



**CITY OF NORMAN
STORMWATER MANAGEMENT PROGRAM
FOR PHASE II MS4 COMPLIANCE
2016 TO 2020**



Prepared by:
**City of Norman
Public Works Department
Stormwater Division**

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Permit Term 2016-2020

Signature

Steve Lewis, City Manager

Date

3-17-17



Executive Summary

In 2001, the EPA promulgated the Phase II stormwater rule which expanded the existing stormwater program to include cities under 100,000 population and constructions sited of between one and five acres. This rule applied to the City of Norman and 44 other municipalities and non-traditional entities in the State of Oklahoma. The rule required permittees to develop a Stormwater Management Program (SMP) to reduce pollutants in stormwater runoff from the municipal separate sewer systems (MS4s).

The Oklahoma Department of Environmental Quality (ODEQ) issued the OKR04 General Permit for Stormwater Discharges from MS4s on February 8, 2005. The City of Norman submitted a Notice of Intent, SMP, and other required permit documents and received authorization under the permit on November 29, 2005. This permit expired February 9, 2010, but was administratively continued pending re-issuance. On October 1, 2015, the ODEQ reissued permit OKR04 with an effective date of November 1, 2015. Existing permittees were required to submit a permit application for the permit by February, 1, 2016.

In compliance with Permit OKR04, the City of Norman has developed this SMP to reduce the discharge of pollutants from the City's MS4 to the maximum extent practicable. The SMP presented here has been reviewed and updated as required by the Permit. All minimum control measures (MCMs) and their associated best management practices (BMPs) were reviewed, with changes made where appropriate and necessary for permit compliance. Those BMPs from the previous permit term which are to be continued with minor modifications will be implemented by February 1, 2016. New BMPs and updates to the SMP will be implemented by November 1, 2016, as required by the Permit. This SMP has also incorporated the requirements of the ODEQ Lake Thunderbird TMDL Study and the Lake Thunderbird Compliance Plan and Monitoring Plans produced by the City of Norman.

The SMP must address these six MCMs, as follows:

- Public Education and Outreach Program
- Public Participation and Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Stormwater Runoff Control
- Post-Construction Management in New Development and Redevelopment
- Pollution Prevention/Good Housekeeping for MS4 Operations

Major Program enhancements for the 2016-2020 permit term include the addition of a street sweeper for increased street sweeping, a camera and crew for better storm sewer inspection and illicit discharge investigations, and addition of an inspector for increased inspection and enforcement on construction sites, including those in the Lake Thunderbird watershed.

Acronyms and Abbreviations

BMP	Best Management Practice(s)
CFR	U.S. Code of Federal Regulations
CWA	Clean Water Act
DMR	Discharge Monitoring Report
ECAB	City of Norman Environmental Control Advisory Board
EPA	Environmental Protection Agency
MCM	Minimum Control Measure(s)
MEP	Maximum Extent Practicable
MS4	Municipal Separate Storm Sewer System
NOI	Notice of Intent
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
OAC	Oklahoma Administrative Code
O&M	Operation and Maintenance
ODEQ	Oklahoma Department of Environmental Quality
OPDES	Oklahoma Pollutant Discharge Elimination System
SMP	Stormwater Management Program
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
USFWS	U.S Fish and Wildlife Service

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1.0 CITY BACKGROUND

1.1 REGULATORY BACKGROUND

In 1972, Congress amended the Federal Water Pollution Control Act (commonly referred to as the Clean Water Act [CWA]) to prohibit the discharge of any pollutant to *Waters of the United States* from a point source unless the discharge is authorized by a National Pollutant Discharge Elimination System (NPDES) permit. The NPDES program is designed to track point sources and requires the implementation of controls necessary to minimize the discharge of pollutants.

In 1987, Congress amended the CWA to require implementation, in two phases, of a comprehensive national program for addressing stormwater discharges. The first phase of the program, commonly referred to as “Phase I”, was promulgated by the Environmental Protection Agency (EPA) on November 16, 1990 (*Federal Register*, Volume 55, Page 47,990 [55 FR 47990]). Phase I requires NPDES permits for stormwater discharge from a large number of priority sources, including municipal separate storm sewer systems (MS4) generally serving populations of 100,000 or more and several categories of industrial activity, including construction sites that disturb five or more acres of land.

EPA promulgated the second phase of the stormwater regulatory program, commonly referred to as “Phase II,” on December 8, 1999 (64 FR 68722). Phase II regulations address stormwater discharges from certain MS4’s serving populations of less than 100,000 people (called “small MS4’s”). EPA has delegated authority to issue MS4 stormwater discharge permits to the State of Oklahoma. Under the authority of Clean Water Act (CWA), the Oklahoma Department of Environmental Quality (DEQ) is the regulatory body responsible for issuing permits to discharge waste pollutants in stormwater runoff from small MS4 systems to waters of the state.

The DEQ issued a general permit for the discharge of stormwater from small MS4’s, General Permit OKR04, on February 8, 2005. Permit requirements are based on the Clean Water Act (33 U.S.C. 1251, et seq.), and OPDES regulations OAC 252:606-1-3(b)(3) adopting and incorporating by reference 40 CFR122.26, as amended.

As a regulated small MS4 operator, the City of Norman obtained permit coverage under OKR04 from the DEQ for the discharge of pollutants in stormwater runoff on November 29, 2005. Coverage expired at midnight on February 7, 2010, but by rule continues under the existing permit until the DEQ grants coverage to the City under the current permit which became effective on November 1, 2015.

In summary, the permit requires the City to comply with a number of administrative and legal requirements and to develop, implement, and enforce a stormwater management program designed to reduce the discharge of pollutants from the MS4 to the maximum extent practicable to protect water quality. The SMP must address six areas, called

“Minimum Control Measures” (MCMs), as follows:

- Public Education and Outreach Program
- Public Participation and Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Stormwater Runoff Control
- Post-Construction Management in New Development and Redevelopment
- Pollution Prevention/Good Housekeeping for MS4 Operations

General Permit OKR04 for small MS4's, dated November 1, 2015, authorizes discharges of stormwater and certain non-stormwater discharges from small MS4's (Appendix A). The submittal date of NOI for stormwater discharges from small MS4's as required by General permit OKR04 is February 1, 2015.

For each MCM, the City must:

- Select appropriate Best Management Practices (BMP), which are various methods of reducing pollutants in stormwater runoff.
- Define measurable goals for each BMP.
- Establish an implementation schedule.
- Assign a responsible person or persons for implementing all activities.

1.2 THE PURPOSE OF THIS DOCUMENT

This document serves as an update to the City's SMP and will be submitted to the DEQ by the City on or before the application deadline of February 1, 2016. In order to receive authorization to discharge stormwater from its small MS4, the City must submit a description of the SMP. It includes all selected BMPs for each of the six MCMs, measurable goals for each BMP, an implementation schedule, and a listing of the person(s) responsible for implementation of all activities. The purpose of this update to the plan is to renew the City's permit with DEQ.

This document provides a clear road map for implementing stormwater quality management activities to improve runoff quality and to maintain permit compliance.

1.3 ORGANIZATION OF THIS DOCUMENT

This document is organized into various sections as follows:

Section 1 – Introduction: This section provides background information on the stormwater regulatory program, defines the purpose of this document, and describes document organization.

Section 2 – City Background: This section provides general information about the city, including setting and character, surface water quality concerns, development conditions, construction schedules, form of government, and legal authority.

Section 3 – Public Education and Outreach: This section describes the regulatory requirements, permit requirements, current city programs, selected BMPs, measurable goals, implementation schedule, and responsible parties pertaining to MCM-1.

Section 4 – Public Participation and Involvement: This section describes the regulatory requirements, permit requirements, current city programs, selected BMPs, measurable goals, implementation schedule, and responsible parties pertaining to MCM-2.

Section 5 – Illicit Discharge Detection and Elimination: This section describes the regulatory requirements, permit requirements, current city programs, selected BMPs, measurable goals, implementation schedule, and responsible parties pertaining to MCM-3.

Section 6 – Construction Storm Water Runoff Control: This section describes the regulatory requirements, permit requirements, current city programs, selected BMPs, measurable goals, implementation schedule, and responsible parties pertaining to MCM-4.

Section 7 – Post-Construction Stormwater Management in New Development and Redevelopment: This section describes the regulatory requirements, permit requirements, current city programs, selected BMPs, measurable goals, implementation schedule, and responsible parties pertaining to MCM-5.

Section 8 – Pollution Prevention/Good Housekeeping for Municipal Operations: This section describes the regulatory requirements, permit requirements, current city programs, selected BMPs, measurable goals, implementation schedule, and responsible parties pertaining to MCM-6.

Section 9 – Reviews, Updates, Record Keeping, and Reporting: This section describes the annual reporting requirements of the permit.

2.0 CITY BACKGROUND

2.1 SETTING AND CHARACTER

The City of Norman is the seat of Cleveland County and is located 17 miles south of the state capital, Oklahoma City. The City's economic base is mainly in education, manufacturing, and governmental agencies. The City of Norman encompasses approximately 190 square miles, with about 40 square miles, or 25,000 acres, being in the urbanized area. Existing land use in the urbanized area is approximately 22,000 acres residential, 1,400 acres commercial, 925 acres industrial, and 670 acres parklands. Three-fifths of Norman's total land area is undeveloped rural land in far eastern Norman.

2.2 NRCS SOIL DATA

The major soils in each map unit located in the city limits of Norman are summarized below.

S. No.	Map Unit No.	Name of the Soil Complex	Percent Slopes
1	3	Grainola-Ashport	0-8
2	4	Gracemore- Gaddy	0-1
3	6	Grainola-Ironmound	5-12
4	9	Kingfisher-Ironmound	1-5
5	11	Dougherty-Konawa	3-8
6	13	Derby loamy fine sand	3-15
7	18	Gracemore loamy fine sand	0-1
8	19	Goodnight loamy fine sand	5-20
9	32	Lomill silty clay	0-1
10	33	Norge-Ashport	0-8
11	39	Asher silt loam	0-1
12	40	Asher silty clay loam	0-1
13	41	Asher silty clay loam	0-1
14	49	Kirkland-Urban land-Pawhuska	0-3
15	50	Kirkland silt loam	0-1
16	51	Kirkland-Pawhuska complex	0-1
17	53	Kirkland-Pawhuska complex	0-3
18	57	Teller-Urban land	3-8
19	58	Teller-Urban land	3-8
20	59	Bethany-Urban land	0-3
21	65	Renfrow-Huska	3-5
22	66	Renfrow-Huska	3-5
23	69	Renfrow- Urban land-Huska	1-5
24	70	Slaughterville fine sandy loam	1-3
25	72	Slaughterville fine sandy loam	5-8
26	74	Vanoss-Urban land-Norge	0-3
27	77	Teller fine sandy loam	1-3
28	78	Teller fine sandy loam	3-5
29	81	Norge silt loam	1-3
30	82	Norge silt loam	3-5
31	84	Grant-Huska	1-5
32	86	Norge-Urban land	3-8
33	88	Grant-Urban land-Huska	1-5

2.3 RECEIVING WATERSHEDS

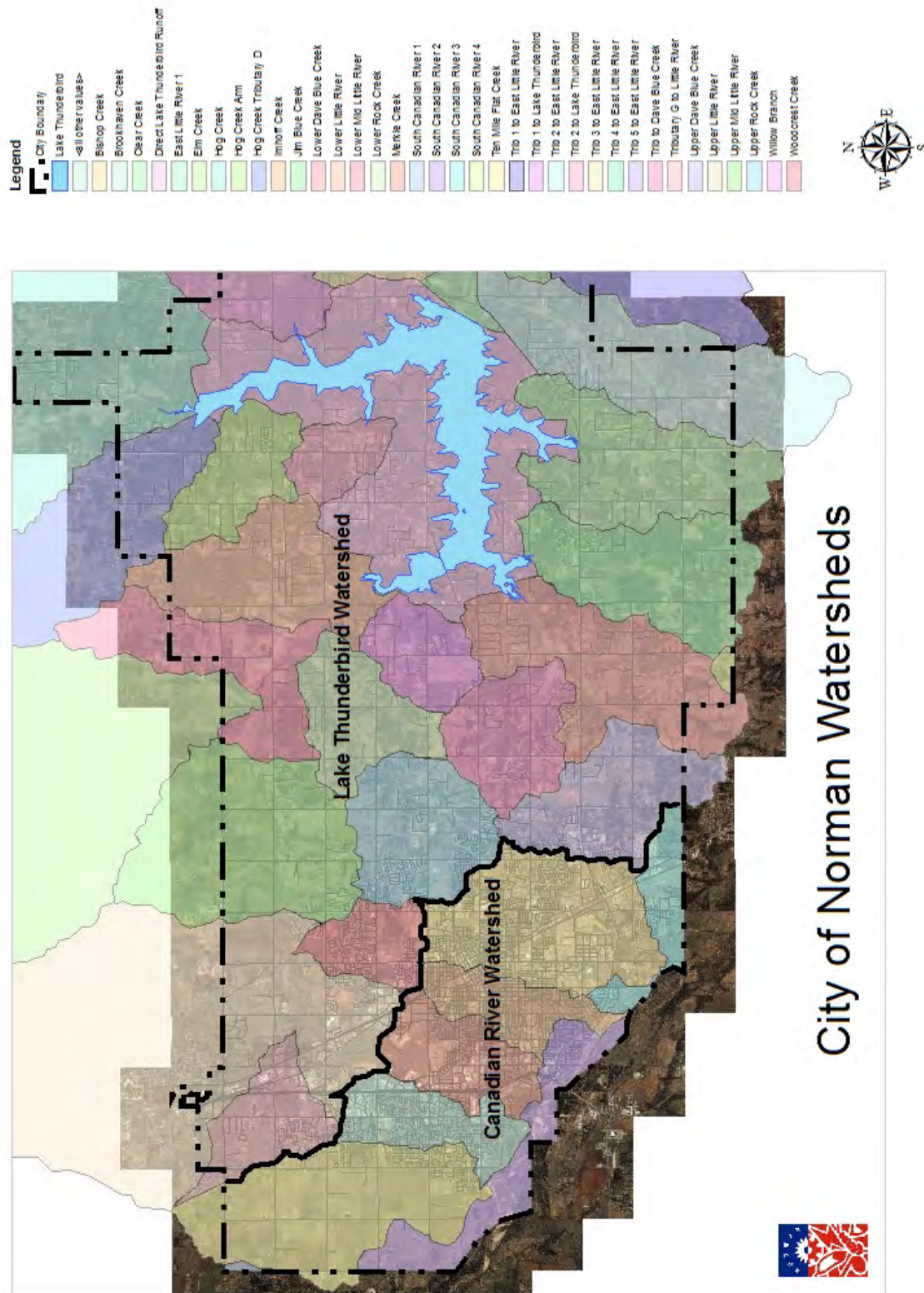
Stormwater runoff from the urbanized area is contained in two major drainage basins; The Canadian River watershed and the Lake Thunderbird watershed. Six creeks and their associated sub-watersheds drain into the Canadian River, which flows along the south edge of the urbanized area. Little River and its tributaries as well as Dave Blue Creek and Rock Creek drain to Lake Thunderbird. The majority of the urbanized area drains to the Canadian River; however, development is increasing in the Lake Thunderbird watershed.

To plan for future development, the City of Norman has developed the Norman 2025 Land Use and Transportation Plan (Appendix F). The plan is intended to guide development in the city-based available public services and environmental suitability. Goals of the plan include greenbelt development and water quality protection.

Basin	Area (acres)	Perimeter (feet)	Drainage
Little River	40,000	393,000	Lake Thunderbird
Rock Creek	7,000	106,000	Lake Thunderbird
Dave Blue	11,000	154,000	Lake Thunderbird
Woodcrest	2,010	41,000	Little River
Ten Mile	7,290	76,000	Canadian River
Brookhaven	2,660	51,000	Canadian River
Merkle	2,470	49,000	Canadian River
Imhoff	2,320	58,000	Canadian River
Bishop	5,700	77,000	Canadian River
Canadian	3,700	130,000	Canadian River

Table 2-2 Receiving Waterbodies

Figure 1: Watershed Map



2.3.1 Impaired Water Bodies

Lake Thunderbird is located in rural east Norman and is the major water supply source. According to the Oklahoma Water Quality Standards, beneficial uses listed are: warm water aquatic community, agriculture, public and private water supply, primary body contact recreation, and aesthetics. It is also listed as a Sensitive Water Supply. DEQ issued a TMDL study for the lake in November 2013 due to non-attainment of water quality standards for turbidity, chlorophyll-a and dissolved oxygen. The City of Norman submitted a TMDL monitoring & compliance plan in November 2015 and incorporated the requirements of these plans in the SMP. The TMDL is further discussed in Section 2.3.4

The **Canadian River** flows along the south border of the Norman city limits and receives the majority of stormwater runoff from the urbanized area. According to the Oklahoma Water Quality Standards, beneficial uses listed are: warm water aquatic community, agriculture, municipal and industrial water supply, primary body contact recreation, and aesthetics. Total Dissolved Solids and Enterococcus bacteria are listed as causes of water quality impairment for the Canadian River according to the 2014 Oklahoma Integrated Water Quality Assessment 303(d) list. The Canadian River is also listed as an Aquatic Resource of Concern due to the presence of a threatened species, the Arkansas River shiner (*Notropis girardi*).

Bishop Creek is located in east Norman and flows south into the Canadian River. Listed beneficial uses include warm water aquatic community and primary body contact recreation. The creek is listed on the 303(d) list as impaired due to Chlorpyrifos.

Merkle Creek is located in the central Norman urbanized area and also flows south to the Canadian River. It was added to the 2014 303(d) list for Microinvertebrate and Fishes Bioassessment impairment.

2.3.2 Water Quality Standards

Water Quality Standards for the beneficial uses listed in Section 2.3.1 above can be found in OAC 785:45-5-10 (Public and Private Water Supplies), 785:45-5-12 (Fish and Wildlife Propagation), OAC 785:45-5-13 (Agriculture: Livestock and Irrigation), OAC 785:45-5-17 (Secondary Body Contact Recreation), and OAC 785:45-5-19 (Aesthetics).

2.3.3 Discharges to Impaired Water Bodies

Potential sources of these pollutants are stormwater runoff from the urbanized area of Norman from application of lawn care chemicals and fertilizers, construction activity, pet waste and other impervious surfaces. The primary means of control of discharges containing pesticides and nutrients to the MS4 will be by a public education/involvement program to inform the public about adverse environmental impacts from overuse and misuse of these chemicals. Information on the proper use, reduction, and safe alternatives for these chemicals will also be distributed to the community. The main effort to control the discharge of organic pollutants to the MS4 will be through the detection and elimination of illicit domestic sewage

discharges to the MS4.

2.3.4 TMDL's

Lake Thunderbird: The Oklahoma Department of Environmental Quality (ODEQ) issued a Total Maximum Daily Load (TMDL) study for the lake in November 2013 due to non-attainment of water quality standards for turbidity, chlorophyll-a and dissolved oxygen. Cities affected by the TMDL include Norman, Oklahoma City, and Moore. The City of Norman contracted with Olsson & Associates for assistance in developing the TMDL Compliance and Monitoring Plans. Additionally, the City of Norman initiated and hosted joint meetings with representatives from each of the affected cities to discuss each city's response to the TMDL. The City of Norman submitted TMDL Compliance and Monitoring Plans on November 5, 2015. DEQ approved these plans on September 21, 2016, and was adopted by City Council on October 25, 2016. Requirements of the Lake Thunderbird TMDL will be incorporated into the SMP and appropriate MCMs.

2.3.5 Endangered Species

The Canadian River is habitat for the Arkansas River shiner, which is listed as threatened by the USFWS. The USFWS Final Rule (DOCIDfr23no98-24) states the primary threat facing the Arkansas River shiner is destruction and modification of habitat by stream channelization, reservoir construction, stream flow alteration and depletion, and, to a lesser extent, water quality degradation. The implementation of BMPs to reduce the discharge of pollutants into the MS4 is expected to improve the quality of stormwater flows to the Canadian River and have no impact on in-stream flows.

2.4 FORM OF GOVERNMENT

The municipal government provided by the City's Charter is known as a "Council-City Manager" form of government. Pursuant to its provisions and subject only to the limitations imposed by the state constitution and by its Charter, all powers of the city are vested in the Mayor and the eight City Council members, who enact local legislation, adopt budgets, and determine policies. All powers of the city are exercised in the manner prescribed by the City's Charter, or if not prescribed, then as may be prescribed by City Ordinance.

2.5 LEGAL AUTHORITY

The City is a Home-Rule municipality.

2.6 CONSTRUCTION AND DEVELOPMENT

Ample undeveloped land remains distributed throughout the city. Continued development and growth are anticipated within the city throughout the duration of this SMP. The City typically reviews about 400-500 residential permits per year for home construction.

2.7 EXISTING PROGRAMS

Existing stormwater management programs are primarily implemented by the Department of Public Works Engineering Division, Stormwater Quality Section. These departments perform a variety of duties, including development and community planning, construction permitting and review, capital engineering, and construction and maintenance.

2.8 STORM WATER MASTER PLAN

In the summer of 2007, the City of Norman selected the firm of Post, Buckley, Schuh & Jernigan, Inc. (PBS&J), an engineering, planning and architecture firm, to study and develop a plan for stormwater management and planning. In addition to traditional drainage issues, the plan addressed water quality issues in local watersheds, greenbelt/trails and riparian corridor planning, Phase II/City of Norman MS4 permitting, development regulations, and development of funding mechanisms for a stormwater utility fee. The Storm Water Master Plan Final Report was adopted by City Council Resolution R-1011-120 on June 28th, 2011. Action items in the Plan which have been implemented include the Water Quality Protection Zone Ordinance and the Manufactured Fertilizer Ordinance.

2.9 RATIONALE STATEMENT FOR SMP

During the development of this SMP, the City considered BMPs that would protect water quality, comply with the Phase II stormwater regulations, and ensure program costs that would not create undue hardship on city residents and businesses. Established Phase I stormwater programs, as well as proposed Phase II programs for other MS4 operators, were reviewed and evaluated. A variety of BMPs for each minimum control measure were considered and compared. BMPs were ultimately selected based on an evaluation of overall effectiveness, affordability, and suitability to the City. The program will allow continual adjustment and refinement through City implementation experience and feedback from all sectors of the residential and business community.

3.0 MCM-1 PUBLIC EDUCATION AND OUTREACH

The following section describes permit requirements and selected BMPs. Additional details for each MCM, including measurable goals, implementation dates, associated BMPs and responsible parties are found in Appendix B, Table 1.

Part IV.C.1 of Permit OKR04 requires the City of Norman to revise and update the existing public education and outreach program. The revision of the program shall be completed within the first year after effective date of this Permit. The City must continue to implement a public education and outreach program to distribute information and educational materials to the community or conduct equivalent outreach activities to promote behavior change by the public to reduce pollutants in stormwater runoff and eliminate illicit discharges. The public education or equivalent outreach activities shall be tailored, using a mix of locally appropriate strategies, to target specific audiences and communities. Individual MCM requirements and associated BMPs to meet the requirement are presented below.

3.1 PERMIT REQUIREMENT:

Include Education and Outreach Efforts for the General Public

3.1.1 Utility Bill Stormwater Pollution Prevention Informational Inserts

Stormwater pollution prevention informational pamphlets will be distributed in City utility bills annually. This BMP target goal has been increased from 50% of all utility customers to 75% of all utility customers. There are approximately 35,000 City of Norman utility accounts and this will increase distribution from 17,500 to 26,250 pamphlets.

3.1.2 Stormwater Website

Stormwater program information is posted on the City of Norman website, <http://www.normanok.gov/content/storm-water-quality>, along with a link for the public to submit questions and comments. Additionally, the website, GreenNorman.org, has been created to promote the City environmental programs and environmental awareness. Content of these websites will be reviewed and updated at least annually. This BMP is unchanged from the previous permit cycle.

3.1.3 Action Center Hotline

The Action Center hotline operated by the City Clerk's office allows citizens to easily report pollution concerns to personnel in the city who can take appropriate action to address stormwater pollution issues. The Action Center may be contacted by phone at (405) 366-5396 or by email at, Action.Center@NormanOK.gov. A log of all referred stormwater pollution complaints will be maintained by the Engineering Division. This BMP target goal to receive and respond to citizen complaints has been increased from 50% response to 90% response.

3.1.4 Earth Day Public Education Event

An Earth Day booth will continue to be set up every year in the month of April in cooperation with the Environmental Services Division and the Parks & Recreation Department. It will continue to encourage public participation in a learning day about environmental and natural resources issues and will continue to raise environmental awareness in the general public. The event will continue to improve natural resources and promote the maintenance of a productive and healthy environment. This BMP is unchanged from the previous permit cycle.

3.1.5 Stormwater Education for Schools

The City will continue to work with local schools to provide promotional items and educational materials for elementary school children about the impacts of stormwater pollution to two schools annually. The City will also present stormwater educational information annually at selected schools as part of National Public Works Week as an improvement to this BMP.

3.1.6 Newspaper Advertisement

Newspaper advertisements will inform the general public informed about various methods to reduce to reduce stormwater pollution. The target goal for this BMP has been increased from 2 to 4 ads published annually.

3.1.7 Fertilizer Use Brochure

Educational materials on proper fertilizer use, including retail location signage and bi-lingual printed material, were developed in the previous permit cycle to provide information to the public and businesses on proper selection and application of fertilizer, soil testing, and environmental impacts of improper fertilizer use. These materials also contain information on the requirements of the City of Norman Manufactured Fertilizer Ordinance O-1213-34 which was adopted on February 26, 2013, and regulates the use and application of manufactured fertilizers by commercial applicators and the public. This ordinance also requires commercial fertilizer applicators to register with the City. This is a new BMP for the 2016-2020 permit term.

3.1.8 Multi-lingual Educational Materials

This practice seeks to increase the effectiveness of the Public Education MCM by developing educational material for citizens whose primary language is not English. Spanish language lawn care and fertilizer use materials were developed in the previous permit cycle. Additional educational materials will be evaluated annually for translation. This is a new BMP for the 2016-2020 permit term.

3.1.9 TMDL Educational Materials

Educational materials regarding the Lake Thunderbird TMDL and watershed protection will be developed and incorporated into the existing Public Education MCM. These materials will be

distributed through existing Public Education BMPs and constitute a new BMP for the 2016-2020 permit term.

3.2 PERMIT REQUIREMENT:
Establish or Revise Measurable Goals

This MCM and associated BMPs has been reviewed, and appropriate revisions or additions have been made. Target milestones, BMP frequency, and persons responsible for implementation are shown in Appendix B.

3.3 PERMIT REQUIREMENT:
Assess Your Education and Outreach Program Annually.

This MCM and associated BMPS will be reviewed annually by the permit authorization date. Any required revisions will be made in accordance with the requirements in Permit OKR04.

4.0 MCM-2 PUBLIC PARTICIPATION AND INVOLVEMENT

The following section describes permit requirements and selected BMPs. Additional details for each MCM, including measurable goals, implementation dates, associated BMPs and responsible parties are found in Appendix B, Table 2.

Part IV.C.2 of Permit OKR04 requires the City of Norman public participation and involvement program be reviewed and updated within the first year after the effective date of this Permit, then reviewed annually and revised, if necessary. The program must encourage public involvement and participation in the development and implementation of the SMP.

4.1 PERMIT REQUIREMENT: Include a Process by Which Public Comments on the Program Are Received

4.1.1 Website Link for Receipt of E-mails

An email link is posted on the Engineering Division and Stormwater Division which allows the public to directly contact staff regarding the SMP and stormwater issues in general. Citizens may report complaints, spills, and other related issues to: <http://www.normanok.gov/content/storm-water-quality>. This BMP was implemented during the previous permit term and will be continued for the 2016-2020 permit term. This BMP target goal to receive and respond to citizen email inquiries has been increased from 25% response to 90% response

4.1.2 Environmental Control Advisory Board

The City of Norman Environmental Control Advisory Board (ECAB) is made up of citizens appointed by the Mayor. ECAB investigates, prepares plans for, and recommends programs regarding the preservation and enhancement of the environment. A representative of the Public Works Department will coordinate with the ECAB on a quarterly basis to provide two-way information flow regarding stormwater pollution issues. This is a new BMP for the 2016-2020 permit term.

4.1.3 Action Center Hotline

The Action Center hotline operated by the City Clerk's office allows citizens to easily report pollution concerns to personnel in the city who can take appropriate action to address stormwater pollution issues. The Action Center may be contacted by phone at (405) 366-5396 or by email at, Action.Center@NormanOK.gov. A log of all referred stormwater pollution complaints will be maintained by the Engineering Division. This BMP target goal to receive and respond to citizen complaints has been increased from 50% response to 90% response.

4.1.4 Stormwater Public Meetings

Public meetings that sought public input were completed during the previous permit term. Additional meetings will be scheduled as needed to address any future stormwater issues. Discussion of the Lake Thunderbird TMDL Study and the City of Norman TMDL Compliance and Monitoring Plans will also be incorporated into these meetings and the Public Involvement MCM in general. At least one meeting will be held annually. The addition of TMDL information constitutes a change for this BMP in the 2016-2020 permit cycle.

4.1.5 Earth Day Public Education Event

An Earth Day booth will continue to be set up every year in the month of April in cooperation with the Environmental Services Division and the Parks & Recreation Department. It will continue to encourage public participation in a learning day about environmental and natural resources issues and will continue to raise environmental awareness in the general public. The event will continue to improve natural resources and promote the maintenance of a productive and healthy environment. This BMP is unchanged from the previous permit cycle.

4.1.6 Blue Thumb Partnership

A working relationship with the Oklahoma Conservation Commission's Blue Thumb organization and Cleveland County Conservation District has been developed. The City will continue to work with these organizations to distribute educational materials and plan public events. This BMP is unchanged from the previous permit cycle.

4.2 PERMIT REQUIREMENT: Comply with State and Local Public Notice Requirements

Formal legal notice will be provided by the City when taking any action requiring it to do so by law. Informing the public and other stakeholders in the implementation of the SMP is essential for effective Public Education and Public Involvement in the process. The content to be published will be prepared by City staff and published by the City Clerk's office.

4.3 PERMIT REQUIREMENT: Establish or Revise Measurable Goals

This MCM and associated BMPs have been reviewed and appropriate revisions and additions have been made. Target milestones, BMP frequency and persons responsible for implementation are shown in Appendix B.

4.4 PERMIT REQUIREMENT: Assess Your Public Participation and Involvement Program Annually

This MCM and associated BMPs will be reviewed annually. Any required revisions will be made in accordance with the requirements in Permit OKR04.

5.0 MCM-3 ILLICIT DISCHARGE DETECTION ELIMINATION

The following section describes permit requirements and selected BMPs. Additional details for each MCM, including measurable goals, associated BMPs, and responsible parties are found in Appendix B, Table 3.

Part IV.C.3 of Permit OKR04 requires the City to revise its existing illicit discharge detection and elimination program, as necessary. The revision of this program shall be completed within the first year after the effective date of this Permit, then as needed. New elements shall be developed, as necessary, and the City will continue to implement and enforce the program to detect and eliminate illicit discharges into its small MS4, including a dry weather field screening program to identify non-stormwater flows.

5.1 PERMIT REQUIREMENT: Enforce Ordinances to Prohibit Illicit Discharges to Your MS4

5.1.1 Ordinance Prohibiting Discharging and Dumping

City of Norman Ordinance O-0506-76, adopting the Engineering Design Criteria (EDC) was adopted by the City Council in the previous permit term. Section 6000 of the EDC prohibits discharging and dumping of pollutants, and illicit discharges into the MS4. Section 6000 also establishes enforcement actions and penalties for violations of that section. The EDC may be found on the web at:

<http://www.normanok.gov/city/public-works-engineering>

5.1.2 Enforcement Actions

Referrals, spill reports, inspections and sampling may be used to identify violations of City stormwater regulations. Responsible parties identified as violating City stormwater regulations will be notified verbally and in writing. A course of action and time schedule to correct the violation will be developed, and the responsible party will be informed of actions to be taken and possible consequences of non-compliance. In development of a course of action, consideration will be given to the nature and amount of the illicit discharge. If the discharge is determined to cause an unacceptable health or environmental risk, the City may issue an immediate Cease and Desist Order and/or take action to eliminate the discharge. Failure to comply may result in further enforcement action, including fines, suspension of permit issuance, or criminal prosecution.

5.2 REQUIREMENT: Implement Dry Weather Field Screening for Illicit Discharges

5.2.1 Outfall Dry Weather Screening

The outfall screening program will provide visual inspection of outfalls to assess condition and detect illicit discharges, including illegal dumping and connections to the MS4. If an illicit

discharge of unknown source is found, samples will be collected to attempt to characterize the pollutant. A combination of sampling, inspections and use of storm sewer maps will then be used to trace the discharge upstream to its source. A storm sewer system map was completed during the previous permit term. This BMP target goal has been increased from 25% of outfall screening points annually to 90% of outfall screening points annually. Current procedures will be reviewed and updated by January 2017 to ensure compliance with Permit OKR04.

5.2.2 Illicit Discharge Investigations

In addition to identifying illicit discharges, the City will perform inspections of the MS4 to detect illicit connections. These inspections will be done by visually inspecting creeks, channels, manholes, and other accessible parts of the MS4. Smoke testing and dye testing may also be used to aid in investigations. The City of Norman also plans to acquire video camera equipment by the third year of the permit cycle to improve inspection capabilities. This is a new BMP for the 2016-2020 permit term.

5.3 REQUIREMENT: Develop, Maintain and Update a Map of the MS4

5.3.1 MS4 Mapping

A map of the MS4 system was created by the City of Norman GIS Section during the previous term. The map is updated annually.

5.4 REQUIREMENT: Prohibit Non-Stormwater Discharges to the MS4

5.4.1 Engineering Design Criteria

An ordinance prohibiting discharging, dumping, and illicit discharges into MS4 conveyances and that establishes enforcement procedures was completed during the previous permit term and is found in The City of Norman Engineering Design Criteria, Section 6000. The Engineering Design Criteria is incorporated by reference into the City Code of Ordinances.

5.5 REQUIREMENT: Implement a Plan to Detect Non-Stormwater Discharges and Illegal Dumping

5.5.1 Outfall Visual Screening

The outfall screening program will provide visual inspection of outfalls to detect illicit discharges including illegal dumping and connections to the MS4 and record those results. If an illicit discharge of unknown source is found, samples will be collected to attempt to characterize the pollutant. A combination of sampling, inspections and use of storm

sewer maps will then be used to trace the discharge upstream to its source. A storm sewer system map was completed during the previous permit term. This BMP target goal has been increased from 25% of outfall screening points annually to 90% of outfall screening points annually.

5.5.2 MS4 Inspection

An MS4 inspection program will be implemented in conjunction with dry weather field screening and impoundment inspections. The MS4 will be surveyed for any evidence of illicit discharges and needed repairs or maintenance. Open channels will be visually inspected while enclosed conveyances will be inspected by remote camera. 10% of the MS4 system will be inspected each year. This is a new BMP for the 2016-2020 permit term.

5.5.3 Action Center Hotline

The existing Action Center Hotline/Website Link discussed in Section 3 allows the public to report pollution concerns including illicit discharges and dumping to the MS4. Any illicit discharges noted by citizens may be reported to the Action Center call line. This information is then sent to the Public Works Department for investigation and follow-up. A log of all referred illicit discharge complaints will be maintained by the Engineering Division. This BMP target goal to receive and respond to citizen calls has been increased from 50% response to 90% response.

5.6 REQUIREMENT: Inform Employees, Businesses and the Public on the Hazards of Illicit Discharges

5.6.1 Hazardous Waste Public Education

Educational materials regarding proper use and disposal of hazardous wastes will be incorporated into MCM3 Public Education and Outreach.

5.6.2 Household Hazardous Waste Collection Event

The annual household hazardous waste collection coordinated by the Utilities Department Environmental Services Division gives residents a legal and cost-free way to dispose of unwanted household chemicals that cannot be disposed of in the regular trash. This helps prevent dumping of unwanted wastes into the MS4. This event also allows for interaction and education of the public on proper use and disposal of household hazardous wastes.

5.7 REQUIREMENT: Maintain a List of Allowable Non-Stormwater Discharges to the MS4

5.7.1 Engineering Design Criteria

A list of allowable non-stormwater discharges is found in The City of Norman Engineering Design Criteria, Section 6000 and Appendix I of the SMP. City of Norman Ordinance O-0506-76, adopting the Engineering Design Criteria (EDC) was adopted by the City Council in the previous permit term.

**5.8 REQUIREMENT:
Establish or Revise Measurable Goals**

This MCM and associated BMPs have been reviewed and appropriate revisions and additions have been made. Target milestones, BMP frequency and persons responsible for implementation are shown in Appendix B.

**5.9 REQUIREMENT:
Assess Your Illicit Discharge Detection and Elimination Program Annually**

This MCM and associated BMPs will be reviewed annually. Any required revisions will be made in accordance with the requirements in Permit OKR04.

6.0 MCM-4 CONSTRUCTION STORMWATER RUNOFF CONTROL

The following section describes permit requirements and selected BMPs. Additional details for each MCM, including measurable goals, associated BMPs and responsible parties are found in Appendix B, Table 4.

Part IV.C.4 of Permit OKR04 requires the City of Norman to review and revise its existing construction site stormwater runoff control program, as necessary. The revision shall be completed within the first year after the effective date of this Permit, then as needed. The City must develop new elements, as necessary, and continue to implement and enforce the program to reduce pollutants in any stormwater runoff to your MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of stormwater discharges from construction activity disturbing less than one acre must be included in your program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more.

6.1 PERMIT REQUIREMENT: Develop, Implement and Enforce an Ordinance for Erosion and Sediment Control

City of Norman Ordinance O-0506-76, adopting the Engineering Design Criteria (EDC) was adopted by the City Council in the previous permit term. Section 5000 of the EDC contains requirements for erosion and sediment control from construction activities, permitting requirements and enforcement options. The EDC may be found on the City of Norman website at: <http://www.normanok.gov/city/public-works-engineering>

6.2 PERMIT REQUIREMENT: Develop, Implement and Enforce Requirements for Construction Site Operators to Implement BMPs for Erosion and Sediment Control

6.2.1 City of Norman Erosion and Sedimentation Control Requirements

Section 5000 of the EDC contains requirements for BMP installation and maintenance on construction sites including erosion and sedimentation control plans. All construction sites with an earth disturbance area of one acre or larger, or part of a larger common plan of development of one acre or more, are required to obtain a City of Norman Earth Change Permit. The City inspects construction sites issued an Earth Change Permit within 30 days of permit issuance. Problems with construction on residential lots may be referred by City code enforcement, City inspectors and any other City staff for further inspection by the Engineering Division Stormwater Staff.

6.2.2 Earth Change Permit

Earth disturbing activities including developing, grading, land filling and berming are required to obtain a City of Norman Earth Change Permit prior to commencing activity. The Earth Change

Permit allows initial clearing and grading necessary to complete installation of required erosion and sedimentation control BMPs. Ninety percent of sites issued an Earth Change Permit will be inspected within 30 days of permit issuance. This BMP target goal to inspect construction sites within thirty days of permit issuance has increased from 75% of permitted sites to 90% of permitted sites.

6.3 PERMIT REQUIREMENT:

Develop, Implement and Enforce Requirements for Construction Site Operators to Implement Control Measures to Reduce or Eliminate Impacts to Receiving Waters and Control Waste On Site.

6.3.1 City of Norman Construction Stormwater Control Requirements

Section 5000 of the EDC contains requirements for BMP to reduce or eliminate pollutants in stormwater runoff from construction sites. Stormwater management considerations, locations for drainage features and water bodies on and near the construction site must also be submitted before permit issuance.

6.3.2 Site Inspection and Enforcement Procedures

Inspections and referrals for construction sites will be made by Engineering Division Staff with assistance from construction inspectors and code enforcement staff. Inspections will also be conducted in response to citizen complaints. Complaints may be called in to the City via the Action Center line, directly to the Stormwater Pollution Control Staff, or to Code Enforcement. Training for city inspectors will be coordinated through the Municipal Good Housekeeping MCM. The Public Education MCM will provide information on construction site runoff regulations to the public.

Responsible parties identified as violating the provisions of the EDC Section 5000 and/or Section 6000 will be notified verbally. A course of action and time schedule to correct the violation will be developed, and the responsible party will be informed of actions to be taken and possible consequences of non-compliance. In development of a course of action, consideration will be given to the severity of the discharge. If the violation is not resolved within the set time, a Notice of Violation (NOV) will be issued by certified mail listing the violation(s) and setting a time for correction and/or notifying the responsible party to contact the City to discuss correction of the violations. Failure to comply after issuance of an NOV may result in further enforcement action, including fines, water service severance, suspension of permit issuance and city services, or criminal prosecution. If the discharge is determined to cause an unacceptable health or environmental risk, the City may issue an immediate Cease and Desist Order and/or take action to eliminate the discharge. Enforcement procedures, site inspection checklists, inspection control, and the record keeping system were completed in the previous permit term. The Public Works Department policy for enforcement of Sections 5000 and 6000 of the EDC related to construction site erosion control, stormwater runoff and illicit discharges is detailed in the Enforcement

Procedure Guidance Document (Appendix G).

**6.4 PERMIT REQUIREMENT:
Develop, Implement and Enforce Procedures for Site Plan Review**

6.4.1 City of Norman Earth Change Permit Requirements

Section 5000 of the EDC requires submittal, review and approval of an erosion and sedimentation control plan prior to Earth Change Permit issuance for all construction sites with an earth disturbance area of one acre or larger, or those sites part of a larger common plan of development of one acre or more. The required plan must include a project description, existing site conditions, a description of the area to include structures and natural features, stormwater management considerations and BMP descriptions.

**6.5 PERMIT REQUIREMENT:
Implement and Enforce Procedures for Receipt and Consideration of
Information Submitted by the Public**

6.5.1 Action Center Hotline

The existing Action Center Hotline/Website Link discussed in Section 3 allows the public to report pollution concerns including stormwater runoff or erosion and sedimentation control from construction sites. Any stormwater pollution issues on construction sites noted by citizens may be reported to the Action Center call line. This information is then sent to the Public Works Department for investigation and follow-up. A log of all referred illicit discharge complaints will be maintained by the Engineering Division. This BMP target goal to receive and respond to citizen calls has been increased from 50% response to 90% response.

6.5.2 Construction Educational Event

An educational event will be held annually to present stormwater pollution prevention information related to construction site runoff, the City of Norman Earth Change Permit requirements and construction inspection procedures. This event will also allow for public input. This BMP target goal has increased from one educational event annually to two events annually.

**6.6 PERMIT REQUIREMENT:
Develop, Implement and Enforce Procedures for Site Inspection and
Enforcement of Control Measures**

6.6.1 Construction Site Inspection

All active permitted construction sites will be inspected within thirty days of Earth Change Permit issuance and every thirty days thereafter. Records of the permitting and inspection of each site will be maintained and permit violations will be recorded and referred for corrective action. This

BMP target goal to inspect permitted construction sites at least monthly has increased from 75% of permitted sites to 90% of permitted sites.

**6.7 PERMIT REQUIREMENT:
Establish or Revise Measurable Goals**

This MCM and associated BMPs have been reviewed and appropriate revisions and additions have been made. Target milestones, BMP frequency and persons responsible for implementation are shown in Appendix B.

**6.8 PERMIT REQUIREMENT:
Evaluate Appropriateness of BMPs for this MCM**

This MCM will be reviewed annually and the effectiveness of associated BMPs evaluated. Any required revisions will be made in accordance with the requirements in Permit OKR04.

6.9 ADDITIONAL BMPs

6.9.1 Water Quality Protection Zone Ordinance

An ordinance to establish water quality protection zones was adopted in 2011. The ordinance (0-1011-52) requires natural vegetative buffers or a combination of buffers and other BMPs be maintained to protect water quality during and after construction. This is a new BMP for the 2016-2020 permit terms.

6.9.2 TMDL Workshop

An annual workshop will be held to educate the building and development community on the impact of the Lake Thunderbird TMDL on their operations. The workshop will include appropriate methods and BMPs for protection of the Lake Thunderbird watershed. This is a new BMP for the 2016-2020 permit term.

6.9.3 Enhanced Construction Inspection

The City of Norman plans to increase the frequency of construction site inspections by the addition of one additional inspector by FYE 2017. This will allow the City greater oversight and compliance with construction site stormwater requirements with an emphasis being placed on construction sites in the Lake Thunderbird TMDL Study area.

7.0 MCM-5 POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

The following section describes permit requirements and selected BMPs. Additional details for each MCM, including measurable goals, associated BMPs and responsible parties are found in Appendix B, Table 5.

Part IV.C.4 of Permit OKR04 requires the City to revise its existing new development and redevelopment post-construction management program, as necessary. The revision shall be completed within the first year after the effective date of this Permit, then as needed. The City must develop new elements, as necessary, and continue to implement and enforce a program to address stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one (1) acre that are part of a larger common plan of development or sale, that discharge into the small MS4. The program must attempt to maintain pre-development runoff conditions and ensure that controls are in place that would prevent or minimize water quality impacts.

7.1 PERMIT REQUIREMENT: Develop, Implement and Enforce Strategies for Structural and Non-Structural BMPs

7.1.1 City of Norman BMPs and LID

Section 5000 of the Engineering Design Criteria (EDC) contains requirements for operation and maintenance of the MS4 system including drainage, detention and stormwater runoff from pre and post-development activity. The EDC will be reviewed within the first two years of the permit term to identify needed changes or additions. The City of Norman also adopted Ordinance O-1011-52 which establishes a Water Quality Protection Zone (WQPZ) and other post-construction BMPs along streams in the Lake Thunderbird watershed. The ordinance establishes the Wichita/Sedgwick County Stormwater Manual as a guidance document for any structural BMPs implemented.

7.2 PERMIT REQUIREMENT: Develop, Implement and Enforce an Ordinance to Address Post-Construction Runoff

7.2.1 Water Quality Protection Zone Ordinance (WQPZ)

Ordinance O-1011-52 was adopted by the City of Norman Council in 2011. The ordinance establishes standards and requirements for a designated water quality protection zone within the Lake Thunderbird watershed. The WQPZ shall consist of a vegetated buffer strip of land along both sides of a stream and its adjacent wetlands. The buffer width may be modified if structural BMPs are used to achieve an equivalent pollutant removal rate. Implementation of the WQPZ Ordinance is a new BMP for the 2016-2020 permit term.

7.2.2 Manufactured Fertilizer Ordinance

To help protect local surface waters and our drinking water supply, the City of Norman has adopted Ordinance O-1213-34 regulating the use of manufactured fertilizers in 2013. The ordinance is a proactive effort to preserve and protect water bodies within the City of Norman limits including our municipal water supply, Lake Thunderbird. The ordinance limits the use of phosphorus-containing fertilizer and establishes rules for the application of all fertilizers. It also requires commercial applicators to register with the City and provide their customers with information about proper fertilizer use. Implementation of the Manufactured Fertilizer Ordinance is a new BMP for the 2016-2020 permit term.

7.3 PERMIT REQUIREMENT: Review Ordinances and Regulations to Remove Barriers to LID

7.3.1 City of Norman Review of Rules and Regulations Regarding LID

The Engineering Design Criteria (EDC) and other selected City rules will be reviewed within the first two years of the permit term to identify any barriers to implementing low impact development practices. Any identified barriers will be selected for review, amendment or removal. This is a new BMP for the 2016-2020 permit term.

7.4 PERMIT REQUIREMENT: Develop, Implement and Enforce Procedures for Long-term Operation and Maintenance of BMPs

7.4.1 Permanent Stormwater BMP Inspections

Inspection of stormwater detention/retention ponds will be performed to ensure proper function and maintenance, and to screen for illicit discharges. Future BMPs may include installing stormwater treatment devices and incorporation of infiltration and/or filter structures in commercial development and parking lots. O&M of structural BMPs will be the responsibility of property owners or the City, depending on the size and location of the facility. Either the City or the operator of the permanent BMP will conduct inspections at least annually to verify proper operations and maintenance of the structural stormwater quality controls. This BMP is unchanged from the previous permit cycle.

7.5 PERMIT REQUIREMENT: Participate in an Education Program for Developers and The Public About Project Designs That Protect Water Quality and Include LID Strategies

7.5.1 Post-Construction Workshop

An annual workshop will be held to educate the building and development community, as well as the public on the benefits of LID, City of Norman LID requirements and highlight any LID

projects within the City of Norman. This is a new BMP for the 2016-2020 permit term.

**7.6 PERMIT REQUIREMENT:
Establish or Revise Measurable Goals**

This MCM and associated BMPs have been reviewed and appropriate revisions and additions have been made. Target milestones, BMP frequency and persons responsible for implementation are shown in Appendix B.

**7.7 PERMIT REQUIREMENT:
Evaluate the Appropriateness of Identified BMPs**

This MCM will be reviewed annually and the effectiveness of associated BMPs evaluated. Any required revisions will be made in accordance with the requirements in Permit OKR04.

8.0 MCM-6 POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

The following section describes permit requirements and selected BMPs. Additional details for each MCM, including measurable goals, associated BMPs and responsible parties are found in Appendix B, Table 6.

Part IV.C.5 of Permit OKR04 requires the City to review and revise its existing pollution prevention and good housekeeping program, as necessary. The revision shall be completed within the first year after the effective date of this Permit, then as needed. The City must develop new elements, as necessary, and continue to implement and enforce the operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from MS4 operations

8.1 PERMIT REQUIREMENT: Use Training Materials for Your Employee Training Program

8.1.1 Employee Training Materials

Materials for employee municipal stormwater management were developed or obtained during the previous permit cycle. These materials will be updated as required. Training will include identification, reduction, and elimination of pollutant sources from municipal operations. Training materials will include BMPs for construction site erosion control, identifying safer substitutes for materials currently in use and preventing stormwater pollution in runoff from City facilities and activities

8.2 PERMIT REQUIREMENT: Implement a Municipal Employee Training Program to Prevent and Reduce Stormwater Pollution from City Operations

8.2.1 Employee Training Sessions

Employees whose duties include maintenance, repairs and construction will attend one training session annually. This BMP target goal to provide one training session annually has increased from 50% of targeted employees to 75% of targeted employees.

8.2.2 Employee Newsletter

The City of Norman employee newsletter is distributed monthly to all City Employees electronically and in print. The newsletter will be used as part of the employee training program to provide information to all City employees regarding the City SMP. Information provided will cover stormwater pollution prevention related to City operations and the general public. This is a new BMP for the 2016-2020 permit term.

8.3 PERMIT REQUIREMENT:
Maintain a List of City-Owned Industrial Facilities subject to the ODEQ Multi-Sector General Permit or OPDES or NPDES Permits

A list of all City facilities which have the potential to contribute polluted stormwater runoff will be compiled and maintained. Facilities which are subject to the ODEQ Multi-sector General Permit, or OPDES or NPDES Individual Permits will be identified.

8.4 PERMIT REQUIREMENT:
Implement Procedures for Controlling, Reducing or Eliminating the Discharge of Pollutants from City-Owned Paved Surfaces and Outdoor Storage Areas

8.4.1 City Facility Inspection

Inspection and inventory of City facilities will identify operations that contribute to stormwater pollution and develop operational BMPs to reduce or eliminate sources. Procedures and BMPs will be implemented and revised as needed to meet the intent of the General Permit OKR04. This BMP is unchanged from the previous permit cycle.

8.4.2 City Facility Storm Sewer Mapping

As part of the City Facility Inspection Program the storm sewer systems at City facilities will be mapped and all outfalls identified. This BMP will help control and prevent any discharges or spills of pollutants to the MS4 and surface waters. Mapping will begin in permit year 2 and be completed by the end of the permit term. This is a new BMP for the 2016-2020 permit term.

8.5 PERMIT REQUIREMENT:
Implement Procedures to Ensure Flood Management Projects are Assessed for Water Quality Impacts

The City of Norman Engineering Design Criteria and other pertinent rules will be reviews and revised if necessary to ensure that water quality impacts are considered in all flood management projects.

8.6 PERMIT REQUIREMENT:
Implement Inspection and Maintenance for Structural and Non-Structural BMPs to Control Pollutants and Floatables

8.6.1 MS4 Inspection

The City of Norman MS4 inspection program will provide inspection of storm sewer system to assess condition, identify needed maintenance and detect illicit discharges, including illegal dumping and connections to the MS4. A storm sewer system map was completed during the previous permit term. Open channels will be visually inspected while enclosed conveyances

will be inspected by remote camera. 10% of the MS4 system will be inspected each year. This is a new BMP for the 2016-2020 permit term

8.6.2 Detention/Retention Pond Inspection

Inspection of stormwater detention/retention ponds will be performed to ensure proper function and maintenance, and to screen for illicit discharges. Future BMPs may include installing stormwater treatment devices and incorporation of infiltration and/or filter structures in commercial development and parking lots. O&M of structural BMPs will be the responsibility of property owners or the City, depending on the size and location of the facility. Either the City or the operator of the permanent BMP will conduct inspections at least annually to verify proper operations and maintenance of the structural stormwater quality controls. This BMP is unchanged from the previous permit cycle.

8.7 PERMIT REQUIREMENT: List and Define the BMPs Implemented for this MCM

8.7.1 BMPs for City Operations

Selected BMPs for City operations including facility maintenance, parks and landscape maintenance, water and sewer line maintenance, and MS4 maintenance will be implemented. The goal of these BMPs will be to reduce or eliminate sediment, fertilizers and other pollutants caused by City operation in stormwater runoff to the MS4. Additional details for each MCM, including measurable goals, associated BMPs and responsible parties are found in Appendix B.

8.7.2 Street Sweeping

Street sweeping will prevent debris and sediments from blocking storm drains. The existing program consists of two operators and two sweepers. At least one additional sweeper will be added during the permit term. This is a new BMP for this permit term.

8.7.3 Emergency Response Spill Kits

Emergency response spill kits will be furnished at City facilities and provided in vehicles with a spill risk. This measure will help ensure that spills are properly contained and mitigated.

8.7.4 Employee TMDL Education

Educational materials regarding the Lake Thunderbird TMDL will be incorporated into City employee educational materials and training sessions.

**8.8 PERMIT REQUIREMENT:
Establish or Revise Measurable Goals**

This MCM and associated BMPs have been reviewed and appropriate revisions and additions have been made. Target milestones, BMP frequency and persons responsible for implementation are shown in Appendix B.

**8.9 PERMIT REQUIREMENT:
Evaluate the Appropriateness of Identified BMPs**

This MCM will be reviewed annually and the effectiveness of associated BMPs evaluated. Any required revisions will be made in accordance with the requirements in Permit OKR04.

9.0 MONITORING RECORDKEEPING AND REPORTING

The City of Norman will develop new elements as needed and continue to implement its SMP to reduce the discharge of pollutants to the MS4. A Review of this document has been completed with revisions and updates incorporated. This review process will be repeated as needed to ensure compliance with General Permit OKR04 and the CWA.

9.1 PERMIT REQUIREMENTS

9.1.1 Stormwater Management Program Review

The City of Norman will conduct an annual review of the SMP in conjunction with preparation of the annual report required under PART V.C. of the permit.

9.1.2 Stormwater Management Program Update

The City of Norman may change the SMP during the life of the permit in accordance with the following procedures:

- a. Changes adding (but not subtracting or replacing) components, controls, or requirements to the SMP may be made at any time upon written notification to the Director.
- b. Changes replacing an ineffective or unfeasible BMP specifically identified in the SMP with one or more alternate BMP may be requested at any time. Unless denied by the Director, changes proposed in accordance with the criteria below shall be deemed approved and may be implemented 60 days from submittal of the request. If your request is denied, the Director will send you a written response giving a reason for the decision. Your modification requests must include the following:
 - (1) An analysis of why the BMP is ineffective or infeasible (including cost prohibitive)
 - (2) Expectations on the effectiveness of the replacement BMP
 - (3) An analysis of why the replacement BMP is expected to achieve the goals of the BMP to be replaced.

9.1.3 Retain Records of All Monitoring Information

The City of Norman must include all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, copies of Discharge Monitoring Reports ("DMR"), a copy of the OPDES permit, and records of all data used to complete the NOI for this permit, for a period of at least

three years from the date of the sample, measurement, report or application, or for the term of this permit, whichever is longer. This period may be extended by request of the Director at any time.

9.1.4 Submit Records

The City of Norman must mail the completed DMR reports, if required, to the DEQ along with the annual report. The City must retain a description of the SMP required by this permit (including a copy of the permit language) at a location accessible to the Director. The City must make records, including the NOI and the description of the SMP, available to the public.

9.1.5 Annual Reports

The City of Norman must submit an annual report for each permit year to the Director of the DEQ. Mail the report to the address specified in PART II.C of the permit. The annual report must be received within 90 days of the end of the fiscal year; September 1. Each report must contain information regarding activities of the previous permit year. Each report must include:

- a. The status of compliance with permit conditions, an assessment of the appropriateness of the identified best management practices, progress toward achieving the statutory goal of reducing the discharge of pollutants to the Maximum Extent Practicable ("MEP"), and progress toward achieving the measurable goals for each of the minimum control measures.
- b. Results of information collected and analyzed, if any, during the reporting period, including monitoring data used to assess the success of the program at reducing the discharge of pollutants to the MEP.
- c. A summary of the stormwater activities the MS4 Operator plans to undertake during the next reporting cycle (including an implementation schedule).
- d. Proposed changes to the SMP, including changes to any BMPs or any identified measurable goals that apply to the program elements.
- e. Description and schedule for implementation of any additional BMPs or monitoring that may be necessary to ensure compliance with any applicable TMDL.
- f. Notice that the MS4 Operator is relying on another government entity to satisfy some permit obligations (if applicable) and a copy of the agreement with that entity.

The City of Norman has opted not to utilize the optional permit requirements for municipal construction activities.

10.0 REFERENCES

City of Norman, 2006. *MS4 Phase II Annual Report*. Public Works, Norman, OK.

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**CITY OF NORMAN
STORMWATER MANAGEMENT PROGRAM
FOR PHASE II MS4 COMPLIANCE
2016 TO 2020**

Appendix B



MCM - 1 Public Education**City of Norman Stormwater Management Program**

BMP	Goal	Implementation Date	Frequency
Distribute informational brochure with utility bills	One brochure to 75% of all utility accounts	1-Feb-16	Annually
Add storm water pollution prevention information to city web site	Information posted	1-Feb-16	Annual review/update
Operate Action Center Hotline	Receive and respond to 90% of legitimate complaints	1-Feb-16	Annually
Public stormwater education event	Coordinate with Environmental Services for Earth Day event	1-Feb-16	Annually
Educational event & materials for schools	Supply material to 2 elementary schools annually and participate in Public Works Week event at local school	1-Feb-16	Annually
Newspaper ads	Quarterly ads in local paper with water quality, pollution prevention or watershed protection information	1-Feb-16	Annually
Develop SWPP brochure for fertilizer use	Distribute to 75% of all utility accounts	1-Jul-16	Once
Develop Spanish language SWPP brochure	Develop Spanish language storm water pollution prevention informational materials	1-Jul-16	Once
Develop educational materials on the Lake Thunderbird TMDL	Provide educational material to the public about water quality impairments in Lake Thunderbird and the Lake Thunderbird TMDL	1-Jul-16	Annually

Responsible Person(s) for performance of these BMPs:

Carrie Evenson
Stormwater Engineer

MCM - 2 Public Participation and Involvement**City of Norman Stormwater Management Program**

BMP	Goal	Implementation	Frequency
Establish web site link for receipt of email regarding storm water issues	Respond to 90% of all emails received	1-Feb-16	Annually
Environmental Control Advisory Board	A storm water quality representative will meet with ECAB quarterly to provide information on storm water pollution issues.	1-Feb-16	Annually
Operate Action Center Hotline	Receive and respond to 90% of legitimate complaints	1-Feb-16	Annually
Public meeting for storm water issues	Hold one public meeting annually	1-Feb-16	Annually
Public Storm Water Education Event	Coordinate with Environmental Services for one event annually	1-Feb-16	Annually
Blue Thumb/Oklahoma Conservation Commission Partnership	Maintain working relationship with Blue Thumb and coordinate for one for one storm water public education event annually	1-Feb-16	Annually
Lake Thunderbird TMDL public meeting	Hold one public meeting annually for education and discussion of the Lake Thunderbird TMDL	1-Jul-16	Annually

Responsible Person(s) for performance of these BMPs:

Carrie Evenson
Stormwater Engineer

MCM - 3 Illicit Discharge Detection and Elimination**City of Norman Stormwater Management Program**

BMP	Goal	Implementation Date	Frequency
Operate Action Center Hotline	Receive and respond to 90% of complaints received.	1-Feb-16	Annually
Household Hazardous Waste Collection Day	Provide annual event for the public to drop off unwanted household waste and report amount of waste collected	1-Feb-16	Annually
Dry Weather Field Screening	90% of visual screening points inspected each year	1-Feb-16	Annually
Illicit Discharge Investigations	Perform source investigation on all identified illicit discharges and connections	1-Feb-16	Annually
Enforcement Actions	Take enforcement actions as allowed by City regulations where responsible parties for illicit discharges are identified	1-Feb-16	Annually
Inspect MS4 System	Visually inspect open channels and camera enclosed conduits. Inspect 10% of system each year.	1-Jul-18	Annually

Responsible Person(s) for performance of these BMPs:

Carrie Evenson
Stormwater Engineer

MCM - 4 Construction Stormwater Runoff Control**City of Norman Stormwater Management Program**

BMP	Goal	Implementation Date	Frequency
Earth Change Permit	Permit 90% of all earth disturbing operations over 1 acre in size within 30 days of permit issuance	1-Feb-16	Annually
Construction site inspection	Inspect 90% of sites within 30 days of permit issuance and at least monthly. Perform enforcement actions as needed	1-Feb-16	Annually
Education event for construction/development	Hold two events for developers, construction crews, utility contractors and engineering companies	1-Feb-16	Annually
Water Quality Protection Zone Ordinance	Implement requirements of the Water Quality Protection Zone Ordinance including establishment and maintenance of streamside buffers	1-Feb-16	Annually
Lake Thunderbird TMDL building/development workshop	Hold annual workshop for the building and development community on the Lake Thunderbird TMDL compliance requirements and Lake Thunderbird watershed protection	1-Jan-17	Annually

Responsible Person(s) for performance of these BMPs:

Carrie Evenson
Stormwater Engineer

MCM - 5 Post-Construction Stormwater in New/Redevelopment City of Norman Stormwater Management Program

BMP	Goal	Implementation Date	Frequency
Review/ammend City engineering and development regulations	Remove any barriers to Low Impact Development (LID)	1-Jul-17	Review every 5 years
Implement Water Quality Protection Zone (WQPZ) ordinance	Establish water quality protection zones in riparian areas	1-Jul-16	Annually
Fertilizer Ordinance	Implement the Manufactured Fertilizer Ordinance to educate the public and commercial fertilizer applicators on proper fertilizer use	1-Jul-16	Annually
Storm water impoundment inspection	Inspect 50% of storm water impoundments	1-Jul-16	Annually
Post-Construction Events	Include information on post-construction BMPs in construction/development events listed for MCM 4	1-Jul-16	Annually

Responsible Person(s) for performance of these BMPs:

Carrie Evenson
Stormwater Engineer

MCM - 6 Good-Housekeeping for Municipal Operations City of Norman Stormwater Managemet Program

BMP	Goal	Implementation Date	Frequency
Develop employee training program	Provide one training session for 75% of targeted employees	1-Jan-17	Annually
Street Sweeping	Sweep at least 2500 curb miles annually to prevent sediment, debris and pollutants from entering	1-Jul-16	Annually
City facility storm water inspections	Inspect half of all facilities identified as potential sources of storm water pollution	1-Jul-16	Annually
Map City facility storm sewer systems	Locate all SS inlets and outfalls at two City facilities every year	1-Jan-17	2 facilities annually until complete
Spill Kits	Provide spill containment kits to 25% of City vehicles	1-Jul-16	Annually
Employee Newsletter	Distribute storm water pollution prevention information to City Employees through the newsletter once each quarter	1-Feb-16	Annually
Employee education on Lake Thunderbird TMDL	Incorporate Lake Thunderbird TMDL requirements into City employee training events.	1-Jul-16	Annually
Implement BMPs for City Operations	Implement BMPs for parks and landscape maintenance, water and sewer line maintenance, and MS4 maintenance	1-Jan-17	Annually

Responsible Person(s) for performance of these BMPs:

Carrie Evenson
Stormwater Engineer



**CITY OF NORMAN
STORMWATER MANAGEMENT PROGRAM
FOR PHASE II MS4 COMPLIANCE
2016 TO 2020**

Appendix F





NORMAN 2025 LAND USE AND TRANSPORTATION PLAN

C L A R I O N

RESOLUTION

R-0405-39

A RESOLUTION OF THE COUNCIL OF THE CITY OF NORMAN,
OKLAHOMA ADOPTING THE NORMAN 2025 LAND USE AND
TRANSPORTATION PLAN.

1. WHEREAS, the Council of the City of Norman has relied upon a land use plan to guide development decisions throughout the City for decades; and
2. WHEREAS, the City Council has contracted with Clarion Associates to prepare a new land use and transportation plan for the City; and
3. WHEREAS, Clarion Associates, in cooperation with the Norman Future Committee, City Staff and the citizens of Norman, has prepared and recommended adoption of the NORMAN 2025 Land Use and Transportation Plan; and
4. WHEREAS, the City Council deems that the goals and policies stated in the NORMAN 2025 Land Use and Transportation Plan are in keeping with the best long term interests of both current and future citizens of Norman.

NOW, THEREFORE BE IT RESOLVED BY THE COUNCIL OF THE CITY OF NORMAN, OKLAHOMA:

5. That the NORMAN 2025 Land Use and Transportation Plan and modifications to the Adoption Draft Plan as outlined in Exhibit "A", attached hereto and made a part hereof, be adopted to direct future development and land use decisions within the City of Norman; and
6. That the City Staff be directed to develop programs and assist the City Council in establishing priorities which will serve to aid in the implementation of the NORMAN 2025 Plan; and
7. That an annual development report be prepared by City Staff for review by the Planning Commission relative to the NORMAN 2025 Land Use and Transportation Plan; and
8. That, approximately every five years, the City Council appoint a citizen committee to conduct a thorough review and update of the NORMAN 2025 Land Use and Transportation Plan; and
9. That the NORMAN 2025 Land Use and Transportation Plan shall become effective on December 16, 2004.

PASSED AND ADOPTED this 16th day of November, 2004.

(Mayor)

ATTEST:

(City Clerk)

EXHIBIT "A"

1. Add an additional policy to Goal 4, Economic Stability and Enhancement (Page 11):
"Policy 11. Prepare and adopt design standards for commercial development in order to improve the appearance of the City's commercial corridors, help attract other high-quality development, and improve the city's economic foundation."
2. Delete conditions 3 and 4 in Special Planning Area 3 and replace them with a new condition 3 that states, "Convert the site from industrial to commercial use by either adaptive re-use of the existing old feed mill and accessory buildings or by demolition of the existing structures, so as to create a unified architectural appearance, especially on all building facades facing public streets."
3. As alternative wording for NORMAN 2025 Plan Amendment criteria, the third paragraph of Amendment Procedures on page 33 of the NORMAN 2025 Adoption Draft Plan would be deleted as written and replaced with the following: "Plan amendments may be submitted at any time. Staff will prepare a complete analysis of the impact of the proposed amendment and will identify all affected portions of the Plan. Staff will prepare a quarterly summary report to the City Council as a review of the last three-month and year to date impact of any and all Plan Amendments. Additionally, as a part of the required annual review, staff will prepare a Plan Amendment annual summary and analysis of all affects to the Plan."
4. It is proposed that this language would replace the present wording limiting Plan Amendments to only occur on a quarterly basis. If, at the time of the first annual review, the City Council felt that the first year of activity demonstrated a need to revisit the concept of limiting Plan Amendments to only every three months, that issue could be considered as an amendment to the procedures at that time.
5. Issue (7) addresses inconsistencies with transitions from urban to rural properties. Based upon existing zoning and development in the area, the areas north of Tecumseh Road and west of 12th Avenue NE are proposed to be amended on the Adoption Draft NORMAN 2025 Plan Map to reflect land uses consistent with that zoning, resulting of the replacement of the Country Residential Area with Suburban Residential.

ACKNOWLEDGEMENTS

Mayors

Harold Haralson
Ron Henderson – Past

City Council

Kevin Hopkins	Ward 1
Richard Stawicki	Ward 2
Jonathan Leavey	Ward 3*
Cindy Rosenthal	Ward 4
Rachel Butler	Ward 5
David Hopper	Ward 6
Doug Cubberley	Ward 7*
Mandy Haws	Ward 8*
David Ray	Ward 4 – Past Member

*NORMAN 2025 Council Steering Committee
Members

Planning Commission

Michael J. LaBrie – Chair
Edward Adwon
Susan Ferguson
Al Griffin
Paul Minnis
David Nordyke
Duane Olinger
Fred Walden
Roy Walker

Harold Rogers – Past Member
James Howard – Past Member
Gary Bradley – Past Member

Norman Future Committee

The City would like to acknowledge the many citizens who took the time away from their busy lives to participate in this lengthy process. The NORMAN 2025 Land Use and Transportation Plan would not be possible without the dedication and vision of the Norman Future Committee members, and their interest in retaining the high quality of life enjoyed by the citizens of Norman.

NORMAN 2025 TEAM

CONSULTANTS

CLARION ASSOCIATES

Benjamin A. Herman, AICP – Project Manager
C. Gregory Dale, FAICP
Christopher J. Duerksen
Donald Elliott, AICP
Lesli K. Ellis, AICP

PRESLEY AND ASSOCIATES

Leo Presley

CITY STAFF

CITY ADMINISTRATION

Brad Gambill, Interim City Manager
Richard Massie, Director of Planning and Community Development

PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT

Development Division

Patrick Copeland, Project Manager
Jane Hudson, Planner II

Revitalization Division

Linda Price, Manager
Jolana McCart, Administrative Technician IV

Administrative Division

Eva Perry, Administrative Technician IV
Wayne Stenis, Planner II

Current Planning Division

Doug Kosciński, Manager

Geographic Information System Division

Joyce Green, Manager
Rick Hoffstatter, GIS Analyst I
Larry Knapp, GIS Analyst II
Scott Woodruff, GIS Analyst I

OTHER DEPARTMENTS

Parks and Recreation Department

Jud Foster, Director
Jim Polston, Parks Planner

Public Works Department

Jimmy Berry, Director

Utilities Department

Mark Daniels, Utilities Engineer
Michelle Matthews, GIS Utilities Analyst

Information Systems

Jeff Champeau, PC Support Technician
Glenn Lauderdale, Internet Services Technician

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I. Plan Background

INTRODUCTION

The NORMAN 2025 Land Use and Transportation Plan is the long-range plan for the future physical development of the City. It represents a desired land use pattern in response to anticipated growth rates, public utility constraints, and environmental conditions. The Plan embodies a conscious decision by the City to anticipate and make choices about Norman's future. It provides a vision for the future and a foundation for managing the City's growth.

This Plan is the culmination of a process built on a dual foundation of strong citizen involvement and a solid understanding of the factual realities of growth trends, patterns, and constraints.

For a more detailed discussion of the technical elements of the NORMAN 2025 Land Use and Transportation Plan, the following technical reports are available:

- Development Capacity Technical Memorandum
- Land Demand Technical Memorandum
- Land Use Plan Implementation Techniques Technical Memorandum

COMMUNITY INVOLVEMENT

This Plan represents the values of the Norman citizenry. An intensive effort was made to involve citizens throughout the City in planning for Norman's future. The Norman Future Committee (NFC) was appointed by the City to act as an advisory group for citizens' views at key points throughout the planning process. The NFC met numerous times in settings that were open to the public. From October 2003 through October 2004 the NFC met a total of eight times. The citizen involvement process also included a citywide survey in which over 500 citizens participated. In addition, the local cable company broadcast most of the *NORMAN 2025 Land Use and Transportation Plan* meetings with citizens and elected officials.

PLANNING ISSUES

The community involvement component contributed greatly to gaining a balanced view of what is important to the citizens of the City. Clearly there is a strong appreciation for the quality of life enjoyed within Norman. Many believe it is important for the City to control the quality and location of growth, to discourage sprawl and ensure that adequate public facilities are available at the time of development. Particular emphasis was noted on the importance of design aspects of commercial and industrial development, which citizens would like to see occur in a more attractive manner.

Citizens remain supportive of restricting development in rural areas, and maintaining the 10-acre minimum lot size in the Country Residential area. Strong opposition to development in the flood plains, particularly within the Ten-Mile Flats flood plain and a desire for a significant Community Separator along much of the northern boundary of the city, developed in tandem with these discussions.

FOUNDATION OF EXISTING LAND USES

The City of Norman contains 121,134 acres of land (189.3 square miles). Of this land, almost 61,000 acres (slightly more than 50%) are developed or unavailable for development and are classified according to the following characteristics:

Developed land	31,344 acres	26%
(including institutionally developed land)		
Open space, lakes, and floodplains	17,823 acres	15%
(including Lake Thunderbird)		
Partially developed land (developed portion only)	4,320 acres	4%
Institutional land	1,070 acres	1%
(vacant, but unavailable for private development)		
Right of way	6,342 acres	5%

The developed land uses include residential and non-residential development. For purposes of this analysis, it is assumed that all land classified as open space, lakes, right-of-way, and institutional land is not developable. Approximately 50 percent of Norman's land area (60,237 acres) is vacant or only partially developed. Much of this undeveloped land (approximately 45,000 acres) is located in the western area (Ten-Mile Flats) and eastern area (from about 48th Avenue East to the City limits). These parts of the City lack readily available infrastructure such as water, sewer and an urban street network. This lack of infrastructure and remoteness make these areas extremely costly to develop, service, and maintain with urban systems. In addition, a significant portion of the vacant land is impacted by environmental or man-made constraints.

DEVELOPMENT CAPACITY

Development Capacity is an analysis of the undeveloped areas within the City, their suitability to be urbanized, and is designed to calculate the amount of different types of land uses that can be accommodated by the Land Use Plan. The analysis is made by preparing a summary of the proposed land uses within the City of Norman and, from that summary, by calculating the "capacity" of the vacant lands to accommodate future development. In preparing the future land use plan for the City, this analysis is needed to determine if the proposed Plan will allow the projected demands for land to be met. Multipliers derived from this analysis determine the degree of market flexibility provided for in the Land Use Plan.

The Development Capacity calculations are made through a process that first focuses on quantifying the amount of vacant, undeveloped land within the City by geographic location through an analysis of what lands are already developed. The second step further reduces the "quantity" of vacant, undeveloped lands through a qualitative process that involves determining the "suitability" of the land to support and sustain an urban environment. This step of the analysis was first used in development of NORMAN 2020 and is based to a large degree on work completed for the *Norman Greenway Study* undertaken through the College of

Architecture at the University of Oklahoma in 1994. This qualitative process utilizes primarily three groups of categories for analysis. Using geomorphology (bedrock geology and subsurface hydrology), physiography (flood plains and slopes) and soils (percolation rates, shrink/swell potential, fertility, erosion potential and depth to bedrock) the process identifies development constraints. This information was central to the identification of Growth Area boundaries and was integral to both the NORMAN 2020 Plan and this subsequent NORMAN 2025 Land Use and Transportation Plan. Based on a combination of existing zoning and proposed land uses, the development capacity of the vacant land is calculated. This analysis reveals that of Norman's approximately 60,237 acres of vacant land, only about 49,000 are unencumbered by development constraints. Of these 49,000 acres of vacant land, only about 8,000 acres are suitable for development at urban densities. Although preliminary numbers for capacity based upon NORMAN 2020 were prepared early in the planning process, only after preparation of a draft NORMAN 2025 Land Use and Transportation Plan could we prepare accurate calculations of development capacity. Those calculations reflect that the NORMAN 2025 Land Use and Transportation Plan will accommodate the following:

Land Use Type	Capacity
New Residential Units at urban densities	Over 22,000 units
New Office Construction	Almost 150 acres
New Commercial Construction	Over 600 acres
New Industrial Construction	Over 1,100 acres
Mixed-Use Development	Almost 800 acres
New Residential Units on Residential Estates	Over 3,000 units
New Residential Units on Large Lots	Over 5,000 units

Although not excessive, these numbers show that NORMAN 2025 provides adequate development capacity to accommodate the demand projected in the Development Demand Technical Memorandum.

FUTURE LAND DEMAND

An assessment of past, present and future population and employment growth is the foundation for projecting the amount of land needed over the next 20 years for new residential, commercial, industrial and institutional (recreational and educational) uses. These projections and land demand forecasts were prepared as part of the *NORMAN 2025 Land Demand Analysis*, a technical report prepared by the consulting team that assisted the City with preparation of this Plan. The methodology for this analysis follows a three-step process: 1) determine future employment in Norman (as a percent of Cleveland County projected employment) for private sector employment (retail commercial, offices, and industry) and estimate land requirements to accommodate the projected employment; 2) determine the number of future households and dwelling units in the City, by type (i.e., single family, multi-family, etc) and estimate land requirements to accommodate projected residential development; and 3) estimate land requirements for public sector uses, specifically schools and parks, based on projected population growth. The primary resource for the employment and population forecasts used in the *Land Demand Analysis* is data provided by Woods & Poole Economists, Inc., as excerpted from the *2003 Data Pamphlet: Cleveland County, Oklahoma*. The complete *NORMAN 2025 Land Demand Analysis* is available at the City of Norman website and from the City's Planning and Community Development Department.

Non-Residential Land Use Demand

The City's private sector employment is projected to rise from 45,438 in 2004, to 63,272 employees by 2025. There will also be continuing future emphasis on retail sales and services in the City. By 2025, it is estimated that almost 75% of all jobs in the private sector will be in the "retail trade" or "services" employment sectors. Based on the City's employment projections through 2025, a total of 1,041 acres will be needed to accommodate office, commercial and industrial growth demands over the 20-year planning period. Of these acres, 621 acres (60%) are projected to be consumed by retail uses, 198 acres (19%) by industrial/warehousing and 221 acres (21%) by office uses (Table 1).

Table 1
NONRESIDENTIAL LAND DEMAND BY LAND USE -- 2004-2025
CITY OF NORMAN

	2004 - 2010	2011 - 2015	2016 - 2020	2021 - 2025	TOTAL
OFFICE USES					
EMPLOYMENT INCREASE	1,761	1,598	1,718	1,842	6,919
FLOOR AREA GENERATED	528,300	479,400	515,400	552,600	2,075,700
NET ACRES CONSUMED	56.3	51.0	54.9	58.8	221.0
RETAIL USES					
EMPLOYMENT INCREASE	2,152	1,974	2,143	2,317	8,586
FLOOR AREA GENERATED	1,076,000	987,000	1,071,500	1,158,500	4,293,000
NET ACRES CONSUMED	155.8	142.9	155.1	167.7	621.6
INDUSTRIAL/WAREHOUSING USES					
EMPLOYMENT INCREASE	625	543	569	592	2,329
FLOOR AREA GENERATED	500,000	434,400	455,200	473,600	1,863,200
NET ACRES CONSUMED	53.1	46.2	48.4	50.3	198.0

SOURCE: NORMAN 2025 Land Demand Analysis

Residential Land Use Demand

Population and household projections show that Norman's population will increase by 34,046 people, rising from 103,101 in 2004 to 137,147 by 2025. The number of households in the City is projected to increase to 53,897 by 2025, an increase of 15,063 households (Table 2). Based on these population and household projections, it is estimated that Norman will have a demand for approximately 13,066 new housing units over the next 20 years. Of this number, it is estimated that 10,032 units (77%) will be single-family, 1,742 (13%) will be apartments and the remaining 1,291 (10%) will be a combination of duplexes, triplexes, quadriplexes and townhouses (Table 3).

Table 2
POPULATION FORECASTS -- 2000-2025
CITY OF NORMAN

	2000	2004	2010	2015	2020	2025
AVERAGE HOUSEHOLD SIZE IN CITY	2.31	2.29	2.29	2.31	2.34	2.39
NUMBER OF HOUSEHOLDS	38,834	42,199	45,964	48,946	51,586	53,897
POPULATION IN HOUSEHOLDS	89,623	96,747	105,404	112,949	120,779	129,074
POPULATION IN GROUP QUARTERS	6,071	6,354	6,804	7,203	7,625	8,073
TOTAL CITY POPULATION	95,694	103,101	112,208	120,152	128,404	137,147

Source: NORMAN 2025 Land Demand Analysis

* Group quarters include institutionalized persons and persons in dormitories and other nonhousehold living arrangements.

Table 3
HOUSING FORECAST -- 2025
CITY OF NORMAN

	2004			2025	
	Number	Percent	Increase %	Increase	Total
Single-Family Detached	27,270	61.25%	71.60%	9,356	36,625
Mobile Home	1,971	4.43%	5.18%	676	2,648
SUBTOTAL SINGLE-FAMILY	29,241	65.67%	76.78%	10,032	39,273
Two-Family (Duplex)	1,405	3.16%	2.13%	279	1,684
Triplex/Quadriplex	3,225	7.24%	4.90%	640	3,865
Townhouses	1,878	4.22%	2.85%	373	2,251
Multi-Unit (5+)	8,776	19.71%	13.33%	1,742	10,518
SUBTOTAL MULTI-FAMILY	15,283	34.33%	23.22%	3,034	18,317
TOTAL	44,524	100.00%	100.00%	13,066	57,590

Source: NORMAN 2025 Land Demand Analysis

Using information on dwelling units and average lot area per dwelling unit figures, projections for residential land acreage demand are estimated in Table 4. Of the 13,065 total new dwelling units projected through 2025, 84% are anticipated to be built in the urban area and 16% on larger lots in the rural areas. Of those to be built in the urban area, 7,952 are projected to be single-family and will require approximately 2,396 acres. An additional 293 acres are projected to be required for the over 3,000 anticipated multi-family units. Additionally, another 2,080 single-family units are projected for the rural areas. Of those, about 400 will be built on 2-acre residential estates with the remaining over 1600 units being built on mostly 10-acre parcels.

Table 4
RESIDENTIAL LAND DEMAND BY LAND USE -- 2004-2025
CITY OF NORMAN

	2004 - 2010	2011 - 2015	2016 - 2020	2021 - 2025	TOTAL
COUNTRY RESIDENTIAL					
NEW HOUSING UNITS	588	406	359	311	1,664
NET ACRES IN LOTS	5,880.0	4,060.0	3,590.0	3,110.0	16,640.0
NET ACRES CONSUMED	6,174.0	4,263.0	3,769.5	3,265.5	17,472.0
VERY LOW DENSITY RESIDENTIAL					
NEW HOUSING UNITS	147	101	90	78	416
NET ACRES IN LOTS	294.0	202.0	180.0	156.0	832.0
NET ACRES CONSUMED	323.4	222.2	198.0	171.6	915.2
LOW DENSITY RESIDENTIAL					
NEW HOUSING UNITS	2,810	1,941	1,718	1,483	7,952
NET ACRES IN LOTS	677.4	467.8	414.2	357.4	1,916.8
NET ACRES CONSUMED	846.8	584.8	517.7	446.7	2,396.0
MEDIUM DENSITY RESIDENTIAL					
NEW HOUSING UNITS	456	315	279	241	1,291
NET ACRES IN LOTS	55	38	34	29	156
NET ACRES CONSUMED	65.8	45.5	40.3	34.8	186.3
HIGH DENSITY RESIDENTIAL					
NEW HOUSING UNITS	615	426	376	325	1,742
NET ACRES IN LOTS	34.2	23.7	20.9	18.1	96.8
NET ACRES CONSUMED	37.6	26.0	23.0	19.9	106.4

SOURCE: Ross + Associates 2004

Summary of Land Demand Forecasts

Table 5 summarizes all of the land demand forecasts. During the 20-year planning period, over 22,600 acres of land (35.4 square miles) are forecasted to be consumed by the construction of residences and businesses, and through public acquisitions for parks and schools. These figures represent only the actual land projected to be occupied by new construction and development. Additional land also will be “consumed” by the development of subdivisions and other projects but will be vacant at any given point in time, awaiting building construction.

Table 5

**SUMMARY--NET LAND DEMAND BY LAND USE -- 2004-2025
CITY OF NORMAN**

	2004 - 2010	2011 - 2015	2016 - 2020	2021 - 2025	TOTAL
NONRESIDENTIAL PRIVATE SECTOR					
OFFICE USES	56.3	51.0	54.9	58.8	221.0
RETAIL USES	155.8	142.9	155.1	167.7	621.6
INDUSTRIAL/WAREHOUSING USES	53.1	46.2	48.4	50.3	198.0
<i>SUBTOTAL--PRIVATE SECTOR</i>	265.2	240.1	258.4	276.9	1,040.6
PUBLIC SECTOR					
PARKS	269.5	69.9	74.3	78.7	492.3
SCHOOLS*	-	-	20.0	20.0	40.0
<i>SUBTOTAL--PUBLIC SECTOR</i>	269.5	69.9	94.3	98.7	532.3
RESIDENTIAL					
COUNTRY RESIDENTIAL	6,174.0	4,263.0	3,769.5	3,265.5	17,472.0
VERY LOW DENSITY RESIDENTIAL	323.4	222.2	198.0	171.6	915.2
LOW DENSITY RESIDENTIAL	846.8	584.8	517.7	446.7	2,396.0
MEDIUM DENSITY RESIDENTIAL	65.8	45.5	40.3	34.8	186.3
HIGH DENSITY RESIDENTIAL	37.6	26.0	23.0	19.9	106.4
<i>SUBTOTAL--RESIDENTIAL</i>	7,447.6	5,141.5	4,548.4	3,938.5	21,076.0
TOTAL	7,982.2	5,451.5	4,901.1	4,314.1	22,648.8

* New schools only, not including expansion of existing schools or replacement of aging and obsolete schools.

II. Land Use & Transportation Plan

INTRODUCTION

The NORMAN 2025 *Land Use and Transportation Plan* represents a long-range 20-year vision for the physical development of the City. It is grounded in planning goals and policies that set the general direction of the Plan. These *Goals and Policies* articulate a basic desire by the City to manage the location of its growth in a fiscally and environmentally responsible manner, while encouraging healthy economic development. In order to accomplish these goals, the City is organized into geographic *Growth Areas*, based on factors related to infrastructure delivery and suitability for urban development. These growth areas, in turn, serve as a framework for the designation of a future *Land Use Plan*. This *Land Use Plan* recommends future land use categories for all property in the City. A *Transportation Plan* has been prepared which is consistent with the Growth Areas and supports the Land Use Plan.

The Plan sets the stage for the City to be proactive in the way it manages growth. Through the use of Growth Areas, the Plan establishes priority areas for urban development based on existing or proposed public facilities. The Plan depicts a healthy development balance between the eastern and western areas of the City, with significant areas identified for future urban densities. It identifies areas suitable for industrial development and sets the stage for providing that these areas be protected from conversion to other uses. It also establishes very low densities for areas that are environmentally sensitive such as the Garber-Wellington aquifer recharge area and the Ten-Mile Flats floodplain, so as to minimize the numbers of dwellings located in those areas. It further protects the City's environmentally sensitive areas by limiting development in the 100-year floodplain and requiring structures to be shifted to higher, non-flood plain parcels. Cluster developments are also encouraged to reduce environmental impacts and to help facilitate a greenway system throughout the City, primarily along the Little River and Canadian River and their tributaries.

GOALS AND POLICIES

The Goals and Policies are the key integrating force behind the NORMAN 2025 *Land Use and Transportation Plan*. They establish a general statement of intent for the future growth and development of the City and serve as the policy basis for the more specific growth area designations, land use recommendations, and streets and highway designations. They will be used as a guide for future land use and infrastructure decisions and for considering requests to amend the Plan.

The Goals and Policies encompass a progression of growth-related principles that articulate the most efficient and environmentally responsible way for Norman to handle growth through the year 2025. The City of Norman is best served by managing growth through influencing the location choices of future development. Infrastructure is recognized as being an effective tool to manage the location of growth. Urban-level growth

is encouraged to locate where infrastructure is readily available and discouraged in the more rural and environmentally sensitive areas of the City. The long-term economic health of the City is also a major influencing factor for future growth, as are protection of the rural environment and the provision of a greenbelt system throughout the City. Each of these goals is stated below, followed by a series of policies related to the goal. These statements are the policy framework for the *NORMAN 2025 Land Use and Transportation Plan*.

Goal 1: Managed Growth

Affirmatively and responsibly manage the location of growth in Norman based on available public services and the environmental suitability of the land for development.

POLICIES:

1. Accommodate a projected year 2025 population of 137,000 people in a fiscally responsible and environmentally sensitive manner.
2. Promote a compact urban area by directing development into areas within or in proximity to the existing infrastructure-served areas.
3. Continue to support the revitalization and redevelopment of Norman's central business district.
4. Promote compatible mixed-use developments within existing urban areas.
5. Protect the water quality of Lake Thunderbird and the Garber-Wellington aquifer by restricting development in flood plains, aquifer recharge areas and areas of erosion-prone soils.
6. Guide development into locations where the land use is most cost-effectively served by urban level services (i.e., accessible to water, sewer, and the urban road network).
7. Balance development on the east and west sides of the urbanized area of Norman by continuing to encourage commercial and residential development on the urban east side.
8. Support infill development on properties that have been skipped over within the urban areas.
9. Discourage areas identified for urban densities from being prematurely developed at very low, non-urban densities by prohibiting the rezoning of areas located in the Current and Future Urban Service Areas for other than urban-level land uses (typically more than 3 dwelling units per acre).

Goal 2: Infrastructure-Supported Growth

Utilize the provision of infrastructure in supporting and influencing growth into areas most suitable for development.

POLICIES:

1. Support growth that minimizes operational costs by encouraging development in areas where adequate public water, sewer and roads are currently available or can inexpensively be extended.
2. Require urban development densities in areas where substantial investment in urban level infrastructure has been made, thereby encouraging greater utilization of the infrastructure investment.
3. Use infrastructure to influence growth toward areas suitable for development and away from areas of restricted or very low suitability.
4. Continue to prohibit development accessing unopened section line roads.
5. Maintain compact urban form by permitting new or expanded sewer lift services only in the Current Urban Service and Future Urban Service Areas and requiring appropriate fee surcharges for permanent maintenance of lift stations.
6. Maintain and improve infrastructure in the existing urban areas.
7. Monitor the impact of development on existing and future infrastructure capacities.

8. Extend major utility lines and facilities only into those areas identified for urban development.
9. Approve new development only when the facilities to serve it will be concurrently available
10. Advance fair and predictable standards for allocation of infrastructure costs between the development community and the City.
11. Address existing and future infrastructure right-of-way needs by acquiring land prior to development or as part of the development, to include adequate right-of-way for shared storm water and greenway systems.
12. Encourage regional and state highway planning for roadway improvements consistent with desired growth patterns and the Transportation Plan.
13. Encourage opportunities for multi-modal transportation, such as Park and Ride Facilities in both south and north Norman.
14. Explore and encourage opportunities for both on and off-street bicycle and pedestrian facilities for commuting to work, schools, shopping, between neighborhoods, and/or other destinations.
15. Discourage through traffic within existing neighborhoods or planned areas by routing it to the major street system.
16. Orient parks and recreational facilities to the needs of all Norman's citizens, including persons with disabilities, senior citizens, young children, and teenagers; and provide for a variety of interests and activities.

Goal 3: Housing and Neighborhoods

Encourage and support diversified housing types and densities in order to serve different income levels, family structures, and ownership.

POLICIES:

1. Proactively manage the preservation, revitalization and maintenance of existing urban neighborhoods.
2. Establish a neighborhood planning program for targeted portions of the City's core area, in order to address such issues as land use compatibility, parking, circulation, and neighborhood improvements.
3. Encourage opportunities for pedestrian and bicycle facilities in and between neighborhoods and other activity areas.
4. Foster and encourage construction of new residential units, and conversion of underutilized buildings into residential units, in downtown Norman.
5. Create an overlay Neighborhood Conservation District in order to more closely monitor and discourage illegal or inappropriate conversions of housing, as needed for neighborhood stabilization.
6. Adopt an implementation strategy regarding occupancy limits of a dwelling, such as requiring that occupancy be limited by adequate on-site parking, size and number of bedrooms, etc., to ensure that single-family units are used for their intended purpose instead of rooming/boarding houses.
7. Develop an incentive program that encourages development of affordable housing.
8. Support the provision of affordable housing through the periodic review of development regulations and administrative procedures to eliminate any unnecessary costs.
9. Encourage housing designed for university student occupancy in areas suitable for high intensity uses.
10. Equitably disperse publicly assisted housing throughout the City, utilizing sub-community planning districts as a geographic framework for distribution, in accordance with the allocation models and procedures contained within the Housing Master Plan, as amended.
11. Adopt an implementation strategy that seeks to ensure that the City's limited supply of land designated for medium and high-density residential is not converted to lower-density uses, in order to preserve the City's compact urban form.

Goal 4: Economic Stability and Enhancement

Enhance the quality of economic growth in the City by attracting high technology-related industries that have low environmental impacts.

POLICIES:

1. Diversify the economic base of the City to create a better balance of privately operated corporations with continued growth in the public sector employment base.
2. Direct environmentally responsible industrial growth onto land that is highly suited for industrial development.
3. Protect suitable industrial land from residential conversion or encroachment by:
 - Identifying and rezoning it to an industrial zoning classification;
 - Critically reviewing rezoning requests for conversion of industrial land to non-industrial uses; and
 - Assessing the impact of incompatible land uses adjacent to industrial lands.
4. Consider industrial uses that have minimal infrastructure demands and environmental impacts for suitable areas outside the urban service areas.
5. Solicit industrial prospects that do not overburden the City's existing or planned infrastructure such as water, sewer or roadways.
6. Initiate redevelopment and revitalization projects in the central business district that assist in enhancing the area as a viable economic entity in Norman.
7. Promote mixed-use developments that provide for a balance of housing, services, and employment in appropriate locations.
8. Support the extension of public utilities and business recruitment efforts for development of the University Research Park and South Campus.
9. Promote greater utilization of public transit services to support employment opportunities.
10. Secure payments-in-lieu of taxes related to development of for-profit ventures occurring within properties that are tax exempt.
11. Prepare and adopt design standards for commercial development in order to improve the appearance of the City's commercial corridors, help attract other high-quality development, and improve the city's economic foundation.

Goal 5: Rural Character and Development

Retain the distinct character of rural Norman and protect the environmentally sensitive Little River Drainage Basin.

POLICIES:

1. Preserve rural Norman's character and protect its environmentally sensitive nature.
2. Maintain development densities in rural Norman that generally do not exceed 1 unit per 10 acres.
3. Encourage cluster developments and preserve open space by providing bonus densities and by simplifying regulations.
4. Establish a level of public service delivery for rural Norman that is appropriate for the rural setting.
5. Protect water quality in Lake Thunderbird and the Garber-Wellington aquifer from point and non-point pollution related to development (impervious surface run-off, oil and gas drilling, disposal of toxic chemicals, etc.)

6. Minimize the amount of development that occurs in the 10-Mile Flats area, in order to preserve the area's character as well as protect residents from hazards associated with flooding.
7. Ensure that the costs for provision of services for development occurring in Norman's rural areas, such as roadways, police protection, emergency services, and solid waste disposal, are fully borne by rural area residents and are not subsidized by urban area residents.
8. Establish a community separator area between Norman and neighboring communities to the north.
9. Continue to accommodate limited commercial opportunities in rural east Norman through the use of Special Enterprise Areas (on 20-acre minimum lots), where service oriented tourism facilities relating to Lake Thunderbird as a destination can capitalize on the rural, pastoral qualities identified and sought to be maintained in the area.

Goal 6: Greenbelt Development

Develop and maintain a greenbelt system for Norman.

POLICIES:

1. Use greenbelts to protect environmentally sensitive lands that are generally the least suitable for development, especially flood prone areas.
2. Encourage the use of lot clustering in areas not served with sanitary sewers as a means to develop the greenbelt system.
3. Use the greenbelt system to link together existing recreation areas.
4. Create a multi-purpose greenbelt corridor that:
 - Creates a unique greenway character for Norman;
 - Protects the environmentally sensitive areas of the City and serves as a wildlife habitat;
 - Serves as a stormwater management resource for urban run-off and regional detention needs;
 - Provides recreation opportunities for bicycling, walking and jogging, as well as an alternative route to move through the City for commuting to work, schools, shopping, between neighborhoods, and/or other destinations by bicycling or walking;
 - Preserves agriculturally significant lands; and,
 - Provides suitable locations for sanitary sewer easements and facilities.
5. Use greenbelts to provide open space areas adjacent to highways and major streets for sound buffer zones and protection from incompatible land uses.
6. Continue to improve a natural landscape planting and maintenance program for City-owned properties and rights-of-way of major streets and highways.

Goal 7: Core Area Stability and Enhancement

Continue efforts to promote the enhancement and stability of the core area.

POLICIES:

1. Continue to promote public and private efforts to strengthen the Downtown area through implementation of the Downtown Norman Revitalization Plan.
2. Continue efforts to work with Norman Regional Hospital on issues related to land use, transportation, and expansion.
3. Continue efforts to work with the University of Oklahoma on issues related to facility location, design, and expansion, as well as student housing, parking, and public transit usage.

4. Establish a neighborhood planning program for targeted portions of the City's core area, in order to address such issues as land use compatibility, parking and circulation, bicycle and pedestrian facilities, public transit facilities and usage, and neighborhood improvements.
5. Adopt an implementation strategy to address the potential impacts of building conversions to parking in the core area.
6. Adopt an implementation strategy to address the potential impacts of parking in the core area, to ensure that new or expanded parking areas are properly designed and buffered to minimize impacts on other uses in the neighborhood.
7. Adopt an implementation strategy to strengthen controls on building demolitions and/or conversions in the core area.

GROWTH AREAS

An integral part of the NORMAN 2025 Land Use and Transportation Plan is the continued designation of various Growth Areas related to the character, density and level of appropriate public services. The Growth Areas are designated as part of the ongoing effort to accomplish the Goals and Policies related to managing the location of growth in relation to infrastructure and the suitability of land for development. The four Growth Areas are: Current Urban Service Area; Future Urban Service Area; Suburban Residential Area; and Country Residential Area. Each is described in the following text and depicted on Figure 1

Current Urban Service Area

The Current Urban Service Area consists of the urban area currently sewerage or sewerable by gravity flow, as well as those areas served by existing lift stations or currently designed to be accommodated by them. It is a central policy of the Plan that the areas currently served by sanitary sewers have the highest priority for new growth and development.

To accomplish the policy priority of encouraging development in the existing sewer service area, it is necessary to reserve sewer capacity either as it exists now or as it is expanded through improvements. It is important that this area develop at urban densities (greater than 3.5 units per acre) appropriate for sewer expansion, and that costs of the required infrastructure expansion are shared by the development community.

The City will continue efforts to maintain the health and stability of this area in order to maintain the quality of life for residents and businesses, and to make the area attractive for new development. The City will continue to revitalize the central business district and the Campus Corner area through a variety of efforts as outlined in the *Downtown Norman Revitalization Plan* and as undertaken by the private sector in the Campus Corner Area. Continued efforts will be made to protect residential resources and strengthen existing neighborhoods through mechanisms such as the CDBG program.

Future Urban Service Area

The Future Urban Service Area is comprised of areas that are presently outside the existing water and/or sanitary sewer service areas, where urban land uses are recommended. The City recognizes that, due to infrastructure requirements, not all portions of the Future Urban Service Area will be able to develop at urban densities in the near future. This raises the concern about the need to prevent development at less than urban densities from occurring in those areas in the interim. In order to ensure that development at less than urban densities does not occur in these areas, City Council will continue the policy that does not allow for these areas to be rezoned to Residential Estate, and that they remain subject to the A-2 zoning regulations. It is recognized that existing A-2 zoned parcels would still be allowed to be built upon with individual water wells and sewage treatment. However, subdividing existing A-2 parcels into smaller than 40 acre tracts will be prohibited unless the development is done as a small cluster with provision for full urban services at a later date, whenever they become available. Approval of the cluster subdivision would require that appropriate agreements be recorded to preserve the remainder of the parcel for later development at higher densities. Subdivision design standards in this district could require, among other things, reservation of utility easements to accommodate future urban level development. Under such circumstances, the clustered lot sizes will range from $\frac{3}{4}$ acre to 2 acre depending upon specific site conditions, such as topography, soil conditions, etc.

In order for the designation of an area to change from Future Urban Service Area to Current Urban Service Area, the following criteria must be met:

- Adequate public facilities (water and sanitary sewer) are in place, or will be in place at the time that they develop.
- Development of these areas will not result in a utilization of the “Current Urban Service Area” sanitary sewer capacities within the outfall lines or at the treatment plant.

The Growth Area boundaries indicated on figure 1 are approximate, and may be modified slightly at the time of application for a designation change as a result of detailed engineering or topographic studies.

Suburban Residential Area

The Suburban Residential Area consists of areas suitable for development from an environmental standpoint, but not planned for sanitary sewer service. Therefore, the Plan recommends development at suburban densities of not more than one unit per two acres. Development will generally require individual water wells and sewage treatment systems; however, city water should be provided for any development in this area where high quality water cannot be assured. It is important for the City to maintain the rural nature of this area and to be explicit as to the limited infrastructure anticipated. Specifically, the City does not plan to extend sanitary sewer service to this area.

Much of the desired greenbelt is located in this area, so the use of lot clustering to preserve open space is appropriate in some circumstances. Through the Planned Unit Development process, a bonus will allow a gross density of one and one-half (1 ½) acres per dwelling unit (no bonus provided for those acres lying within the 100 year floodplain). The bonus requires that at least 35% of the total site be set aside as permanent open space. Conservation easements for privately owned lands are appropriate for such areas. The minimum lot size per dwelling unit will be ¾ of an acre. To be granted this increased density, cluster developments will require installation of a community water system to current city standards, including the provision of fire protection.

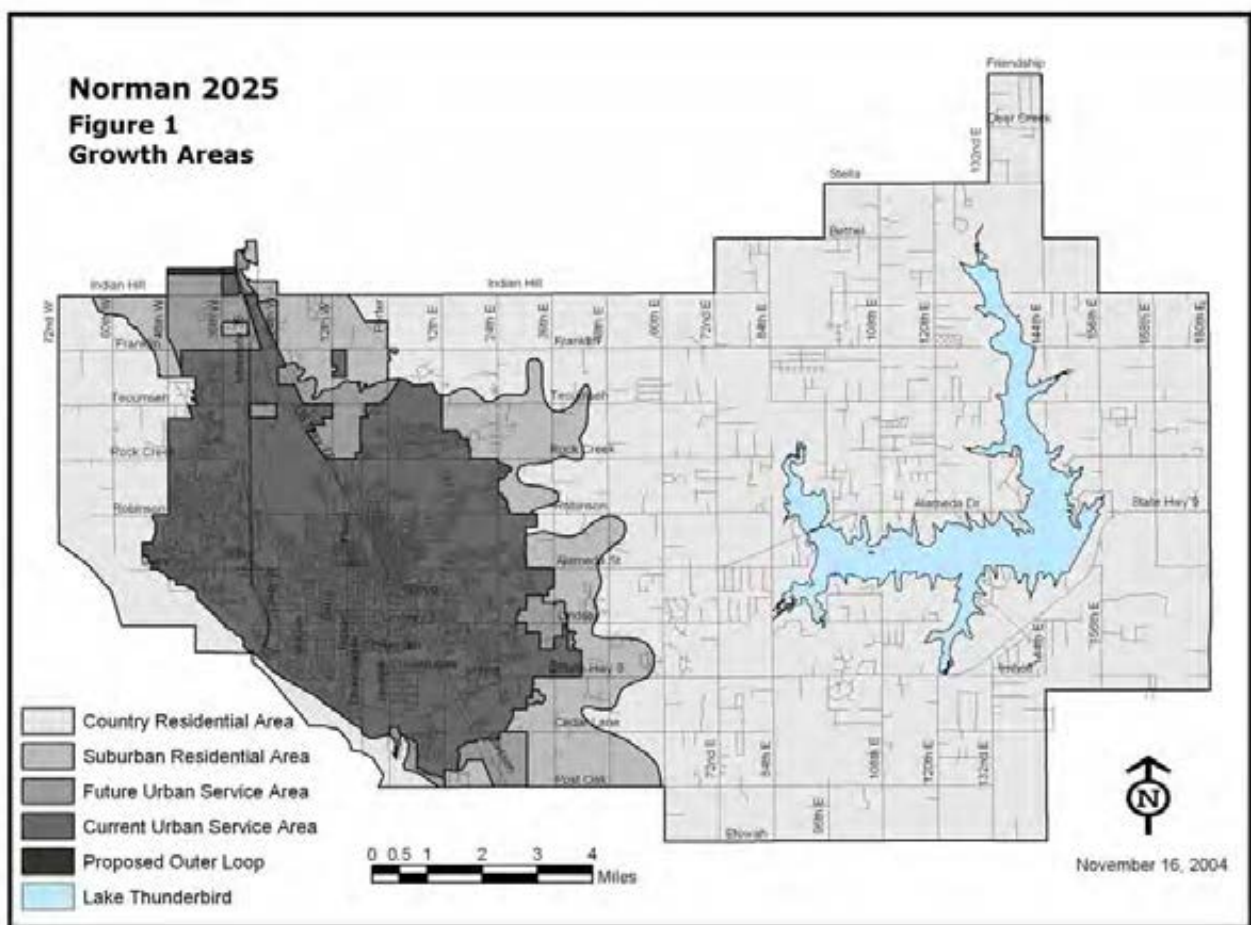
Country Residential Area

The Country Residential Area encompasses predominately those portions of Norman that are over the Garber-Wellington Aquifer primary recharge area and/or within the flood plains of the Little River and South Canadian River. These areas have low suitability for development at urban densities. This low suitability for development within the floodplains of the rivers is due to occasional flooding that will occur. The low suitability in the Garber-Wellington Aquifer primary recharge area is not only because of the threat of contamination to the ground water in the aquifer, but also because of the combination of generally erodible soils, steeper slopes, and the potential for contamination of this portion of the Lake Thunderbird watershed. Additionally, these areas provide significant benefits to the overall quality of life in Norman due to the large amounts of undeveloped open space and the presence of a substantial number of wildlife habitats.

Most of this area is planned for a maximum density of one dwelling unit per ten (10) acres (i.e. ten (10) acre minimum lot size.) A bonus is available for cluster developments, not including acres in the 100 year floodplain. For those areas subject to the ten (10) acre restriction, development may be done so that the home building sites are clustered on approximately two (2) acre lots. When this cluster development option is utilized (through the Planned Unit Development process), a bonus density of up to a total maximum number of dwelling units of one (1) unit per eight (8) acres gross density is available. The portion of the property on which a cluster development is based, but which is not used for the two (2) acre lots, must be set aside for permanent open space and should be at least 65% of the total acreage. (This open space can be held by a single owner or transferred to a mandatory Home Owners Association.)

For floodplain areas within the Little River/Lake Thunderbird tributaries, the City will require the shifting of density out of the 100-year floodplain onto areas of a site that are not in the floodplain, except in those instances where no such option exist on already created legal parcels. Floodplain areas within the Ten-Mile Flats area shall develop with at least twenty (20) acre lots.

Another issue that this Plan begins to address in the Country Residential Area is the cost differential between development in the urban area and the rural area. While service and maintenance costs are higher per capita in the rural areas for certain facilities and services (such as roads and solid waste disposal), the City does not currently have any mechanisms to address this cost differential. In reality, due to higher development costs in the urban area, the City's current low development standards and fees in the rural areas may artificially induce pressure for growth in these areas.



LAND USE PLAN

The *Norman 2025 Land Use and Transportation Plan* is grounded in the Goals and Policies that set the general direction of the Plan. In order to accomplish these goals, the City is organized into geographic Growth Areas, based on factors related to infrastructure delivery and suitability for urban development. These growth areas, in turn serve as a framework for the designation of a future *Land Use Plan*. This *Land Use Plan* recommends future land use categories for all property in the City.

The Plan is proactive in the way it manages growth. Through the use of Growth Areas, it establishes priority areas for urban development based on existing or proposed public facilities. It discourages sprawl and suggests minimum urban densities. The Plan depicts a development balance between the eastern and western areas of the City. It identifies areas suitable for industrial development and recommends that these areas be protected from conversion to other uses. It also establishes low densities for areas that are environmentally sensitive such as that portion of the Little River drainage basin overlaying the principal recharge areas of the Garber-Wellington aquifer and the Ten-Mile Flats flood plain. It further protects the City's environmentally sensitive areas by encouraging clustering of development to reduce environmental impacts and to complement a proposed greenway system throughout the City.

The Plan blends a healthy amount of residential and commercial growth with an aggressive amount of area recommended for industrial development. It also recognizes that commercial development in Norman may include commercial activities and services such as office uses; neighborhood and community shopping centers; the central business district; highway service areas; and regional shopping centers.

The NORMAN 2025 Plan will accommodate nearly 31,000 new dwelling units. Of these new units, an estimated capacity for over 15,000 new single-family structures accommodates almost twice the projected demand for 7,952 new single-family dwelling units by 2025. The capacity for slightly over 5,000 new dwelling units at medium and high density provides for about 165% of the projected demand for just over 3,000 new units by 2025. The NORMAN 2025 Plan also provides about 650 acres for new commercial land uses, about 150 acres for office land uses, almost 1,200 acres for future industrial land uses and almost 800 acres of land designated for mixed-use development (which will accommodate a mixture of residential, commercial, office and industrial land uses.) The projected demand through 2025 for each of the above uses is 221 acres of office, 622 acres of commercial, and 198 acres of industrial. The capacity provided will accommodate about 75% of the office demand, about 105 % of the commercial demand, and almost 1,000 more acres for industrial uses than the projected demand of slightly less than 200 acres. The almost 800 acres of mixed-use lands also provide for additional acres for commercial, office and industrial uses. The Plan also identifies three new community parks.

Mixed-Use Development

The Plan also introduces and incorporates the concept of *mixed-use development*, to provide for a more flexible approach to development in specific targeted areas. Mixed-use development is intended to create an environment for well-planned, mutually supportive uses containing a mixture of different densities and types of residential uses and supporting areas for office-based employment, retail activities and institutional uses, planned and designed according to a unified, cohesive master plan for a given area with high quality architectural design. Pedestrian-oriented, mixed-use neighborhoods that incorporate a variety of styles, residential types and densities and appropriate non-residential uses, include an interconnected street

network, promote pedestrian travel and access, and foster neighborhood interaction, will be encouraged in appropriate locations throughout the City.

Uses for each mixed-use development will vary, but all should be designed as urban activity centers—community destinations for working, shopping, and/or entertainment. The planning of these areas should be pedestrian-oriented, and special improvements should be considered to make them rich, enjoyable public places. Mixed-use development can occur in two primary configurations – *Vertical Mixed-Use* or *Horizontal Mixed-Use*.

Vertical mixed-use refers to the integration of two or more land use types within a building, occurring on different floors. A typical example of a vertical mixed use building would incorporate active uses, such as stores and restaurants, at the street level and residential or office uses on the upper floors. *Horizontal mixed-use* refers to a pattern where several types of uses or buildings are included, as part of a cohesive development in proximity to each other – but each building would contain its own separate use. An example would be a development site that might include an area of multi-family housing, a professional office building, and a retail center. They would be designed as a set of coordinated uses, with common parking areas, good pedestrian connections, and perhaps similar design features, but would contain separate uses in each building.

Since mixed-use development provides for a flexible approach to development, it must be uniquely tailored to each site – there is no “one size fits all” approach. Thus, we are recommending a Special Planning Area designation (see below) for each of the areas designated on the NORMAN 2025 Land Use and Transportation Plan for *Mixed-Use* development, to ensure that an overall unified development plan is prepared for each site prior to development.

The design of mixed-use development should take into consideration the following characteristics:

RESIDENTIAL DENSITY AND MIX OF HOUSING TYPES

Residential density should be sufficiently high in order to support a level of pedestrian activity, and should typically be not less than six (6) dwelling units per acre. A mix of two or more different housing types should be included, at varying densities. Residential dwellings located above first-floor retail, offices, and services are encouraged.

NON-RESIDENTIAL USES

A mix of non-residential uses is encouraged, in order to incorporate opportunities for employment, shopping, and services. Non-residential uses should be designed so that they are integrated into the overall site plan and design, not as isolated areas from other uses in the development. Auto-oriented uses such as auto repair and service shops, large-format commercial “super-stores”, and drive-through restaurants are generally discouraged in mixed-use development areas; however, the use of creative site layout and design techniques to develop pedestrian-supportive designs that would be appropriate within mixed-use areas may be considered. This would include an overall reduction in scale that accommodated reduced parking areas, building setbacks, and building footprints (for example, “super-stores” and other large commercial uses would typically be restricted to less than 40,000 square feet). In addition prototypes would seek to minimize conflicts between automobiles and pedestrians and provide detailed attention towards pedestrian orientation and accessibility.

DEFINED BY STREETS OR OTHER PHYSICAL FEATURES

Mixed-use developments should generally be bounded by physical or constructed features with some level of permanence, such as streets, greenways, or other open spaces.

CONTAINING PUBLIC PLAZAS OR OPEN SPACE DESIGNED AS A FOCAL POINT

Mixed-use developments should include at least one predominant location for an outdoor open space or plaza, with amenities such as benches, monuments, kiosks, or public art, designed to serve as a central gathering place or community activity center. These areas should be designed to create comfortable outdoor spaces designed to attract and accommodate people, where higher pedestrian activity is likely to occur. Outdoor spaces should be linked to and made visible from streets and sidewalks.

PEDESTRIAN-ORIENTED SITE DESIGN

Entrances and parking lots should be designed to be both functional and inviting with continuous landscaped walkways linking all land uses. Buildings should be oriented to sidewalks or other outdoor spaces for people, not set back behind parking lots or oriented only to parking lots. Buildings on isolated "pad sites" surrounded by parking lots and driveways should not be incorporated. Parking lots should not dominate the frontage of streets, interrupt pedestrian routes, or negatively affect surrounding land uses or neighborhoods. Access must serve the needs of the pedestrian as well as the motorist. Accordingly, the following design aspects must be considered: (1) pedestrian access to the site and buildings; (2) gathering areas for people; and (3) auto access and parking lots. Continuous internal pedestrian walkways should be provided to connect focal points of pedestrian activity such as transit stops, street crossings, building entry points, and parking areas.

INTERCONNECTED NETWORK OF MULTI-MODAL STREETS

An interconnected hierarchy of streets should be established to clearly define primary pedestrian and vehicular travel routes between uses. Streets should be designed to accommodate all modes comfortably and should provide a separation between incompatible modes, such as bicycles and pedestrians where possible. Cul-de-sacs or other dead end streets are strongly discouraged in mixed-use developments.

SPECIAL PLANNING AREAS

Within the Land Use Plan Map, several areas are identified that exhibit characteristics requiring special consideration. It is anticipated that these areas would develop as recommended in the Land Use Plan only through the Planned Unit Development (PUD) process, except for the Northern Community Separator Overlay District (SPA 6). Each of these areas has unique features or circumstances that create the need for this process if the land use as reflected on the Plan is to become a reality. Some of the Special Planning Areas identified in NORMAN 2020 have been completed, and are no longer designated in this Plan. The following information presents the areas to be included in this PUD process, their current circumstances, the proposed land uses and conditions that need to be met in order for development/redevelopment to occur.

SPECIAL PLANNING AREAS 1 AND 2

EXISTING CONDITIONS

Special Planning Areas 1 and 2 are situated on the west side of 24th Avenue SW, between Briggs Street and State Highway 9 and directly east of and adjacent to Interstate 35. Both of these areas are primarily residential in nature but have been surrounded over time by a varied assortment of commercial activities. Most of the remaining residential structures are of modest construction and date back several decades. Access to these areas is now limited to 24th Avenue SW.

Although the predominate zoning in both of these areas remains R-1 (single family residential), actual existing land uses include a mixture of commercial (including landscaping/nurseries, auto and small engine repair, retail and services.) While many of the homes are on small lots, there are a number of homes in both areas that are located on very large lots, many of which are well kept. Although some sanitary sewer is nearby, most of the residential properties are on individual septic tanks. The construction of Interstate 35 and the continuing intrusion of commercial uses into the area are creating a less than desirable residential environment. Additionally, some of the existing businesses and surrounding grounds are poorly maintained, have unscreened storage and inadequately paved parking and are generally of substandard quality and appearance. There are also a number of poorly maintained mobile homes and residential units in the area.

PROPOSED LAND USES

All of these areas are projected to become commercial. Provision for this use is recommended if certain conditions are met.

REQUIRED DEVELOPMENT CONDITIONS

1. Consolidation of properties into unified ownership for each area prior to its redevelopment.
2. Provision of a master redevelopment plan prior to any rezoning or platting.
3. Provision of all city services and infrastructure adequate to accommodate full build out.

SPECIAL PLANNING AREA 3

EXISTING CONDITIONS

Special Planning Area 3 is located north of the residential properties along the north side of Acres Street between University Boulevard and the planned location of Front Street just north of Andrews Park. This largely undeveloped triangular site is within the Adams Neighborhood. The area is bounded by the Burlington Northern/ Santa Fe Railroad tracks to the east, single family residential properties to the north, light industrial /service operations to the west, and a mixture of single and multi-family residential development to the south.

The majority of the site is currently zoned I-1 light industrial and much of it is vacant. The site includes the Rhodes Feed and Seed operation. The dominant adjoining land uses are the service/warehousing operations located on the adjacent I-1 zoned properties.

PROPOSED LAND USES

The redevelopment opportunities for the former milling operation and the opportunities for the vacant portions of this tract will be greatly impacted by the roadway and landscaping improvements planned for Front Street. It is anticipated that these properties will be converted to commercial uses when Front Street is completed. Provision for this use is recommended if certain conditions are met.

REQUIRED DEVELOPMENT CONDITIONS

1. Front Street must be completed as planned and include the extension of Highland Parkway through this tract.
2. No ingress and egress will be granted directly onto Front Street.
3. Convert the site from industrial to commercial use by either adaptive re-use of the existing old feed mill and accessory buildings or by demolition of the existing structures, so as to create a unified architectural appearance, especially on all building facades facing public streets.

SPECIAL PLANNING AREA 4

EXISTING CONDITIONS

Special Planning Area 4 is situated between 36th Avenue NW and I-35, from Indian Hill Road south ½ mile. The area is undeveloped, but has been under growing pressure to change, primarily due to continued growth and expansion in the northern area of the City and good access from the I-35/Indian Hill Road interchange.

PROPOSED LAND USES

This area is designated for Mixed-Use Development, if certain conditions are met. The primary emphasis of this mixed-use development area is to allow for a mix of employment uses (such as office or light industrial), with some supporting commercial and medium or high density residential housing, as part of an overall, unified planned development. It is envisioned that employment and commercial uses would be oriented towards Indian Hill Road and I-35 to the north and east, and residential uses would be oriented towards 36th Avenue NW to the west. The area along 36th Avenue NW could also accommodate vertically integrated mixed-use buildings, with appropriate design treatments and transitions to adjoining residential areas.

REQUIRED DEVELOPMENT CONDITIONS

1. A unified overall master development plan that includes well-planned, mutually supportive uses containing a mixture of different densities and types of residential uses and supporting areas for office-based employment, retail activities and institutional uses, planned and designed according to a unified, cohesive master plan for the area.
2. A unified overall master development plan that adequately addresses potential impacts on adjoining residential areas, (especially along the south boundary and along 36th Avenue NW). This should include landscape treatments and/or setbacks, solid masonry attractive walls, and design treatments and building height transitions of buildings.
3. A unified overall master development plan that assures appropriate ingress and egress so as to mitigate the potential traffic impacts on 36th Avenue NW and Indian Hill Road.
4. Design treatments for building architecture, site design, signage, and landscaping that reflect the importance of this site as a visual gateway into the community.
5. If the development planned for the site occurs in more than a single phase, each phase shall include a mix of at least two land uses, as specified in a phasing plan included as part of the overall development master plan.

SPECIAL PLANNING AREA 5

EXISTING CONDITIONS

Special Planning Area 5 is situated between 36th Avenue NW and I-35, from Franklin Road north ¼ mile, directly north of the proposed community park site. The area is undeveloped, but has been under growing pressure to change, primarily due to continued growth and expansion in the northern area of the City and good access from the I-35/Indian Hill Road interchange.

PROPOSED LAND USES

This area is designated for Medium Density residential development due to its' proximity to the proposed community park site and if certain conditions are met.

REQUIRED DEVELOPMENT CONDITIONS

1. A unified overall master development plan that assures appropriate ingress and egress so as to mitigate the potential traffic impacts on 36th W and Franklin Road.
2. A unified overall master development plan that adequately addresses potential impacts on adjoining residential areas, (especially along the northern boundary). This may include landscape treatments and/or setbacks, solid masonry screening walls or fences, and design treatments and building height transitions of buildings.
3. Design treatments for building architecture, site design, signage, and landscaping that reflect the importance of this site relative to the planned Community Park.

4. Residential uses shall be a minimum of 6 to 8 dwelling units per net acre, with a mixture of housing types and densities encouraged.

SPECIAL PLANNING AREA 6 – Community Separator

EXISTING CONDITIONS

Special Planning Area 6 is situated between Broadway Avenue and 72nd Avenue NE, extending north of Franklin Road to Indian Hill Road. The area is generally undeveloped or in agricultural use. The land use designations for this area reflect two primary objectives: protect the Little River watershed and tributaries, and create a sense of visual, physical separation between Norman and Moore.

PROPOSED LAND USES

This area is designated for clustered rural residential development at a gross density of one dwelling unit per 10 acres with a minimum lot size of 2 acres, and open space, if certain conditions are met.

REQUIRED DEVELOPMENT CONDITIONS

1. Mandatory shifting of density out of the floodplain, in order to protect the integrity of the Little River watershed and its tributaries. In order to maintain the density allowed by the base zoning, the density that would be allocated to areas located in the floodplain would be shifted to areas on the property that are not located in the floodplain. Smaller lots would be allowed to the extent necessary to accommodate this shifting on the upland portions of the site, although the total permitted density should remain at no more than one (1) unit per ten (10) acres. In addition, clustered development on approximately two (2) acre lots would be allowed at an overall density of not more than one (1) unit per eight (8) acres, with the remainder of the property designated and preserved as common open space, or protected by a conservation easement.
2. In order to retain the visually open character of the area, all buildings will be required to be set back a minimum of four hundred (400) feet from the centerline of Indian Hill Road. This setback will be protected by requiring a recorded, no-build easement, in order to retain this visual quality over time.
3. To the maximum extent possible, access to development shall be obtained from north/south roads, and not directly from Indian Hill Road, in order to maintain the integrity of the view corridor along Indian Hill Road.

SPECIAL PLANNING AREA 7

EXISTING CONDITIONS

Special Planning Area 7 is situated in an area south of Cedar Lane and directly east of Highway 77/Classen, bisected by 24th Avenue SE. The area is generally undeveloped.

PROPOSED LAND USES

The area east of Highway 77/Classen, bisected by 24th Avenue SE, is designated for Mixed-Use Development. This is intended to accommodate a mixture of employment, commercial, and residential uses. The primary emphasis of this mixed-use development area is to accommodate employment uses (such as office or light industrial), with some supporting commercial and medium or high-density residential housing, as part of an overall planned development, if certain conditions are met.

REQUIRED DEVELOPMENT CONDITIONS

1. A unified overall master development plan for the entire area, to be approved by the city before development of the area could commence.
2. A unified overall master development plan that includes well-planned, mutually supportive uses containing a mixture of employment and commercial uses, as well as different densities and types of supporting residential uses. Residential uses shall comprise at least forty percent of the land area contained in the Special Planning Area.
3. A unified overall master development plan that adequately addresses specific design aspects unique to the area's location and surroundings, such as the design relationship and connections to the planned residential areas to the east, overall mix of uses, and design treatments of the site, landscaping, signage, and buildings.
4. A unified overall master development plan that assures appropriate ingress and egress so as to mitigate the potential traffic impacts on Highway 77.

SPECIAL PLANNING AREA 8

EXISTING CONDITIONS

Special Planning Area 8 is situated in an area south of Indian Hill Road, between the BNSF railroad and 24th Avenue NW.

PROPOSED LAND USES

The area is designated for industrial development.

Required Development Conditions

1. A unified overall master development plan for the entire area, to be approved by the city before development of the area could commence.

2. A development plan that adequately addresses potential impacts on adjoining residential areas, (especially along the east edge that abuts 24th Avenue NW). This will include landscape treatments for both the perimeter and in parking areas and will require building setbacks of at least 100 feet..
3. A unified development plan that assures appropriate ingress and egress so as to mitigate the potential traffic impacts on 24th Avenue NW.
4. No industrial development shall occur until sanitary sewer is available to serve the site.

III. Transportation Plan

One of the most critical elements of this Plan is the designation of a system of vehicular travel that supports the Land Use Plan. A Transportation Plan is needed to prescribe a system of safe, economical and efficient streets providing for a variety of functions. A comprehensive pedestrian and bikeway system should be pursued in conjunction with the other elements of the City's transportation system. The City's transportation system should also support enhanced opportunities for public transit service; both locally and regionally, in order to reduce dependency on private automobile travel, decrease congestion, and enhance air quality in the City.

HIGHWAYS

Highways include all roadways for which the primary responsibility for maintenance is other than the City. The function of these roadways is primarily to accommodate long trips between parts of Norman and to connect areas outside of Norman. Highways may also function as Urban Principal or Minor Arterials. The right-of-way requirements, number of lanes, and shoulder requirements will vary greatly within the highway system. The types of Highways include:

Freeway – a divided highway with full control of access.

Turnpike – a divided highway with full control of access, on which a “user fee” or toll is charged for each trip.

Expressway – a divided highway with partial control of access.

Gateway/Boulevard/Parkway Scenic Zones – any highway, generally divided, where special setbacks are imposed, signs are restricted, uniformity of street trees is required and extensive landscaping is encouraged, to enhance the park-like setting along the street.

Conventional – any non-divided road, maintained by the Oklahoma Department of Transportation.

URBAN STREETS

Urban Streets include all roadways within urbanized Norman; this includes that portion of Norman falling within the Current and Future Urban Service Areas. The Urban Streets include:

Urban Principal Arterials – distributes traffic throughout the City and link major community-wide traffic generators.

Includes all “Highways” within or passing through urbanized Norman.

Requires a minimum of four travel lanes with curb and gutter and a minimum of 100 feet of right-of-way. Additional lanes, turn lanes, medians and rights-of-way may be required based upon traffic generation or unique conditions.

Urban Minor Arterials – are intended to distribute traffic throughout the City and link major community-wide traffic generators, but because of limited right-of-way or adjacent land development cannot or need not be constructed to the Principal Arterial standard. A Minor Arterial will typically consist of two travel lanes, with turn lanes required at intersections with all other arterials, and sometimes with collectors. In some instances, a third lane will be required.

Urban Collectors – allow traffic to move from the local street system to the arterial system. Collectors typically have two travel lanes, with turn lanes required at some intersections, including all arterials.

Urban Locals – provide access to property abutting public rights-of-way and a means to travel to the higher classified street system. Local streets have two travel lanes.

RURAL ROADS

Rural Roads include all roadways outside of urbanized Norman in the Suburban and Country Residential areas. The right-of-way requirements, width of lanes, width and types of shoulders, and requirements for turn lanes vary widely. Rural roads include:

Rural Principal Arterials – distribute traffic throughout areas which have low land development capacities and lower traffic demand than the Urban Arterial System. Rural Principal Arterials represent an integrated rural network linking large traffic generators and providing intra-county service. They also represent the most heavily traveled roads in the Rural System and will sometimes serve as a connection to an Urban Arterial. Rural Principal Arterials should be designed to provide for relatively high overall travel speeds, with minimum interference to through movement. Roads in this classification require a minimum of 100 feet of right-of-way, two paved lanes of 12 feet each, a 10 foot paved shoulder adjoining each lane, and in some instances, acceleration/deceleration/turn lanes at intersections with other arterial and collectors. No curb and gutter is required, however, a 4 to 1 side slope, or flatter, is required for all bar ditches.

Rural Minor Arterials – represent the second tier of roads in the Rural System. Rural Minor Arterials are also intended to distribute traffic throughout areas that have low land development capacities and lower traffic demand than the Urban Arterial System. Rural Minor Arterials form part of an integrated rural network linking large traffic generators and providing intra-county service. They should be designed to provide for moderate overall travel speeds, with minimum interference to through movement. Roads in this classification require a minimum of 100 feet of right-of-way, two paved lanes of 12 feet each, a 6 foot paved shoulder adjoining each lane, and in most instances, acceleration/deceleration/turn lanes at intersections with other arterials and collectors. No curb and gutter is required, however, a 4 to 1 side slope, or flatter, is required for all bar ditches.

Rural Collectors – represents a roadway system designed to serve travel on which predominate travel distances are shorter or slower than on arterial roads. Rural Collectors should be consistent with population density, to collect traffic from local roads and connect all developed areas within a reasonable distance to an arterial. Roads in this classification require a minimum of 100 feet of right-of-way, two paved lanes of 12 feet each, a 6-foot earthen shoulder adjoining each lane, and acceleration/deceleration/turn lanes at

intersections with arterials. No curb and gutter is required, however, a 4 to 1 side slope, or flatter, is required for all bar ditches.

Rural Locals – represent a road system designed primarily to provide access to adjacent land and provide service to travel over relatively short distances as compared to collectors or other higher systems. These roads require a minimum of 80 feet of right-of-way, two paved lanes of 11 feet each with a 4-foot earthen shoulder adjoining each lane. No curb and gutter is required, however, a 4 to 1 side slope, or flatter, is required for all bar ditches.

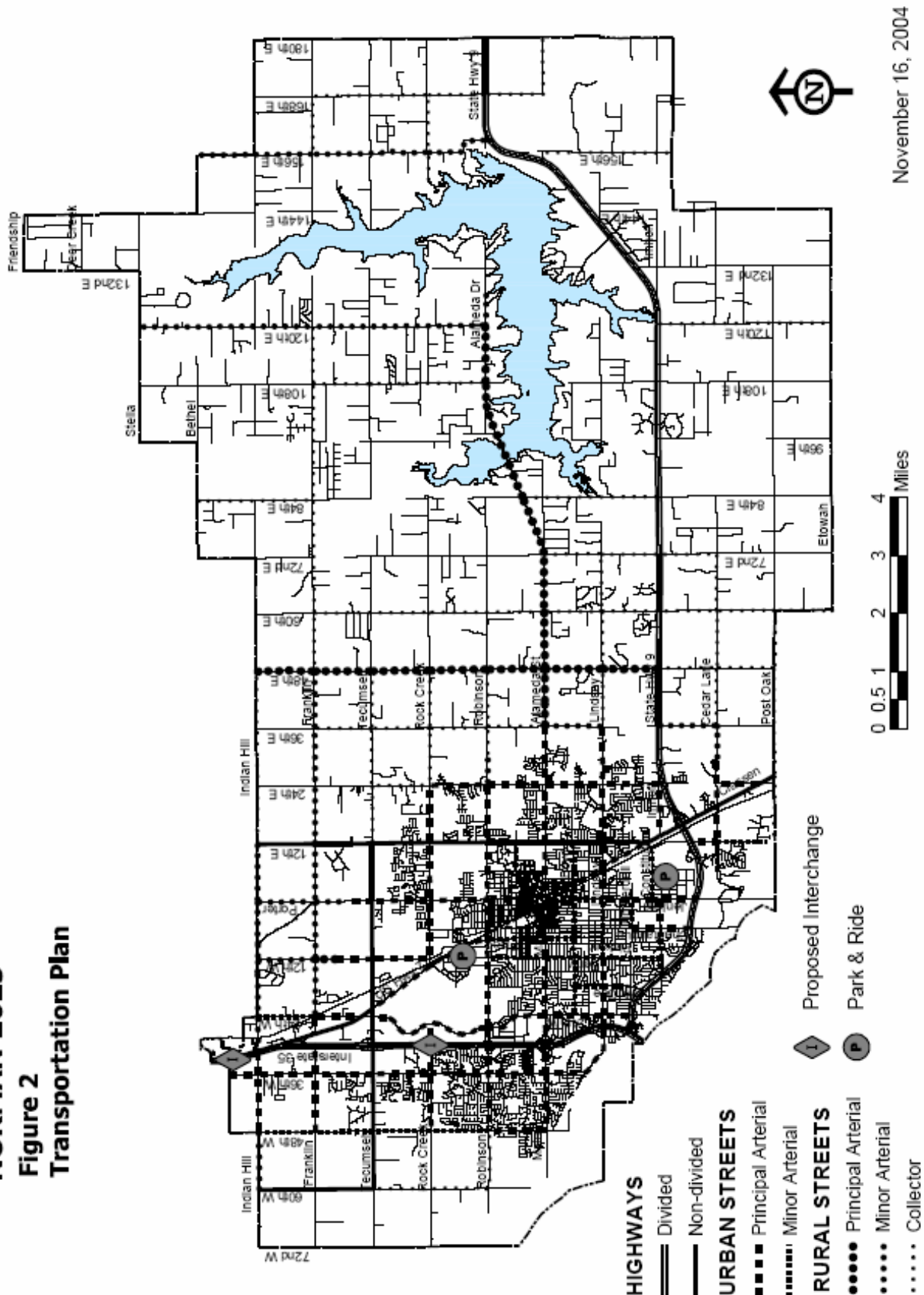
PUBLIC TRANSIT

Bus transit service is currently provided in Norman by Cleveland Area Rapid Transit (CART), which provides fixed route service to the urban core as well as curb-to-curb paratransit service. The CART system is part of a regional transit system that provides public transportation for the entire central Oklahoma region under the auspices of METRO Transit. Through the over 25-year development of this system, service to the City of Norman and the University of Oklahoma, the CART system has grown in the number of services offered and the area served.

Currently, CART operates six fixed routes within the City of Norman and provides commuter service from Norman to the METRO Transit system in Oklahoma City via downtown Oklahoma City, the OU Health Sciences Center, and the State Capitol. The fixed route services include both University-oriented shuttle services as well as community routes. The University's south oval is the transfer point between all fixed routes.

System ridership has increased significantly in recent years. During the current 2003/2004 fiscal year, total system ridership was more than 1 million passengers, which represents an increase of more than 32% from the prior year's total of 758,000 passengers.

NORMAN 2025
Figure 2
Transportation Plan



IV. Plan Implementation

The long-term success of the NORMAN 2025 Land Use and Transportation Plan rests largely on the ability of the City of Norman to pursue the implementation of the Plan.

To ensure the plan is implemented, various land use implementation techniques or programs are needed. These techniques fall into three major categories: Regulatory Techniques, Public Facilities Financing Techniques, and Miscellaneous Implementation Techniques. Each of these techniques or programs should be considered by the City of Norman as possible approaches for implementing the Land Use Plan. The specific techniques or programs are:

REGULATORY TECHNIQUES

Urban Development and Protection

- Core area protection regulations
- Mixed-use development

Rural Protection

- Country Residential Preservation Standards
- Floodplain protection zoning
- Cluster development standards
- Northern separator area overlay zoning

Quality Development Standards

Multifamily and commercial design standards
Natural resource protection standards

PUBLIC FACILITIES FINANCING TECHNIQUES

- Wastewater Plant Investment Fees/Excise Tax
- Water and Sewer Utility Payback Fees
- Arterial Road Improvement Recoupment Program
- Improvement Districts
- Rural Cost of Growth Analysis

MISCELLANEOUS IMPLEMENTATION TECHNIQUES

- Neighborhood Planning Program
- CBD Enhancement Programs
- Greenbelt/Greenway Programs

A full discussion of these techniques or programs is found in the *NORMAN 2025 Implementation Techniques Technical Memorandum*. This memorandum provides a discussion of the geographical applicability of each implementation technique, the Plan policies implemented, a description of each of the techniques or programs listed above, its purpose, an implementation strategy, adoption procedures, administrative requirements, and the advantages and disadvantages to be considered with each.

It should be noted that no one single program or technique will implement the Plan; nor will all programs be feasible at the time of initial adoption of the Plan. It is the combined effect of the various methods that must work together over time to achieve the desired results. Each should be evaluated within the overall implementation framework.

V. Plan Administration & Amendment

The NORMAN 2025 Land Use and Transportation Plan will be utilized in several different ways, as discussed below. Its role in the City's ongoing and diverse planning activities means that it must be a flexible document that is updated and amended periodically.

FUNCTIONS OF THE PLAN

The Plan serves several functions for the City of Norman. First, it serves as a guide for public investment by articulating policies and strategies that suggest both general and specific capital projects. The various policies and specific recommendations must ultimately be tied to capital improvement programs that define, budget, coordinate and schedule specific projects. The Plan should be used as a policy basis for the expenditure of capital funds.

Second, the Plan serves as a policy basis for the development of various regulatory techniques. In order for the recommendations of the Plan to be carried out, various zoning and subdivision regulation amendments may be necessary, and other mechanisms must be developed. This plan serves as the policy base for those changes.

Third, this Plan defines the desired land use pattern for use and development of all private sector properties. As such, this Plan will serve as a policy guide for zoning and planning requests as they are presented to the Planning Commission and City Council.

CONSISTENCY WITH THE PLAN

As a long-range policy guide it is important that decisions made about the expenditure of capital funds, amendments to the City's land use regulations, and decisions about zoning and planning requests be consistent with the Plan. As such decisions are contemplated, explicit consideration should be given to whether the decisions are, or are not, consistent with the Plan. When requests are consistent with the Plan, they should be approved under normal circumstances. When requests are not consistent with the Plan, they should not be approved.

ADMINISTRATIVE PROCEDURES

In order to encourage open space preservation through cluster development design, simultaneous rezoning and platting proposals may be processed for the single fee associated with the corresponding traditional zoning or platting for such cluster developments. Public access to open space is encouraged.

In order to promote better design, parcels lying within more than a single Growth Area may have the total maximum density distributed throughout the development based upon the average density for the entire parcel.

AMENDMENT PROCEDURES

At a minimum the Plan should be reviewed annually by the Planning Commission and every five years by a special task force appointed by the City Council to make recommendations concerning policy changes.

Requests for amendments to the Plan may be considered by the City Council after a recommendation by the Planning Commission. Amendment requests may be initiated by any citizen of Norman, by the Planning Commission, or by City Council. Major amendments may require greater than thirty days review time by staff prior to being considered by the Planning Commission.

Plan amendments may be submitted at any time. Staff will prepare a complete analysis of the impact of the proposed amendment and will identify all affected portions of the Plan. Staff will prepare a quarterly summary report to the City Council as a review of the last three-month and year to date impact of any and all Plan Amendments. Additionally, as a part of the required annual review, staff will prepare a Plan Amendment annual summary and analysis of all affects to the Plan.

AMENDMENT GUIDELINES

In reviewing proposed amendments to the Plan, it is recognized that different types of amendments will require different consideration. Specifically, there are three types of potential changes which might be contemplated. The three types are as follows:

- Land Use Designation Changes;
- Changes to Functional Classification of Roadways; and
- Growth Area Boundary Changes.

Land Use Designation Changes

The following criteria must be met in order to approve requested land use designation changes from the adopted NORMAN 2025 Plan:

1. There has been a change in circumstances resulting from development of properties in the general vicinity which suggest that the proposed change will not be contrary to the public interest; and

2. There is a determination that the proposed change would not result in adverse land use or adverse traffic impacts to surrounding properties or the vicinity.

Changes to Functional Classification of Roadways

The following criteria should be examined in reviewing proposed amendments to the Transportation Plan:

1. The appropriateness of a proposed functional classification change in the Transportation Plan should be determined by analyzing:
 - a. The location and type of land use served,
 - b. The potential travel distances,
 - c. The speed and volume of traffic to be accommodated,
 - d. The primary type of vehicles to be carried, and
 - e. The degree of interference with through movement created by abutting uses and intersections;
2. Regional and system wide transportation impacts must be assessed for each proposed change; and
3. The potential need for Transportation Plan changes should be evaluated with every Land Use or Growth Area Amendment request.

Growth Area Boundary Changes

The Growth Area boundaries are approximate, and may be modified slightly as a result of detailed engineering or topographic studies at the time of application for a designation change. Such minor adjustments are not considered to be formal Plan amendments. The following criteria shall apply and set requirements for changes in Growth Area Boundaries:

CHANGE FROM FUTURE URBAN SERVICE AREA TO CURRENT URBAN SERVICE AREA

1. The area proposed for change is contiguous to the Current Urban Service Area and constitutes a logical and cohesive service area expansion; and
2. The request for amendment demonstrates that the subject area has been provided, or will be at the time of development, with complete infrastructure systems. At a minimum, these systems will consist of:
 - a) Additional sanitary sewer collection and treatment capacity needed to serve the expanded area,
 - b) Water service with adequate pressure for fire-fighting,
 - c) Adequate storm drainage to insure that the proposed development will not create downstream drainage problems, and
 - d) Access to at least one arterial street connecting the subject area to the Current Urban Service Area.

CHANGE FROM SUBURBAN RESIDENTIAL AREA TO CURRENT OR FUTURE URBAN SERVICE AREA

1. The land must be contiguous to existing Current or Future Urban Service Area land;
2. There must be an indication that the existing Urban Service Areas may not be adequate to accommodate the full range of urban land demands based upon land use type and the area of the community;
3. Justification for expansion of the Urban Service Areas should accompany the request; and
4. Concurrent application for Planned Unit Development zoning must accompany the request in order to insure compliance with development criteria for the Current or Future Urban Service Areas.

Country Residential Area

Based upon the significance of this area to the NORMAN 2025 Plan in assisting in orderly development and managed growth and providing adequate safeguards for the sensitive environmental issues and protection of the water resources of the city, conversion to another area is neither desirable nor in the public interest. Any such conversion from Country Residential would be based upon meeting both of the following conditions:

1. The area must be contiguous to an Urban Service Area; and
2. Extension of full urban services to the area will be required.



**CITY OF NORMAN
STORMWATER MANAGEMENT PROGRAM
FOR PHASE II MS4 COMPLIANCE
2016 TO 2020**

Appendix H



Ordinance Exerpts

Sec. 16-101. - Engineering Design Criteria and Standard Specifications and Construction Drawings for Streets, Storm Drainage, Water Lines, and Sanitary Sewers: Adoption.

- (a) The City of Norman Engineering Design Criteria and Standard Specifications and Construction Drawings for Streets, Storm Drainage, Water Lines, and Sanitary Sewers dated September 24, 1996, and amended April 28, 1998; March 28, 2000; May 8, 2001; July 24, 2001, February 26, 2002, September 9, 2003; January 11, 2005; and June 13, 2006, shall be further amended to read as attached hereto and incorporated herein by reference.
- (b) The City of Norman Engineering Design Criteria and Standard Specifications and Construction Drawings for Streets, Storm Drainage, Water Lines, and Sanitary Sewers as referred to above shall not become effective until at least three (3) copies of each have been filed in the Office of the City Clerk for examination by the public.

(Ord. No. 0-9697-13; Ord. No. 0-9798-43; Ord. No. 0-9900-32; Ord. No. 0-0001-53; Ord. No. 0-0102-36; Ord. No. 0-0304-19; Ord. No. 0-0405-33, § 1; Ord. No. 0-0506-67; Ord. No. 0506-76)

Editor's note— Section 1 of Ord. No. 0-9697-13, adopted Sept. 24, 1996, amended § 16-101 to read as herein set out. Prior to such amendment, § 16-101 pertained to penalties for violation of this chapter and derived from Ord. No. 0-7374-82; Ord. No. 0-8283-05; and Ord. No. 0-9596-45. Further, Ord. No. 0-9900-32, § 1, adopted Mar. 28, 2000, amended the title of § 10-101 to read as herein set out.

Sec. 16-102. - Standard Specifications and Construction Drawings and Engineering Design Criteria: Penalties for violation.

- (a) Any person convicted of violating the provisions of the City's Standard Specifications and Construction Drawings and/or Engineering Design Criteria or material referenced therein, or of failing to act or comply with the provisions thereof, shall be punished by a fine of not less than fifty dollars (\$50.00) nor more than seven hundred fifty dollars (\$750.00) for each violation or failure to comply.
- (b) Each day that a violation or failure to comply exists shall constitute a separate and distinct offense, and any one (1) or more of such offenses may be set out in any citation or complaint or information filed.

(Ord. No. 0-9697-13; Ord. No. 0-9900-11; Ord. No. 0-0405-26; Ord. No. 0-0506-10)

Manufactured Fertilizer Ordinance

Sec. 10-801. - Purpose.

City Council finds that certain compounds containing phosphorus, which are contained in manufactured fertilizer, enter into the City's and neighboring communities' water sources resulting in excessive and accelerated growth of algae and aquatic plants which is detrimental to these water resources. It is the purpose and intent of this section to regulate the application of manufactured fertilizers containing phosphorus within the City of Norman.

(Ord. No. 0-1213-34, § 1)

Sec. 10-802. - Definitions.

For the purposes of this chapter, the following words and phrases shall have the meanings described in this section:

Applicator: Any person who applies manufactured fertilizer in the City, including, but not limited to, homeowners, occupants of rental property, and property managers.

Buffer: The land area, twenty-five (25) feet in width, adjacent to any waterbody.

Commercial applicator means any corporation, partnership, or business that is engaged in the business of applying fertilizer for hire and is required to register under this chapter of the City of Norman Code.

Commercial seller: Any person who sells or displays for sale any manufactured fertilizer in the City.

General turf: Nonagricultural land managed using turf grasses including but not limited to home lawns, vegetable and flower gardens, golf courses, cemeteries, park areas as well as commercial, school, university and government grounds.

Impervious cover: Roads, parking areas, buildings, pools, patios, sheds, driveways, private sidewalks, and other impermeable construction covering the natural land surface. This shall include, but not be limited to, all streets and pavement within a subdivision. Vegetated water quality basins, vegetated swales, other vegetated conveyances for overland drainage, areas with gravel placed over pervious surfaces that are used only for landscaping or by pedestrians, and public sidewalks shall not be calculated as impervious cover.

Manufactured fertilizer: A commercially manufactured substance containing one (1) or more recognized plant nutrients, which is used for its plant nutrient content and which is designed for use, or claimed to have value, in promoting plant growth. Fertilizer does not include unadulterated animal and vegetable manures, marl, lime, limestone, and wood ashes.

Phosphate: A form of phosphorus used to measure the phosphorus content of fertilizers. It is expressed as the chemical formula P_2O_5 . The phosphorus (P) content of a fertilizer is forty-three (43) percent of its phosphate (P_2O_5) content.

Phosphorus fertilizer: Any fertilizer that contains phosphorus, expressed as P_2O_5 , with a guaranteed analysis of greater than zero.

Soil test: A set of scientific measurements that determine the basic texture of soil, the pH level of soil, and the various nutrient levels of phosphorus, potassium, calcium and magnesium in soil, for the purpose of providing a fertilizer recommendation regarding the amount of nutrients and rate of application of nutrients for general turf growth.

Waterbody: A surface water feature such as a lake, river, stream, creek, pond, lagoon, bay, or estuary.

(Ord. No. 0-1213-34, § 2)

Sec. 10-803. - Phosphorus fertilizer application.

- (a) Manufactured fertilizer that contains any amount of phosphorus or a compound containing phosphorus, such as phosphate, shall not be applied to general turf within the City, except under one (1) of the following exceptions:
 - (1) Application of manufactured fertilizer to an area during the first six (6) months of turf establishment from seed or sod;
 - (2) The naturally occurring phosphate in unadulterated natural or organic fertilizing products;
 - (3) The general turf and lawn area has been soil tested, with results from a certified laboratory, which confirms that the phosphate levels are less than or equal to ten (10) parts per million. In such cases, lawn fertilizer application shall not exceed the laboratory recommended application rate for phosphorous;
- (b) Manufactured fertilizer containing phosphorous applied pursuant to the above listed exceptions shall be watered into the soil within fourteen (14) hours so that the phosphorous can be immobilized and generally protected from loss by runoff.

(Ord. No. 0-1213-34, § 3)

Sec. 10-804. - Prohibited conduct.

No person may do any of the following:

- (a) Apply manufactured fertilizer when a runoff producing rainfall is occurring or predicted and/or when soils are saturated and a potential for fertilizer movement off-site exists.
- (b) Apply manufactured fertilizer to impervious cover. Fertilizer applied to impervious cover, is to be removed by sweeping or blowing back into the target surface, returned to an appropriate container for reuse, or collected and disposed of properly. Excess fertilizer may not be disposed of by placing it in any area likely to lead into a storm drain.
- (c) Store manufactured fertilizer uncontained on driveways or other areas of impervious cover.
- (d) Apply manufactured fertilizer within 25 feet of any wetland, watercourse, or storm water retention or detention basin.
- (e) Blow, sweep, dump, direct, or place leaves, grass clippings, or any yard debris into any street, storm drain, ditch, creek, pond, or waterway.

(Ord. No. 0-1213-34, § 4)

Sec. 10-805. - Soil testing.

- (a) Soil testing is required before an applicator or commercial applicator may apply phosphorus containing manufactured fertilizer. A soil sample or samples shall be taken from the general turf area on which an applicator or commercial applicator is proposing to apply manufactured fertilizer containing phosphorus or a compound containing phosphorus, following the procedure requirement by the soil testing service.
- (b) The applicator or commercial applicator shall submit a soil sample to the soil testing service following the procedure required by the soil testing service.
- (c) The soil testing service shall determine the rate and application of manufactured fertilizer containing phosphorus based on the results of the soil test and the requirements of this chapter.
- (d) The results of the soil test shall be maintained for a period of three (3) years following receipt of the test by the applicator or commercial applicator.

- (e) The applicator or commercial applicator shall provide a copy of the soil test results to Director of Public Works or his/her designee within forty-eight (48) hours of a written request for the test results.

(Ord. No. 0-1213-34, § 5)

Sec. 10-806. - Information regarding manufactured fertilizer.

- (a) The Director of Public Works or his/her designee shall prepare an informational pamphlet that includes, at minimum, the following:
 - (1) A summary, or complete text, of this chapter;
 - (2) Facts regarding the environmental benefit of phosphorus reduction;
 - (3) A description of penalties for violation of this chapter; and
 - (4) A City phone number and website address where additional information will be available.
- (b) A copy of the informational pamphlet shall be made available to commercial applicators at the time of registration each year. Commercial applicators may make reasonable facsimiles or copies of the informational pamphlet for distribution.
- (c) A copy of the informational pamphlet shall be made available to commercial sellers no later than March 1 of each year. Commercial sellers may make reasonable facsimiles or copies of the informational pamphlet for distribution.

(Ord. No. 0-1213-34, § 6)

Sec. 10-807. - Sale of fertilizer containing phosphorus.

- (a) Any corporation, partnership or business establishment selling or displaying lawn fertilizer, liquid or granular, within the City of Norman that is labeled to contain more than zero (0) percent phosphate (P_2O_5) shall be required to clearly identify those fertilizers by displaying a sign indicating the phosphate levels and advising the use of such fertilizer is regulated within the City of Norman in accordance with this chapter.
- (b) Commercial sellers shall have copies of the informational pamphlets on display, and have copies of the informational pamphlet available to customers, adjacent to the display of any manufactured fertilizer containing phosphorus for sale.

(Ord. No. 0-1213-34, § 7)

Sec. 10-808. - Storage of fertilizer.

All manufactured fertilizer must be stored in a covered area from which rainwater runoff does not run directly into a storm sewer. Any spillage must be swept up and disposed of properly.

(Ord. No. 0-1213-34, § 8)

Sec. 10-809. - Registration.

- (a) Commercial applicators shall register annually.
- (b) No commercial applicator shall engage in the business of lawn fertilizer application in the City of Norman without first having registered as provided in this chapter; however, any owner occupant of a

single-family dwelling may spread fertilizer on the lawn of the dwelling occupied by that owner occupant or owner occupant's immediate family.

- (c) All City programs for fertilizer use shall be reviewed and approved by the Storm Water Engineer prior to any application upon City property.
- (d) All commercial applicators shall receive a copy of Article VIII of Chapter 10 of the Code of the City of Norman and an informational pamphlet, which shall be provided to all employees who may be applying manufactured fertilizer containing phosphorus.

(Ord. No. 0-1213-34, § 9)

Sec. 10-810. - Registration application.

- (a) The following information shall be included in a complete application for registration:
 - (1) The legal name of the commercial applicator, any other names used, the address, telephone number, and contact person for the registrant;
 - (2) The product name, type of use, and percentage weight and ration of elemental phosphorus for every manufactured fertilizer to be used on general turf; and
 - (3) A notarized, sworn statement signed by an owner or duly authorized representative of a commercial applicator indicating that the applicator will provide appropriate training to its employees to ensure compliance with the requirements of Article VIII of Chapter 10 of the Code of the City of Norman throughout the registration period, including, but not limited to, completing soil test prior to applying manufactured fertilizer containing phosphorus and applying manufactured fertilizer at rates required by soil tests.
- (b) The completed registration form shall be returned to the Storm Water Engineer or his/her designee along with:
 - (1) Annual registration fee pursuant to Section 13-108 of this Code; or
 - (2) If the commercial applicator certifies, on the registration form, that the commercial applicator will not use any manufactured fertilizer containing phosphorus, the annual registration fee shall be waived.

(Ord. No. 0-1213-34, § 10)

Sec. 10-811. - Inspections and log book.

- (a) The Director of Public Works or his/her designee shall have the right to inspect property on which manufactured fertilizer has been applied by a registered applicator.
- (b) The commercial applicator shall provide a five-ounce sample of any manufactured fertilizer used by the commercial applicator in the City of Norman upon request by Director of Public Works or his/her designee to enforce this chapter.
- (c) The commercial applicator shall keep a log book of each place where manufactured fertilizer containing phosphorus has been applied and shall make the log book available for inspection to the City of Norman upon request. The log book shall contain:
 - (1) Address of site of application;
 - (2) Amount of manufactured fertilizer containing phosphorus applied; and
 - (3) Results of the soil test conducted prior to application of manufactured fertilizer containing phosphorus.

- (d) The commercial applicator shall keep a log of all employees who have received training on Article VIII of Chapter 10 of the Code of the City of Norman and informational pamphlets for distribution.

(Ord. No. 0-1213-34, § 11)

Sec. 10-812. - Required distribution of information regarding manufactured fertilizer.

- (a) Commercial applicators will be provided a copy of an informational pamphlet at the time of registration each year. Commercial applicators may make facsimiles or copies of the informational pamphlet for distribution.
- (b) A commercial applicator shall provide at least one (1) copy of the informational pamphlet to the owner or occupant of each address at the time of first application of manufactured fertilizer each year.

(Ord. No. 0-1213-34, § 12)

Sec. 10-813. - Violations and penalties.

Any applicator, commercial applicator or commercial seller found to be in violation of the provisions of this chapter shall be subject to a fine in the amount of not less than fifty dollars (\$50.00) nor more than seven hundred fifty dollars (\$750.00).

(Ord. No. 0-1213-34, § 13)

AN ORDINANCE OF THE COUNCIL OF THE CITY OF NORMAN, OKLAHOMA AMENDING CHAPTER 19 OF THE CODE OF THE CITY OF NORMAN TO PROVIDE FOR STANDARDS AND REQUIREMENTS FOR A DESIGNATED WATER QUALITY PROTECTION ZONE INCLUSIVE OF THE LAKE THUNDERBIRD WATERSHED; AND PROVIDING FOR THE SEVERABILITY THEREOF.

NOW, THEREFORE, BE IT ORDAINED BY THE COUNCIL OF THE CITY OF NORMAN, OKLAHOMA:

§ 1. That Section 19-210 of Chapter 19 of the Code of the City of Norman shall be amended to read as follows:

Sec. 19-210. Definitions.

The following words and phrases when used in this chapter, shall for the purposes of this chapter, have the meanings respectively ascribed to them in this article, except where the context otherwise requires:

- A. *Alley*: A minor right-of-way dedicated to public use, which gives a secondary means of vehicular access to the back or side of properties otherwise abutting a street, and which may be used for public utility purposes.
- B. *Best Management Practices (BMP)*: An effective integration of storm water management systems, with appropriate combinations of non-structural controls and structural controls which provide an optimum way to convey, store and release runoff, so as to reduce peak discharge, reduce pollutants, enhance water quality, assist in stream and/or stream bank stabilization, prevent property damage due to flooding, and assist in sediment reduction. BMP's include, but are not limited to, the following:
 - 1. Structural controls such as:
 - a. Sediment forebay;
 - b. Grassed swale;
 - c. Enhanced bio-swale;
 - d. Voluntary urban nutrient management;
 - e. Statutory urban nutrient management;
 - f. Wetlands;
 - g. Extended detention-enhanced;
 - h. Retention basins;

- i. Bioretention, surface sand, organic, and similar filters;
 - j. Soaking trench;
 - k. Infiltration trench;
 - l. Storm water pond;
 - m. Dry extended detention pond; and
 - n. In-channel detention.
 - 2. Non-structural controls such as:
 - a. Landscape conservation;
 - b. Reduction in impervious cover;
 - c. Schedule of maintenance activities;
 - d. Prohibition of practices;
 - e. Maintenance procedures.
 - f. Street sweeping;
 - g. Fertilizer restrictions.
- C. *Bicycle lane*: That portion of a roadway set aside and appropriately designated for the use of bicycles.
- D. *Bicycle path*: A paved facility physically separating the bicycle from motor vehicle traffic.
- E. *Block*: A parcel of land, intended to be used for urban purposes, which is entirely surrounded by public streets, highways, railroad rights-of-way, public walks, parks or greenstrips, rural land or drainage channels or a combination thereof.
- F. *Buffer*: A vegetated area, including trees, shrubs, and herbaceous vegetation that exists or is established to protect a stream system, lake or reservoir, reduce pollutants, enhance water quality, assist in stream and/or stream bank stabilization, and assist in sediment reduction.
- G. *Building line*: A line parallel to the lot or property line beyond which a structure or building cannot extend, except as specifically provided under the zoning ordinance. It is equivalent to the setback or yard line.
- H. *Cluster development*: cluster development is a method of subdividing land which allows the maximum density available within the zoning district while allowing smaller lots than those specified, provided that the land saved is reserved for permanent agricultural use or open space, ideally in common ownership for community use.

- I. *Combustible structure*: That which is built or constructed, an edifice or building of any kind, or any piece of work artificially built up or composed of parts joined together in some definite manner and consisting of any material that, in the form in which it is used and under the conditions anticipated, will ignite and burn or will add appreciable heat to an ambient fire.
- J. *Degradation*: any condition caused by the activities of humans which result in the prolonged impairment of any constituent of the aquatic environment.
- K. *Development*: The erection, construction, or change of use of buildings; or the erection or construction of any additions to existing buildings where outer walls are added or altered as to location, but not including alterations or remodeling of buildings where said outer walls are not added or altered as to location. As it relates to water quality protection, any man-made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation, drilling, or storage of equipment or materials.
- L. *Development committee*: The City of Norman Development Committee shall be comprised of the following staff members: The Director of Public Works (who shall be the chairman), the Director of Planning and Community Development, the Director of Utilities, the City Engineer, the Development Coordinator, and the Manager of Current Planning, or their designees.
- M. *Director of Public Works*: The Director of Public Works of the City of Norman, including his or her designee.
- N. *Easement*: A grant by the property owner to the public, a corporation, or persons, of the use of an area of land for specific purposes.
- O. *Impervious Cover*: Roads, parking areas, buildings, pools, patios, sheds, driveways, private sidewalks, and other impermeable construction covering the natural land surface. This shall include, but not be limited to, all streets and pavement within a subdivision. Vegetated water quality basins, vegetated swales, other vegetated conveyances for overland drainage, areas with gravel placed over pervious surfaces that are used only for landscaping or by pedestrians, and public sidewalks shall not be calculated as impervious cover.

- P. *Lot*: A subdivision of a block or other parcel intended as a unit for the transfer of ownership or for development.
- Q. *Lot, corner*: A lot which abuts two (2) intersecting streets. The front of a lot is defined by the filed plat of the subdivision, and is addressed accordingly. Although the front door of the house should face the front yard, a house may be oriented towards the side street if the plat was designed to provide two (2) front and rear yards or if there is sufficient room to provide both a new front and rear setback.
- R. *Lot, depth*: The average distance from the front property line of the lot adjacent to the street to its rear property line, measured in the general direction of side lines of the lot.
- S. *Lot, double frontage*: A lot which runs through a block from street to street and which has frontage on two (2) or more streets, but not including a corner lot.
- T. *Lot, reverse frontage*: A corner lot of such size and shape that a building erected on it might logically be designed to face on either adjoining street, thus causing the building to rear on the side line of any abutting lot.
- U. *Lot, townhouse*: A lot shown on a townhouse plat and intended as the site of a single attached dwelling unit.
- V. *Lot line adjustment*: A relocation of the lot lines of two (2) or more lots included in a plat which is filed of record, for the purpose of making necessary adjustments to building sites.
- W. *Low Impact Development (LID)*: a comprehensive land planning and engineering design approach to development that can be used to replicate or restore natural watershed functions and/or address targeted watershed goals and objectives.
- X. *Non-degradation*: The proper use of BMP's and pollution prevention criteria in activity so as to prevent property damage due to flooding and degradation as defined herein.
- Y. *Non-structural controls*: Pollution prevention measures that focus on the management of pollutants by practices and procedures which minimize exposure to runoff, as well as preserve open space and natural systems. Non-structural controls may include riparian buffers,

modified development practices, and regulations on pesticide, herbicide, and fertilizer use.

Z. *Norman 2025 Plan*: The comprehensive development plan for the City of Norman which has been officially adopted to provide long-range development policies for the City in the foreseeable future and which includes, among other things, the plan for land use, land subdivision, traffic circulation and community facilities, utilities, and drainage facilities.

AA. *Person*: Any natural person, corporation, partnership, joint venture, association (including homeowners or neighborhood associations), trust, or any other entity recognized by law.

BB. *Planning Commission*: The City Planning Commission of the City of Norman.

CC. *Plat, final*: A map of a land subdivision giving, in form suitable for filing in the office of the County Clerk, necessary affidavits, dedications, and acceptances, and delineating the layout of such subdivision as required herein.

DD. *Plat, preliminary*: A map of a proposed subdivision showing the character and proposed layout of the tract in sufficient detail to indicate the relationship of the proposed development to topography, existing streets, drainage facilities and utilities, existing easements of record, the Norman 2025 Plan, existing urban development and zoning, and to indicate the nature of the land planning design.

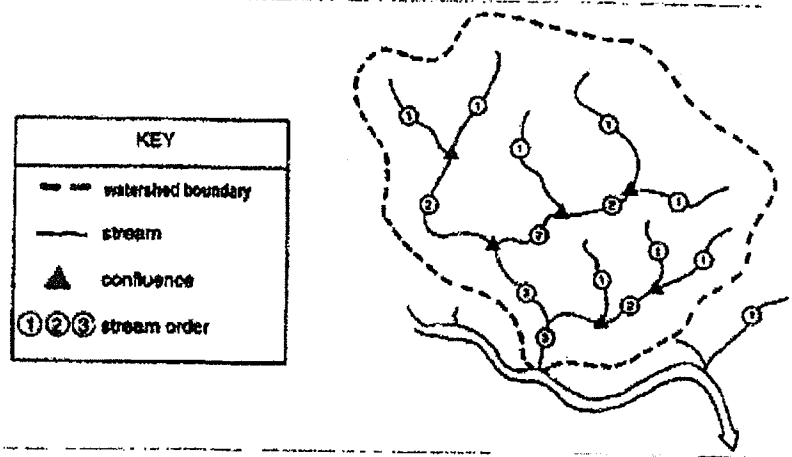
EE. *Pollution*: the contamination or other alteration of the physical, chemical or biological properties of any stream or other water source, or such discharge of any liquid, gaseous or solid substance into any stream or other water source as will or is likely to create a nuisance or render such waters harmful or detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life.

FF. *Public improvements*: Any utility, structure, or modification of topography which is, or will be, located within, under, or over a right-of-way or easement of record and which is, or will be, owned and/or maintained by other than the individual owner(s) of developed real estate.

- GG. *Raised mound septic system*: a soil absorption system that is elevated above the natural soil surface in a suitable fill material. It is a variation of the raised bed utilizing sandy fill material but not requiring a stabilization period prior to the construction of the absorption area.
- HH. *Raised septic system*: a wastewater absorption trench system which has been constructed in soil fill material which has been placed on top of the natural soil on a building lot.
- II. *Reserve strip*: A strip of land located adjacent to a public easement or right-of-way which has the effect of denying access to adjacent property owners to said public easement or right-of-way.
- JJ. *Right-of-way*: Any street, avenue, parkway, highway, boulevard, road, alley, bicycle path or pedestrian walkway reserved and/or dedicated for public or private use chiefly by vehicular or pedestrian traffic. Its width shall be established as the shortest horizontal distance measured between lines delineating the right-of-way.
- KK. *Rural and suburban area*: All that part of the incorporated area of the City of Norman which is not classified on the Norman 2025 Plan for urbanization.
- LL. *Setback line*: See building line or yard line.
- MM. *Site development plan*: A plan drawn at a scale of not less than fifty (50) feet equal one (1) inch which shows the topographic characteristics of the site not more than a one (1) foot contour interval in the urban areas and not more than two (2) feet contour intervals in the rural areas; the location and dimensions of buildings, yards, courts, landscape, pedestrian and vehicular circulation and parking, fences and screening; service areas and service courts, and other features; the use of each building and area; the height of buildings; adjacent street, alleys, utility, drainage and other easements; and the relationship of the development to adjacent areas which it may affect.
- NN. *Streams*: Watercourses that are either identified through site inspection and/or notification by the United States Army Corp of Engineers or by the United States Geological Survey (USGS) 7.5 minute series (topographic) maps drawn at a scale of 1:24,000 or 1 inch = 2000 feet. Perennial streams are those which are depicted on a USGS map with a solid blue line. Intermittent streams are those which are depicted on a USGS map with a dotted blue line.

OO. *Stream Order*: A method of numbering streams as part of a drainage basin network. Tributaries which have no branches are designated as of the first order, streams which receive two first-order tributaries are of the second order, larger branches which receive two second-order tributaries are designated third order, and so on, the main stream being always of the highest order. Designation of stream order shall be determined utilizing a USGS 7.5 minute series (topographic) map drawn at a scale of 1:24,000 or 1 inch = 2000 feet. See Figure 1 below.

Figure 1: Stream Order (Source: Schueler, 1995)



PP. *Stream Planning Corridor (SPC)*: the areas of land designated as an SPC in Exhibit 4-4 to the PBS&J Storm Water Master Plan dated October 2009 along both sides of a stream or natural drainage corridor that encompasses the area projected to be inundated by the one-percent (1%) chance flood event (i.e. the 100-year floodplain) in any given year assuming full build-out watershed conditions (based upon the Norman 2025 Plan and subsequent updates) in those areas with 40 or more acres of drainage area in the Lake Thunderbird watershed.

QQ. *Street*: Any public or private right-of-way which affords the primary means of access to abutting property.

RR. *Street, collector*. A minor street collecting traffic from other minor streets and serving as the most direct route to a major street or community facility.

SS. *Street, cul-de-sac*: A local street having one (1) closed end terminated by a turn-around.

TT. *Street, estate type*: A local street in a Residential Estate (R-E) or Agricultural (A-1, A-2) zone or district.

UU. *Street, frontage or service*: A minor street located adjacent and parallel to a major street for land service to abutting properties and access to adjacent areas and for allowing control of access to the major street.

VV. *Street, local*: A minor street which collects and distributes traffic between parcels of land and collector or arterial streets, with the principal purpose to provide access to abutting property.

WW. *Street, major*: A freeway, principal arterial, or minor arterial designated on the adopted Transportation Plan of the City of Norman.

XX. *Street, minor*: Any street other than one (1) designated as a freeway, principal arterial, or minor arterial on the adopted Transportation Plan of the City of Norman, but not including alleys.

YY. *Street, public*: Any pre-existing county road heretofore annexed by the City of Norman and which forms a part of said City by reason of such annexation, or any street or road granted or dedicated to and accepted by the City of Norman.

ZZ. *Structural controls*: engineered solutions designed to reduce pollution in surface water runoff primarily through five basic mechanisms: infiltration, amelioration, treatment, filtration and detention. In effect, these systems attempt to counteract the opposite tendencies of decreased infiltration, filtration and detention which urbanization imposes upon the land.

AAA. *Subdivider (developer)*: Any person, firm, partnership, corporation, or other entity acting as a unit, subdividing or proposing to subdivide or develop land as herein defined.

BBB. *Subdivision*: The division, re-division, or delineation of land by lots, tracts, sites or parcels for the purpose of transfer of ownership, or for urban development, or for the dedication or vacation of a public or private right-of-way or easement.

CCC. *Swale*: A natural depression or wide shallow ditch used to temporarily store, route, or filter runoff and encourage infiltration.

- DDD. *Top of bank*: The point along a stream bank where abrupt change in slope is evident, and where the stream is generally able to overflow the banks and enter the adjacent floodplain. The top of bank may be identified from topography maps but must be verified through field inspection. Where no top of bank is discernable by the City Storm Water Engineer or his designee, measurements should be taken from the center line of the stream.
- EEE. *Transportation Plan*: The arrangement, character, extent, and width of major streets within the City of Norman as designated on the most currently adopted Land Use and Transportation Plan document.
- FFF. *Townhouse*: One (1) of a series of two (2) or more attached dwelling units, separated from one (1) another by continuous, vertical party walls without openings from basement floor to the roof deck and tight against same or through the roof and which are intended to have ownership transferred in conjunction with a platted lot.
- GGG. *Urban area*: All that part of the incorporated area of the City of Norman which is designated on the Norman 2025 Plan for urbanization.
- HHH. *Water Quality Protection Zone (WQPZ)*: A vegetated strip of land that lies along a Stream or Lake Thunderbird and its adjacent wetlands, floodplains or slopes that is comprised of the stream bed and areas adjacent to the stream bed and the distance of which is determined by Section 19-411(B), (C) and (D) herein.
- III. *Way*: Any street, avenue, parkway, highway, boulevard, road, alley, bicycle path or pedestrian walkway reserved and/or dedicated for public or private use chiefly by vehicular or pedestrian traffic. Its width shall be established as the shortest horizontal distance measured between lines delineating the right-of-way.
- JJJ. *Wetland*: the term, as used herein, shall have the same meaning as set forth in 40 C.F.R. §230.3.
- KKK. *Yard line*: An open space at grade between a building and the adjoining lot lines, unoccupied and unobstructed by any portion of a structure from the ground upward except as specifically provided in Chapters 18 or 22. In measuring a yard for the purpose of determining the width of the side yard, the depth of a front yard, or the depth of a

rear yard, the least horizontal distance between the lot line and the main building shall be used.

LLL. *Yard line, front.* A yard extending the full width of a lot between the side property lines and being the minimum horizontal distance between the street side property line and the main building or any projection thereof.

MMM. *Yard line, rear:* A yard extending across the rear of a lot measured between side yard lines and being the minimum horizontal distance between the rear lot line and the rear of the main building or any projections other than steps, unenclosed balconies or unenclosed porches. On corner lots the rear yard shall be considered as parallel to the street upon which the lot has its least dimension. On both corner lots and interior lots the rear yard shall in all cases be at the opposite end of the lot from the front yard.

NNN. *Yard line, side:* A yard between the building and the side line of the lot and extending from the front yard line to the rear lot line and being the minimum horizontal distance between a side lot line and the side of the main building or any projections other than steps.

- § 2. That Section 19-303 of Chapter 19 of the Code of the City of Norman shall be amended to read as follows:

Sec. 19-303. Preliminary Plat: Contents.

The preliminary plat shall be drawn at a scale of not more than one hundred (100) feet to the inch, except where impractical and shall show:

- A. The scale, north arrow, date and legend;
- B. The proposed name of the subdivision;
- C. The name and address of the owner of record, the subdivider, the owner's engineer, and the registered land surveyor preparing the plat;
- D. Legal description of the proposed subdivision, including the acreage and the number of lots proposed in the subdivision, by type;
- E. A key map showing the location of the proposed subdivision referenced to existing or proposed arterial streets or highways and to government section lines, and including the boundaries and number of acres of the drainage area of which the proposed subdivision is a part;

- F. The names, with locations of intersecting boundary lines, of adjoining subdivisions, and the location of the Norman City limits if falling within or immediately adjoining the tract;
- G. The land contours with vertical intervals of one foot in the urban areas and two (2) feet in the rural areas referenced to a United States Geological Survey datum (1988) or Coast and Geodetic Survey bench mark or monument;
- H. The location of dedicated streets at the point where they adjoin and/or are immediately adjacent; but actual measured distances shall not be required;
- I. Important features such as existing permanent buildings; large trees (a minimum eight (8) inch caliber); streams; railway lines; oil and gas line or wells as shown on the records of the Oklahoma Corporation Commission (including abandoned gas or oil wells and dry holes which remain unplugged);
- J. The location of all existing easements of record, sanitary and storm sewers, water mains, streets, culverts, power lines, and other surface or subsurface structures within the tract or immediately adjacent thereto, and the proposed location, layout, type, and size of the following structures and utilities:
 - 1. Water mains;
 - 2. Sanitary sewer mains, sub-mains and laterals;
 - 3. Storm sewers; and,
 - 4. Street improvements.
- K. The location of all drainage channels and subsurface drainage structures, and the proposed method of disposing of all run-off from the proposed subdivision, and the location and size of all drainage easements relating thereto, whether they be located within or outside of the proposed plat;
- L. The length of the boundaries of the tract, measured to the nearest foot, and the proposed location and width of streets, alleys, easements, and setback lines, and the approximate lot dimensions;

- M. The existing zoning and proposed changes of zoning in the tract and of the property immediately adjacent thereto;
- N. One hundred (100) year flood boundaries;
- O. Water Quality Protection Zone boundaries;
- P. Preliminary drawings showing compliance with the applicable requirements of this Chapter for structural controls on development;
- Q. A topographic map, drawn to a scale of one hundred (100) feet to one inch, or in an appropriate scale. The map should display, according to the best information available, topographic information and features (including, but not limited to, faults and fractures along waterways, wetlands, and sinkholes), and the WQPZ. Current limits of the FEMA floodplain and the SPC shall be displayed;
- R. Location of all temporary and permanent runoff detention basins, constructed and altered waterways and other physical facilities to be installed to comply with the terms of this ordinance;
- S. Location of all existing monitoring stations, sample points or other significant devices used in measuring or assuring water quality;
- T. Any technical surveys or studies necessary to support a request for modification of WQPZ boundaries affecting the subject parcel;
- U. In the instance where there is one (1) or more active oil and/or gas well(s), lease road(s), tank batteries, flow lines, gas sales lines, dead man anchors or any other related equipment, located within a proposed preliminary plat, any and all such items shall be shown on the submitted preliminary plat. Both existing conditions and any proposed changes to the existing conditions must be indicated on the preliminary plat. The information shall include, but not be limited to well access, size of the well location, including appurtenant equipment, any change in lay out or operations of the well site such as relocation of the lease road or moving of the tank batteries and flow lines, fencing, easements for flow lines, gas sales line, communication cables, and electric power lines. The information must also stipulate the parties responsible for constructing any lease road and approach and fencing. Easements necessary to provide for flow lines, gas sales lines, power supply lines and communication cables must be designated in writing. All information required must be shown on a site plan that has been reviewed and approved for compliance with oil and gas ordinances. A

copy of the site plan shall be provided to the oil and gas inspector to become part of the well records until such time of the plugging and restoration of well location(s) has been completed. Oil well operators shall be notified by the oil and gas inspector of any predevelopment informational meeting(s) as an interested part where a preliminary plat contains a well(s), lease road, tank battery, flow line, gas sales line, dead man anchors, or any other related equipment that they operate. Notice shall be given in the same format as property owners within the required notice area.

§ 3. That Section 19-308(E) of Chapter 19 of the Code of the City of Norman shall be amended to read as follows:

E. In the case of a plat proposing the reserving or dedicating of land or amenities to be used in common by owners of lots in a single-family residential subdivision, or in the case of a plat or Norman Rural Certificate of Survey that contains any portion of the WQPZ, the applicant shall submit evidence acceptable to the City Attorney that all necessary steps have been taken for:

1. The establishment of a mandatory Property Owner's Association ("POA") or establishment of another acceptable arrangement for adequate maintenance of the common elements and any designated non-structural controls for storm water management. All mandatory POAs shall submit a Declaration of Covenants, Conditions and Restrictions (the "Declaration") which establishes a minimum framework that provides for the fair and effective administration of the POA and thereby assures the greater likelihood that the interests of the City and its citizens are secure and which include the following provisions:

a. A list of all common property in the plat, by legal description. A specific description of all of the common elements within the subdivision including any abutting arterial roadways, the uses allowed for each common element and a description of the person responsible for initially constructing or installing each common element and the responsibility for maintaining the common element after initial installation;

b. In those plats containing any portion of the WQPZ, a list of any non-structural controls located on the property.

* * * * *

§ 4. That Section 19-411 of Chapter 19 of the Code of the City of Norman shall be added to read as follows:

Sec. 19-411. Water Quality Protection Zone Design Standards.

- A. The Water Quality Protection Zone (WQPZ) for a stream system shall consist of a vegetated strip of land, preferably undisturbed and natural, extending along both sides of a stream and its adjacent wetlands, floodplains, or slopes. The width shall be adjusted to include contiguous sensitive areas, such as steep slopes, where development or disturbance may adversely affect water quality, streams, wetlands, or other water bodies.
- B. The required base width for all WQPZ's shall be equal to:
 - 1. The greater of the following:
 - a. 100 feet in width, measured from the top of the bank, on either side of the stream; OR
 - b. The designated Stream Planning Corridor as delineated on Exhibit 4-4 to the Storm Water Master Plan, dated October 2009 and accepted by City Council on November 10, 2009 and as available on the appropriate scale through the Public Works Department, or as indicated by the Applicant's independent engineering analysis ; OR
 - c. The FEMA Floodplain; OR
 - 2. An alternative width equal to 25 feet in width, measured from the top of the bank, on either side of the stream when a reduction in nitrogen of at least 75% and a reduction in phosphorus of at least 58% is achieved through the use of an engineered process that is certified by a licensed Professional Engineer. A development plan using an alternative width less than the SPC shall also document protection against flooding and bank erosion that would be anticipated during the 1% chance flood event in an given year assuming full build-out watershed conditions in those areas with 40 or more acres of drainage area in the Lake Thunderbird watershed. For the purpose of determining the applicable reduction in the base width of the buffer, the table below may be utilized to determine pollutant removal for a particular structural control, as long as such control is constructed in accordance with the specifications for said control contained in Wichita/Sedgwick County Stormwater Manual.

Table of Design Pollutant Removal Efficiencies for Storm Water Controls (%)				
Structural Control	Total Suspended Solids	Total Phosphorus	Total Nitrogen	Metals
Storm Water Pond	80	55	30	50
Dry Extended Detention Pond	60	35	25	25
Enhanced Dry Swales	90	50	50	40
Grass Channel	50	25	20	30
Infiltration Trench	90	60	60	90
Soaking Trench	90	60	60	90
Vegetative Filter Strips	50	20	20	40
Surface Sand Filters	80	50	30	50

- C. For each portion of any 25 foot segment of the buffer, as set forth in Section 19-411(B), that has a slope over 20%, 25 feet shall be added to the width of the WQPZ. To determine the extent of steep slopes, a cross section of the topography every 100 feet shall be prepared and utilized by the Applicant.
- D. In second-order streams with continuous water or in higher order streams, 25 feet shall be added to the base width outlined in Section 19-411 (B) above.
- E. Drainage easements, of sufficient size to carry the runoff of a 1% chance flood event from all drainage areas on the Plat greater than forty (40) acres within the WQPZ must be shown on dotted lines on the Preliminary and Final Plats, along with a written legal description of any such easement, all certified by a licensed Professional Engineer. Such easement shall be granted to the City of Norman for the purpose of access for inspecting, repairing, and maintaining drainage channels.
- F. For all developments, particularly those containing some portion of the WQPZ, utilization of low impact development strategies are encouraged. For plats or Norman Rural Certificates of Survey that include portions of the WQPZ, the current Engineering Design Criteria may be modified when Low Impact Development strategies are utilized in accordance with City of Wichita/Sedgwick County Stormwater Manual.
- G. Water Pollution Hazards. The following land uses and/or activities are designated as potential water pollution hazards and must be set back from the top of the bank of any stream or waterbody by the distance indicated below:

1. Storage of hazardous substances—(300 feet)
2. Aboveground or underground petroleum storage facilities—(300 feet)
3. Drainfields from onsite sewage disposal and treatment systems (i.e., septic systems)—(200 feet)
4. Raised septic systems and raised mound septic systems—(500 feet)
5. Solid waste landfills or junkyards—(600 feet)
6. Subsurface discharges from a wastewater treatment plant—(200 feet)
7. Land application of biosolids—(200 feet)

H. WQPZ Design Restrictions. Except as required for initial construction, there shall be no clearing, grading, construction that disturbs vegetation on any portion of the WQPZ, the width of which is determined by Section 19-411(B), (C) and (D) herein. Any development containing a WQPZ shall not be designed to contain within that zone any permanent structures or portions of septic systems, except for structural controls or other enhancing design features that will further the objectives of this ordinance.

I. All applications for preliminary plats and Norman Rural Certificates of Survey that contain any portion of property within the WQPZ shall also submit a report outlining the Best Management Practices to be employed.

§ 5. That Section 19-514 of Chapter 19 of the Code of the City of Norman shall be added to read as follows:

Sec. 19-514. Water Quality Protection Zone Management and Maintenance.

A. All preliminary plats, final plats, and Norman Rural Certificates of Survey shall clearly:

1. Show the extent of any WQPZ on the subject property.
2. Label the WQPZ.
3. Provide a note to reference any WQPZ stating: "There shall be no clearing, grading, construction or disturbance of vegetation

except as permitted by the Director of Public Works unless such disturbance is done in accordance with 19-514(E) of the Norman City Code.

4. Provide a note to reference any protective covenants governing all WQPZ areas stating: "Any WQPZ shown hereon is subject to protective covenants that may be found in the land records and that restrict disturbance and use of these areas."
 5. All subdivisions containing a WQPZ area shall ensure maintenance of the non-structural controls/aspects in the WQPZ area by its Property Owners' Association through the filing of a protective covenant, which is required to be submitted to the City Attorney's office for approval. The covenant shall be recorded in the land records and shall run with the land and continue in perpetuity. Any changes to the covenants and restrictions shall be consistent with the provisions herein.
- B. An offer of dedication of a WQPZ to the City of Norman does not convey to the general public the right of access to this area unless such a right is explicitly set forth in said dedication. Further, an offer of dedication of a WQPZ is not a mandate for a public trail system or any portion thereof.
- C. The Public Works Department shall inspect the buffer annually and following severe storms for evidence of sediment deposition, erosion, or concentrated flow channels and corrective actions taken to ensure the integrity and functions of the WQPZ.
- D. Any portion of the WQPZ that is within thirty (30) feet of a combustible structure shall be maintained (regardless of the underlying zoning designation) as provided in Section 10-209.
- E. Portions of the WQPZ that are not within thirty (30) feet of a combustible structure may be left undisturbed and natural, and in no event, shall grassy vegetation in this area be mowed or otherwise cut down to less than six (6) inches tall.

- § 6. That Section 19-601 of Chapter 19 of the Code of the City of Norman shall be amended to read as follows:

Sec. 19-601. Variations.

- A. Occasionally the tract to be subdivided is of such unusual size or shape or is surrounded by such development or unusual conditions that the strict application of the requirements contained in this chapter would result in substantial hardship or inequity. The City Council may vary or modify, except as otherwise indicated, such requirements of design, but not of procedure or public improvements, so that the subdivider may develop the subject property in a reasonable manner. At the same time, the public welfare and interests of the City must be protected and the general intent and spirit of this chapter are preserved by granting such variance. Such modification may be granted upon written request of the subdivider or the subdivider's engineer, stating the reason for each modification, and may be approved by vote of the regular membership of the City Council, with the recommendation of the Planning Commission, subject to the acceptance of the plat and the dedications thereon by the City Council; provided, however, that a variation based on unique condition(s) shall not be granted when the unique condition(s) was created or contributed to by the subdivider.
- B. WQPZ Averaging. The width of the WQPZ may be reduced in some circumstances to accommodate unusual or historical development patterns, shallow lots, stream crossings, or storm water ponds. Any averaging of the WQPZ must be done in accordance with the following:
1. An overall average WQPZ width of at least the base width as determined in 19-411(B) must be achieved within the boundaries of the property to be developed. The WQPZ on adjoining properties cannot be included with buffer averaging on a separate property, even if owned by the same property owner.
 2. The average width must be calculated based upon the entire length of stream bank that is located within the boundaries of the property to be developed. When calculating the WQPZ length, the natural stream channel should be followed.
 3. WQPZ averaging shall be applied to each side of a stream independently. If the property being developed encompasses both sides of a stream, WQPZ averaging can be applied to both sides of the stream, but must be applied to both sides of the stream independently, unless the natural topography of the stream makes one side of the stream not conducive to the establishment of a WQPZ and in that event, averaging using both sides may be utilized.

4. WQPZ averaging is prohibited in developments that have, or will have after development areas that have slopes greater than 15% that are located within fifty feet of the stream to be buffered.
 5. Appeal from Decision of Public Works Director. If the applicant desires to appeal from the decision of the Public Works Director or his or her designee made in accordance with this subsection, the applicant may file such request, and any documentation supporting said appeal, with the City Clerk. The City Clerk will place the appeal on the agenda of the next available regular City Council meeting. The decision of the Public Works Director, or his or her designee, may be upheld or overturned by vote of the regular membership of the City Council.
 - C. Whenever infrastructure has been installed that will benefit the full build-out of a Preliminary Plat which was approved within five (5) years prior to the effective date of this ordinance, the Preliminary Plat shall not be deemed expired, for purposes only of the application of this ordinance, even after the passage of three (3) years from the date of approval of the Preliminary Plat, or five (5) years from the date of approval of the Preliminary Plat if a Final Plat has been filed on part of the land embraced in the Preliminary Plat.
- § 7. That Section 19-606 of Chapter 19 of the Code of the City of Norman shall be amended to read as follows:

Sec. 19-606 Exception to allow Norman Rural Certificates of Survey as plats in A-1 and A-2 Zoning Districts.

A. It is the purpose of this exception to allow lots of ten (10) acres or more to be developed and sold adjacent to public or private roadways in the A-1 and A-2 Agricultural Districts; however, private roadways should be constructed and maintained in such a manner that said roadways may be traversed and used by police, fire and other official vehicles of all municipal, county, state and federal agencies. Lots created under this process shall be designated as "Norman Rural Certificate of Survey Subdivisions" and may be permitted under the following procedures (Ord. No. O-0203-34):

- * * * * *
2. An accurate survey of the lot, prepared by a land surveyor registered in the State of Oklahoma, and the proposed subdivision thereof shall be submitted to the Public Works Department and shall show the same information required for a preliminary plat as referenced in Section 19-303 of this Code, except the ground

contours may be drawn at five-foot intervals in such cases where the average ground slope is three (3) percent or greater.

* * * * *

§ 8. If the provisions of any existing section of Chapter 19 conflicts with any section of this Water Quality Protection Zone ordinance, then the provisions of this ordinance O-1011-52 will control and prevail.

§ 9. Severability. If any section, subsection, sentence, clause, phrase, or portion of this ordinance is, for any reason, held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions of this ordinance, except that the effective date provision shall not be severable from the operative provisions of the ordinance.

ADOPTED this 28th day

NOT ADOPTED this _____ day

of June, 2011.

of _____, 2011.

Cindy Rosenthal
Cindy Rosenthal, Mayor

Cindy Rosenthal, Mayor

ATTEST:

Brenda Hall
Brenda Hall, City Clerk





**CITY OF NORMAN
STORMWATER MANAGEMENT PROGRAM
FOR PHASE II MS4 COMPLIANCE
2016 TO 2020**

Appendix I



Allowable Non-Stormwater Discharges

Part I.B.2, Authorized Non-Stormwater Discharges, of the General Permit for Stormwater Discharges Associated with Municipal Separate Storm Sewer Systems in Small Cities, Urbanized Area, and Other County Areas in the State of Oklahoma, OKR04, states that the following are allowable non-stormwater discharges:

1. Water line flushing;
2. Landscape irrigation;
3. Diverted stream flows;
4. Rising ground waters;
5. Residential building wash water without detergents;
6. Uncontaminated pumped ground water;
7. Uncontaminated ground water infiltration;
8. Discharges from potable water sources;
9. Foundation drains;
10. Air conditioning condensate;
11. Irrigation water;
12. Springs;
13. Water from crawl space pumps;
14. Footing drains;
15. Lawn watering;
16. Individual residential car washing;
17. De-chlorinated swimming pool discharges;
18. Street wash water;
19. Fire hydrant flushing;
20. Discharges from riparian areas and wetlands;
21. Discharges in compliance with a separate Oklahoma Pollutant Discharge Elimination System or National Pollutant Discharge Elimination System permit;
22. Discharges of gray water from municipal splash pads, unless otherwise permitted or regulated by DEQ, provided discharges comply with all applicable municipal and county ordinances and discharges from recirculating systems are de-chlorinated prior to discharge; and
23. Discharges or flows 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 such 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.

Section 6003.1, Allowable Discharges, of the City of Norman Engineering Design Criteria, which was adopted by the Norman City Council through Ordinance No. O-0506-76, also

includes a list of allowable non-stormwater discharges that have been determined to not be substantial contributors of pollutants to the MS4:

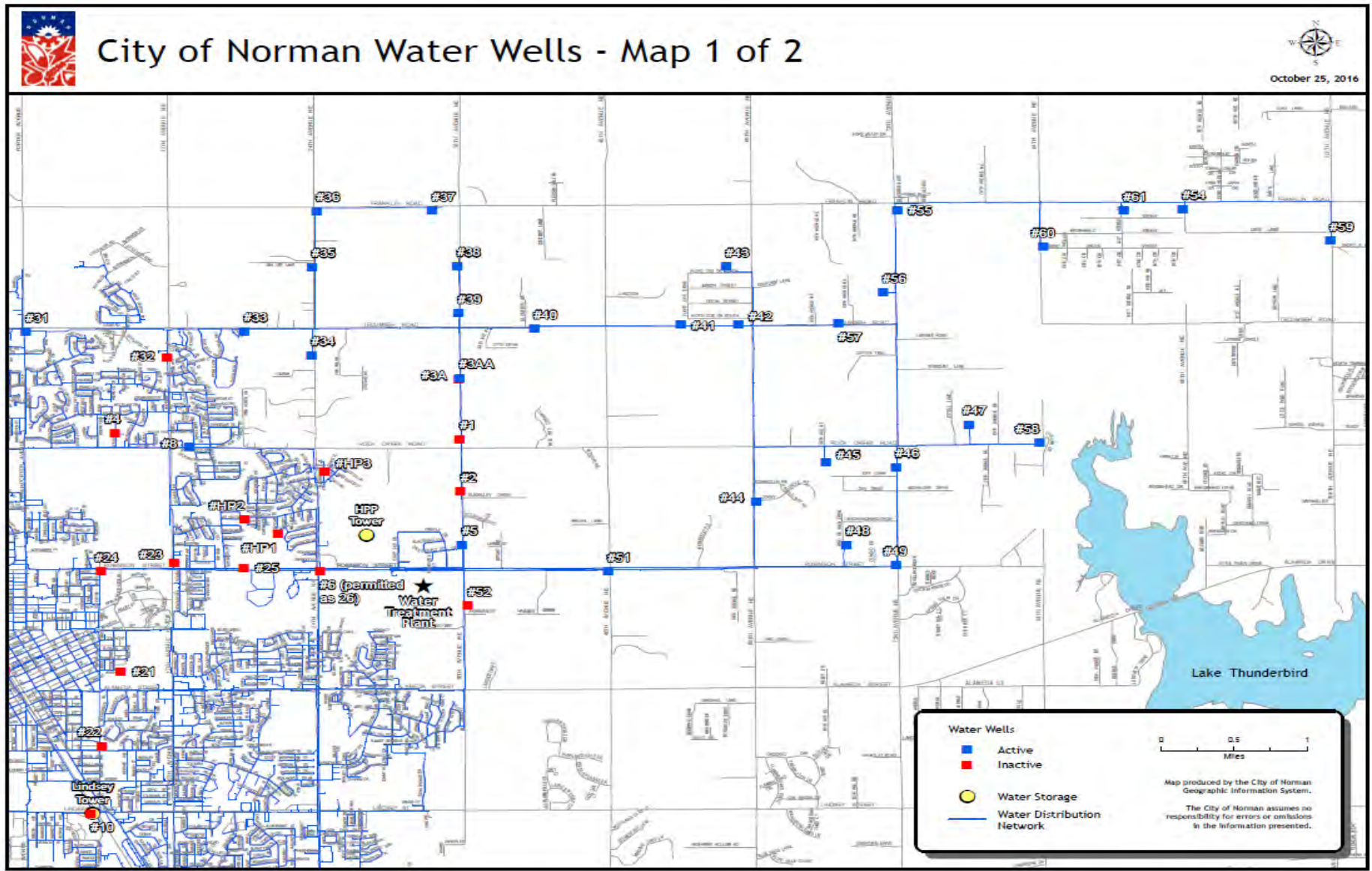
1. Potable water discharges, including potable water line flushing;
2. Uncontaminated groundwater;
3. Uncontaminated water from crawl space and footing drains;
4. Flows from riparian habitats, wetlands, springs, or streams;
5. Irrigation water;
6. Residential car washing (including charity car washes);
7. Air conditioner condensate;
8. Discharges resulting from City operations, including street washing, firefighting, maintenance and repair work;
9. Any discharge covered by a current OPDES/NPDES permit so long as the discharge is not in violation of the permit or Section 6003.1 of this ordinance;
10. Discharges containing chemicals applied according to manufacturer instructions for legitimate residential or commercial use, including legal pesticides, herbicides and fertilizers;
11. Runoff from agricultural activities, including residential gardening and landscaping;
12. Any other type of discharge determined allowable by the Director; and
13. De-chlorinated swimming pool discharges.

Any of the above allowable discharges may be present throughout the City of Norman on any given day. Specific allowable discharges will be included in the table below upon notification and occurrence, and any additional information will be kept with the SWMP:

Discharge Type	Location	Start Date	Duration	End Date
WTP Pilot Project	City Water Wells	October 13, 2016	~24 months	

WTP Pilot Project:

The Utilities Department, Water Treatment Plant, is conducting a pilot project to test treatment technologies for the removal of naturally-occurring Hexavalent Chromium from groundwater wells used for public water supply purposes. Discharge to the MS4 will consist of treated groundwater and well purge water, which are allowable non-stormwater discharges as uncontaminated groundwater. Locations of City of Norman Water Wells No. 44 and 48 can be seen in the maps below. Additional project details can be found by contacting Chris Mattingly, Capital Projects Engineer, Utilities Department, (405) 366-5443, chris.mattingly@normanok.gov.





City of Norman Water Wells - Map 2 of 2



October 25, 2016

