

ARTICLE 9

SITE PLAN REVIEW STANDARDS AND SITE REVIEW COMMITTEE

It is hereby added to and amended into Ordinance No. 867, the Zoning Ordinance and Subdivision Regulations of the City of Tonganoxie, Kansas, 1992 by adoption and incorporation by reference as if fully set forth herein concerning Site Plan Review Standards and the establishment of a Site Review Committee. New Article 9 is an amendment and an addition to the Zoning Ordinance and Subdivision Regulations of the City of Tonganoxie, Kansas authorized by K.S.A. 12-741 et. seq. Not less than three copies of Article 9, Site Plan Review Standards and Site Plan Review Committee, an amendment of the zoning and Subdivision regulations of the City of Tonganoxie, Kansas 1992 shall be marked or stamped "Official Copy as Incorporated by Reference by Ordinance No. 1020, amending Ordinance No. 867 of the City of Tonganoxie, Kansas" with all sections or portions thereof intended to be amended or changed clearly marked to show any such omission or changes, and filed with the City Clerk to be open to inspection and available to the public at all reasonable hours.

SECTION 1.0 GENERAL PROVISIONS

All proposed construction within the Tonganoxie city limits must obtain an approved site plan. Single-family and duplex residential construction requires only minimal landscaping that may be noted on the site sketch accompanying their building permit application. No formal plan is required. Business, industrial, multifamily as well as public and semi-public uses must submit formal plans for approval by the Site Review Committee. The Site Review process consists of 3 parts: Site Plan, Design Standards, and Landscaping. Each portion of the plan shall be evaluated according to the criteria set forth in the following sections.

This process is intended to enhance the quality of industrial, commercial or multi-family development within the city limits thus increasing property values and encouraging the continued growth of our community. The plan is purposely written to allow the Site Review Committee flexibility to evaluate each project on a site-specific basis. Due to the special and unique needs of industrial development, it is important to express that site review is intended to be a negotiated process, taking into account the type of industry, proximity to arterial roadways and other factors that will promote successful and harmonious industrial projects.

1.1 Purpose and Intent. The purpose and intent of requiring site plan approval is to:

- 1.1.1 Encourage the compatible arrangement of buildings, off street parking, lighting, landscaping, ingress and egress, and drainage on the site, any or all of these, in a manner that will promote the safety, health, welfare and convenience of the public;

- 1.1.2 Use landscaping techniques to minimize the environmental effect of a development by contributing to erosion control, providing shade, and noise, glare, and heat abatement;
- 1.1.3 Assure quality of design in future development as well as enhance community appearance and preserve neighborhood character;
- 1.1.4 Evaluate the impact of developments upon surrounding uses and activities;
- 1.1.5 Buffer or screen uncomplimentary uses; and
- 1.1.6 Maintain property values.

1.2 When Required.

- 1.2.1 The conditions and requirements of this Article shall be in effect in the following instances:
 - 1.2.1.1 New Construction: Whenever an area is zoned and/or developed as a multi-family, commercial, industrial, public or semi-public use.
 - 1.2.1.2 Renovation: Whenever a multi-family, commercial or industrial use is altered, changed or intensified in a manner that significantly increases the footprint of the main building, changes the facade of a building fronting on an main thoroughfare, or increases the parking or the exterior storage requirements;
 - 1.2.1.3 Reference: Whenever a specific reference is made to these regulations in the Zoning Regulations.
 - 1.2.1.4 Zoning Change: When a requested zoning change involves a multi-family, commercial, industrial, public or semi-public use.
Landscaping and buffer yard requirements shall be the responsibility of the applicant and must be met before an occupancy permit will be issued.
- 1.2.2 No building permit shall be issued in any of the noted instances for the erection or alteration of a structure or building until a complete Site Plan has been submitted and approved by the Site Review Committee as set forth herein.
- 1.2.3 Single-family units and two-family (duplex) units are subject to limited minimum general landscaping requirements only, as listed in Section 4.0. See Definitions for situations when duplex units are considered multi-family development.

1.3 Procedure.

1.3.1 Preliminary Planning Meeting. A meeting(s) should be arranged between the applicant and the City Planner to discuss the proposal in order to avoid a delay in the approval process. The applicant should be prepared to provide as much of the following information as possible:

1.3.1.1 Sketch drawing of proposed site plan.

1.3.1.2 Information concerning the property:

- Contour map of site. This can be obtained from the preliminary plat.
- Topographic map of the area.
- General outline of 100 year floodplain or on-site drainage ways.
- Proposed locations of all buildings, structures, parking areas, drives, walks, screening/buffering, public streets and existing easements.
- Proposed landscaping.

1.3.1.3 Adjacent Property

- Public streets, driveways, structures, drainage systems, fire hydrants.
- Other pertinent existing or proposed facilities or landscape features that have a bearing on the site including existing foliage.

1.3.1.4 Approximate areas of proposed improvements.

1.3.1.5 Approximate timeline for project.

1.3.1.6 Elevation (exterior wall) sketches showing the general style and size of the building and proposed materials.

1.3.2 Submit Site Plan Application. Application must include four (4) full size copies of all site plan drawings and schedules as outlined by this ordinance, and a review fee as specified by the City Council. These shall be submitted by the property owner, or his/her certified agent, to the City Clerk. No part of the review fee shall be refunded.

1.3.3 Staff Review. The Planning staff and the City Engineer shall review the Site Plan for conformance with the Zoning and Subdivision Regulations of the City. Each shall prepare a report of their findings. The site review, plans and reports shall then be placed on the agenda of the Site Review Committee.

1.3.4 Site Review Committee. The Committee shall review the submittal and reports. The Committee may approve the site review package, with or without conditions, or deny it. If the submittal is denied, the applicant may request a review by the City Council.

1.4 Conditions of Approval.

The Site Review Committee shall examine each submittal using the following criteria as guidelines for approval:

- 1.4.1 The proposed use is a permitted use within the zoning district in which the property is located;
- 1.4.2 The proposed arrangement of buildings, parking, access, lighting, landscaping, and drainage is compatible with adjacent land uses;
- 1.4.3 Vehicular ingress and egress to and from the site and the circulation within the site provides for safe, efficient, and convenient movement of both vehicular and pedestrian traffic not only within the site but on adjacent roadways as well;
- 1.4.4 Landscaping of the site is in harmony with adjacent land uses and will provide a pleasing appearance to the public. Cleared spaces not used for buildings, structures, parking or access ways are landscaped, planted in turf grass or left in a natural state to avoid erosion of soil.
- 1.4.5 In all cases, the design for storm drainage must meet the criteria set forth in the Storm Water Detention Plan for the City of Tonganoxie. Design criteria shall be submitted to the City Engineer for review and approval (ORDINANCE #1069).

1.5 Occupancy of Site.

- 1.5.1 No initiation of use of a site shall take place before all conditions of the site plan and other provisions of the Zoning Regulations have been satisfied, with the following exceptions:
 - 1.5.1.1 In developments that have been approved for phasing, such development may commence as each phase is approved, if the conditions of the site plan relating to that particular phase are satisfied.
 - 1.5.1.2 That consideration shall be given to seasons of the year and adverse weather conditions in requiring completion of landscaping plans before initiation of such activity. In such case, a bond may be required to assure completion of requirements. (See 1.7)
- 1.5.2 Such conduct of activity on a parcel of ground having an approved site plan without fulfillment of site plan conditions, excepted as noted above, and/or Zoning Regulations, shall be considered a violation of these Regulations. In which case, the occupancy permit cannot be obtained.
- 1.5.3 If no building permit is issued for the site within one year from the date of the site plan approval, the site plan shall be and become null and void. Renewal of the site review may be granted for one year, if said renewal is requested prior to expiration of permit and plans still meet all guidelines.

1.6 Changes to Approved Site Plan.

- 1.6.1 An applicant who wishes to change a previously approved submittal must contact the Planning Staff. If the proposed changes are of a nature that the plan remains substantially similar to the previously approved site review, the City Administrator and Planner must grant the change(s).
- 1.6.2 Substantial changes to any part of the Site Review submittal, such as those listed below, shall require approval of the Site Review Committee.
 - 1.6.2.1 Altering a dedicated right-of-way;
 - 1.6.2.2 Reducing the amount of dedicated land or improvements;
 - 1.6.2.3 Adding to or removing as much as 25% of the structural improvements or landscaping;
 - 1.6.2.4 Changing the exterior building materials to something other than an accepted material;
 - 1.6.2.5 Changing the location or orientation of a major structure(s) in the development.

1.7 Exceptions.

- 1.7.1 In the case where circumstances beyond the control of the owner/developer/builder make compliance with these regulations a hardship, the Site Review Committee may make minor modifications to the requirements. Advice from the City Planner and/or City Engineer should be sought in all instances. The test is that the intent and purpose of the ordinance is fulfilled.
- 1.7.2 In the case of exceptional circumstances, a temporary or conditional use permit may be granted to allow occupancy prior to completion of all the requirements in these regulations. A temporary or conditional use permit will only be issued upon presentation of proof that funds or a bond has been reserved in a sufficient amount so as to guarantee the completion of the requirements at the earliest possible opportunity.
- 1.7.3 Cases of dispute between the Site Review Committee and the applicant will be resolved by the City Council.

SECTION 2.0

SITE PLAN

Drawings to be prepared according to the rules and regulations set forth by the Kansas State Board of Technical Professions. (Available from City Planner)

2.1 SITE PLAN DRAWINGS. Requirements for official site review submittals.

- 2.1.1 Show site boundaries and dimensions graphically, and contain a written legal description of the property;
- 2.1.2 List the name, complete address and phone number of the owner and/or developer;
- 2.1.3 Show finished grades or contour lines at intervals of not more than two (2) feet, north arrow, site area, and a scale.
- 2.1.4 Indicate both adjacent and on-site existing and proposed public streets and private or public drive locations, sidewalks, median breaks and turning lanes with widths and curb cuts;
- 2.1.5 Depict existing on-site structures and significant vegetation;
- 2.1.6 Show location and sufficient dimensioning of all proposed structures, including walls and fences. Indicate the distance between all structures and property lines, and between parking areas and property lines;
- 2.1.7 Clearly indicate or label the proposed uses of the site, such as parking spaces, aisles, loading and service areas, docks, etc. Prepare improvement plans according to city standards for all proposed parking, loading, and walkway areas. (If the exact use is not known at the time of the site plan submittal, off-street parking requirements should be calculated by the general requirements for the existing zoning district);
- 2.1.8 Show location and height of all exterior lighting fixtures for buildings and parking lots;
- 2.1.9 Indicate location and function of any exterior sound equipment;
- 2.1.10 Indicate location, size and building materials of all exterior signs;
- 2.1.11 Transfer the following items from the plat. If they were not calculated on the plat, an engineer will need to do so:

- Proposed storm water collection, detention and erosion control plans, with the necessary calculations.
 - Show, by the use of directional arrows, the proposed flow of storm drainage from the site after grading.
 - Provide an analysis of the capacity of the existing sanitary sewer system.
- 2.1.12 Give the location and dimensions of all screening elements for outdoor storage areas, trash enclosures or utility areas;
- 2.1.13 Provide a projected timeline for the entire project;
- 2.1.14 Provide four complete sets of drawings. (City Engineer, City Planner, Site Review Committee, official file)

SECTION 3.0

DESIGN STANDARDS

Elevations drawings shall depict the design, dimensions, exterior materials, and colors graphically and/or in schedules. Color boards or sample boards, swatches, color chips, color photographs or samples should be provided to facilitate a better understanding of the design and color scheme.

Exceptions may be made to sections of these standards on a case-by-case basis. When an exception is granted, the reasons shall be detailed in writing and be made a part of the site review. In these instances, increased requirements may be imposed in other portions of the standards at the discretion of the Site Review Board. Exceptions may be based upon but not limited to the reasons listed below:

- Strict adherence will pose a security risk to the business or the area
- An exceptional architectural design that meets the intent of the regulations.

Special consideration will be granted to the location of both sites and individual structures on sites for industrial uses. For example, sites or buildings located at a distance from arterial roads and/or residential uses would have fewer restrictions.

3.1 ARTICULATION OF WALL AND ROOF PLANES. Articulation or offsets of the plane of a wall or roof are used to break up a wall expanse and adds a three-dimensional quality to a structure.

3.1.1 For buildings less than 2000 square feet:

3.1.1.1 The façade shall contain at least one offset from the primary plane of the wall. This offset may be used to articulate a design element such as an entryway.

3.1.1.2 The roof will also contain an offset. This may be in the form of porches, dormers, clerestory windows or other such elements.

3.1.2 For buildings 2000 square feet or more:

3.1.2.1 In general, a 3-to-1 ratio shall be used to determine facade wall articulation. The wall should not extend more than 3 times its height without at least one offset portion. Generally, the larger the building, the deeper the offset should be.

3.1.2.2 Roofline articulation shall also be at a 3-1 ratio as described above. Porch roofs, dormer windows and the like will be considered a change in the roof plane.

3.2 CLADDING AND ROOFING MATERIALS: Special consideration should be given when a site adjoins existing residential property or property zoned as residential.

- 3.2.1 Walls visible from the street should be clad in one or more of the following materials
 - 3.2.1.1 Masonry: Stone, brick, decorative concrete block, stucco or gypsum concrete
 - 3.2.1.2 Glass: curtain walls or glass block
 - 3.2.1.3 Wood: Board & bat, Clapboard, Paneling. Surface must be painted or preserved in an acceptable manner.
 - 3.2.1.4 Metal with a quality appearance and finish is acceptable in industrial districts. (Amended by Ordinance # 1184 5/9/05)
 - 3.2.1.5 Other materials as approved by the Planning Commission on a case by case basis. This includes uses such as car wash, auto maintenance or storage buildings where large portion of the wall may be doors or other types of openings.(Amended by Ordinance # 1184 5/9/05)
- 3.2.2 Roofing Materials
 - 3.2.2.1 Standing Seam Metal or Copper
 - 3.2.2.2 Clay, slate or cast concrete tiles
 - 3.2.2.3 Cedar Shingles
 - 3.2.2.4 Heritage II composition shingles or better
 - 3.2.2.5 Other materials as approved by the Site Review Committee

3.3 VISUAL ELEMENTS: Design elements that allow visual penetration to the interior of a building, i.e. display units, windows or doors, shall be required on all buildings according to their function and the zoning district in which they are located. Visual penetration is essential in retail and small office districts to increase the pedestrian traffic that benefits all businesses in the district. In districts containing large commercial businesses or industrial buildings, penetrating elements aid in breaking up a monotonous, impersonal façade. (updated by Ordinance 1230, May 29, 2007)

- 3.3.1 Zoning Districts LBD Limited Business District, HBD Historic Business District, and GBD General Business District:
 - 3.3.1.1 50% of the ground floor level facade dimension and 25% of facade second floor level for all retail and office uses.
 - 3.3.1.2 A minimum of 25% of the overall sidewall dimension for all retail and office uses
 - 3.3.1.3 Minimum of 30% of the overall wall dimension for both facade and sidewalls on other uses or for exceptionally large buildings located in a B-3 district.
- 3.3.2 Zoning Districts I-LT Light Industrial/I-MD Moderate Industrial-Retail and/or office portions of industrial structures need visual elements in 30% of the facade and street walls. Opacity of strictly industrial portions will be determined by the

Site Review Committee, based upon location, building design, security, and structural integrity.

3.3.3 The Site Review Committee may grant exceptions to these requirements. For example, where the use makes penetrating elements a liability or when it would compromise the structure. Exceptions may also be granted to maintain the integrity of an exceptional design or to make the building fit better within its context. Faux elements that still serve the function of interrupting the façade, but do not allow visual penetration may be substituted at the discretion of the Site Review Committee. Faux elements may consist of, but not be limited to, false windows, showcases, niches, glass block, or windows, doors or wall sections with reflective or opaque materials.

3.4 COLORS/PATTERNS/TEXTURES FOR FACADES AND STREET WALLS: Colors, patterns and textures of exterior materials or coatings shall be compatible with existing surroundings. Extremely bright or fluorescent colors should be avoided in all districts. Provision of samples and color charts for materials to be used in the exterior walls is helpful.

3.5 AUXILIARY ELEMENTS.

3.5.1 All ground level or roof-level mechanical, electrical or other equipment needs to be completely screened from view of either roadways or adjacent residential areas with an opaque material. Architectural screening will be considered as an extension of the building or structure and must be compatible or complementary in material, color and style.

3.5.2 Exterior trash or recycling receptacles shall be enclosed on all sides. Enclosure shall be of a compatible or complementary material, color and style to the main or adjoining structure. An entrance gate may be used as one side of the structure. Wall height must be such that the contents are completely hidden.

3.5.3 Except for industrial buildings located in a designated industrial area, loading and service areas shall be located at the side or rear of buildings. Any loading dock or service area visible from a non-internal street shall be appropriately screened either structurally or with landscaping materials. If structural screening is employed, the space will be considered an extension of the structure and must be compatible in materials, color and design.

3.5.4 Industrial buildings should be designed in a manner so that loading docks and service areas are located at the side or rear of the buildings whenever possible. If loading docks must be oriented toward a street, the docks should be screened either by landscaping, berms, a building wall, a screen wall, or by architectural integration into the building design so as to not be noticeably visible.

3.5.5 Placement of exterior point-of-sale machines will be evaluated on a case-by-case basis.

3.6 ADDITIONS AND RENOVATIONS. The Site Review Committee may permit additions and exterior renovations to existing structures even if they do not conform completely to these regulations. Approval will be on a case-by-case basis, if said additions or renovations adhere to the overall intent of the Site Plan Ordinance. The design shall be compatible or complementary to the original structure as well as that of surrounding buildings.

3.7 SITE COMPATIBILITY. New construction and renovations in established neighborhoods should strive for compatibility with existing architecture through the use of materials, colors, patterns, and/or horizontal or vertical design elements. Similarity in height and bulk is required.

3.8 HISTORIC BUSINESS DISTRICT. The Historic Business District is the heart of a city. Creating a livable, inviting space for shopping, services and entertainment is vital to the life of this area. Until the design standards are formed and adopted by the Downtown Benefit District, the following criteria shall guide decisions in the area.

3.8.1 Facades on buildings in the Central Business District will be evaluated according to the following criteria: design elements, transparency, amenities, materials, and use.

3.8.1.1 Traditional elements of downtown design are encouraged. Elements such as canopies, awnings and false fronts are essential to overall design compatibility. They also contribute heavily to the ambiance of the street. Streetscape amenities are also important contributors to the life of the street. The placement of items such as planters, benches, light fixtures, display cases, trash containers, etc. encourages the pedestrian traffic that is essential to the success of this area.

3.8.1.2 Transparency is an essential element for storefronts and offices. Transparency connects the life on the street with the activity occurring inside the building. It encourages greater pedestrian traffic and interaction, benefiting all businesses in the area. (See Section 3.3)

3.8.1.3 Building materials such as masonry, cast stone or painted cast metal, are used extensively in traditional downtown districts. No metal facades will be allowed in this district.

Traditional uses in downtown areas are retail, entertainment and service oriented. Also important to the street life are residences. Uses in downtown buildings will be oriented primarily toward these types of uses. Residential uses should be encouraged on upper levels of downtown buildings

SECTION 4.0

LANDSCAPING REQUIREMENTS

Landscaping plans must be prepared according to the rules and regulations set forth by the Kansas State Board of Technical Professions. Plans include all landscape elements, existing foliage to be retained, areas to be seeded or sodded, and a plant schedule. A list of recommended plants is available at City Hall for your use. The ideal plan will be overlaid on the site plan to accurately depict all elements and relationships.

4.1 SINGLE FAMILY AND DUPLEX REQUIREMENTS:

In all single family and duplex Residential Districts except Rural there shall be a minimum of 3 landscaping units per residence chosen from the list below. One of these elements must be a tree. Trees should be located forward of the front wall of the structure, but not interfere with visibility at street intersections or driveway entrances.

Landscaping Material	Units
Medium to Large Shade Tree	2.0
Ornamental tree or Conifer	1.5
Large shrub (5' or greater at maturity)	1.0
Small or Medium shrub or bush (less than 5' at maturity)	0.5
Other elements if approved by Planner	

4.2 MULTI-FAMILY, BUSINESS, INDUSTRIAL AND PUBLIC OR SEMI-PUBLIC REQUIREMENTS:

These uses are requested to create a landscaping plan for the site, keeping in mind the following goals set forth by the Site Review Committee. If, in the opinion of the Site Review Board, the landscaping plan submitted by the applicant does not meet the goals below, additional elements will be required for approval.

Goal #1: Landscaping contributes to the aesthetic appearance of the site and/or its improvements which, in turn, enhances community appearance and preserves neighborhood character.

- Provide accents for natural or architectural features
- Delineate pathways or edges
- Separate or screen between on-site elements
- Contribute to the overall aesthetic appeal of the site
- Does not interfere with the smooth ingress/egress and circulation of the site.
- Contributes to the compatibility of the site with the environmental character of the neighborhood/area

Goal #2: Landscaping safeguards the natural environment against the effects of improvements.

- Proper methods used to control erosion and storm water drainage from site
- The landscaping contributes to the natural environment by providing shade, and minimizing possible noise, glare, and heat produced by the new use.

Goal #3: Buffering and screening sufficiently minimizes the impact of the development upon the neighborhood.

- Determine intensity of buffering/screening needed for adjacent uses or zones using the Use Intensity Guide from the appendix. Intensity is rated on a scale from 1 to 5 with 5 requiring a completely opaque buffer or screen.
- Placement of buffering and screening is logical and successful.
- Overall, the buffering and screening contributes successfully to the preservation of property values

General rules of thumb:

- Required trees and landscaping adequately dispersed over the site.
- Landscaping at any intersection of a combination of streets, crosswalks, driveways or entrance-ways does not interfere with the sight distance requirements of the City Engineer.
- Retention of quality existing foliage is strongly encouraged.
- Fences or walls shall be of masonry or wood. All other materials will require prior approval from the Site Review Committee.
- Suggestions for landscaping elements can be found in the Appendix.
- Plant material guidelines:
- All plant materials to be healthy specimens with maintenance or replacement for a minimum of two years.
- The owner and the tenant shall be held jointly responsible for the maintenance and upkeep of all landscaping materials.
- Opaqueness of buffers/screening elements must be achieved within 3 years.

SECTION 5.0

STORM WATER DETENTION PLAN Adopted by Ordinance #1064 March 12, 2001

1.0 INTRODUCTION

The Storm Water Management Criteria contained in this plan sets forth the minimum technical criteria for the analysis and design of Storm Water Detention Facilities in Tonganoxie, Kansas. The purpose and intent of these criteria are to provide for the proper design of storm water appurtenances and to enhance the harmonious development of the City.

1.1 APPLICABILITY

These criteria are applicable to all residential, commercial and industrial development. Storm Water Detention Facilities shall be required where hydraulic calculations indicate an increase in storm water runoff due to proposed development.

2.1 DETERMINING THE NEED FOR DETENTION

A) An engineering study as outlined in section 6 of these criteria will be required for all locations to determine the impact of the proposed development on the existing drainage system and the need for detention. The study shall be submitted to the City with the preliminary plat or site plan for proposed development. The City encourages as few detention facilities as possible in order to meet the requirements of this ordinance. The study shall be prepared under the direct supervision of a professionally licensed engineer.

2.2 EXCEPTIONS REQUIRING AN ENGINEERING STUDY BUT NO DETENTION

- B) Detention will not be required when the engineering study indicates that construction of a detention facility will increase the downstream system's peak discharge by delaying the peak from the proposed development so that it coincides with the peak discharge from upstream area.
- C) Detention will not be required where site discharge occurs within the limits of the 100-year floodplain as defined by the Federal Insurance Study current at the time the development is proposed.
- D) Requirements may be waived if the drainage study, provided by the Developer and prepared by a registered professional engineer, quantifies the problems and adequately demonstrates to the City Engineer that a waiver of a specific requirement is appropriate.

2.3 EXCEPTIONS NOT REQUIRING AN ENGINEERING STUDY OR DETENTION

- E) Detention will not be required for additions to, improvement and repair of existing residential housing up to and including four-plex multi-family dwellings.
- F) Detention will not be required for residential, commercial or industrial developments of one acre or less.
- G) Detention will not be required for modifications to sites that result in an increase of less than 20% in impervious area. This one time allowance may not be applied to multi-phase development.

3.0 HYDROLOGICAL CRITERIA AND METHODS

This section sets forth the hydrological method and general parameters to be used for computations of storm water runoff and peak rates for storm water detention.

3.1 HYDROGRAPH METHOD

The application of a hydrograph method is required for all detention facilities. Computer models or manual methods are permissible as approved by the City Engineer. The following is a list of preferred acceptable computer models:

- 1) SCS Technical Release No. 55 (TR-55) – “Urban Hydrology for Small Watersheds”
- 2) SCS Technical Release No. 20 – “Project Formulation – Hydrology”
- 3) US Army Corps of Engineers, Hydrologic Engineering Center – “Hec-1 Flood Hydrograph Package”
- 4) US Environmental Protection Agency “Storm Water Management Model” (SWMM)
- 5) Calculations generated in accredited engineering software programs utilizing one or a combination of the above methods will be accepted.

3.2 DESIGN STORM

The following is a general guide to be used to determine the appropriate design storm for a given watershed:

<u>Tc (minutes)</u>	<u>Time Step (minutes)</u>	<u>Storm Duration (hours)</u>
1 to 12	1	3
12 to 18	2	6
18 to 24	3	12
24 to 30	4	12
>30	5	24 Type II

3.3 RUNOFF COEFFICIENTS

Storm water runoff coefficients or curve numbers shall be determined for proposed land use in modeling. Standard coefficients from an accredited engineering publication will be accepted for use in analysis. Existing runoff coefficients shall be determined but in no case shall existing unpaved areas be analyzed with a curve number exceeding 69 and 79 for Hydrologic Soil Groups B and C, respectively.

3.4 TIME OF CONCENTRATION

The time of concentration shall be calculated as the sum of overland flow time, the shallow concentrated flow time and the concentrated system flow time. Accredited engineering guides utilized shall be provided for support of analysis.

4.0 EASEMENTS

In all new developments, developers shall dedicate (plat) easements for all drainage system components. In all existing developments, easements shall be acquired from the property owners at no cost to the City before drainage system improvements are made.

4.1 MAINTENANCE RESPONSIBILITY

The city shall be responsible for maintenance of enclosed drainage system components within public street rights-of-way only. Maintenance of all improved or natural channels, all overflow channels, detention facilities and enclosed drainage system components within public easements and all easements associated with drainage system components shall be the responsibility of the individual property owner or development association.

The city will conduct periodic inspections of above systems. In the event that maintenance concerns are identified but left unresolved by the responsible property owner or association, the City shall resolve those concerns and seek compensation from the responsible property owner or association.

5.0 STORM WATER DETENTION FACILITY REQUIREMENTS

- A) Public and private detention facilities shall be sized to provide for no increase in runoff for the proposed development conditions. Proposed detention shall provide control of increased runoff for the 10 and 100-year frequency storms.
- B) Public and private detention may be accomplished with either wet or dry bottom basin facilities. Public safety shall be addressed in the study if joint uses, such as parking or recreation, are proposed.

- C) Wet bottom basins shall require additional storage volume to accommodate 5 years of sediment and storage volume necessary to maintain a minimum water depth of 3 feet.
- D) Erosion control into and out of the proposed detention facilities shall be addressed in the study and provided as necessary.

6.0 DRAINAGE STUDY REQUIREMENTS

Storm water drainage studies shall contain the following general information, supporting calculations and drainage map.

6.1 REQUIRED REPORT CONTENT

- A) Names and addresses of the development team including but not limited to the landowner, developer, architect and engineer.
- B) Date of submittal.
- C) A list of all permits required by local, state and federal agencies.
- D) General summary discussion regarding the proposed development land use and facilities proposed for storm water management.
- E) General discussion regarding the impact of proposed storm water flow to adjacent properties.
- F) Any special consideration items addressed in the study.
- G) Supporting calculations and design guides utilized in analysis.

6.2 DRAINAGE PLAN CONTENTS

- A) A contour map indicating on and off site drainage areas to the development used in analysis.
- B) Proposed location and type of detention facility to be provided.
- C) Proposed size and type of control structure.
- D) Existing and proposed 10 and 100 year discharge rates.

5.1 DEFINITIONS (Updated by Ordinance 1230, May 29, 2007)

Buffer yard – a unit of land together with specified planting and/or structures required to minimize or eliminate conflict between land uses. Buffer yards may range from berms with minimal landscape elements to semi-opaque fencing or plantings.

Building footprint – The outline of the area of a building or structure where it comes in contact with the ground.

Deciduous Tree – Generally, those trees that shed their leaves annually such as ash, sycamore, willow, etc.

Design Elements – The individual features that combine to create a finished building, landscape, or site. These may include, but not be limited to, building material or fabric, color, texture, windows, doors, vents, height, bulk, shape, horizontal or vertical elements.

Compatibility – Harmony in the appearance of two or more design features in the same vicinity.

Conditional or Temporary Occupancy Permit - acknowledges that the owner/lessee has met all but specific conditions mandated by the City Codes Inspector or Site Review Board. A bond or trust fund must be established to cover completion of said conditions prior to issuance of the permit. (See Section 1.7.2)

Evergreen Tree – Generally, those trees that do not shed their leaves annually such as pine, spruce, juniper.

Façade – Main wall of a building, usually containing the principle entrance.

False Front – A partition extending a minimum of 2 feet above the eave line on the front of a building.

Fenestration – The arrangement and design of windows in a building

Ground Cover - A low growing plant, other than turf grass, which forms a continuous cover over the ground surface.

Harmony – A quality that represents an appropriate and congruent arrangement of parts, as in an arrangement of varied architectural and landscape elements.

Landscape Materials - Any combination of living plant materials, nonliving or decorative materials such as trees, shrubs, vines, turf, groundcover, rock, pebbles, sand, mulch, pavers, berms, fencing, walls, pools, fountains, sculpture and other decorative materials.

Landscape Open Space - Any area within the property lines not covered by building or pavement.

Landscaping - Trees, shrubs, vines turf, ground cover and other landscaping materials utilized to enhance the aesthetic and functional qualities of a site.

Multi-family - Any grouping of attached dwelling units, including townhouses, apartments, flats etc. Duplex units will not be considered multi-family unless platted as part of a subdivision containing 3 or more lots designated as such.

Native Grasses - Species of perennial grass other than those designated as noxious weeds.

New Construction - Any permanent improvements to a site to include but not be limited to structures and hard surface, paved areas.

Occupancy Permit - Acknowledgment that the owner or lessee has met all conditions that the City Codes Inspector and the Site Review Board have placed upon the site.

Parking Area – 300 square feet per vehicle as determined by the Time Saver Standards

Permanent Structure - any existing or proposed structure that will be affixed to the aground.

Plant Materials - Living plants which include trees, shrubs, ground cover, grasses and perennial flowering plants, turf and vines which are suitable for ornamental and/or functional use.

Review Fee - a set fee established by the City Council based on an average expected expenditure of time and materials for staff to prepare each case for the Site Review Board.

Screen - A semi-opaque to opaque separation to the height of six (6) to eight (8) ft. above the ground surface or, for a screen of plant materials, has the maximum opacity obtainable with the approved arrangement and species of plant materials, to a height of six (6) to eight (8) ft. This may consist of one or a combination of:

- Fencing constructed of cedar, redwood, treated wood, or other suitable material;
- Masonry walls, or;
- Plant materials and landscape materials
- Berms.

Setback Lines - Space designated as required yard area by these regulations. See applicable zones.

Shrub – Plants that grow vertically in a multi-branched growth pattern. Mature height ranges between 2 and 5 feet.

Street – This shall mean any existing street, any street proposed by the plat or site plan, or any future street or accessway proposed in the future land use plan for the City of Tonganoxie.

Streetwall – a wall that is not the front or façade, but is facing or runs generally parallel to a street.

Subordinate walls – side walls or portions of side walls of a building that are visible from a street.

Temporary or Conditional Occupancy Permit - acknowledges that the owner/lessee has met all but specific conditions mandated by the City Codes Inspector or Site Review Board. A bond or trust fund must be established to cover completion of said conditions prior to issuance of the permit. (See Section 1.7.2)

Tree, shade or canopy – a deciduous tree with an upper, spreading, branchy layer supported by one or two main trunks.

Tree – A self-supporting woody plant that normally reaches a height of at least fifteen (15) ft.

- Small Tree: Less than 30 feet in height at maturity including ornamental, flowering trees, ‘patio’ trees, and most conifers
- Medium Tree: Between 30 and 70 feet in height at maturity.
- Large Tree: Those greater than 70 feet in height at maturity.

Transparency – The degree of opacity of elements, materials or walls. The transparency of an element (such as a window) or a material (such as glass) is determined by its density and/or color. The transparency of a wall is determined by the percentage of wall area devoted to windows, doors or other penetrating elements that allow visibility into the interior of the structure.

Turf - Ground cover composed of one or more species of perennial grass that is grown as a permanent lawn.

Vine - A plant that is typically woody and climbs by supporting itself on some other plant or structure.

Wall Percentages shall be the structural cladding less the area used for windows, doors, mansards or fascias.

Woodlands (existing) - Trees & shrubs of a number, size, and species that accomplish the same general function as new plantings.

SECTION 5.2 USE INTENSITY CHART (Updated by Ordinance 1230, May 29, 2007)

USE	ZONING	INTENSITY OF USE				
		Very Low 1	Low 2	Mod 3	High 4	Very High 5
Administrative Buildings	R-R, R-E, R-SF			X		
Advertising Signs	LBD			X		
Airport/Aviation field	SUP					X
Amusement building	HBD				X	
Amusement park	SUP					X
Apartments (3 or more units)	R-MF2, R-MF3		X			
Appliance repair	LBD, HBD, GBD			X		
Arterial street						X
Assembly hall	GBD, I-LT				X	
Auditorium, theatre	HBD				X	
Auto sales/service/repair	GBD				X	
Autoparts sales	LBD			X		
Bakery w/sales on premises	LBD			X		
Bank	LBD,HBD,GBD			X		
Bar, Private Club	HBD				X	
Barber	LBD		X			
Baseball or athletic field (commercial)	SUP				X	
Beauty parlor	LBD		X			
Bicycle repair	LBD		X			
Boarding, lodging, rooming houses	R-MF3, SUP		X			
Boat sales/storage	GBD				X	
Bowling alley, billiard parlor	HBD, GBD			X		
Building materials sales	I-LT				X	
Buildings for public utilities	I-LT, SUP				X	
Camping areas w/concession facilities	SUP			X		
Carnival, circus, fairground	SUP					X
Cemetery, mausoleum, crematory	SUP			X		
Charitable institutions	SUP			X		
Church, parish hall, temple	R-R, R-E, R-SF		X			
Circus, Carnival, Fairground	SUP					X
Clinic, hospital	SUP				X	
Collector Street					X	
Concession facilities at campgrounds	SUP		X			
Conservation/flood control projects	SUP					X
Contractor's equipment sales	I-LT				X	
Convenience stores w/fuel pumps					X	

USE	ZONING	INTENSITY OF USE				
		Very Low 1	Low 2	Mod 3	High 4	Very High 5
Convent, monastery	R-R, R-E, R-SF		X			
Correctional institution	SUP					X
Crematory, cemetery, mausoleum	SUP		X			
Dance Hall	GBD				X	
Dance Studio	SUP		X			
Day nursery or preschool	SUP		X			
Delivery service	I-LT				X	
Dental office	LBD		X			
Doctor's office	LBD, SUP		X			
Dog kennel, commercial	SUP				X	
Dressmaker/Tailor	LBD		X			
Drive-in/thru Restaurant	GBD				X	
Drive-in Theatre	GBD					X
Dry cleaner, presser (storefront/self-serv.)	LBD			X		
Dyeing, cleaning works, laundry (professional)	HBD,GBD			X		
Employment agencies	I-LT			X		
Equipment rental, leasing	I-LT				X	
Exhibition, convention hall	HBD				X	
Exterminating	I-LT				X	
Farm implement sale/repair	GBD				X	
Farm store, feed store	GBD			X		
Farming	R-R	X				
Fertilizer sales	GBD			X		
Filling station	GBD				X	
Financial institutions	LBD			X		
Fire station	R-R, R-E, R-SF				X	
Fishing lake	R-R	X				
Flood control projects	SUP					
Flood plain - any use	SUP					
Florist (retail)	LBD		X			
Forest	R-R	X				
Furniture - business, sales	I-LT			X		
Garage (public)	GBD			X		
Golf Course	R-R, R-E, R-SF	X				
Golf driving range (w/lights)	SUP			X		
Golf driving range (w/o lights)	SUP		X			
Greenhouse retail	LBD		X			

USE	ZONING	INTENSITY OF USE				
		Very low 1	Low 2	Mod 3	High 4	Very High 5
Greenhouse, wholesale	SUP			X		
Group home	SUP		X			
Gun club, skeet shoot/target range (indoor)	SUP			X		
Home Occupations	R-R, R-E, R-SF w/SUP					
Hospital, clinic	SUP				X	
Hotels, motels, motor hotels	GBD				X	
Hotel supply sales	I-LT			X		
Laboratory - research, experimental, testing	GBD			X		
Laundry (self-service)	LBD,GBD			X		
Library	R-R, R-E, R-SF		X			
Light manufacturing	R-SF				X	
Lodge hall	HBD		X			
Low-rise apartment building	R-MF2, R-MF3			X		
Machinery sales	I-LT				X	
Maintenance, custom	I-LT			X		
Manufacturing	I-LT					X
Manufacturing, light	GBD				X	
Mausoleum, cemetery, crematory	SUP			X		
Medical Clinic	SUP			X		
Medical office	LBD		X			
Messenger service	LBD			X		
Milk distribution station (no bottling)	HBD				X	
Mining operation--all types	SUP					X
Mobile home park	MH			X		
Motel, hotel, motor hotel	GBD				X	
Multi-Family dwellings (3 units or more)	R-MF2, R-MF3			X		
Museum	R-R, R-E, R-SF		X			
Nursery, plant	R-R, SUP		X			
Nursery or preschool - day	SUP		X			
Nursing home	SUP		X			
Offices / office buildings	LBD,HBD,GBD			X		
Office supply sales	I-LT			X		
Orchard	R-R		X			
Paint shop	HBD,GBD			X		
Park, playground (Public)	R-R, R-E, R-SF		X			
Parking lots	GBD, SUP				X	

USE	ZONING	INTENSITY OF USE				
		Very Low 1	Low 2	Mod 3	High 4	Very High 5
Personal Services	LBD,HBD,GBD			X		
Philanthropic institutions	SUP			X		
Photographic/artistic studio	LBD		X			
Photo processing lab	I-LT				X	
Plumbing, heating shop	HBD,GBD			X		
Police station	R-R, R-E, R-SF				X	
Preschool, day nursery	SUP		X			
Printer, publisher, Engraver	HBD, GBD				X	
Printing processes	GBD, I-LT				X	
Private club w/alcohol	HBD,GBD,SUP					X
Private Utilities	I-LT, SUP					
Public garage	GBD			X		
Public Well	SUP					
Race track	SUP				X	
Radio/TV stat, studio, offices--no tower	HBD			X		
Railroad R/W, tracks, facilities	R-R					X
Recreational community building	R-R, R-E, R-SF		X			
Refuse disposal plant	SUP					X
Research/testing laboratory	GBD			X		
Reservoirs	SUP		X			
Restaurant	LBD,GBD				X	
Restaurant supply sales	I-LT			X		
Retail stores (small)	LBD, HBD		X			
Retail stores (large)	HBD				X	
Riding stable	SUP	X				
Sales: furniture, office sup, hotel/motel sup	I-LT			X		
Sanitary land fill	SUP					X
Schools: public, private, parochial	R-R, R-E, R-SF			X		
Seasonal roadside stands	R-R		X			
Self-service laundry	LBD		X			
Senior Citizens Center	SUP		X			
Sewage/refuse/disposal plant	SUP					X
Shoe Repair	LBD		X			
Single-Family Dwellings	R-R, R-E, R-SF	X				
Skating rink (indoor)	HBD,GBD			X		
Storage warehouse	GBD				X	
Substations for utilities	SUP				X	
Swimming pool/natatorium	HBD			X		

USE	ZONING	INTENSITY OF USE				
		Very Low 1	Low 2	Mod 3	High 4	Very High 5
Target Range/skeet club (outdoor)	SUP					X
Tavern, private club, bar	HBD,GBD				X	
Taxicab service	LBD			X		
Television/Radio Station - no tower	HBD			X		
Temp signs	R-R,R-E, R-SF		X			
Theatre, Auditorium (indoor)	HBD, GBD			X		
Tinsmith	GBD				X	
Towers, Antennas	SUP				X	
Townhouses	R-MF1, R-MF2, R-MF3		X			
Trades contractors (general/special)	I-LT					X
Truck garden	R-R		X			
Truck terminal	GBD					X
Two-family Dwelling (< 3 Units)	R-MF1, R-MF3	X				
Two-family Dwelling (3 Units or more)	R-MF2, R-MF3		X			
Undertaking, funeral home	LBD			X		
Upholstery shop (no furn. mfg)	HBD,GBD		X			
Utilities (public or private)	I-LT, SUP				X	
Veterinary hospital/clinic	GBD			X		
Water supply plant/filter beds	SUP					X
Water Tower	SUP		X			
Well	SUP	X				
Wholesale merchandising/warehousing	HBD				X	

5.3 COMMON LANDSCAPING ELEMENTS:

Plant Materials
Medium to Large Shade Tree
Ornamental tree or Conifer
Large shrub (5' or greater at maturity)
Medium shrub or bush (3-6' in height at maturity)
Small shrub or bush (3' height or lower at maturity)
Flowerbed
Turf grass
Container plants (in public and/or commercial areas only)
Natural or Native Grasses (not turf)
Landscaped Berms

Structural Elements
Fence - wood or masonry
Wall - wood or masonry
Decorative walkway using pavers, brick, flagstones, patterned concrete or pavement, treated wood, etc.
Non-decorative, concrete sidewalk
Canopies or sheltering type structures
Miniature or full-size enclosures or buildings
Berms
Walking and/or biking paths

Furnishings or Sculptural Elements
Benches, seating or other furniture elements
Ornamental lighting
Fountains or water features
Ornamental Fixtures/Sculpture
Large stones/rocks/boulders
Timbers, railroad ties, other wood landscape materials

5.4 SUGGESTED PLANT LIST:

The following are recommended trees and shrubs for meeting the City's landscaping requirements in Section 4.0 of the Subdivision Regulations. The design and placement of trees and shrubs in a development should begin early in the design process to achieve the maximum benefit and to minimize conflicts. Consideration should be given to the location and placement of landscape plantings while preparing a landscape plan since varying site conditions may impact the suitability of such plantings. A registered landscape architect may provide further assistance for appropriate plantings and design based on local site characteristics.

DECIDUOUS SHADE TREES:

<u>Botanical Name</u>	<u>Common Name</u>
<u>Acer nigrum</u>	<u>Black Maple</u>
<u>Acer platanoides</u>	<u>Norway maple</u>
<u>Acer rubrum</u>	
<u>cv. 'Red Sunset'</u>	<u>Red Maple</u>
<u>Acer saccharum</u>	<u>Sugar Maple</u>
<u>Carya cordiformis</u>	<u>Bitternut Hickory</u>
<u>Carya illinoensis</u>	<u>Pecan</u>
<u>Carya ovata</u>	<u>Shagbark Hickory</u>
<u>Celtis occidentalis</u>	<u>Hackberry</u>
<u>Cladrastis lutea</u>	<u>American Yellowwood</u>
<u>Fraxinus americana</u>	
<u>cv. 'Autumn Purple'</u>	<u>Autumn Purple White Ash</u>
<u>cv. 'Rosehill'</u>	<u>Rosehill White Ash</u>
<u>Fraxinus nigra</u>	<u>Black Ash</u>
<u>Fraxinus pennsylvanica lanceolata</u>	
<u>cv. 'Marshall's Seedless'</u>	<u>Green Ash</u>
<u>Gleditsia triacanthos</u>	
<u>var. 'Inermis'</u>	<u>Thornless Seedless Honey locust</u>
<u>Ginkgo biloba</u>	<u>Ginkgo</u>
<u>Gymnoclaous dioicus</u>	<u>Kentucky Coffee tree</u>
<u>Juglans cinerea</u>	<u>Butternut</u>
<u>Liquidamber styraciflua</u>	<u>American Sweetgum</u>
<u>Liriodendron tulipifera</u>	<u>Tulip tree</u>
<u>Nyssa sylvatica</u>	<u>Black Tupelo</u>
<u>Prunus serotina</u>	<u>Black Cherry</u>
<u>Quercus acutissima</u>	<u>Sawtooth Oak</u>
<u>Quercus alba</u>	<u>White Oak</u>
<u>Quercus bicolor</u>	<u>Swamp White Oak</u>
<u>Quercus borealis</u>	<u>Northern Red Oak</u>
<u>Quercus coccinea</u>	<u>Scarlet Oak</u>

DECIDUOUS SHADE TREES Continued:

<u>Botanical Name</u>	<u>Common Name</u>
<u>Quercus imbricaria</u>	<u>Shingle Oak</u>
<u>Quercus macrocarpa</u>	<u>Burr Oak</u>
<u>Quercus muhlenbergi</u>	<u>Chinquapin Oak</u>
<u>Quercus robur</u>	<u>English Oak</u>
<u>Sophora japonica</u>	<u>Japanese Pagoda tree</u>
<u>Taxodium distichum</u>	<u>Common Bald cypress</u>
<u>Tilia americana</u>	
<u>cv. 'Redmond'</u>	<u>American Linden</u>
<u>Tilia cordata</u>	
<u>cv. 'Greenspire'</u>	<u>Greenspire Linden</u>
<u>Ulmus parvifolia</u>	<u>Lacebark Elm</u>
<u>Zelkova serrata</u>	<u>Zelkova</u>

EVERGREEN TREES:

<u>Botanical Name</u>	<u>Common Name</u>
<u>Picea abies</u>	<u>Norway Spruce</u>
<u>Picea glauca densata</u>	<u>Black Hills White Spruce</u>
<u>Picea omorika</u>	<u>Serbian Spruce</u>
<u>Picea pungens</u>	<u>Blue Spruce</u>
<u>Pinus bungeana</u>	<u>Lacebark Pine</u>
<u>Pinus cembra</u>	<u>Swiss Stone Pine</u>
<u>Pinus flexilis</u>	<u>Limber Pine</u>
<u>Pinus koreansis</u>	<u>Korean Pine</u>
<u>Pinus nigra</u>	<u>Austrian Pine</u>
<u>Pinus ponderosa</u>	<u>Ponderosa Pine</u>
<u>Pinus strobus</u>	<u>Eastern White Pine</u>
<u>Tsuga canadensis</u>	<u>Eastern or Canadian hemlock</u>

ORNAMENTAL TREES:

<u>Botanical Name</u>	<u>Common Name</u>
<u>Acer ginnala</u>	<u>Amur Maple</u>
<u>Amelanchier arborea</u>	<u>Downy Serviceberry</u>
<u>Amelanchier x grandiflora</u>	<u>Autumn Brilliance Serviceberry</u>
<u>Betula nigra</u>	<u>River Birch</u>
<u>Cercis</u>	<u>Redbud varieties</u>
<u>canadensis</u>	<u>Redbud</u>
<u>canadensis 'Alba'</u>	<u>Whitebud</u>
<u>Cotinus coggygria</u>	<u>Smoke tree</u>
<u>Crataegus</u>	<u>Hawthorn varieties</u>
<u>phaenopyrum</u>	<u>Washington Hawthorn</u>
<u>crusgalli var. inermis</u>	<u>Crusader Thornless Hawthorn</u>
<u>Koeleruteria paniculata</u>	<u>Goldenrain</u>
<u>Magnolia x soulangiana</u>	<u>Saucer Magnolia</u>

ORNAMENTAL TREES Continued:

<u>Botanical Name</u>	<u>Common Name</u>
Malus	Crabapple varieties
'Adirondack'	Adirondack Crabapple
'Goldenraindrops'	Goldenraindrops Crabapple
'Jewelberry'	Jewelberry Crabapple
'Pink Princess'	Prairiefire Crabapple
'Professor Sprenger'	Professor Sprenger Crabapple
'Sargent'	Sargent Crabapple
'Strawberry Parfait'	Strawberry Parfait Crabapple
Prunus cerasifera	Newport Plum
Pyrus calleryana	Callery Pear varieties
'Aristocrat'	Aristocrat Pear
'Capital'	Capital Pear
'Chanticleer'	Chanticleer Pear
Rhus typhina Staghorn	Sumac

DECIDUOUS SHRUBS:

<u>Botanical Name</u>	<u>Common Name</u>
Euonymus alatus 'Compactus'	Compact Burning Bush
Hypericum densiflorum	Dense Hypericum
Forsythia	Forsythia varieties
x intermedia 'Lynwood'	Lynwood
suspensa var. Sieboldii	Sieboldii
Lonicera tatarica 'Arnold's Red'	Arnold's Red Honeysuckle
Cornus sanguinea	Bloodtwig Dogwood
Cornus sanguinea 'Viridissima'	Yellowtwig Dogwood
Berberis	Barberry varieties
x mentorensis	Mentor
thunbergii var. Atropurpurea	Redleaf
thunbergii var. atropurpurea 'Rose Glow'	Roseglow
Syringa spp - numerous varieties	Lilac varieties
Ligustrum vulgare 'Lodense'	Lodense Privet
Potentilla fruticosa 'Jackmanii'	Jackmanii Potentilla
Philadelphus spp. numerous varieties	Mock orange species
Spirea	Spirea varieties
nipponica 'Snowmound'	Snowmound
x bumalda 'Froebeli'	Froebeli

DECIDUOUS SHRUBS Continued:

<u>Botanical Name</u>	<u>Common Name</u>
Viburnum	Viburnum varieties
x burkwoodii 'Mohawk'	Mohawk
x burkwoodii 'Park Farm'	Park Farm
x carlesii 'Cayuga'	Cayuga Koreanspice

<u>x juddi</u>	<u>Judd</u>
<u>opulus 'Compactum'</u>	<u>Compact European Cranberry bush</u>
<u>plicatum var. tomentosum 'Mariesii'</u>	<u>Mariesii Doublefile</u>
<u>x rhytidophylloides 'Alleghany'</u>	<u>Alleghany</u>
<u>x rhytidophylloides 'Willow wood'</u>	<u>Willow wood</u>
<u>trilobum 'Compactum'</u>	<u>Compact American</u>
<u>trilobum 'Alfredo'</u>	<u>Cranberry bush Alfredo</u>
<u>Wiegelia florida</u>	<u>Wiegelia varieties</u>

EVERGREEN SHRUBS:

<u>Botanical Name</u>	<u>Common Name</u>
<u>Berberis julianae</u>	<u>Wintergreen Barberry</u>
<u>Buxus microphylla</u>	<u>Wintergreen Boxwood</u>
<u>Ilex x meserveae</u>	<u>Holly varieties</u>
<u>'Blue Boy'/'Blue Girl'</u>	<u>Blue Boy/Blue Girl</u>
<u>'Blue Prince'/'Blue Princess'</u>	<u>Blue Prince/Blue Princess</u>
<u>Juniperus chinensis</u>	<u>Spreading Junipers</u>
<u>'Pfitzeriana Glauca'</u>	<u>Blue Pfitzer</u>
<u>'Sea Green'</u>	<u>Sea Green</u>
<u>'Plumosa'</u>	<u>Plumosa</u>
<u>'Armstrong'</u>	<u>Armstrong</u>
<u>'Old Gold'</u>	<u>Old Gold</u>
<u>Juniperus virginia</u>	<u>Upright Juniper varieties</u>
<u>Pyracantha coccinea 'Lalandei'</u>	<u>Lalandei Pyracantha</u>
<u>Viburnum davidii</u>	<u>David Viburnum</u>
<u>Taxus x media</u>	<u>Anglojap Yew varieties</u>
<u>'Densiformis'</u>	<u>Deniformus</u>
<u>'Brownii'</u>	<u>Brown's</u>
<u>'Hicksii'</u>	<u>Hick's</u>
<u>Taxus x cuspidata</u>	<u>Japanese Yew varieties</u>
<u>'Capitata'</u>	<u>Capitata</u>
<u>'Pyramidalis'</u>	<u>Pyramidal</u>