tract. Ingestion may<br>gastric disturbances and electrolyte imbalance. |
| - Medical condition aggravated by exposure | Not applicable  |

**Pottassium Ferricyanide Solution**

- |  |                                      |
|--|--------------------------------------|
| - Toxicity:                                | ORAL RAT LDLo 1600 mg/kg (for solid) |
| - Signs and symptoms of exposure:          | Not applicable                       |
| - Medical condition aggravated by exposure | Not applicable                       |

**1.4 Cautions**

The illicit discharge monitoring locations may be open channels, manholes or outfall structures. Always set up traffic cones at sites which have traffic or that are located on or very close to the street and/or intersection. Wear your Class 3 safety vest at all times. Never enter a storm drain to collect a sample. Collect samples from manholes at surface level utilizing an extension pole or string attached to a clean collection container. Open channels may be entered to collect a sample.

Due to the potential of contacting a contaminated water, investigators must wear hand protection (latex or nitrile gloves) while sampling. These gloves will not only protect the skin from chemicals involved during the water quality analysis but also protect the investigator from the potential hazards in the sampled water. Steel-toed boots should be worn during all field investigations. In the event that a technician is required to enter a stream channel to collect a sample, hip or chest waders should be worn to prevent primary body contact with the water. Eye protection should be worn when handling potentially toxic or carcinogenic compounds (refer to Section Health and Safety Plan for additional information).

**1.5 Interference**

- Samples should be collected that best represent the present situation. For example, backwater pools or eddies should not be sampled if the dominant habitat type is a flowing stream.
- Chlorinated rinse water may affect chlorine test results. Do not use water from the tap to rinse out sampling containers or other sampling apparatus. SWQ will maintain sufficient quantities of deionized water for the purposes of washing sampling containers and other sampling apparatus.
- Detergent results may be affected by the use of detergents to clean sampling containers and other sampling apparatus. All sampling equipment must be pre-cleaned by using tap water and Alconox (phosphate free detergent). The equipment will then be rinsed a minimum of three times with deionized water and dried prior to going into the field.
- The pocket pH meter (supplied with the Storm Drain Kit) should be calibrated (one-point calibration or two-point calibration depending on meter type) prior to going to the field each day. To avoid erroneous pH readings caused by the calibration becoming unstable, field investigators must recalibrate the pH meter every four hours or if a questionable reading is made and at the end of the sampling day.
- Phenols are a class of chemical compounds consisting of a hydroxyl group bonded with an aromatic hydrocarbon. Phenols may occur in domestic and industrial wastewaters, natural waters, and public water supplies. Interferences associated with measuring phenols include phenol decomposing bacteria, oxidizing agents (chlorine compounds), reducing agents (sulfur compounds), and high pH values.
- Solutions and reagents must be checked for expiration. Expired reagents can affect results and must be removed for use on discovery.

**1.6 Personnel Qualification**

Field personnel must be trained and evaluated on the use of equipment prior to collecting samples or data. Use of equipment is subject to the approval by the QA Officer/Environmental Units Specialist. Training will be done through dry run exercises in the laboratory and field to familiarize field personnel with operation/collection, calibration and maintenance. Investigators must be familiar with the SOP document and manuals, when applicable. Additional training and experience will be required in order for personnel to be approved as a lead investigator for follow-up testing and source tracking.

**1.7 Apparatus & Materials**

- Hand held thermometer
- Latex or Nitrile Gloves
- Safety glasses (must meet ANSI Z87 standard)
- Steel-toed boots
- Rubber boots
- Applicable meters (with pH calibration buffers) and water quality monitoring field kits (total chlorine, phenols, detergents, copper, turbidity, and alkalinity)
- Applicable field sheets (Episode Sheet and Illegal Discharge Field Screening Program data sheet)
- Clipboard
- Replacement reagents, standards, and/or buffers
- Traffic cones (Minimum 4)
- High-visibility safety vest (Class 3)
- Flotation vest (PFD)
- Waste bottle and Cap
- Pick axe
- Manhole cover puller
- Sledge hammer
- Rope
- HDPE Beakers (Pre-cleaned)
- Extension pole and hardware (to sample with)
- Nylon string and HDPE Beaker (drop cup)
- Atlas Map
- Pencils
- Site List
- Flashlight
- Water Bottles (with deionized water)
- Tape measure
- Stadia rod
- Stopwatch
- Trash Bags

**1.8 Instrument/Method Calibration**

Electronic pH meters must be calibrated (1-point or 2-point, depending on meter type) at the beginning of the day, every 2-4 hours, and at the end of the day. Calibration data will be recorded on the episode sheet. A National Institute of Standards and Technology (NIST) certified thermometer with an armored jacket will be used to take temperature readings.

Field investigators will perform Quality Assurance/Quality Control (QAQC) for 10% of all samples collected. A sample, split, replicate and blank will be tested for total chlorine, phenols, total copper and detergents. In addition, temperature and pH of the sample, split and replicate will be measured. A flow replicate (temporal or spatial) will also be performed. Sample information will be recorded on the illegal discharge field screening program data sheet and the duplicate/split, replicate, blank and flow information will be recorded on the episode sheet. Field audits will be conducted by the QA officer as needed.

### **1.9 Equipment Operation & Preparation**

All field investigators will follow all SOPs and manufacturer recommended maintenance procedures for equipment operation and preparation for use in the field or laboratory.

### **1.10 Sample Collection**

Samples will be collected from areas within the stream, open channel, and or pipe where the water is present. If the site is located at a pipe outlet structure, collect the sample at the point of discharge with a clean HDPE beaker. If the site is located at a manhole collect the sample utilizing an extension pole and a clean HDPE beaker or drop cup. This may entail many dips to acquire the necessary volume required for complete sample analysis, approximately 1000 mL. If the site is located at a natural stream channel (i.e., not a pipe or open channel, although a natural stream may be channelized or modified in some manner), collect the sample from an area where the water is well mixed such as at a gradient change (riffle).

The general sampling plan is as follows. A monitoring site list will be submitted to each investigative team, usually consisting of no more than two (2) field investigators. The monitoring list will be distributed by geographic area (i.e., Canadian, North Canadian, Deep Fork or the Deer Creek basins) or by special project. Monitoring activities for the day should be performed in a logical and time-efficient manner by visiting sites located in relative close proximity to each other. At each site an Illegal Discharge Field Screening Program Data Sheet will be completed to different degrees, depending on whether flow was detected or not detected. If there is water in the channel, storm drain and/or outfall structure, fill out the header information and the categories marked with a single asterisk as well as the other categories including the physical and chemical testing procedures. If the site is dry, complete the header information and the categories marked with a single asterisk. When completed, continue to the next monitoring location. Sites that were found to be wet will be revisited. This revisit will be within twenty-four (24) hours of the initial field screening but no earlier than four (4) hours of the initial field screening. Again the entire sheet must be completed before continuing to the next monitoring location. If any parameter has a positive "hit" on either screening, the information will be turned into the project coordinator upon arrival back into the office where it will be dispersed to an investigation team for follow-up testing. Follow-up testing should be performed within five (5) working days of the second site visit. If there is an obvious, excessive positive result, the investigator should contact the project coordinator as soon as possible in order to initiate a more immediate follow-up response.

#### **1.10.1 General Collecting Procedures**

Collecting samples at the various types of channels and pipes will be generally the responsibility of the individual field investigator. This will entail best professional judgement. Field investigators will be field audited to ensure that sample collection is being conducted in representative areas.

- Prior to going to the field acquire the last rainfall event information. This can be accomplished by accessing various weather station web sites for central Oklahoma (such as Oklahoma Mesonet Station information). Record whether the last rainfall event was >72 hours or <72 hours. Also record the approximate quantity of the last rainfall. If a rainfall has occurred within the last 72 hours, contact the Environmental Unit Supervisor prior to going to the field. Sample collection should only take place during dry weather and when no surface water runoff is occurring.
- Use traffic cones, hazard lights and safety strobes to warn vehicle and pedestrian traffic of work in progress.
- All sites with water will be sampled.
- Collection should take place at representative locations. If a sample is collected at a riffle, collect below the riffle where the water column water is well mixed.
- Do not disturb sediment or other particles upstream of the sampling point.
- Always use clean HDPE beakers at each new sampling location (these can be reused if triple-rinsed with deionized water).
- Collect the sample with the container opening to the upstream. Avoid scooping sediments and other debris from the bed of the stream, open channel or other storm water conveyance system.
- After sufficient sample volume is collected, perform the water quality analysis.
- Temperature measurements should be made with a handheld thermometer or the pH meter temperature sensor.
- pH will be measured utilizing a calibrated electronic pH meter.
- Phenols, total chlorine, copper and detergents will all be measured using Storm Water LaMotte Kits.

### 1.10.2 General Data Recording Procedures

Record all results on the Illegal Discharge Field Data Program Data Sheet.

- **General Information** must be supplied such as Outfall ID, date, time, inspection team (circle crew leader)
- Circle applicable **rain information**.
- **Field Site Description:** Describe the exact address and circle the channel type. If other is circled please describe in detail.
- **Dominant Watershed Land Use:** Circle the appropriate dominant land use surrounding the monitoring location. If this information given on the site list is incorrect or non-existent, the field investigator must determine the dominant land use and make a notation in the comments section.
- **Flow Estimation:** Circle whether flow was observed within the stream, structure or outfall. Describe the channel width or pipe diameter in feet. 1) Describe the width of the water surface in inches. 2) Describe the approximate depth of the water in feet. 3) Approximate the velocity (feet per second). 4) Multiply the water average water width X average water depth X the approximate velocity to calculate cubic feet per second. Refer to SOP #8, Flow Measurement, Semi-Submersible Object Method for details.
- **Visual Observations:** Circle the appropriate observations for each of the following categories: odor, color, clarity, floatables, deposits/stains, vegetative condition, structural and biological. Refer to SOP #50, Instructions for Recording Field Information for details.
- **Field Analysis:** Upon collection of each field parameter, record the results in the applicable field. The following analyses are the minimum requirements for dry weather/illicit discharge monitoring: 1) water temperature, 2) pH, 3) phenol, 4) chlorine, 5) copper, 6) detergents and 7) discharge.
- If a laboratory sample is collected for further analysis check the appropriate category. Always notify the Environmental Units Supervisor prior to laboratory sample collection.
- Fill out the comment field if there are other observations made that do not fit other categories within the field sheet or if any extra water quality analysis was performed such as dissolved oxygen, conductivity, alkalinity, etc.

#### 1.10.2.1 Temperature Reading Methods

##### Hand Held Thermometer:

After acquiring the water sample, transfer enough water to a clean HDPE beaker to submerge both the probe of the pH meter and the end of the thermometer. Position the thermometer in the beaker so the scale can be read without removing it from the water. Wait for the thermometer to equilibrate with the water temperature and record the temperature in °C to the nearest 0.5 degree.

#### 1.10.2.2 pH Reading Method

##### pH Meter Method

1. After acquiring the water sample, transfer enough water to a clean HDPE beaker to submerge both the probe of the pH meter and the end of the thermometer.
2. Remove the protective cap from the pH meter. Place the pH meter in the HDPE beaker with enough water to submerge the probe and shake gently to remove any trapped air bubbles. Wait for the reading to stabilize (~60 seconds).
3. Record value after the reading has stabilized (no change >0.1 pH units in 10 seconds).
4. Rinse probe with deionized water and replace protective cap.

#### 1.10.2.3 Total Residual Chlorine Method

1. Fill test tube (0101) to 10 ml mark with water sample.
2. Add one DPD #4 Tablet (6899). Cap and invert the test tube once.
3. Wait until tablet is dissolved. Periodic inversion of the test tube will help the tablet dissolve, but do not agitate the test tube severely as this can cause the chlorine to off-gas.
4. Insert the test tube into the Octa-Slide Comparator. Match color with a standard in the Octa-Slide (3401).
5. Record as mg/L total chlorine residual.
6. A non-detect is recorded as "<0.2 mg/L".



**1.10.2.4 Phenols**

1. Fill sample reaction tube (0837) to the line with sample water.
2. Use the 0.1 gram spoon (0699) to measure Aminoantipyrine Reagent, pour and mix.
3. Use an unmarked pipet (0344) to add 4 drops of Ammonium Hydroxide (7826). Cap and mix.
4. Use the 1.0 ml pipet (0330) to add 2 ml (2 measures) of potassium ferricyanide solution (7827). Cap and mix. The solution will acquire a reddish tint if phenols are present.
5. Fill the test tube (0101) to 10 ml line with solution. Insert the test tube into the Octa-Slide Comparator. Match sample color to a color standard. Record as mg/L phenols.
6. A non-detect is recorded as “<0.5 mg/L”.

**1.10.2.5 Total Copper**

1. Fill test tube (0101) to 10 ml mark with sample water.
2. Add 5 drops of Copper Reagent (6446) to test tube. Cap and invert to mix. The solution will acquire a yellowish tint if copper is present.
3. Insert the first test tube into the Octa-Slide Comparator. Match color with a standard in the Copper Octa-Slide (3435).
4. Record the results as mg/L copper.
5. A non-detect is recorded as “<0.01 mg/L”.

**1.10.2.6 Detergents**

1. Fill test jar (0800) to 65 ml line with sample water.
2. Use the 1.0 gram spoon (0697) to add 2 measures of Detergent Reagent #1 (7444). Shake until dissolved.
3. Fill to 75 ml line with Detergent Reagent #2 (6037).
4. Use pipet (0335) to add 0.5 ml Detergent Reagent #3 (7445). Shake vigorously for 15 seconds. Wait until layers separate (20-30 seconds). If the top layer is light blue, less than 0.1 ppm detergent is present and no further testing is necessary. If the top layer is colorless, continue adding Detergent Reagent #3 (7445), 0.5 ml at a time, shaking vigorously for 15 seconds after each addition, allowing the layers to separate until the top layer is light blue. Count the number of 0.5 ml additions of Detergent Reagent #3 that was required to change the top layer in the jar from a colorless to light blue hue.
5. Detergent concentrations can be converted from 0.5 mL drops to mg/L detergent using the following table:

| Drops | mg/L |
|-------|------|
| 1     | 0.01 |
| 2     | 0.05 |
| 3     | 0.15 |
| 4     | 0.25 |
| 5     | 0.35 |
| 6     | 0.45 |
| 7     | 0.55 |
| 8     | 0.65 |
| 9     | 0.75 |
| 10    | 0.85 |
| 11    | 0.95 |
| 12    | 1.05 |

6. A non-detect is recorded as “<0.01 mg/L”.

**1.10.3 Follow-up Levels**

| Category                | Detect Limits | Immediate Response                        | Follow Up Response                       |
|-------------------------|---------------|---|--|
| <b>pH</b>               |               | Below <b>6.0</b> or Above <b>10.5</b>     | Below <b>6.5</b> or Above <b>9.0</b>     |
| <b>Detergents</b>       | <0.01         | Greater than <b>0.85</b> mg/L (10 Drops)  | Greater than <b>0.25</b> mg/L (4 Drops)  |
| <b>Chlorine</b>         | <0.2          | Greater than <b>1.0</b> mg/L              | Greater than <b>0.2</b> mg/L             |
| <b>Copper</b>           | <0.01         | Any Detect                                |  |
| <b>Phenols</b>          | <0.5          | Any Detect                                |  |
| <b>Color</b>            |               | Extremely unusual water <b>color</b>      | Unusual water <b>color</b>               |
| <b>Turbidity</b>        |               | Extremely high <b>turbidity (opaque)</b>  | High <b>turbidity</b>                    |
| <b>Odor</b>             |               | Extremely unusual water <b>odor</b>       | Unusual water <b>odor</b>                |
| <b>Other Pollutants</b> |               | Any situation needing immediate attention | Anything unusual other than those listed |

**All responses should be investigated immediately, unless time is limited due to 2nd screening**

**At that time it would be appropriate to call another technician for support.**

Issues like chlorine could be resolved by confirmation of water sprinklers in area watering the pavement.

**1.11 Sample Handling & Preservation**

Sample must be measured in the field. Should a sample need to be collected for laboratory analysis, refer to Inorganic Sample Collection SOP #11. Always contact the Environmental Unit Supervisor prior to any sample collection for laboratory analysis. Preservation will vary depending on the constituents that are to be analyzed. It is beyond the scope of this section to review all preservation methods.

**1.12 Sample Preparation and Analysis**

Contact the Environmental Unit Supervisor prior to any sample collection and associated preservation for laboratory analysis.

**1.13 Troubleshooting**

Refer to the owner’s manual for the appropriate meter. Check reagents, buffers, and/or standards for container integrity, contamination and/or expiration. If a problem cannot be resolved and data quality may be of concern, report the problem to the Environmental Unit Supervisor and/or QA Officer.

**1.14 Data Acquisition, Calculation & Data Reduction**

Basic calculations required for illicit discharge/dry weather monitoring include the following:

Calculation of flow utilizing the semi-submersible object method (refer to Flow Measurement Semi Submersible Object Method SOP #8);

- CFS = Depth X Width X Velocity
- Where: Velocity = Length of run/time

Calculation of flow utilizing the timed-volume method (refer to Flow Measurement Timed-Volume Method SOP #25):

- CFS = volume in mL X 0.0003531 cubic feet/mL ÷ time in seconds

**1.15 Computer Hardware & Software**

None

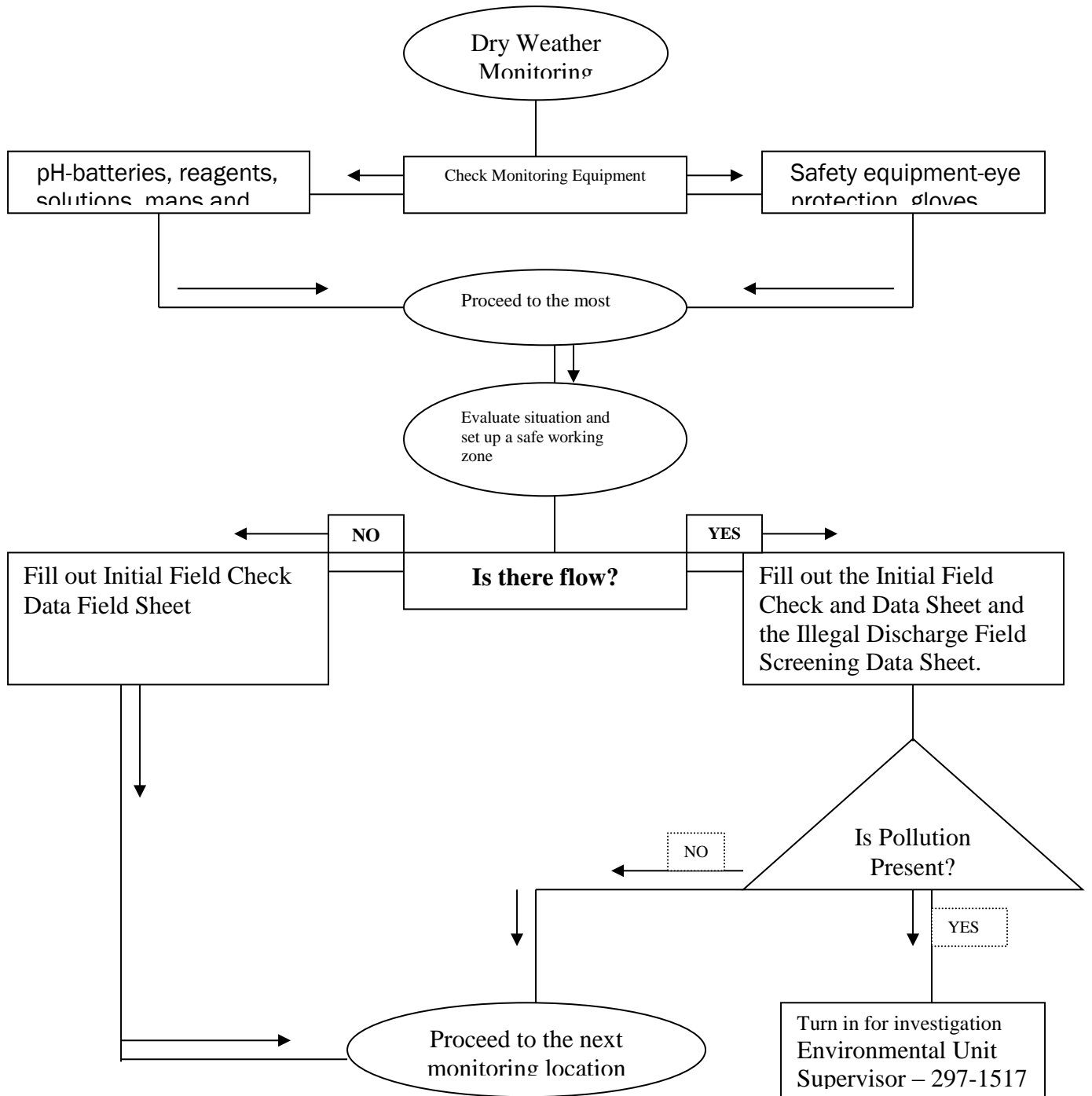
**1.16 Data Management & Records Management**

**1.16.1 Field Notation of Data**

All stations visited, field meters/kits, field calibration and calibration checks should be recorded on the “Sampling Episode” sheet. All measurements made at each site should be recorded on the “Illegal Discharge Field Screening Program Data Sheet”. Data should be recorded following procedures outlined in the **Instructions for Recording Field Information** SOP #50.

**1.16.2 Chain-of-Custody Procedure**

All measurements must be read in the field; therefore no laboratory chain-of-custody form is required. If a sample collection is conducted for further laboratory analysis, contact the Environmental Units Supervisor.



## **2.0 QA/QC SECTION**

### **2.1 Training**

Training of field personnel will be done through dry run exercises in the laboratory and/or field to familiarize them with instrument/field testing kit operation, calibration and maintenance. Investigators must be familiar with the SOP document and owner's manual for applicable equipment.

### **2.2 Maintenance**

- Maintenance of the electronic pH meter should follow procedures outlined for the individual meter.
- Handheld thermometers should be kept clean and in a protective case.
- Field kits will be cleaned prior to storage. Storage will be in a secured, temperature controlled location.
- All solutions and reagents will be checked for expiration. When expiration has been exceeded, the products will be taken out of service and disposed of through the proper waste disposal route.

### **2.3 QC Procedures**

These meters should be calibrated against NIST certified thermometers each quarter following procedures specified in the Quarterly Calibration and Maintenance SOP. Values will be recorded in the equipment logbook.

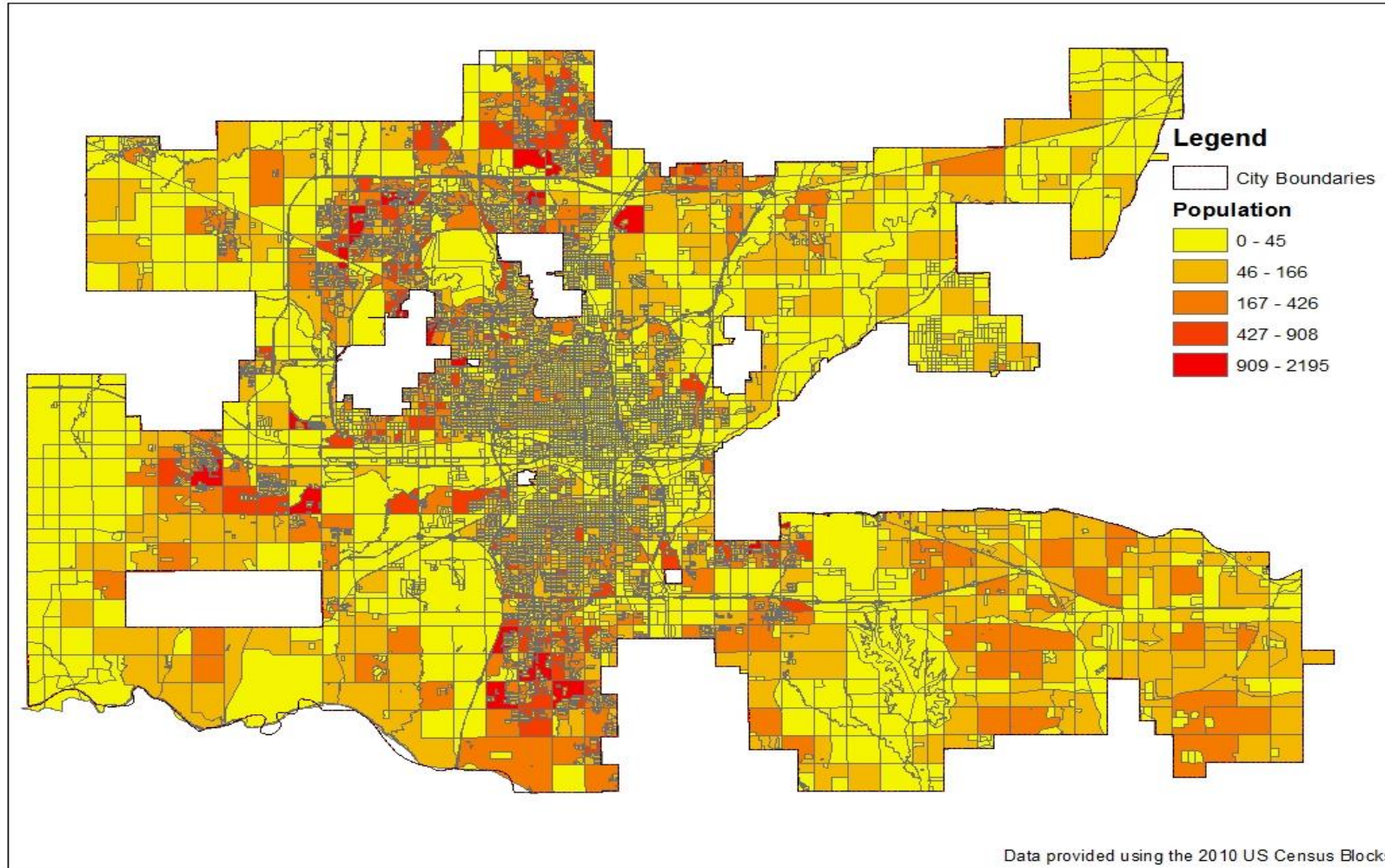
The collection of QA samples should follow the procedure specified in the SOP manual.

## **3.0 REFERENCES**

1. Oklahoma City Municipal Code, Article VI, §57-142.
2. OSHA 3844-02 2016.
3. National Toxicology Program, Instant Tox Base.

## Appendix AK: OKC Population Densities Map (based on 2010 U.S. Census Block Data)

OKC Population Density Map



**Appendix AL: OKC Parks and Recreational Spaces**

| Name  | Address                       | Street Number | N/S/E/W | Street Name        | Street Type | Zip   | Latitude | Longitude | Acres  | Year Acquired | Status | Park Type    | Land Owner | Agency Name                                   |
|---|-------------------------------|---------------|---------|--------------------|-------------|-------|----------|-----------|--------|---------------|--------|--------------|------------|---|
| Stiles Circle Park                                  | 379 N STILES CR               | 379           | N       | STILES             | CR          | 73104 | 173646.1 | 2115652.4 | 0.72   | 1901          | Open   | Green Space  | Municipal  | Oklahoma City Parks and Recreation Department |
| Wheeler Park  | 1120 S WESTERN AVE            | 1120          | S       | WESTERN            | AVE         | 73109 | 165251.5 | 2109596.9 | 93.85  | 1902          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| Red Andrews Park                                    | 720 NW 8TH ST                 | 720           | NW      | 8TH                | ST          | 73102 | 173507.1 | 2109931.5 | 2.30   | 1907          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| Burton/Britton Park                                 | 9701 N SHARTEL AVE            | 9701          | N       | SHARTEL            | AVE         | 73114 | 207759.6 | 2109672.1 | 1.32   | 1908          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Brock Park  | 1601 SW 25TH ST               | 1601          | SW      | 25TH               | ST          | 73119 | 158774.3 | 2103096.1 | 29.18  | 1909          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Goodholm Park                                       | 2701 N ROBINSON AVE           | 2701          | N       | ROBINSON           | AVE         | 73103 | 181128.9 | 2112422.2 | 4.38   | 1909          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Lincoln Park  | 4712 N MARTIN LUTHER KING AVE | 4712          | N       | MARTIN LUTHER KING | AVE         | 73111 | 187537.4 | 2124555.2 | 22.40  | 1909          | Open   | Metropolitan | Municipal  | Oklahoma City Parks and Recreation Department |
| Rhode Island Park                                   | 6623 N RHODE ISLAND AVE       | 6623          | N       | RHODE ISLAND       | AVE         | 73111 | 196657   | 2122737.1 | 0.43   | 1909          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Sparrow Park  | 300 NW 30TH ST                | 300           | NW      | 30TH               | ST          | 73103 | 182190   | 2112182.3 | 2.58   | 1909          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Woodson Park  | 3401 S MAY AVE                | 3401          | S       | MAY                | AVE         | 73119 | 157299.9 | 2096681.4 | 121.72 | 1909          | Open   | District     | Municipal  | Oklahoma City Parks and Recreation Department |
| Trosper Park  | 2300 SE 29TH ST               | 2300          | SE      | 29TH               | ST          | 73129 | 158645.9 | 2126699.9 | 367.30 | 1909          | Open   | Metropolitan | Municipal  | Oklahoma City Parks and Recreation Department |
| Wiley Post  | 2021 S ROBINSON AVE           | 2021          | S       | ROBINSON           | AVE         | 73109 | 163015.5 | 2112174.9 | 66.38  | 1909          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| McNabb Park   | 901 NE 33RD ST                | 901           | NE      | 33RD               | ST          | 73105 | 184218.1 | 2118656.9 | 1.20   | 1910          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Winans Park   | 2100 N BROADWAY AVE           | 2100          | N       | BROADWAY           | AVE         | 73103 | 179160   | 2113292.9 | 3.19   | 1910          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Alice Harn Park                                     | 926 NW 15TH ST                | 926           | NW      | 15TH               | ST          | 73106 | 176594.1 | 2109107.3 | 2.16   | 1911          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Douglas Park  | 500 NW 47TH ST                | 500           | NW      | 47TH               | ST          | 73118 | 189077.9 | 2110751.9 | 8.42   | 1911          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Draper Park (Capitol Hill)                          | 3816 S ROBINSON AVE           | 3816          | S       | ROBINSON           | AVE         | 73109 | 154852.6 | 2113506.3 | 29.69  | 1911          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| Lake Stanley Draper (Childrens Playground Included) | 8255 SE 104TH ST              | 8255          | SE      | 104TH              | ST          | 73165 | 133553.9 | 2154179.3 | 2.07   | 1911          | Open   | Metropolitan | Municipal  | Oklahoma City Parks and Recreation Department |

| Name                 | Address                | Street Number | N/S/E/W | Street Name  | Street Type | Zip   | Latitude | Longitude | Acres  | Year Acquired | Status | Park Type    | Land Owner | Agency Name                                   |
|----------------------|------------------------|---------------|---------|--------------|-------------|-------|----------|-----------|--------|---------------|--------|--------------|------------|---|
| Oliver Park          | 65 SW GRAND BLVD       | 65            | SW      | GRAND        | BLVD        | 73109 | 157418.3 | 2113293.7 | 16.47  | 1911          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Wayman's Park        | 1900 N DREXEL BLVD     | 1900          | N       | DREXEL       | BLVD        | 73107 | 178090.5 | 2096293.4 | 1.55   | 1911          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Elm Grove Park       | 710 S PENNSYLVANIA AVE | 710           | S       | PENNSYLVANIA | AVE         | 73108 | 167033.8 | 2103975.7 | 25.65  | 1912          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Girvin Park          | 3400 NW 14TH ST        | 3400          | NW      | 14TH         | ST          | 73107 | 176385.1 | 2094594   | 7.36   | 1912          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Highley Park         | 1934 NW 8TH ST         | 1934          | NW      | 8TH          | ST          | 73106 | 173706.7 | 2103960.2 | 0.88   | 1912          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Reed Park            | 1217 N MAY AVE         | 1217          | N       | MAY          | AVE         | 73107 | 175760.3 | 2097363.6 | 2.24   | 1912          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Will Rogers Park     | 3400 NW 36TH ST        | 3400          | NW      | 36TH         | ST          | 73112 | 183827.2 | 2093658.5 | 119.57 | 1912          | Open   | District     | Municipal  | Oklahoma City Parks and Recreation Department |
| Draper Memorial Park | 100 SW 3RD ST          | 100           | SW      | 3RD          | ST          | 73109 | 168399.4 | 2112857.8 | 1.93   | 1917          | Open   | Green Space  | Municipal  | Oklahoma City Parks and Recreation Department |
| Culbertson Park      | 1101 NE 13TH ST        | 1101          | NE      | 13TH         | ST          | 73117 | 176214.3 | 2119458.7 | 0.36   | 1919          | Open   | Green Space  | Municipal  | Oklahoma City Parks and Recreation Department |
| Memorial Park        | 1152 NW 36TH ST        | 1152          | NW      | 36TH         | ST          | 73118 | 184723.9 | 2107795.1 | 16.09  | 1922          | Closed | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| South Rotary Park    | 1604 SW 15TH ST        | 1604          | SW      | 15TH         | ST          | 73108 | 163004.5 | 2105245.8 | 40.90  | 1924          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| Washington Park      | 400 N HIGH AVE         | 400           | N       | HIGH         | AVE         | 73117 | 171631.5 | 2119512.4 | 17.68  | 1924          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| McKinley Park        | 1300 N MCKINLEY AVE    | 1300          | N       | MCKINLEY     | AVE         | 73106 | 175919.8 | 2106804.5 | 9.39   | 1925          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| McCracken Park       | 410 SE 64TH ST         | 410           | SE      | 64TH         | ST          | 73149 | 145950.1 | 2116780.8 | 9.01   | 1926          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Military Park        | 1200 NW 25TH ST        | 1200          | NW      | 25TH         | ST          | 73106 | 180494.2 | 2107665.7 | 1.15   | 1926          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| John F. Kennedy Park | 1824 NE 16TH ST        | 1824          | NE      | 16TH         | ST          | 73117 | 177068.9 | 2123800.8 | 5.42   | 1927          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Manuel Perez Park    | 301 SW 14TH ST         | 301           | SW      | 14TH         | ST          | 73109 | 164635   | 2111968.6 | 0.81   | 1927          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Mike Dover Park      | 4601 S WALKER AVE      | 4601          | S       | WALKER       | AVE         | 73109 | 153030.4 | 2110974.4 | 1.65   | 1928          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Campbell Park        | 41 W PARK PL           | 41            | W       | PARK         | PL          | 73103 | 175365.5 | 2113282.5 | 1.34   | 1928          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Creston Hills Park   | 2240 NE 18TH ST        | 2240          | NE      | 18TH         | ST          | 73111 | 177944.4 | 2126169.4 | 4.60   | 1928          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |



| Name                 | Address              | Street Number | N/S/E/W | Street Name | Street Type | Zip   | Latitude | Longitude | Acres | Year Acquired | Status | Park Type    | Land Owner | Agency Name                                   |
|----------------------|----------------------|---------------|---------|-------------|-------------|-------|----------|-----------|-------|---------------|--------|--------------|------------|---|
| Edgemere Park        | 3421 N HARVEY PKWY   | 3421          | N       | HARVEY      | PKWY        | 73118 | 184223.4 | 2111719.2 | 15.48 | 1928          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Hosea Vinyard Park   | 4201 S WALKER AVE    | 4201          | S       | WALKER      | AVE         | 73109 | 154507.4 | 2110721.3 | 7.69  | 1928          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Saint Clair Park     | 2212 N ST. CLAIR AVE | 2212          | N       | ST. CLAIR   | AVE         | 73107 | 179304.2 | 2093158.4 | 0.57  | 1928          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Airport Heights Park | 3605 S SHAWNEE AVE   | 3605          | S       | SHAWNEE     | AVE         | 73119 | 156200.1 | 2090319.9 | 3.59  | 1929          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Harden Park          | 2801 CRESTON DR      | 2801          |         | CRESTON     | DR          | 73111 | 181755.7 | 2126279.2 | 2.08  | 1929          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| May Park             | 2817 SW 34TH ST      | 2817          | SW      | 34TH        | ST          | 73119 | 157044.1 | 2098272.9 | 1.38  | 1929          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Nichols Court Park   | 1901 CULBERTSON DR   | 1901          |         | CULBERTSON  | DR          | 73105 | 178396   | 2117855.2 | 0.71  | 1929          | Open   | Green Space  | Municipal  | Oklahoma City Parks and Recreation Department |
| Zurline Park         | 2800 S WOODWARD AVE  | 2800          | S       | WOODWARD    | AVE         | 73108 | 160475   | 2094800.6 | 6.08  | 1929          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Bicentennial Park    | 500 COUCH DR         | 500           |         | COUCH       | DR          | 73102 | 171089.2 | 2110867.3 | 2.15  | 1929          | Open   | Special Use  | Municipal  | Oklahoma City Parks and Recreation Department |
| Flower Garden Park   | 4711 N CLASSEN BLVD  | 4711          | N       | CLASSEN     | BLVD        | 73118 | 189302.3 | 2106716.2 | 3.65  | 1929          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| E.B. Jeffrey Park    | 4432 NW 16TH ST      | 4432          | NW      | 16TH        | ST          | 73107 | 176849.3 | 2087472.3 | 4.76  | 1930          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Grant Corbin Park    | 4032 NW 13TH ST      | 4032          | NW      | 13TH        | ST          | 73107 | 176025   | 2090117.8 | 2.20  | 1930          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Meadowbrook Park     | 3809 NW 10TH ST      | 3809          | NW      | 10TH        | ST          | 73107 | 174713.3 | 2091835.6 | 1.79  | 1930          | Closed | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Woodland Park        | 750 NE 50TH ST       | 750           | NE      | 50TH        | ST          | 73105 | 189685.3 | 2116914.1 | 7.36  | 1930          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Glen Ellyn Park      | 2300 N EVEREST AVE   | 2300          | N       | EVEREST     | AVE         | 73111 | 179621.4 | 2119986.8 | 1.96  | 1931          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| McMechan Park        | 1601 MCMECHAN PKWY   | 1601          |         | MCMECHAN    | PKWY        | 73104 | 177081.4 | 2118302.9 | 1.03  | 1931          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Swatek Park          | 2301 NW 29TH ST      | 2301          | NW      | 29TH        | ST          | 73112 | 182308   | 2101586.5 | 2.82  | 1931          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Crown Heights Park   | 600 NW 38TH ST       | 600           | NW      | 38TH        | ST          | 73118 | 185817.8 | 2110155.4 | 16.59 | 1931          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Edwards Park         | 1515 N BRYANT AVE    | 1515          | N       | BRYANT      | AVE         | 73117 | 176121   | 2128751.4 | 45.02 | 1932          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| Pied Piper Park      | 1303 NW 100TH ST     | 1303          | NW      | 100TH       | ST          | 73114 | 208712.2 | 2106698.2 | 6.67  | 1935          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |

| Name                   | Address                    | Street Number | N/S/E/W | Street Name        | Street Type | Zip   | Latitude | Longitude | Acres  | Year Acquired | Status | Park Type    | Land Owner | Agency Name                                   |
|------------------------|----------------------------|---------------|---------|--------------------|-------------|-------|----------|-----------|--------|---------------|--------|--------------|------------|---|
| Mayview Park           | 3135 NW 73RD ST            | 3135          | NW      | 73RD               | ST          | 73116 | 198354.3 | 2096126.4 | 1.34   | 1937          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| O'Neil Park            | 725 NW 13TH ST             | 725           | NW      | 13TH               | ST          | 73103 | 176033.4 | 2109860.1 | 0.55   | 1939          | Open   | Green Space  | Municipal  | Oklahoma City Parks and Recreation Department |
| Denniston Park         | 2609 DENNISTON DR          | 2609          |         | DENNISTON          | DR          | 73107 | 180728   | 2096827.2 | 3.03   | 1939          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Rotary Playground Park | 416 SE 15TH ST             | 416           | SE      | 15TH               | ST          | 73129 | 164484.6 | 2116023.3 | 8.17   | 1949          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Ted Reynolds Park      | 3005 W RENO AVE            | 3005          | W       | RENO               | AVE         | 73107 | 169662.9 | 2097333.2 | 11.32  | 1949          | Open   | Green Space  | Municipal  | Oklahoma City Parks and Recreation Department |
| Britton Park           | 1301 NW 96TH ST            | 1301          | NW      | 96TH               | ST          | 73114 | 207438.2 | 2106575.5 | 1.38   | 1950          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| North Highland Park    | 301 NW 81ST ST             | 301           | NW      | 81ST               | ST          | 73114 | 202219.4 | 2111837.4 | 1.99   | 1950          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Douglass Park          | 900 FREDERICK DOUGLASS AVE | 900           |         | FREDERICK DOUGLASS | AVE         | 73117 | 173160   | 2126891.9 | 187.19 | 1952          | Open   | District     | Municipal  | Oklahoma City Parks and Recreation Department |
| Pilot Center Park      | 1435 NW 2ND ST             | 1435          | NW      | 2ND                | ST          | 73106 | 171580.7 | 2105893.6 | 1.08   | 1952          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| River Park             | 800 S AGNEW AVE            | 800           | S       | AGNEW              | AVE         | 73108 | 167011.9 | 2102201.3 | 31.82  | 1952          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Schilling Park         | 539 SE 25TH ST             | 539           | SE      | 25TH               | ST          | 73129 | 160978.1 | 2117082.8 | 22.68  | 1952          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| Youngs Park            | 4610 S YOUNGS BLVD         | 4610          | S       | YOUNGS             | BLVD        | 73119 | 152953.9 | 2102236.1 | 12.57  | 1952          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Northeast Center       | 1300 NE 33RD ST            | 1300          | NE      | 33RD               | ST          | 73111 | 183387.6 | 2120460.6 | 10.66  | 1952          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| E.W. Perry Park        | 1329 NE 48TH ST            | 1329          | NE      | 48TH               | ST          | 73111 | 190017.5 | 2121115.2 | 2.17   | 1953          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Tinsley Park           | 3243 NW 65TH ST            | 3243          | NW      | 65TH               | ST          | 73116 | 196457.4 | 2095298.7 | 2.22   | 1953          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Lorraine Thomas        | 2350 S INDEPENDENCE AVE    | 2350          | S       | INDEPENDENCE       | AVE         | 73108 | 161495.5 | 2095522.4 | 3.93   | 1953          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Guilchester Park       | 2716 DORCHESTER DR         | 2716          |         | DORCHESTER         | DR          | 73120 | 202564.9 | 2098489   | 0.31   | 1954          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Phillips Park          | 2808 N PROSPECT AVE        | 2808          | N       | PROSPECT           | AVE         | 73111 | 181744.6 | 2121968.6 | 3.91   | 1954          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Belle Isle Park        | 2701 NW 62ND ST            | 2701          | NW      | 62ND               | ST          | 73112 | 195198.5 | 2099216   | 8.96   | 1954          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |

| Name                       | Address               | Street Number | N/S/E/W | Street Name | Street Type | Zip   | Latitude | Longitude | Acres | Year Acquired | Status | Park Type    | Land Owner | Agency Name                                   |
|----------------------------|-----------------------|---------------|---------|-------------|-------------|-------|----------|-----------|-------|---------------|--------|--------------|------------|---|
| Top O Town Park            | 2102 S EVEREST AVE    | 2102          | S       | EVEREST     | AVE         | 73129 | 162707.9 | 2119779.4 | 4.86  | 1954          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Mayfair Park               | 4510 N MAYFAIR DR     | 4510          | N       | MAYFAIR     | DR          | 73112 | 188552.1 | 2097819.9 | 1.82  | 1957          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Hefner Park (NW Optimist)  | 3301 NW GRAND BLVD    | 3301          | NW      | GRAND       | BLVD        | 73116 | 199450.8 | 2095265.7 | 42.95 | 1958          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| Lippert Park               | 5501 S SHARTEL AVE    | 5501          | S       | SHARTEL     | AVE         | 73109 | 149671.5 | 2109492.4 | 3.68  | 1959          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Hiram Park                 | 8200 HAPPY LN         | 8200          |         | HAPPY       | LN          | 73084 | 202648.9 | 2168672.9 | 9.11  | 1961          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Lakeshore Estates Park     | 8115 W LAKE HEFNER DR | 8115          | W       | LAKE HEFNER | DR          | 73132 | 202129.2 | 2083263.4 | 0.92  | 1961          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Diggs Park                 | 2201 N COLTRANE RD    | 2201          | N       | COLTRANE    | RD          | 73121 | 179237.7 | 2134376.9 | 14.92 | 1962          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| Earlywine Park             | 3033 SW 119TH ST      | 3033          | SW      | 119TH       | ST          | 73170 | 128404.8 | 2097254.9 | 96.49 | 1962          | Open   | Metropolitan | Municipal  | Oklahoma City Parks and Recreation Department |
| Smitty Park                | 2404 NW 44TH ST       | 2404          | NW      | 44TH        | ST          | 73112 | 188017.6 | 2101250.1 | 5.63  | 1962          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Taylor Park                | 1115 SW 70TH ST       | 1115          | SW      | 70TH        | ST          | 73139 | 144576.2 | 2106962.6 | 7.22  | 1962          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| Tulsa Park                 | 2409 S TULSA AVE      | 2409          | S       | TULSA       | AVE         | 73108 | 161008.2 | 2089630.4 | 8.95  | 1962          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Geraldine Park             | 3203 N GERALDINE AVE  | 3203          | N       | GERALDINE   | AVE         | 73112 | 183157.7 | 2088100.8 | 6.09  | 1963          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Harlow Park                | 4800 NW 19TH ST       | 4800          | NW      | 19TH        | ST          | 73127 | 178107.1 | 2085586.1 | 7.17  | 1963          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Hathaway Park              | 3730 S LINDSAY AVE    | 3730          | S       | LINDSAY     | AVE         | 73129 | 155675.2 | 2118050.8 | 12.86 | 1963          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| Luther Dulaney Park        | 2931 NW 41ST ST       | 2931          | NW      | 41ST        | ST          | 73112 | 187502.8 | 2097102.2 | 5.39  | 1963          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| North Rotary Park          | 5708 N TULSA AVE      | 5708          | N       | TULSA       | AVE         | 73112 | 192317.8 | 2090328.8 | 20.34 | 1963          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| J.B. Black Park            | 2121 N COUNCIL RD     | 2121          | N       | COUNCIL     | RD          | 73127 | 178920.5 | 2070741   | 9.38  | 1964          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Joe Louis Park             | 10810 NE 48TH ST      | 10810         | NE      | 48TH        | ST          | 73084 | 189834.5 | 2165013.7 | 1.86  | 1964          | Open   | Green Space  | Municipal  | Oklahoma City Parks and Recreation Department |
| Progressive Community Park | 4401 LENOX AVE        | 4401          |         | LENOX       | AVE         | 73084 | 188692.6 | 2163493.4 | 11.63 | 1964          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Quail Creek Detention Pond | 11501 QUAIL CREEK RD  | 11501         |         | QUAIL CREEK | RD          | 73120 | 214481.7 | 2093174.4 | 23.37 | 1964          | Open   | Green Space  | Municipal  | Oklahoma City Parks and Recreation Department |

| Name                  | Address                  | Street Number | N/S/E/W | Street Name   | Street Type | Zip   | Latitude | Longitude | Acres | Year Acquired | Status | Park Type    | Land Owner | Agency Name                                   |
|-----------------------|--------------------------|---------------|---------|---------------|-------------|-------|----------|-----------|-------|---------------|--------|--------------|------------|---|
| Syl Goldman Park      | 5333 S INDEPENDENCE AVE  | 5333          | S       | INDEPENDENCE  | AVE         | 73119 | 150189.4 | 2094872.7 | 23.31 | 1965          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Overholser            | 2402 E OVERHOLSER DR     | 2402          | E       | OVERHOLSER    | DR          | 73127 | 176789.8 | 2066758.4 | 59.34 | 1968          | Open   | Metropolitan | Municipal  | Oklahoma City Parks and Recreation Department |
| Mark Twain Park       | 2402 NW 1ST ST           | 2402          | NW      | 1ST           | ST          | 73107 | 170965.5 | 2101261.4 | 0.34  | 1968          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Merrel Medley Park    | 11100 S PENNSYLVANIA AVE | 11100         | S       | PENNSYLVANIA  | AVE         | 73170 | 130286.3 | 2103941   | 15.61 | 1968          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Minnis Lakeview Park  | 12520 NE 36TH ST         | 12520         | NE      | 36TH          | ST          | 73084 | 185042.5 | 2174575   | 19.75 | 1968          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| Sellers Park          | 8301 S VILLA AVE         | 8301          | S       | VILLA         | AVE         | 73159 | 139704   | 2100193.6 | 8.41  | 1968          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| Southern Oaks Park    | 6818 S WALKER AVE        | 6818          | S       | WALKER        | AVE         | 73139 | 145088   | 2111891.9 | 22.34 | 1968          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| Lytle Park            | 801 GREENVALE RD         | 801           |         | GREENVALE     | RD          | 73127 | 173329.9 | 2074003.2 | 4.06  | 1968          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Macklanburg Park      | 2234 NW 117TH ST         | 2234          | NW      | 117TH         | ST          | 73120 | 214441   | 2101532.5 | 9.18  | 1969          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| L.D. Lacy Park        | 1114 NE 43RD ST          | 1114          | NE      | 43RD          | ST          | 73111 | 188431.4 | 2119535.7 | 12.45 | 1970          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Quail Creek Park      | 11130 QUAIL CREEK RD     | 11130         |         | QUAIL CREEK   | RD          | 73120 | 212616.8 | 2095339   | 10.16 | 1970          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Zach D. Taylor        | 633 NW 52ND ST           | 633           | NW      | 52ND          | ST          | 73118 | 191410.6 | 2110259.8 | 5.78  | 1971          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Stars & Stripes Park  | 3701 S LAKE HEFNER DR    | 3701          | S       | LAKE HEFNER   | DR          | 73120 | 200204.8 | 2092970.8 | 69.15 | 1972          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| Jack W Cornett Park   | 3001 N GROVE AVE         | 3001          | N       | GROVE         | AVE         | 73122 | 182335.1 | 2083009.3 | 5.36  | 1972          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Melrose Park          | 7800 MELROSE LN          | 7800          |         | MELROSE       | LN          | 73127 | 171461.8 | 2072510.7 | 8.67  | 1972          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| Lela Park             | 1801 LELA AVE            | 1801          |         | LELA          | AVE         | 73127 | 178053.4 | 2080938.4 | 6.93  | 1973          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Lightning Creek Park  | 8100 S WESTERN AVE       | 8100          | S       | WESTERN       | AVE         | 73139 | 140846.1 | 2109273.4 | 34.57 | 1973          | Open   | Green Space  | Municipal  | Oklahoma City Parks and Recreation Department |
| Myriad Gardens        | 301 W RENO AVE           | 301           | W       | RENO          | AVE         | 73102 | 169763.5 | 2112052.8 | 13.92 | 1973          | Open   | Special Use  | Municipal  | Oklahoma City Parks and Recreation Department |
| Rockwell Park         | 618 N ROCKWELL AVE       | 618           | N       | ROCKWELL      | AVE         | 73127 | 172625.3 | 2077044.3 | 2.23  | 1973          | Open   | Green Space  | Municipal  | Oklahoma City Parks and Recreation Department |
| Kerr (Robert S.) Park | 102 ROBERT S KERR AVE    | 102           |         | ROBERT S KERR | AVE         | 73102 | 171295.7 | 2112927.9 | 0.60  | 1974          | Open   | Special Use  | Municipal  | Oklahoma City Parks and Recreation Department |

| Name                       | Address                 | Street Number | N/S/E/W | Street Name   | Street Type | Zip   | Latitude | Longitude | Acres  | Year Acquired | Status | Park Type    | Land Owner | Agency Name                                   |
|----------------------------|-------------------------|---------------|---------|---------------|-------------|-------|----------|-----------|--------|---------------|--------|--------------|------------|---|
| Martin Nature Park         | 4700 W MEMORIAL RD      | 4700          | W       | MEMORIAL      | RD          | 73142 | 220586   | 2085066   | 137.24 | 1974          | Open   | Nature       | Municipal  | Oklahoma City Parks and Recreation Department |
| Pitts Park                 | 1920 N KATE AVE         | 1920          | N       | KATE          | AVE         | 73111 | 178176.4 | 2121312.7 | 11.24  | 1974          | Open   | Community    | Municipal  | Oklahoma City Parks and Recreation Department |
| Siler Park                 | 2508 SW 95TH ST         | 2508          | SW      | 95TH          | ST          | 73159 | 135396.7 | 2100502.4 | 3.89   | 1974          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Perle Mesta Park           | 1900 N SHARTEL AVE      | 1900          | N       | SHARTEL       | AVE         | 73103 | 178209.4 | 2109910   | 2.96   | 1975          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Woodrun Park               | 4 N WILLWOOD DR         | 4             | N       | WILLWOOD      | DR          | 73099 | 170374.5 | 2048165.6 | 11.75  | 1975          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Bob Akers Park             | 2408 SE 11TH ST         | 2408          | SE      | 11TH          | ST          | 73129 | 165332   | 2126609.1 | 4.59   | 1976          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Brookwood Park             | 9600 S SHARTEL AVE      | 9600          | S       | SHARTEL       | AVE         | 73139 | 135814.6 | 2110407.4 | 3.68   | 1976          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Dolese Youth Park          | 4701 NW 50TH ST         | 4701          | NW      | 50TH          | ST          | 73122 | 191714.8 | 2085845.2 | 152.79 | 1976          | Open   | District     | Municipal  | Oklahoma City Parks and Recreation Department |
| Dolphin Wharton Park       | 301 NE 63RD ST          | 301           | NE      | 63RD          | ST          | 73105 | 196467.2 | 2115344.8 | 19.32  | 1976          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Crossroads Sports Complex  | 120 SE 89TH ST          | 120           | SE      | 89TH          | ST          | 73160 | 136856.3 | 2114615.2 | 48.88  | 1976          | Open   | Green Space  | Municipal  | Oklahoma City Parks and Recreation Department |
| Foster Center              | 614 NE 4TH ST           | 614           | NE      | 4TH           | ST          | 73104 | 171927.4 | 2117030.5 | 0.86   | 1978          | Open   | Special Use  | Municipal  | Oklahoma City Parks and Recreation Department |
| Harvest Hills Park         | 8235 NW 104TH ST        | 8235          | NW      | 104TH         | ST          | 73162 | 209869.1 | 2069008.1 | 4.36   | 1978          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Shallowbrook Park          | 4901 S SHALLOW BROOK DR | 4901          | S       | SHALLOW BROOK | DR          | 73129 | 151590.7 | 2122631.8 | 10.45  | 1978          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Greens Tot-Lot             | 13048 BURLINGAME AVE    | 13048         |         | BURLINGAME    | AVE         | 73120 | 221475.7 | 2090248.8 | 0.70   | 1979          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Mackleman Park             | 5501 MACKLEMAN DR       | 5501          |         | MACKLEMAN     | DR          | 73135 | 149858.5 | 2137967   | 4.68   | 1979          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Redlands Park              | 1425 NW 141ST ST        | 1425          | NW      | 141ST         | ST          | 73013 | 224026.8 | 2105386.2 | 16.67  | 1979          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Pat Murphy Park            | 4551 W HEFNER RD        | 4551          | W       | HEFNER        | RD          | 73162 | 212169.2 | 2085459.7 | 12.31  | 1980          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Bluff Creek Park           | 11301 N MERIDIAN AVE    | 11301         | N       | MERIDIAN      | AVE         | 73162 | 213782.2 | 2086174.6 | 292.50 | 1992          | Open   | Metropolitan | Municipal  | Oklahoma City Parks and Recreation Department |
| Stinchcomb Wildlife Refuge | 5101 N STINCHCOMB AVE   | 5101          | N       | STINCHCOMB    | AVE         | 73099 | 193371.3 | 2064878.4 | 965.04 | 1995          | Open   | Nature       | Municipal  | Oklahoma City Parks and Recreation Department |

| Name                                    | Address                 | Street Number | N/S/E/W | Street Name     | Street Type | Zip   | Latitude | Longitude | Acres  | Year Acquired | Status | Park Type    | Land Owner | Agency Name                                   |
|---|-------------------------|---------------|---------|-----------------|-------------|-------|----------|-----------|--------|---------------|--------|--------------|------------|---|
| South Lakes Park                        | 4302 SW 119TH ST        | 4302          | SW      | 119TH           | ST          | 73173 | 125782.5 | 2088969.8 | 158.92 | 1998          | Open   | Metropolitan | Municipal  | Oklahoma City Parks and Recreation Department |
| Lake Hefner (Childrens Playground)      | 8901 LAKE HEFNER PKWY   | 8901          |         | LAKE HEFNER     | PKWY        | 73120 | 204080.4 | 2094140.1 | 1.88   | 1999          | Open   | Metropolitan | Municipal  | Oklahoma City Parks and Recreation Department |
| Route 66 Park                           | 9901 NW 23RD ST         | 9901          | NW      | 23RD            | ST          | 73099 | 180975.9 | 2059666.6 | 146.31 | 2000          | Open   | Metropolitan | Municipal  | Oklahoma City Parks and Recreation Department |
| Maywood Park                            |                         |               |         |                 |             | 73104 | 171834.9 | 2114346.2 | 0.26   | 2007          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |
| Kitchen Lake Park                       | 5501 SE 119th ST        | 5501          | SE      | 119th           | ST          | 73165 | 127930.1 | 2140680.3 | 7.45   | 2012          | Open   | Special Use  | Municipal  | Oklahoma City Parks and Recreation Department |
| Carolyn Hill Park                       |                         |               |         |                 |             | 73102 | 171217   | 2111491.7 | 0.17   | 2012          | Open   |              | Municipal  | Oklahoma City Parks and Recreation Department |
| Hightower (Frank J.) Park               | 208 PATIENT LATTING CIR | 208           |         | PATIENT LATTING | CIR         | 73102 | 170893.1 | 2111500.5 | 0.24   | 2014          | Open   |              | Municipal  | Oklahoma City Parks and Recreation Department |
| Florence Park                           | 820 NW 15TH ST          | 820           | NW      | 15TH            | ST          | 73106 | 176899.6 | 2109315.6 | 0.31   |               | Open   | Green Space  | Municipal  | Oklahoma City Parks and Recreation Department |
| Straka Detention Pond                   | 1203 SW 84TH ST         | 1203          | SW      | 84TH            | ST          | 73139 | 139786.5 | 2105884.1 | 24.49  |               | Open   | Green Space  | Municipal  | Oklahoma City Parks and Recreation Department |
| Paw Park                                | 7196 N GRAND BLVD       | 7196          | N       | GRAND           | BLVD        | 73116 | 199472.6 | 2094849.7 | 2.05   |               | Open   | Dog Park     | Municipal  | Oklahoma City Parks and Recreation Department |
| Regatta Park                            | 701 S LINCOLN BLVD      | 701           | S       | LINCOLN         | BLVD        | 73129 | 167307.9 | 2117025.8 | 27.99  |               | Open   | Special Use  | Municipal  | Oklahoma City Parks and Recreation Department |
| Unnamed Open Space - A                  | 1910 NE 66TH ST         | 1910          | NE      | 66TH            | ST          | 73111 | 196405.6 | 2123824.2 | 1.80   |               | Open   | Green Space  | Municipal  | Oklahoma City Parks and Recreation Department |
| Unnamed Open Space - B                  | 4701 N ANDERSON RD      | 4701          | N       | ANDERSON        | RD          | 73084 | 189728   | 2171271   | 3.96   |               | Open   | Green Space  | Municipal  | Oklahoma City Parks and Recreation Department |
| Unnamed Open Space - C                  | 5800 SE 59TH ST         | 5800          | SE      | 59TH            | ST          | 73135 | 148228.2 | 2141300.4 | 2.99   |               | Open   | Green Space  | Municipal  | Oklahoma City Parks and Recreation Department |
| Unnamed Open Space - D                  | 1722 S DURLAND AVE      | 1722          | S       | DURLAND         | AVE         | 73129 | 163510.1 | 2117110.4 | 0.19   |               | Open   | Green Space  | Municipal  | Oklahoma City Parks and Recreation Department |
| Unnamed Open Space - G                  | 1102 NW 115TH ST        | 1102          | NW      | 115TH           | ST          | 73114 | 213779.3 | 2107012.3 | 4.56   |               | Open   | Green Space  | Municipal  | Oklahoma City Parks and Recreation Department |
| Unnamed Open Space - F (Chisholm Creek) | 902 NW 122ND ST         | 902           | NW      | 122ND           | ST          | 73114 | 215870.3 | 2108702.7 | 7.54   |               | Open   | Green Space  | Municipal  | Oklahoma City Parks and Recreation Department |
| Unnamed Open Space - H (Canyon)         | 624 W I-44 HWY          | 624           | W       | I-44            | HWY         | 73118 | 192298.3 | 2110515.5 | 22.04  |               | Open   | Green Space  | Municipal  | Oklahoma City Parks and Recreation Department |
| Unnamed Open Space - E                  | 2719 S MERDIAN AVE      | 2719          | S       | MERDIAN         | AVE         | 73108 | 159668   | 2087263.7 | 0.55   | 1985          | Open   | Green Space  | Municipal  | Oklahoma City Parks and Recreation Department |
| Wm. Freemont Harn Park                  | 331 NE 16TH ST          | 331           | NE      | 16TH            | ST          | 73104 |          |           | 0.92   | 2015          | Open   | Neighborhood | Municipal  | Oklahoma City Parks and Recreation Department |

| Name           | Address          | Street Number | N/S/E/W | Street Name | Street Type | Zip   | Latitude | Longitude | Acres | Year Acquired | Status | Park Type | Land Owner | Agency Name                                   |
|----------------|------------------|---------------|---------|-------------|-------------|-------|----------|-----------|-------|---------------|--------|-----------|------------|---|
| City Hall Park | 200 N WALKER AVE | 200           | N       | WALKER      | AVE         | 73102 |          |           | 2.69  | 2017          | Open   |           | Municipal  | Oklahoma City Parks and Recreation Department |

## Appendix AM: Runoff Curve Numbers Identified by Hydrologic Soil Type for OKC Land Uses Identified Using the NLCD.

| Land Use                     | Hydro Soil Group | Curve Number | Notes  |
|------------------------------|------------------|--------------|--|
| Barren Land (Rock/Sand/Clay) | A                | 0.76         | Used streets and roads - gravel  |
| Barren Land (Rock/Sand/Clay) | B                | 0.85         | Used streets and roads - gravel  |
| Barren Land (Rock/Sand/Clay) | C                | 0.89         | Used streets and roads - gravel  |
| Barren Land (Rock/Sand/Clay) | D                | 0.91         | Used streets and roads - gravel  |
| Cultivated Crops             | A                | 0.65         | Small Grain, Assumed Poor Condition. Contoured   |
| Cultivated Crops             | B                | 0.76         | Small Grain, Assumed Poor Condition. Contoured   |
| Cultivated Crops             | C                | 0.84         | Small Grain, Assumed Poor Condition. Contoured   |
| Cultivated Crops             | D                | 0.88         | Small Grain, Assumed Poor Condition. Contoured   |
| Deciduous Forest             | A                | 0.36         | Woods, Assumed Fair Condition  |
| Deciduous Forest             | B                | 0.6          | Woods, Assumed Fair Condition  |
| Deciduous Forest             | C                | 0.73         | Woods, Assumed Fair Condition  |
| Deciduous Forest             | D                | 0.79         | Woods, Assumed Fair Condition  |
| Developed, High Intensity    | A                | 0.77         | Residential, Assumed 1/8 Acre Lots and Average % Impervious of 65%                             |
| Developed, High Intensity    | B                | 0.85         | Residential, Assumed 1/8 Acre Lots and Average % Impervious of 65%                             |
| Developed, High Intensity    | C                | 0.9          | Residential, Assumed 1/8 Acre Lots and Average % Impervious of 65%                             |
| Developed, High Intensity    | D                | 0.92         | Residential, Assumed 1/8 Acre Lots and Average % Impervious of 65%                             |
| Developed, Low Intensity     | A                | 0.57         | Residential, Assumed 1/3 acre lots and Average 30% Impervious                                  |
| Developed, Low Intensity     | B                | 0.72         | Residential, Assumed 1/3 acre lots and Average 30% Impervious                                  |
| Developed, Low Intensity     | C                | 0.81         | Residential, Assumed 1/3 acre lots and Average 30% Impervious                                  |
| Developed, Low Intensity     | D                | 0.86         | Residential, Assumed 1/3 acre lots and Average 30% Impervious                                  |
| Developed, Medium Intensity  | A                | 0.61         | Residential, Assumed 1/4 acre lots and average 38% Impervious                                  |
| Developed, Medium Intensity  | B                | 0.75         | Residential, Assumed 1/4 acre lots and average 38% Impervious                                  |
| Developed, Medium Intensity  | C                | 0.83         | Residential, Assumed 1/4 acre lots and average 38% Impervious                                  |
| Developed, Medium Intensity  | D                | 0.87         | Residential, Assumed 1/4 acre lots and average 38% Impervious                                  |
| Developed, Open Space        | A                | 0.49         | Laws, parks, golf courses. Assumed Fair Condition (grass cover 50-75%)                         |
| Developed, Open Space        | B                | 0.69         | Laws, parks, golf courses. Assumed Fair Condition (grass cover 50-75%)                         |
| Developed, Open Space        | C                | 0.79         | Laws, parks, golf courses. Assumed Fair Condition (grass cover 50-75%)                         |
| Developed, Open Space        | D                | 0.84         | Laws, parks, golf courses. Assumed Fair Condition (grass cover 50-75%)                         |
| Emergent Herbaceous Wetlands | A                | 0            | Assumed no runoff  |
| Emergent Herbaceous Wetlands | B                | 0            | Assumed no runoff  |
| Emergent Herbaceous Wetlands | C                | 0            | Assumed no runoff  |
| Emergent Herbaceous Wetlands | D                | 0            | Assumed no runoff  |
| Evergreen Forest             | A                | 0.43         | Woods, Assumed Fair Condition  |
| Evergreen Forest             | B                | 0.65         | Woods, Assumed Fair Condition  |
| Evergreen Forest             | C                | 0.76         | Woods, Assumed Fair Condition  |
| Evergreen Forest             | D                | 0.82         | Woods, Assumed Fair Condition  |
| Grassland / Herbaceous       | A                | 0.49         | Open Space (lawns, parks, golf courses) Assumed Fair Condition                                 |
| Grassland / Herbaceous       | B                | 0.69         | Pasture, grassland or raga. Assumed in fair condition (50-75% ground cover not heavily grazed) |
| Grassland / Herbaceous       | C                | 0.79         | Pasture, grassland or raga. Assumed in fair condition (50-75% ground cover not heavily grazed) |
| Grassland / Herbaceous       | D                | 0.84         | Pasture, grassland or raga. Assumed in fair condition (50-75% ground cover not heavily grazed) |
| Open Water                   | A                | 0            | Assumed no runoff  |
| Open Water                   | B                | 0            | Assumed no runoff  |
| Open Water                   | C                | 0            | Assumed no runoff  |
| Open Water                   | D                | 0            | Assumed no runoff  |
| Pasture / Hay                | A                | 0.49         | Pasture, grassland or raga. Assumed in fair condition (50-75% ground cover not heavily grazed) |
| Pasture / Hay                | B                | 0.69         | Pasture, grassland or raga. Assumed in fair condition (50-75% ground cover not heavily grazed) |
| Pasture / Hay                | C                | 0.79         | Pasture, grassland or raga. Assumed in fair condition (50-75% ground cover not heavily grazed) |
| Pasture / Hay                | D                | 0.84         | Pasture, grassland or raga. Assumed in fair condition (50-75% ground cover not heavily grazed) |
| Woody Wetlands               | A                | 0            | Assumed no runoff  |



| Land Use       | Hydro Soil Group | Curve Number | Notes             |
|----------------|------------------|--------------|-------------------|
| Woody Wetlands | B                | 0            | Assumed no runoff |
| Woody Wetlands | C                | 0            | Assumed no runoff |
| Woody Wetlands | D                | 0            | Assumed no runoff |

# Appendix AN: Renewal of the Oklahoma City Municipal Separate Storm Sewer Permit (MS4) Correspondence



The City of  
**OKLAHOMA CITY**  
DEPARTMENT OF PUBLIC WORKS

RECEIVED

SEP 14 2017

WATER QUALITY DIVISION

September 15, 2017

Michael Jordan, P.E., Manager  
Oklahoma Department of Environmental Quality  
707 N. Robinson  
P. O. Box 1677  
Oklahoma City, OK 73101-1677

Subject: Renewal of the Oklahoma City Municipal Separate Storm Sewer Permit (MS4)

Dear Mr. Jordan:

Pursuant to rules set forth in 40 CFR 122, the City must submit the reapplication on the Phase I MS4 Permit, OKS000101, 180 days prior to the permit expiration date of March 14, 2018. It is my privilege to submit the attached Storm Water Municipal Separate Storm Sewer System (MS4) Application for the City of Oklahoma City and Co-Permittees Oklahoma Turnpike Authority and Oklahoma Department of Transportation.

With this in mind we submit the following proposed changes to the City of Oklahoma City Permit OKS000101 for the upcoming five (5) year term of 2018-2023.

**Item 1: Current permit language**, Part I, Discharges Authorized Under This Permit, Section C.1.d.:

*d. Collection of representative wet weather monitoring data required by Part V.B according to such agreements as may be established between permittees;....*

**Proposed permit language change**, Part I, Discharges Authorized under This Permit, Section C.1.d.

*d. Collection of representative continuous flow and flow weighted sampling data required by Part V.B according to such agreements as may be established between parties;...*

o **Comment 1:** See Item 5, 12, 15 and 16 for additional information.

**Item 2: Current permit language**, Part II, Storm Water Management Program, Section A6(2)d.

*The discharge or disposal of used motor vehicle fluids, household hazardous wastes, grass clippings, leaf litter, and animal wastes into separate storm sewers shall continue to be prohibited. The permittee(s) shall ensure the program continue to be implemented, revised and updated as necessary, to collect used motor vehicle fluids (at a minimum, oil and antifreeze) for recycle, reuse, or proper disposal and to collect household hazardous waste materials (including paint, solvents, pesticides, herbicides, and other hazardous materials) for recycle, reuse, or proper disposal. Such programs*

*shall be readily available to all private residents and shall be publicized and promoted on a regular basis. (Emphasis added)*

**Proposed permit language change**, Part II, Storm Water Management Program, Section A6(2)d.

The discharge or disposal of used motor vehicle fluids, household hazardous wastes, grass clippings, leaf litter, and animal wastes into separate storm sewers shall continue to be prohibited. The permittee(s) shall ensure the program continue to be implemented, revised and updated as necessary, to collect used motor vehicle fluids (at a minimum, oil and antifreeze) for recycle, reuse, or proper disposal and to collect household hazardous waste materials (including paint, solvents, pesticides, herbicides, and other hazardous materials) for recycle, reuse, or proper disposal. Such programs shall be readily available to all **qualifying Oklahoma City residents or residents from other communities with legal interjurisdictional agreements** and shall be publicized and promoted on a regular basis. (Emphasis added)

**Item 3: Current permit language**, Part II, Storm Water Management Program (SWMP), Section 6a, Part (1):

*(1) Categories of non-storm water discharges that the permittee(s) may exempt from the Prohibition on non-storm water entering the MS4 include:*

- (a) Water line flushing;*
- (b) Landscape irrigation;*
- (c) Diverted stream flows;*
- (d) Rising ground waters;*
- (e) Uncontaminated ground water infiltration to separate storm sewers;*
- (f) Uncontaminated pumped ground water;*
- (g) Discharge from potable water sources;*
- (h) Foundation drains;*
- (i) Air conditioning condensation;*
- (j) Irrigation water;*
- (k) Springs;*
- (l) Water from crawl space pumps;*
- (m) Footing drains;*
- (n) Lawn watering;*
- (o) Individual residential car washing;*
- (p) Flows from riparian habitats and wetlands;*
- (q) Dechlorinated swimming pool discharges;*
- (r) Discharges from emergency fire fighting activities provided procedures are in place for the Incident Commander, Fire Chief, or other on-scene fire fighting official in charge to make an evaluation regarding potential releases of pollutants from the scene. Measures must be taken to reduce any pollutant releases to the maximum extent practicable subject to all appropriate actions necessary to ensure public health and safety. These procedures must be documented in your SWMP. Discharges or flows from fire fighting training activities are not authorized by this permit.*

**Proposed permit language change**, Part II, Storm Water Management Program (SWMP), Section 6a, Part (1):

- (1) Categories of non-storm water discharges that the permittee(s) may exempt from the prohibition on non-storm water entering the MS4 include:
- (a) Water line flushing;
  - (b) Landscape irrigation;
  - (c) Diverted stream flows;
  - (d) Rising ground waters;
  - (e) Uncontaminated ground water infiltration to separate storm sewers;
  - (f) Uncontaminated pumped ground water;
  - (g) Discharge from potable water sources;
  - (h) Foundation drains;
  - (i) Air conditioning condensate;
  - (j) Irrigation water;
  - (k) Springs;
  - (l) Water from crawl space pumps;
  - (m) Footing drains;
  - (n) Lawn watering;
  - (o) Individual residential car washing;
  - (p) Flows from riparian habitats and wetlands;
  - (q) Dechlorinated swimming pool discharges (**excluding filter backwash or discharges associated with salt water pool systems**). (Emphasis added)
  - (r) Discharges from emergency firefighting activities provided procedures are in place for the Incident Commander, Fire Chief, or other on-scene fire fighting official in charge to make an evaluation regarding potential releases of pollutants from the scene. Measures must be taken to reduce any pollutant releases to the maximum extent practicable subject to all appropriate actions necessary to ensure public health and safety. These procedures must be documented in your SWMP. Discharges or flows from fire fighting training activities are not authorized by this permit.
  - (s) **Surface water impoundment discharges from draining activities (provided that controls are put into place prior to commencement of any draining activities not associated with precipitation to limit the discharge of any associated pollutants or sediments and to control the quantity of the discharge rate and volume as to not cause or contribute to significant bank erosion, streambed scour or downstream flooding)**. (Emphasis added)
- **Comment 2:** Item (q) should be amended to ensure that salt water pool systems and pool filter backwash is prohibited regardless of dechlorination. Item (s) is related to the drainage of ponds, reservoirs, detention, retention basins or other dewatering activities which do not require a permit (such as a construction site). Best management practices should be used to reduce or eliminate the discharge of pollutants during the dewatering activities. Best Management Practices may include filtering the discharge through a dewatering bag or similar structure, draining from the surface of the pond, limiting the amount of bottom sludge disturbed during the draining process, obtaining permission from the applicable municipality prior to draining the structure and limiting the flow into receiving storm drainage structures or receiving streams.

## 13a, Monitoring Programs:

*The Dry Weather Screening Program shall continue ongoing efforts to detect the presence of illicit connections and improper discharges to the MS4. All areas of the MS4 must be screened at least once during the permit term. Screening methodology... (Emphasis added)*

**Proposed permit language change**, Part II, Storm Water Management Program (SWMP), Section 13a: The Priority Based Monitoring Program:

The Dry Weather Screening Program shall continue ongoing efforts to detect the presence of illicit connections and improper discharges to the MS4. **All representative locations** must be screened at least once during the permit term. Screening methodology... (Emphasis added)

**Item 5: Current permit language**, Part II, Storm Water Management Program (SWMP) Section 13b, *The Wet Weather Screening Program*:

*The permittee(s) shall identify, investigate, and address areas within their jurisdiction that may be contributing excessive levels of pollutants to the MS4. The wet weather screening program:*

- (1). *Shall screen the MS4, in accordance with the procedures specified in the SWMP;*
- (2). *Shall specify the sampling and non-sampling techniques to be used for initial screening and follow-up purposes. Sample collection and analysis need not conform to the requirements of OAC 252:606-1-3(b)(7) adopting and incorporating by reference 40 CFR Part 136. However, samples taken to confirm (e.g. in support of possible legal action) a particular illicit connection or improper disposal practice should conform to the requirements of OAC 252:606-1-3(b)(7).*

- o **Proposed permit language change**, Trend and Load Based Monitoring: The permittee(s) shall identify representative drainages to monitor and calculate annual loadings based on continuous monitoring of flow and select parameters. A flow weighted sampling approach will be used to collect individual aliquots which will be composited as a flow weighted sample for laboratory analysis. Sample analysis will conform to 40 CFR Part 136. The Trend and Load Based Monitoring Program will provide long-term stream quality information which will assist Oklahoma City to determine if programmatic changes are creating measurable changes within the drainages monitored. The Load Based Monitoring Program:

- (1) Shall be selected from representative drainages within the jurisdiction;
- (2) Shall be monitored in accordance with the procedures specified in the SWMP;
- (3) Shall specify the sampling and data needs associated with the data quality objectives. Sample collection will conform to applicable standard operating procedures and analytical services will conform to the requirements of OAC 252:606-1-3(b)(7) adopting and incorporating by reference 40 CFR Part 136.

- o **Comment 3:** See Item 12, 15 and 16 for additional program language.

**Item 6: Current permit language**, Part II, Storm Water Management Program (SWMP) Section 13c, *The Priority Based Monitoring Program*: *The program shall consist of monitoring stream segments to determine watershed priority areas. Two monitoring levels have been established using water quality standards violation rates to categorize the applicable stream segments. Segments which exhibited a violation rate of <15% are considered Level I and segments which exhibited a violation rate of  $\geq 15\%$  are categorized as a Level II stream segment. Level I stations will be*

*established to confirm/refute the historical monitoring data in relation to State Water Quality Standards violations detected during the Watershed Characterization Program. Level I segment will typically consist of monitoring select parameters at the original monitoring station established within the applicable watershed which will generally be the original station monitored during the Watershed Characterization Program. Stream data collected for Level I monitoring efforts will be utilized to refute/confirm previous evaluations, however if Water Quality Standards violations are confirmed, the stream segment may be remanded to a Level II monitoring effort. Level II segments will be monitored at several stations within the watershed to acquire information on select parameters at multiple stations in the watershed. This information will be used to assist in the identification of priority areas within the watershed. Each monitoring level (I and Level II) will consist of directed monitoring of onsite field chemistry, laboratory samples or biological collections, when applicable. Each monitoring effort may require different levels of data generation.*

- **Proposed permit language change**, Part II, Storm Water Management Program (SWMP), Section 13c: The Priority Based Monitoring Program: The program shall consist of monitoring stream segments to determine watershed priority areas. Two monitoring levels have been established using water quality standards violation rates to categorize the applicable stream segments. Segments which exhibited a violation rate of <15% are considered Level I and segments which exhibited a violation rate of  $\geq 15\%$  are categorized as a Level II stream segment. Level I stations will be established to confirm/refute the historical monitoring data in relation to State Water Quality Standards violations detected during the Watershed Characterization Program (**or other agency supplied information**). Level I segment will typically consist of monitoring select parameters at the original station monitored during the Watershed Characterization Program. Stream data collected for Level I monitoring efforts will be utilized to refute/confirm previous evaluations. Level II segments will be monitored at several stations within the watershed to acquire information on select parameters at multiple stations in the watershed. This information will be used to assist in the identification of priority areas within the watershed. Each monitoring level (I and Level II) will consist of onsite field chemistry, laboratory samples, biological collections or visual observations, when applicable. Each monitoring effort may require different levels of data generation. (Emphasis added)
- **Comment 4**: SWQ has monitoring scheduled through May 2020. At that point, the project objectives will be completed and the project closed. A comprehensive compilation of relevant biological collections and water quality information collected for each permit year will be provided in the Oklahoma City MS4 Annual Report. SWQ will submit a list of monitoring locations, collected information, summary data sheets and assessments regarding the status of the assessed reaches within the scope of relevant criteria in the 2020 Oklahoma City Annual Report. See schedule details in Item 12.

**Item 7: Current permit language**, Part III, Schedules for Implementation and Compliance, Section A, Component 3: *Flood Control Projects and Structural Controls*.

a. *Update Capital Improvement Program list for the City of Oklahoma City proposed General Obligation Bond authorization for 2007.*

- **Proposed permit language change**, Part III, Schedules for Implementation and Compliance, Section A, Component 3: *Flood Control Projects and Structural Controls*.

- a. Update Capital Improvement Program list for the City of Oklahoma City’s **current and proposed** General Obligation Bond authorizations. (Emphasis added)

**Item 8: Current permit language**, Part III, Schedules for Implementation and Compliance, Section A, Component 7(b): *Public Outreach*.

- a. *Install an average of 500 curb markers annually using volunteers and City employees.*
- o **Proposed permit language change**, Part III, Schedules for Implementation and Compliance, Section A, Component 7(b): *Public Outreach*.
  - a. **Inspect, install or re-install** an average of 500 curb markers annually using volunteers and City employees. Identification of embossed storm drains will count towards that annual total. (Emphasis added)

**Item 9: Current permit language**, Part III, Schedules for Implementation and Compliance, Section A, Component 10(b): *Pollution Complaint and Spills Response Program*.

- a. *Continue to respond as technical support for the City of Oklahoma City Hazardous Materials Unit on hazardous material incidents.*
- o **Proposed permit language change**, Part III, Schedules for Implementation and Compliance, Section A, Component 10(b): *Pollution Complaint and Spills Response Program*.
  - a. Continue to respond as technical support for City of Oklahoma City **emergency responders to incidents which may cause or contribute to storm water contamination.**(Emphasis added)

**Item 10: Current permit language**, Part III, Schedules for Implementation and Compliance, Section A, Component 11(a): *Floatables*.

- a. *Update the study targeting structural controls for floatables, including an update in annual report..(Emphasis added)*
- o **Proposed permit language change**, Part III, Schedules for Implementation and Compliance, Section A, Component 11(a): *Floatables*.
  - a. Update the study targeting structural controls for floatables, including an update in annual report.(extra period removed)

**Item 11: Current permit language**, Part III, Schedules for Implementation and Compliance, Section A, Component 12(a-c): *Wet Weather Analytical*.

| <i>SWMP Component</i>             | <i>Activity</i>  | <i>Responsible Permittee(s)</i> | <i>Date Due/Frequency</i> |
|-----------------------------------|--|---------------------------------|---------------------------|
| 12. <i>Wet Weather Analytical</i> | a. <i>Submit a revised monitoring list of three (3) representative monitoring locations.</i> | All                             | Annually                  |

|  |   |            |                 |
|--|---|------------|-----------------|
|  | <p>b. Conduct monitoring to characterize storm water discharges at three (3) representative monitoring locations at a frequency of two (2) times per permit year.</p> | <p>All</p> | <p>Annually</p> |
|  | <p>c. Submit, in the annual report, analytical summary reports detailing constituent loadings from representative storm events during the permit year.</p>            | <p>All</p> | <p>Annually</p> |

- **Proposed permit language change.** Part III, Schedules for Implementation and Compliance, Section A, Component 12: Trend and Load Based Monitoring Program.

| SWMP Component                      | Activity   | Responsible Permittee(s) | Date Due/Frequency                             |
|-------------------------------------|--|--------------------------|--|
| 12. Trend and Load Based Monitoring | a. Submit a revised monitoring list of 15 selected monitoring locations with target dates for each station to be activated.          | All                      | 6 months from the effective date of the permit |
|                                     | b. Year 1 - Install, calibrate and activate 5 water quality monitoring stations  | All                      | Year 1 Annual Report                           |
|                                     | c. Year 2- Install, calibrate and activate 5 water quality monitoring stations   | All                      | Year 2 Annual Report                           |
|                                     | d. Year 3- Install, calibrate and activate 5 water quality monitoring stations   | All                      | Year 3 Annual Report                           |
|                                     | e. After station installation and calibration, provide continuous monitoring   | All                      | Annually                                       |
|                                     | f. Submit, in the annual report, a summary of all analytical results and calculated discharge results for each station monitored.    | All                      | Annually                                       |
|                                     | g. Provide a comprehensive summary report which details the pollutant loadings and any trends realized through statistical analysis. | All                      | Year 5 Annual Report                           |

- Item 12: Current permit language.** Part III, Schedules for Implementation and Compliance, Section A, Component 13(a-h): *Priority Based Monitoring Program.*

| SWMP Component | Activity | Responsible Permittee(s) | Date Due/Frequency |
|----------------|----------|--------------------------|--------------------|
|----------------|----------|--------------------------|--------------------|



|                                       |   |     |  |
|---------------------------------------|---|-----|--|
| 13. Priority Based Monitoring Program | a. Update the SWMP to include the Priority Based Monitoring Program   | All | 6 months from the effective date of the permit |
|                                       | b. Submit a schedule for completion of each major monitoring milestone.   | All | 6 months from the effective date of the permit |
|                                       | c. Complete Part 1 monitoring requirement   | All | June 1, 2013                                   |
|                                       | d. Complete Part 2 monitoring requirement   | All | September 1, 2014                              |
|                                       | e. Complete Part 3 monitoring requirement   | All | December 1, 2015, Annually                     |
|                                       | f. Complete Part 4 monitoring requirement   | All | March 1, 2017                                  |
|                                       | g. Provide a comprehensive compilation of relevant biological collections and water quality information, if applicable, collected for each permit year.   | All | Annually                                       |
|                                       | h. Based on results of the Priority Based Monitoring Program, submit a list of monitoring locations, collected information, summary data sheets and assessments regarding the status of the assessed reaches within the scope of relevant criteria for data collected through April 30 of odd-numbered years. | All | Every two (2) years starting September 2013    |

- o **Proposed permit language change**, Part III, Schedules for Implementation and Compliance, Section A, Component 13(a-g): Priority Based Monitoring Program.

| SWMP Component                        | Activity  | Responsible Permittee(s) | Date Due/Frequency                             |
|---------------------------------------|---|--------------------------|--|
| 13. Priority Based Monitoring Program | a. Update the SWMP to specify the remaining components of the Priority Based Monitoring Program                                   | All                      | 6 months from the effective date of the permit |
|                                       | b. Submit a schedule according to completion of each major monitoring milestone – 6 months from the effective date of the permit. | All                      | 6 months from the effective date of the permit |
|                                       | c. Completion of Part 5 monitoring requirements   | All                      | January 17, 2018                               |

|   |     |   |
|---|-----|---|
| d. Completion of Part 6 monitoring requirements   | All | March 13, 2019                          |
| e. Completion of Part 7 monitoring requirements   | All | May 6, 2020                             |
| f. Provide a comprehensive compilation of relevant biological collections and water quality information, if applicable, collected for each permit year.   | All | Annually                                |
| g. Based on results of the Priority Based Monitoring Program, submit a list of monitoring locations, collected information, summary data sheets and assessments regarding the status of the assessed reaches within the scope of relevant criteria. Submitted with the 2020 Oklahoma MS4 Annual Report. | All | Submitted with the 2020 Annually Report |

**Item 13: Current permit language**, Part III, Schedules for Implementation and Compliance, Section A, Component 14(a-f): Illicit Discharge Detection and Elimination Program.

| SWMP Component  | Activity   | Responsible Permittee(s) | Date Due/Frequency |
|---|--|--------------------------|--------------------|
| 14. Illicit Discharge Detection and Elimination Program | a. Complete field screening, 100% of the selected 554 monitoring locations                                   | All                      | December 1, 2013   |
|   | b. Complete field screening, cumulative 33% of the selected 554 monitoring locations                         | All                      | December 1, 2014   |
|   | c. Complete field screening, cumulative 33% of the selected 554 monitoring locations                         | All                      | December 1, 2015   |
|   | d. Complete field screening, cumulative 33% of the selected 554 monitoring locations                         | All                      | December 1, 2016   |
|   | e. Complete field screening, cumulative 100% of the selected 554 monitoring locations                        | All                      | December 1, 2017   |
|   | f. Submit field screening summaries including follow-up reports and summary statistics in the Annual Report. | All                      | Annually           |

- o **Proposed permit language change**, Part III, Schedules for Implementation and Compliance, Section A, Component 14(a-f): Illicit Discharge Detection and Elimination Program.

| SWMP Component  | Activity   | Responsible Permittee(s) | Date Due/Frequency |
|---|--|--------------------------|--------------------|
| 14. Illicit Discharge Detection and Elimination Program | a. Complete field screening, cumulative 25% of the selected 554 monitoring locations (Year 1)                | All                      | December 1, 2018   |
|   | b. Complete field screening, cumulative 25% of the selected 554 monitoring locations (Year 2)                | All                      | December 1, 2019   |
|   | c. Complete field screening, cumulative 25% of the selected 554 monitoring locations (Year 3)                | All                      | December 1, 2020   |
|   | d. Complete field screening, cumulative 25% of the selected 554 monitoring locations (Year 4)                | All                      | December 1, 2021   |
|   | e. Complete field screening, 100% of the selected 554 monitoring locations (Year 5)                          | All                      | December 1, 2022   |
|   | f. Submit field screening summaries including follow-up reports and summary statistics in the Annual Report. | All                      | Annually           |

- o **Comment 5:** Part III SWMP Component 14, Illicit Discharge Detection and Elimination. Progress has been made over the past permit terms to provide comprehensive responses to detections of non-storm water discharges. SWQ realizes that immediate response is often needed when excessive parameter detections are measured. To provide additional time for near immediate response, SWQ proposes reducing the number of stations monitored each permit year. This proposal requires OKC to monitor 25% of the stations year 1, 2, 3, and 4. Year 5 will consist of monitoring each of 545 stations to determine if follow-up efforts have been successful. During the years which reduced monitoring is required, personnel will use historically collected information to determine problematic areas and direct additional testing and investigation.

**Item 14: Current permit language**, Part V, Monitoring and Reporting Requirements, Section B, Item 3a Wet Weather Analytical Monitoring Requirements:

- o **Comment 6:** Oklahoma City requests the removal of the Wet Weather Analytical Monitoring Requirement and proposes replacement with the Trend and Load Based Monitoring Program. Historically, SWQ has focused on individual storm quality with the Wet Weather Analytical Monitoring. Although the event mean concentration information provided by this program is good for some uses, it does not provide sufficient information to determine the annual

pollutant load or if any long-term trends are occurring with programmatic changes. The Trend and Load Based Monitoring Program will assist Oklahoma City by providing the data needed to calculate practical load estimations for specific parameters of interest with reasonable certainty. This program is intended to bring the monitoring efforts to a level which active and future TMDL's will require for assessment of pollutant loading (excluding bacteria or other parameters which require grab sampling or in-situ measurement). Through continuous monitoring, the natural flux, which often occurs in non-point source situations, is accounted for. The program considers all hydrologic conditions through flow paced sampling efforts. This program will be instituted in representative drainages throughout the City. Select parameters will be monitored continuously. Flow weighted samples will be collected at a frequency necessary to meet appropriate holding times and analytical procedures will be in accordance to 40 CFR Part 136. Oklahoma City will use automatic samplers, sondes and flow sensors to collect continuous flow weighted samples and calculate discharge. Duration of the sampling event, total discharge, total rainfall, and constituent concentrations will be recorded for each sampling event. Oklahoma City selected total suspended solids, total nitrogen and total phosphorus as the "primary parameters" to continuously monitor. Other parameters termed "secondary parameters" may be added if supporting data is required. Oklahoma City realizes the capital investment and station development will take several years to bring the anticipated 15 stations to active status.

- **Proposed permit language change**, Part V, Monitoring and Reporting Requirements, Section B, Trend and Load Based Monitoring Program:
  - A. Monitoring shall be conducted at in-stream monitoring locations with selected representative drainages in Oklahoma City Corporate boundaries to provide the parameter data and flow data necessary to calculate annual constituent loadings. Analytical monitoring will be conducted continuously (or as site conditions allow). Stations will be selected which represent Oklahoma City geographically and represent the various land uses which contribute to stream pollutant loading.
  - B. Quantitative data will be used to calculate annual loading. Records shall be maintained of all analytical results, each date and duration of the sampling period (in hours), an estimated volume of the discharge sampled (in cubic feet), the estimated annual pollutant load, and the number of subsamples acquired for the composite sample.
  - C. Composite Samples – Flow weighted composite samples shall be collected as follows:  
Composite Method – Flow weighted composite samples shall be collected automatically. In the cases that a parameter of interest requires a grab sample, that method must be used and the frequency of collection may be reduced to meet the data quality objectives established in applicable Quality Assurance Project Plans. The flow weighted sample may be composited in the field or laboratory and methods must adhere to standard operating procedures.
  - D. Sampling Duration – Each sample episode duration shall not exceed the shortest holding time of the parameters monitored. As discharge will increase or decrease with seasonal changes and precipitation patterns samples may be collected at various intervals as sample volume demands.
  - E. Aliquot Collection – the minimum aliquot collection required for a composite sample will be based on the sample quantity needed for analysis purposes and any quality assurance purposes. At a minimum, a composite sample must consist of at least three aliquots which provide sufficient volume for the laboratory analysis of the selected parameter.

F. Analytical Methods: Analysis and collection of samples shall be done in accordance with the methods specified at OAC 252:606-1-3(b)(7) adopting and incorporating by reference 40 CFR Part 136. Where an approved Part 136 method does not exist, any available method may be used unless a particular method or criteria for method selection (such as sensitivity) has been specified in the permit.

**Item 15: Current permit language,** Part V, Monitoring and Reporting Requirements, Table V.B. Analytical Monitoring Requirements:

|   | REPORT FOR EACH MONITORING PERIOD<br>(each sample type) |      |     | SAMPLE TYPE(S) |           |
|---|---|------|-----|----------------|-----------|
|   | Min.  | Ave. | Max | Grab           | Composite |
| Biochemical Oxygen Demand (BOD5) (mg/L) |   | Yes  | Yes |                | Yes       |
| Chemical Oxygen Demand (COD) (mg/L)     |   | Yes  | Yes |                | Yes       |
| Oil and Grease (mg/L)                   |   | Yes  | Yes | Yes            | Yes       |
| Total Suspended Solids (TSS) (mg/L)     |   | Yes  | Yes |                | Yes       |
| Total Dissolved Solids (TDS) (mg/L)     |   | Yes  | Yes |                | Yes       |
| Total Nitrogen (mg/L)                   |   | Yes  | Yes |                | Yes       |
| Total Kjeldahl Nitrogen (TKN) (mg/L)    |   | Yes  | Yes |                | Yes       |
| Total Phosphorus (mg/L)                 |   | Yes  | Yes |                | Yes       |
| Dissolved Phosphorus (mg/L)             |   | Yes  | Yes |                | Yes       |
| Total Cadmium (ug/L) (MQL 1 ug/L)       |   | Yes  | Yes |                | Yes       |
| Total Copper (ug/L) (MQL 10 ug/L)       |   | Yes  | Yes |                | Yes       |
| Total Lead (ug/L) (MQL 5 ug/L)          |   | Yes  | Yes |                | Yes       |
| Total Zinc (ug/L) (MQL 20 ug/L)         |   | Yes  | Yes |                | Yes       |
| E. coli (colonies/100 ml)               |   | Yes  | Yes | Yes            |           |
| pH (S.U.)                               | Yes   |      | Yes | Yes            |           |
| Hardness (as CaCO3) (mg/L)              | Yes   | Yes  | Yes | Yes            |           |
| Water Temperature (Degree C)            | Yes   | Yes  | Yes | Yes            |           |
| Total Mercury (ug/L) (MQL 0.2 ug/L)     |   | Yes  | Yes |                | Yes       |
| Total Thallium (ug/L) (MQL 10 ug/L)     |   | Yes  | Yes |                | Yes       |

o **Proposed permit language change,** Part V, Monitoring and Reporting Requirements, Table V.B. Analytical Monitoring Requirements:

| MONITORING PARAMETERS                   |           | REPORT FOR EACH MONITORING PERIOD (each sample type) |                 |             | SAMPLE TYPE(S) |
|---|-----------|--|-----------------|-------------|----------------|
| Parameter                               | *Priority | No. Samples  | Total Discharge | Annual Load |                |
| Biochemical Oxygen Demand (BOD5) (mg/L) | Secondary | *  | *               | *           | Composite      |
| Chemical Oxygen Demand (COD) (mg/L)     | Secondary | *  | *               | *           | Composite      |
| Oil and Grease (mg/L)                   | Secondary | *  | *               | *           | Grab           |
| Total Suspended Solids (TSS) (mg/L)     | Primary   | Yes  | Yes             | Yes         | Composite      |

|                                       |           |     |     |     |            |
|---------------------------------------|-----------|-----|-----|-----|------------|
| Total Dissolved Solids (TDS) (mg/L)   | Secondary | *   | *   | *   | Composite  |
| Total Nitrogen (mg/L)                 | Primary   | Yes | Yes | Yes | Composite  |
| Total Kjeldahl Nitrogen (TKN) (mg/L)  | Secondary | *   | *   | *   | Composite  |
| Total Phosphorus (mg/L)               | Primary   | Yes | Yes | Yes | Composite  |
| Dissolved Phosphorus (mg/L)           | Secondary | *   | *   | *   | Composite  |
| Total Cadmium (µg/L) (MQL 1 µg/L) 1   | Secondary | *   | *   | *   | Composite  |
| Total Copper (µg/L) (MQL 10 µg/L) 1   | Secondary | *   | *   | *   | Composite  |
| Total Lead (µg/L) (MQL 5 µg/L) 1      | Secondary | *   | *   | *   | Composite  |
| Total Zinc (µg/L) (MQL 20 µg/L) 1     | Secondary | *   | *   | *   | Composite  |
| <i>E. coli</i> (colonies/100 ml)      | Secondary | *   | *   | *   | Grab       |
| pH (S.U.)                             | Secondary | *   | *   | *   | Grab       |
| Hardness (as CaCO3) (mg/L)            | Secondary | *   | *   | *   | Composite  |
| Water Temperature (°C)                | Secondary | *   | *   | *   | Composite  |
| Total Mercury (µg/L) (MQL 0.2 µg/L) 1 | Secondary | *   | *   | *   | Composite  |
| Total Thallium (µg/L) (MQL 10 µg/L) 1 | Secondary | *   | *   | *   | Composite  |
| Discharge (CFS)                       | Primary   | *   | Yes | *   | Continuous |

\*Primary parameters are selected for long-term continuous monitoring as the key constituents for determining annual loading and trends. Secondary parameters may be added as needed to support additional monitoring needs.

**Item 16: Current permit language,** Part VIII, Definitions: *Flow-Weighted Composite Sample*

G. *Flow-Weighted Composite Sample means a composite sample consisting of a mixture of aliquots collected at a constant time interval, where the volume of each aliquot is proportional to the flow rate of the discharge.*

- o **Proposed permit language change,** Part VIII, Definitions: Flow-Weighted Composite Sample.
- G. Flow-Weighted Composite Sample means a composite sample consisting of a mixture of aliquots collected at a constant time or volume interval, where the volume of each aliquot is proportional to the flow rate of the discharge or a constant volume is used and collected after a pre-determined discharge rate has been measured.
- o **Comment 7:** Clarification of the definition provides expansion for the permittee to collect time proportional samples or flow proportional samples with equal or variable aliquot volumes.

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

Basic Contact Information:

**Mayor and City Council Members**

Mick Cornett, Mayor  
James Greiner, Ward One  
Ed Shadid, Ward Two  
Larry McAtee, Ward Three  
Todd Stone, Ward Four

David Greenwell, Ward Five  
Margaret S. "Meg" Salyer, Ward Six  
John A. Pettis, Ward Seven  
Mark K. Stonecipher, Ward Eight

Mailing Address for Mayor and City Council Members:  
200 N. Walker, 3<sup>rd</sup> Floor  
Oklahoma City, OK 73102

**City Manager**

James D. Couch, City Manager  
Office of the City Manager  
200 N. Walker, 3<sup>rd</sup> Floor  
Oklahoma City, OK 73102

**Public Works Director**

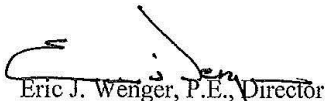
Eric J. Wenger, P.E.  
Public Works Director  
420 W. Main St., 7<sup>th</sup> Floor  
Oklahoma City, OK 73102

**Storm Water Quality Management**

Raymond Melton, CPESC, CSI  
Environmental Protection Manager  
420 W. Main St., 3<sup>rd</sup> Floor  
Oklahoma City, OK 73102  
(405) 297-2179, (Primary Contact)

Please contact Mr. Raymond Melton at (405) 297-2179 if you have any questions regarding this letter or if you require additional information.

Sincerely,

  
Eric J. Wenger, P.E., Director  
Department of Public Works

Attachments

Pc: Darian Butler, Oklahoma Turnpike Authority  
Tim Tegeler, Oklahoma Department of Transportation  
Raymond Melton, Storm Water Quality

April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**



SCOTT A. THOMPSON  
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

MARY FALLIN  
Governor

July 7, 2017

**CERTIFIED MAIL**

Raymond Melton, Stormwater Division Head  
Oklahoma City (OKS-STORMWATER)  
420 West Main Suite 700  
Oklahoma City, OK 73102

RE: Application for Renewal of Discharge Permit Number OKS000101  
Wastewater Treatment for Oklahoma City (OKS-STORMWATER), Oklahoma Co., Oklahoma  
Facility ID No. MS4-PERMIT

Dear Mr. Melton:

On 6/17/2017, a letter was sent to you requesting a renewal application to be filled out for the above referenced discharge permit which will expire on 3/14/2018. Federal and State Regulations require that applications for permit renewal be made at least 180 days prior to the expiration date of the current permit. An application form with instructions was enclosed for your convenience. It should be filled out, signed, and returned to this office no later than 180 days prior to the expiration date of your permit. Please contact us if you need assistance. The deadline for receipt of your application is 9/15/2017.

In accordance with OAC 252:606-3-4 of the DEQ rules, effective July 1, 2011 an application fee is due when submitting an application for a permit. The application fee is non-refundable and is due when an application is filed with the DEQ. An invoice is enclosed describing your application fee. Please return the invoice with your payment and application to the Department of Environmental Quality, Accounts Receivable at P.O. Box 2036, Oklahoma City, OK 73101.

If your facility no longer has a discharge, but does have a total retention system (lagoon or land application), you will need to submit an Affidavit of No Discharge (AND). Please advise us if you need an AND. If the facility is no longer in existence and has no discharge or total retention system please contact us regarding a closure plan for the existing permit. If you have already completed and submitted an application, an AND, or closure plan please notify us as soon as possible. Thank you very much for your cooperation with this matter.

Please contact Accounts Receivable at (405) 702-1130 if you have questions concerning payment methods for your application fee. Please contact Tammi Johnson at (405) 702-8170 if you have any questions concerning the renewal of your permit.

Sincerely,

A handwritten signature in cursive script, appearing to read "Micheal Jordan".

Micheal Jordan, P.E., Manager  
Municipal Discharge and Stormwater Permitting  
Water Quality Division

707 NORTH ROBINSON, P.O. BOX 1677, OKLAHOMA CITY, OKLAHOMA 73101-1677

printed on recycled paper with soy ink





April 30, 2018

**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**



Department of Environmental Quality  
Administrative Services - Accounts Receivable  
P O Box 2036  
Oklahoma City, OK 73101

DEQ's FEI # 73-6017987

**RECEIPT FOR PAYMENT**

THE CITY OF OKLAHOMA CITY  
420 W MAIN, STE 700  
OKLAHOMA CITY, OK 73102

Fax #:  
Fax To:  
Email Address:

Type of Fee: MUNICIPAL AND INDUSTRIAL PDES FEES

Invoice: 55700338

VCP Case: \_\_\_\_\_

Permit ID: OKS000101

**Form of Payment:**

Cash  Check/MO  Credit Card  CC Online  CC Lab  eCheck  Electronic Payment  Wire Trans

Date Received: 09/14/2017

Check Number: \_\_\_\_\_

Amount Received: \_\_\_\_\_

Amount Received: \$533.29

Credit Card Approval Code: 051140

Logged in By: TGILLESPIE

Receipt Number: 693076

**Appendix AO: Wet Weather Analytical Monitoring Stations 2012-2017**

| Site Number | Project Number | Stream Name                              | Major Basin    | Legal                   | County   | Project     | Fire Grid | Atlas Number | SECTION | Location Information  | Type      |
|-------------|----------------|--|----------------|-------------------------|----------|-------------|-----------|--------------|---------|---|-----------|
| 615         | SE615          | Unnamed Tributary to the Deep Fork River | Deep Fork      | SW\NW\NW\SW T12N R3W S9 | Oklahoma | Storm Event | 4547      | 377          | 9       | 5440 N. Western Avenue  | Optional  |
| 616         | SE616          | Unnamed Tributary to the Oklahoma River  | North Canadian | NE\NW\SE\SW T11N R3W S4 | Oklahoma | Storm Event | 4542      | 577          | 4       | 550 SW 12th Street  | Permanent |
| 754         | SE754          | Unnamed Tributary to the Deep Fork River | Deep Fork      | NW\NW\NW\NE 31, 13N 2W  | Oklahoma | Storm Event | 4949      | 301          | 31      | ODOT Monitoring Location - Britton Road & I-35                              | Permanent |
| 85          | SE85           | Walnut Creek                             | Deer Creek     | Section 31, 13N 4W      | Oklahoma | Storm Event | 3749      | 289          | 31      | 8621 NW Brittin - 375 west of Rambling Rd btw. Council and County Line Rds. | Permanent |
| 1320        | SE1320         | Unnamed Tributary to Harrison Creek      | Deep Fork      | Section 19, T13N R2W    | Oklahoma | Storm Event | 4951      | 221          | 19      | On Coltrane (West Side) just North of Hefner Road and West of I-35          | Optional  |

**Appendix AP: Wet Weather Analytical Monitoring Data – Calculated Loading 2012-2017**

| Station | Date      | Total Discharge Measured (Ft <sup>3</sup> ) | Total Oil & Grease (lbs.) | *Fecal Coliform / E. coli | BOD5 (lbs.) | COD (lbs.) | **Diazinon (lbs.) | TDS (lbs.) | TSS (lbs.) | Total Nitrogen (lbs.) | NO <sub>3</sub> /NO <sub>2</sub> N. (lbs.) | TKN (lbs.) | Dissolved Phosphorus (lbs.) | Total Phosphorus (lbs.) | Total Hardness (lbs.) | Total Cadmium (lbs.) | Total Copper (lbs.) | Total Pb (lbs.) | Total Hg (lbs.) | Total Tl (lbs.) | Total Zn (lbs.) |
|---------|-----------|---|---------------------------|---------------------------|-------------|------------|-------------------|------------|------------|-----------------------|--|------------|-----------------------------|-------------------------|-----------------------|----------------------|---------------------|-----------------|-----------------|-----------------|-----------------|
| 615     | 6-Jun-12  | 1780212                                     | 510.205911                | N/A                       | 1630.4      | 5989.37374 | 0.00622229        | 21739.2084 | 10647.78   | 259.54                | 89.62                                      | 169.70     | 17.19                       | 34.38                   | 8873.15               | 0.1109               | 1.0315              | 1.3421          | 0.0222          | 0.1109          | 8.8731          |
| 616     | 6-Jun-12  | 85609.2                                     | 25.12                     | N/A                       | 66.672      | 272.023575 | 0.00050724        | 2826.91167 | 512.04     | 13.49                 | 5.03                                       | 8.48       | 1.33                        | 1.28                    | 586.72                | 0.0053               | 0.0752              | 0.2539          | 0.0011          | 0.0053          | 0.6561          |
| 754     | 6-Jun-12  | 12156                                       | 3.44602178                | N/A                       | 8.331       | 36.3536364 | 4.2185E-05        | 55.287822  | 34.08      | 1.08                  | 0.54                                       | 0.54       | 0.07                        | 0.10                    | 37.87                 | 0.0008               | 0.0093              | 0.0067          | 0.0002          | 0.0008          | 0.0598          |
| 85      | 13-Sep-12 | 57264                                       | 16.0193154                | N/A                       | 34.857      | 78.4910776 | 0.00019837        | 264.015443 | 41.03      | 5.78                  | 1.43                                       | 4.35       | 0.29                        | 0.81                    | 85.63                 | 0.0036               | 0.0210              | 0.0171          | 0.0007          | 0.0036          | 0.0749          |
| 616     | 13-Sep-12 | 437820                                      | 121.114042                | N/A                       | 398.26      | 1391.1748  | 0.00150574        | 2182.23498 | 1273.88    | 70.10                 | 17.92                                      | 52.10      | 6.36                        | 11.37                   | 2182.23               | 0.0273               | 0.4310              | 0.9056          | 0.0055          | 0.0273          | 2.7551          |
| 754     | 13-Sep-12 | 5648.4                                      | 1.48                      | N/A                       | #####       | 49.268508  | 0.000033          | 37.655217  | 43.64      | 1.15                  | 0.36                                       | 0.79       | 0.09                        | 0.15                    | 38.71                 | 0.0004               | 0.0109              | 0.0095          | 0.0001          | 0.0004          | 0.0679          |
| 85      | 12-Feb-13 | 22716                                       | 11.8601944                | N/A                       | 5.66        | 152.852148 | 0.00016106        | 124.546194 | 84.92      | 3.86                  | 1.40                                       | 2.46       | 0.35                        | 0.47                    | 90.58                 | 0.0028               | 0.0161              | 0.0062          | 0.0006          | 0.0028          | 0.0821          |
| 754     | 12-Feb-13 | 12864                                       | 3.37422514                | N/A                       | 1.603       | 51.294634  | 4.4803E-05        | 97.780396  | 71.33      | 1.44                  | 0.83                                       | 0.64       | 0.12                        | 0.23                    | 70.53                 | 0.0008               | 0.0210              | 0.0186          | 0.0002          | 0.0008          | 0.0008          |
| 1320    | 12-Feb-13 | 11580                                       | 8.44131974                | N/A                       | 7.21        | 101.007245 | 4.0475E-05        | 54.83      | 43.29      | 0.77                  | 0.33                                       | 0.44       | 0.06                        | 0.18                    | 30.30                 | 0.0007               | 0.0100              | 0.0051          | 0.0001          | 0.0007          | 0.0404          |
| 85      | 26-Mar-14 | 13358.4                                     | 3.66203972                | N/A                       | 14.98       | 66.5825403 | N/A               | 77.40      | 58.26      | 2.92                  | 0.83                                       | 2.09       | 0.23                        | 0.27                    | 45.19                 | 0.0004               | 0.0114              | 0.0027          | 0.0002          | 0.0042          | 0.0626          |
| 616     | 26-Mar-14 | 184260                                      | 51.5458063                | N/A                       | 282.41      | 1607.21891 | N/A               | 3099.64    | 1331.70    | 46.84                 | 11.48                                      | 35.36      | 3.24                        | 9.22                    | 1377.62               | 0.0057               | 0.2790              | 0.3180          | 0.0023          | 0.0057          | 2.3419          |
| 754     | 26-Mar-14 | 11244.72                                    | 3.25774831                | N/A                       | 10.58       | 98.0827449 | N/A               | 186.36     | 112.09     | 0.74                  | 0.70                                       | 0.04       | 0.13                        | 0.32                    | 112.80                | 0.0007               | NR                  | 0.0284          | 0.0001          | 0.0004          | 0.1927          |
| 616     | 16-Jul-14 | 58490.4                                     | 27.2220685                | N/A                       | 157.06      | 546.627882 | N/A               | 1515.98    | 1264.53    | 21.50                 | 5.50                                       | 16.00      | 1.52                        | 2.19                    | 1129.70               | 0.0019               | 1031.3046           | 0.3160          | 0.0007          | 0.0018          | 0.6960          |
| 85      | 3-Nov-14  | 160680                                      | 47.8526121                | N/A                       | 85.39       | 200.220134 | 0.00072279        | 300.33     | 355.39     | 83.57                 | 74.58                                      | 8.99       | 1.67                        | 1.83                    | 260.29                | 0.0050               | 0.0440              | 0.0160          | 0.0020          | 0.0050          | 0.2333          |
| 754     | 3-Nov-14  | 34376.4                                     | 23.3454808                | N/A                       | 19.04       | 119.940085 | 0.00012765        | 94.24      | 156.35     | 23.09                 | 17.50                                      | 5.59       | 0.44                        | 0.59                    | 124.22                | 0.0011               | 0.0291              | 0.0242          | 0.0004          | 0.0011          | 0.2088          |
| 754     | 22-Oct-15 | 15595.2                                     | 4.3626786                 | N/A                       | 13.80       | 75.7881806 | 4.9359E-05        | 80.65      | 116.60     | 2.37                  | 0.97                                       | 1.40       | 0.04                        | 0.26                    | 92.99                 | 0.0005               | 0.0243              | 0.0168          | 0.0002          | 0.0005          | 0.1321          |
| 616     | 5-Nov-15  | 314856                                      | 87.0985397                | N/A                       | 286.41      | 2354.01459 | N/A               | 1687.04    | 3060.22    | 44.79                 | 9.08                                       | 35.70      | 0.20                        | 5.69                    | NR                    | 0.0098               | 0.4826              | 0.8180          | 0.0039          | 0.0098          | 4.6884          |
| 85      | 5-Nov-15  | 20296.8                                     | 5.81703041                | N/A                       | 15.68       | 83.4617406 | 0.00012646        | 480.54     | 41.73      | 3.03                  | 0.25                                       | 3.29       | 0.01                        | 0.25                    | 139.10                | 0.0006               | 0.0103              | 0.0018          | 0.0003          | 0.0006          | 0.0598          |
| 85      | 13-Dec-15 | 122628                                      | 35.1449886                | N/A                       | 77.17       | 389.650961 | N/A               | 588.30     | 168.08     | 4.71                  | 2.51                                       | 2.21       | 1.50                        | 2.50                    | 215.45                | 0.0038               | 0.0458              | 0.0130          | 0.0015          | 0.0038          | 0.1910          |
| 754     | 13-Dec-   | 46135.2                                     | 12.244976                 | N/A                       | 12.59       | 83.357817  | N/A               | 186.84     | 126.47     | 1.13                  | 0.57                                       | 0.55       | 0.31                        | 0.77                    | 107.22                | 0.0014               | 0.0204              | 0.0236          | 0.0006          | 0.0014          | 0.1667          |

| Station | Date      | Total Discharge Measured (Ft <sup>3</sup> ) | Total Oil & Grease (lbs.) | *Fecal Coliform / E. coli | BOD5 (lbs.) | COD (lbs.) | **Diazinon (lbs.) | TDS (lbs.) | TSS (lbs.) | Total Nitrogen (lbs.) | NO <sub>3</sub> /NO <sub>2</sub> N. (lbs.) | TKN (lbs.) | Dissolved Phosphorus (lbs.) | Total Phosphorus (lbs.) | Total Hardness (lbs.) | Total Cadmium (lbs.) | Total Copper (lbs.) | Total Pb (lbs.) | Total Hg (lbs.) | Total Tl (lbs.) | Total Zn (lbs.) |
|---------|-----------|---|---------------------------|---------------------------|-------------|------------|-------------------|------------|------------|-----------------------|--|------------|-----------------------------|-------------------------|-----------------------|----------------------|---------------------|-----------------|-----------------|-----------------|-----------------|
|         | 15        |   |                           |                           |             | 5          |                   |            |            |                       |  |            |                             |                         |                       |                      |                     |                 |                 |                 |                 |
| 616     | 13-Dec-15 | 489756                                      | 147.076313                | N/A                       | 323.45      | 1556.20165 | N/A               | 2380.07    | 2557.05    | 20.41                 | 7.29                                       | 13.12      | 4.94                        | 11.02                   | 1464.66               | 0.0153               | 0.2899              | 0.4516          | 0.0061          | 0.0153          | 2.1054          |
| 754     | 8-Mar-16  | 26868                                       | 7.36552904                | N/A                       | 9.51        | 70.3073226 | N/A               | 128.90     | 97.09      | 1.93                  | 0.50                                       | 1.42       | 0.07                        | 0.35                    | 122.54                | 0.0008               | 0.0298              | 0.0214          | 0.0003          | NR              | 0.1858          |
| 616     | 14-Sep-16 | 74808                                       | 21.4398531                | N/A                       | 89.95       | 382.188686 | N/A               | 848.27     | 151.48     | 24.05                 | 15.01                                      | 9.04       | 0.21                        | NR                      | 247.49                | 0.0012               | 0.0368              | 0.0219          | 0.0009          | NR              | 0.2377          |
| 754     | 16-Sep-16 | 1276.68                                     | 0.35316768                | N/A                       | NR          | 2.7044372  | N/A               | 6.05       | 1.31       | 0.08                  | 0.11                                       | 0.03       | 0.00                        | 0.01                    | 4.53                  | 0.0000               | 0.0010              | 0.0006          | 0.0000          | 0.0000          | 0.0064          |
| 85      | 7-Nov-16  | 100728                                      | 84.095148                 | N/A                       | 60.94       | 326.33938  | N/A               | 363.99     | 421.10     | NR                    | NR   | 5.65       | 0.77                        | 1.70                    | 243.50                | 0.0013               | 0.0446              | 0.0176          | 0.0013          | 0.0031          | 0.3326          |
| 754     | 8-Mar-16  | 26868                                       | 7.36552904                | N/A                       | 9.51        | 70.3073226 | N/A               | 128.90     | 97.09      | 1.93                  | 0.50                                       | 1.42       | 0.07                        | 0.35                    | 122.54                | 0.0008               | 0.0298              | 0.0214          | 0.0003          | NR              | 0.1858          |
| 754     | 13-Feb-17 | 89603.04                                    | 30.0903639                | N/A                       | 29.03       | 374.036063 | 0                 | 530.35     | 915.55     | 9.17                  | 5.58                                       | 3.57       | 0.32                        | 2.19                    | 473.41                | 0.0019               | 0.1362              | 0.0876          | 0.0011          | 0.0028          | 0.7872          |
| 85      | 13-Feb-17 | 89600.64                                    | 24.5629044                | N/A                       | 11.16       | 240.046566 | N/A               | 189.80     | 848.54     | 7.60                  | 5.58                                       | 2.01       | 0.17                        | 0.88                    | 218.27                | 0.0011               | 0.0402              | 0.0195          | 0.0011          | 0.0028          | 0.2345          |
| 85      | 4-Oct-17  | 8070.84                                     | 2.22                      | N/A                       | 9.45        | 18.6052878 | N/A               | 46.26      | 2.97       | 0.62                  | 0.17                                       | 0.45       | 0.01                        | 0.23                    | 20.11                 | 0.0001               | 0.0026              | 0.0005          | 0.0001          | 0.0003          | 0.0075          |
| 754     | 4-Oct-17  | 2383.2                                      | 0.68450614                | N/A                       | 1.97        | 8.61200778 | N/A               | 11.14      | 3.42       | 0.31                  | 0.05                                       | 0.26       | 0.00                        | 0.07                    | 0.74                  | 0.0000               | 0.0012              | 0.0007          | 0.0000          | 0.0001          | 0.0070          |
| 616     | 4-Oct-17  | 383100                                      | 107.647667                | N/A                       | 243.46      | 477.373248 | N/A               | 1265.04    | 2124.31    | 42.65                 | 23.87                                      | 18.86      | 0.24                        | 65.16                   | 1241.17               | 0.0048               | 0.2673              | 0.4010          | 0.0048          | 0.0119          | 1.9572          |
| 616     | 19-Dec-17 | 147888                                      | 40.5416614                | N/A                       | 334.47      | 1170.17977 | N/A               | 1474.24    | 893.76     | 31.79                 | 9.21                                       | 22.57      | 0.27                        | 5.04                    | 2487.78               | 0.0018               | 0.2700              | 0.1778          | 0.0018          | 0.0046          | 2.1561          |

Highlighted values include those laboratory results reported at or below the detection limits (DL). In those cases the DL was used as the calculating value.

\*Grab sample. No loading applied to parameter.

\*\*Diazinon excluded from OKS000101 Permit March 15, 2013. Diazinon may have been measured on subsequent dates in error. In these cases, those data were reported.

## **Appendix AQ: Wet Weather Analytical (Storm Event) Standard Operating Procedure**

Wet Weather Monitoring  
SOP No.: 17  
Status: Review  
Date: 10/29/07  
Page 1 of 12

**City of Oklahoma City, Public Works Department, Storm Water Quality Division**

**STANDARD OPERATING PROCEDURE #17**

Wet Weather Monitoring (Storm Event Monitoring)  
SOP #17

## 1.0 PROCEDURAL SECTION

### 1.1 Scope and Application<sup>1</sup>

The City of Oklahoma City, Public Works Department, Storm Water Quality Division currently monitors the municipal separate storm system (MS4) at specific locations to detect illicit discharges into the storm drainage network. City ordinances mandate that only storm water are to be discharged into the Municipal Separate Storm Drainage System (MS4) and/or a receiving waterbody. The specific language specified in the OPDES MS4 Permit Number OKS000101 Part II, 6, a "permittees shall identify in the Storm Water Management Plan any categories of non-storm water that are not prohibited from being discharged into the MS4". Wet weather analytical monitoring, or often referred to as Storm Event Monitoring, is conducted to insure that significant quantities on organics and inorganic elements are not being discharge into the MS4 in elevated conditions. The program is also designed to set a benchmark of the general success of the Storm Water Quality Environmental Education, Industrial, Construction, Household Hazardous Waste and other associated programs within the City of Oklahoma City. Traditionally, efforts to improve the water quality under the NPDES Program have focused on reducing pollutants in industrial process wastewater discharges from municipal sewage treatment plants. Recognizing the need for more comprehensive control of storm water discharges, Congress amended the Clean Water Act in 1987, and established a two-phased program. In phase I, Congress required the United States Environmental Protection Agency (USEPA) to establish NPDES for certain classes of storm water discharge. The five listed categories include the following classifications. 1) Storm water discharge for which a permit has been issued prior to 2/4/87, 2) a storm water discharge associated with industrial activity, 3) a storm water discharge from a MS4 serving a population of 250,000 or more, 4) a storm water discharge from a MS4 serving a population of 100,000 but less than 250,000, a discharge for which the Administrator or the State determines that the storm water discharge contributes to a violation of a water quality standard or is a significant contributor of pollutants to the water of the United States.

Storm Event Sampling provides a means for evaluating the environmental risk of the storm water by identifying the types and amounts of pollutants present. This data helps to determine the relative potential for the storm water discharge to contribute to water quality impacts or water quality standards. The data is also used to indicate sources or potential sources of the various types of pollution sources.

### 1.2 Summary of Method

Measurements and sample collection should be made according to the procedures specified within this document. This includes the following categories:

- 1) Appropriate sampling time frame
- 2) Appropriate representative storm event
- 3) Appropriate sample type (grab or flow weighted composite sample)
- 4) Appropriate sample quantities

All analytical testing procedures need not conform to the requirements of 40 CFR Part 136. However, samples taken to confirm a particular illicit connection or improper practice should conform to 40 CFR Part 136.

#### 1.2.1 Definitions

**Storm Event**, for the purposes of the Storm Water Quality Division a storm event is defined as a period of rainfall that exceeds 0.1 inch of rainfall (significant rainfall event). The storm must be preceded by at least 72 hours of dry weather (no rainfall or rainfall >0.10"). Where feasible, the depth of the rain and duration of the event should not vary by more than 50% from the average depth and duration.

**Receiving Waterbody** means a runoff process connected to a network of waterways that increase in size as the watershed increases.

**Stormwater** means any rainwater runoff, surface runoff, and drainage related to rain or storm events or snow melt.

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<sup>1</sup> Text was taken directly or in part from Standard Methods (APHA, AWWA, WPCF, 1992).

**Outfall Structure** means the place where sewers, drain or stream discharges.

**Monitoring** means the performance of storm water flow measurements, storm water sampling, sample analysis, and like procedures necessary to determine compliance with storm water discharge activity.

**Municipal Separate Storm Sewer System (MS4)** means the system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or drains) owned and regulated by the City of Oklahoma City and designed or used for collecting or conveying storm water, and which is not used for collecting or conveying sewage.

**Sewage** means industrial waste and/or domestic sewage.

### 1.3 Health and Safety Warnings

#### StabilCal Standards (0.1, 20.0, 100, and 800 NTU's)

Toxicity: None reported

Signs and symptoms of exposure: Eyes-may cause irritation, Skin-May cause irritation or allergic reaction, Ingestion-gastrointestinal irritation, kidney damage.

Medical condition aggravated by exposure: Allergies or sensitivity to hexamethylenetetramine

Carcinogenicity: None reported

#### Sulfuric Acid 0.1600 +- 0.008 N

Toxicity: None reported

Signs and symptoms of exposure: Eyes-cause eye burns, Skin-no effect are anticipated, Ingestion-irritation of mouth and esophagus, may cause vomiting, diarrhea, Inhalation-May cause: respiratory tract irritation, teeth erosion, mouth soreness, and difficulty breathing.

Medical condition aggravated by exposure: Pre-existing: Eye conditions and respiratory conditions

Carcinogenicity: An ingredient of this mixture is IARC Group 1: Recognized Carcinogen

#### Sulfuric Acid 1.600 +- 0.008 N

Toxicity: None reported

Signs and symptoms of exposure: Eyes-cause eye burns, Skin-no effect are anticipated, Ingestion-practically non-toxic,

Inhalation-no data reported

Medical condition aggravated by exposure: None reported

Carcinogenicity: An ingredient of this mixture is IARC Group 1: Recognized Carcinogen

#### Sulfuric Acid –Concentrated <98%

Toxicity: Acute Toxicity: Oral Rat LD50= 2140 mg/Kg= moderately toxic. Inhalation Rat= LC50 =347 ppm/1 hour =Toxic  
This product is corrosive to the eyes, skin and respiratory tract.

Signs and symptoms of exposure: Severely burns any tissue contacted. Breathing any mist or vapor may cause tooth erosion, mouth soreness and difficulty breathing. Inhalation of the mist or vapor may cause cancer of the nasal tissue, lungs and larynx.



Medical condition aggravated by exposure: Pre-existing eye, skin or respiratory problems.  
Carcinogenicity: Known carcinogen

#### **Hydrochloric Acid – HCL 36.5 – 38.0**

Toxicity: Acute Toxicity Oral rabbit LD50 – 900 mg/kg, Inhalation-Rat 3124 ppm/1H, Inhalation Human LCL0 1300 ppm/30M, Inhalation Human LCL0 1108/5M.

Signs and symptoms of exposure: Primary irritant effect: on the skin – corrosive effect on skin and mucous membranes. Irritant to skin and mucous membranes. Eye – strong corrosive and irritating effect. Sensitization – no sensitizing effects known. Sub acute to chronic toxicity – HCL is corrosive and irritating to skin, eyes and mucous membranes. Vapors may cause severe irritation to the eyes and respiratory tract. Inhalation of vapors may cause pulmonary edema. Dilute solutions have less irritating effect. Additional toxicology information – swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

Signs and symptoms of exposure: Not specified on Material Data Safety Sheet

Medical condition aggravated by exposure: Not specified on Materials Safety Data Sheet

Carcinogenicity: Not classified as to carcinogenicity to humans.

#### **Nitric Acid – Nitric Acid 1:1**

Toxicity: LDLO Oral Human 430 mg/kg, PEL 5 mg/m3, TLV 5 mg/m3, STEL 4 ppm.

Sign and symptoms of exposure: Eyes – contact causes severe burns. Skin – Contact causes severe burns. Ingestion – Corrosion. Causes severe gastrointestinal irritation, burns of mouth, esophagus and stomach. Inhalation – corrosive. May cause acute pulmonary edema or chronic obstructive pulmonary disease.

Signs and symptoms of exposure:

Medical condition aggravated by exposure: Eye, skin, and respiratory conditions.

Carcinogenicity: NTP – 0, IARC – 0, OSHA - 0

#### **1.4 Cautions**

Be aware of your surroundings. Many of the outfalls monitoring locations are in the highly urbanized portions of Oklahoma City. These areas are prone to fast moving and at times heavy traffic. All precautions must be applied when wet weather/storm event monitoring. Always set up traffic cones at sites that have heavy traffic or that are located on or very close to the street and/or intersection. Never enter a storm drain structure. Collect samples with equipment that will allow safe retrieval of the sample. Outfall structures or any water conveyance structure are not to be entered during any time of the storm event. These channel types convey water extremely quick and can have rapid increases in discharge in a very brief period of time. Be aware of rainfall that may be occurring upstream but not occurring at your present location. Be aware of the water level. If the water level rises above the level of the structure that is being sampled from, do not sample. Safety is critical.

Due to the nature of the urban watersheds that field investigators will be monitoring, it is imperative that investigators wear latex gloves while sampling. These gloves will not only protect the skin from chemicals involved during the water quality analysis but also protect the investigator from the potential chemical and materials discharged into the MS4.

Be aware of large debris that may be discharge from outfalls. Debris fields may preclude entering a waterway. Always watch for large debris, eroding banks or other potentially dangerous items within the waterway.

Sample containers are pre-preserved. Distribution of sample contents into sample containers may create an exothermic reaction with the acid preservative (if applicable). Gases may vent from the sampling container. PPE required.

**1.5 Interference**

Be careful not to sample in areas that are not representative of the overall situation. In the case of wet weather monitoring, do not sample in eddies or other micro-flow regimes. If possible, sample in the main discharge point where heavy mixing is occurring. Be aware, if possible of large mats of floating debris, scum or oils floating on the surface of the water. However, if this is a typical situation of the stream and the crew leader, through best professional judgement, deems that the situation is representative, then continue collecting the sample. Document all applicable comments as to any deviation from normal conditions.

Collecting a “representative” storm event can pose various logistical problems such as arid/drought areas, adverse weather conditions, and start/stop rains. Unfortunately, this may lead to false starts. In the case of a false start, sample will be discarded and new storm water sampling kits will be obtained from the contracted laboratory. Due to the fact the Oklahoma receives more rain than snow, snowfall events will not be sampled, therefore snow events will not be addressed in this SOP.

The first flush may pose an interfering element to storm water sampling. The first flush, often characterized as the initial discharges of rainwater of the land surfaces often contain higher levels of certain pollutants. Unfortunately, each watershed has its own signature of time-of-travel. For example, a small, highly urbanized watershed may have a distinct first flush that characterized by the first rise in stream stage (discharge). Larger urbanized watersheds may have a series of flushes or surges as the waters from each tributary and commingles. In this case, a second group of first flush sampling containers should be maintained in case the onsite crew leader, through best professional judgment, deems the first sample non representative of the first flush. Please note: The OKC SWQ Discharge Permit specifies that the grab samples will be acquired within the first two (2) hours of the discharge.

Rainfall could be a potential source of interference or contamination. Sample preparation must be conducted in an area that prohibits rainfall from entering the acquired sample. Insure that ropes, hanging vegetation or canopies are not dripping into sample containers. Insure that contamination does not occur during transport from collection point to sample distribution point.

The rain event must be a qualifying event to be sampled. The entire watershed must receive at least 0.10” of rainfall to be a qualifying rainfall event. The rain event must also be preceded by a 72 hour period of dry weather conditions (rainfall less than 0.10”). Samples acquired for non-qualifying events must be disposed (see Qualifying Event Section).

Flow meters (both portable and installed units) can be covered with debris. Prior to the event, installed units must be inspected for structural integrity, good batteries, clean flow sensor and able to be read using a laptop computer.

Automatic samplers may be utilized to collect wet weather/storm event samples. In the case that this type of apparatus is utilized, a section detailing the use will be incorporated into this document.

**1.6 Personnel Qualification**

Field personal must be trained and evaluated on the use of equipment prior to collecting samples or data. Use of equipment is subject to the approval by the QA Officer/Environmental Unit Supervisor. Training will be done through dry run exercises in the laboratory and field to familiarize field personnel with operation/collection, calibration and maintenance. Investigators must be familiar with the SOP document and manuals, when applicable. Personnel will be required to work a minimum of four (4) storm events with experienced personnel and display sufficient knowledge of skills and procedures prior to being permitted to be a crew leader.

**1.7 Apparatus & Materials**

- Hand held thermometer
- Storm Event Sampling Kit (with extra set of grab samples, supplied by contacted laboratory)
- Latex gloves
- Applicable meters (with ph calibration buffers) and water quality monitoring field kits (pH, dissolved oxygen, conductivity, turbidity, flow meter/flow rod and alkalinity)
- Applicable field sheets (episode sheet (1), Storm Event Monitoring field form (1), Flow field forms (9), Site Sheet field form (1))
- Replacement reagents, standards, and/or buffers
- Traffic cones
- Orange safety vest

- Pick axe
- Sledge hammer
- Headlamps and flashlights
- Rope and pre-cleaned stainless steel bucket
- HDPE Beakers (Pre-cleaned)
- Pencils
- Site List
- Squirt Bottles w/deionized water (with high grade laboratory water/approx. 1 gallon)
- Trash Bag
- Rain Jacket/Coat
- Chain of Custody Form (One/site)
- Indelible Pen

#### **1.8 Instrument/Method Calibration**

The field collector should select one (1) meter to make all temperature readings (please refer to the quarterly calibration results to select this meter). This meter, along with all other meters, should be calibrated against a National Institute of Standards and Technology (NIST) certified thermometer (or to one that is traceable to a NIST thermometer) each quarter following procedures specified in the Quarterly Calibration and Maintenance SOP #51. Values will be recorded on the Quarterly Calibration Sheet. During each quarterly calibration all field water quality monitoring kits will be inspected for completeness, cleanliness and all standards, reagents and other supplies will be checked for expirations. At each quarterly calibration event, multiple samples will be analyzed to determine the precision/accuracy between sampler and between samplers.

All meter will be calibrated prior to the sampling event according to the Storm Water Quality SOP's for each specific meter and/or the manufacturer's recommended procedures if no SOP has been developed. Flow meters will be zeroed before each sampling event.

#### **1.9 Equipment Operation & Preparation**

All field technicians will follow all SOPs and manufacturer recommended maintenance procedures for equipment operation and preparation for use in the field or laboratory.

Storm Event Sampling kits will be pre-prepared by the contracted laboratory with certified clean sampling containers. At the beginning of each seasonal monitoring period, the contracted laboratory will deliver storm event sampling kits to the Storm Water Quality Division, Environmental Water Quality Section. These storm water sampling kits should consist of all appropriate sampling bottles including bacteria, organic and inorganic sample containers. All of the bottles should be pre-acidified with the appropriate preservative (HCL, HNO<sub>3</sub> and H<sub>2</sub>SO<sub>4</sub>). For example, bacteria sampling containers should have a small pill (sodium thiosulfate) for neutralizing chlorine, one glass container should be preserved with concentrated sulfuric acid, and a plastic container should be preserved with concentrated nitric acid. A full checklist of the storm water sampling kits will be distributed to each field personnel, prior to the event, to insure that each storm water sampling kit is complete (see attached).

All meters will be calibrated prior to the sampling event according to the Storm Water Quality SOP's for each specific meter and/or the manufacturer's recommended procedures if no SOP has been developed. Meters will be pre-cleaned and checked for any problems prior to going to the field.

Field technicians are required to make appropriate preparations of proper PPE, equipment and paperwork. A short list is included below.

| <b>PPE</b>                       | <b>Equipment</b>                   | <b>Sampling Equipment</b>   |
|----------------------------------|------------------------------------|-----------------------------|
| Latex Gloves                     | Stainless Pre-cleaned Steel Bucket | Amber Glass 2/950 ml/HCL    |
| Safety Glasses                   | Rope                               | Bact-T/Sodium Thiosulfate   |
| Chest Waders                     | Sharpies (Black)                   | 250 HDPE/Nitric (9)         |
| Rain Coat/Jacket/bibs            | Tape Measure                       | 500 ml Amber Glass/NP       |
| Personal Floatation Device (PFD) | Rebar (2 pieces)                   | 250 ml Amber Glass/H2SO4    |
| Headlamp/Flashlight              | Ice Chest/Ice (4 bags)             | Flow Meter/Flow Rod         |
|                                  | Stopwatch (SSOM)                   | pH meter (buffers 4, 7, 10) |
|                                  | Calculator                         | Dissolved Oxygen Meter      |
|                                  |                                    | Conductivity Meter          |
|                                  |                                    | Turbidity Meter             |
|                                  |                                    | Alkalinity Kit              |
|                                  |                                    | Thermometer                 |

**PaperWork**

- Episode Sheet (1/event)
- Site Sheet (1/site)
- Storm Event Monitoring Sheet (1/site)
- Flow Sheet (whether SSOM or Metered Flow, bring both) (10/site, one utilized as MASTER FLOW SHEET FOR LAB)

**1.10 Information Generation & Sample Collection**

Samples will be collected utilizing a stainless steel bucket and rope. It is imperative that the bucket be pre-cleaned with a phosphorus free detergent, dried and properly bagged to avoid contamination from rainfall or other potential sources. (see Equipment Decontamination SOP #26). Storm Event monitoring will be conducted in an attempt to spread out the sampling throughout the seasonal index periods. Seasonal monitoring periods are defined below, however, due to time constraints and sporadic rainfall frequencies, samples will be acquired on an as needed basis.

**1.10.1 Seasonal Index Periods**

- 1) July 1 - October 31
- 2) November 1 – February 28 (29)
- 3) March 1 – June 30

It is the Environmental Units Supervisor or designee’s responsibility to notify field personnel when a storm event will be sampled. On this note, all field personnel will be on 24-hour call to complete this sampling regime during the seasonal monitoring periods. The contracted laboratory must also be notified that a potential rain event is scheduled for collection.

**1.10.2 Permanent and Rotating Outfall Locations**

Each permit and permit year, there may be changes to the Storm Event Monitoring List. These monitoring locations are selected for many reasons, but typically reflect locations that are either 1) landuse based, 2) representative of the urban environment, 3) or project based. Permanent locations are monitored over long periods of time (years). These sites are placed to acquire large pools of information to determine program effectiveness. Rotating sites are sites that may be sampled for one year (2 times/year – \*OKC MS4 Permit 2007) and are typically based on a specific landuse or problem area.

**1.10.3 General Weather Related Information**

Storm front predictive information will be obtained by logging onto various weather websites or by calling the following weather related organizations.

- |   |              |   |
|---|--------------|---|
| 1) National Weather Service                 | 405/360/5928 | <a href="http://www.nws.noaa.gov/">http://www.nws.noaa.gov/</a>   |
| 2) National Severe Storms Laboratory-Norman | 405/360/3620 | <a href="http://www.nssl.noaa.gov/">http://www.nssl.noaa.gov/</a> |
| 3) Oklahoma Climate Survey                  | 405/325/2541 | <a href="http://www.ocs.ou.edu/">http://www.ocs.ou.edu/</a>       |

Rainfall information will be obtained by a rain gauge placed at the monitoring location (if practicable). This rain gauge will be placed in an area that is not prone to have interference such as interception of rain droplets and splash over from road traffic. The gauge will be installed vertically level a minimum of four (4) feet of the ground. The gauge must read to the nearest tenth of an inch utilizing the reverse meniscus to acquire the final reading. If the quantity of rainfall is partially between two tenth graduations then round to the nearest tenth. If rain gauge installation is impractical, utilize the nearest rain gauge monitoring sites, Will Rogers International Airport or NOAA Storm Total Models to determine the rainfall for the given watershed. A qualifying event must occur throughout the watershed. If the Crew Leader determines that sufficient rainfall has not occurred within the watershed, terminate the sampling event.

#### 1.10.4 Qualifying Storm Event

Not every storm event will qualify to sample during the seasonal index-monitoring period. For a storm event to qualify, it must meet the following conditions.

- Must be within the seasonal index monitoring period (not applicable for 2007 MS4 Permit).
- Must have greater than 0.1 inch of total rainfall.
- The storm event must be preceded by at least 72 hours (3 days) of dry weather.
- Where feasible, the depth of rain and duration of the event should not vary by more than 50% from the average depth and duration.

The above qualifications for a storm event was established to 1) ensure that adequate flow will be discharged, 2) allow adequate build-up of pollutants during the dry weather intervals, and 3) ensure and document that the storm will be “representative”.

#### 1.10.5 Site Specific Rain Information

Site specific rain quantity information will be obtained by utilizing rain gauges located at the monitoring sites. Only United States Weather Bureau approved rain gauges graduated in 0.01 inches will be utilized. The rain gauge will be mounted in an area that will not be impacted by interception from tree branches or other structures. The gauge will also be placed in an area that passing traffic will not splash water into the gauge. **Do not install on the bridge.** After each sample collection record the rain gauge level in crew leaders field book. Validation of rain gauge information can be checked against the rain gauge information available through the Will Rogers World Airport @ 405/680/3200 or the organizations listed above (section 1.10.3 General Weather Related Information).

#### 1.10.6 General Sampling Protocol

Collecting samples at the various types of channels and pipes will be generally the responsibility of the individual field investigator. This will certainly entail best professional judgement. Field investigators will be field audited to insure that sample collection is being conducted in representative areas.

- Always set out traffic cones and turn hazard lights on to warn oncoming traffic of active monitoring activities.
- Collect in areas that are well mixed, avoid sampling in areas that micro-flow regimes are present such as eddies or other back flow areas that have less velocity.
- Always be aware of large debris flowing through the system.
- Never tie the anything connected to sampling apparatus to your body or the structure that is being sampled from. Water that is flow at even moderate velocities can drag you in or destroy City property.
- Always use a pre-cleaned stainless steel bucket for sample collection. Buckets should be stored out of the rain until the appropriate sampling time. The buckets should be totally encased by a trash bag after cleaning. The buckets should be labeled with a sticker/tape specifying “In-house Decontamination”, Date and Initials of Technician. Write this information down on the Sampling Episode Sheet.
- Collect the sample with the container opening to the upstream. Avoid scooping sediments and other debris from the bed of the stream, open channel or other storm water conveyance system.
- Avoid contamination during transport to sample distribution point.
- Pre-label sampling containers and mark with an indelible pen the aliquot number, time, date, sampling personnel and client (if applicable).

- Note: Sample containers are pre-preserved. Distribution of sample contents into sample containers may create an exothermic reaction with the acid preservative (if applicable). Gases may vent from the sampling container. PPE required.
- After sufficient sample volume is collected, perform sample distribution and water quality analysis. Insure that the sample is well mixed prior to distributing into the sample containers. Poor sample in an area that is not exposed to rainwater. Poor sample to a point that there is 1% headspace. And quickly re-cap the sampling container. Invert the sample and contains a minimum of ten (10) times and place into a cooler with ice (See SOP # 11 Inorganic Sample Collection for further details regarding sample collection).
  - Note: Physico-chemical data should preferably be collected in-situ (instream) versus from the sampling container (stainless steel bucket). If site conditions (discharge rates, unpredictable rise/fall in stream stage or highly sloped banks) preclude in-situ collection, physico-chemical results may be obtained from the remaining volume (after distributing sample aliquots into containers).
- Temperature measurements should be made with any electronic temperature sensor (refer to quarterly calibration results to determine most appropriate meter for temperature measurement). For QAQC purposes, a temperature must be acquired for all utilized meters and a thermometer. This information will be recorded on the Sampling Episode Field Form.
- pH can be measured utilizing a calibrated YSI pH meter (See SOP # 5 pH Measurement).
- Dissolved oxygen can be measured utilizing a calibrated YSI Dissolved Oxygen Meter (See SOP # 4 Dissolved Oxygen Measurement).
- Specific Conductance can be measured utilizing YSI Conductivity Meter (See SOP # 3 Conductivity Measurement)
- Total Alkalinity can be measured using a HACH Total Alkalinity Kit (See SOP # 2, Alkalinity Measurement)
- Turbidity can be measured using a HACH portable Turbidity Meter (See SOP # 6 Turbidity Measurement)
  - Note: Turbidity and Total Alkalinity are only required to be reported for the first flush/aliquot #1 (if the same). If the first flush is collected independently of an aliquot, the turbidity and alkalinity must be reported.
- Record all results on the Storm Event Monitoring Sheet.
  - **General Information** must be supplied such as Investigators (circle Crew Leader), date, time, Location Description (Legal, County, Atlas Number) and Project Number.
  - Circle applicable **rain information**
  - **Grab Sample (First Flush):** Describe the date collected, Time of the first flush and the containers and preservatives used for the collection of the first flush samples. Below this area is a place for the physico-chemical results to be placed for the first flush reading (Please note that the first flush may not be your aliquot #1 results). Current weather condition should be described below the physico-chemical data entry portion of the form.
  - **Composite Sample – Collection information for each aliquot:** This portion of the field form is used to record the 1) date, 2) time (mlt.) 3) pH, 4) water temperature, 5) rain gauge amount (cumulative, if applicable), 6) conductivity (must be recorded as specific conductance), 7) total alkalinity (only first flush and Aliquot 1), 8) weather description (codes are listed on the bottom of the field form), 9) water elevation (codes are listed on the bottom of the field form) and 10) dissolved oxygen (only required on first flush and Aliquot 1).
  - A Site Sheet, Nine Flow Sheets (either Semi-submersible object method, Metered Flow Sheet or a Composite of the two types of forms must be submitted for each aliquot, including the first flush if separate from aliquot #1), Episode Sheet (for the entire 24 hours, if a Episode is started between 12:00 a.m. – 11:59 p.m. and the storm event is started within this timeframe, use that Episode Form), and a “Master” Flow Sheet (metered flow form adjusted to reflect aliquot number, time, date and discharge in cubic feet/second).

#### 1.11 Sample Handling & Preservation

Sample must be measured *in situ*. Should a sample need to be collected for laboratory analysis, refer to Inorganic Sample Collection Standard Operating Procedure Number 11. **Always contact the Environmental Units Supervisor prior to any sample collection for laboratory analysis.** Preservation will vary depending on the constituents that are to be analyzed. For this monitoring program, sample containers will be pre-preserved and clearly marked as to the preservative contents. Crew Leaders must be aware of the preservative and explain this to other Crew Members.

Once acquired, samples are to be placed in a cooler with ice. The cooler must be closed and not exposed to ambient light (if daytime). Samples should not be exposed to rainfall or left out of the cooler for any more than one aliquot period. Samples must be placed in the cooler in a manner that containers will not be broken or ruptured. Sampling containers must be stored in an upright position. Water level (ice melt water) must not be permitted to accumulate to the mouth of containers. Drain excess water.

All samples acquired for each monitoring site must be accompanied by a chain-of-custody (See SOP # 19 Chain of Custody and Sample Labeling). Insure that the contracted laboratory specify and write the temperature of the samples on the chain-of-custody.

**1.12 Sample Preparation and Analysis**

Not Applicable, contracted laboratory performs sample preparation and analysis.

**1.13 Troubleshooting**

Refer to the owner’s manual for the appropriate meter. Check reagents, buffers, and/or standards for container integrity, contamination, and/or expiration. If a problem cannot be resolved and data quality may be of concern, report the problem to the Environmental Units Supervisor. If rainfall amounts preclude a qualifying event, the Crew Leader is responsible for ceasing the event. In the case that the sampling event is cancelled, notify the Environmental Unit Supervisor. All samples collected must be properly disposed.

**1.14 Data Acquisition, Calculation & Data Reduction**

Calculation for the Flow Measurement Sheet can be found in the SOP Number 8, 9 and 25 (Flow Measurement (SSOM), Flow Measurement (Meter Method) and Flow Measurement (Timed Volume Method).

Calculation of Meters segments can be obtained by the following calculation.

Total Width of stream divided by the required Flow Measurements (for time purposes for this program, a minimum of 4 boxes and a maximum of 8 boxes are required).

In Example:

|                              |                                |  |
|------------------------------|--------------------------------|--|
| Tape measure start = 20 feet | Tape measure stop = 40 feet    | (40 feet – 20 feet = 20 feet)                    |
| Stream Width = 20 feet       | Required Flow Measurements = 5 | (20 feet / 5 measurements = 4 feet/ measurement) |

Flow Box 1 = Tape measure start + 4 feet/measurement = 24 feet

Flow Box 2 = Flow Box 1 + 4 feet/measurement = 28 feet

“ “ “

Calculation of flow utilizing the semi submersible object method;

- CFS=AVE Depth X Width X Velocity (refer to Flow Measurement Semi Submersible Object Method SOP #8)

**1.15 Computer Hardware & Software**

Laptop computers and Floware Software may be needed to download installed (non-portable) flow meters. See the Environmental Unit Supervisor if a flow meter is present at the monitoring location.

**1.16 Data Management & Records Management**

**1.16.1 Field Notation of Data**

All field calibration and calibration checks should be recorded on the “Sampling Episode” sheet. All measurements made at each site should be recorded on the “Storm Event Monitoring Field Form”, “Flow Sheet”, “SSOM Field Sheet” and the “Site Sheet”. Data should be recorded following procedures outlined in the Instructions for Recording Field Information SOP #50.

**1.16.2 Chain-of-Custody Procedure**

All samples collected in the field must be submitted to the laboratory with an Oklahoma City, Storm Water Quality Management Chain-of-Custody (See Chain-of-Custody and Sample Labeling SOP # 19).

## 2.0 QA/QC SECTION

### 2.1 Training

Training of field personnel will be done through dry run exercises in the laboratory and/or field to familiarize them with instrument operation, calibration and maintenance. Investigators must be familiar with the SOP document and owner's manual for the meter used.

### 2.2 Maintenance

- Maintenance of the electronic temperature sensor, pH, Dissolved oxygen, flow, turbidity and conductivity should follow procedures outlined for the individual meter.
- Handheld mercury thermometers should be kept clean and in a protective case.

### 2.3 QC Procedures

These meters should be calibrated against NIST certified thermometers each quarter following procedures specified in the Quarterly Calibration and Maintenance SOP # 51. Values will be recorded in the equipment logbook.

The collection of QA samples should follow the procedure specified in the SOP manual.

## 3.0 REFERENCES

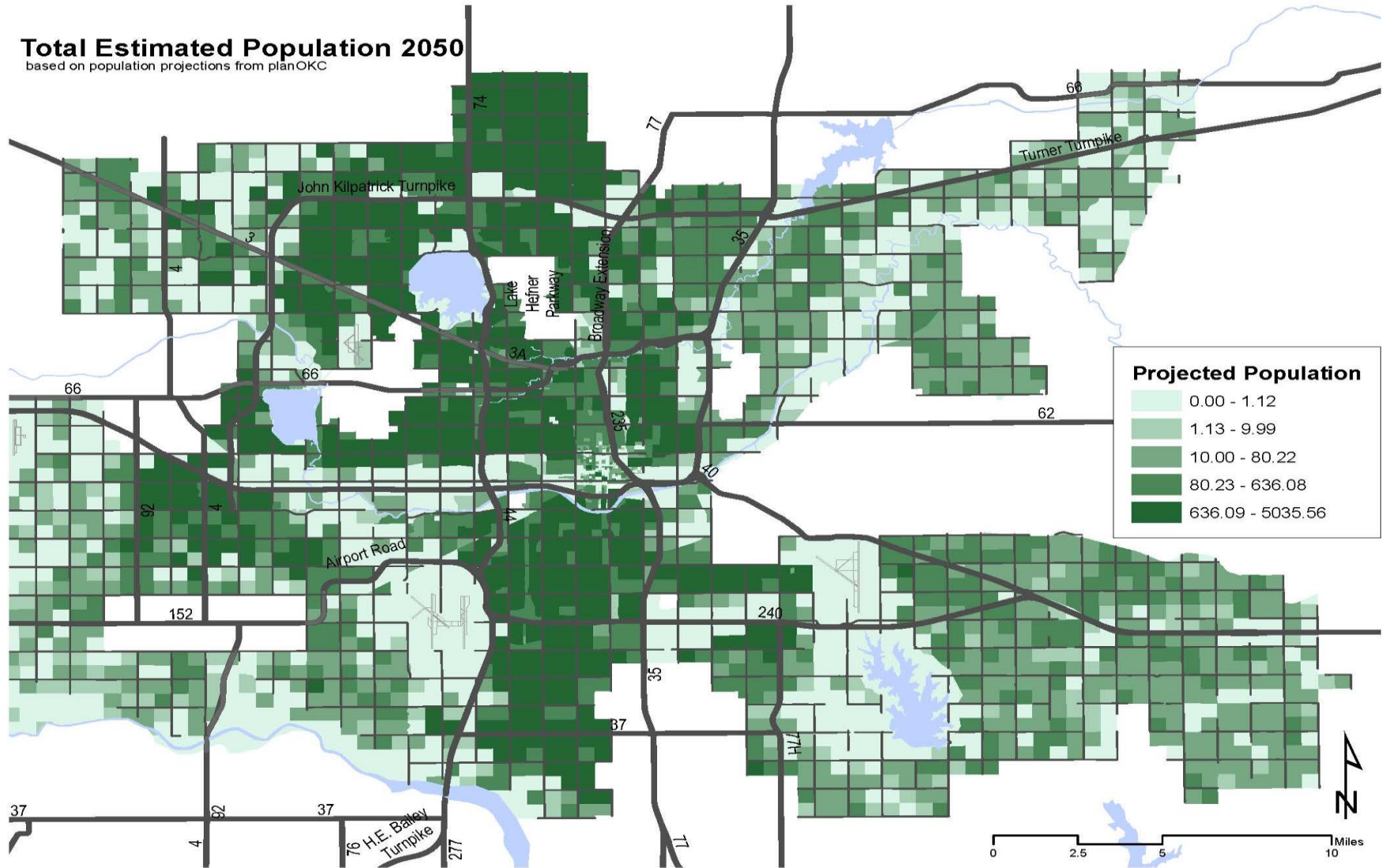
APHA, AWWA, and WPCF (1992) Standard Methods for the Examination of Water and Wastewater. 17<sup>th</sup> edition, eds. L.S. Clesceri, A.E. Greenberg, and R.R. Trussell, American Public Health Association, Washington, D.C.



**Appendix AR: Wet Weather Analytical Methods (EPA and Standard Methods)**

| Laboratory Parameter                | Laboratory Method                           | Primary Laboratory                           |
|-------------------------------------|---|--|
| Total Oil & Grease                  | EPA 1664B                                   | Ana-lab Corporation                          |
| E. coli                             | SM9223B                                     | Oklahoma Department of Environmental Quality |
| BOD5                                | SM 5210 B-2001                              | Ana-lab Corporation                          |
| COD                                 | SM 5220 D-97                                | Ana-lab Corporation                          |
| Diazinon                            | EPA 614                                     | Ana-lab Corporation                          |
| TDS                                 | SM 2540 C-97                                | Ana-lab Corporation                          |
| TSS                                 | SM 2540 D-97                                | Ana-lab Corporation                          |
| Total Nitrogen                      | Calculation of TKN and Nitrate plus Nitrite | OKC Staff                                    |
| NO <sub>3</sub> /NO <sub>2</sub> N. | EPA 300.0.2.1                               | Ana-lab Corporation                          |
| TKN                                 | EPA 351.2.2                                 | Ana-lab Corporation                          |
| Dissolved Phosphorus                | SM 4500-P E-1999                            | Ana-lab Corporation                          |
| Total Phosphorus                    | SM 4500-P E-1999                            | Ana-lab Corporation                          |
| Total Hardness                      | SM 2340 C-97                                | Ana-lab Corporation                          |
| Total Cadmium                       | EPA 200.8.5.4                               | Ana-lab Corporation                          |
| Total Copper                        | EPA 200.8.5.4                               | Ana-lab Corporation                          |
| Total Pb                            | EPA 200.8.5.4                               | Ana-lab Corporation                          |
| Total Hg                            | EPA 245.1.3                                 | Ana-lab Corporation                          |
| Total TI                            | EPA 200.8.5.4                               | Ana-lab Corporation                          |
| Total Zn                            | EPA 200.8.5.4                               | Ana-lab Corporation                          |
| Liquids Metals Digestion            | EPA 200.2.2.8                               | Ana-lab Corporation                          |

## Appendix AS: Population Prediction - Areas of Growth 2050



## Appendix AT: Municipal Waste Disposal Locations

| Facility Name                            | Address                                | City          | State    | Status | SWQ Permit Number | Type                                 |
|--|--|---------------|----------|--------|-------------------|--------------------------------------|
| Oklahoma Landfill                        | 7600 SW 15th Street                    | Oklahoma City | Oklahoma | Active | IND1235           | Landfill                             |
| Southeast OKC Landfill                   | 7001 South Bryant Avenue               | Oklahoma City | Oklahoma | Active | IND1138           | Landfill                             |
| East Oak Recycling and Disposal Facility | 3201 Mosley Road                       | Oklahoma City | Oklahoma | Active | IND1157           | Landfill                             |
| Northeast Landfill                       | 2101 NW Boulevard                      | Spencer       | Oklahoma | Active | No IND Permit     | Construction and Demolition Landfill |
| Southside Maintenance Facility           | 2701 NE 4th Street                     | Oklahoma City | Oklahoma | Active | IND1839           | Sludge Drying Beds                   |
| Household Hazardous Waste Facility       | 1621 South Portland Avenue, Building 1 | Oklahoma City | Oklahoma | Active | NEC2828           | Solid Waste Transfer Station         |

**Appendix AU: Detention Structures in Oklahoma City**

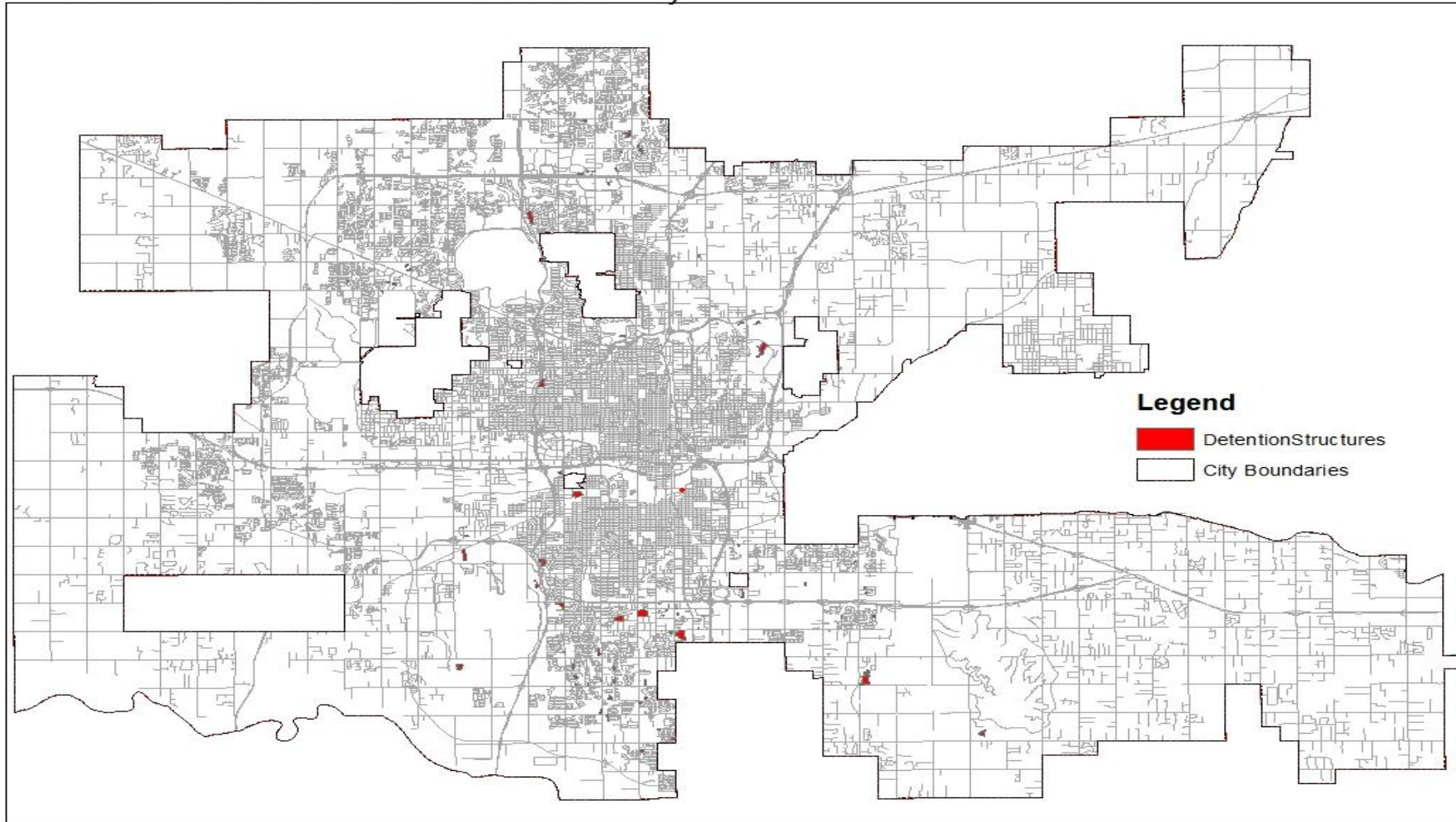
| OBJECT ID | Location Description                   | Notes                                      | Acres    | X (-97)          | Y (+35)          |
|-----------|--|--|----------|------------------|------------------|
| 1         | SE 82nd St & Gateway Terrace           |  | 0.45662  | 97° 29' 55.49" W | 35° 23' 3.01" N  |
| 2         | S Walker Av & S I-240 Service Road     |  | 0.450419 | 97° 31' 10.64" W | 35° 23' 25.94" N |
| 3         | S Walker Av & SW 80th Street           |  | 0.372207 | 97° 31' 10.68" W | 35° 23' 12.77" N |
| 4         | S Harvey Av & SW 83rd Street           |  | 0.425905 | 97° 31' 4.48" W  | 35° 23' 4.65" N  |
| 5         | SW 79th St & Crystal Park Drive        |  | 0.79099  | 97° 30' 58.62" W | 35° 23' 14.58" N |
| 6         | S Santa Fe Av & SE 79th Street         |  | 0.178777 | 97° 30' 41.76" W | 35° 23' 17.45" N |
| 7         | S Santa Fe Av & Springfield Drive      |  | 1.455505 | 97° 30' 39.19" W | 35° 23' 7.86" N  |
| 8         | SW 79th St & S Santa Fe Avenue         | West side of Santa Fe & Lowes              | 1.304777 | 97° 30' 55.30" W | 35° 23' 22.57" N |
| 9         | NW 122nd St & Quail Creek Road         | Dry Creek                                  | 24.68292 | 97° 34' 50.79" W | 35° 35' 18.21" N |
| 10        |  |  | 41.38598 | 97° 25' 13.76" W | 35° 21' 5.90" N  |
| 11        | SE 89th St & S Santa Fe Avenue         | Lightning Creek HP"A"                      | 37.55046 | 97° 30' 34.52" W | 35° 22' 28.66" N |
| 12        | SW 81st St & S Western Avenue          | Lightning Creek HP"B"                      | 31.30948 | 97° 31' 40.38" W | 35° 23' 9.35" N  |
| 13        | SW 84th St & S McKinley Avenue         | Lightning Creek HP"C"                      | 23.74716 | 97° 32' 20.63" W | 35° 22' 59.29" N |
| 14        |  |  | 4.064511 | 97° 34' 1.08" W  | 35° 27' 27.90" N |
| 15        |  |  | 1.385077 | 97° 28' 35.36" W | 35° 27' 41.94" N |
| 16        |  |  | 33.59119 | 97° 28' 9.11" W  | 35° 31' 14.77" N |
| 17        |  |  | 11.23123 | 97° 21' 52.60" W | 35° 19' 25.30" N |
| 18        | NW 32nd St & Independence Avenue       | Deep Fork Will Rogers                      | 15.41968 | 97° 34' 32.51" W | 35° 30' 11.68" N |
| 19        | NW 82nd St & Lange Drive               | Wilshire Hills Private                     | 1.219419 | 97° 40' 9.15" W  | 35° 33' 20.91" N |
| 20        | SW 134th St & S Pennsylvania Avenue    | Calistoga Crossing Private                 | 1.845259 | 97° 32' 41.92" W | 35° 19' 55.62" N |
| 21        | SW 134th St & S Pennsylvania Avenue    | NW Corner - Vo-Tec Private                 | 2.826317 | 97° 32' 53.53" W | 35° 20' 7.67" N  |
| 22        | SW 107th St & S Miller Avenue          | East of Miller Ave                         | 3.097221 | 97° 33' 40.73" W | 35° 21' 31.63" N |
| 23        | S May Ave & SW 102nd Street            |  | 1.121572 | 97° 33' 57.73" W | 35° 21' 59.17" N |
| 24        | W Wilshire Blvd & N Council Road       |  | 0.687023 | 97° 39' 9.00" W  | 35° 33' 1.65" N  |
| 25        | SW 89th St & S Santa Fe Avenue         | 1 of 2                                     | 0.291327 | 97° 30' 51.45" W | 35° 22' 33.73" N |
| 26        | SW 89th St & S Santa Fe Avenue         | 2 of 2                                     | 0.255932 | 97° 30' 52.09" W | 35° 22' 31.89" N |
| 27        | S Western Ave & SW 119th Street        |  | 2.752743 | 97° 31' 35.63" W | 35° 20' 59.05" N |
| 28        | SE 44th St & Eastern Avenue            |  | 0.367191 | 97° 28' 52.45" W | 35° 25' 12.90" N |
| 29        | SE 44th St & S Sooner Road             |  | 0.337937 | 97° 25' 33.03" W | 35° 25' 10.36" N |
| 30        | S I-35 Service Rd & I-240              | West of Crossroads Mall                    | 0.264739 | 97° 29' 40.29" W | 35° 23' 44.09" N |
| 31        | SW 119th St & Southwood Drive          | East of May Ave - Southwood Private        | 1.576184 | 97° 33' 37.26" W | 35° 20' 58.24" N |
| 32        | Pinnacle Point & S Pennsylvania Avenue | Eagles Cove Private                        | 0.5491   | 97° 32' 53.02" W | 35° 21' 5.72" N  |
| 33        | Copper Trails Ln & SW 119th Street     | Copper Trails Private                      | 2.887373 | 97° 32' 29.68" W | 35° 21' 4.87" N  |
| 34        | W Britton Rd & N Rockwell Avenue       | Previously Silver Springs Crossing Private | 3.570982 | 97° 38' 26.55" W | 35° 33' 50.01" N |
| 35        | NW Expressway & N Rockwell Avenue      | Brixton Sqare Private                      | 2.596288 | 97° 38' 22.18" W | 35° 33' 42.47" N |
| 36        | NW 82nd St & Silver Crossing           | Silver Springs Crossing Private            | 2.007952 | 97° 38' 58.60" W | 35° 33' 20.02" N |
| 37        | I-44 & SW 53rd Street                  | 3 of 3 - Twin Creek Almonte                | 2.118105 | 97° 34' 35.33" W | 35° 24' 40.39" N |
| 38        | SW 15th St & S Agnew Avenue            | Twin Creek Stockyards                      | 28.01779 | 97° 33' 32.20" W | 35° 26' 48.86" N |

| OBJECT ID | Location Description                        | Notes   | Acres    | X (-97)          | Y (+35)          |
|-----------|---|---|----------|------------------|------------------|
| 39        | SE 82nd St & Woodbend Drive                 | Crutch Creek Wind Woods Est                     | 2.079463 | 97° 25' 55.49" W | 35° 23' 1.63" N  |
| 40        | W Memorial Rd & Pawnee Drive                | Chisholm Creek Redlands                         | 2.291109 | 97° 32' 21.37" W | 35° 36' 45.28" N |
| 41        | S MacArthur Blvd & SW 104th Street          | Airport South                                   | 13.96422 | 97° 36' 57.64" W | 35° 21' 31.48" N |
| 42        | Glade Ave & W Wilshire Blvd                 | Rockwell Industrial Park Private                | 2.905408 | 97° 38' 48.30" W | 35° 33' 15.83" N |
| 43        | Martin Luther King & I-44                   | 1 of 3  | 0.66097  | 97° 28' 43.63" W | 35° 32' 2.54" N  |
| 44        | Martin Luther King & I-44                   | 2 of 3  | 0.121639 | 97° 28' 48.40" W | 35° 32' 0.75" N  |
| 45        | Martin Luther King & I-44                   | 3 of 3  | 0.163675 | 97° 28' 51.26" W | 35° 31' 58.46" N |
| 46        | Martin Luther King & NE 63rd Street         | NW of Racetrack Private                         | 4.292148 | 97° 28' 16.33" W | 35° 32' 2.19" N  |
| 47        | N Pennsylvania Ave & NW 63rd Street         | Waterford Private                               | 0.653454 | 97° 32' 48.63" W | 35° 32' 10.63" N |
| 48        | NW 164th St & N Pennsylvania Avenue         | Seminole Pointe Private                         | 2.06685  | 97° 33' 15.39" W | 35° 38' 15.21" N |
| 49        | Kingsridge Dr & SW 109th Place              | Greenbriar Ponds - east of Pennsylvania         | 1.767516 | 97° 32' 30.10" W | 35° 21' 27.99" N |
| 50        | S Pennsylvania Ave & SW 119th Street        | Greenbriar ponds west of Kingsgate Dr           | 5.991957 | 97° 32' 37.54" W | 35° 20' 34.38" N |
| 51        | S Western Ave & Wandering Way               | Greenbriar pond north of Turtle Creek Rd        | 2.600081 | 97° 31' 35.20" W | 35° 20' 32.87" N |
| 52        | NW 150th St & Brasswood Blvd                | Brasswood Private                               | 2.086257 | 97° 32' 11.93" W | 35° 37' 17.02" N |
| 53        | N Classen Blvd & Belle Isle Blvd            | Deep Fork-CloverLeaf-Belle Isle Private         | 3.771358 | 97° 32' 12.92" W | 35° 31' 38.80" N |
| 54        | SW 149th St & S Santa Fe Avenue             | Westmoor Private                                | 4.01786  | 97° 30' 47.07" W | 35° 19' 18.56" N |
| 55        | N Western Ave & NW 150th Street             | Brenton Hills Private west of Worthington Ln    | 3.804617 | 97° 31' 42.78" W | 35° 37' 28.52" N |
| 56        | N Western Ave & NW 150th Street             | Glen Eagles Est Private west of Carlingford Way | 5.570218 | 97° 31' 37.99" W | 35° 37' 20.05" N |
| 57        | N Indiana Ave & NW 133rd Street             | Memorial Plaza Private east of Penn             | 1.618755 | 97° 32' 34.19" W | 35° 36' 18.19" N |
| 58        | W Memorial Rd & Highland Park Blvd          | Quail Springs Mall Private                      | 4.075968 | 97° 33' 23.33" W | 35° 36' 37.43" N |
| 59        | S Western Ave & SW 126th Street             | South of Apartments                             | 1.486183 | 97° 31' 45.31" W | 35° 20' 25.25" N |
| 60        | S Hudson Ave & SW 141st Street              | corner of subdivision                           | 2.224401 | 97° 31' 13.53" W | 35° 19' 35.41" N |
| 61        | S Pennsylvania Ave & SW 104th Street        |   | 8.597616 | 97° 32' 56.05" W | 35° 21' 55.84" N |
| 62        | S Western Ave & SW 154th Street             |   | 5.131788 | 97° 31' 43.59" W | 35° 18' 56.60" N |
| 63        | S Western Ave & SW 119 <sup>th</sup> Street | North pond                                      | 1.218095 | 97° 31' 35.73" W | 35° 21' 4.61" N  |
| 64        | Prairie Ridge Rd & SE 82nd Circle           |   | 2.771121 | 97° 24' 58.77" W | 35° 23' 2.22" N  |
| 65        | S Sunnyside Rd & SE 59th Street             | 1 of 4  | 1.726581 | 97° 26' 58.13" W | 35° 24' 1.78" N  |
| 66        | S May Ave & SW 115th Street                 |   | 2.902409 | 97° 33' 36.81" W | 35° 21' 11.71" N |
| 67        | SW 119th St & Autumn Leaves                 | Redbud Est                                      | 0.861438 | 97° 33' 15.95" W | 35° 20' 58.25" N |
| 68        | SE 66th St & S Eastern Avenue               |   | 9.286225 | 97° 28' 46.72" W | 35° 23' 44.59" N |
| 69        | S Sooner Rd & Holly Brooke Ln               |   | 1.806314 | 97° 25' 32.37" W | 35° 24' 41.57" N |
| 70        | NW 138th St & N Pennsylvania Avenue         | south side of street                            | 0.301764 | 97° 33' 10.89" W | 35° 36' 40.93" N |
| 71        | NW 138th St & N Pennsylvania Avenue         | north side of street                            | 0.167304 | 97° 33' 10.95" W | 35° 36' 42.90" N |
| 72        | NW 138th St & N Pennsylvania Avenue         | just west of Penn                               | 0.068021 | 97° 33' 2.55" W  | 35° 36' 41.00" N |
| 73        | NW 138th Street & N Pennsylvania Avenue     | NW corner of NW 138 & Penn                      | 0.118265 | 97° 32' 59.44" W | 35° 36' 42.73" N |
| 74        | W Memorial Rd & N Pennsylvania Avenue       |   | 0.114988 | 97° 33' 3.98" W  | 35° 36' 36.49" N |
| 75        | N Western Ave & Fairview Farm               | 1 of 3 - largest pond                           | 9.817757 | 97° 31' 59.14" W | 35° 37' 50.18" N |
| 76        | NW 63rd St & Harden Drive                   | Underground det Private file #1585              | 0.036109 | 97° 32' 20.24" W | 35° 32' 10.80" N |
| 77        | S Sooner Rd & SE 66th Street                | Liberty Trails north Private                    | 0.70671  | 97° 25' 14.39" W | 35° 23' 54.55" N |
| 78        | S Sooner Rd & SE 70th Street                | Liberty Trails south Private                    | 0.509342 | 97° 25' 11.82" W | 35° 23' 44.91" N |

| OBJECT ID | Location Description               | Notes                                  | Acres    | X (-97)          | Y (+35)          |
|-----------|------------------------------------|--|----------|------------------|------------------|
| 79        | SE 89th St & S Shields Blvd        | Only seen on 2007 aerials              | 0.854229 | 97° 30' 4.07" W  | 35° 22' 40.98" N |
| 80        | N Lindsay Ave & Hester Street      | NE of Britton & Kelley                 | 1.00403  | 97° 29' 56.89" W | 35° 34' 5.82" N  |
| 81        | SW 33rd St & S Purdue Avenue       | Private                                | 0.499475 | 97° 36' 52.88" W | 35° 25' 48.17" N |
| 82        | SW 33rd St & Purdue Avenue         | East side of Purdue - 1 of 2 - Private | 0.226301 | 97° 36' 45.62" W | 35° 25' 48.62" N |
| 83        | SW 33rd St & Purdue Avenue         | east of Purdue - 2 of 2 - Private      | 0.076334 | 97° 36' 45.89" W | 35° 25' 47.38" N |
| 84        | SW 38th St & S Purdue Avenue       | 1 of 2 - Private                       | 0.694144 | 97° 36' 45.70" W | 35° 25' 32.57" N |
| 85        | SW 38th St & S Purdue Avenue       | 2 of 2 - Private                       | 1.044416 | 97° 36' 44.87" W | 35° 25' 31.61" N |
| 86        | S MacArthur Blvd & Newcastle Road  | Airport North Airport Trust            | 19.85498 | 97° 36' 48.71" W | 35° 24' 56.74" N |
| 87        | S Portland Ave & SW 65th Street    | Airport East Airport Trust             | 4.972986 | 97° 34' 43.62" W | 35° 24' 0.92" N  |
| 88        | S Portland Ave & SW 63rd Street    | Airport East Airport Trust             | 1.200171 | 97° 34' 46.83" W | 35° 24' 9.71" N  |
| 89        | SW 74th St & S May Avenue          | South Community College                | 13.4565  | 97° 34' 1.16" W  | 35° 23' 24.54" N |
| 90        | SW 51st St & I-44                  | 1 of 3 - Twin Creek-Almonte            | 4.482627 | 97° 34' 35.76" W | 35° 24' 46.67" N |
| 91        | SW 51st St & S Independence Avenue | 2 of 3 - Twin Creek Almonte            | 7.877582 | 97° 34' 31.32" W | 35° 24' 41.16" N |

## Appendix AV: Map of Detention Facilities in Oklahoma City

Detention Structures in Oklahoma City



**Appendix AW: List of Outfall Locations to State Waterways**

| X Coord. (-97)   | Y Coord. (+35)   | Installation Contractor        | Project Number | MATERIAL | NAME                            | Size | Location Description                    | County    | OKC Fire Grid | Legal        | OKC Atlas # |
|------------------|------------------|--------------------------------|----------------|----------|---------------------------------|------|---|-----------|---------------|--------------|-------------|
| 97° 31' 54.08" W | 35° 40' 24.23" N | Atlas Paving Co.               | PD-0284        | RCP      | Danforth Farms Section 1        | 36"  | NW 198th St & Harness Court             | OKLAHO MA | 4557          | T14N R3W S21 | 5           |
| 97° 31' 50.35" W | 35° 40' 13.46" N | Bishop Paving                  | PD-1676        | RCP      | Stonebriar Addition Section 2   | 42"  |   | OKLAHO MA | 4557          | T14N R3W S21 | 5           |
| 97° 31' 51.36" W | 35° 40' 16.83" N | Bishop Paving Company          | PD-1679        | RCP      | Stonebriar Addition Section III | 30"  | N of NW 192nd St & E of N Western Ave   | OKLAHO MA | 4557          | T14N R3W S21 | 5           |
| 97° 31' 52.60" W | 35° 40' 24.54" N | Bishop Paving Company          | PD-1679        | RCP      | Stonebriar Addition Section III | 24"  | N of NW 192nd St & E of N Western Ave   | OKLAHO MA | 4557          | T14N R3W S21 | 5           |
| 97° 32' 1.81" W  | 35° 40' 12.71" N | Atlas Paving Co.               | PD-1055        | RCP      | Stubblefield Addition           | 24"  | N of NW 192nd St & W of Western Ave     | OKLAHO MA | 4457          | T14N R3W S20 | 4           |
| 97° 32' 4.79" W  | 35° 40' 10.48" N | Atlas Paving Co.               | PD-1055        | Concrete | Stubblefield Addition           | 6'   | N of NW 192nd St & W of Western Ave     | OKLAHO MA | 4457          | T14N R3W S20 | 4           |
| 97° 32' 7.21" W  | 35° 40' 8.17" N  | Atlas Paving Co.               | PD-1055        | Concrete | Stubblefield Addition           | 6'   | N of NW 192nd St & W of Western Ave     | OKLAHO MA | 4457          | T14N R3W S20 | 4           |
| 97° 32' 10.53" W | 35° 40' 6.15" N  | Atlas Paving Co.               | PD-1055        | Concrete | Stubblefield Addition           | 4'   | N of NW 192nd St & W of Western Ave     | OKLAHO MA | 4457          | T14N R3W S20 | 4           |
| 97° 31' 37.51" W | 35° 39' 20.20" N | Schwarz Construction Co.       | PD-0726        | RCP      | Palo Verde                      | 36"  | N of NW 178th St & E of Western Ave     | OKLAHO MA | 4556          | T14N R3W S28 | 17          |
| 97° 31' 44.53" W | 35° 39' 24.95" N | Schwarz Construction Co.       | PD-0726        | RCP      | Palo Verde                      | 24"  | N of NW 178th St & E of Western Ave     | OKLAHO MA | 4556          | T14N R3W S28 | 17          |
| 97° 31' 45.94" W | 35° 39' 25.18" N | Schwarz Construction Co.       | PD-0726        | CGMP     | Palo Verde                      | 24"  | N of NW 178th St & E of Western Ave     | OKLAHO MA | 4556          | T14N R3W S28 | 17          |
| 97° 31' 39.79" W | 35° 39' 11.31" N | T.J. Campbell Construction Co. | PD-1064        | PCCB     | Tierra Verde                    | 5X4  | N of NW 178th St & E of Western Ave     | OKLAHO MA | 4556          | T14N R3W S28 | 17          |
| 97° 31' 38.02" W | 35° 39' 17.10" N | T.J. Campbell Construction Co. | PD-1064        | RCP      | Tierra Verde                    | 36"  | N of NW 178th St & E of Western Ave     | OKLAHO MA | 4556          | T14N R3W S28 | 17          |
| 97° 31' 59.37" W | 35° 39' 39.02" N | Atlas Paving                   | PD-1350        | RCP      | Barrington Section 1            | 30"  | S of NW 192nd St & W of Western Ave     | OKLAHO MA | 4456          | T14N R3W S29 | 16          |
| 97° 32' 2.06" W  | 35° 39' 46.29" N | Atlas Paving                   | PD-1350        | RCP      | Barrington Section 1            | 30"  | S of NW 192nd St & W of Western Ave     | OKLAHO MA | 4456          | T14N R3W S29 | 16          |
| 97° 32' 8.54" W  | 35° 39' 52.02" N | Atlas Paving                   | PD-1350        | RCP      | Barrington Section 1            | 24"  | S of NW 192nd St & W of Western Ave     | OKLAHO MA | 4456          | T14N R3W S29 | 16          |
| 97° 32' 10.26" W | 35° 39' 54.18" N | Atlas Paving                   | PD-1350        | RCP      | Barrington Section 1            | 24"  | S of NW 192nd St & W of Western Ave     | OKLAHO MA | 4456          | T14N R3W S29 | 16          |
| 97° 32' 2.77" W  | 35° 39' 52.43" N | T.J. Campbell Construction     | PD-1554        | RCP      | Canyon Creek Addition           | 24"  | S. of NW 192nd St & W of Western Avenue | OKLAHO MA | 4456          | T14N R3W S29 | 16          |
| 97° 32' 6.60" W  | 35° 39' 57.91" N | T.J. Campbell Construction     | PD-1554        | RCP      | Canyon Creek Addition           | 30"  | S. of NW 192nd St & W of Western Avenue | OKLAHO MA | 4456          | T14N R3W S29 | 16          |
| 97° 31' 58.63" W | 35° 39' 45.32" N | Atlas Paving                   | PD-1350        | RCP      | Barrington Section 1            | 30"  | S of NW 192nd St & W of Western Ave     | OKLAHO MA | 4456          | T14N R3W S29 | 16          |
| 97° 32'          | 35° 39'          | Atlas Paving                   | PD-1350        | RCP      | Barrington Section 1            | 24"  | S of NW 192nd St & W of Western Ave     | OKLAHO    | 4456          | T14N R3W     | 16          |



| X Coord. (-97)   | Y Coord. (+35)   | Installation Contractor           | Project Number | MATERIAL | NAME                                | Size | Location Description                  | County   | OKC Fire Grid | Legal        | OKC Atlas # |
|------------------|------------------|-----------------------------------|----------------|----------|-------------------------------------|------|---------------------------------------|----------|---------------|--------------|-------------|
| 6.30" W          | 48.68" N         |                                   |                |          |                                     |      |                                       | MA       |               | S29          |             |
| 97° 32' 11.30" W | 35° 39' 56.65" N | Atlas Paving                      | PD-1350        | RCP      | Barrington Section 1                | 24"  | S of NW 192nd St & W of Western Ave   | OKLAHOMA | 4456          | T14N R3W S29 | 16          |
| 97° 32' 10.06" W | 35° 40' 0.53" N  | Atlas Paving                      | PD-1350        | RCP      | Barrington Section 1                | 30"  | S of NW 192nd St & W of Western Ave   | OKLAHOMA | 4456          | T14N R3W S29 | 16          |
| 97° 31' 40.21" W | 35° 38' 49.82" N | Consultant's Engineering Services | PD-0069        | CGMP     | The Valley Section 1                | 33"  | SW ¼, Sec.33, T14N, R3W               | OKLAHOMA | 4555          | T14N R3W S33 | 57          |
| 97° 31' 38.89" W | 35° 38' 50.36" N | Consultant's Engineering Services | PD-0860        | CGMP     | The Valley Section 1                | 36"  | SW ¼, Sec.33, T14N, R3W               | OKLAHOMA | 4555          | T14N R3W S33 | 57          |
| 97° 31' 39.93" W | 35° 38' 40.08" N | Consultant's Engineering Services | PD-0069        | RCP      | The Valley Section 1                | 54"  | SW ¼, Sec.33, T14N, R3W               | OKLAHOMA | 4555          | T14N R3W S33 | 57          |
| 97° 31' 37.14" W | 35° 38' 31.81" N | 12-6-84                           | PD-0069        | RCP      | The Valley Section 1                | 30"  | SW ¼, Sec.33, T14N, R3W               | OKLAHOMA | 4555          | T14N R3W S33 | 57          |
| 97° 31' 40.84" W | 35° 38' 29.87" N | Atlas Paving Co.                  | PD-0254        | RCP      | Stone Ridge                         | 30"  | NW 167th St & Crest Valley            | OKLAHOMA | 4555          | T14N R3W S33 | 57          |
| 97° 31' 40.35" W | 35° 38' 28.41" N | Atlas Paving Co.                  | PD-0254        | RCP      | Stone Ridge                         | 24"  | NW 166th St & Crest Valley            | OKLAHOMA | 4555          | T14N R3W S33 | 57          |
| 97° 31' 42.00" W | 35° 38' 35.35" N | Atlas Paving Co.                  | PD-0680        | RCP      | The Valley Section 5                |      | S. of NW 178th St & E of Western Ave. | OKLAHOMA | 4555          | T14N R3W S33 | 57          |
| 97° 31' 42.20" W | 35° 38' 41.99" N | Atlas Paving Co.                  | PD-0680        | RCP      | The Valley Section 5                | 24"  | S. of NW 178th St & E of Western Ave. | OKLAHOMA | 4555          | T14N R3W S33 | 57          |
| 97° 31' 41.37" W | 35° 38' 44.99" N | Atlas Paving Co.                  | PD-0680        | RCP      | The Valley Section 5                | 30"  | S. of NW 178th St & E of Western Ave. | OKLAHOMA | 4555          | T14N R3W S33 | 57          |
| 97° 31' 37.04" W | 35° 38' 56.29" N | Atlas Paving Co.                  | PD-0981        | RCP      | The Valley Section 8                | 24"  | S of NW 178th St & E of Western Ave.  | OKLAHOMA | 4555          | T14N R3W S33 | 57          |
| 97° 31' 37.29" W | 35° 38' 47.87" N |                                   |                | RCP      |                                     |      |                                       | OKLAHOMA | 4555          | T14N R3W S33 | 57          |
| 97° 31' 37.25" W | 35° 38' 48.74" N | Consultant's Engineering Services | PD-0069        | CGMP     | The Valley Section 1                | 42"  | SW ¼, Sec.33, T14N, R3W               | OKLAHOMA | 4555          | T14N R3W S33 | 57          |
| 97° 31' 46.67" W | 35° 37' 37.52" N | Atlas Paving Co.                  | PD-1002        | Concrete | N of NW 150th St & E of Western Ave | 4    | N of NW 150th St & E of Western Ave   | OKLAHOMA | 4554          | T13N R3W S4  | 97          |
| 97° 31' 32.31" W | 35° 37' 48.95" N | TJ Campbell Construction Co.      | PD-1579        | RCP      | Brenton Hills Section 6             | 36"  | N of NW 150th St & E of Western Ave   | OKLAHOMA | 4554          | T13N R3W S4  | 97          |
| 97° 31' 39.60" W | 35° 38' 0.20" N  | Atlas Paving Company              | PD-1272        | RCP      | Brenton Hills Section 4             | 42"  | S of NW 164th St & E of Western Ave   | OKLAHOMA | 4554          | T13N R3W S4  | 97          |
| 97° 31' 39.25" W | 35° 38' 5.41" N  | Burns Paving                      | PD-1288        | RCP      | The Villas At Cedar Creek Section 1 | 18"  | S of NW 164th St & E of Western Ave   | OKLAHOMA | 4554          | T13N R3W S4  | 97          |
| 97° 31' 38.91" W | 35° 38' 12.65" N | Burns Paving                      | PD-1288        | RCP      | The Villas At Cedar Creek Section 1 | 18"  | S of NW 164th St & E of Western Ave   | OKLAHOMA | 4554          | T13N R3W S4  | 97          |
| 97° 31' 36.52" W | 35° 38' 15.20" N | Burns Paving                      | PD-1288        | RCP      | The Villas At Cedar Creek Section 1 | 36"  | S of NW 164th St & E of Western Ave   | OKLAHOMA | 4554          | T13N R3W S4  | 97          |
| 97° 31' 41.71" W | 35° 37' 41.41" N | Atlas Paving Co.                  | PD-1002        | Concrete | Brenton Hills Section 5             | 4    | N of NW 150th St & E of Western Ave   | OKLAHOMA | 4554          | T13N R3W S4  | 97          |
| 97° 31'          | 35° 37'          | Atlas Paving Co.                  | PD-1002        | RCP      | Brenton Hills Section 5             | 54"  | N of NW 150th St & E of Western Ave   | OKLAHOMA | 4554          | T13N R3W     | 97          |

| X Coord. (-97)   | Y Coord. (+35)   | Installation Contractor        | Project Number | MATERIAL | NAME                                | Size | Location Description                     | County   | OKC Fire Grid | Legal       | OKC Atlas # |
|------------------|------------------|--------------------------------|----------------|----------|-------------------------------------|------|--|----------|---------------|-------------|-------------|
| 45.61" W         | 30.30" N         |                                |                |          |                                     |      |  | MA       |               | S4          |             |
| 97° 31' 59.61" W | 35° 37' 26.14" N | Males Brothers                 | PD-0141        | CGMP     | Paving & Drainage for Fairview Farm | 54"  | Burning Spring & Stoney Spring           | OKLAHOMA | 4454          | T13N R3W S5 | 96          |
| 97° 35' 57.63" W | 35° 38' 17.62" N | T.J. Campbell Construction Co. | PD-1460        | RCP      | Lone Oak Park                       | 36"  | S of NW 164th St & E of MacArthur Blvd   | OKLAHOMA | 4154          | T13N R4W S2 | 93          |
| 97° 36' 3.58" W  | 35° 38' 9.67" N  | T.J. Campbell Construction Co. | PD-1460        | RCP      | Lone Oak Park                       | 36"  | S of NW 164th St & E of MacArthur Blvd   | OKLAHOMA | 4154          | T13N R4W S2 | 93          |
| 97° 36' 18.43" W | 35° 37' 44.15" N |                                |                |          |                                     |      |  | OKLAHOMA | 4054          | T13N R4W S3 | 92          |
| 97° 36' 16.46" W | 35° 37' 58.61" N | T.J. Campbell Construction     | PD-1456        | Concrete | Lone Oak Pointe                     | 6X4  | S of NW 164th St & W of Pennsylvania Ave | OKLAHOMA | 4054          | T13N R4W S3 | 92          |
| 97° 36' 13.01" W | 35° 38' 3.94" N  | T.J. Campbell Construction Co. | PD-1460        | RCP      | Lone Oak Park                       | 36"  | S of NW 164th St & E of MacArthur Blvd   | OKLAHOMA | 4054          | T13N R4W S3 | 92          |
| 97° 36' 21.89" W | 35° 37' 54.63" N | TJ Campbell Construction       | PD-1736        | RCP      | Lone Oak Run & Lone Oak Creek       | 42"  | N of NW 150th St & E of MacArthur Blvd   | OKLAHOMA | 4054          | T13N R4W S3 | 92          |
| 97° 36' 24.49" W | 35° 37' 48.41" N | TJ Campbell Construction       | PD-1736        | RCP      | Lone Oak Run & Lone Oak Creek       | 42"  | N of NW 150th St & E of MacArthur Blvd   | OKLAHOMA | 4054          | T13N R4W S3 | 92          |
| 97° 36' 23.16" W | 35° 37' 44.00" N | T.J. Campbell Construction Co. | DD-0579        | CON      | Southwest Tract at Lone Oak         |      | N of NW 150th St & E of MacArthur        | OKLAHOMA | 4054          | T13N R4W S3 | 92          |
| 97° 39' 58.59" W | 35° 37' 37.80" N | Burns Paving                   | PD-1766        | RCP      | Vizcaya Section 1                   | 30"  | N of NW 150th St & E of County Line Road | OKLAHOMA | 3754          | T13N R4W S6 | 89          |
| 97° 39' 58.43" W | 35° 37' 44.78" N | Burns Paving                   | PD-1766        | RCP      | Vizcaya Section 1                   | 36"  | N of NW 150th St & E of County Line Road | OKLAHOMA | 3754          | T13N R4W S6 | 89          |
| 97° 40' 2.02" W  | 35° 37' 48.71" N | Burns Paving                   | PD-1766        | RCP      | Vizcaya Section 1                   | 30"  | N of NW 150th St & E of County Line Road | OKLAHOMA | 3754          | T13N R4W S6 | 89          |
| 97° 40' 2.62" W  | 35° 37' 30.18" N | Burns Paving                   | PD-1766        | RCP      | Vizcaya Section 1                   | 30"  | N of NW 150th St & E of County Line Road | OKLAHOMA | 3754          | T13N R4W S6 | 89          |
| 97° 32' 45.87" W | 35° 36' 35.89" N |                                | DD-0061        | RCP      |                                     | 54"  |  | OKLAHOMA | 4453          | T13N R3W S8 | 136         |
| 97° 32' 9.23" W  | 35° 37' 18.17" N |                                | PD-0575        | RCP      |                                     | 54"  |  | OKLAHOMA | 4453          | T13N R3W S8 | 136         |
| 97° 32' 14.90" W | 35° 37' 2.78" N  | Atlas Paving Co.               | PD-0673        | RCP      | Brasswood Section 3                 | 24"  | S of NW 150th St & W of Western Avenue   | OKLAHOMA | 4453          | T13N R3W S8 | 136         |
| 97° 32' 16.31" W | 35° 36' 58.30" N | Atlas Paving Co.               | PD-0677        | RCP      | Brasswood Section 4                 | 36"  | S. of NW 150th St & W. of Western Ave.   | OKLAHOMA | 4453          | T13N R3W S8 | 136         |
| 97° 32' 14.46" W | 35° 36' 57.94" N | Atlas Paving Co.               | 8E629          | CGMP     | Paving Plans Redlands               | 36"  | Redlands                                 | OKLAHOMA | 4453          | T13N R3W S8 | 136         |
| 97° 32' 16.29" W | 35° 36' 56.70" N | Atlas Paving Co.               | 8E629          | RCP      | Paving Plans Redlands               | 30"  | Redlands                                 | OKLAHOMA | 4453          | T13N R3W S8 | 136         |
| 97° 32' 34.12" W | 35° 36' 51.78" N |                                | DD-0024        | RCP      |                                     | 42"  |  | OKLAHOMA | 4453          | T13N R3W S8 | 136         |
| 97° 32' 24.06" W | 35° 36' 48.16" N |                                |                |          |                                     |      |  | OKLAHOMA | 4453          | T13N R3W S8 | 136         |
| 97° 32'          | 35° 36'          | Comet Construction Co.         | PD-0186        | RCP      | Memorial Plaza Section I            | 48"  | NW 133rd St & Indiana Ave                | OKLAHOMA | 4453          | T13N R3W    | 136         |

| X Coord. (-97)   | Y Coord. (+35)   | Installation Contractor          | Project Number | MATERIAL | NAME                           | Size | Location Description                    | County   | OKC Fire Grid | Legal        | OKC Atlas # |
|------------------|------------------|----------------------------------|----------------|----------|--------------------------------|------|---|----------|---------------|--------------|-------------|
| 34.91" W         | 35.39" N         |                                  |                |          |                                |      |   | MA       |               | S8           |             |
| 97° 35' 29.06" W | 35° 36' 44.40" N | M.M. Baker, City Engineer        | 66E122         | RCP      | Plan & Profile                 | 30"  | Quail Ridge Addition                    | OKLAHOMA | 4153          | T13N R4W S11 | 133         |
| 97° 36' 4.98" W  | 35° 37' 5.65" N  | Atlas Paving Co.                 | PD-1116        | RCP      | Remington Section 6            | 48"  | S of NW 150th St & E of Meridian Ave.   | OKLAHOMA | 4153          | T13N R4W S11 | 133         |
| 97° 35' 59.12" W | 35° 37' 15.43" N | Atlas Paving Co.                 | PD-1116        | RCP      | Remington Section 6            | 36"  | S of NW 150th St & E of Meridian Ave.   | OKLAHOMA | 4153          | T13N R4W S11 | 133         |
| 97° 35' 54.17" W | 35° 37' 0.41" N  | Atlas Paving Co.                 | PD-0251        | RCP      | Remington Sec 1                | 24"  | NW 143rd St & Remington Way             | OKLAHOMA | 4153          | T13N R4W S11 | 133         |
| 97° 35' 53.28" W | 35° 36' 48.83" N |                                  |                | RCP      |                                |      |   | OKLAHOMA | 4153          | T13N R4W S11 | 133         |
| 97° 36' 19.76" W | 35° 36' 34.63" N |                                  |                |          |                                |      |   | OKLAHOMA | 4053          | T13N R4W S10 | 132         |
| 97° 36' 20.23" W | 35° 36' 34.65" N |                                  |                |          |                                |      |   | OKLAHOMA | 4053          | T13N R4W S10 | 132         |
| 97° 36' 19.79" W | 35° 36' 36.10" N |                                  |                | RCP      |                                |      |   | OKLAHOMA | 4053          | T13N R4W S10 | 132         |
| 97° 36' 20.13" W | 35° 36' 33.48" N |                                  |                | RCP      |                                |      |   | OKLAHOMA | 4053          | T13N R4W S10 | 132         |
| 97° 36' 20.46" W | 35° 36' 33.47" N |                                  |                | RCP      |                                |      |   | OKLAHOMA | 4053          | T13N R4W S10 | 132         |
| 97° 36' 20.10" W | 35° 36' 36.10" N |                                  |                | RCP      |                                |      |   | OKLAHOMA | 4053          | T13N R4W S10 | 132         |
| 97° 36' 20.23" W | 35° 36' 37.47" N | T.J. Campbell Construction       | PD-1120        | RCP      | Gaillardia Lots 1 & 2          | 42"  | N of Memorial Road & W of Meridian Ave. | OKLAHOMA | 4053          | T13N R4W S10 | 132         |
| 97° 39' 5.43" W  | 35° 36' 35.35" N |                                  |                |          |                                |      |   | OKLAHOMA | 3853          | T13N R4W S8  | 130         |
| 97° 39' 54.72" W | 35° 36' 50.15" N | TJ Campbell Construction Company | PD-2155        | RCP      | Pleasant Grove Section 2       | 24"  | N of W Memorial Rd & W of N Council Rd  | OKLAHOMA | 3753          | T13N R4W S7  | 129         |
| 97° 24' 7.94" W  | 35° 36' 20.82" N | T.J. Campbell Construction       | PD-0956        | CGMP     | Raintree Acres                 | 24"  | S of Memorial Road & E of Air Depot     | OKLAHOMA | 5252          | T13N R2W S15 | 184         |
| 97° 24' 7.59" W  | 35° 36' 26.81" N | T.J. Campbell Construction       | PD-0956        | CGMP     | Raintree Acres                 | 42"  | S of Memorial Road & E of Air Depot     | OKLAHOMA | 5252          | T13N R2W S15 | 184         |
| 97° 28' 13.14" W | 35° 35' 42.95" N | Silver Star Construction         | PD-1966        | CON      | Bella Mira Subdivision Phase I | 4'   | N of NE 122nd St & E of Eastern Ave     | OKLAHOMA | 4852          | T13N R3W S13 | 180         |
| 97° 28' 15.54" W | 35° 35' 47.65" N | Silver Star Construction         | PD-1966        | RCP      | Bella Mira Subdivision Phase I | 18"  | N of NE 122nd St & E of Eastern Ave     | OKLAHOMA | 4852          | T13N R3W S13 | 180         |
| 97° 28' 14.05" W | 35° 35' 50.25" N | Silver Star Construction         | PD-1966        | RCP      | Bella Mira Subdivision Phase I | 30"  | N of NE 122nd St & E of Eastern Ave     | OKLAHOMA | 4852          | T13N R3W S13 | 180         |
| 97° 28' 52.76" W | 35° 36' 27.07" N | Edmond Paving & Construction Co. | PD-0099        | CGMP     | Fox Creek                      | 24"  | NE 1/4, Sec. 14, T13N, R3W              | OKLAHOMA | 4752          | T13N R3W S14 | 179         |
| 97° 28' 46.76" W | 35° 36' 16.51" N | Burns Paving Co.                 | PD-0292        | CGMP     | The Oaks 1st Addition          | 18"  | Oaks Way & Creeks End Circle            | OKLAHOMA | 4752          | T13N R3W S14 | 179         |
| 97° 28'          | 35° 36'          | Burns Paving Co.                 | PD-0292        | CGMP     | The Oaks 1st Addition          | 24"  | Fox Creek Drive & Oaks Way              | OKLAHOMA | 4752          | T13N R3W     | 179         |

| X Coord. (-97)   | Y Coord. (+35)   | Installation Contractor          | Project Number | MATERIAL | NAME                                   | Size       | Location Description                      | County   | OKC Fire Grid | Legal        | OKC Atlas # |
|------------------|------------------|----------------------------------|----------------|----------|--|------------|---|----------|---------------|--------------|-------------|
| 46.25" W         | 17.74" N         |                                  |                |          |  |            |   | MA       |               | S14          |             |
| 97° 28' 47.28" W | 35° 36' 27.27" N | TJ Campbell Construction         | PD-1942        | RCP      | The Pointe                             | 30"        | S of Memorial Road & W of Eastern Ave     | OKLAHOMA | 4752          | T13N R3W S14 | 179         |
| 97° 28' 46.36" W | 35° 36' 14.73" N | Burns Paving Co.                 | PD-0292        | CGMP     | The Oaks 1st Addition                  | 18"        | Oaks Way & Eastern Ave                    | OKLAHOMA | 4752          | T13N R3W S14 | 179         |
| 97° 28' 46.50" W | 35° 36' 14.55" N | Burns Paving Co.                 | PD-0292        | CGMP     | The Oaks 1st Addition                  | 18"        | Oaks Way & Creeks End Circle              | OKLAHOMA | 4752          | T13N R3W S14 | 179         |
| 97° 32' 23.60" W | 35° 35' 49.72" N | Silver Star Construction         | PD-1784        | RCPA     | Heritage Oaks Addition Section 1       | 36"x58"    | N of NW 122nd St & W of Western Ave       | OKLAHOMA | 4452          | T13N R3W S17 | 176         |
| 97° 32' 31.41" W | 35° 35' 58.45" N | Silver Star Construction         | PD-1932        | RCP      | Heritage Oaks Addition Section 4       | 30"        | N of NW 122nd St & W of Western Ave       | OKLAHOMA | 4452          | T13N R3W S17 | 176         |
| 97° 32' 27.28" W | 35° 35' 50.31" N | Silver Star Construction         | PD-1932        | CON      | PD-1932                                | 6'x6"      | N of NW 122nd St & W of Western Ave       | OKLAHOMA | 4452          | T13N R3W S17 | 176         |
| 97° 32' 30.86" W | 35° 35' 50.83" N | Silver Star Construction         | PD-1932        | CON      | Heritage Oaks Addition Section 4       | 10'x6"     | N of NW 122nd St & W of Western Ave       | OKLAHOMA | 4452          | T13N R3W S17 | 176         |
| 97° 34' 43.49" W | 35° 35' 56.86" N |                                  | 28E603         | RCB      | Paving Plans for Quail Creek Section 2 | 2 - 10 x 8 | Quail Creek Section 2                     | OKLAHOMA | 4252          | T13N R4W S13 | 174         |
| 97° 34' 37.41" W | 35° 36' 2.25" N  | Palm Paving Co.                  | 28E608         | RCP      | Paving Plans Quail Creek               | 54"        | Quail Creek                               | OKLAHOMA | 4252          | T13N R4W S13 | 174         |
| 97° 34' 43.75" W | 35° 36' 13.45" N | Palm Paving Co.                  | 29E608         | RCP      | Paving Plans Sect. 10 Quail Creek      | 30"        | Quail Creek, Sect. 10                     | OKLAHOMA | 4252          | T13N R4W S13 | 174         |
| 97° 34' 43.44" W | 35° 36' 13.10" N | Palm Paving Co.                  | 29E608         | RCP      | Paving Plans Sect. 10 Quail Creek      | 36"        | Quail Creek, Sect. 10                     | OKLAHOMA | 4252          | T13N R4W S13 | 174         |
| 97° 34' 37.18" W | 35° 35' 41.20" N | Palm Paving Co.                  | 15E610         | RCP      | Paving Plans Quail Creek, Sec. 3       | 54"        | Quail Creek                               | OKLAHOMA | 4252          | T13N R4W S13 | 174         |
| 97° 34' 38.80" W | 35° 35' 43.74" N | Palm Paving Co.                  | 15E610         | RCP      | Paving Plans Quail Creek, Sec. 3       | 2.88%      | Quail Creek                               | OKLAHOMA | 4252          | T13N R4W S13 | 174         |
| 97° 34' 39.91" W | 35° 35' 43.95" N | Palm Construction Co.            | 18E610         | RCP      | Paving Plans Quail Creek, Sec. 8       | 24"        | Quail Creek, Sec. 8                       | OKLAHOMA | 4252          | T13N R4W S13 | 174         |
| 97° 34' 58.28" W | 35° 36' 23.22" N | Atlas Paving                     | PD-1759        | RCP      | Memorial Business Park                 | 24"        | S of Memorial Road & E of Portland Ave    | OKLAHOMA | 4252          | T13N R4W S13 | 174         |
| 97° 35' 2.45" W  | 35° 36' 21.64" N | Palm Paving                      | PD-0539        | RCP      | Quail Creek                            | 36"        | S of Memorial Road & E of Portland Avenue | OKLAHOMA | 4252          | T13N R4W S13 | 174         |
| 97° 34' 55.30" W | 35° 36' 21.74" N | Atlas Paving                     | PD-1759        | RCP      | Memorial Business Park                 | 42"        | S of Memorial Road & E of Portland Ave    | OKLAHOMA | 4252          | T13N R4W S13 | 174         |
| 97° 35' 25.04" W | 35° 36' 28.56" N | Slater Brothers Construction Co. | 1E634          | Concrete | Paving & Storm Sewer Plan              |            | Green Valley Plaza                        | OKLAHOMA | 4152          | T13N R4W S14 | 173         |
| 97° 35' 29.57" W | 35° 36' 30.44" N | M.M. Baker, City Engineer        | 66E122         | RCP      | Plan & Profile                         | 30"        | Quail Ridge Addition                      | OKLAHOMA | 4152          | T13N R4W S14 | 173         |
| 97° 35' 26.92" W | 35° 35' 54.77" N | Slater Brothers Construction Co. | 1E634          | RCP      | Paving & Storm Sewer Plan              |            | Green Valley Plaza                        | OKLAHOMA | 4152          | T13N R4W S14 | 173         |
| 97° 35' 35.99" W | 35° 35' 44.60" N | Slater Brothers Construction Co. | 1E634          | RCP      | Paving & Storm Sewer Plan              |            | Green Valley Plaza                        | OKLAHOMA | 4152          | T13N R4W S14 | 173         |
| 97° 36'          | 35° 35'          | Males Brothers Paving, Inc.      | PD-0035        | CGMP     | Bocage Addition                        | 24"        | NW 122nd St & Meridian Avenue             | OKLAHOMA | 4052          | T13N R4W     | 172         |

| X Coord. (-97)   | Y Coord. (+35)   | Installation Contractor           | Project Number | MATERIAL | NAME                           | Size  | Location Description                     | County   | OKC Fire Grid | Legal        | OKC Atlas # |
|------------------|------------------|-----------------------------------|----------------|----------|--------------------------------|-------|--|----------|---------------|--------------|-------------|
| 29.36" W         | 53.80" N         |                                   |                |          |                                |       |  | MA       |               | S15          |             |
| 97° 36' 33.51" W | 35° 35' 47.65" N | Males Brothers Paving, Inc.       | PD-0035        | CGMP     | Bocage Addition                | 36"   | W ½, SE ¼, Sec.15, T13N, R4W             | OKLAHOMA | 4052          | T13N R4W S15 | 172         |
| 97° 36' 31.58" W | 35° 35' 57.37" N | Slayter Brothers Construction Co. | PD-0339        | CGMP     | Val Verde West                 | 36"   | NW 122nd St & Meridian Avenue            | OKLAHOMA | 4052          | T13N R4W S15 | 172         |
| 97° 36' 29.32" W | 35° 35' 53.36" N | Slayter Brothers Construction Co. | PD-0339        | CGMP     | Val Verde West                 | 24"   | NW 122nd St & Meridian Avenue            | OKLAHOMA | 4052          | T13N R4W S15 | 172         |
| 97° 36' 33.47" W | 35° 35' 48.65" N | Slayter Brothers Construction Co. | PD-0339        | CGMP     | Val Verde West                 | 36"   | NW 122nd St & Meridian Avenue            | OKLAHOMA | 4052          | T13N R4W S15 | 172         |
| 97° 36' 36.66" W | 35° 35' 45.21" N | Slayter Brothers Construction Co. | PD-0339        | CGMP     | Val Verde West                 | 36"   | NW 122nd St & Meridian Avenue            | OKLAHOMA | 4052          | T13N R4W S15 | 172         |
| 97° 36' 15.52" W | 35° 35' 57.21" N | Slayter Brothers Construction Co. | 4E629          | CGMP     | Paving Plan The Greens, Sec. 7 | 60"   | The Greens, Sec. 7                       | OKLAHOMA | 4052          | T13N R4W S15 | 172         |
| 97° 36' 20.71" W | 35° 36' 6.92" N  | Slater Brothers Construction Co.  | 1E629          | RCP      | Paving & Storm Sewer           | 24"   | The Greens Sect. 8                       | OKLAHOMA | 4052          | T13N R4W S15 | 172         |
| 97° 36' 19.07" W | 35° 35' 59.12" N | Slater Brothers Construction Co.  | 1E629          | RCP      | Paving & Storm Sewer           | 24"   | The Greens Sect. 8                       | OKLAHOMA | 4052          | T13N R4W S15 | 172         |
| 97° 39' 5.82" W  | 35° 36' 25.41" N | TJ Campbell Construction          | PD-1761        | RCP      | Canyon Lakes 2nd Addition      | 30"   | S of Memorial Road & E of Council Road   | OKLAHOMA | 3852          | T13N R4W S17 | 170         |
| 97° 38' 59.65" W | 35° 36' 11.16" N | TJ Campbell Construction          | PD-1971        | RCP      | Canyon Lakes 3rd Addition      | 18"   | S of Memorial Road & E of Council Road   | OKLAHOMA | 3852          | T13N R4W S17 | 170         |
| 97° 38' 55.17" W | 35° 36' 13.70" N | TJ Campbell Construction          | PD-1761        | RCP      | Canyon Lakes 2nd Addition      | 18"   | S of Memorial Road & E of Council Road   | OKLAHOMA | 3852          | T13N R4W S17 | 170         |
| 97° 39' 3.78" W  | 35° 36' 18.46" N | TJ Campbell Construction          | PD-1761        | RCP      | Canyon Lakes 2nd Addition      | 24"   | S of Memorial Road & E of Council Road   | OKLAHOMA | 3852          | T13N R4W S17 | 170         |
| 97° 39' 3.60" W  | 35° 36' 23.03" N | TJ Campbell Construction          | PD-1761        | RCP      | Canyon Lakes 2nd Addition      | 30"   | S of Memorial Road & E of Council Road   | OKLAHOMA | 3852          | T13N R4W S17 | 170         |
| 97° 39' 0.99" W  | 35° 36' 14.66" N | TJ Campbell Construction          | PD-1761        | RCP      | Canyon Lakes 2nd Addition      | 30"   | 12-31-06                                 | OKLAHOMA | 3852          | T13N R4W S17 | 170         |
| 97° 38' 55.31" W | 35° 36' 12.80" N | TJ Campbell Construction          | PD-1971        | RCP      | Canyon Lakes 3rd Addition      | 18"   | S of Memorial Road & E of Council Road   | OKLAHOMA | 3852          | T13N R4W S17 | 170         |
| 97° 38' 54.63" W | 35° 36' 13.08" N | TJ Campbell Construction          | PD-1971        | RCP      | Canyon Lakes 3rd Addition      | 54"   | S of Memorial Road & E of Council Road   | OKLAHOMA | 3852          | T13N R4W S17 | 170         |
| 97° 38' 54.83" W | 35° 36' 12.87" N | TJ Campbell Construction          | PD-1971        | RCP      | Canyon Lakes 3rd Addition      | 24"   | S of Memorial Road & E of Council Road   | OKLAHOMA | 3852          | T13N R4W S17 | 170         |
| 97° 40' 19.76" W | 35° 36' 26.58" N | Burns Paving                      | PD-1915        | CON      | The Grand                      | 4'x6" | S of Memorial Road & E of County Line Rd | OKLAHOMA | 3752          | T13N R4W S18 | 169         |
| 97° 40' 21.20" W | 35° 36' 25.48" N | Burns Paving                      | PD-1915        | RCP      | The Grand                      | 36"   | S of Memorial Road & E of County Line Rd | OKLAHOMA | 3752          | T13N R4W S18 | 169         |
| 97° 40' 22.46" W | 35° 36' 19.62" N | Burns Paving                      | PD-1915        | CON      | The Grand                      | 4'x6" | S of Memorial Road & E of County Line Rd | OKLAHOMA | 3752          | T13N R4W S18 | 169         |
| 97° 40' 17.96" W | 35° 36' 23.10" N | Burns Paving                      | PD-1915        | CON      | The Grand                      | 4'x6" | S of Memorial Road & E of County Line Rd | OKLAHOMA | 3752          | T13N R4W S18 | 169         |
| 97° 40'          | 35° 36'          | Burns Paving                      | PD-1915        | RCP      | The Grand                      | 24"   | S of Memorial Road & E of County Line Rd | OKLAHOMA | 3752          | T13N R4W     | 169         |

| X Coord. (-97)   | Y Coord. (+35)   | Installation Contractor        | Project Number | MATERIAL | NAME                               | Size    | Location Description                     | County   | OKC Fire Grid | Legal        | OKC Atlas # |
|------------------|------------------|--------------------------------|----------------|----------|------------------------------------|---------|--|----------|---------------|--------------|-------------|
| 24.01" W         | 15.13" N         |                                |                |          |                                    |         |  | MA       |               | S18          |             |
| 97° 40' 16.76" W | 35° 36' 13.35" N | Burns Paving                   | PD-1915        | CON      | The Grand                          | 4'x6"   | S of Memorial Road & E of County Line Rd | OKLAHOMA | 3752          | T13N R4W S18 | 169         |
| 97° 40' 15.93" W | 35° 36' 15.75" N | Burns Paving                   | PD-1915        | CON      | The Grand                          | 4'x6"   | S of Memorial Road & E of County Line Rd | OKLAHOMA | 3752          | T13N R4W S18 | 169         |
| 97° 40' 17.42" W | 35° 36' 8.61" N  | Burns Paving                   | PD-1915        | CON      | The Grand                          | 4'x6"   | S of Memorial Road & E of County Line Rd | OKLAHOMA | 3752          | T13N R4W S18 | 169         |
| 97° 40' 8.75" W  | 35° 35' 41.34" N |                                |                | RCB      |                                    |         |  | OKLAHOMA | 3752          | T13N R4W S18 | 169         |
| 97° 28' 31.10" W | 35° 35' 39.72" N | Silver Star Construction       | PD-1966        | RCP      | Bella Mira Subdivision Phase I     | 42"     | N of NE 122nd St & E of Eastern Ave      | OKLAHOMA | 4851          | T13N R3W S24 | 220         |
| 97° 32' 42.02" W | 35° 35' 0.63" N  |                                | DC-0182        |          |                                    |         |  | OKLAHOMA | 4451          | T13N R3W S20 | 216         |
| 97° 32' 33.32" W | 35° 34' 57.65" N | Slayter Brothers               | 8E616          | RCSP     | Paving Plans Bel-Air Park Addition | 66"     | Bel-Air Park Addition                    | OKLAHOMA | 4451          | T13N R3W S20 | 216         |
| 97° 34' 49.84" W | 35° 35' 28.82" N | Palm Paving                    | PD-0007        | RCP      | Quail Creek                        | 36"     | N. ½ of Section 24, T13N, R4W            | OKLAHOMA | 4251          | T13N R4W S24 | 214         |
| 97° 34' 41.33" W | 35° 35' 35.01" N | Palm Paving Co.                | 3E611          | RCP      | Paving Plans Quail Creek, Sec. #14 | 60"     | Quail Creek, Sec. #14                    | OKLAHOMA | 4251          | T13N R4W S24 | 214         |
| 97° 34' 43.92" W | 35° 35' 32.88" N | Palm Paving Co.                | 3E611          | RCP      | Paving Plans Quail Creek, Sec. #14 | 27"     | Quail Creek, Sec. #14                    | OKLAHOMA | 4251          | T13N R4W S24 | 214         |
| 97° 34' 39.21" W | 35° 35' 36.64" N | Palm Paving Co.                | 3E611          | RCP      | Paving Plans Quail Creek, Sec. #14 | 27"     | Quail Creek, Sec. #14                    | OKLAHOMA | 4251          | T13N R4W S24 | 214         |
| 97° 34' 46.66" W | 35° 35' 0.63" N  | Southwest Paving Co.           | 14E628         | RCP      | Paving & Drainage Plans            | 27"     | Springhollow                             | OKLAHOMA | 4251          | T13N R4W S24 | 214         |
| 97° 34' 48.05" W | 35° 35' 3.70" N  | Southwest Paving Co.           | 14E628         | RCP      | Paving & Drainage Plans            | 36"     | Springhollow                             | OKLAHOMA | 4251          | T13N R4W S24 | 214         |
| 97° 34' 56.68" W | 35° 35' 24.49" N | Palm Paving                    | PD-0007        | CON      | Quail Creek                        |         | N. ½ of Section 24, T13N, R4W            | OKLAHOMA | 4251          | T13N R4W S24 | 214         |
| 97° 34' 54.38" W | 35° 35' 27.35" N | Palm Paving                    | PD-0007        | RCP      | Quail Creek                        | 18"     | N. ½ of Section 24, T13N, R4W            | OKLAHOMA | 4251          | T13N R4W S24 | 214         |
| 97° 34' 54.45" W | 35° 35' 20.19" N |                                |                |          |                                    |         |  | OKLAHOMA | 4251          | T13N R4W S24 | 214         |
| 97° 34' 22.76" W | 35° 35' 40.02" N | Palm Paving Co.                | 5E609          | RCP      | Paving Plan Sec. 13 Quail Creek    | 24"     | Quail Creek, Sec. 13                     | OKLAHOMA | 4251          | T13N R4W S24 | 214         |
| 97° 34' 52.58" W | 35° 35' 14.28" N | Palm Paving Co.                | PD-0468        | RCP      | Quail Creek                        | 42"     | E of Portland Avenue & N of Hefner Road  | OKLAHOMA | 4251          | T13N R4W S24 | 214         |
| 97° 36' 37.83" W | 35° 35' 35.40" N | Swatek Construction Co.        | 7E616          | CGMP     | Paving Plan The Arbors             | 36"     | The Arbors                               | OKLAHOMA | 4051          | T13N R4W S22 | 212         |
| 97° 36' 38.02" W | 35° 35' 40.25" N | Haskell Lemon Construction Co. | 2E634          | RCP      | Bond Issue Street Project 628-01   | 48"     | N.W. 122nd Street                        | OKLAHOMA | 4051          | T13N R4W S22 | 212         |
| 97° 36' 42.64" W | 35° 35' 34.20" N | TJ Campbell Construction       | PD-1308        | RCPA     | Glenhurst Section 1                | 26"X43" | S of NW 122nd St & E of MacArthur Blvd   | OKLAHOMA | 4051          | T13N R4W S22 | 212         |
| 97° 36'          | 35° 35'          | T.J. Campbell Construction     | PD-1445        | RCP      | Glenhurst Section 3                | 48"     | S of NW 122nd St & E of MacArthur Blvd   | OKLAHOMA | 4051          | T13N R4W     | 212         |

| X Coord. (-97)   | Y Coord. (+35)   | Installation Contractor          | Project Number | MATERIAL | NAME                               | Size    | Location Description                     | County   | OKC Fire Grid | Legal        | OKC Atlas # |
|------------------|------------------|----------------------------------|----------------|----------|------------------------------------|---------|--|----------|---------------|--------------|-------------|
| 42.01" W         | 28.56" N         |                                  |                |          |                                    |         |  | MA       |               | S22          |             |
| 97° 36' 44.41" W | 35° 35' 19.31" N | Atlas Paving Company             | PD-1690        | RCP      | Glenhurst Section 5                | 24"     | S of NW 122nd St & E of N MacArthur Blvd | OKLAHOMA | 4051          | T13N R4W S22 | 212         |
| 97° 36' 35.98" W | 35° 34' 51.01" N |                                  |                |          |                                    |         |  | OKLAHOMA | 4051          | T13N R4W S22 | 212         |
| 97° 39' 24.32" W | 35° 35' 32.83" N | n/a                              | PD-0029        | RCP      | Willow Creek Estates Addition No.6 | 24"     | Ne ¼, Sec.19, T13N, R4W                  | OKLAHOMA | 3751          | T13N R4W S19 | 209         |
| 97° 39' 23.11" W | 35° 35' 36.32" N | N/A                              | DD-0568        | RCP      | Dollar General Store               | 24"     | S of NW 122nd St & W Council Road        | OKLAHOMA | 3751          | T13N R4W S19 | 209         |
| 97° 40' 22.69" W | 35° 35' 38.33" N | Atlas Paving Co.                 | PD-1389        | RCP      | Willow Bend Section VI             | 30"     | S of NW 122nd St & E of County Line Road | OKLAHOMA | 3751          | T13N R4W S19 | 209         |
| 97° 39' 32.40" W | 35° 35' 28.82" N | n/a                              | PD-0029        | RCP      | Willow Creek Estates Addition No.6 | 18"     | Ne ¼, Sec.19, T13N, R4W                  | OKLAHOMA | 3751          | T13N R4W S19 | 209         |
| 97° 39' 33.14" W | 35° 35' 23.27" N | Slater Brothers Construction Co. | 10E613         | RCP      | Paving Plans Willow Creek Estates  | 30"     | Willow Creek Estates                     | OKLAHOMA | 3751          | T13N R4W S19 | 209         |
| 97° 39' 27.12" W | 35° 35' 29.70" N | Slater Brothers Construction Co. | 10E613         | Concrete | Paving Plans Willow Creek Estates  | 4' X 6" | Willow Creek Estates                     | OKLAHOMA | 3751          | T13N R4W S19 | 209         |
| 97° 39' 24.65" W | 35° 35' 30.03" N | Slater Brothers Construction Co. | 10E613         | RCP      | Paving Plans Willow Creek Estates  |         | Willow Creek Estates                     | OKLAHOMA | 3751          | T13N R4W S19 | 209         |
| 97° 39' 28.10" W | 35° 35' 16.24" N | Slater Brothers Construction Co. | 10E613         | RCP      | Paving Plans Willow Creek Estates  | 24"     | Willow Creek Estates                     | OKLAHOMA | 3751          | T13N R4W S19 | 209         |
| 97° 39' 28.87" W | 35° 35' 13.78" N | Atlas Paving Co.                 | PD-0022        | RCP      | Windmill Estates                   | 30"     | SE ¼, Sec.19, T13N, R4W                  | OKLAHOMA | 3751          | T13N R4W S19 | 209         |
| 97° 39' 32.69" W | 35° 35' 3.84" N  | Atlas Paving Co.                 | PD-0022        | RCP      | Windmill Estates                   | 18"     |  | OKLAHOMA | 3751          | T13N R4W S19 | 209         |
| 97° 39' 29.86" W | 35° 35' 9.88" N  | Atlas Paving Co.                 | PD-0022        | RCP      | Windmill Estates                   | 24"     | SE ¼, Sec.19, T13N, R4W                  | OKLAHOMA | 3751          | T13N R4W S19 | 209         |
| 97° 39' 32.62" W | 35° 34' 58.90" N | Atlas Paving Co.                 | PD-0022        | RCP      | Windmill Estates                   | 48"     |  | OKLAHOMA | 3751          | T13N R4W S19 | 209         |
| 97° 39' 38.44" W | 35° 34' 53.30" N | Atlas Paving Co.                 | PD-0022        |          | Windmill Estates                   |         | SE ¼, Sec.19, T13N, R4W                  | OKLAHOMA | 3751          | T13N R4W S19 | 209         |
| 97° 39' 34.95" W | 35° 35' 0.25" N  | Southwest Paving Co.             | 6E634          | RPC      | Eagle Ridge Paving & Drainage      | 30"     | Eagle Ridge                              | OKLAHOMA | 3751          | T13N R4W S19 | 209         |
| 97° 26' 30.35" W | 35° 34' 42.47" N |                                  |                |          |                                    |         |  | OKLAHOMA | 5050          | T13N R2W S29 | 262         |
| 97° 30' 45.22" W | 35° 34' 37.68" N |                                  |                |          |                                    |         |  | OKLAHOMA | 4650          | T13N R3W S27 | 258         |
| 97° 30' 45.24" W | 35° 34' 39.04" N |                                  |                |          |                                    |         |  | OKLAHOMA | 4650          | T13N R3W S27 | 258         |
| 97° 31' 18.14" W | 35° 34' 13.92" N |                                  |                | RCP      |                                    |         |  | OKLAHOMA | 4550          | T13N R3W S28 | 257         |
| 97° 30' 55.61" W | 35° 34' 28.93" N | ML Young Construction            | PD-1381        | Concrete | Sabolich Building Site             | 4'X6"   | S of Hefner Road & W of Britton Road     | OKLAHOMA | 4550          | T13N R3W S28 | 257         |
| 97° 32'          | 35° 34'          |                                  |                |          |                                    |         |  | OKLAHOMA | 4450          | T13N R3W     | 256         |

| X Coord. (-97)   | Y Coord. (+35)   | Installation Contractor       | Project Number | MATERIAL | NAME                                      | Size      | Location Description                      | County   | OKC Fire Grid | Legal        | OKC Atlas # |
|------------------|------------------|-------------------------------|----------------|----------|---|-----------|---|----------|---------------|--------------|-------------|
| 25.12" W         | 33.24" N         |                               |                |          |   |           |   | MA       |               | S29          |             |
| 97° 37' 21.33" W | 35° 34' 36.45" N | Palm Construction Co.         | 3E616          |          | Paving Plan Ski Island Lake               | 5' X 2'   | Ski Island                                | OKLAHOMA | 3950          | T13N R4W S28 | 251         |
| 97° 37' 21.39" W | 35° 34' 43.42" N | Palm Construction Co.         | 3E616          | Concrete | Paving Plan Ski Island Lake               | 3' X 6"   | Ski Island                                | OKLAHOMA | 3950          | T13N R4W S28 | 251         |
| 97° 37' 26.81" W | 35° 34' 22.19" N |                               | 17E634         | RCP      | Sherwood Estates Paving Plans             | 30"       | Sherwood Estates                          | OKLAHOMA | 3950          | T13N R4W S28 | 251         |
| 97° 37' 39.14" W | 35° 34' 45.39" N | Steelman Construction Co.     | 1E616          | RCP      | Paving Plan Ski Island Lake               | 24"       | Ski Island                                | OKLAHOMA | 3950          | T13N R4W S28 | 251         |
| 97° 37' 36.02" W | 35° 34' 44.00" N | Steelman Construction Co.     | 1E616          | RCP      | Paving Plan Ski Island Lake               | 24"       | Ski Island                                | OKLAHOMA | 3950          | T13N R4W S28 | 251         |
| 97° 37' 28.54" W | 35° 34' 39.53" N | Steelman Construction Co.     | 4E616          | Concrete | Paving Plan Ski Island Lake               | 3' bottom | Ski Island                                | OKLAHOMA | 3950          | T13N R4W S28 | 251         |
| 97° 37' 32.77" W | 35° 34' 38.21" N | Steelman Construction Co.     | 1E616          | RCP      | Paving Plan Ski Island Lake               | 30"       | Ski Island                                | OKLAHOMA | 3950          | T13N R4W S28 | 251         |
| 97° 37' 39.36" W | 35° 34' 36.10" N | Steelman Construction Co.     | 1E616          | RCP      | Paving Plan Ski Island Lake               | 36"       | Ski Island                                | OKLAHOMA | 3950          | T13N R4W S28 | 251         |
| 97° 37' 30.17" W | 35° 34' 0.64" N  |                               | EXISTING       | RCP      |   | 15"       |   | OKLAHOMA | 3950          | T13N R4W S28 | 251         |
| 97° 39' 41.09" W | 35° 34' 46.61" N | Slayter Brothers Construction | PD-0260        | RCP      | Harvest Hills Section 5                   | 42"       | NW 107th St & Prairie Lane                | OKLAHOMA | 3750          | T13N R4W S30 | 249         |
| 97° 39' 41.15" W | 35° 34' 41.42" N | Slayter Brothers Construction | PD-0260        | RCP      | Harvest Hills Section 5                   | 36"       | NW 107th St & Prairie Lane                | OKLAHOMA | 3750          | T13N R4W S30 | 249         |
| 97° 39' 54.76" W | 35° 34' 28.63" N | Atlas Paving Company          | PD-1337        | RCP      | Westcliffe Section 2                      | 24"       | S of Hefner Road & E of County Line Road  | OKLAHOMA | 3750          | T13N R4W S30 | 249         |
| 97° 39' 46.27" W | 35° 34' 34.82" N | Triple A Construction Co.     | 9E615          | RCP      | Paving Plans Harvest Hills Add., Sec. Two | 48"       | Harvest Hills Add.                        | OKLAHOMA | 3750          | T13N R4W S30 | 249         |
| 97° 39' 46.73" W | 35° 34' 34.52" N | Triple A Construction Co.     | 9E615          | RCP      | Paving Plans Harvest Hills Add., Sec. Two | 48"       | Harvest Hills Add.                        | OKLAHOMA | 3750          | T13N R4W S30 | 249         |
| 97° 39' 54.21" W | 35° 34' 25.16" N | Triple "A" Construction       | 15E616         | Grass    | Harvest Hills Add., Sec. 1 Paving Plans   |           | Harvest Hills                             | OKLAHOMA | 3750          | T13N R4W S30 | 249         |
| 97° 40' 51.08" W | 35° 34' 2.04" N  | TJ Campbell Construction      | PD-1836        | RCP      | Russellville Addition                     | 36"       | N of Britton Road & W of County Line Road |          | 3650          | T13N R5W S25 | 248         |
| 97° 40' 51.40" W | 35° 33' 58.86" N | TJ Campbell Construction      | PD-1836        | CON      | Russellville Addition                     | 4'x6"     | N of Britton Road & W of County Line Road |          | 3650          | T13N R5W S25 | 248         |
| 97° 40' 52.36" W | 35° 34' 7.51" N  | TJ Campbell Construction      | PD-1836        | CON      | Russellville Addition                     | 5'x6"     | N of Britton Road & W of County Line Road |          | 3650          | T13N R5W S25 | 248         |
| 97° 40' 51.13" W | 35° 34' 11.12" N | TJ Campbell Construction      | PD-1836        | CON      | Russellville Addition                     | 4'x6"     | N of Britton Road & W of County Line Road |          | 3650          | T13N R5W S25 | 248         |
| 97° 40' 51.13" W | 35° 34' 11.12" N | TJ Campbell Construction      | PD-1836        | CON      | Russellville Addition                     | 4'x6"     | N of Britton Road & W of County Line Road |          | 3650          | T13N R5W S25 | 248         |
| 97° 40' 48.88" W | 35° 34' 10.18" N | TJ Campbell Construction      | PD-1836        | CON      | Russellville Addition                     | 5'x6"     | N of Britton Road & W of County Line Road |          | 3650          | T13N R5W S25 | 248         |
| 97° 29'          | 35° 33'          |                               |                |          |   |           |   | OKLAHOMA | 4749          | T13N R3W     | 299         |



| X Coord. (-97)   | Y Coord. (+35)   | Installation Contractor                | Project Number | MATERIAL | NAME                                      | Size    | Location Description                   | County    | OKC Fire Grid | Legal        | OKC Atlas # |
|------------------|------------------|--|----------------|----------|---|---------|--|-----------|---------------|--------------|-------------|
| 43.15" W         | 11.97" N         |  |                |          |   |         |  | MA        |               | S35          |             |
| 97° 29' 55.63" W | 35° 33' 32.13" N |  |                |          |   |         |  | OKLAHO MA | 4649          | T13N R3W S34 | 298         |
| 97° 29' 45.72" W | 35° 33' 26.54" N | Hughes Engineering Co.                 | 30E607         | RCP      | Paving for Musgrave's Gold Medal Addition | 30"     | Musgrave's Gold Medal Addition         | OKLAHO MA | 4649          | T13N R3W S34 | 298         |
| 97° 29' 45.74" W | 35° 33' 26.31" N | Hughes Engineering Co.                 | 30E607         | RCP      | Paving for Musgrave's Gold Medal Addition | 24"     | Musgrave's Gold Medal Addition         | OKLAHO MA | 4649          | T13N R3W S34 | 298         |
| 97° 29' 48.56" W | 35° 33' 27.60" N | TJ Campbell Construction               | PD-1877        | RCPE     | Hope Crossing II                          | 29"x45" | N of Wilshire Blvd & W of Kelley Ave   | OKLAHO MA | 4649          | T13N R3W S34 | 298         |
| 97° 34' 18.71" W | 35° 33' 40.40" N | Metropolitan Construction Co.          | 13E120         | RCP      | Paving Plans                              | 42"     | Lakehurst                              | OKLAHO MA | 4249          | T13N R4W S36 | 294         |
| 97° 34' 18.25" W | 35° 33' 19.51" N | City of Oklahoma City                  | 17E605         |          | Paving Plans – Lakehurst                  | 24"     | Lakehurst                              | OKLAHO MA | 4249          | T13N R4W S36 | 294         |
| 97° 34' 18.48" W | 35° 33' 12.79" N | Atlas Paving Co.                       | 15E605         | RCP      | Paving Plans – Lakehurst                  | 36"     | Lakehurst                              | OKLAHO MA | 4249          | T13N R4W S36 | 294         |
| 97° 34' 18.77" W | 35° 33' 28.51" N |  |                |          |   |         |  | OKLAHO MA | 4249          | T13N R4W S36 | 294         |
| 97° 35' 49.97" W | 35° 33' 7.70" N  |  |                |          |   |         |  | OKLAHO MA | 4149          | T13N R4W S35 | 293         |
| 97° 37' 21.82" W | 35° 33' 29.18" N |  | 51E602         | RCP      | Paving Windsor Lakes Add.                 | 36"     | Windsor Lakes Add.                     | OKLAHO MA | 3949          | T13N R4W S33 | 291         |
| 97° 37' 24.98" W | 35° 33' 43.15" N | Slyter Brothers Construction Co., Inc. | 16E618         | Concrete | Paving Plans Lansbrook Section 6          | 5'      | Lansbrook Section 6                    | OKLAHO MA | 3949          | T13N R4W S33 | 291         |
| 97° 37' 20.47" W | 35° 33' 23.95" N |  | ST-526         | RCP      |   |         |  | OKLAHO MA | 3949          | T13N R4W S33 | 291         |
| 97° 37' 18.63" W | 35° 33' 17.59" N |  | 51E602         | RCP      | Paving Windsor Lakes Add.                 | 24"     | Windsor Lakes Add.                     | OKLAHO MA | 3949          | T13N R4W S33 | 291         |
| 97° 37' 20.49" W | 35° 33' 21.77" N |  | DC-0075        | RCP      |   |         |  | OKLAHO MA | 3949          | T13N R4W S33 | 291         |
| 97° 37' 25.57" W | 35° 33' 29.19" N |  | 51E602         | RCP      | Paving Windsor Lakes Add.                 | 30"     | Windsor Lakes Add.                     | OKLAHO MA | 3949          | T13N R4W S33 | 291         |
| 97° 37' 23.34" W | 35° 33' 26.05" N |  | 51E602         | RCP      | Paving Windsor Lakes Add.                 | 30"     | Windsor Lakes Add.                     | OKLAHO MA | 3949          | T13N R4W S33 | 291         |
| 97° 37' 20.15" W | 35° 33' 17.04" N |  | 51E602         | RCP      | Paving Windsor Lakes Add.                 | 0.5%    | Windsor Lakes Add.                     | OKLAHO MA | 3949          | T13N R4W S33 | 291         |
| 97° 37' 20.00" W | 35° 33' 14.91" N |  |                |          |   |         |  | OKLAHO MA | 3949          | T13N R4W S33 | 291         |
| 97° 37' 23.68" W | 35° 33' 26.46" N |  |                |          |   |         |  | OKLAHO MA | 3949          | T13N R4W S33 | 291         |
| 97° 37' 37.55" W | 35° 33' 9.49" N  |  |                | CGMPA    |   |         |  | OKLAHO MA | 3949          | T13N R4W S33 | 291         |
| 97° 38' 2.31" W  | 35° 33' 15.04" N | Bishop Paving                          | PD-1556        | CON      | Commerce Pointe on Rockwell               | 4'x6"   | N of Wilshire Blvd & E of Rockwell Ave | OKLAHO MA | 3949          | T13N R4W S33 | 291         |
| 97° 38'          | 35° 33'          | Bishop Paving                          | PD-1556        | RCP      | Commerce Pointe on Rockwell               | 24"     | N of Wilshire Blvd & E of Rockwell Ave | OKLAHO    | 3949          | T13N R4W     | 291         |

| X Coord. (-97)      | Y Coord. (+35)      | Installation Contractor | Project Number     | MATERIAL | NAME  | Size     | Location Description                      | County       | OKC Fire Grid | Legal           | OKC Atlas # |
|---------------------|---------------------|-------------------------|--------------------|----------|---|----------|---|--------------|---------------|-----------------|-------------|
| 10.71" W            | 16.65" N            |                         |                    |          |   |          |   | MA           |               | S33             |             |
| 97° 38'<br>50.39" W | 35° 33'<br>4.21" N  |                         |                    | CGMP     |   | 2-18"    |   | OKLAHO<br>MA | 3849          | T13N R4W<br>S32 | 290         |
| 97° 40'<br>32.77" W | 35° 33'<br>38.89" N | Burns Paving Company    | PD-1863            | RCB      | Pikes Pointe                                  | 6'x4'    | S of Britton Road & W of County Line Road |              | 3649          | T13N R5W<br>S36 | 288         |
| 97° 40'<br>31.79" W | 35° 33'<br>38.57" N | Burns Paving Company    | PD-1863            | RCP      | Pikes Pointe                                  | 30"      | S of Britton Road & W of County Line Road |              | 3649          | T13N R5W<br>S36 | 288         |
| 97° 40'<br>29.82" W | 35° 33'<br>39.20" N | Burns Paving Company    | PD-1863            | RCP      | Pikes Pointe                                  | 24"      | S of Britton Road & W of County Line Road |              | 3649          | T13N R5W<br>S36 | 288         |
| 97° 33'<br>24.85" W | 35° 32'<br>24.71" N |                         | DC-0019 &<br>SC-01 | RCB      | Flood Control and Sanitary Sewer Improvements | 12' x 4' | East of N May Ave & North of NW 63rd St   | OKLAHO<br>MA | 4348          | T12N R3W<br>S6  | 335         |
| 97° 34'<br>31.23" W | 35° 32'<br>58.36" N |                         | 34E605             | RCP      | Paving Plans Wilshire Estates                 | 24"      | Elmwood Avenue                            | OKLAHO<br>MA | 4248          | T12N R4W<br>S1  | 334         |
| 97° 34'<br>19.13" W | 35° 32'<br>53.67" N |                         | 34E606             | RCP      | Paving Plans Wilshire Estates                 | 30"      | Elmwood Avenue                            | OKLAHO<br>MA | 4248          | T12N R4W<br>S1  | 334         |
| 97° 35'<br>50.78" W | 35° 32'<br>57.05" N |                         |                    |          |   |          |   | OKLAHO<br>MA | 4148          | T12N R4W<br>S2  | 333         |
| 97° 27'<br>40.96" W | 35° 31'<br>52.16" N |                         |                    |          |   |          |   | OKLAHO<br>MA | 4847          | T12N R3W<br>S12 | 380         |
| 97° 29'<br>5.34" W  | 35° 32'<br>4.12" N  |                         |                    |          |   |          |   | OKLAHO<br>MA | 4747          | T12N R3W<br>S11 | 379         |
| 97° 29'<br>24.74" W | 35° 32'<br>5.95" N  |                         | DC-0167            | RCP      |   | 42"      |   | OKLAHO<br>MA | 4747          | T12N R3W<br>S11 | 379         |
| 97° 29'<br>37.74" W | 35° 32'<br>3.63" N  |                         |                    |          |   |          |   | OKLAHO<br>MA | 4747          | T12N R3W<br>S11 | 379         |
| 97° 29'<br>37.06" W | 35° 32'<br>3.73" N  |                         |                    |          |   |          |   | OKLAHO<br>MA | 4747          | T12N R3W<br>S11 | 379         |
| 97° 28'<br>36.97" W | 35° 32'<br>6.14" N  |                         |                    |          |   |          |   | OKLAHO<br>MA | 4747          | T12N R3W<br>S11 | 379         |
| 97° 29'<br>4.42" W  | 35° 31'<br>58.95" N |                         |                    |          |   |          |   | OKLAHO<br>MA | 4747          | T12N R3W<br>S11 | 379         |
| 97° 28'<br>54.96" W | 35° 31'<br>57.55" N | N/A                     | PD-0978            | RCB      | Cinemark USA                                  | 6X3      | S of NE 63rd St & W of MLK Blvd.          | OKLAHO<br>MA | 4747          | T12N R3W<br>S11 | 379         |
| 97° 29'<br>39.05" W | 35° 31'<br>20.69" N |                         |                    | RCP      |   | 30"      |   | OKLAHO<br>MA | 4747          | T12N R3W<br>S11 | 379         |
| 97° 30'<br>2.34" W  | 35° 31'<br>48.82" N |                         |                    | RCP      |   |          |   | OKLAHO<br>MA | 4647          | T12N R3W<br>S10 | 378         |
| 97° 29'<br>40.85" W | 35° 32'<br>2.27" N  |                         |                    | RCP      |   |          |   | OKLAHO<br>MA | 4647          | T12N R3W<br>S10 | 378         |
| 97° 29'<br>57.62" W | 35° 31'<br>50.41" N |                         |                    | RCP      |   |          |   | OKLAHO<br>MA | 4647          | T12N R3W<br>S10 | 378         |
| 97° 29'<br>43.51" W | 35° 32'<br>1.46" N  |                         |                    | RCP      |   |          |   | OKLAHO<br>MA | 4647          | T12N R3W<br>S10 | 378         |
| 97° 29'             | 35° 31'             |                         |                    | RCP      |   |          |   | OKLAHO       | 4647          | T12N R3W        | 378         |

| X Coord. (-97)   | Y Coord. (+35)   | Installation Contractor                | Project Number | MATERIAL | NAME  | Size           | Location Description                   | County    | OKC Fire Grid | Legal        | OKC Atlas # |
|------------------|------------------|--|----------------|----------|---|----------------|--|-----------|---------------|--------------|-------------|
| 49.77" W         | 55.65" N         |  |                |          |   |                |  | MA        |               | S10          |             |
| 97° 29' 53.39" W | 35° 31' 53.40" N |  |                | RCP      |   |                |  | OKLAHO MA | 4647          | T12N R3W S10 | 378         |
| 97° 30' 33.80" W | 35° 31' 44.87" N |  |                | RCP      |   |                |  | OKLAHO MA | 4647          | T12N R3W S10 | 378         |
| 97° 30' 28.04" W | 35° 31' 39.30" N | H&H Plumbing                           | DD-0562        | RCP      | The Lincoln at Central Park                                 | 42"            | N of N.E 50th St. & E of Santa Fe Ave. | OKLAHO MA | 4647          | T12N R3W S10 | 378         |
| 97° 30' 23.84" W | 35° 31' 40.05" N | C Watts                                | PD-0460        | CGMP     | Central Park One  | 54"            | N of NE 50th St & E of Santa Fe Avenue | OKLAHO MA | 4647          | T12N R3W S10 | 378         |
| 97° 31' 39.12" W | 35° 32' 2.06" N  |  |                |          |   |                |  | OKLAHO MA | 4547          | T12N R3W S9  | 377         |
| 97° 31' 11.92" W | 35° 32' 11.49" N |  |                |          |   |                |  | OKLAHO MA | 4547          | T12N R3W S9  | 377         |
| 97° 31' 13.08" W | 35° 31' 54.74" N | Cimarron Construction                  | PV-0081        | RCB      | Chesapeake Energy East Campus                               | 8'x4'          | N of I-44 & E of Shartel               | OKLAHO MA | 4547          | T12N R3W S9  | 377         |
| 97° 30' 55.20" W | 35° 31' 39.86" N |  |                |          |   |                |  | OKLAHO MA | 4547          | T12N R3W S9  | 377         |
| 97° 31' 31.88" W | 35° 31' 40.03" N |  |                | RCB      |   |                |  | OKLAHO MA | 4547          | T12N R3W S9  | 377         |
| 97° 31' 12.50" W | 35° 31' 36.92" N |  |                | RCP      |   |                |  | OKLAHO MA | 4547          | T12N R3W S9  | 377         |
| 97° 31' 20.53" W | 35° 31' 34.87" N |  |                | RCP      |   |                |  | OKLAHO MA | 4547          | T12N R3W S9  | 377         |
| 97° 31' 36.38" W | 35° 31' 37.17" N |  |                | RCP      |   |                |  | OKLAHO MA | 4547          | T12N R3W S9  | 377         |
| 97° 31' 18.74" W | 35° 31' 35.11" N | H.E. Chase, City Engineer              | 74E94          | RCP      | Plan & Profile  | 2-18"          | Wileman Addition                       | OKLAHO MA | 4547          | T12N R3W S9  | 377         |
| 97° 31' 13.61" W | 35° 31' 36.02" N | H.E. Chase, City Engineer              | 74E94          | RCP      | Plan & Profile  | 2-24"          | Wileman Addition                       | OKLAHO MA | 4547          | T12N R3W S9  | 377         |
| 97° 31' 45.94" W | 35° 31' 39.34" N |  | 7E203          | CMP      |   | 13'-10"X27'-3" |  | OKLAHO MA | 4547          | T12N R3W S9  | 377         |
| 97° 31' 46.40" W | 35° 31' 40.14" N |  |                | RCB      |   |                |  | OKLAHO MA | 4547          | T12N R3W S9  | 377         |
| 97° 31' 1.65" W  | 35° 31' 20.99" N |  |                |          |   |                |  | OKLAHO MA | 4547          | T12N R3W S9  | 377         |
| 97° 32' 49.97" W | 35° 31' 45.21" N |  |                | RCB      |   |                |  | OKLAHO MA | 4447          | T12N R3W S8  | 376         |
| 97° 31' 56.85" W | 35° 31' 38.61" N |  |                | RCP      |   |                |  | OKLAHO MA | 4447          | T12N R3W S8  | 376         |
| 97° 32' 32.54" W | 35° 31' 39.30" N | H.F. Hulett, Jr. Professional Engineer | 76E80          | RCP      | Paving Plans, Profiles & Estimates for Wileman 8th Addition | 24"            | W1/2, Sec. 8, T-12-Nm R-3-W. I.M.      | OKLAHO MA | 4447          | T12N R3W S8  | 376         |
| 97° 32' 38.42" W | 35° 31' 40.55" N | H.F. Hulett, Jr. Professional Engineer | 76E80          | RCP      | Paving Plans, Profiles & Estimates for Wileman 8th Addition | 30"            | W1/2, Sec. 8, T-12-Nm R-3-W. I.M.      | OKLAHO MA | 4447          | T12N R3W S8  | 376         |
| 97° 32'          | 35° 31'          |  |                |          |   |                |  | OKLAHO    | 4447          | T12N R3W     | 376         |

| X Coord. (-97)   | Y Coord. (+35)   | Installation Contractor       | Project Number | MATERIAL | NAME  | Size    | Location Description                          | County   | OKC Fire Grid | Legal        | OKC Atlas # |
|------------------|------------------|-------------------------------|----------------|----------|---|---------|---|----------|---------------|--------------|-------------|
| 45.44" W         | 41.32" N         |                               |                |          |   |         |   | MA       |               | S8           |             |
| 97° 32' 30.13" W | 35° 31' 36.20" N |                               | DD-0442        |          |   |         |   | OKLAHOMA | 4447          | T12N R3W S8  | 376         |
| 97° 32' 7.37" W  | 35° 31' 35.75" N | Silver Star Construction      | PD-1069        | RCP      | Belle Isle Boulevard                                  | 48"     | N of NW 50th St & W of Western Ave            | OKLAHOMA | 4447          | T12N R3W S8  | 376         |
| 97° 31' 47.76" W | 35° 31' 39.59" N |                               |                |          |   |         |   | OKLAHOMA | 4447          | T12N R3W S8  | 376         |
| 97° 32' 57.21" W | 35° 31' 48.02" N | Mark Halloway Co.             | 33E107         | RCP      | Paving Plans  | 1.00%   | Wileman Sixth Addition                        | OKLAHOMA | 4347          | T12N R3W S7  | 375         |
| 97° 33' 11.17" W | 35° 31' 59.14" N |                               |                |          |   |         |   | OKLAHOMA | 4347          | T12N R3W S7  | 375         |
| 97° 32' 56.35" W | 35° 31' 42.80" N | Mark Halloway Co.             | 33E107         | RCP      | Paving Plans  | 24      | Wileman Sixth Addition                        | OKLAHOMA | 4347          | T12N R3W S7  | 375         |
| 97° 32' 56.38" W | 35° 31' 42.85" N | Mark Halloway Co.             | 33E107         | RCP      | Paving Plans  | 1.00%   | Wileman Sixth Addition                        | OKLAHOMA | 4347          | T12N R3W S7  | 375         |
| 97° 33' 1.50" W  | 35° 31' 41.24" N | Mark Holloway Construction    | 33E110         | RCP      | Paving  | 18"     | Wileman Fifth Addition                        | OKLAHOMA | 4347          | T12N R3W S7  | 375         |
| 97° 32' 51.43" W | 35° 31' 51.14" N | Harry F. Hulett, Jr. Engineer | 37E110         | RCP      | Paving Plans  | 15"     | Wileman Seventh Addition                      | OKLAHOMA | 4347          | T12N R3W S7  | 375         |
| 97° 33' 14.64" W | 35° 32' 11.73" N |                               | 4E610          | Concrete | County Highway, N.W. 63rd Street                      | 4'      | N.W. 63rd Street                              | OKLAHOMA | 4347          | T12N R3W S7  | 375         |
| 97° 32' 59.25" W | 35° 31' 54.06" N | Republic Paving               | DC-0014        | RCB      | Drainage Improvements NW 59th St & West of Barnes Ave | 6'x 4'  | S of NW 63rd Street and W of Pennsylvania Ave | OKLAHOMA | 4347          | T12N R3W S7  | 375         |
| 97° 32' 52.41" W | 35° 31' 53.25" N | Harry F. Hulett, Jr. Engineer | 37E110         | RCP      | Paving Plans  | 15"     | Wileman Seventh Addition                      | OKLAHOMA | 4347          | T12N R3W S7  | 375         |
| 97° 25' 27.82" W | 35° 30' 28.52" N |                               |                | RCP      |   |         |   | OKLAHOMA | 5046          | T12N R2W S17 | 422         |
| 97° 29' 37.66" W | 35° 31' 19.58" N |                               |                | RCP      |   |         |   | OKLAHOMA | 4746          | T12N R3W S14 | 419         |
| 97° 29' 39.16" W | 35° 31' 1.61" N  |                               |                | CMP      |   | 30"     |   | OKLAHOMA | 4746          | T12N R3W S14 | 419         |
| 97° 29' 37.79" W | 35° 30' 53.63" N |                               |                |          |   |         |   | OKLAHOMA | 4746          | T12N R3W S14 | 419         |
| 97° 28' 44.23" W | 35° 30' 42.61" N |                               |                |          |   |         |   | OKLAHOMA | 4746          | T12N R3W S14 | 419         |
| 97° 28' 42.15" W | 35° 30' 41.78" N |                               |                |          |   |         |   | OKLAHOMA | 4746          | T12N R3W S14 | 419         |
| 97° 28' 36.74" W | 35° 30' 41.59" N |                               |                |          |   |         |   | OKLAHOMA | 4746          | T12N R3W S14 | 419         |
| 97° 29' 39.93" W | 35° 31' 19.62" N |                               |                | RCP      |   |         |   | OKLAHOMA | 4646          | T12N R3W S15 | 418         |
| 97° 29' 45.25" W | 35° 30' 28.18" N | Metropolitan Construction Co. | 56E602         | RCB      | Pavement N. 36th Street                               | 10 x 10 | N. 36th Street                                | OKLAHOMA | 4646          | T12N R3W S15 | 418         |
| 97° 31'          | 35° 31'          | Marvel Engineering Co.        | 82"B"E99       | RCP      | Paving  | 24"     | Edgemere Terrace Add.                         | OKLAHOMA | 4546          | T12N R3W     | 417         |

| X Coord. (-97)   | Y Coord. (+35)   | Installation Contractor       | Project Number | MATERIAL | NAME                                 | Size     | Location Description       | County    | OKC Fire Grid | Legal        | OKC Atlas # |
|------------------|------------------|-------------------------------|----------------|----------|--------------------------------------|----------|----------------------------|-----------|---------------|--------------|-------------|
| 6.27" W          | 1.38" N          |                               |                |          |                                      |          |                            | MA        |               | S16          |             |
| 97° 31' 3.77" W  | 35° 30' 52.86" N |                               | 18E114         | RCP      |                                      | 24"      |                            | OKLAHO MA | 4546          | T12N R3W S16 | 417         |
| 97° 31' 6.93" W  | 35° 31' 10.19" N | Marvel Engineering Co.        | 82"B"E99       | RCP      | Paving                               | 24"      | Edgemere Terrace Add.      | OKLAHO MA | 4546          | T12N R3W S16 | 417         |
| 97° 31' 7.36" W  | 35° 31' 11.72" N | Marvel Engineering Co.        | 82"B"E99       | RCP      | Paving                               | 24"      | Edgemere Terrace Add.      | OKLAHO MA | 4546          | T12N R3W S16 | 417         |
| 97° 31' 0.00" W  | 35° 30' 54.62" N |                               |                |          |                                      |          |                            | OKLAHO MA | 4546          | T12N R3W S16 | 417         |
| 97° 31' 2.33" W  | 35° 30' 31.03" N |                               |                |          |                                      |          |                            | OKLAHO MA | 4546          | T12N R3W S16 | 417         |
| 97° 41' 12.90" W | 35° 30' 46.61" N | Connelly Paving Co.           | PD-0115        | RCP      | Stonebridge Lake Estates Blocks 1-4  | 30"      |                            |           | 3646          | T12N R5W S13 | 408         |
| 97° 41' 12.38" W | 35° 30' 49.47" N | Connelly Paving Co.           | PD-0115        | RCP      | Stonebridge Lake Estates Blocks 1-4  | 36"      |                            |           | 3646          | T12N R5W S13 | 408         |
| 97° 41' 26.25" W | 35° 30' 50.25" N |                               |                |          |                                      |          |                            |           | 3546          | T12N R5W S14 | 407         |
| 97° 41' 32.06" W | 35° 30' 50.27" N |                               |                |          |                                      |          |                            |           | 3546          | T12N R5W S14 | 407         |
| 97° 41' 29.77" W | 35° 30' 47.65" N |                               |                |          |                                      |          |                            |           | 3546          | T12N R5W S14 | 407         |
| 97° 41' 24.42" W | 35° 30' 48.27" N |                               |                |          |                                      |          |                            |           | 3546          | T12N R5W S14 | 407         |
| 97° 29' 17.11" W | 35° 30' 1.83" N  |                               |                | RCP      |                                      | 36"      |                            | OKLAHO MA | 4745          | T12N R3W S23 | 459         |
| 97° 29' 3.83" W  | 35° 30' 15.34" N | Metropolitan Paving Co.       | 79E91          | RCP      | Plan & Profile                       | 36"      | Park Estates 12th Addition | OKLAHO MA | 4745          | T12N R3W S23 | 459         |
| 97° 29' 10.68" W | 35° 30' 11.25" N | W.W. Baker, City Engineer     | 6E109          | RCP      | Paving Plans                         | 18"      | Park Estates 3rd Addition  | OKLAHO MA | 4745          | T12N R3W S23 | 459         |
| 97° 29' 7.54" W  | 35° 30' 11.83" N | Atlas Paving                  | 2E118          | RCB      | Plans & Profiles                     | 6' x 12' | N. Prospect Avenue         | OKLAHO MA | 4745          | T12N R3W S23 | 459         |
| 97° 28' 56.30" W | 35° 30' 27.39" N | Metropolitan Construction Co. | 56E602         | RCP      | Pavement N. 36th Street              | 30"      | N. 36th Street             | OKLAHO MA | 4745          | T12N R3W S23 | 459         |
| 97° 29' 11.65" W | 35° 30' 7.58" N  | Atlas Paving Co.              | 28E112         | RCP      | Paving Plans                         | 18"      | Park Estates 15th Addition | OKLAHO MA | 4745          | T12N R3W S23 | 459         |
| 97° 29' 15.85" W | 35° 30' 4.33" N  |                               |                | RCP      |                                      | 36"      |                            | OKLAHO MA | 4745          | T12N R3W S23 | 459         |
| 97° 29' 24.97" W | 35° 30' 1.58" N  |                               | 30E98          | RCP      | Storm Sewer Improvements Contract #3 | 33"      | Contract #3, Line 24       | OKLAHO MA | 4745          | T12N R3W S23 | 459         |
| 97° 29' 19.86" W | 35° 29' 52.43" N |                               | 16E202         | RCP      |                                      | 24"      |                            | OKLAHO MA | 4745          | T12N R3W S23 | 459         |
| 97° 29' 30.58" W | 35° 29' 48.72" N |                               |                | RCP      |                                      |          |                            | OKLAHO MA | 4745          | T12N R3W S23 | 459         |
| 97° 31'          | 35° 30'          |                               |                | RCP      |                                      | 18"      |                            | OKLAHO    | 4545          | T12N R3W     | 457         |

| X Coord. (-97)   | Y Coord. (+35)   | Installation Contractor  | Project Number | MATERIAL | NAME                        | Size  | Location Description               | County    | OKC Fire Grid | Legal        | OKC Atlas # |
|------------------|------------------|--------------------------|----------------|----------|-----------------------------|-------|------------------------------------|-----------|---------------|--------------|-------------|
| 8.84" W          | 14.88" N         |                          |                |          |                             |       |                                    | MA        |               | S21          |             |
| 97° 31' 6.73" W  | 35° 30' 20.78" N |                          |                | RCP      |                             | 18"   |                                    | OKLAHO MA | 4545          | T12N R3W S21 | 457         |
| 97° 31' 9.69" W  | 35° 30' 12.28" N |                          |                | RCP      |                             |       |                                    | OKLAHO MA | 4545          | T12N R3W S21 | 457         |
| 97° 31' 7.85" W  | 35° 30' 27.04" N |                          |                |          |                             |       |                                    | OKLAHO MA | 4545          | T12N R3W S21 | 457         |
| 97° 31' 7.40" W  | 35° 30' 17.67" N |                          |                |          |                             |       |                                    | OKLAHO MA | 4545          | T12N R3W S21 | 457         |
| 97° 31' 9.16" W  | 35° 30' 11.43" N |                          |                | RCB      |                             |       |                                    | OKLAHO MA | 4545          | T12N R3W S21 | 457         |
| 97° 31' 9.35" W  | 35° 30' 11.34" N |                          |                | RCB      |                             |       |                                    | OKLAHO MA | 4545          | T12N R3W S21 | 457         |
| 97° 31' 5.76" W  | 35° 30' 20.41" N |                          |                | RCP      |                             | 18"   |                                    | OKLAHO MA | 4545          | T12N R3W S21 | 457         |
| 97° 31' 7.45" W  | 35° 30' 25.35" N |                          |                | RCP      |                             |       |                                    | OKLAHO MA | 4545          | T12N R3W S21 | 457         |
| 97° 39' 59.39" W | 35° 30' 10.32" N |                          |                | RCP      |                             |       |                                    | OKLAHO MA | 3745          | T12N R4W S19 | 449         |
| 97° 39' 55.45" W | 35° 30' 9.09" N  |                          |                | RCP      |                             |       |                                    | OKLAHO MA | 3745          | T12N R4W S19 | 449         |
| 97° 39' 58.59" W | 35° 30' 1.56" N  |                          |                | RCP      |                             |       |                                    | OKLAHO MA | 3745          | T12N R4W S19 | 449         |
| 97° 42' 1.74" W  | 35° 30' 27.94" N |                          |                | RCP      |                             |       |                                    |           | 3545          | T12N R5W S23 | 447         |
| 97° 41' 59.39" W | 35° 30' 27.77" N | TJ Campbell Construction | PD-1969        | RCP      | Corinthians Court Section 2 | 18"   | S of NW 36th St & E of Sara Road   |           | 3545          | T12N R5W S23 | 447         |
| 97° 41' 54.18" W | 35° 30' 21.99" N | TJ Campbell Construction | PD-1969        | CON      | Corinthians Court Section 2 | 7'x8" | S of NW 36th St & E of Sara Road   |           | 3545          | T12N R5W S23 | 447         |
| 97° 39' 55.78" W | 35° 29' 35.51" N |                          |                |          |                             |       |                                    | OKLAHO MA | 3744          | T12N R4W S30 | 489         |
| 97° 39' 55.68" W | 35° 29' 7.15" N  |                          |                | RCP      |                             |       |                                    | OKLAHO MA | 3744          | T12N R4W S30 | 489         |
| 97° 39' 48.39" W | 35° 28' 44.15" N |                          |                |          |                             | 54"   |                                    | OKLAHO MA | 3744          | T12N R4W S30 | 489         |
| 97° 40' 7.06" W  | 35° 29' 3.65" N  |                          |                |          |                             |       |                                    | OKLAHO MA | 3744          | T12N R4W S30 | 489         |
| 97° 40' 49.23" W | 35° 28' 59.12" N | Atlas Paving Co.         | PD-1006        | RCP      | Life Style Addition         | 36"   | N of NW 10th St & E of Morgan Road |           | 3644          | T12N R5W S25 | 488         |
| 97° 40' 56.71" W | 35° 29' 0.69" N  | Atlas Paving Co.         | PD-1006        | RCP      | Life Style Addition         | 30"   | N of NW 10th St & E of Morgan Road |           | 3644          | T12N R5W S25 | 488         |
| 97° 41' 5.43" W  | 35° 29' 7.04" N  | Atlas Paving Co.         | PD-1006        | RCP      | Life Style Addition         | 72"   | N of NW 10th St & E of Morgan Road |           | 3644          | T12N R5W S25 | 488         |
| 97° 42'          | 35° 29'          |                          |                |          |                             |       |                                    |           | 3544          | T12N R5W     | 487         |

| X Coord. (-97)      | Y Coord. (+35)      | Installation Contractor         | Project Number | MATERIAL | NAME                                 | Size | Location Description     | County       | OKC Fire Grid | Legal           | OKC Atlas # |
|---------------------|---------------------|---------------------------------|----------------|----------|--------------------------------------|------|--------------------------|--------------|---------------|-----------------|-------------|
| 23.73" W            | 3.06" N             |                                 |                |          |                                      |      |                          |              |               | S26             |             |
| 97° 42'<br>21.21" W | 35° 29'<br>3.31" N  |                                 |                | RCP      |                                      |      |                          |              | 3544          | T12N R5W<br>S26 | 487         |
| 97° 41'<br>55.35" W | 35° 29'<br>9.75" N  |                                 |                | RCP      |                                      |      |                          |              | 3544          | T12N R5W<br>S26 | 487         |
| 97° 42'<br>1.59" W  | 35° 29'<br>9.79" N  |                                 |                | RCP      |                                      |      |                          |              | 3544          | T12N R5W<br>S26 | 487         |
| 97° 42'<br>12.64" W | 35° 29'<br>4.10" N  |                                 |                | RCP      |                                      |      |                          |              | 3544          | T12N R5W<br>S26 | 487         |
| 97° 42'<br>16.33" W | 35° 29'<br>3.31" N  |                                 |                | RCP      |                                      |      |                          |              | 3544          | T12N R5W<br>S26 | 487         |
| 97° 42'<br>9.28" W  | 35° 29'<br>6.50" N  |                                 |                | RCP      |                                      |      |                          |              | 3544          | T12N R5W<br>S26 | 487         |
| 97° 42'<br>10.39" W | 35° 29'<br>5.65" N  |                                 |                | RCP      |                                      |      |                          |              | 3544          | T12N R5W<br>S26 | 487         |
| 97° 43'<br>26.89" W | 35° 29'<br>20.63" N |                                 |                | RCB      |                                      |      |                          |              | 3444          | T12N R5W<br>S27 | 486         |
| 97° 43'<br>29.43" W | 35° 29'<br>27.69" N |                                 |                |          |                                      |      |                          |              | 3344          | T12N R5W<br>S33 | 485         |
| 97° 27'<br>52.25" W | 35° 28'<br>0.13" N  |                                 |                |          |                                      |      |                          | OKLAHO<br>MA | 4843          | T12N R3W<br>S36 | 540         |
| 97° 28'<br>6.86" W  | 35° 27'<br>53.65" N |                                 |                |          |                                      |      |                          | OKLAHO<br>MA | 4843          | T12N R3W<br>S36 | 540         |
| 97° 28'<br>3.78" W  | 35° 27'<br>55.44" N |                                 |                |          |                                      |      |                          | OKLAHO<br>MA | 4843          | T12N R3W<br>S36 | 540         |
| 97° 39'<br>48.62" W | 35° 28'<br>38.58" N | M.H. Burton Construction<br>Co. | 20E628         | CGMP     | Paving & Storm Sewer                 | 36"  | Westwood Heights, Sec. 2 | OKLAHO<br>MA | 3743          | T12N R4W<br>S31 | 529         |
| 97° 40'<br>16.55" W | 35° 27'<br>51.55" N |                                 |                |          |                                      |      |                          | OKLAHO<br>MA | 3743          | T12N R4W<br>S31 | 529         |
| 97° 40'<br>20.67" W | 35° 28'<br>12.49" N |                                 |                |          |                                      |      |                          |              | 3643          | T12N R5W<br>S36 | 528         |
| 97° 27'<br>34.10" W | 35° 27'<br>44.84" N |                                 |                |          |                                      |      |                          | OKLAHO<br>MA | 4842          | T11N R3W<br>S1  | 580         |
| 97° 29'<br>19.99" W | 35° 27'<br>38.79" N |                                 |                |          |                                      |      |                          | OKLAHO<br>MA | 4742          | T11N R3W<br>S2  | 579         |
| 97° 28'<br>42.90" W | 35° 27'<br>44.37" N |                                 |                |          |                                      |      |                          | OKLAHO<br>MA | 4742          | T11N R3W<br>S2  | 579         |
| 97° 29'<br>18.02" W | 35° 27'<br>12.31" N |                                 |                |          |                                      |      |                          | OKLAHO<br>MA | 4742          | T11N R3W<br>S2  | 579         |
| 97° 29'<br>32.56" W | 35° 27'<br>36.81" N |                                 |                |          |                                      |      |                          | OKLAHO<br>MA | 4742          | T11N R3W<br>S2  | 579         |
| 97° 30'<br>23.60" W | 35° 27'<br>23.84" N |                                 |                |          |                                      |      |                          | OKLAHO<br>MA | 4642          | T11N R3W<br>S3  | 578         |
| 97° 29'             | 35° 27'             |                                 | 33E98          | RCP      | Storm Sewer Improvements Contract #2 | 36"  | Contract #3, Line 64     | OKLAHO       | 4642          | T11N R3W        | 578         |

| X Coord. (-97)      | Y Coord. (+35)      | Installation Contractor | Project Number | MATERIAL | NAME                                 | Size | Location Description   | County       | OKC Fire Grid | Legal          | OKC Atlas # |
|---------------------|---------------------|-------------------------|----------------|----------|--------------------------------------|------|--|--------------|---------------|----------------|-------------|
| 56.66" W            | 30.29" N            |                         |                |          |                                      |      |  | MA           |               | S3             |             |
| 97° 29'<br>40.77" W | 35° 27'<br>17.74" N |                         |                |          |                                      |      |  | OKLAHO<br>MA | 4642          | T11N R3W<br>S3 | 578         |
| 97° 30'<br>30.36" W | 35° 26'<br>59.51" N |                         |                | RCP      |                                      | 30"  |  | OKLAHO<br>MA | 4642          | T11N R3W<br>S3 | 578         |
| 97° 29'<br>50.43" W | 35° 27'<br>43.59" N |                         |                |          |                                      |      |  | OKLAHO<br>MA | 4642          | T11N R3W<br>S3 | 578         |
| 97° 30'<br>28.73" W | 35° 27'<br>18.69" N |                         |                |          |                                      |      |  | OKLAHO<br>MA | 4642          | T11N R3W<br>S3 | 578         |
| 97° 31'<br>24.55" W | 35° 27'<br>10.62" N |                         | 39E98          | RCB      |                                      |      |  | OKLAHO<br>MA | 4542          | T11N R3W<br>S4 | 577         |
| 97° 31'<br>53.35" W | 35° 27'<br>26.57" N |                         | 36E84          | RCB      |                                      |      |  | OKLAHO<br>MA | 4442          | T11N R3W<br>S5 | 576         |
| 97° 32'<br>12.82" W | 35° 27'<br>30.98" N |                         | 5E83           | RCP      |                                      |      |  | OKLAHO<br>MA | 4442          | T11N R3W<br>S5 | 576         |
| 97° 32'<br>16.89" W | 35° 27'<br>27.84" N |                         | 5E83           | RCP      |                                      |      |  | OKLAHO<br>MA | 4442          | T11N R3W<br>S5 | 576         |
| 97° 32'<br>18.59" W | 35° 27'<br>28.71" N |                         |                | RCP      |                                      |      |  | OKLAHO<br>MA | 4442          | T11N R3W<br>S5 | 576         |
| 97° 31'<br>50.68" W | 35° 27'<br>24.02" N |                         |                |          |                                      |      |  | OKLAHO<br>MA | 4442          | T11N R3W<br>S5 | 576         |
| 97° 32'<br>18.60" W | 35° 27'<br>40.68" N |                         | 25E120         | RCP      |                                      |      |  | OKLAHO<br>MA | 4442          | T11N R3W<br>S5 | 576         |
| 97° 33'<br>35.30" W | 35° 27'<br>37.05" N |                         |                | RCB      |                                      |      |  | OKLAHO<br>MA | 4342          | T11N R3W<br>S6 | 575         |
| 97° 33'<br>43.99" W | 35° 27'<br>32.57" N |                         |                |          |                                      |      |  | OKLAHO<br>MA | 4342          | T11N R3W<br>S6 | 575         |
| 97° 33'<br>54.03" W | 35° 27'<br>31.06" N | Concho Co.              | DC-0018        | RCP      | Storm Sewer Facility Improvements    | 72"  | East of S May Ave & General Pershing to S May & North Canadian River | OKLAHO<br>MA | 4342          | T11N R3W<br>S6 | 575         |
| 97° 33'<br>18.35" W | 35° 27'<br>23.66" N |                         | 33E98          | RCP      | Storm Sewer Improvements Contract #2 | 24"  | Contract #3, Line 65   | OKLAHO<br>MA | 4342          | T11N R3W<br>S6 | 575         |
| 97° 33'<br>36.79" W | 35° 27'<br>27.96" N |                         |                |          |                                      |      |  | OKLAHO<br>MA | 4342          | T11N R3W<br>S6 | 575         |
| 97° 34'<br>29.73" W | 35° 27'<br>16.68" N |                         |                | RCP      |                                      |      |  | OKLAHO<br>MA | 4242          | T11N R4W<br>S1 | 574         |
| 97° 34'<br>8.03" W  | 35° 27'<br>28.11" N |                         |                |          |                                      |      |  | OKLAHO<br>MA | 4242          | T11N R4W<br>S1 | 574         |
| 97° 34'<br>22.33" W | 35° 27'<br>17.18" N |                         |                |          |                                      |      |  | OKLAHO<br>MA | 4242          | T11N R4W<br>S1 | 574         |
| 97° 34'<br>4.32" W  | 35° 27'<br>24.97" N | Metropolitan            | 17E118         | RCP      | Plans & Profiles                     | 36"  | S.W. 9th Street  | OKLAHO<br>MA | 4242          | T11N R4W<br>S1 | 574         |
| 97° 34'<br>44.30" W | 35° 27'<br>2.33" N  |                         |                |          |                                      |      |  | OKLAHO<br>MA | 4242          | T11N R4W<br>S1 | 574         |
| 97° 34'             | 35° 27'             |                         |                |          |                                      |      |  | OKLAHO       | 4242          | T11N R4W       | 574         |



| X Coord. (-97)      | Y Coord. (+35)      | Installation Contractor   | Project Number | MATERIAL | NAME                                 | Size | Location Description      | County       | OKC Fire Grid | Legal           | OKC Atlas # |
|---------------------|---------------------|---------------------------|----------------|----------|--------------------------------------|------|---------------------------|--------------|---------------|-----------------|-------------|
| 50.17" W            | 8.76" N             |                           |                |          |                                      |      |                           | MA           |               | S1              |             |
| 97° 34'<br>12.86" W | 35° 27'<br>5.88" N  |                           |                |          |                                      |      |                           | OKLAHO<br>MA | 4242          | T11N R4W<br>S1  | 574         |
| 97° 36'<br>11.11" W | 35° 27'<br>0.57" N  |                           |                | RCP      |                                      | 36"  |                           | OKLAHO<br>MA | 4042          | T11N R4W<br>S3  | 572         |
| 97° 38'<br>42.42" W | 35° 27'<br>36.41" N |                           |                | RCP      |                                      |      |                           | OKLAHO<br>MA | 3842          | T11N R4W<br>S5  | 570         |
| 97° 40'<br>5.19" W  | 35° 27'<br>47.77" N | Harry F Hulett JR         | PD-0203        | RCP      | Alliance Industrial Park             | 54"  | SW 2nd St & Alliance Blvd | OKLAHO<br>MA | 3742          | T11N R4W<br>S6  | 569         |
| 97° 27'<br>50.63" W | 35° 26'<br>58.84" N | R.R. Tway, Inc.           | 2E633          | RCP      | RDWY. On S.E. 15th Street            | 24"  | S.E. 15th Street          | OKLAHO<br>MA | 4841          | T11N R3W<br>S12 | 620         |
| 97° 30'<br>32.51" W | 35° 26'<br>45.16" N |                           |                | RCB      |                                      |      |                           | OKLAHO<br>MA | 4641          | T11N R3W<br>S10 | 618         |
| 97° 30'<br>38.33" W | 35° 26'<br>29.66" N |                           |                | RCP      |                                      | 18"  |                           | OKLAHO<br>MA | 4641          | T11N R3W<br>S10 | 618         |
| 97° 30'<br>38.31" W | 35° 26'<br>29.07" N |                           |                | RCP      |                                      | 24"  |                           | OKLAHO<br>MA | 4641          | T11N R3W<br>S10 | 618         |
| 97° 30'<br>43.69" W | 35° 26'<br>21.84" N |                           |                |          |                                      |      |                           | OKLAHO<br>MA | 4641          | T11N R3W<br>S10 | 618         |
| 97° 30'<br>42.21" W | 35° 26'<br>20.83" N |                           |                | RCP      |                                      |      |                           | OKLAHO<br>MA | 4641          | T11N R3W<br>S10 | 618         |
| 97° 30'<br>38.53" W | 35° 26'<br>27.34" N | Amis & Kelly              | 38E605         | RCP      | Street Improvement District # 1491-A | 21   | S. Oklahoma Ave.          | OKLAHO<br>MA | 4641          | T11N R3W<br>S10 | 618         |
| 97° 31'<br>17.20" W | 35° 26'<br>56.23" N |                           | 5E626          | RCP      |                                      |      |                           | OKLAHO<br>MA | 4541          | T11N R3W<br>S9  | 617         |
| 97° 31'<br>13.96" W | 35° 26'<br>55.75" N |                           | 5E626          | RCP      |                                      |      |                           | OKLAHO<br>MA | 4541          | T11N R3W<br>S9  | 617         |
| 97° 30'<br>57.40" W | 35° 26'<br>55.48" N |                           | 94E118         | RCP      |                                      |      |                           | OKLAHO<br>MA | 4541          | T11N R3W<br>S9  | 617         |
| 97° 31'<br>3.94" W  | 35° 26'<br>55.58" N |                           | 47E402         | RCP      |                                      | 30"  |                           | OKLAHO<br>MA | 4541          | T11N R3W<br>S9  | 617         |
| 97° 30'<br>58.62" W | 35° 26'<br>55.65" N | W.W. Baker, City Engineer | 94E118         | RCP      | Plan & Profile                       | 18"  | S.W. Robinson Avenue      | OKLAHO<br>MA | 4541          | T11N R3W<br>S9  | 617         |
| 97° 31'<br>26.98" W | 35° 26'<br>46.18" N |                           |                |          |                                      |      |                           | OKLAHO<br>MA | 4541          | T11N R3W<br>S9  | 617         |
| 97° 30'<br>46.57" W | 35° 26'<br>14.35" N |                           |                | RCP      |                                      | 24"  |                           | OKLAHO<br>MA | 4541          | T11N R3W<br>S9  | 617         |
| 97° 30'<br>49.46" W | 35° 26'<br>10.78" N |                           | 60E121         | RCP      |                                      | 18"  |                           | OKLAHO<br>MA | 4541          | T11N R3W<br>S9  | 617         |
| 97° 30'<br>50.90" W | 35° 26'<br>7.26" N  |                           | 34E208         | RCP      |                                      | 42"  |                           | OKLAHO<br>MA | 4541          | T11N R3W<br>S9  | 617         |
| 97° 32'<br>38.96" W | 35° 26'<br>34.57" N |                           | DC-0132        |          |                                      |      |                           | OKLAHO<br>MA | 4441          | T11N R3W<br>S8  | 616         |
| 97° 32'             | 35° 26'             |                           |                | RCB      |                                      |      |                           | OKLAHO       | 4441          | T11N R3W        | 616         |

| X Coord. (-97)   | Y Coord. (+35)   | Installation Contractor   | Project Number | MATERIAL | NAME   | Size | Location Description  | County    | OKC Fire Grid | Legal        | OKC Atlas # |
|------------------|------------------|---------------------------|----------------|----------|--|------|-----------------------|-----------|---------------|--------------|-------------|
| 37.00" W         | 45.28" N         |                           |                |          |  |      |                       | MA        |               | S8           |             |
| 97° 32' 44.99" W | 35° 26' 29.23" N |                           | 21E202         | RCP      |  |      |                       | OKLAHO MA | 4441          | T11N R3W S8  | 616         |
| 97° 32' 36.79" W | 35° 26' 45.60" N |                           | 4E100          | RCP      |  |      |                       | OKLAHO MA | 4441          | T11N R3W S8  | 616         |
| 97° 32' 36.72" W | 35° 26' 38.01" N |                           |                | RCP      |  |      |                       | OKLAHO MA | 4441          | T11N R3W S8  | 616         |
| 97° 32' 39.31" W | 35° 26' 32.87" N |                           | 24E52          | RCP      |  |      |                       | OKLAHO MA | 4441          | T11N R3W S8  | 616         |
| 97° 32' 40.08" W | 35° 26' 32.50" N | W.W. Baker, City Engineer | 18E120         | RCP      | Plans Sheet                                  | 18"  | Brock Creek           | OKLAHO MA | 4441          | T11N R3W S8  | 616         |
| 97° 32' 51.38" W | 35° 26' 18.27" N | V.G. Thompson, Engineer   | 53E89          | RCP      | Plans & Profiles                             | 24"  | S Pennsylvania Avenue | OKLAHO MA | 4441          | T11N R3W S8  | 616         |
| 97° 32' 48.44" W | 35° 26' 21.05" N |                           | DC-0132        |          |  |      |                       | OKLAHO MA | 4441          | T11N R3W S8  | 616         |
| 97° 32' 4.54" W  | 35° 26' 40.60" N |                           |                | RCP      |  |      |                       | OKLAHO MA | 4441          | T11N R3W S8  | 616         |
| 97° 32' 53.92" W | 35° 26' 7.06" N  |                           |                | RCP      |  |      |                       | OKLAHO MA | 4341          | T11N R3W S7  | 615         |
| 97° 32' 52.95" W | 35° 26' 7.07" N  |                           |                | RCP      |  |      |                       | OKLAHO MA | 4341          | T11N R3W S7  | 615         |
| 97° 32' 53.21" W | 35° 26' 9.34" N  |                           | DC-0132        |          |  |      |                       | OKLAHO MA | 4341          | T11N R3W S7  | 615         |
| 97° 34' 33.60" W | 35° 26' 27.62" N |                           |                | RCP      |  |      |                       | OKLAHO MA | 4241          | T11N R4W S12 | 614         |
| 97° 34' 27.74" W | 35° 26' 47.60" N | HE Chase, City Engineer   | 2E100          | RCP      | Plans & Profiles                             | 21"  | SW 18th Street        | OKLAHO MA | 4241          | T11N R4W S12 | 614         |
| 97° 34' 28.20" W | 35° 26' 44.31" N | HE Chase, City Engineer   | 3E100          | RCP      | Plans & Profiles                             | 21"  | SW 19th Street        | OKLAHO MA | 4241          | T11N R4W S12 | 614         |
| 97° 34' 34.29" W | 35° 26' 24.35" N | W.W. Baker, City Engineer | 95E110         | RCP      | Plans & Profiles                             | 24"  | S.W. 25th Street      | OKLAHO MA | 4241          | T11N R4W S12 | 614         |
| 97° 34' 29.17" W | 35° 26' 44.27" N | Haskell – Lemon           | 18E623         | RCP      | Paving Rockwood Add.                         | 24"  | S.W. 19th Street      | OKLAHO MA | 4241          | T11N R4W S12 | 614         |
| 97° 34' 27.77" W | 35° 26' 41.05" N | HE Chase, City Engineer   | 4E100          | RCP      | Plans & Profiles                             | 21"  | SW 20th Street        | OKLAHO MA | 4241          | T11N R4W S12 | 614         |
| 97° 34' 32.01" W | 35° 26' 27.64" N |                           |                | RCP      |  |      |                       | OKLAHO MA | 4241          | T11N R4W S12 | 614         |
| 97° 34' 42.40" W | 35° 26' 7.32" N  |                           |                | RCP      |  |      |                       | OKLAHO MA | 4241          | T11N R4W S12 | 614         |
| 97° 34' 43.18" W | 35° 26' 7.51" N  |                           |                | RCP      |  | 54"  |                       | OKLAHO MA | 4241          | T11N R4W S12 | 614         |
| 97° 34' 59.93" W | 35° 26' 7.02" N  |                           | 26E114         | RCP      |  | 24"  |                       | OKLAHO MA | 4241          | T11N R4W S12 | 614         |
| 97° 34'          | 35° 26'          |                           | 1E617          | RCP      | Robert S. Kerr Village OKC Housing Authority | 30"  | OKC Housing Authority | OKLAHO    | 4241          | T11N R4W     | 614         |

| X Coord. (-97)   | Y Coord. (+35)   | Installation Contractor        | Project Number | MATERIAL | NAME                                      | Size            | Location Description                | County    | OKC Fire Grid | Legal        | OKC Atlas # |
|------------------|------------------|--------------------------------|----------------|----------|---|-----------------|-------------------------------------|-----------|---------------|--------------|-------------|
| 27.78" W         | 50.81" N         |                                |                |          |   |                 |                                     | MA        |               | S12          |             |
| 97° 35' 1.50" W  | 35° 26' 57.93" N |                                |                |          |   |                 |                                     | OKLAHO MA | 4141          | T11N R4W S11 | 613         |
| 97° 35' 51.80" W | 35° 26' 56.78" N | Jordan Construction            | PV-0025        | RCP      | Holiday Inn Full Service Staybridge Hotel | 24"             | N of SW 15th & E of Meridian Ave    | OKLAHO MA | 4141          | T11N R4W S11 | 613         |
| 97° 35' 40.91" W | 35° 26' 53.90" N |                                |                |          |   |                 |                                     | OKLAHO MA | 4141          | T11N R4W S11 | 613         |
| 97° 35' 18.63" W | 35° 26' 54.61" N |                                |                |          |   |                 |                                     | OKLAHO MA | 4141          | T11N R4W S11 | 613         |
| 97° 37' 6.95" W  | 35° 26' 56.61" N | Haskell Lemon Construction Co. | 6E632          | RCB      | Plan of Proposed County Highway           | 2-10' x 5'      | S.W. MacArthur                      | OKLAHO MA | 4041          | T11N R4W S10 | 612         |
| 97° 37' 7.13" W  | 35° 26' 51.70" N | Haskell Lemon Construction Co. | 6E632          | RCSP     | County Highway                            | 24"             | S.W. MacArthur                      | OKLAHO MA | 4041          | T11N R4W S10 | 612         |
| 97° 36' 11.05" W | 35° 26' 57.83" N | Brewski Construction           | PV-0021        | RCP      | Towneplace Suites                         | 24"             | N of SW 15th St & W of Meridian Ave | OKLAHO MA | 4041          | T11N R4W S10 | 612         |
| 97° 36' 7.13" W  | 35° 26' 57.65" N | Brewski Construction           | PV-0020        | RCP      | Towneplace Suites                         | 24"             | N of SW 15th St & W of Meridian Ave | OKLAHO MA | 4041          | T11N R4W S10 | 612         |
| 97° 40' 50.81" W | 35° 26' 58.86" N | JGVE, Inc.                     | PC-0090        |          |   |                 |                                     |           | 3641          | T11N R5W S12 | 608         |
| 97° 41' 17.53" W | 35° 26' 20.61" N | D&H Construction               | PD-1466        | RCP      | Fountaingrass Addition Section 1          | 42"             | 3-8-05                              |           | 3641          | T11N R5W S12 | 608         |
| 97° 41' 20.36" W | 35° 26' 19.64" N | D&H Construction               | PD-1466        | RCP      | Fountaingrass Addition Section 1          | 60"             | N of SW 29th St & E of Morgan Road  |           | 3641          | T11N R5W S12 | 608         |
| 97° 41' 12.19" W | 35° 26' 22.64" N | D&H Construction               | PD-1466        | RCP      | Fountaingrass Addition Section 1          | 48"             | N of SW 29th St & E of Morgan Road  |           | 3641          | T11N R5W S12 | 608         |
| 97° 41' 6.83" W  | 35° 26' 25.66" N | Silver Star Construction       | PD-1742        | RCP      | Fountaingrass Addition Section 3          | 30"             | N of SW 29th St & E of Morgan Road  |           | 3641          | T11N R5W S12 | 608         |
| 97° 41' 0.24" W  | 35° 26' 27.76" N | Silver Star Construction       | PD-1742        | RCP      | Fountaingrass Addition Section 3          | 18"             | N of SW 29th St & E of Morgan Road  |           | 3641          | T11N R5W S12 | 608         |
| 97° 42' 24.16" W | 35° 26' 39.19" N | Steelman Construction Co.      | 13E622         | Concrete | Paving Plans Westbury                     | 6' btm, 4' deep | Westbury                            |           | 3541          | T11N R5W S11 | 607         |
| 97° 41' 38.18" W | 35° 26' 20.94" N | H&H Plumbing                   | PD-1576        | RCP      | Thornberry Place                          | 24"             | N of SW 29th St & W of Morgan Road  |           | 3541          | T11N R5W S11 | 607         |
| 97° 42' 21.62" W | 35° 26' 38.91" N | Atlas Paving Co.               | 13E622         | CGMPA    | Paving Plans Westbury                     | 43 X 27         | Westbury                            |           | 3541          | T11N R5W S11 | 607         |
| 97° 43' 24.63" W | 35° 26' 46.89" N | Brewer Construction Co.        | DD-0547        | RCP      | Links @ Mustang Creek Section 10          | 48"             | S of SW 15th St & E of Mustang Road |           | 3441          | T11N R5W S10 | 606         |
| 97° 42' 35.01" W | 35° 26' 40.72" N | Atlas Paving Co.               | PD-1537        | RCP      | Mustang Creek II                          | 36"             | S of SW 15th St & W of Sara Rd      |           | 3441          | T11N R5W S10 | 606         |
| 97° 42' 25.30" W | 35° 26' 38.64" N | Atlas Paving Co.               | PD-1537        | RCP      | Mustang Creek II                          | 30"             | S of SW 15th St & W of Sara Rd      |           | 3441          | T11N R5W S10 | 606         |
| 97° 42' 42.54" W | 35° 26' 42.53" N | Atlas Paving Co.               | PD-1537        | RCP      | Mustang Creek II                          | 30"             | S of SW 15th St & W of Sara Rd      |           | 3441          | T11N R5W S10 | 606         |
| 97° 42'          | 35° 26'          | Atlas Paving Company           | PD-1831        | RPCA     | Mustang Creek III                         | 31.31"x51.      | S of SW 15th St & W of Sara Road    |           | 3441          | T11N R5W     | 606         |

| X Coord. (-97)      | Y Coord. (+35)      | Installation Contractor   | Project Number | MATERIAL | NAME                              | Size          | Location Description                | County    | OKC Fire Grid | Legal        | OKC Atlas # |
|---------------------|---------------------|---------------------------|----------------|----------|-----------------------------------|---------------|-------------------------------------|-----------|---------------|--------------|-------------|
| 49.04" W            | 47.11" N            |                           |                |          |                                   | 12"           |                                     |           |               | S10          |             |
| 97° 42'<br>54.44" W | 35° 26'<br>48.85" N | Atlas Paving Company      | PD-1831        | RCPA     | Mustang Creek III                 | 26.63"x43.75" | S of SW 15th St & W of Sara Road    |           | 3441          | T11N R5W S10 | 606         |
| 97° 43'<br>47.20" W | 35° 26'<br>35.00" N | All Roads Paving Inc.     | PD-2074        | RCP      | Timbercreek Estates Phase 2       | 36"           | S of SW 15th St & W of S Mustang Rd |           | 3341          | T11N R5W S9  | 605         |
| 97° 43'<br>44.27" W | 35° 26'<br>33.29" N | TJ Campbell Construction  | PD-1997        | CON      | Canyon Creek Phase 1              | 3'x4"         | N of SW 29th St & W of Mustang Road |           | 3341          | T11N R5W S9  | 605         |
| 97° 43'<br>43.82" W | 35° 26'<br>29.15" N | TJ Campbell Construction  | PD-1997        | CON      | Canyon Creek Phase 1              | 9'            | N of SW 29th St & W of Mustang Road |           | 3341          | T11N R5W S9  | 605         |
| 97° 22'<br>21.53" W | 35° 25'<br>24.90" N |                           |                |          |                                   |               |                                     | OKLAHO MA | 5340          | T11N R2W S14 | 665         |
| 97° 24'<br>27.47" W | 35° 25'<br>32.56" N |                           |                | RCB      |                                   |               |                                     | OKLAHO MA | 5140          | T11N R2W S16 | 663         |
| 97° 28'<br>36.36" W | 35° 25'<br>51.42" N | Ray W. Lynch              | 2E120          | RCB      | Summery of Pay Quantities         | (13-17-13)x8' | S.E. Grand Boulevard                | OKLAHO MA | 4840          | T11N R3W S13 | 660         |
| 97° 28'<br>41.67" W | 35° 25'<br>44.58" N | Ray W. Lynch              | 2E120          | RCP      | Summery of Pay Quantities         | 18"           | S.E. Grand Boulevard                | OKLAHO MA | 4740          | T11N R3W S14 | 659         |
| 97° 28'<br>41.13" W | 35° 25'<br>44.80" N | Ray W. Lynch              | 2E120          | RCP      | Summery of Pay Quantities         | 18"           | S.E. Grand Boulevard                | OKLAHO MA | 4740          | T11N R3W S14 | 659         |
| 97° 28'<br>52.94" W | 35° 25'<br>36.33" N | Schwarz Ready Mix         | PD-0378        | CGMPA    | SE 37th St                        | 33"X24"       | SE 37th St & Missouri               | OKLAHO MA | 4740          | T11N R3W S14 | 659         |
| 97° 30'<br>44.77" W | 35° 25'<br>16.39" N |                           | 8E627          | RCP      |                                   | 30"           |                                     | OKLAHO MA | 4640          | T11N R3W S15 | 658         |
| 97° 30'<br>45.51" W | 35° 25'<br>31.10" N |                           | 25E42          | RCP      |                                   | 54"           |                                     | OKLAHO MA | 4540          | T11N R3W S16 | 657         |
| 97° 30'<br>57.70" W | 35° 25'<br>48.23" N |                           |                | RCB      |                                   |               |                                     | OKLAHO MA | 4540          | T11N R3W S16 | 657         |
| 97° 30'<br>49.14" W | 35° 25'<br>52.79" N |                           | 36E29          | RCP      |                                   | 24"           |                                     | OKLAHO MA | 4540          | T11N R3W S16 | 657         |
| 97° 30'<br>51.55" W | 35° 26'<br>3.45" N  |                           | 34E208         | RCP      |                                   | 15"           |                                     | OKLAHO MA | 4540          | T11N R3W S16 | 657         |
| 97° 30'<br>46.97" W | 35° 25'<br>38.93" N |                           | 49E93          | RCP      |                                   | 24"           |                                     | OKLAHO MA | 4540          | T11N R3W S16 | 657         |
| 97° 30'<br>51.00" W | 35° 25'<br>15.13" N |                           | 8E627          | RCP      | Bond Issue Street Project #609-01 | 30"           | S.W. & S.E. 44th Street             | OKLAHO MA | 4540          | T11N R3W S16 | 657         |
| 97° 30'<br>49.91" W | 35° 25'<br>56.12" N |                           | 26E64          | RCP      |                                   | 18"           |                                     | OKLAHO MA | 4540          | T11N R3W S16 | 657         |
| 97° 30'<br>48.62" W | 35° 26'<br>1.10" N  | Metropolitan Paving Co.   | 26E95          | RCP      | Plan & Profile                    | 26"           | E Broadway                          | OKLAHO MA | 4540          | T11N R3W S16 | 657         |
| 97° 30'<br>50.48" W | 35° 26'<br>5.59" N  | V.J. Thompson, Engineer   | 21E91          | RCP      | Plans and Profiles                | 18"           | E Broadway                          | OKLAHO MA | 4540          | T11N R3W S16 | 657         |
| 97° 33'<br>2.11" W  | 35° 25'<br>44.41" N | H.E. Chase, City Engineer | 69E99          | RCP      | Plans & Profiles                  | 18"           | SW 35th Street                      | OKLAHO MA | 4340          | T11N R3W S18 | 655         |
| 97° 33'             | 35° 25'             |                           |                | RCP      |                                   | 72"           |                                     | OKLAHO    | 4340          | T11N R3W     | 655         |

| X Coord. (-97)      | Y Coord. (+35)      | Installation Contractor   | Project Number | MATERIAL | NAME                                 | Size     | Location Description                | County       | OKC Fire Grid | Legal           | OKC Atlas # |
|---------------------|---------------------|---------------------------|----------------|----------|--------------------------------------|----------|-------------------------------------|--------------|---------------|-----------------|-------------|
| 0.75" W             | 40.83" N            |                           |                |          |                                      |          |                                     | MA           |               | S18             |             |
| 97° 33'<br>1.63" W  | 35° 25'<br>40.62" N |                           |                | RCP      |                                      | 72"      |                                     | OKLAHO<br>MA | 4340          | T11N R3W<br>S18 | 655         |
| 97° 32'<br>54.06" W | 35° 26'<br>1.64" N  |                           |                | RCP      |                                      |          |                                     | OKLAHO<br>MA | 4340          | T11N R3W<br>S18 | 655         |
| 97° 33'<br>1.74" W  | 35° 25'<br>41.84" N | HE Chase, City Engineer   | 63E100         | RCP      | Plans & Profiles                     | 24"      | W. Brock Park Drive                 | OKLAHO<br>MA | 4340          | T11N R3W<br>S18 | 655         |
| 97° 33'<br>0.38" W  | 35° 25'<br>28.71" N | W.W. Baker, City Engineer | 79E110         | RCP      | Plans & Profiles                     | 18"      | S.W. 40th Street                    | OKLAHO<br>MA | 4340          | T11N R3W<br>S18 | 655         |
| 97° 32'<br>53.45" W | 35° 26'<br>4.07" N  |                           |                | RCP      |                                      | 18       | S. Pennsylvania Ave.                | OKLAHO<br>MA | 4340          | T11N R3W<br>S18 | 655         |
| 97° 32'<br>54.18" W | 35° 26'<br>3.81" N  |                           | 20E98          | RCP      | Storm Sewer Improvements Contract #4 | 18"      | South Brock Park                    | OKLAHO<br>MA | 4340          | T11N R3W<br>S18 | 655         |
| 97° 32'<br>56.68" W | 35° 25'<br>55.57" N |                           | 20E98          | RCP      | Storm Sewer Improvements Contract #4 | 18"      | South Brock Park                    | OKLAHO<br>MA | 4340          | T11N R3W<br>S18 | 655         |
| 97° 32'<br>55.74" W | 35° 25'<br>59.76" N |                           | DC-0163        |          |                                      |          |                                     | OKLAHO<br>MA | 4340          | T11N R3W<br>S18 | 655         |
| 97° 32'<br>58.33" W | 35° 25'<br>51.71" N |                           | 20E98          | RCP      | Storm Sewer Improvements Contract #4 | 18"      | South Brock Park                    | OKLAHO<br>MA | 4340          | T11N R3W<br>S18 | 655         |
| 97° 32'<br>59.87" W | 35° 25'<br>48.15" N |                           | 20E98          | RCP      | Storm Sewer Improvements Contract #4 | 18"      | South Brock Park                    | OKLAHO<br>MA | 4340          | T11N R3W<br>S18 | 655         |
| 97° 33'<br>1.09" W  | 35° 25'<br>44.72" N |                           | 20E98          | RCP      | Storm Sewer Improvements Contract #4 | 24"      | South Brock Park                    | OKLAHO<br>MA | 4340          | T11N R3W<br>S18 | 655         |
| 97° 34'<br>47.57" W | 35° 26'<br>6.12" N  |                           |                |          |                                      |          |                                     | OKLAHO<br>MA | 4240          | T11N R4W<br>S13 | 654         |
| 97° 35'<br>31.42" W | 35° 25'<br>26.37" N | Swatek                    | 72E93          | RCP      | Plan & Profile                       | 30"      | SW 42nd Street                      | OKLAHO<br>MA | 4140          | T11N R4W<br>S14 | 653         |
| 97° 38'<br>7.20" W  | 35° 25'<br>41.44" N | Downey Contracting        | PV-0071        | RCP      | Hobby Lobby                          | 48"      | N of 44th & W of Hwy 152            | OKLAHO<br>MA | 3940          | T11N R4W<br>S16 | 651         |
| 97° 38'<br>15.87" W | 35° 25'<br>30.85" N | Lithco (Lippert Brothers) | DD-0747        | RCB      | Hobby Lobby, Phase 6                 | 2-12'x5' | N of SW 44th St & W of Rockwell Ave | OKLAHO<br>MA | 3840          | T11N R4W<br>S17 | 650         |
| 97° 23'<br>58.81" W | 35° 24'<br>29.89" N |                           |                |          |                                      |          |                                     | OKLAHO<br>MA | 5239          | T11N R2W<br>S22 | 704         |
| 97° 24'<br>3.09" W  | 35° 24'<br>29.46" N |                           |                |          |                                      |          |                                     | OKLAHO<br>MA | 5239          | T11N R2W<br>S22 | 704         |
| 97° 25'<br>5.82" W  | 35° 24'<br>47.47" N | Elmer Cornellos           | PD-0089        | RCP      | Frolich Meadows Estates              | 60"      | SE 55th St & Cloverlawn Dr.         | OKLAHO<br>MA | 5139          | T11N R2W<br>S21 | 703         |
| 97° 25'<br>13.24" W | 35° 24'<br>41.33" N | TJ Campbell Construction  | PD-0904        | CON      | Frolich Meadows Estates Blocks 30-32 |          | N of SE 59th St & E of Sooner Road  | OKLAHO<br>MA | 5139          | T11N R2W<br>S21 | 703         |
| 97° 25'<br>2.69" W  | 35° 24'<br>59.20" N |                           |                |          |                                      |          |                                     | OKLAHO<br>MA | 5139          | T11N R2W<br>S21 | 703         |
| 97° 25'<br>16.64" W | 35° 24'<br>36.77" N | Males Brothers Paving     | PD-0608        | RCP      | Frolich Meadows Estates              | 24"      | SE 59th ST & Sooner Road            | OKLAHO<br>MA | 5139          | T11N R2W<br>S21 | 703         |
| 97° 25'             | 35° 24'             | Males Brothers Paving     | PD-0608        | RCP      | Frolich Meadows Estates              | 30"      | SE 59th ST & Sooner Road            | OKLAHO       | 5139          | T11N R2W        | 703         |

| X Coord. (-97)   | Y Coord. (+35)   | Installation Contractor        | Project Number | MATERIAL | NAME  | Size    | Location Description               | County    | OKC Fire Grid | Legal        | OKC Atlas # |
|------------------|------------------|--------------------------------|----------------|----------|---|---------|------------------------------------|-----------|---------------|--------------|-------------|
| 17.46" W         | 30.39" N         |                                |                |          |   |         |                                    | MA        |               | S21          |             |
| 97° 25' 36.66" W | 35° 24' 39.19" N | Steelman Construction Co.      | 4E621          | RCP      | Paving Plans Frolich Meadows                  | 30"     | Frolich Meadows                    | OKLAHO MA | 5039          | T11N R2W S20 | 702         |
| 97° 25' 35.88" W | 35° 24' 37.53" N | Atlas Paving Co.               | 3E621          | RCP      | Paving Plans Frolich Meadows                  | 30"     | Frolich Meadows                    | OKLAHO MA | 5039          | T11N R2W S20 | 702         |
| 97° 25' 33.79" W | 35° 24' 35.26" N | Atlas Paving Co.               | 3E621          | RCP      | Paving Plans Frolich Meadows                  | 36"     | Frolich Meadows                    | OKLAHO MA | 5039          | T11N R2W S20 | 702         |
| 97° 25' 38.23" W | 35° 24' 31.30" N | Southwest Paving Co.           | 5E621          | RCP      | Paving Plans Frolich Meadows                  | 36"     | Frolich Meadows                    | OKLAHO MA | 5039          | T11N R2W S20 | 702         |
| 97° 25' 38.20" W | 35° 24' 25.58" N | Southwest Paving Co.           | 5E621          | RCP      | Paving Plans Frolich Meadows                  | 30"     | Frolich Meadows                    | OKLAHO MA | 5039          | T11N R2W S20 | 702         |
| 97° 25' 25.39" W | 35° 25' 12.46" N |                                | 6E637          | CGMP     | Street Project # 2-79-C, Phase I              | 36"     | S. Sooner Road                     | OKLAHO MA | 5039          | T11N R2W S20 | 702         |
| 97° 25' 33.55" W | 35° 24' 38.38" N | Atlas Paving Co.               | PD-1301        | RCPA     | Holly Brooke Estates Section 2                | 58"X36" | N of SE 59th St & W of Sooner Road | OKLAHO MA | 5039          | T11N R2W S20 | 702         |
| 97° 25' 31.82" W | 35° 24' 41.77" N | Atlas Paving Co.               | PD-1060        | Concrete | Holly Brooke Estates Section 1                | 4'      | N of SE 59th St & W of Sooner Road | OKLAHO MA | 5039          | T11N R2W S20 | 702         |
| 97° 25' 29.56" W | 35° 24' 44.53" N | Atlas Paving Co.               | PD-1060        | Concrete | Holly Brooke Estates Section 1                | 4'      | N of SE 59th St & W of Sooner Road | OKLAHO MA | 5039          | T11N R2W S20 | 702         |
| 97° 25' 35.07" W | 35° 24' 30.65" N | T.J. Campbell Construction     | PD-1473        | RCP      | Holly Brooke Estates Section 3                | 18"     | N of SE 59th St & W of Sooner Road | OKLAHO MA | 5039          | T11N R2W S20 | 702         |
| 97° 27' 32.42" W | 35° 24' 48.04" N |                                | 14E606         | RCP      | Paving Plans Section 5 Oakcliff Addition      | (2) 30" | Bodine Drive                       | OKLAHO MA | 4939          | T11N R2W S19 | 701         |
| 97° 27' 32.66" W | 35° 24' 59.14" N | Slyter Brothers Construction   | 5E607          | RCP      | Paving Plans Lumbermen's #3 Add.              | 48"     | Lumbermen's #3 Add.                | OKLAHO MA | 4939          | T11N R2W S19 | 701         |
| 97° 27' 32.28" W | 35° 24' 50.16" N |                                |                |          |   |         |                                    | OKLAHO MA | 4939          | T11N R2W S19 | 701         |
| 97° 27' 30.50" W | 35° 25' 1.37" N  | Haskell Lemon Construction Co. | 6E610          | RCP      | Paving Plans Oakcliff Addition, Sec. 2        | 30"     | Oakcliff Addition                  | OKLAHO MA | 4939          | T11N R2W S19 | 701         |
| 97° 27' 18.77" W | 35° 25' 6.13" N  |                                |                |          |   |         |                                    | OKLAHO MA | 4939          | T11N R2W S19 | 701         |
| 97° 27' 32.40" W | 35° 24' 36.66" N | Haskell Lemon Construction Co. | 10E610         | RCP      | Paving Oakcliff Addition, Sec. 8              | 36"     | Oakcliff Addition                  | OKLAHO MA | 4939          | T11N R2W S19 | 701         |
| 97° 27' 32.39" W | 35° 24' 33.91" N | Haskell Lemon Construction Co. | 11E610         | RCP      | Paving Oakcliff Addition, Sec. 10             |         | Oakcliff Addition                  | OKLAHO MA | 4939          | T11N R2W S19 | 701         |
| 97° 27' 32.45" W | 35° 24' 31.09" N | Haskell Lemon Construction Co. | 2E625          | RCP      | Paving Plan Oakcliff Addition                 | 36"     | Oakcliff                           | OKLAHO MA | 4939          | T11N R2W S19 | 701         |
| 97° 29' 0.51" W  | 35° 25' 6.23" N  | Doerfler - Krapff              | 23E603         | RCP      | Paving Plans - Shallow Brook Addition         | 48"     | Shallow Brook Addition             | OKLAHO MA | 4739          | T11N R3W S23 | 699         |
| 97° 28' 37.74" W | 35° 24' 23.09" N |                                |                | RCB      |   |         |                                    | OKLAHO MA | 4739          | T11N R3W S23 | 699         |
| 97° 28' 45.88" W | 35° 24' 49.41" N |                                | DC-0027        | RCP      |   | 48"     |                                    | OKLAHO MA | 4739          | T11N R3W S23 | 699         |
| 97° 28'          | 35° 24'          | Doerfler – Krapff              | 11E603         | RCSP     | Paving Plan – Shallow Brook Addition Sec. III | 33"     | Shallow Brook Addition Sec. III    | OKLAHO    | 4739          | T11N R3W     | 699         |

| X Coord. (-97)   | Y Coord. (+35)   | Installation Contractor   | Project Number | MATERIAL | NAME   | Size   | Location Description                    | County    | OKC Fire Grid | Legal        | OKC Atlas # |
|------------------|------------------|---------------------------|----------------|----------|--|--------|---|-----------|---------------|--------------|-------------|
| 52.91" W         | 57.70" N         |                           |                |          |  |        |   | MA        |               | S23          |             |
| 97° 28' 49.02" W | 35° 24' 56.60" N | Doerfler – Krapff         | 11E603         |          | Paving Plan – Shallow Brook Addition Sec. III  | 18"    | Shallow Brook Addition Sec. III         | OKLAHO MA | 4739          | T11N R3W S23 | 699         |
| 97° 28' 57.29" W | 35° 25' 0.72" N  | Doerfler – Krapff         | 11E603         | RCP      | Paving Plan – Shallow Brook Addition Sec. III  | 24"    | Shallow Brook Addition Sec. III         | OKLAHO MA | 4739          | T11N R3W S23 | 699         |
| 97° 31' 26.04" W | 35° 24' 29.07" N |                           |                |          |  |        |   | OKLAHO MA | 4539          | T11N R3W S21 | 697         |
| 97° 30' 51.09" W | 35° 25' 5.07" N  |                           |                |          |  |        |   | OKLAHO MA | 4539          | T11N R3W S21 | 697         |
| 97° 31' 24.54" W | 35° 24' 35.58" N |                           | 4E114          | RCP      |  | 84"    |   | OKLAHO MA | 4539          | T11N R3W S21 | 697         |
| 97° 30' 54.72" W | 35° 25' 4.46" N  | Metropolitan Paving Co.   | 101E80         | RCP      | Paving   | 18"    | Robinwood Addition                      | OKLAHO MA | 4539          | T11N R3W S21 | 697         |
| 97° 31' 11.46" W | 35° 24' 39.13" N | H.E. Chase, City Engineer | 80E99          | RCP      | Private Contract Paving                        | 15"    | From S Walker to 478' East              | OKLAHO MA | 4539          | T11N R3W S21 | 697         |
| 97° 31' 0.72" W  | 35° 25' 0.80" N  | Metropolitan              | 27E118         | CMP      | Plans & Profiles                               | 18"    | S. Sage Avenue                          | OKLAHO MA | 4539          | T11N R3W S21 | 697         |
| 97° 31' 0.65" W  | 35° 25' 0.33" N  | Metropolitan              | 27E118         | CMP      | Plans & Profiles                               | 18"    | S. Sage Avenue                          | OKLAHO MA | 4539          | T11N R3W S21 | 697         |
| 97° 31' 18.96" W | 35° 24' 38.54" N | Patin Co.                 | 71E118         | RCP      | Paving Plans                                   | 18"    | S.W. 54th Street                        | OKLAHO MA | 4539          | T11N R3W S21 | 697         |
| 97° 31' 21.30" W | 35° 24' 37.38" N | City Engineer             | 64E122         | CMP      | Paving Plans                                   | 20"    | Beil Manor                              | OKLAHO MA | 4539          | T11N R3W S21 | 697         |
| 97° 31' 23.74" W | 35° 24' 25.82" N |                           | PD-0138        |          |  |        |   | OKLAHO MA | 4539          | T11N R3W S21 | 697         |
| 97° 31' 25.00" W | 35° 24' 30.84" N |                           |                |          |  |        |   | OKLAHO MA | 4539          | T11N R3W S21 | 697         |
| 97° 31' 24.60" W | 35° 24' 33.87" N |                           |                |          |  |        |   | OKLAHO MA | 4539          | T11N R3W S21 | 697         |
| 97° 31' 5.96" W  | 35° 24' 41.94" N | Amis Materials Co.        | DC-0036        | RCB      | Lightning Creek Proposed Channels Improvements | 30"    | N of SW 59th & E of Walker              | OKLAHO MA | 4539          | T11N R3W S21 | 697         |
| 97° 31' 5.00" W  | 35° 24' 57.20" N | Amis Materials Company    | DC-0015        | RCP      | Const. plans for Lightning Creek Phase I-A     | 72"    | N of SW 59th St and W of S Santa Fe Ave | OKLAHO MA | 4539          | T11N R3W S21 | 697         |
| 97° 33' 11.89" W | 35° 24' 27.94" N |                           |                |          |  |        |   | OKLAHO MA | 4339          | T11N R3W S19 | 695         |
| 97° 33' 11.59" W | 35° 24' 50.44" N |                           | DC-0171B       |          |  |        |   | OKLAHO MA | 4339          | T11N R3W S19 | 695         |
| 97° 33' 10.07" W | 35° 24' 43.65" N |                           | DC-0171B       |          |  |        |   | OKLAHO MA | 4339          | T11N R3W S19 | 695         |
| 97° 33' 7.10" W  | 35° 25' 3.01" N  |                           | 16E202         | RCB      |  | 10'X3' |   | OKLAHO MA | 4339          | T11N R3W S19 | 695         |
| 97° 33' 11.08" W | 35° 24' 48.09" N |                           | 103E114        | RCP      |  | 36"    |   | OKLAHO MA | 4339          | T11N R3W S19 | 695         |
| 97° 33'          | 35° 24'          | Cobb & Thompson           | 65E89          | RCP      | Plan & Profile                                 | 24"    | Youngs Place                            | OKLAHO    | 4339          | T11N R3W     | 695         |

| X Coord. (-97)   | Y Coord. (+35)   | Installation Contractor          | Project Number | MATERIAL | NAME                                    | Size       | Location Description                  | County   | OKC Fire Grid | Legal        | OKC Atlas # |
|------------------|------------------|----------------------------------|----------------|----------|---|------------|---------------------------------------|----------|---------------|--------------|-------------|
| 10.78" W         | 46.87" N         |                                  |                |          |   |            |                                       | MA       |               | S19          |             |
| 97° 33' 11.81" W | 35° 24' 57.34" N | W.W. Baker, City Engineer        | 34E106         | RCP      | Plans & Profiles                        | 24"        | S.W. 49th Street                      | OKLAHOMA | 4339          | T11N R3W S19 | 695         |
| 97° 38' 52.23" W | 35° 25' 5.66" N  |                                  |                |          |   |            |                                       | OKLAHOMA | 3839          | T11N R4W S20 | 690         |
| 97° 38' 59.75" W | 35° 24' 56.08" N |                                  | 5E630          | RCB      | Street Project # 637                    | 3) 12'X10' | S. Council Road                       | OKLAHOMA | 3839          | T11N R4W S20 | 690         |
| 97° 39' 6.15" W  | 35° 24' 54.38" N |                                  | 5E630          | RCP      | Street Project # 637                    |            | S. Council Road                       | OKLAHOMA | 3839          | T11N R4W S20 | 690         |
| 97° 38' 57.63" W | 35° 24' 59.85" N | D & D Utilities                  | PV-0129        | RCB      | Hobby Lobby                             | 6'x4'      | N of Hwy & E of Council               | OKLAHOMA | 3839          | T11N R4W S20 | 690         |
| 97° 38' 48.64" W | 35° 25' 6.74" N  |                                  |                |          |   |            |                                       | OKLAHOMA | 3839          | T11N R4W S20 | 690         |
| 97° 38' 58.81" W | 35° 24' 56.45" N | D & D Utilities                  | PV-0129        | RCB      | Hobby Lobby                             | 6'x4'      | N of Hwy 152 & E of Council           | OKLAHOMA | 3839          | T11N R4W S20 | 690         |
| 97° 38' 55.23" W | 35° 25' 1.54" N  | D & D Utilities                  | PV-0129        | RCB      | Hobby Lobby                             | 6'x4'      | N of Hwy & E of Council               | OKLAHOMA | 3839          | T11N R4W S20 | 690         |
| 97° 39' 26.76" W | 35° 24' 32.66" N | Silver Star Construction         | PD-1867        | RCP      | Clearwater Section 1                    | 36"        | N of SW 59th St & W of Council Road   | OKLAHOMA | 3739          | T11N R4W S19 | 689         |
| 97° 16' 44.85" W | 35° 23' 42.36" N |                                  |                | RCB      |   |            |                                       | OKLAHOMA | 5938          | T11N R1W S26 | 751         |
| 97° 31' 32.02" W | 35° 24' 16.25" N |                                  | DC-0013        | RCP      |   | 30"        |                                       | OKLAHOMA | 4538          | T11N R3W S28 | 737         |
| 97° 31' 32.31" W | 35° 23' 41.27" N | Slayer Brothers Construction Co. | 44E602         | RCP      | Plan South Woodview Add. Sec. 2         | 30"        | South Woodview Add. Sec. 2            | OKLAHOMA | 4538          | T11N R3W S28 | 737         |
| 97° 31' 32.87" W | 35° 24' 11.89" N |                                  | DC-0048        |          |   |            |                                       | OKLAHOMA | 4538          | T11N R3W S28 | 737         |
| 97° 31' 24.63" W | 35° 24' 22.22" N |                                  | 57E602         | RCP      | Widening & Resurfacing S.W. 59th Street | 18"        | S.W. 59th Street                      | OKLAHOMA | 4538          | T11N R3W S28 | 737         |
| 97° 31' 33.78" W | 35° 24' 13.60" N |                                  | DC-0020        | CGMP     | Storm sewer in 6100 Block S. Shartel    | 30"        | SE of SW 59th Street & S Western Ave  | OKLAHOMA | 4538          | T11N R3W S28 | 737         |
| 97° 31' 33.78" W | 35° 24' 8.70" N  |                                  | DC-0020        | CGMP     | Storm sewer in 6100 Block S. Shartel    | 48"        | SE of SW 59th Street & S Western Ave. | OKLAHOMA | 4538          | T11N R3W S28 | 737         |
| 97° 33' 15.85" W | 35° 24' 22.04" N |                                  | 57E602         | RCP      | Widening & Resurfacing S.W. 59th Street | 24"        | S.W. 59th Street                      | OKLAHOMA | 4338          | T11N R3W S30 | 735         |
| 97° 33' 25.37" W | 35° 23' 55.14" N | Project Construction Co.         | 46E201         | Concrete | 1962 Bond Issue                         |            | SW 66th ST. & Miller Ave.             | OKLAHOMA | 4338          | T11N R3W S30 | 735         |
| 97° 33' 32.81" W | 35° 23' 35.52" N | Project Construction Co.         | 46E201         | Concrete | 1962 Bond Issue                         |            | SW 66th ST. & Miller Ave.             | OKLAHOMA | 4338          | T11N R3W S30 | 735         |
| 97° 33' 31.18" W | 35° 23' 42.03" N |                                  | 25E606         | RCP      | Paving Plans Hillcrest Heights          | 24"        | Hillcrest Heights                     | OKLAHOMA | 4338          | T11N R3W S30 | 735         |
| 97° 33' 30.92" W | 35° 23' 41.82" N |                                  | 25E606         | RCP      | Paving Plans Hillcrest Heights          | 24"        | Hillcrest Heights                     | OKLAHOMA | 4338          | T11N R3W S30 | 735         |
| 97° 33'          | 35° 24'          |                                  |                |          |   |            |                                       | OKLAHOMA | 4338          | T11N R3W     | 735         |



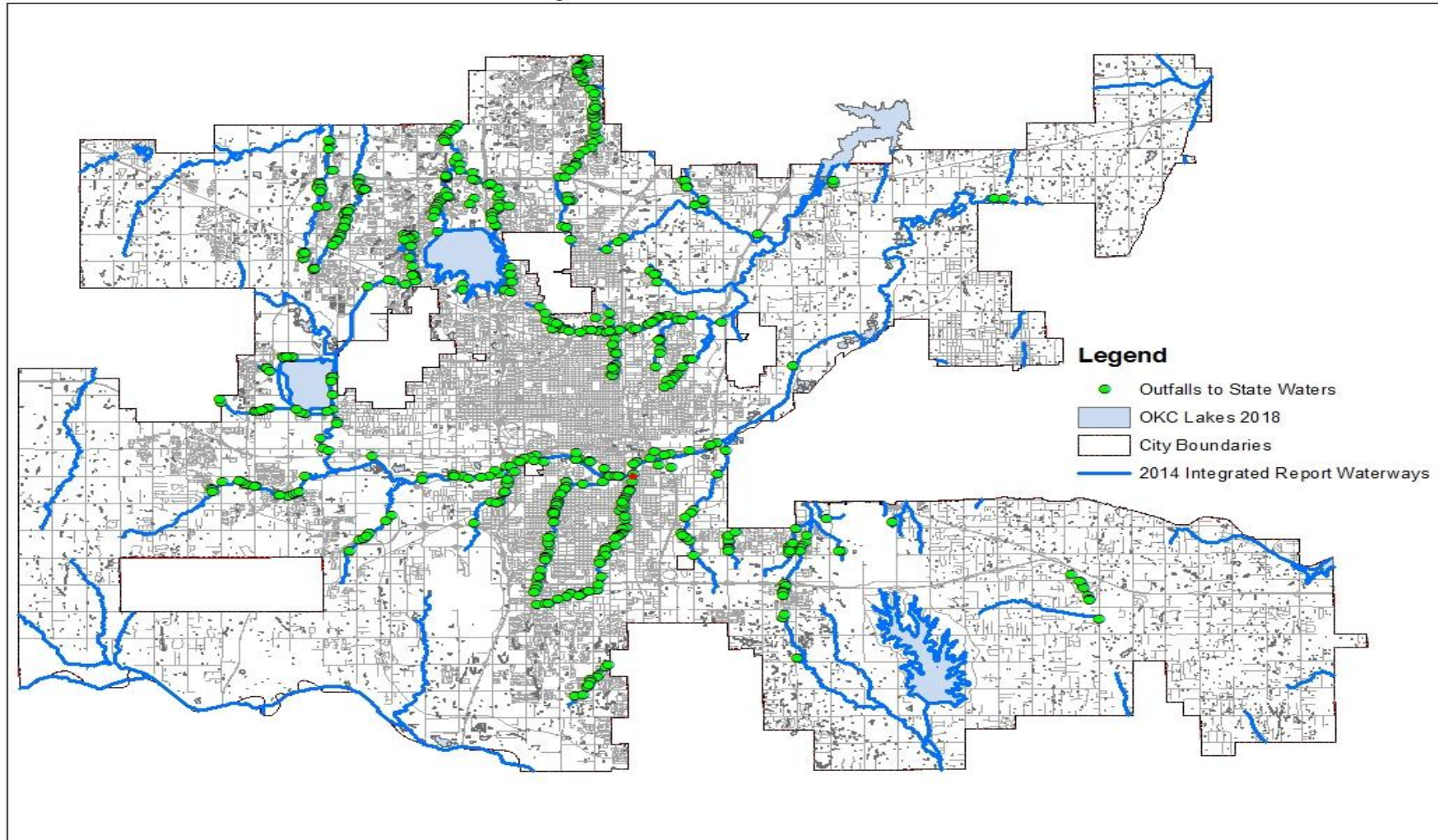
| X Coord. (-97)      | Y Coord. (+35)      | Installation Contractor  | Project Number | MATERIAL | NAME   | Size      | Location Description                          | County       | OKC Fire Grid | Legal           | OKC Atlas # |
|---------------------|---------------------|--------------------------|----------------|----------|--|-----------|---|--------------|---------------|-----------------|-------------|
| 16.89" W            | 18.22" N            |                          |                |          |  |           |   | MA           |               | S30             |             |
| 97° 33'<br>16.29" W | 35° 24'<br>15.37" N |                          |                |          |  |           |   | OKLAHO<br>MA | 4338          | T11N R3W<br>S30 | 735         |
| 97° 19'<br>4.39" W  | 35° 35'<br>49.71" N |                          |                |          |  |           |   | OKLAHO<br>MA | 5752          | T13N R1W<br>S16 | 189         |
| 97° 18'<br>46.37" W | 35° 35'<br>49.15" N |                          |                |          |  |           |   | OKLAHO<br>MA | 5752          | T13N R1W<br>S16 | 189         |
| 97° 16'<br>14.46" W | 35° 23'<br>0.10" N  |                          |                |          |  |           |   | OKLAHO<br>MA | 5937          | T11N R1W<br>S35 | 791         |
| 97° 16'<br>27.39" W | 35° 23'<br>26.48" N |                          |                | RCB      |  |           |   | OKLAHO<br>MA | 5937          | T11N R1W<br>S35 | 791         |
| 97° 16'<br>23.37" W | 35° 23'<br>18.44" N |                          |                | RCB      |  |           |   | OKLAHO<br>MA | 5937          | T11N R1W<br>S35 | 791         |
| 97° 16'<br>21.10" W | 35° 23'<br>15.85" N |                          |                | RCB      |  |           |   | OKLAHO<br>MA | 5937          | T11N R1W<br>S35 | 791         |
| 97° 16'<br>29.66" W | 35° 23'<br>29.70" N |                          |                | RCB      |  |           |   | OKLAHO<br>MA | 5937          | T11N R1W<br>S35 | 791         |
| 97° 16'<br>11.86" W | 35° 22'<br>54.21" N |                          |                |          |  |           |   | OKLAHO<br>MA | 5937          | T11N R1W<br>S35 | 791         |
| 97° 16'<br>11.15" W | 35° 22'<br>51.50" N |                          |                |          |  |           |   | OKLAHO<br>MA | 5937          | T11N R1W<br>S35 | 791         |
| 97° 25'<br>46.09" W | 35° 23'<br>26.88" N |                          | PC-0155        | RCB      |  | 2-10'X12' |   | OKLAHO<br>MA | 5037          | T11N R2W<br>S32 | 782         |
| 97° 25'<br>45.47" W | 35° 23'<br>20.25" N | Silver Star Construction | PD-1565        | RCB      | Wind Wood North Section 3                    | 9'x6'     | S of SE 74th St & W of Sooner Road            | OKLAHO<br>MA | 5037          | T11N R2W<br>S32 | 782         |
| 97° 25'<br>43.58" W | 35° 23'<br>22.09" N | Silver Star Construction | PD-1565        | RCB      | Wind Wood North Section 3                    | 9'x6'     | S of SE 74th St & W of Sooner Road            | OKLAHO<br>MA | 5037          | T11N R2W<br>S32 | 782         |
| 97° 25'<br>50.07" W | 35° 23'<br>13.23" N | Silver Star Construction | PD-1565        | RCP      | Wind Wood North Section 3                    | 42"       | S of SE 74th St & W of Sooner Road            | OKLAHO<br>MA | 5037          | T11N R2W<br>S32 | 782         |
| 97° 25'<br>50.18" W | 35° 23'<br>10.03" N | Silver Star Construction | PD-1565        | RCP      | Wind Wood North Section 3                    | 30"       | S of SE 74th St & W of Sooner Road            | OKLAHO<br>MA | 5037          | T11N R2W<br>S32 | 782         |
| 97° 25'<br>49.39" W | 35° 23'<br>3.83" N  | Silver Star Construction | PD-1565        | RCP      | Wind Wood North Section 3                    | 30"       | S of SE 74th St & W of Sooner Road            | OKLAHO<br>MA | 5037          | T11N R2W<br>S32 | 782         |
| 97° 31'<br>40.28" W | 35° 23'<br>15.52" N |                          |                |          |  |           |   | OKLAHO<br>MA | 4537          | T11N R3W<br>S33 | 777         |
| 97° 31'<br>39.98" W | 35° 23'<br>15.80" N |                          |                |          |  |           |   | OKLAHO<br>MA | 4537          | T11N R3W<br>S33 | 777         |
| 97° 31'<br>35.90" W | 35° 23'<br>27.67" N |                          | DC-0003        | RCP      | South Shartel & SW 74th (I-240)              | 54"       | S of SW 74th St and E of Western Ave          | OKLAHO<br>MA | 4537          | T11N R3W<br>S33 | 777         |
| 97° 32'<br>2.66" W  | 35° 23'<br>11.92" N | Slyater Brothers         | 12E603         | RCP      | Paving Plan – Southern Hills Addition Sec. 4 | 36"       | Southern Hills Addition Sec. 4                | OKLAHO<br>MA | 4437          | T11N R3W<br>S32 | 776         |
| 97° 32'<br>28.87" W | 35° 23'<br>10.34" N |                          | 15E606         | RCP      | Paving Plans Southern Hills Addition         | 30"       | SE of S Pennsylvania Ave & I-240 (SW 74th St) | OKLAHO<br>MA | 4437          | T11N R3W<br>S32 | 776         |
| 97° 32'             | 35° 23'             | Lynch Construction       | 16E620         | RCP      | Paving Plans Southern Hills                  | 24"       | Southern Hills                                | OKLAHO       | 4437          | T11N R3W        | 776         |

| X Coord. (-97)   | Y Coord. (+35)   | Installation Contractor             | Project Number | MATERIAL | NAME   | Size        | Location Description                          | County   | OKC Fire Grid | Legal        | OKC Atlas # |
|------------------|------------------|-------------------------------------|----------------|----------|--|-------------|---|----------|---------------|--------------|-------------|
| 7.52" W          | 8.05" N          |                                     |                |          |  |             |   | MA       |               | S32          |             |
| 97° 31' 55.13" W | 35° 23' 13.54" N |                                     |                |          |  |             |   | OKLAHOMA | 4437          | T11N R3W S32 | 776         |
| 97° 31' 55.65" W | 35° 23' 13.56" N | Comet Construction Co.              | 12E634         | RCP      | Southern Hills Paving & Drainage Plans                       | 42"         | Southern Hills                                | OKLAHOMA | 4437          | T11N R3W S32 | 776         |
| 97° 32' 29.43" W | 35° 23' 9.99" N  |                                     | DC-0021        | RCP      | Storm Sewer & Drainage Improvements -5121 S Brookline, 11216 | 48"         | SE of S Pennsylvania Ave & I-240 (SW 74th St) | OKLAHOMA | 4437          | T11N R3W S32 | 776         |
| 97° 32' 37.89" W | 35° 23' 3.65" N  | Slyfer Brothers                     | 31E601         | RCP      | Anton Estates Addition – Paving Plans                        | 30"         | Anton Estates                                 | OKLAHOMA | 4437          | T11N R3W S32 | 776         |
| 97° 32' 14.08" W | 35° 23' 5.25" N  | Lynch Construction                  | 16E620         | RCB      | Paving Plans Southern Hills                                  | 2 - 8' X 4' | Southern Hills                                | OKLAHOMA | 4437          | T11N R3W S32 | 776         |
| 97° 33' 32.87" W | 35° 23' 25.08" N | Metropolitan Construction Co.       | 59E118         | RCP      | Paving Plans   | 18"         | Meadow Cliff                                  | OKLAHOMA | 4337          | T11N R3W S31 | 775         |
| 97° 33' 36.10" W | 35° 23' 18.51" N | Metropolitan Paving Co.             | 3E120          | RCSP     | Paving Plans   | 18"         | Meadow Cliff Addition, Sec. 2                 | OKLAHOMA | 4337          | T11N R3W S31 | 775         |
| 97° 33' 39.48" W | 35° 23' 12.69" N | Metropolitan Paving Co.             | 3E120          | RCSP     | Paving Plans   | 30"         | Meadow Cliff Addition, Sec. 2                 | OKLAHOMA | 4337          | T11N R3W S31 | 775         |
| 97° 32' 52.60" W | 35° 22' 58.40" N |                                     |                |          |  |             |   | OKLAHOMA | 4337          | T11N R3W S31 | 775         |
| 97° 33' 33.18" W | 35° 22' 47.76" N |                                     |                |          |  |             |   | OKLAHOMA | 4337          | T11N R3W S31 | 775         |
| 97° 33' 16.95" W | 35° 22' 51.24" N | Atlas                               | 29E601         | RCP      | P.B. Odom’s South Penn. 4th Add. – Paving Plan               | 48"         | South Penn. Add.                              | OKLAHOMA | 4337          | T11N R3W S31 | 775         |
| 97° 33' 11.68" W | 35° 22' 51.48" N | Atlas Paving Co.                    | 21E602         | RCP      | Paving Plan for P.B. Odom’s S. Pennsylvania 5th Add.         | 30"         | P.B. Odom’s S. Pennsylvania 5th Add.          | OKLAHOMA | 4337          | T11N R3W S31 | 775         |
| 97° 15' 54.10" W | 35° 22' 14.93" N |                                     |                | RCP      |  |             |   |          | 5936          | T10N R1W S2  | 831         |
| 97° 25' 48.60" W | 35° 22' 21.17" N | D&H Construction                    | PD-1406        | RCP      | Dublin Bay Addition Section 2                                | 30"         | S of SE 89th St & W of Sooner Road            |          | 5036          | T10N R2W S5  | 822         |
| 97° 25' 47.05" W | 35° 22' 26.09" N | D&H Construction                    | PD-1406        | RCP      | Dublin Bay Addition Section 2                                | 36"         | S of SE 89th St & W of Sooner Road            |          | 5036          | T10N R2W S5  | 822         |
| 97° 25' 22.58" W | 35° 21' 2.22" N  |                                     |                | RCB      |  |             |   |          | 5135          | T10N R2W S9  | 863         |
| 97° 31' 38.61" W | 35° 20' 31.92" N |                                     |                |          |  |             |   |          | 4534          | T10N R3W S16 | 897         |
| 97° 31' 24.22" W | 35° 20' 47.21" N | Burns Paving                        | PD-0805        | CON      | Greenbriar East Lake Sec.2                                   | 4           | S of SW 119th ST & E of Western Ave           |          | 4534          | T10N R3W S16 | 897         |
| 97° 31' 19.71" W | 35° 20' 50.66" N | Atlas Paving Co.                    | PD-1129        |          |  |             | S of SW 119th St & E of Western Ave.          |          | 4534          | T10N R3W S16 | 897         |
| 97° 31' 41.35" W | 35° 20' 27.21" N | M. C. Miller Construction Co., Inc. | 16E626         | concrete | Paving & Drainage for Greenbriar East Lake Estates, Sec. 6   |             | Greenbriar East Lake Estates                  |          | 4534          | T10N R3W S16 | 897         |
| 97° 31' 59.38" W | 35° 20' 10.86" N |                                     |                | RCP      |  |             |   |          | 4434          | T10N R3W S17 | 896         |
| 97° 31'          | 35° 20'          |                                     | DD-0113        | RCP      |  | 42"         |   |          | 4434          | T10N R3W     | 896         |

| X Coord. (-97)   | Y Coord. (+35)   | Installation Contractor          | Project Number | MATERIAL | NAME                                | Size  | Location Description                      | County | OKC Fire Grid | Legal        | OKC Atlas # |
|------------------|------------------|----------------------------------|----------------|----------|-------------------------------------|-------|---|--------|---------------|--------------|-------------|
| 56.04" W         | 13.18" N         |                                  |                |          |                                     |       |   |        |               | S17          |             |
| 97° 31' 54.68" W | 35° 20' 21.30" N |                                  |                | RCP      |                                     |       |   |        | 4434          | T10N R3W S17 | 896         |
| 97° 32' 0.45" W  | 35° 20' 7.28" N  | Slyter Brothers Construction Co. | PD-0187        | RCP      | Eastlake Estates Sec 13             | 33"   | SW 133rd St & Briar Hollow Ln             |        | 4434          | T10N R3W S17 | 896         |
| 97° 31' 52.57" W | 35° 20' 23.58" N | Brewer Construction Co.          | PD-0217        | RCP      | Greenbriar Eastlake Estates Sec. 11 | 42"   | SW 126th ST & Briar Hallow Lane           |        | 4434          | T10N R3W S17 | 896         |
| 97° 31' 55.07" W | 35° 20' 18.00" N | T.J. Campbell Construction       | PD-0749        | RCP      | Eastlake Estates Section 17         | 30"   | N of SW 134th St & W of Western Ave       |        | 4434          | T10N R3W S17 | 896         |
| 97° 31' 57.57" W | 35° 20' 12.93" N | Marler Construction Co.          | PD-0703        | RCP      | Eastlake Estates Sec 15             | 36"   | N of SW 134th St & W of Western Ave.      |        | 4434          | T10N R3W S17 | 896         |
| 97° 32' 23.46" W | 35° 19' 50.91" N | T.J. Campbell Construction       | PD-0967        | RCP      | Calistoga Crossing Section 1        | 30"   | S of SW 134th St & E of Pennsylvania Ave. |        | 4433          | T10N R3W S20 | 936         |
| 97° 32' 7.00" W  | 35° 19' 53.59" N | Silver Star Construction         | PD-1379        | Concrete | Tuscany                             | 4'X6" | S of SW 134th St & W of Western Ave       |        | 4433          | T10N R3W S20 | 936         |

## Appendix AX: Map of Outfalls to State Waterways in Oklahoma City

OKC Outfalls to State Waterways



## **Appendix AY: Renewal of the Oklahoma City MS4 Permit Letter November 15, 2017**



**The City of  
OKLAHOMA CITY**  
DEPARTMENT OF PUBLIC WORKS

November 15, 2017

Michael Jordan, P.E., Manager  
Oklahoma Department of Environmental Quality  
707 N. Robinson  
P. O. Box 1677  
Oklahoma City, OK 73101-1677

RE: Renewal of the Oklahoma City Municipal Separate Storm Sewer Permit (MS4)

Dear Mr. Jordan:

Pursuant to rules set forth in 40 CFR 122, the City must submit the reapplication on the Phase I MS4 Permit, OKS000101, 180 days prior to the permit expiration date of March 14, 2018.

With this in mind we submit the following additional proposed change to the City of Oklahoma City Permit OKS000101 for the upcoming five (5) year term of 2018-2023. This is in addition to the previously submitted proposed changes dated September 15, 2017. The City requests that the "Optional Permit Requirements for Municipal Construction Activities" be added to upcoming five (5) term permit of 2018-2023. This language was taken, in part, from the ODEQ General Permit OKR04.

### **OPTIONAL PERMIT REQUIREMENTS FOR MUNICIPAL CONSTRUCTION ACTIVITIES**

The development of this optional provision for municipal construction activities is an alternative for the MS4 operator seeking coverage under this Permit. This provision does not apply to Oklahoma Turnpike Authority (OTA) or Oklahoma Department of Transportation (ODOT), who are MS4 operators. Additionally, contractors working for the MS4 operator are not required to obtain separate authorization as long as the contractor does not meet the definition of "construction site operator". MS4s that choose to develop this option will be authorized by the Permit to discharge stormwater and certain non-stormwater from construction activities where the MS4s are the "construction site operators". For MS4s that choose this measure, it shall be part of the SWMP submitted with the initial NOI. You must comply with the requirements in OKR10 Stormwater Discharges from Construction Activities (OKR10).

If you choose not to develop this option measure, then you must submit a NOI and seek coverage under the DEQ general permit (OKR10) for stormwater discharges from construction activities.

If this optional provision requirement is elected you must include the following in your SWMP.

1. Description of how construction activities will generally be conducted by the MS4. Local conditions and other site specific considerations must be included in the description.

April 30, 2018


**[OKLAHOMA CITY STORM WATER QUALITY  
MANAGEMENT PLAN]**

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2. Description of how the MS4 will implement the technology-based requirements to comply with Effluent Limitation Guidelines and Standards for the Construction and Development Point Source Category (ELGs) under Part 450 of 40 CFR, effective February 1, 2010.
3. Description of how the MS4 will ensure that the SWP3 requirements are properly implemented and maintained at the construction site; or how the MS4 will ensure that the contractors obtain a separate authorization for stormwater discharges from DEQ for each project: and
4. General Stormwater Pollution Prevention Plan (SWP3) conditions and a procedure to include site specific BMPs to account for local considerations.

Your consideration of the proposed change is greatly appreciated. Please contact Mr. Raymond Melton at (405) 297-2179 if you have any questions regarding this letter or if you require additional information.

Sincerely,



Eric J. Wenger, P.E., Director  
Public Works/City Engineer