



AGENDA

TOWN OF FLOWER MOUND ENVIRONMENTAL CONSERVATION COMMISSION REGULAR MEETING

MAY 3, 2016

**FLOWER MOUND TOWN HALL
2121 CROSS TIMBERS ROAD
FLOWER MOUND, TEXAS**

6:30 P.M.

AN AGENDA INFORMATION PACKET IS AVAILABLE ONLINE AT
[HTTPS://TX-FLOWER MOUND.CIVICPLUS.COM/AGENDACENTER](https://tx-flowermound.civicplus.com/agendacenter)

A. CALL REGULAR MEETING TO ORDER – 6:30 PM

B. CITIZENS/VISITORS COMMENTS

1. Please fill out an "Appearance Before Environmental Conservation Commission" form in order to address the Environmental Conservation Commission, and turn the form in prior to Citizens and Visitors Comments, or by 6:40 p.m. to the Town staff. Speakers are normally limited to three minutes. Time limits can be adjusted by the Chair as to accommodate more or fewer speakers.

C. INVOCATION AND PLEDGE OF ALLEGIANCE

D. STAFF REPORT

1. Update and status report related to environmental issues and events, regulatory activities, and projects.

E. CONSENT AGENDA - CONSENT ITEMS

This agenda consists of non-controversial or "housekeeping" items and may be approved with a single motion. A member of the Environmental Conservation Commission may request an item(s) be withdrawn from the consent agenda and moved to regular agenda for discussion by making such request prior to a motion and vote on the Consent Agenda.

1. Consider approval of minutes from the regular meeting of the Environmental Conservation Commission held on April 5, 2016.

F. REGULAR ITEMS

2. Consider a recommendation of an ordinance amending Chapter 94, "Trees", of the Land Development Regulations (LDR16-0002 – Tree Ordinance Amendments) of the Code of Ordinances.

G. ADJOURNMENT – REGULAR SESSION

Environmental Conservation Commission Meeting Agenda

May 3, 2016

Page 2

H. CALL WORK SESSION TO ORDER

I. WORK SESSION ITEMS

3. Receive an update on the Town's Stormwater Management Program.

J. COORDINATION OF FUTURE AGENDAS/MEETINGS

K. ADJOURNMENT – WORK SESSION



Matthew Woods
Director of Environmental Services

I do hereby certify that the Notice of Meeting was posted on the bulletin board in Town Hall of the Town of Flower Mound, Texas, a place convenient and readily accessible to the general public at all times and said Notice was posted on the following date and time: April 28, 2016, by 5:00 p.m., at least 72 hours prior to the schedule time of said meeting.



Emily Chapman
Administrative Assistant



ENVIRONMENTAL CONSERVATION COMMISSION AGENDA ITEM NO. 1

CONSENT ITEM

DATE: May 3, 2016

FROM: Emily Chapman, Administrative Assistant

ITEM: Consider approval of minutes from the regular meeting of the Environmental Conservation Commission held on April 5, 2016.

BACKGROUND INFORMATION: This agenda item is to consider approval of the minutes from the April 5, 2016, regular meeting of the Environmental Conservation Commission.

CITIZEN FEEDBACK: N/A

ALTERNATIVES/OPTIONS: N/A

FISCAL IMPACT: N/A

LEGAL REVIEW: N/A

ATTACHMENTS:

1. A copy of the draft minutes from the April 5, 2016, regular meeting of the Environmental Conservation Commission.

RECOMMENDATION: Move to approve the minutes from the April 5, 2016, regular meeting of the Environmental Conservation Commission.

FLOWER MOUND ENVIRONMENTAL CONSERVATION COMMISSION MEETING OF APRIL 5, 2016

THE FLOWER MOUND ENVIRONMENTAL CONSERVATION COMMISSION MEETING HELD ON THE 5TH DAY OF APRIL 2016, IN THE FLOWER MOUND TOWN HALL, LOCATED AT 2121 CROSS TIMBERS ROAD IN THE TOWN OF FLOWER MOUND, COUNTY OF DENTON, TEXAS, AT 6:30 P.M.

The Environmental Conservation Commission met in regular session, with the following members present constituting a quorum:

Craig Bromley	Chair
Russ McNamer	Vice Chair
Marilyn Lawson	Commission Member, Place 4
Elaine Takacs	Commission Member, Place 6
Alton Bowman	Commission Member, Place 5
James Gerber	Commission Member, Place 7
Karen Kroesen	Commission Member, Place 9

Constituting a quorum with the following members absent:

Ellen Stallcup	Commission Member, Place 2
Vacant	Commission Member, Place 8
Jim Cumbest	Commission Member, Place 10

Places 8, 9, and 10 of the Commission do not vote on items unless they sit in place of one of the regular members, Places 1-7.)

And the following members of Town staff present:

Matthew Woods	Director of Environmental Services
Emily Chapman	Administrative Assistant
James Hoefert	Environmental Review Analyst
Quintin Carey	Environmental Review Analyst
Misty Wellner	Environmental Programs Coordinator

- A. CALL TO ORDER - REGULAR SESSION: 6:30 P.M.**
- B. CITIZENS/VISITORS COMMENTS**
- C. INVOCATION AND PLEDGE OF ALLEGIANCE**
- D. STAFF REPORT**
 - 1. Update and status report related to environmental issues and events, regulatory activities, and projects.**
- E. CONSENT AGENDA**

FLOWER MOUND ENVIRONMENTAL CONSERVATION COMMISSION MEETING OF APRIL 5, 2016

1. Consider approval of minutes from the regular meeting of the Environmental Conservation Commission held on March 1, 2016.

Commission Deliberation

Vice Chair McNamer made a motion to approve the March 1, 2016, minutes as presented. Commission Member Kroesen seconded the motion.

VOTE ON THE MOTION

AYES: Gerber, Bowman, Lawson, McNamer, Kroesen, Takacs
NAYS: None
ABSTAIN: None

The motion passed with a vote of 6-0-0

F. CALL WORK SESSION TO ORDER 6:37 P.M.

G. WORK SESSION ITEMS

2. Continue an evaluation and discussion of the Town's tree preservation regulations.
3. Discuss the sustainability initiatives for 2016.

H. COORDINATION OF FUTURE AGENDAS/MEETINGS

I. ADJOURNMENT –WORK SESSION 8:36 P.M.

TOWN OF FLOWER MOUND, TEXAS



MATTHEW WOODS

DIRECTOR OF ENVIRONMENTAL SERVICES

ATTEST:



EMILY CHAPMAN

ADMINISTRATIVE ASSISTANT



ENVIRONMENTAL CONSERVATION COMMISSION AGENDA ITEM NO. 2

REGULAR ITEM

DATE: May 3, 2016

FROM: James Hoefert, Environmental Review Analyst

ITEM: Consider a recommendation of an ordinance amending Chapter 94, "Trees", of the Land Development Regulations (LDR16-0002 – Tree Ordinance Amendments) of the Code of Ordinances.

BACKGROUND INFORMATION: The Town's tree ordinance was originally adopted in 1993 and subsequently amended in 2000. The original ordinance was then replaced in 2008; and recently amended in 2015 to remove a mitigation exception clause in Section 94-81 for non-residential uses within the Lakeside Business District, the Denton Creek District, and all Specific Plan Areas (SPAs). Town staff has been working with ECC to develop a revised tree ordinance. The primary objectives of the new tree ordinance amendments are to reduce the specimen size of post oak (*Quercus stellata*) trees from 25 caliper inches, while also providing additional tree credits for the post oaks trees to be preserved within the Buildable Area of a site. The proposed amendments would also provide additional tree credits for protected and specimen trees located within areas of a site that would not be impacted by construction related activities as part of a new development, along with any Upland and Riparian Habitat to be preserved. Under the present tree ordinance there are no credits available for the preservation of trees in of these areas.

At the request of the Town Council, staff requested feedback from representatives of the local development community regarding the proposed tree ordinance amendments. Town staff, along with the ECC Chair and Vice-chair, held a meeting with multiple developers, engineers, and landscape architects on March 18, 2016, to go over the proposed Tree Ordinance amendments. We received mostly positive feedback from those who attended. The one major concern that was identified during the meeting was the potential increase to the number of specimen trees that would need to be requested for removal at ECC and Town Council meetings if the post oak tree specimen size is reduced.

Several portions of the current ordinance will carry over largely unchanged. However, there are key sections within the ordinance that will be amended. The proposed amendments would revise the language in the following sections from the ordinance:

- Sec. 94-22. - Protected tree lists;
- Sec. 94-23. - Tree survey; development projects;
- Sec. 94-32. - Trees located in a buildable area;
- Sec. 94-39. - Mitigation requirements for authorized tree removal;
- Sec. 94-40. - Incentives for preservation of protected, specimen, and historic trees;
- Sec. 94-51. - Enumeration;
- Sec. 94-65. - Residential lots;
- Sec. 94-66. - Approved tree planting lists;
- Sec. 94-67. - Landscape credit for large trees; and
- Sec. 94-81. - Exceptions.

ATTACHMENTS:

1. Draft Ordinance
2. Chapter 94 "Trees"

RECOMMENDATION: Move to recommend approval or denial to amend Chapter 94, "Trees", of the Land Development Regulations (LDR16-0002 – Tree Ordinance Amendments) of the Code of Ordinances.

TOWN OF FLOWER MOUND, TEXAS

ORDINANCE NO.

AN ORDINANCE OF THE TOWN COUNCIL OF THE TOWN OF FLOWER MOUND, TEXAS, AMENDING THE CODE OF ORDINANCES OF THE TOWN OF FLOWER MOUND, TEXAS, BY AMENDING SUBPART B, "LAND DEVELOPMENT REGULATIONS," THROUGH THE AMENDMENT OF CHAPTER 94, "TREES."

WHEREAS, after public notice and public hearing as required by law, the Planning and Zoning Commission of the Town of Flower Mound, Texas, has recommended the amendment of Chapter 94 of the Code of Ordinances, entitled "Trees."; and

WHEREAS, after public notice and public hearing as required by law, and upon due deliberation and consideration of the recommendation of said Planning and Zoning Commission and of all testimony and information submitted during said public hearing, the Town Council of the Town of Flower Mound, Texas, has determined that it is in the public's best interest and in furtherance of the health, safety, morals, and general welfare of the citizens of the Town to amend the Town Code of Ordinances as set forth herein.

NOW, THEREFORE, BE IT ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF FLOWER MOUND, TEXAS, THAT:

SECTION 1

All of the above premises are hereby found to be true and correct legislative and factual determinations of the Town of Flower Mound and they are hereby approved and incorporated into the body of this Ordinance as if copied in their entirety.

SECTION 2

From and after the effective date of this Ordinance, Chapter 94 of the Code of Ordinances of the Town of Flower Mound, Texas, entitled "Trees," is hereby amended to read as follows:

“Sec. 94-22. Protected tree lists.

Medium Tree List

Common Name	Scientific Name
Slippery elm	(Ulmus rubra)
Cedar elm	(Ulmus crassifolia)
Winged elm	(Ulmus alata)
Blackjack oak	(Quercus marilandica)
Persimmon species	(Diospyros species)
Chittamwood	(Bumelia languinosa)
Western soapberry	(Sapindus drummondii)
Sweetgum	(Luquidambar styraciflua)
Post oak	(Quercus stellata)

Large Tree List

Common Name	Scientific Name
Post oak	(Quercus stellata)
Shumard red oak	(Quercus shumardi)
Texas red oak	(Quercus texana)
Southern live oak	(Quercus virginiana)
Water oak	(Quercus nigra)
Bur oak	(Quercus macrocarpa)
Chinquapin oak	(Quercus muehlenbergii)
American elm	(Ulmus Americana)
Pecans and Hickories	(Cayra species)
Magnolia	(Magnolia grandiflora)
Bald cypress	(Taxodium distichum)
Pine species	(Pinus species)
Ash species	(Fraxinus species)
Sycamore	(Plantanus occidentalis)
Black walnut	(Juglans nigra)

Sec. 94-23. - Tree survey; development projects.

Tree surveys are required to accompany an application for a development plan, site plan, record plat, replat, oil and gas well drilling permit, oil and gas pipeline permit, tree removal permit, or tree transplanting permit. A tree survey may be required to accompany a zoning application or a master plan amendment if it is deemed necessary by the town's tree preservation and

enforcement officer. Each tree survey shall contain, but not be limited to, the following information/parts:

(1) The location of all specimen trees and historic trees on the subject site.

(2) The location of the trunk and the extent of the canopy spread of each specimen tree and historic tree on the subject site.

(3) A table containing the following information for each specimen tree and historic tree:

- a. Tree number;
- b. Common and scientific name of each tree;
- c. Diameter (DBH) of each tree measured in accordance with [section 94-14](#) of this chapter;
- d. General health/condition of each tree;
- e. Average canopy spread;
- f. Status (specimen or historic) of each tree;
- g. Whether each identified tree will remain or be removed; and
- h. Location coordinates (northings and eastings, State Plane - NAD 1983) for each tree.

(4) Each specimen tree and historic tree shall be affixed with a permanent tag bearing the corresponding number on the tree survey. This tag shall be placed on the trunk of the tree, between five and six feet in height on the south face of the tree's trunk.

(5) Each tree survey shall contain a count of all protected trees located on the property.

(6) Each tree survey shall contain a count of all protected trees that will be removed from the buildable area on the property. The phrase "buildable area" is defined in [section 94-32](#) of this chapter.

(7) Protected trees designated for preservation shall be flagged in a distinguishing manner approved by the town for such purpose. In addition, those trees designated for removal shall be flagged in a different distinguishing manner as approved by the town.

(8) The tree survey must be signed, and stamped or sealed, by a certified arborist, certified forester, or a registered landscape architect. Each tree survey submitted shall contain one sheet of the tree survey as described above, one sheet with the tree survey data overlain with the site information, and one sheet with the site information overlain on an aerial photo for the site. The tree survey shall be on drawings measuring 24 inches x 36 inches and shall be drawn to a scale of no less than 100 feet to one inch, unless otherwise approved by the tree preservation and enforcement officer. When necessary the tree survey shall be on several sheets accompanied by an index sheet, showing the entire area of the survey. Necessary site information includes:

- a. The location and dimensions of all existing or proposed public streets, alleys, rights-of-way, utility easements, drainage easements, fence easements, pedestrian access easements or other public rights-of-way or easements;
- b. The location and dimensions of the designated parking area and designated stockpile area required in this subdivision and of any site proposed or anticipated to be proposed for a temporary batching plant permit; and,
- c. The location of all existing or proposed property lines, lot lines, building lines, setback and yard requirements, any proposed building footprint or floor plan, and other special relationships or significant features of the proposed development plan, record plat or site plan of the development.
- d. The location of designated upland, riparian habitat, and FEMA Floodplain, if identified through an Environmentally Sensitive Area survey and subsequent Environmental Protection Plan, as defined in the Town's SMARTGrowth Program and Analysis Manual.

Sec. 94-32. - Trees located in a buildable area.

The phrase "buildable area" shall mean and include all that ~~portion of the~~ of a commercial or residential building lot, oil and gas pad site, development site or other site, excluding the fully developed FEMA floodplain and required street/landscaping buffer areas. ~~inclusive of the approved footprint of the building, structure, or oil and gas pad site, and projected ten feet from the outside of each such structure or facility. "Buildable area" shall also mean and include those areas on a building lot, oil and gas pad site, development site, or other site as shown on the required site plan or development plan that is necessary for the construction of other improvements such as driveways, parking areas, pools, detention ponds/structures, tennis courts, and accessory buildings including sufficient adjacent area to allow the normal operation of construction equipment. Further, "buildable area" shall also mean and include all new commercial and residential rights-of-way and easements as shown on newly approved record plats, replats, and amended plats. Buildable area shall not include~~ Trees located within TXDOT rights-of-way are exempt from the terms and provisions of this chapter. ~~or town-required easements.~~

Sec. 94-39. - Mitigation requirements for authorized tree removal.

(a) *Replacement trees required for the removal of protected trees located within the buildable area on a lot or site.* It shall be the responsibility of any person removing a protected tree located within the buildable area of a lot or site to replace each protected tree removed with one, two and one-half to three-inch caliper tree measured in accordance with section 94-13 of this chapter. Replacement trees shall be of a species listed on the town's approved mitigation and replacement tree planting list. Replacement trees shall have a minimum height of at least six feet, and shall be planted in locations approved by the tree preservation and enforcement officer or authorized designee. Acceptable locations shall include reforestation sites designated by the town. At the discretion of the tree preservation and enforcement officer or authorized designee, money in an amount equal to the per-caliper-inch cash value of the removed tree(s) may be paid to the town instead of providing the replacement trees required by this article. Any such payments shall be deposited in a special account or fund and used by the town to provide and/or support supplemental landscape plantings in public areas of the town and/or to support the administration and enforcement of the town's tree preservation regulations. A per-caliper-inch cash value for replacement trees shall be set by the town council in accordance with section 94-38 of this article.

It shall be the responsibility of any person removing protected trees from an Environmentally Sensitive Area (ESA), such as upland habitat and/or riparian habitat as defined in the Town's SMARTGrowth Program and Analysis Manual, to mitigate the acreage of habitat impacted through mitigation fees and/or replacement trees included in the required Environmental Protection Plan (EPP) for the development project. The monetary value of upland habitat and riparian habitat is set at \$15,000 per acre. Preservation incentives for upland and/or riparian habitat preserved within a project are established in Sec. 94-40. At the discretion of the tree preservation and enforcement officer or authorized designee, money in an amount equal to the value of the removed habitat may be paid to the town instead of providing the replacement trees. Any such payments shall be deposited in a special account or fund and used by the town to provide and/or support supplemental landscape plantings in public areas of the town and/or to support the administration and enforcement of the town's tree preservation regulations.

Sec. 94-40. - Incentives for preservation of protected, specimen, and historic trees.

If any protected, specimen, or historic tree is preserved within an area that would otherwise be considered a buildable area, credit for preservation shall be given that will be counted toward the mitigation requirements for the removal of protected trees within the buildable area on a site or project. Such mitigation credits shall be given only for those trees whose critical root zones are left predominately in their natural state. No cutting, filling, or other construction related activities are allowed within the critical root zones of trees eligible for mitigation credit unless otherwise approved in writing and in advance by the town. Existing trees that are preserved within required street yard landscaping areas shall be counted for credit toward the requirements of section 82-241 of this Code, street yard landscaping, provided that they are located within the street yard and/or parking area. Following is a list of credits available for the preservation of protected and specimen trees on a site or project, and a separate credit schedule for the preservation of protected and specimen post oak trees on a site or project.

(1) One mitigation tree credit will be given for each protected tree preserved within a buildable area on a site or project.

(2) The following schedule outlines tree credits that will be given for each specimen tree preserved within a buildable area on a site or project.

Buildable Area Mitigation Specimen Tree Credit Schedule

Caliper Size (Diameter)	Tree Credits
13—18 inches	3
19—24 inches	4
25—30 inches	5
Greater than 30 inches	6

(3) The following schedule outlines tree credits that will be given for each protected or specimen post oak tree preserved on a site or project and located outside of an ESA.

Post Oak Tree Credit Schedule

Post Oak Caliper Size (Diameter)	Tree Credits
6—12 inches	2
13—21 inches	4
22 inches and greater	6

(4) Mitigation credits for impacts to protected trees within designated upland and/or riparian habitat will be given for each acre of habitat protected on a site or project.

For purposes of this section, one mitigation tree credit shall be the equivalent of one container-grown tree of a variety selected from the replacement tree list having a minimum caliper width of two and one-half inches to three inches, measured in accordance with section 94-13 of this chapter. In the event the tree preservation and enforcement officer or authorized designee approves the payment of money in an amount equal to the per-caliper-inch cash value of the removed tree(s) instead of providing the replacement trees required by this article one mitigation tree credit shall be the equivalent of the per-caliper-inch cash value for a replacement tree having a minimum caliper width of two and one-half inches to three inches. However, no tree credits shall be allowed or permitted for trees that are dead, dying, diseased or infested with harmful insects; trees which have not been adequately protected using required tree protection measures, as defined in article V of this chapter, or which are otherwise likely to die; or trees that are not included on the protected tree list.

Sec. 94-51. - Enumeration.

The following tree protection measures shall be required:

(1) Prior to any and all construction or land development activity, the developer or property owner shall install four-foot-high plastic (or equivalent) safety fencing around the drip line of protected trees and six-foot-high chain-link fencing around the drip line of specimen and historic trees.

(2) Prior to any and all construction or land development activity, the developer or property owner shall establish designated parking areas for the parking and maintenance of all vehicles, trailers, construction equipment and related items, designated stockpile areas for the storage of construction supplies and materials during construction of the subdivision and designated drive areas for

vehicles and equipment. The location and dimensions of such designated areas shall be clearly identified on both subdivision construction and site plans and shall be approved by the tree preservation and enforcement officer or authorized designee prior to any construction or land development activity in, on or about the subdivision. Such designated areas shall be completely fenced with chain-link fencing and gates for safety purposes and to separate protected, specimen, or historic trees from the construction area and related construction activity. With the approval of the tree preservation and enforcement officer or authorized designee, the designated parking and stockpile areas may be combined into one fenced area, provided that the preservation of protected trees is not adversely affected or jeopardized. Supplies and pipe and other items that are customarily unloaded where installed shall not be required to be stored within the designated stockpile areas. Sites approved for temporary batching plant permits shall be fenced and gated in the same manner as designated parking and stockpile areas. Temporary batching plant permits shall also be required for the operation of all batching plants, pursuant to the regulations of this chapter.

(3) During construction, the developer or property owner shall prohibit the cleaning of equipment or materials and/or the disposal of any waste material, including, but not limited to, paint, oil, solvents, asphalt, concrete, mortar, etc., under the canopy or drip line of any protected, specimen, or historic tree or group of such trees.

(4) No attachments or wires of any kind, other than those of a protective nature, shall be attached to any protected tree(s).

(5) With major grade changes of six inches or greater, a retaining wall or tree well of rock, brick, landscape timbers or other approved materials shall be constructed around the tree no closer than the drip line of the tree. The top of the retaining wall or tree well shall be constructed at the new grade.

(6) Unless otherwise approved by the town, no construction or construction-related activity shall occur under the canopy or drip line of any protected, specimen, or historic tree or group of such trees.

(7) Any tree(s) removed during land development, construction or construction-related activities shall be chipped or hauled offsite. Burning of removed trees is prohibited unless prior approval is given by the town's fire marshal.

(8) The tree preservation and enforcement officer or authorized designee may require additional protection measures or best management practices as needed on a case by case basis to adequately protect protected, specimen, historic trees, or trees required as part of an approved landscape plan.

Sec. 94-65. - Residential lots.

The following tree planting requirements shall be satisfied prior to the issuance of a certificate of occupancy for a single-family, duplex or multi-family use:

- (1) A minimum of three trees, with a minimum caliper width of two and one-half inches to three inches, and at least six feet in height, shall be provided on each 10,000 square foot and greater single-family and duplex lot prior to the issuance of a certificate of occupancy. A minimum of two trees, with a minimum caliper width of two and one-half inches to three inches, and at least six feet in height, shall be provided on each single-family and duplex lot between 5,000 and 10,000 square feet prior to the issuance of a certificate of occupancy. At least one of the required trees shall be located within the front yard area of the lot.
- (2) A minimum of one tree, with a minimum caliper width of two and one-half inches to three inches, shall be provided for each 3,000 square feet of gross lot area on each multi-family lot prior to the issuance of a certificate of occupancy. At least 50 percent of the required trees shall be located within either the front or side yard area of the lot.
- (3) From July 1 until September 1 of each year, only container grown trees shall be used to satisfy the requirements of this section; and, the builder/developer shall certify that any such trees are container grown.
- (4) Homeowners desiring to plant trees of a caliper width in excess of two times the requirements of this article may, from July 1 until September 1 of each year, file a town-approved affidavit with the town manager to this effect. Such trees shall be planted by March 1 of the following year in which the affidavit was filed. Failure to comply with the requirements of this article shall be considered a misdemeanor, punishable as such by a fine in accordance with section 1-13 of this Code.
- (5) There shall be no more than 50% of any tree species, and no more than 75% of any tree genus permitted to satisfy the planting requirements.

Sec. 94-66. - Approved tree planting lists.

Unless otherwise specified in this chapter, only those tree species included in this section shall satisfy the tree planting requirements of this article.

Generally. The tree species lists contained in this section have been developed and will be periodically updated by the town's environmental conservation commission and shall be maintained and distributed to the public by the tree preservation and enforcement officer or authorized designee as guides for the identification and selection of tree species that meet the various standards and requirements of this article. Trees included on these tree species lists were selected on the basis of one or more of the following criteria or factors: hardiness, resistance to disease, suitability relative to local climate and soil conditions, adaptability for transplantation, longevity, adaptability to various landscape conditions, resistance to drought, aesthetic qualities, shade provision, windbreak provision, and screening qualities. **To promote biodiversity, there shall be no more than 20% of a tree species, and no more than 40% of any tree genus permitted to satisfy the planting requirements on all new developments.**

(1) *Approved tree planting list.* Only those tree species found on the following approved tree planting list shall satisfy the tree planting standards and requirements of this article:

Approved Tree Planting List

Common Name	Scientific Name
Southern live oak	(Quercus virginiana)
Escarpment live oak	(Quercus fusiformis)
Shumard oak	(Quercus shumardi)
Chinkapin oak	(Quercus muehlenbergii)
Bur oak	(Quercus macrocarpa)
Texas red oak	(Quercus texana)
Water oak	(Quercus nigra)
American elm	(Ulmus americana)
Cedar elm	(Ulmus crassifolia)
Winged elm	(Ulmus alata)
Lacebark elm	(Ulmus parvifolia)
Bald Cypress	(Taxodium distichum)

Pecans and hickories	(Carya species)
Juniper tree	(Juniperus species)
White ash	(Fraxinus Americana)
Green ash	(Fraxinus pennsylvanica)
Texas ash	(Fraxinus texensis)
Western soapberry	(Sapindus drummondii)
Sweet gum	(Liquidambar styraciflua)
Eastern red cedar	(Juniperus virginiana)
Pines	(Pinus species)
Chinese pistache	(Pistachia chinensis)
Leyland Cypress	(Cypressocyparis leylandi)
Black Walnut	(Juglans nigra)
Magnolia	(Magnolia grandiflora)

~~Sec. 94-67. -- Landscape credit for large trees.~~

~~(a) — Trees that are newly planted or already established and growing shall be counted for credit toward the requirements of section 82-241 of this Code, street yard landscaping, and section 82-243 of this Code, parking area landscaping, as follows, provided that they are located within the street yard and/or parking area:~~

12 inches or greater diameter:	2,000 square feet
6 inches or greater diameter:	1,000 square feet

~~No credit shall be allowed or given if, in the opinion of the tree preservation and enforcement officer or authorized designee, grade alterations surrounding the established tree are detrimental to the survival of the tree. It shall be incumbent upon the developer to demonstrate the site development follows recommended procedures to guarantee survival of established trees. If existing trees are to be retained in a parking lot area, sufficient ground (the drip line) shall be left ungraded around each tree to allow for the survival of the tree. Special consideration shall be given to the preservation of large oak, elm, pecan and hickory trees. Preservation of trees shall be in conformance with article V of this chapter.~~

~~Existing trees that have either been preserved or replanted and meet the minimum standards of the following tree credit schedule may be substituted or credited toward the requirements of this article, tree planting requirements and planting lists as follows. Fractional measurements shall be rounded to the nearest whole number. Caliper width shall be measured at a point four and one-half feet above natural grade level.~~

~~Tree Credit Schedule~~

Caliper Size (Diameter)	Tree Credits
Less than 6 inches	0
6—10 inches	2
11—14 inches	3
15—20 inches	4
21—26 inches	5
27—32 inches	6
Greater than 32 inches	7

~~-~~

~~However, no tree credits shall be allowed or permitted for trees that are dead, dying, diseased or infested with harmful insects; trees which have not been adequately protected using required tree protection measures, as defined in article V of this chapter, or which are otherwise likely to die; trees that are not included on the protected tree list; or trees that are located within recreational tracts, golf courses or similar sub-areas of planned developments which are not intended to be developed for either residential or nonresidential uses.~~

Sec. 94-81. Exceptions.

The following exceptions from the terms and provisions of this chapter are hereby authorized and granted:

(1) If any protected, specimen, or historic tree shall be determined to be in a hazardous or dangerous condition so as to endanger the public health, welfare or safety, and require immediate removal without delay, authorization for removal may be given by the town manager, upon recommendation of the tree preservation and enforcement officer or authorized designee, and such protected, specimen, or historic tree may then be removed without obtaining a written permit as required in this article.

(2) During the period of an emergency, such as a tornado, storm, flood or other act of God, the requirements of this article may be waived as may be deemed necessary by the town council.

(3) All licensed plant or tree nurseries shall be exempt from the terms and provisions of this article only in relation to those trees planted and growing on the premises of such licensee that are so planted and growing for the sale or intended sale to the general public in the ordinary course of such licensed business.

(4) Utility companies, franchised or otherwise, that are authorized to provide utility service within the town may remove protected, specimen, or historic trees that endanger public safety and welfare by interfering with utility service, except that where such trees are on owner-occupied properties developed for single-family or duplex use, removal of such trees shall be at the option of the property owners and require the property owners' consent and approval.

(5) For recreational property or uses, such as golf courses and baseball, soccer, football or similar athletic facilities, and public works projects such as water or wastewater treatment plants, pump stations, storage tanks, and public streets and drainage improvements, the buildable area of the property shall include that portion of the property necessary for the construction of such recreational and public works improvements, including sufficient adjacent area, to allow the normal operation of construction equipment.

(6) The terms and provisions of this article shall not apply to any development, subdivision or re-subdivision for which a record plat has been approved by the town council and filed in the plat records of the county prior to October 6, 2008.

(7) All easements and rights-of-way included on a record plat approved by the town and filed in the plat records of the county.

~~(8) Trees that are situated within a town-required easement shall not be considered as being located within the "buildable area" as that term is defined herein above."~~

SECTION 3

This Ordinance shall be cumulative of all provisions of ordinances of the Town of Flower Mound, Texas, except where the provisions of this Ordinance are in direct conflict with the provisions of such ordinances, in which event the conflicting provisions of such ordinances are hereby repealed.

SECTION 4

It is hereby declared to be the intention of the Town Council that the phrases, clauses, sentences, paragraphs, and sections of this Ordinance are severable, and if any phrase, clause, sentence, paragraph, or section of this Ordinance shall be declared unconstitutional by the valid judgment or decree of any court of competent jurisdiction, such unconstitutionality shall not affect any of the remaining phrases, clauses, sentences, paragraphs, and sections of this Ordinance, since same would have been enacted by the Town Council without the incorporation in this Ordinance of any such unconstitutional phrase, clause, sentence, paragraph, or section.

SECTION 5

Any person, firm, or corporation who violates any provision of this Ordinance as adopted by the Town Council of the Town of Flower Mound shall be deemed guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine as provided in Section 1-13 of the Code of Ordinances of the Town of Flower Mound. Each day any such violation or violations exist shall constitute a separate offense and shall be punishable as such.

SECTION 6

This Ordinance shall take effect and be in full force from and after its passage and publication, as provided by the Revised Civil Statutes of the State of Texas and the Home Rule Charter of the Town of Flower Mound, Texas.

DULY PASSED AND APPROVED BY THE TOWN COUNCIL OF THE
TOWN OF FLOWER MOUND, TEXAS, BY A VOTE OF___ TO___ , ON THIS
THE ___ DAY OF _____, 2016.

APPROVED:

Thomas E. Hayden, MAYOR

ATTEST:

Theresa Scott, TOWN SECRETARY

APPROVED AS TO FORM AND LEGALITY:

Bryn Meredith, TOWN ATTORNEY

Chapter 94 - TREES

ARTICLE I. - GENERALLY

Sec. 94-1. - Purpose.

The terms and provisions of this chapter are intended to accomplish the following public purposes:

- (1) Establish rules and regulations for the protection and preservation of native and/or established trees within the town.
- (2) Encourage the preservation and replacement of the town's tree canopy by establishing a 35 percent canopy goal for the town as outlined in guidelines established by "American Forests," the nation's oldest nonprofit citizens' conservation organization.
- (3) Encourage the protection of healthy trees and provide for the replacement and/or replanting of trees that are necessarily removed during construction, development or redevelopment.
- (4) Provide for the preservation and protection of larger native and/or established trees, which provide a valuable amenity to the urban environment and which, once destroyed, can only be replaced after generations, if at all.
- (5) Provide for shade, windbreaks and the cooling of air; thereby, reducing the requirements for air conditioning and heating and the utilization of scarce energy sources.
- (6) Provide for open space and more efficient drainage of land; thereby, reducing the effects of soil erosion and the need for additional drainage facilities.
- (7) Reduce the clear-cutting of land.
- (8) Preserve the country atmosphere and natural environment that define the community character of the town and make it a unique and desirable community.
- (9) Mitigate the ill effects of rapid and intense urbanization.

Sec. 94-2. - Applicability of chapter provisions.

The terms and provisions of this chapter shall apply to real property within the town's corporate limits and extraterritorial jurisdiction as follows:

- (1) All real property upon which any protected, specimen, or historic tree is located, excluding property that has already been developed for single-family and two-family residential uses.
- (2) All vacant and undeveloped real property.
- (3) All real property to be subdivided or re-subdivided, including record plats and replats.
- (4) The yard areas of all developed property, excluding property already developed for single-family and two-family residential uses.

Secs. 94-3—94-12. - Reserved.

ARTICLE II. - MEASUREMENT

Sec. 94-13. - Landscape, nursery, or replacement trees.

Unless specified otherwise, tree caliper (diameter) or circumference shall be measured at a height of 12 inches above ground level. The caliper of multi-trunk trees shall be measured by determining the diameter or circumference of the largest trunk at full caliper added to one-half of the diameter or circumference of each remaining trunk, measured at a height of 12 inches above ground level.

Sec. 94-14. - Existing, established, and/or native trees.

The caliper or circumference of existing, established, and/or native trees shall be measured in accordance with the measuring rules and procedures as developed and updated by the Texas Forest Service. A copy of these procedures shall be made available for review in the office of the tree preservation and enforcement officer. The current procedure is outlined below.

(1) *Caliper width or circumference.*

General rule: Measure the smallest trunk caliper width or circumference between the diameter at breast height ("DBH") point (4.5 feet) and the ground, but below the lowest fork. Also record the height above the ground, in inches, where the measurement was taken.

(2) *Determining DBH point.*

Tree on slope: Measure up 4.5 feet along the axis of the trunk on both the high and low sides of the trunk; DBH point is midway between these two planes.

Leaning tree: Measure 4.5 feet along both the top and under sides of the trunk; DBH point is midway between these two planes.

Low branches: When determining where on the trunk to measure circumference, ignore portions of the tree that do not form part of the tree's crown, such as dead branches or forks, and epicormic sprouts.

Obstruction at DBH: If there is a bump, burl, branch, or other obstruction at the DBH point, measure the circumference of the trunk above and below the obstruction and record the smaller value. A buttress that forms between the trunk and root system as a natural feature of the species (e.g.—bald cypress, water tupelo) should not be considered an obstruction.

(3) *Multiple trees.* In practice, it must be determined whether a tree has a single trunk, or whether it represents two or more stems growing very close to one another. Trunks that have clear separation or included bark at or near the ground line should be considered separate trees; trunks of different species should also be considered separate stems, no matter how closely aligned. When following the measurement rules above, if the point below the lowest fork places the measurement at the ground line, the stems should be considered and measured as separate.

Secs. 94-15—94-20. - Reserved.

ARTICLE III. - PRESERVATION

Sec. 94-21. - Tree designations.

Protected, specimen, and historic trees, except as specified in this section, shall possess the following respective characteristics or criteria:

- (1) *Protected trees.* Any tree listed on the small, medium, or large protected tree lists in section 94-22 that measures six inches in caliper width or greater and which is at least ten feet in height and located outside of existing public streets, alleys, rights-of-way, utility easements, drainage easements, fence easements, pedestrian access easements, or other existing public rights-of-way or easements.
- (2) *Specimen tree.* Except as specified in this section, any tree listed on the town's small, medium, or large protected tree lists can be considered a specimen tree if it reaches the designated size for that list. For the small tree list, a specimen tree shall be any tree that measures 13 inches or more in caliper width. For the medium tree list, a specimen tree shall be any tree that measures 19 inches or more in caliper width. For the large tree list, a specimen tree shall be any tree that measures 25 inches or more in caliper width. All measurements shall be taken in accordance with the measuring rules and procedures as outlined and maintained by the Texas Forest Service. These procedures are outlined in section 94-14 of this chapter. In addition to the provisions of this subsection, a specimen tree shall be any other tree that has been designated by the town council, upon recommendation by the environmental conservation commission, after public hearing and due notice to the owner of the tree, to be of high value because of its type, size, age or other relevant criteria. Specimen trees shall not be regulated as protected trees. Specific requirements are set forth in this chapter regarding specimen trees.
- (3) *Historic tree.* Upon recommendation by the environmental conservation commission, a historic tree shall be any tree that has been designated by the town council, after public hearing and due notice to the owner of the tree, as a tree of notable historical interest and value to the town because of its location or historical association with the community. A listing and map of all designated historic trees shall be maintained and updated by the tree preservation and enforcement officer or authorized designee and made available to the public upon request. Historic trees are not dependant on or determined by diameter or caliper width as are protected and specimen trees. Specific requirements are set forth in this chapter regarding historic trees.

Subject to the review and approval of the tree preservation and enforcement officer or authorized designee, a protected or specimen tree shall not include any living tree that a registered arborist or landscape architect certifies in writing is injured, dying, diseased or infested with harmful insects; that is in danger of falling, interferes with utility service or creates unsafe vision clearance; in any manner creates a hazardous or dangerous condition so as to endanger the public health, welfare or safety. Further, a protected tree shall not include any living tree that is identified on approved subdivision construction plans as necessary to be removed to comply with EPA storm water permitting requirements or FHA lot grading plans.

Subject to review and approval of the tree preservation and enforcement officer or authorized designee, a protected, specimen, or historic tree shall not include any tree that a registered arborist or landscape architect certifies in writing is dead.

Sec. 94-22. - Protected tree lists.

- (a) *Generally.* The tree species lists contained in this section have been developed and will be periodically updated by the town's environmental conservation commission and shall be maintained and distributed to the public by the tree preservation and enforcement officer or authorized designee as guides for the identification and selection of tree species that meet the various standards and requirements of this chapter. Trees included on this tree species list were selected on the basis of one or more of the following criteria or factors: hardiness, resistance to disease, suitability relative to local climate and soil conditions, adaptability for transplantation, longevity, adaptability to various landscape conditions, resistance to drought, aesthetic qualities, shade provision, windbreak provision, and screening qualities.

- (b) *Lists of trees that are protected.* Unless otherwise specified in this chapter, only those tree species found on the following lists shall be subject to the preservation, protection and replanting requirements of this section.

Small Tree List

Common Name	Scientific Name
Carolina buckthorn	(Rhamnus caroliniana)
Yaupon holly	(Ilex vomitoria)
Possum haw	(Ilex deciduas)
Redbud	(Cercis species)
Texas buckeye	(Aesculus glabra variety arguta)
Chickasaw plum	(Prunus agustifolia)
Mexican plum	(Prunus mexicana)

Medium Tree List

Common Name	Scientific Name
Slippery elm	(Ulmus rubra)
Cedar elm	(Ulmus crassifolia)
Winged elm	(Ulmus alata)
Blackjack oak	(Quercus marilandica)
Persimmon species	(Diospyros species)
Chittamwood	(Bumelia languinosa)
Western soapberry	(Sapindus drummondii)

Sweetgum	(Liquidambar styraciflua)
----------	---------------------------

Large Tree List

Common Name	Scientific Name
Post oak	(Quercus stellata)
Shumard red oak	(Quercus shumardi)
Texas red oak	(Quercus texana)
Southern live oak	(Quercus virginiana)
Water oak	(Quercus nigra)
Bur oak	(Quercus macrocarpa)
Chinquapin oak	(Quercus muehlenbergii)
American elm	(Ulmus Americana)
Pecans and Hickories	(Carya species)
Magnolia	(Magnolia grandiflora)
Bald cypress	(Taxodium distichum)
Pine species	(Pinus species)
Ash species	(Fraxinus species)
Sycamore	(Plantanus occidentalis)
Black walnut	(Juglans nigra)

Sec. 94-23. - Tree survey; development projects.

Tree surveys are required to accompany an application for a development plan, site plan, record plat, replat, oil and gas well drilling permit, oil and gas pipeline permit, tree removal permit, or tree transplanting permit. A tree survey may be required to accompany a zoning application or a master plan amendment if it is deemed necessary by the town's tree preservation and enforcement officer. Each tree survey shall contain, but not be limited to, the following information/parts:

- (1) The location of all specimen trees and historic trees on the subject site.
- (2) The location of the trunk and the extent of the canopy spread of each specimen tree and historic tree on the subject site.
- (3) A table containing the following information for each specimen tree and historic tree:
 - a. Tree number;
 - b. Common and scientific name of each tree;
 - c. Diameter (DBH) of each tree measured in accordance with section 94-14 of this chapter;
 - d. General health/condition of each tree;
 - e. Average canopy spread;
 - f. Status (specimen or historic) of each tree;
 - g. Whether each identified tree will remain or be removed; and
 - h. Location coordinates (northings and eastings, State Plane - NAD 1983) for each tree.
- (4) Each specimen tree and historic tree shall be affixed with a permanent tag bearing the corresponding number on the tree survey. This tag shall be placed on the trunk of the tree, between five and six feet in height on the south face of the tree's trunk.
- (5) Each tree survey shall contain a count of all protected trees located on the property.
- (6) Each tree survey shall contain a count of all protected trees that will be removed from the buildable area on the property. The phrase "buildable area" is defined in section 94-32 of this chapter.
- (7) Protected trees designated for preservation shall be flagged in a distinguishing manner approved by the town for such purpose. In addition, those trees designated for removal shall be flagged in a different distinguishing manner as approved by the town.
- (8) The tree survey must be signed, and stamped or sealed, by a certified arborist, certified forester, or a registered landscape architect. Each tree survey submitted shall contain one sheet of the tree survey as described above, one sheet with the tree survey data overlain with the site information, and one sheet with the site information overlain on an aerial photo for the site. The tree survey shall be on drawings measuring 24 inches x 36 inches and shall be drawn to a scale of no less than 100 feet to one inch, unless otherwise approved by the tree preservation and enforcement officer. When necessary the tree survey shall be on several sheets accompanied by an index sheet, showing the entire area of the survey. Necessary site information includes:
 - a. The location and dimensions of all existing or proposed public streets, alleys, rights-of-way, utility easements, drainage easements, fence easements, pedestrian access easements or other public rights-of-way or easements;
 - b. The location and dimensions of the designated parking area and designated stockpile area required in this subdivision and of any site proposed or anticipated to be proposed for a temporary batching plant permit; and,

- c. The location of all existing or proposed property lines, lot lines, building lines, setback and yard requirements, any proposed building footprint or floor plan, and other special relationships or significant features of the proposed development plan, record plat or site plan of the development.

Sec. 94-24. - Tree survey; residential lots.

Tree surveys are required to accompany an application for a building permit for the construction of homes on undeveloped residential lots. For lots that are one acre in size or larger, the tree survey shall be completed as described in section 94-23 of this chapter. For lots that are less than one acre in size, the tree survey shall contain, but not be limited to, the following information/parts:

- (1) A site plan showing: The location and configuration of the proposed house/structure, all required setbacks, sidewalks, driveway locations, porches, etc.
- (2) Further, the site plan shall show the location of all specimen or historic trees located on the site.
- (3) The survey shall depict the location of the trunk and the extent of the canopy spread of each specimen or historic tree.
- (4) A table (spreadsheet) shall be supplied containing the common name, caliper width (DBH), and tree number of each specimen tree and historic tree shown on the site plan/tree survey. All measurements shall be in accordance with section 94-14 of this chapter.
- (5) A count of all protected trees on the site and all protected trees proposed for removal shall be included on the tree survey.

Secs. 94-25—94-30. - Reserved.

ARTICLE IV. - PERMITS, MITIGATION, PENALTIES, AND INCENTIVES

Sec. 94-31. - Generally.

No person, directly or indirectly, shall cut down, destroy, remove or effectively destroy through damaging any protected, specimen, or historic tree on any real property within the town without first obtaining a tree removal permit as required in the terms and provisions of this article. Further, the replanting of any protected, specimen, or historic tree requires a tree replanting permit in accordance with the terms and provisions of this article.

Sec. 94-32. - Trees located in a buildable area.

The phrase "buildable area" shall mean and include all that portion of the building lot, oil and gas pad site, development site or other site inclusive of the approved footprint of the building, structure, or oil and gas pad site, and projected ten feet from the outside of each such structure or facility. "Buildable area" shall also mean and include those areas on a building lot, oil and gas pad site, development site, or other site as shown on the required site plan or development plan that is necessary for the construction of other improvements such as driveways, parking areas, pools, detention ponds/structures, tennis courts, and accessory buildings including sufficient adjacent area to allow the normal operation of construction equipment. Further, "buildable area" shall also mean and include all new commercial and residential rights-of-way and easements as shown on newly approved record plats, replats, and amended plats. Buildable area shall not include TXDOT rights-of-way or town-required easements.

The following provisions shall apply to trees located within the buildable area:

- (1) For residential building lots one acre in size or larger, no protected, specimen, or historic trees shall be removed from the lot or site prior to the issuance of a building permit relating to the lot or site, prior to the issuance of any necessary tree removal permits, and prior to determining mitigation or replacement requirements on the lot or site. The removal of protected and/or non-protected trees located within the approved buildable area on a lot or site does not require a tree removal permit; however, such trees shall not be removed from a lot or site prior to all of the other conditions listed above being met.
- (2) For residential building lots less than one acre in size, as well as for existing public rights-of-way and easements, protected and non-protected trees located within the buildable area of a building lot or site may be removed without a tree removal permit and prior to the issuance of a building permit, with prior approval of the tree preservation and enforcement officer and after determining mitigation or replacement requirements for the lot or site. However, a tree removal permit is required prior to the removal of any specimen or historic trees on the lot or site.
- (3) For all other development projects, no protected, specimen, or historic trees shall be removed from the lot or site prior to the approval of a record plat, site plan, development plan, zoning planned development, or oil and gas well permit, where buildable area is established, and prior to a preconstruction meeting with appropriate town staff authorizing grading and construction activities to begin on the lot or site, and prior to the issuance of any necessary tree removal permits, and prior to determining mitigation or replacement requirements on the lot or site. The removal of protected and non-protected trees located within the approved buildable area on a lot or site does not require a tree removal permit, however; such trees shall not be removed from a lot or site prior to all of the other conditions listed above being met.

Sec. 94-33. - Tree transplanting permit.

An application for a tree transplanting permit for protected trees located on undeveloped property or developed nonresidential property within the town may be submitted at any time and need not be submitted in conjunction with a development plan or record plat or a building permit. Tree transplanting permits shall be obtained by making application to the town's tree preservation and enforcement officer or authorized designee on forms prescribed by the town when a protected tree is proposed to be transplanted within the town. No fee shall be charged to make application for a tree transplanting permit. The application shall also be accompanied by a written document indicating the reasons for transplanting the protected tree and two copies of a legible tree survey. The tree survey should be prepared in accordance with section 94-24 of this chapter.

Upon receipt of a proper application for a tree transplanting permit, the town's tree preservation and enforcement officer or authorized designee shall review the application and may conduct field inspections of the site or development and/or refer the permit application to other departments for review and recommendations as deemed necessary and appropriate by the town manager or authorized designee. The application for a tree transplanting permit shall be approved unless the town's tree preservation and enforcement officer or authorized designee determines that the proposed transplanting will unnecessarily damage or jeopardize the health of the trees proposed to be transplanted. A denial of an application for a tree transplanting permit by the tree preservation and enforcement officer or authorized designee may be appealed to the environmental conservation commission. The decision of the environmental conservation commission regarding the appeal from the denial of such tree transplanting permit application shall be final.

Sec. 94-34. - Tree removal permit.

Tree removal permits are required for the removal of protected trees located outside the buildable area of a lot or site, and for any specimen trees and historic trees that are intended for removal from a lot or site in conjunction with the development, redevelopment, subdivision and/or re-subdivision of real property within the town.

An application for a tree removal permit, when required, shall be submitted at the earliest point in the application process where entitlements and/or buildable area are established. The following outlines the process associated with tree removal permit applications.

- (1) Tree removal permit applications, when required, shall be submitted in conjunction with a zoning planned development (ZPD) or a development plan and shall be considered by the environmental conservation commission prior to the project proceeding to the planning and zoning commission. The application shall be placed on the same town council agenda for action as the ZPD or development plan; or
- (2) Tree removal permit applications, when required, shall be submitted in conjunction with site plans or record plats for the development of subdivisions of four lots or less where the construction of necessary infrastructure necessitates a tree removal permit, and shall be considered by the environmental conservation commission and acted upon by the town council prior to the site plan or record plat proceeding to the planning and zoning commission for approval; or
- (3) Tree removal permit applications, when required, shall be submitted in conjunction with the development of individual residential or nonresidential platted lots and shall be considered by the environmental conservation commission and acted upon by the town council prior to the issuance of a building permit.

No protected trees located outside the buildable area, specimen trees, or historic trees approved for removal in accordance with this chapter shall be removed from any building lot or site until:

- (1) Proper mitigation or replacement requirements have been determined and approved for the lot or site; and
 - (2) A preconstruction meeting has been held with proper town staff authorizing grading and construction activities to begin on the lot or site; and/or
 - (3) A building permit, where needed, has been issued for the lot or site.
- (a) *Tree removal permits for fewer than ten protected trees or four specimen trees.* A tree removal permit shall be obtained by making application to the town's tree preservation and enforcement officer or authorized designee on forms prescribed by the town. The application shall include the following:
- (1) A written document indicating the reasons for removal of the protected, specimen, or historic trees on the lot or site.
 - (2) Photographs of each tree requested for removal.
 - (3) Photographs of required signage on the site as described below.
 - (4) Two copies of a tree survey for the lot or site prepared as described in section 94-23 of this chapter.
- (b) *Tree removal permits for greater than ten protected trees or four specimen trees.* Applicants requesting to remove greater than ten protected trees or greater than four specimen trees, shall have the option of requesting a comprehensive tree removal permit. The fee for this permit will be \$1,000.00. All other requirements and incentives remain unchanged.
- (c) A sign shall be placed on each separate lot or tract for which a tree removal permit is requested to inform the general public that an application for a tree removal permit has been filed relative to a protected, specimen, or historic tree.
- (1) The size of the signs shall be three feet by four feet.

- (2) The signs shall be made out of aluminum or corrugated plastic material.
- (3) The signs shall be mounted on stakes/poles.
- (4) The signs shall be visible from the street.
- (5) There shall be one sign for each street frontage.
- (6) The signs shall have a white background, with letters and borders being green in color. The signs shall state the following:

TOWN		OF		FLOWER		MOUND,		TX
A		TREE		REMOVAL				REQUEST
IS	BEING	MADE		ON		THIS		PROPERTY
FOR			INFORMATION					CALL

Sec. 94-35. - Tree removal permit on property zoned agricultural district (A) uses.

No fee shall be charged to make application for a tree removal permit for the removal of protected trees located on real property having an agricultural zoning district classification. However, if within any 12-month period, tree removal permits for the removal of 20 or more protected trees are issued for the same agricultural property or tract, or any of its portions, the agricultural zoning district classification of such property cannot be changed, nor can an application for approval of a development plan, planned development or zoning amendment relative to such property be made, for a period of 60 months following the most recent 12-month period during which 20 or more protected trees were removed from such agricultural zoned property.

Sec. 94-36. - Special provisions for agricultural district (A) uses.

Notwithstanding anything contained in this chapter to the contrary, for tracts zoned agricultural district (A) uses, the tree survey requirements contained in this article shall be limited in their application to proposed rights-of-way, easements and an area equal to 20 feet on any side of such rights-of-way and easements, provided that the applicant executes a development agreement with the town that all trees on the tract and outside of such areas, for the purposes of such agreement, are protected trees (regardless of their species or caliper width) and that the unauthorized removal of such trees shall result in the revocation of any previously approved development plan and record plat for a period of 60 months from the date of the most recent unauthorized removal of one or more trees from the subject property.

Sec. 94-37. - Review of application.

- (a) An application for a tree removal permit for a protected tree located outside of the buildable area shall be accompanied by an administrative fee per tree proposed for removal in the amount listed in appendix A of this Code, not to exceed a total per permit application in an amount listed in appendix A of this Code. An application for a tree removal permit for a specimen tree, or historic tree shall be accompanied by an administrative fee per tree proposed for removal in the amount listed in appendix A of this Code. Upon receipt of a properly completed application accompanied by the appropriate fee, the tree preservation and enforcement officer or his authorized designee shall review the application and may conduct field inspections of the development and/or refer the permit application to other departments for review and recommendations as deemed necessary and appropriate by the tree preservation and enforcement officer or his authorized designee.
- (b) The application for a tree removal permit, if required, shall be considered an integral part of the application for development plan or site plan approval, or the application for an oil and gas well

permit. No development plan or site plan for any development, or oil and gas well permit, subject to the terms and provisions of this subdivision, shall be approved without approval of such tree removal permit. It is further provided that if a property owner or developer does not submit a tree removal permit application prior to town approval of a development plan covering a particular site, then if a tree removal permit application for the site is submitted later, approval of the development plan may be revoked. In this event, a revised development plan must be submitted for review by the town.

- (c) The tree preservation and enforcement officer may approve, approve with conditions, or deny a request for a tree removal permit for protected trees located outside the buildable area of a lot or site, provided that the requested tree removal permit is for the removal of trees in a development district other than the Cross Timbers Conservation Development District. An appeal of the decision of the tree preservation and enforcement officer may be made to the Environmental Conservation Commission.
- (d) An application for a tree removal permit for specimen, historic, or protected trees located outside the buildable area of a lot or site within the Cross Timbers Conservation Development District or an application for a tree removal permit for specimen, or historic trees within all other districts shall be submitted to the environmental conservation commission for review and recommendation to the town council that the permit application be approved, approved with conditions or denied. The environmental conservation commission shall not recommend an application for a tree removal permit be approved or approved with conditions, unless the commission finds that the subject development, redevelopment, subdivision or re-subdivision cannot reasonably be developed, based on economic and/or practical considerations, without removal of the trees included in the permit application.
- (e) The environmental conservation commission's recommendation concerning an application for tree removal permit shall be reviewed by the town council. The town council may then approve the application, approve it with conditions, or deny the application; however, the town council may overturn the denial of an application for tree removal permit by the environmental conservation commission only upon a finding that the subject development, redevelopment, subdivision or re-subdivision cannot reasonably be developed, based on economic and/or practical considerations, without removal of the trees included in the permit application.
- (f) Approval for removal of a historic tree shall require a three-fourths majority vote of the environmental conservation commission and the town council, respectively.

Sec. 94-38. - Per-caliper-inch cash value; replacement trees.

A per-caliper-inch cash value for replacement trees shall be set, and updated as necessary by the town council after review and recommendation by the environmental conservation commission. The per-caliper-inch cash value shall be used to calculate mitigation costs for authorized and unauthorized removals of protected, specimen, and historic trees. the tree preservation and enforcement officer or his authorized designee shall maintain a record of the current per-caliper-inch cash value of replacement trees.

Sec. 94-39. - Mitigation requirements for authorized tree removal.

- (a) *Replacement trees required for the removal of protected trees located within the buildable area on a lot or site.* It shall be the responsibility of any person removing a protected tree located within the buildable area of a lot or site to replace each protected tree removed with one, two and one-half to three-inch caliper tree measured in accordance with section 94-13 of this chapter. Replacement trees shall be of a species listed on the town's approved mitigation and replacement tree planting list. Replacement trees shall have a minimum height of at least six feet, and shall be planted in locations approved by the tree preservation and enforcement officer or authorized designee. Acceptable locations shall include reforestation sites designated by the town. At the discretion of the tree

preservation and enforcement officer or authorized designee, money in an amount equal to the per-caliper-inch cash value of the removed tree(s) may be paid to the town instead of providing the replacement trees required by this article. Any such payments shall be deposited in a special account or fund and used by the town to provide and/or support supplemental landscape plantings in public areas of the town and/or to support the administration and enforcement of the town's tree preservation regulations. A per-caliper-inch cash value for replacement trees shall be set by the town council in accordance with section 94-38 of this article.

- (b) *Replacement trees required for the removal of protected trees located outside the buildable area on a lot or site.* It shall be the responsibility of any person obtaining a tree removal permit for a protected tree located outside of the buildable area on a lot or site to provide replacement with trees having a total caliper width equivalent to one and one-half times that of the tree(s) to be removed. Total caliper width for replacement trees shall be calculated using measurements taken in accordance with section 94-14 of this chapter. For example, if a ten-inch protected tree is removed, then that tree must be replaced by trees having a total caliper width of 15 inches. This total caliper width could be satisfied by an approved combination of replacement trees to meet the required caliper width replacement. Replacement trees shall be of a species listed on the town's approved mitigation and replacement tree planting list. Such replacement trees shall be container-grown and each replacement tree shall have a minimum caliper width of two and one-half inches to three inches, measured in accordance with section 94-13 of this chapter. Replacement trees shall have a minimum height of at least six feet, and shall be planted in locations approved by the tree preservation and enforcement officer or his authorized designee. Acceptable locations shall include reforestation sites designated by the town. At the discretion of the tree preservation and enforcement officer or authorized designee, money in an amount equal to the per-caliper-inch cash value of the removed tree(s) may be paid to the town instead of providing the replacement trees required by this article. Any such payments shall be deposited in a special account or fund and used by the town to provide and/or support supplemental landscape plantings in public areas of the town and/or to support the administration and enforcement of the town's tree preservation regulations. A per-caliper-inch cash value for replacement trees shall be set by the town council in accordance to section 94-38 of this chapter.
- (c) *Replacement trees required for the authorized removal of specimen trees.* It shall be the responsibility of any person obtaining a tree removal permit for a specimen tree to provide replacement trees having a total caliper width equivalent to two times that of the tree(s) to be removed. Total caliper width for replacement trees shall be calculated using measurements taken in accordance with section 94-14 of this chapter. Replacement trees shall be of a species listed on the town's approved mitigation and replacement tree planting list. Such replacement trees shall be container-grown and have a minimum caliper width of two and one-half inches to three inches, measured in accordance with section 94-13 of this chapter. Replacement trees shall have a minimum height of at least six feet, and shall be planted in a location approved by the tree preservation and enforcement officer or authorized designee. Acceptable locations shall include reforestation sites designated by the town. At the discretion of the tree preservation and enforcement officer or authorized designee, money in an amount equal to the per-caliper-inch cash value of the removed tree(s) may be paid to the town instead of providing the replacement trees required by this article. Any such payments shall be deposited in a special account or fund and used by the town to provide and/or support supplemental landscape plantings in public areas of the town and/or to support the administration and enforcement of the town's tree preservation regulations. A per-caliper-inch cash value for replacement trees shall be set by the town council in accordance to section 94-38 of this chapter.
- (d) *Replacement trees required for the authorized removal of historic trees.* It shall be the responsibility of any person obtaining a tree removal permit for a historic tree to provide replacement trees having a total caliper width equivalent to two and one-half times that of the tree(s) to be removed. Total caliper width for replacement trees shall be calculated using measurements taken in accordance with section 94-14 of this chapter. Replacement trees shall be of a species listed on the town's approved mitigation and replacement tree planting list. Such replacement trees shall be container-grown and have a minimum caliper width of two and one-half inches to three inches, measured in accordance

with section 94-13 of this chapter. Replacement trees shall have a minimum height of at least six feet, and shall be planted in locations as approved by the tree preservation and enforcement officer or authorized designee. Acceptable locations shall include reforestation sites designated by the town. At the discretion of the tree preservation and enforcement officer or authorized designee, money in an amount equal to the per-caliper-inch cash value of the removed tree(s) may be paid to the town instead of providing the replacement trees required by this article. Any such payments shall be deposited in a special account or fund and used by the town to provide and/or support supplemental landscape plantings in public areas of the town and/or to support the administration and enforcement of the town's tree preservation regulations. A per-caliper-inch cash value for replacement trees shall be set by the town council in accordance to section 94-38 of this chapter.

Any fees or payments made to the town to satisfy the mitigation or replacement requirements of this article shall be paid at the time of a preconstruction meeting authorizing grading or construction activities to occur on the lot or site. In cases where a preconstruction meeting is not required, all fees or payments shall be made prior to the issuance of a building permit for the lot or site.

Sec. 94-40. - Incentives for preservation of protected, specimen, and historic trees.

If any protected, specimen, or historic tree is preserved within an area that would otherwise be considered a buildable area, credit for preservation shall be given that will be counted toward the mitigation requirements for the removal of protected trees within the buildable area on a site or project. Such mitigation credits shall be given only for those trees whose critical root zones are left predominately in their natural state. No cutting, filling, or other construction related activities are allowed within the critical root zones of trees eligible for mitigation credit unless otherwise approved in writing and in advance by the town. Following is a list of credits available for the preservation of protected and specimen trees on a site or project.

- (1) One mitigation tree credit will be given for each protected tree preserved within a buildable area on a site or project.
- (2) The following schedule outlines tree credits that will be given for each specimen tree preserved within a buildable area on a site or project.

Buildable Area Mitigation Specimen Tree Credit Schedule

Caliper Size (Diameter)	Tree Credits
13—18 inches	3
19—24 inches	4
25—30 inches	5
Greater than 30 inches	6

For purposes of this section, one mitigation tree credit shall be the equivalent of one container-grown tree of a variety selected from the replacement tree list having a minimum caliper width of two and one-half inches to three inches, measured in accordance with section 94-13 of this chapter. In the event the tree preservation and enforcement officer or authorized designee approves the payment of money in an amount equal to the per-caliper-inch cash value of the removed tree(s) instead of providing the replacement trees required by this article one mitigation tree credit shall be the equivalent of the per-caliper-inch cash value for a replacement tree having a minimum caliper width of two and one-half inches to three inches.

Sec. 94-41. - Penalties for unauthorized removal of protected, specimen, and historic trees.

If any protected, specimen, or historic trees are removed from any real property without a tree removal permit, or if a protected, specimen, or historic tree is injured because of failure to follow required tree protection measures such that the tree dies or may reasonably be expected to die, the town shall have the authority to impose one or more of the following administrative and civil penalties on the developer and/or owner of the property:

- (1) A monetary penalty of \$250.00 per-caliper-inch of width of the protected tree(s) removed or damaged, payable to the town. A monetary penalty of \$500.00 per-caliper-inch of width of the specimen tree(s) removed or damaged, payable to the town. A monetary penalty of \$750.00 per-caliper-inch of width of the historic tree(s) removed or damaged, payable to the town. Funds paid to the town as tree removal penalties shall be deposited in a special account or fund and used by the town to provide and/or support supplemental landscape plantings in public areas of the town, and/or to support the administration and enforcement of the town's tree preservation regulations.
- (2) For each protected tree that is removed or damaged, replacement with new trees having a total tree caliper width equivalent to five times that of the removed or damaged tree(s). For each specimen tree that is removed or damaged, replacement with new trees having a total tree caliper width equivalent to ten times that of the removed or damaged tree(s). For each historic tree that is removed or damaged, replacement with new trees having a total tree caliper width equivalent to 15 times that of the removed or damaged tree(s). Replacement trees shall be of a species listed on the town's approved mitigation and replacement tree planting list. Such replacement trees shall be container-grown and have a minimum caliper width of two and one-half inches to three inches, measured in accordance with section 94-13 of this chapter. Replacement trees shall have a minimum height of at least six feet, and shall be planted in locations as approved by the tree preservation and enforcement officer or authorized designee. Acceptable locations shall include reforestation sites designated by the town. At the discretion of the tree preservation and enforcement officer or authorized designee, money in an amount equal to the per-caliper-inch cash value of the removed or damaged tree(s) may be paid to the town instead of providing replacement trees required by this article. Any such payments shall be deposited in a special account or fund and used by the town to provide and/or support supplemental landscape plantings in public areas of the town and/or to support the administration and enforcement of the town's tree preservation regulations. A per-caliper-inch cash value for replacement trees shall be set by the town council in accordance with section 94-38 of this article.

Secs. 94-42—94-50. - Reserved.

ARTICLE V. - TREE PROTECTION

Sec. 94-51. - Enumeration.

The following tree protection measures shall be required:

- (1) Prior to any and all construction or land development activity, the developer or property owner shall install four-foot-high plastic (or equivalent) safety fencing around the drip line of protected trees and six-foot-high chain-link fencing around the drip line of specimen and historic trees.
- (2) Prior to any and all construction or land development activity, the developer or property owner shall establish designated parking areas for the parking and maintenance of all vehicles, trailers, construction equipment and related items, designated stockpile areas for the storage of construction supplies and materials during construction of the subdivision and designated drive areas for vehicles and equipment. The location and dimensions of such designated areas shall be clearly identified on both subdivision construction and site plans and shall be approved by the tree preservation and enforcement officer or authorized designee prior to any construction or land development activity in, on or about the subdivision. Such designated areas shall be completely fenced with chain-link fencing and gates for safety purposes and to separate protected, specimen, or historic trees from the construction area and related construction activity. With the approval of the tree preservation and enforcement officer or authorized designee, the designated parking and stockpile areas may be combined into one fenced area, provided that the preservation of protected trees is not adversely affected or jeopardized. Supplies and pipe and other items that are customarily unloaded where installed shall not be required to be stored within the designated stockpile areas. Sites approved for temporary batching plant permits shall be fenced and gated in the same manner as designated parking and stockpile areas. Temporary batching plant permits shall also be required for the operation of all batching plants, pursuant to the regulations of this chapter.
- (3) During construction, the developer or property owner shall prohibit the cleaning of equipment or materials and/or the disposal of any waste material, including, but not limited to, paint, oil, solvents, asphalt, concrete, mortar, etc., under the canopy or drip line of any protected, specimen, or historic tree or group of such trees.
- (4) No attachments or wires of any kind, other than those of a protective nature, shall be attached to any protected tree(s).
- (5) With major grade changes of six inches or greater, a retaining wall or tree well of rock, brick, landscape timbers or other approved materials shall be constructed around the tree no closer than the drip line of the tree. The top of the retaining wall or tree well shall be constructed at the new grade.
- (6) Unless otherwise approved by the town, no construction or construction-related activity shall occur under the canopy or drip line of any protected, specimen, or historic tree or group of such trees.
- (7) Any tree(s) removed during land development, construction or construction-related activities shall be chipped or hauled offsite. Burning of removed trees is prohibited unless prior approval is given by the town's fire marshal.
- (8) The tree preservation and enforcement officer or authorized designee may require additional protection measures or best management practices as needed on a case by case basis to adequately protect protected, specimen, or historic trees.

Secs. 94-52—94-60. - Reserved.

ARTICLE VI. - TREE PLANTING REQUIREMENTS AND PLANTING LISTS

Sec. 94-61. - Street yard trees.

Trees shall be planted or existing trees preserved within the street yard of a nonresidential lot or building tract according to the following provisions:

- (1) For street yards less than 10,000 square feet in area, one tree shall be provided for each 1,000 square feet, or fraction of such amount, of street yard.
- (2) For street yards between 10,000 and 110,000 square feet in area, ten trees shall be required for the first 10,000 square feet plus one additional tree shall be required for each 2,500 square feet, or fraction of such amount, of street yard area in excess of 10,000 square feet.
- (3) For street yards over 110,000 square feet in area, 50 trees shall be required for the first 110,000 square feet plus one additional tree shall be required for each 5,000 square feet, or fraction of such amount, of street yard area in excess of 110,000 square feet.
- (4) Street yard trees shall be a minimum of three-inch caliper.
- (5) Trees required to satisfy other provisions of this article and lying within the street yard may be used to satisfy the requirements of this section.

Sec. 94-62. - Street buffer trees.

Trees shall be planted or existing trees preserved within the street buffer landscaping area required by section 82-242 of this Code, street buffer landscaping, according to the following provisions:

- (1) Street buffer trees shall be provided in a ratio of one tree for every 30 feet of lineal frontage, except that a ratio of one tree for every 25 feet of lineal frontage shall be provided along scenic roadways.
- (2) Street buffer trees shall be a minimum of three-inch caliper.

Sec. 94-63. - Parking area trees.

Trees shall be planted or existing trees preserved within off-street parking areas according to the following provisions:

- (1) One tree shall be provided for each ten parking spaces provided on the site; provided, however, that churches and/or schools shall be required to provide one tree for each 20 parking spaces provided on the site.
- (2) Parking area trees shall be minimum of three-inch caliper, except as provided in subsection (4) of this section.
- (3) All parking spaces shall be located within 50 feet of a tree that is located within the same parking area, measured from the trunk of the tree; provided, however, that for churches and/or schools, all parking spaces shall be located within 100 feet of a tree that is located within the same parking area, measured from the trunk of the tree.
- (4) A maximum of 30 percent of the trees used to satisfy the requirements of this section may come from subsection 94-66(b), approved median and right-of-way planting list.

Sec. 94-64. - Median and right-of-way trees.

Trees may be planted in medians and rights-of-way only with the approval of the town, provided that such trees are selected from subsection 94-66(b), approved median and right-of-way planting list.

Sec. 94-65. - Residential lots.

The following tree planting requirements shall be satisfied prior to the issuance of a certificate of occupancy for a single-family, duplex or multi-family use:

- (1) A minimum of three trees, with a minimum caliper width of two and one-half inches to three inches, and at least six feet in height, shall be provided on each single-family and duplex lot prior to the issuance of a certificate of occupancy. At least one of the required trees shall be located within the front yard area of the lot.
- (2) A minimum of one tree, with a minimum caliper width of two and one-half inches to three inches, shall be provided for each 3,000 square feet of gross lot area on each multi-family lot prior to the issuance of a certificate of occupancy. At least 50 percent of the required trees shall be located within either the front or side yard area of the lot.
- (3) From July 1 until September 1 of each year, only container grown trees shall be used to satisfy the requirements of this section; and, the builder/developer shall certify that any such trees are container grown.
- (4) Homeowners desiring to plant trees of a caliper width in excess of two times the requirements of this article may, from July 1 until September 1 of each year, file a town-approved affidavit with the town manager to this effect. Such trees shall be planted by March 1 of the following year in which the affidavit was filed. Failure to comply with the requirements of this article shall be considered a misdemeanor, punishable as such by a fine in accordance with section 1-13 of this Code.

Sec. 94-66. - Approved tree planting lists.

Unless otherwise specified in this chapter, only those tree species included in this section shall satisfy the tree planting requirements of this article.

Generally. The tree species lists contained in this section have been developed and will be periodically updated by the town's environmental conservation commission and shall be maintained and distributed to the public by the tree preservation and enforcement officer or authorized designee as guides for the identification and selection of tree species that meet the various standards and requirements of this article. Trees included on these tree species lists were selected on the basis of one or more of the following criteria or factors: hardiness, resistance to disease, suitability relative to local climate and soil conditions, adaptability for transplantation, longevity, adaptability to various landscape conditions, resistance to drought, aesthetic qualities, shade provision, windbreak provision, and screening qualities.

- (1) *Approved tree planting list.* Only those tree species found on the following approved tree planting list shall satisfy the tree planting standards and requirements of this article:

Approved Tree Planting List

Common Name	Scientific Name
Southern live oak	(Quercus virginiana)

Escarpment live oak	(Quercus fusiformis)
Shumard oak	(Quercus shumardi)
Chinkapin oak	(Quercus muehlenbergii)
Bur oak	(Quercus macrocarpa)
Texas red oak	(Quercus texana)
Water oak	(Quercus nigra)
American elm	(Ulmus americana)
Cedar elm	(Ulmus crassifolia)
Winged elm	(Ulmus alata)
Lacebark elm	(Ulmus parvifolia)
Bald Cypress	(Taxodium distichum)
Pecans and hickories	(Carya species)
Juniper tree	(Juniperus species)
White ash	(Fraxinus Americana)
Green ash	(Fraxinus pennsylvanica)
Texas ash	(Fraxinus texensis)
Western soapberry	(Sapindus drummondii)
Sweet gum	(Liquidambar styraciflua)
Eastern red cedar	(Juniperus virginiana)
Pines	(Pinus species)

Chinese pistache	(Pistachia chinensis)
Leyland Cypress	(Cypressocyparis leylandi)
Black Walnut	(Juglans nigra)
Magnolia	(Magnolia grandiflora)

- (2) *Approved median and right-of-way tree planting list.* The following tree species shall be allowed to be planted in medians and rights-of-way when approved by the town. Additional tree species with non-aggressive root systems/deep root systems maybe authorized for planting in such areas by the director of recreational services:

Approved Median and ROW Tree Planting List

Common Name	Scientific Name
Sweet gum	(Liquidambar styraciflua)
Crepe myrtle	(Lagerstroemia indica)
Wax myrtle	(Myrica cerifera)
Plum	(Prunus species)
Holly	(Ilex species)
Possum haw	(Ilex decidua)
Native pecan	(Carya species)
Redbuds/whitebuds	(Cercis species)
Fruitless crabapples	(Malus species)
Southern live oak	(Quercus virginiana)
Escarpment live oak	(Quercus fusiformis)

Texas red oak	(Quercus texana)
Shumard oak	(Quercus shumardi)
Chinkapin oak	(Quercus muehlenbergii)
Bur oak	(Quercus macrocarpa)
Water oak	(Quercus nigra)
Winged elm	(Ulmus alata)
Cedar elm	(Ulmus crassifolia)
Lacebark elm	(Ulmus parvifolia)
Slippery elm	(Ulmus rubra)
Bald Cypress	(Taxodium distichum)
Hickories	(Carya species)
Pines	(Pinus species)
Chinese pistache	(Pistachia chinensis)
Juniper tree	(Juniperus species)
Texas buckeye	(Aesculus glabra variety arguta)
Common persimmon	(Diospyros virginiana)
Texas ash	(Fraxinus texensis)
White ash	(Fraxinus Americana)
Green ash	(Fraxinus pennsylvanica)
Western soapberry	(Sapindus drummondii)

Black walnut	(Juglans nigra)
Magnolia	(Magnolia grandiflora)
Yaupon holly	(Ilex vomitoria)
Carolina buckthorn	(Rhamnus caroliniana)
Thornless honey locust	(Gleditsia triacanthos variety inermis)

- (3) *Approved mitigation and replacement tree planting list.* The following list of tree species shall be allowed to be planted to satisfy mitigation and replacement standards for trees removed from the buildable area on sites, trees removed with approved tree removal permits, and/or trees removed without authorization.

Approved Mitigation and Replacement Tree Planting List

Common Name	Scientific Name
Native pecan	(Carya species)
Texas red oak	(Quercus texana)
Shumard oak	(Quercus shumardi)
Bur oak	(Quercus macrocarpa)
Water oak	(Quercus nigra)
Winged elm	(Ulmus alata)
Slippery elm	(Ulmus rubra)
Post oak	(Quercus stellata)
Cedar elm	(Ulmus crassifolia)

- (4) *Approved overhead utility easement tree planting list.* The following list of tree species shall be allowed to be planted in overhead utility easements where required. These species were selected due to their relatively small mature size and growth characteristics. Trees planted in these areas shall be planted at a ratio of three trees for every one tree required.

Common Name	Scientific Name
Yaupon holly	(Ilex vomitoria)
Carolina buckthorn	(Rhamnus caroliniana)
Possum haw	(Ilex decidua)
Plum	(Prunus species)
Redbuds/whitebuds	(Cercis species)
Wax myrtle	(Myrica cerifera)
Crepe myrtle	(Lagerstroemia indica)

Sec. 94-67. - Landscape credit for large trees.

- (a) Trees that are newly planted or already established and growing shall be counted for credit toward the requirements of section 82-241 of this Code, street yard landscaping, and section 82-243 of this Code, parking area landscaping, as follows, provided that they are located within the street yard and/or parking area:

12 inches or greater diameter:	2,000 square feet
6 inches or greater diameter:	1,000 square feet

No credit shall be allowed or given if, in the opinion of the tree preservation and enforcement officer or authorized designee, grade alterations surrounding the established tree are detrimental to the survival of the tree. It shall be incumbent upon the developer to demonstrate the site development follows recommended procedures to guarantee survival of established trees. If existing trees are to be retained in a parking lot area, sufficient ground (the drip line) shall be left ungraded around each tree to allow for the survival of the tree. Special consideration shall be given to the preservation of large oak, elm, pecan and hickory trees. Preservation of trees shall be in conformance with article V of this chapter.

Existing trees that have either been preserved or replanted and meet the minimum standards of the following tree credit schedule may be substituted or credited toward the requirements of this article, tree planting requirements and planting lists as follows. Fractional measurements shall be rounded to the nearest whole number. Caliper width shall be measured at a point four and one-half feet above natural grade level.

Tree Credit Schedule

Caliper Size (Diameter)	Tree Credits
Less than 6 inches	0
6—10 inches	2
11—14 inches	3
15—20 inches	4
21—26 inches	5
27—32 inches	6
Greater than 32 inches	7

However, no tree credits shall be allowed or permitted for trees that are dead, dying, diseased or infested with harmful insects; trees which have not been adequately protected using required tree protection measures, as defined in article V of this chapter, or which are otherwise likely to die; trees that are not included on the protected tree list; or trees that are located within recreational tracts, golf courses or similar sub-areas of planned developments which are not intended to be developed for either residential or nonresidential uses.

Sec. 94-68. - Limits on credit for preservation of existing or established trees.

Existing protected trees, which are not being applied toward compliance with landscaping requirements, may be applied as a credit against required buildable area mitigation. Similarly, existing specimen trees, which are not being applied toward compliance with landscaping requirements, may be applied as credit toward required buildable area mitigation. In order for trees to qualify for credit, all standards described in article V of this chapter, shall be met completely. Further, all requirements set forth in section 94-40 shall also be met for credit to apply toward required buildable area mitigation for such trees. If the trees are compromised in any way, credit will not be given. Eligibility for credit will be determined by the tree preservation and enforcement officer or authorized designee. In no event shall any tree be counted for credit against both the landscaping requirements and the buildable area mitigation requirements.

Secs. 94-69—94-80. - Reserved.

ARTICLE VII. - MISCELLANEOUS

Sec. 94-81. - Exceptions.

The following exceptions from the terms and provisions of this chapter are hereby authorized and granted:

- (1) If any protected, specimen, or historic tree shall be determined to be in a hazardous or dangerous condition so as to endanger the public health, welfare or safety, and require immediate removal without delay, authorization for removal may be given by the town manager, upon recommendation of the tree preservation and enforcement officer or authorized designee, and such protected, specimen, or historic tree may then be removed without obtaining a written permit as required in this article.
- (2) During the period of an emergency, such as a tornado, storm, flood or other act of God, the requirements of this article may be waived as may be deemed necessary by the town council.
- (3) All licensed plant or tree nurseries shall be exempt from the terms and provisions of this article only in relation to those trees planted and growing on the premises of such licensee that are so planted and growing for the sale or intended sale to the general public in the ordinary course of such licensed business.
- (4) Utility companies, franchised or otherwise, that are authorized to provide utility service within the town may remove protected, specimen, or historic trees that endanger public safety and welfare by interfering with utility service, except that where such trees are on owner-occupied properties developed for single-family or duplex use, removal of such trees shall be at the option of the property owners and require the property owners' consent and approval.
- (5) For recreational property or uses, such as golf courses and baseball, soccer, football or similar athletic facilities, and public works projects such as water or wastewater treatment plants, pump stations, storage tanks, and public streets and drainage improvements, the buildable area of the property shall include that portion of the property necessary for the construction of such recreational and public works improvements, including sufficient adjacent area, to allow the normal operation of construction equipment.
- (6) The terms and provisions of this article shall not apply to any development, subdivision or re-subdivision for which a record plat has been approved by the town council and filed in the plat records of the county prior to October 6, 2008.
- (7) All easements and rights-of-way included on a record plat approved by the town and filed in the plat records of the county.
- (8) Trees that are situated within a town-required easement shall not be considered as being located within the "buildable area" as that term is defined herein above.

Sec. 94-82. - Penalty upon failure to comply with chapter provisions.

- (a) Any person violating or failing to comply with any provision or requirement of this chapter shall be deemed guilty of a misdemeanor and, upon conviction, shall, without exception, be fined the maximum amount provided in section 1-13 of this Code. A separate offense shall be deemed

committed upon each day or portion of a day during or on which each separate violation or failure to comply occurs or continues to occur and shall be punishable as such.

- (b) Notwithstanding the foregoing, any violation by any person of any provision of this chapter that constitutes an immediate danger or threat to any protected, specimen, or historic tree shall be subject to the administrative penalties set forth in this chapter.
- (c) Notwithstanding the foregoing, any violation by any person of any provision of this chapter that constitutes an immediate danger or threat to the health, safety and welfare of the public may be enjoined in a suit brought by the town for such purpose.
- (d) In addition to any other remedies or penalties contained in this section, the town may enforce the provisions of this chapter pursuant to the applicable provisions of V.T.C.A., Local Government Code ch. 54, which chapter provides for the enforcement of municipal ordinances.
- (e) Allegation and evidence of a culpable mental state is not required for the proof of an offense defined by this chapter.

Sec. 94-83. - Informational assistance.

- (a) In furtherance of the purposes and provisions of this article, the town's tree preservation and enforcement officer or authorized designee shall develop and distribute to persons making application for either tree removal permits or tree replanting permits and make available to the general public an informational pamphlet identifying appropriate and useful facts, guidelines and how-to information relative to the preservation, protection and replanting of trees.
- (b) The tree preservation and enforcement officer or authorized designee shall also develop, maintain and make available to applicants for tree removal permits or tree replanting permits and to the general public a tree species reference book to provide more detailed information concerning tree care in general and the characteristics, soil and growth requirements and other traits of specific tree species identified on the town's protected tree list and approved tree planting and replacement list.
- (c) A current edition of the Texas Association of Nurserymen Grades and Standards, as applicable to the tree species on the town's protected tree list and approved tree planting and replacement list, shall be maintained by the tree preservation and enforcement officer or his authorized designee and made available to applicants for building permits, tree removal permits or tree replanting permits and to the general public, as only those trees meeting and planted or replanted in accordance with the applicable Texas Association of Nurserymen Grades and Standards shall satisfy the tree planting, replanting and/or replacement standards and requirements contained in this chapter.



ENVIRONMENTAL CONSERVATION COMMISSION AGENDA ITEM NO. 3

WORK SESSION ITEM

DATE: May 3, 2016

FROM: Quintin Carey, Environmental Review Analyst

ITEM: Receive an update on the Town's Stormwater Management Program.

BACKGROUND INFORMATION: The Texas Commission on Environmental Quality (TCEQ) adopted the new TPDES MS4 General Permit on December 13, 2013. That date marked the beginning of the new five year cycle that all large and small municipal separate storm sewer systems (MS4) cities will be governed. The Town has been effectively covered by the TCEQ permit since January 1, 2009, having already completed one permit cycle (seven years in total). The new permit provided guidelines to MS4s on how to properly regulate and control stormwater runoff for municipal construction activities, as well as provided a framework for the Town's new Stormwater Management Program (SWMP).

Flower Mound has completed its second annual reporting year under the new SWMP and is currently waiting for feedback from the TCEQ. The MS4 General Permit outlines five Minimum Control Measures (MCMs) which contain Best Management Practices (BMPs) that are designed for the Town's SWMP.

The SWMP is designed to reduce the discharge of pollutants from the Town's storm sewer to the "maximum extent practicable" using BMPs. The SWMP must include the following five minimum control measures:

- 1) Public Education, Outreach and Involvement
- 2) Illicit Discharge Detection and Elimination (IDDE)
- 3) Construction Site Storm Water Runoff Control
- 4) Post-Construction Storm Water Management in New Development and Redevelopment
- 5) Pollution Prevention and Good Housekeeping for Municipal Operations

To comply with the SWMP requirements, public education and participation are integral components of a successfully designed program. Additionally, in Section 2-175 of Ordinance 51-11, the ECC shall have the power and duty to "Advise the town council relative to water conservation and the future character and health of the town's bodies of water, stormwater, groundwater, and surface water to include reviewing water quality and conservation program activities, prioritizing actions and plans, and public education." It is understood that ECC's role relative to Town stormwater issues include providing direction to staff on storm water program policies and activities, promoting community involvement, assisting with public education, and reviewing ordinances.

CITIZEN FEEDBACK: N/A

ALTERNATIVES/OPTIONS: N/A

LEGAL REVIEW: N/A

ATTACHMENTS:

1. Town of Flower Mound Year Two Annual Stormwater Report

RECOMMENDATION: This item is for information and discussion purposes only. No action is required.

Phase II (Small) MS4 Annual Report Form

TPDES General Permit Number TXR040000

A. General Information

Authorization Number TXR040542 Annual Report Year: Jan. 1, 2015 - Dec. 31, 2015

MS4 Operator Level: Level 3 Name of MS4/Permittee: Town of Flower Mound

Contact Name: Quintin Carey Telephone Number: 972-874-6354

Mailing Address: 2121 Cross Timbers Road, Flower Mound, TX 75028

E-mail Address: Quintin.Carey@Flower-Mound.com

B. Narrative Provisions (Part IV Section B.2.(a))

Provide information on the status of complying with permit conditions: (Part V - Standard Permit Conditions):

	Yes	No	Explain
Permittee is currently in compliance with the SWMP as submitted to and approved by the TCEQ.	✓		Town has completed the town's new SWMP. Updates will be made to the SWMP when deemed necessary.
Permittee is currently in compliance with recordkeeping and reporting requirements.	✓		Town staff have maintained records and reported them in compliance with state requirements.
Permittee meets the eligibility requirements of the permit (e.g., TMDL requirements, Edwards Aquifer limitations, compliance history, etc.)	✓		Town has met our permit eligibility requirements. Year one's activity, "determining if the MS4 is a source of the POC" has been accomplished. The preliminary sampling procedures and results

			will be added to the SWMP in the near future.
--	--	--	---

1. Provide a general assessment of the appropriateness of the selected BMPs. Use table below or attach a summary, as appropriate (See Example 1 in instructions):

MCM(s)	BMP	BMP is appropriate for reducing the discharge of pollutants in stormwater (yes or no). Explain.
1: Public Education, Outreach and Involvement	Municipal Channel Stormwater Quality Messages	Yes, the feedback we receive from residents indicates that the FMTV municipal channel BMP is still an effective education and outreach tool.
1: Public Education, Outreach and Involvement	Municipal website and stormwater quality	Yes, the feedback we receive from residents indicates the BMP is still effective. Edits to the webpage are constantly being made to best provide beneficial information to the community in regards to stormwater management.
1: Public Education, Outreach and Involvement	Anti-Littering/Dumping Brochure	Yes, the feedback we receive from residents indicates the BMP is effective. Brochures continue to be periodically disseminated with notices and/or citations.
1: Public Education, Outreach and Involvement	Watershed Address Program	Yes, areas where watershed signs are located are effective at reducing illegal dumping and illicit discharges. A new sign was posted for each lane of traffic at four individual locations. There were a total of 8 signs added in 2015.
1: Public Education, Outreach and Involvement	Storm Drain Labeling	Yes, the BMP serves as an effective public education tool. New storm drain labels are added as new inlets are constructed. A total of 545 inlets were inspected and 390 were labeled in 2015.
1: Public Education, Outreach and Involvement	Comply with State and Local Public Notice Requirements	Yes, the Town of Flower Mound continues to comply with State and Local Public Notice Requirements.

MCM(s)	BMP	BMP is appropriate for reducing the discharge of pollutants in stormwater (yes or no). Explain.
1: Public Education, Outreach and Involvement	Community Source Water Protection Program	Yes, the BMP provides valuable and quantifiable water quality data. This data is a tool used by Texas State University to evaluate the overall health of surface water in the state of Texas. Staff continues to run the program for sampling locations within city limits.
2: Illicit Discharge Detection and Elimination	Storm Sewer System Map	Yes, the map continues to be updated as new outfalls and inlets are built. It is a useful tool to identify and eliminate illicit discharges.
2: Illicit Discharge Detection and Elimination	Develop an Illicit Discharge Detection and Elimination Program	Yes, Town staff has undergone training to identify illicit discharges. Additionally, a dry-weather sampling program has been created to establish baseline water quality parameters. Forty five locations throughout the watershed will be sampled on a monthly basis.
2: Illicit Discharge Detection and Elimination	Develop and Maintain an Illicit Discharge Document	Yes, illicit discharges are tracked and documented through our internal TRAKiT database. TRAKiT is also being used to generate documents for our stormwater reports.
3: Construction Site Stormwater Runoff Control	Evaluate and Update Regulatory Authority and Procedures	Yes, our process has allowed for the evaluation of procedures and provides staff with the regulatory authority to enforce the use of proper stormwater controls at construction sites. The Town continually examines and modifies standards to further improve our regulatory procedures.
3: Construction Site Stormwater Runoff Control	Construction Site Reporting Hotline	Yes, the construction site reporting hotline continues to receive calls. Twenty four calls were received in 2015.
3: Construction Site Stormwater Runoff Control	Develop and Maintain a Construction Site Inventory Document	Yes, Town staff currently has a construction site inventory document that is updated as developments are permitted and/or completed. Our TRAKiT database can also be used to create an inventory of all construction and grading activity that is currently in progress.

MCM(s)	BMP	BMP is appropriate for reducing the discharge of pollutants in stormwater (yes or no). Explain.
4: Post-Construction Stormwater Management in New Development and Redevelopment	Comprehensive Stormwater Ordinance	Yes, since the adoption of the Stormwater Ordinance staff has used it to enforce stormwater violations through notices and citations. Cases are created and filed using our TRAKiT system.
4: Post-Construction Stormwater Management in New Development and Redevelopment	Evaluate and Update Stormwater Inspections Programs	Yes, all applicable departments partake in annual training on how to identify stormwater violations during inspections. Additionally, meetings are held to evaluate the progress of the program or to discuss policy changes.
5: Pollution Prevention/Good Housekeeping for Municipal Operations	Facility Specific Standard Operating Procedures (SOPs)	Yes, our facility specific SOP's are a scaled down version of the Environmental Management System that the Town had been trying to progress towards. Currently, we have SOP's created for our Fleet Services and Operations and Maintenance facilities. Standard operating procedures for additional facilities and their related activities are currently in progress.
5: Pollution Prevention/Good Housekeeping for Municipal Operations	MS4 Facility and Stormwater Controls Map	Yes, the Town currently has a layer in ArcReader dedicated to Town facilities and their associated stormwater controls. The previously mentioned map is updated as new facilities and controls are constructed.
5: Pollution Prevention/Good Housekeeping for Municipal Operations	MS4 Operations and Maintenance Program	Yes, Town staff has already undergone training to recognize pollutants of concern from O&M activities. In 2015, staff went through 12 training sessions with a total of 84 participants.

MCM(s)	BMP	BMP is appropriate for reducing the discharge of pollutants in stormwater (yes or no). Explain.
5: Pollution Prevention/Good Housekeeping for Municipal Operations	MS4 Facility Inventory	Yes, Town staff has an inventory of all Town facilities. Updates to the facility inventory are made as needed.

2. Describe progress towards reducing the discharge of pollutants to the maximum extent practicable. Summarize any information used (such as monitoring data) to evaluate reductions in the discharge of pollutants. Use a table or attach a narrative description as appropriate:

MCM	BMP	Parameter	Quantity	Units	Does BMP Demonstrate a Direct Reduction in Pollutants? (Yes / No / Explain)
1: Public Education, Outreach and Involvement	Municipal Channel Stormwater Quality Messages	Stormwater messages through FMTV	5 FMTV messages, and 3 social media postings	Number of messages	Yes, FMTV allows residents to educate themselves about stormwater and water conservation.
1: Public Education, Outreach and Involvement	Municipal Website and Stormwater Quality Information	Stormwater education and information through municipal website	Flower Mound's Stormwater webpage was viewed 1,529 times in 2015	Webpage views	Yes, the website allows residents to educate themselves about stormwater and water conservation.
1: Public Education, Outreach and Involvement	Anti-Littering/Dumping Brochure	Brochure distribution through education	We conducted 7 elementary school	Number of education events	Yes, staff hands out brochures during education events and

		events and enforcement	events and 2 environmental fairs		through the public education process.
1: Public Education, Outreach and Involvement	Watershed Address Program	Placement of watershed signs	8 signs were added in 2015	Illegal dumping; Illicit discharges	Yes, staff installed new highly visible signs.
1: Public Education, Outreach and Involvement	Storm Drain Labeling	Storm Drain labeling as new inlets are added/inspected	390 labels were added during storm inlet inspections	Illegal dumping; Illicit discharges	Yes, staff added new storm drain labels.
1: Public Education, Outreach and Involvement	Community Source Water Protection Program	Continued monthly sampling	6 active volunteers.	pH; DO; conductivity; temperature	Yes however, a numerical value cannot be assigned. Samples are taken once a month. To date, all samples have returned indicating healthy water bodies.
2: Illicit Discharge Detection and Elimination	Storm Sewer System Map	Updating map, if necessary	248 inlets and 4 outfalls were added to the map in 2015	Inlets; outfalls;	Yes, this allows staff to recognize potential areas for illegal dumping and illicit discharges.
2: Illicit Discharge Detection and Elimination	Develop an Illicit Discharge Detection and Elimination Program	Periodic dry weather sampling	A dry weather sampling SOP has been created and 45 sampling locations have been selected	pH; DO; conductivity; temperature; TDS; salinity; turbidity, odor, color, floatables	Yes, our dry weather sampling program will allow us to establish baseline water quality parameters for 45 different locations.
2: Illicit	Develop and	Create cases	25 cases	Number of	Yes, this

Discharge Detection and Elimination	Maintain an Illicit Discharge Document	and add to document, when needed.	related to Stormwater – Illicit Discharges	cases	document allows staff to track illicit discharges.
3: Construction Site Stormwater Runoff Control	Evaluate and Update Regulatory Authority and Procedures	Update stormwater policy & procedures, if necessary	No updates in 2015	Updates	Yes, staff continues to evaluate internal policies to reduce discharges.
3: Construction Site Stormwater Runoff Control	Construction Site Reporting Hotline	Continue monitoring hotline	24 calls in 2015	Number of calls from the hotline	Yes, staff continues to use the hotline to monitor illegal dumping/illicit discharge calls.
3: Construction Site Stormwater Runoff Control	Develop and Maintain a Construction Site Inventory Document	Continue to update the construction site inventory document, when needed	Document is continuously updated for new permits and projects.	Updates to the document	Yes, this inventory allows for a more efficient inspection process.
4: Post-Construction Stormwater Management in New Development and Redevelopment	Comprehensive Stormwater Ordinance	Continue enforcement of stormwater ordinance through notices and citations.	Three citations were issued relating to stormwater – illicit discharge in 2015	Number of citations	Yes, staff continued enforcement of the ordinance in 2015.
4: Post-Construction Stormwater Management in New Development and Redevelopment	Evaluate and Update Stormwater Inspections Programs	Continued evaluation of the program through meetings and update, if needed.	Nine meetings were held in 2015	Number of meetings	Yes, meetings were held periodically throughout the year.
5: Pollution Prevention/Good Housekeeping for Municipal Operations	Facility Specific Standard Operating Procedures (SOPs)	Continue to create Standard Operating Procedures	SOP's were created for our Fleet Services and Operations	Number of SOP's completed for a facility	Yes, staff has developed SOP's that outline our environmental due diligence in

		for additional facilities and their related activities.	and Maintenance facilities.		regards to pollution prevention and good housekeeping measures.
5: Pollution Prevention/Good Housekeeping for Municipal Operations	MS4 Facility and Stormwater Controls Map	Create a map of town facilities with associated stormwater controls for each facility.	Stormwater control inventory was added to map.	Facilities and stormwater controls added to the map	No, this BMP does not directly relate to activities taken in the field or training of staff.
5: Pollution Prevention/Good Housekeeping for Municipal Operations	MS4 Operations and Maintenance Program	Develop an O&M program through training materials and procedures.	12 training sessions	Training sessions	Yes, there were 12 training sessions with a total of 84 participants.
5: Pollution Prevention/Good Housekeeping for Municipal Operations	MS4 Facility Inventory	Develop a spreadsheet inventory of all Town of Flower Mound facilities.	One new facility added to the MS4 Facility	Facilities added to the inventory	Yes, this allows staff to document potential stormwater impacts from town facilities.

3. Provide the measurable goals for each of the MCMs, and an evaluation of the success of the implementation of the measurable goals (See Example 2 in instructions):

1	Post 3 stormwater quality messages.	Exceeded goal: Five messages relating to stormwater were posted on FMTV. Three social media postings were also made to encourage citizens not to blow lawn clippings into stormwater inlets.
1	Updates and maintain stormwater website.	Met goal
1	Anti-littering/dumping brochure.	Met goal

1	Continue sign placement.	Met goal
1	Continue the storm drain labeling program.	Met goal
1	Comply with state & local rules.	Met goal
1	Continue program, training and providing technical services.	Met goal
2	Periodically update map.	Met goal
2	Research and develop an Illicit Discharge Program.	Met goal
2	Develop and maintain an Illicit Discharges document.	Met goal
3	Update inspection program and ordinance, if necessary.	Met goal
3	Monitor hotline.	Met goal
3	Maintain and update stormwater permits document.	Met goal
4	Enforce all provisions of the stormwater ordinance. Update, if necessary.	Met goal
4	Provide for periodic inspections for targeted locations.	Met goal
5	Develop SOP(s) annually for dedicated facilities.	Met goal
5	Collect data and start developing map.	Met goal

5	Develop Operations and Maintenance Program training materials.	Met goal
5	Develop a MS4 Facility Inventory.	Met goal

C. Stormwater Monitoring Data (Part IV Section B.2.(b))

1. The MS4 has conducted analytical monitoring of stormwater quality and submitted in the annual report.

____ Yes ☒ No

a. Explain below or attach a summary to submit along with any monitoring data used to evaluate the success of the SWMP at reducing pollutants to the maximum extent practicable. Be sure to include a discussion of results:

N/A

D. Impaired Waterbodies (Part IV Section B.2.(c))

1. If applicable, explain below or attach a summary of any activities taken to address the discharge to impaired waterbodies, including any sampling results and a summary of the small MS4's BMPs used to address the pollutant of concern:

The Town of Flower Mound directly discharges stormwater into an impaired segment known as 0826 – Grapevine Lake. The Pollutant of Concern (POC) for the impaired segment is identified in the *2012 Texas Integrated Report Index of Water Quality Impairments* as pH. The pH level for this segment has been consistently high. On February 2, 2015, the Town of Flower Mound sought to determine whether or not the Town contributed to the high pH associated with segment 0826. Seven streams, which, discharged into the northern portion of Grapevine Lake were sampled to determine if a point source could be identified. The sampling locations and resulting pH are as follows:

Site Number	Location	Coordinates	pH	Temp (°C)
2	Graham Branch at Cross Timbers Rd	33.061373, -97.220478	8.51	8.6
4	Balturosol Dr at Pine Valley Dr	33.068110, -97.164627	7.80	7.8
5	Lighthouse Drive	33.064130, -97.159889	8.10	7.0
6	Tour 18 Dr at Cross Timbers Rd	33.043567, -97.165271	10.11	7.5
38	Raintree Place btwn Hidden Trail and Valley View	33.040873, -97.138480	8.56	7.0
40	Drainage to Smoot Creek at U.S. 377	33.075553, -97.200311	8.40	6.5
NA	Drainage to Smoot Creek near Argyle	33.080825, -97.197498	8.41	5.6

Only one of the seven streams yielded a pH above 9. The preliminary sampling indicates that the Town of Flower Mound is not contributing to the high pH level associated with this impaired segment.

- Describe the implementation of targeted controls if the small MS4 discharges to an impaired water body with an approved TMDL (*Part II Section D.4.(a)*):

In 2015 the Town developed a dry weather sampling program as part of our illicit discharge detection and elimination minimum control measures. Our dry weather sampling program consists of 45 strategically chosen sampling locations that will monitor 10 water quality parameters. The dry weather sampling will allow us to determine baseline values for each location, as well as providing continuous monitoring of pH levels for streams which discharge into Grapevine Lake.

- Report the benchmark identified by the MS4 and assessment activities (*Part II Section D.4.(a)(6)*):

Benchmark Parameter	Benchmark Value	Description of additional sampling or other assessment activities	Year(s) conducted
pH level	<9	The pH level of Grapevine Lake is consistently over 9 according to the 2012 Texas Integrated Report Index of Water Quality Impairments. Streams discharging into Grapevine Lake will continually be monitored at 15 predetermined sampling sites under our Dry Weather Sampling Program.	2

4. Provide an analysis of how the selected BMPs will be effective in contributing to achieving the benchmark (Part II Section D.4.(a)(4)):

Benchmark Parameter	Selected BMP	Contribution to achieving Benchmark
<i>pH level</i>	Staff will determine if the Town is a significant contributor to the impairment.	Sampling was conducted and the Town was found to not be contributing to the high pH level associated with segment 0826.
<i>pH level</i>	Sampling/monitoring and public education.	Continued periodic sampling will take place under our Dry Weather Sampling Program. Water quality information will also continue to be disseminated by multiple methods.

5. If applicable, report on focused BMPs to address impairment (*Part II Section D.4.(a)(5)*):

Pollutant to Address (<i>Ex: Bacteria</i>)	Description of Focused BMP	Comments / Discussion
N/A		

6. Describe progress in achieving the benchmark (*Part II.D.4.(a)(6)*):

For example, the MS4 may use the following indicators:

- number of sources identified or eliminated;
- decrease in number of illegal dumping;
- increase in illegal dumping reporting;
- number of educational opportunities conducted;
- reductions in sanitary sewer flows (SSOs)
- increase in illegal discharge detection through dry weather screening

Benchmark Indicator	Description / Comments
Number of samples taken	Seven sampling locations were used in the preliminary determination. Forty five sampling locations will be utilized in the near future to continuously monitor the pH levels.
Number of educational opportunities conducted	In year two, it was determined the Town is not a significant contributor to the high pH level associated with segment number 0826. Information in regards to the impaired segment will still be incorporated into our public education and outreach events.
Number of sources identified	Only one of the seven sampling locations resulted in a pH reading above a 9. The previously mentioned location will be further analyzed through our Dry Weather Sampling Program.

E. Stormwater Activities (Part IV Section B.2.(d))

Describe any stormwater activities the MS4 operator has planned for the next reporting year. Use the table or attach a summary, as appropriate:

MCM(s)	BMP	Stormwater Activity	Description / Comments
1: Public Education, Outreach and	Municipal Channel Stormwater	Post 3 stormwater quality messages.	Town staff will continue to post a minimum of 3 stormwater related educational messages over our FMTV

MCM(s)	BMP	Stormwater Activity	Description / Comments
Involvement	Quality Messages		station. In addition, our Environmental Conservation Committee is seeking to expand our public outreach efforts.
1: Public Education, Outreach and Involvement	Municipal Website with Stormwater Quality Information	Update and maintain the stormwater website.	Town staff will continue to make updates to the stormwater webpage when necessary.
1: Public Education, Outreach and Involvement	Anti-littering/dumping brochure	Print and distribute, as needed.	Town staff will continue to distribute brochures during education events, as well as utilizing them during enforcement.
1: Public Education, Outreach and Involvement	Watershed Address Program	Continue sign placement.	Town staff will continue to strategically place watershed signs in unidentified watershed areas.
1: Public Education, Outreach and Involvement	Storm Drain Labeling	Continue the storm drain labeling program.	Town staff will continue labeling new inlets as they are constructed.
1: Public Education, Outreach and Involvement	Public Notice	Comply with state and local rules.	The Town will continue to comply with state and local rules.
1: Public Education, Outreach and Involvement	Community Source Water Protection Program	Continue program, training and provide technical services.	Town staff will continue maintaining the Community Source Water Protection Program. Staff is currently in the process of finding training opportunities to incorporate several new members into the program.
2: Illicit Discharge Detection and Elimination	Storm Sewer System Map	Periodically update map.	Town staff will update the storm sewer system map, as needed.
2: Illicit Discharge Detection and Elimination	Program to Detect and Address Illicit Discharges	Complete the IDDE program.	Our IDDE program has been established and periodic sampling will continue throughout the remainder of the permit.

MCM(s)	BMP	Stormwater Activity	Description / Comments
2: Illicit Discharge Detection and Elimination	Develop and Maintain an Illicit Discharge Document	Maintain and update an Illicit Discharge document.	Town staff will maintain and update the Illicit Discharge document, as needed.
3: Construction Site Stormwater Runoff Control	Evaluate and Enforce Regulatory Authority and Procedures	Update inspection program and ordinance, if necessary.	Town staff will continue to update our inspection program and make policy changes to the ordinance, as needed.
3: Construction Site Stormwater Runoff Control	Construction Site Reporting Hotline	Monitor hotline.	Town staff will continue to monitor the construction site reporting hotline.
3: Construction Site Stormwater Runoff Control	Maintain a Stormwater Permit Document	Maintain and update stormwater permits document.	Town staff currently has a stormwater permits document. Staff will continue to update the document annually.
4: Post-Construction Stormwater Management in New Development and Redevelopment	Comprehensive Stormwater Ordinance	Enforce all provisions of the stormwater ordinance, update, if necessary.	Town staff will continue to enforce the stormwater ordinance.
4: Post-Construction Stormwater Management in New Development and Redevelopment	Evaluate and Enforce the Stormwater Inspection Program	Provide for periodic inspections of targeted locations.	Town staff continues to conduct periodic inspections for construction sites and developments in the Town.
5: Pollution Prevention/Good Housekeeping for Municipal Operations	Facility Specific Standard Operating Procedures	Develop SOP(s) annually for dedicated facilities.	SOP's have been created for several facilities. SOP's will continue to be created as new facilities and their associated operations are identified.

MCM(s)	BMP	Stormwater Activity	Description / Comments
5: Pollution Prevention/Good Housekeeping for Municipal Operations	MS4 Facility and Stormwater Controls Map	Finalize map.	Map has been finalized and will continue to be updated as needed.
5: Pollution Prevention/Good Housekeeping for Municipal Operations	MS4 Operations and Maintenance Program	Ensure all designated employees receive annual training.	Town staff will ensure all designated employees receive O&M training and develop the program into a permanent policy.
5: Pollution Prevention/Good Housekeeping for Municipal Operations	MS4 Facility Inventory	Maintain a Facility Inventory. Update, if necessary.	Town staff will maintain and update the completed facility inventory, if necessary.

F. SWMP Modifications (Part IV Section B.2.(e))

1. Changes have been made or are proposed to the SWMP since the NOI or the last annual report, including changes in response to TCEQ's review.

☐ Yes ☒ No

If 'Yes', report on changes made to measurable goals and BMPs:

Note: If changes include additions or substitutions of BMPs, include a written analysis explaining why the original BMP is ineffective or not feasible and why the replacement BMP is expected to achieve the goals of the original BMP.

2. Explain additional changes or proposed changes not previously mentioned (i.e. dates, contacts, procedures, annexation of land etc.):

The changes listed in the above table are as a result of our revised Stormwater Management Program to comply with the new MS4 General Permit. All the above mentioned changes have been approved by the TCEQ through the SWMP review process.

G. Additional BMPs (Part IV Section B.2.(f))

Provide a description and schedule for implementation of additional BMPs that may be necessary, based on monitoring results, to ensure compliance with applicable TMDLs and implementation plans.

BMP	Description	Implementation Schedule (Start Date etc.)	Status / Completion Date (completed, in progress, not started)
Stream Monitoring/Testing	Preliminary sampling of 7 predetermined locations.	2014-2015	02/02/2016
Stream Monitoring/Testing	The town will continue to periodically sample tributaries that discharge into Grapevine lake through our IDDE program. If at any point, we determine that we are contributing to segment 0826's high pH then we will implement additional BMP's.	2015-2019	In progress

H. Additional Information (Part IV Section B.2.(g))

1. Is the permittee relying on another entity/ies to satisfy some of its permit obligations?

___ Yes ☒ No

If 'Yes,' provide the name(s) of other entity/ies and an explanation of their responsibilities (add more spaces or pages if needed):

Name and Explanation:

Name and Explanation:

Name and Explanation:

Name and Explanation:

Name and Explanation:

2.a. Is the named permittee sharing a SWMP with other entities?

___ Yes ☒ No

2.b. If 'yes,' is this a system-wide annual report including information for all permittees?

___ Yes ___ No

If 'Yes,' list all associated permit numbers and permittee names (add additional spaces or pages if needed):

Authorization Number: _____	Permittee: _____
Authorization Number: _____	Permittee: _____
Authorization Number: _____	Permittee: _____
Authorization Number: _____	Permittee: _____

I. Construction Activities (Part IV Section B.2.(h-i))

1. a. Does the permittee utilize the optional seventh MCM related to construction?

___ Yes ☒ No

1. b. If 'yes,' then provide the following information for this permit year:

The number of municipal construction activities authorized under this general permit	
--	--

The total number of acres disturbed for municipal construction projects	
The number of construction projects in the jurisdiction of the MS4 where the permittee was not the construction site operator (as provided in submittals to the MS4 operator via notices of intent or site notices)	

Note: *Though the seventh MCM is optional, implementation must be requested on the NOI or on a NOC and approved by the TCEQ.*

J. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name (printed): _____ Title: _____

Signature: _____ Date: _____

Name (printed): _____ Title: _____

Signature: _____ Date: _____

Name (printed): _____ Title: _____

Signature: _____ Date: _____

Name (printed): _____ Title: _____

Signature: _____ Date: _____

Name (printed): _____ Title: _____

Signature: _____ Date: _____

Note: If this is this a system-wide annual report including information for all permittees, each permittee shall sign and certify the annual report in accordance with 30 TAC §305.128 (relating to Signatories to Reports).