NOTICE

AN APPOINTMENT WITH STAFF

IS REQUIRED

PRIOR TO THE SUBMITTAL OF A

PLANNING AND ZONING

APPLICATION

The pre-submittal meeting with staff will assist you in preparing your submittal information and help to prevent delays in the process and review of your application by the Planning and Zoning Commission

CONTACT JONATHAN RAICHE, CITY PLANNER
(314) 984-5926

CITY OF KIRKWOOD

APPLICATION FOR PLANNING AND ZONING COMMISSION ACTION

CASE NUMBER:_____

DATE:_____

PROJECT ADDRESS:_____

ZONING DISTRICT: _____ LOT SIZE: _____

LOCATOR NUMBER:_____

ACTION REQUESTED

- ☐ Zoning Change From _____ to _____
- ☐ Community Unit Plan, Type:_____
- ☐ Special Use Permit, Category:_____
- ☐ Subdivision Development, Number of Lots:_____
- ☐ B4 Development Plan
- ☐ B5 Development Plan
- ☐ Site Plan Review
- ☐ Right-of-Way/Easement Vacation
- ☐ Other:_____

Comments: _____

_____

PETITIONER INFORMATION

I (We) hereby certify that I (we) have legal interest in the hereinabove described property and that all information given herein is true and a statement of fact

Name (Print):_____ Signature:_____ Phone No.: _____

Mailing Address:_____ City:_____ State:_____ Zip:_____

E-mail Address: _____

Petitioner's Status: ☐ Corporation ☐ Partnership ☐ Individual

Relationship of Petitioner to Property: ☐ Owner ☐ Tenant ☐ Option Holder (Attach Copy of Contract) ☐ Other

AGENT INFORMATION

Agent's Name: _____ Signature:_____ Phone No.:_____

Mailing Address:_____ City:_____ State:_____ Zip:_____

E-mail Address:_____

(NOTE: The petitioner's agent, if listed, shall receive the official notice of public hearing)

PROPERTY OWNERS

Signature **required** or submit proof petitioner has legal interest in property.

Name:_____ Name: _____

Signature:_____ Signature: _____

Address:_____ Address: _____

City/State/Zip:_____ City/State/Zip_____

Phone:_____ Phone: _____

FOR CITY USE ONLY

Date Received:_____ Total Received: $_____ Agenda Date:_____

- ☐ B-4/B-5 Development Plan (Preliminary): $1,000 + _____ Acres @ $100/Acre or portion over one acre) = $_____
- ☐ CUP, Preliminary (Multi Family): $1,000 + _____ Dwelling units @ $20/Each = $_____ = $_____
- ☐ CUP, Preliminary (Detached Single Family): $1,000 + ____ Lots @ $500/Lot = $_____
- ☐ Letter of Credit Extension: $100
- ☐ Rezoning: $1,000
- ☐ Site Plan Review: $1,000
- ☐ Site Plan Review Amendment $800 or Extension: $300
- ☐ Site Plan Review, Mixed Use in B2 Zoning District (Preliminary): $1,000 (includes SPR fee) + $25/acre or portion over one acre
- ☐ Special Use Permit and Special Use Permit Amendments: $1,000
- ☐ Subdivision, Preliminary (Detached Single Family): ____ Lots @ $500/Lot = $_____
- ☐ Vacation, Easement: $75
- ☐ Vacation, Right-of-way: $100
- ☐ Zoning Code Amendment: $1,000

****

Final Subdivision Plat/Community Unit Plan/B-4or B-5 Development Plan

Date Received:_____ Total Received: $_____ Agenda Date:_____

- ☐ B-4 and B-5 Development Plan (Final) or B4 Development Plan Amendment (when public hearing is not required): $1,000
- ☐ B-5 Development Plan Amendment (when public hearing is not required): $500
- ☐ CUP Amendment, Type A or Type C: Without public hearing $500; With public hearing $800
- ☐ CUP Type C (Final): $500 + 1-1/4% of $_____ = $_____
- ☐ CUP Type A or C Time Extension on Final: $300
- ☐ Sidewalk Waiver on _____feet @ $30/Foot = $_____ = $_____
- ☐ Site Plan Review, Mixed use in B2 Zoning District (Final): $500
- ☐ Site Plan, Mixed use in B2 Zoning District Amendment: $300
- ☐ Subdivision Plat or CUP Type A (Final): _____ Lots @ $100/Lot = $_____ + 1-1/4% of $_____ = $_____
- ☐ Subdivision Plat Development Plan Amendment: $200

SUBCOMMITTEE (_____)

CITY OF KIRKWOOD
PLANNING AND ZONING COMMISSION
APPLICATION PROCEDURE
APRIL 2017

MUST BE SIGNED AND ATTACHED TO APPLICATION FORM

The Planning and Zoning Commission meets on the first and third Wednesdays (except June, July, August, and December) of each month at 7:00 p.m. in the Council Chambers at Kirkwood City Hall, 139 South Kirkwood Road (see attached schedule). Submittal of a petition authorizes the City to place a Zoning Matters sign on the premises advising the public of the petition.

An applicant shall complete and submit the following items to the Public Services Department according to the attached schedule. ***These are the minimum submittal requirements needed for review. Failure to provide all information will result in the application being delayed or returned.***

☐ **APPLICATION FORM.** All forms must be completed in full, including signature of property owners. A copy of the Contract between the property owner and petitioner will suffice. Incomplete or partial applications will not be accepted and will be returned to the petitioner. *All designated spaces on the forms must be appropriately filled in prior to filing of the application.*

☐ **COVER LETTER.** A one-page letter describing the project in detail, including nature of business, proposed use, hours of operation, number of employees, etc.

☐ **PROPERTY TITLE.** A copy of the title, deed, title commitment, or survey which includes the legal description of the property and present ownership.

☐ **DRAWINGS.**

(a) **Site plan** shall be signed and sealed by a Professional Engineer and shall show all required information as noted on attached checklist.
(1) 16 sets 11"x17" (folded into 8.5"x11"); and
(2) Five sets of drawings **(no larger than 24"x36")**, (folded into 12"x10").

(b) **Floor plan**, if applicable - 18 copies 11"x17", folded.

(c) **Landscaping plan** showing the required information as noted on attached checklist.
(1) 16 sets 11"x17" (folded into 8.5"x11"; and
(2) Five sets of drawings **(no larger than 24"x36")**, (folded into 12"x10").

☐ **TREE STUDY.** Study shall be signed by a certified forester, certified arborist, or landscape architect and include value of significant trees and protection methods. Trees on abutting public rights-of-way and private property within five feet of all property lines shall also be shown on study.

☐ **PHOTOGRAPHS.** One set of color photographs of site frontage, adjacent properties, and significant site features, including significant trees.

☐ **PROCESSING FEE.** A non-refundable filing fee is required for **each** of the following, as applicable:

B4 and B5 Development Plans, Preliminary (includes site plan review fee)	$1,000 + $100/acre or portion over one acre
B4 and B5 Development Plans, Final (includes site plan review fee)	$1,000
Rezoning and Zoning Code Amendment	$1,000
Site Plan Review	$1,000
Site Plan Review Amendment	$800
Site Plan Review Extension	$300
Site Plan Review, Mixed Use in B2, Preliminary	$1,000 + $25/acre or portion over one acre
Site Plan Review, Mixed Use in B2, Final	$500
Special Use Permit and Amendments	$1,000

_____ Signature

_____ Date

CITY OF KIRKWOOD
PLANNING AND ZONING COMMISSION
CITY CONTACTS
APRIL 2017

NAME/TITLE	LOCATION	PHONE NUMBER	E-MAIL ADDRESS
Bill Bensing Public Services Director	City Hall 139 South Kirkwood	314-822-5846	bensinwe@kirkwoodmo.org
Ted Dunkmann, P.E. City Engineer	City Hall 139 South Kirkwood	314-822-5820	dunkmatj@kirkwoodmo.org
Jonathan Raiche, AICP City Planner	City Hall 139 South Kirkwood	314-984-5926	raichejd@kirkwoodmo.org
Amy Lowry Assistant City Planner	City Hall 139 South Kirkwood	314-822-5815	lowryag@kirkwoodmo.org
Cory Meyer City Forester	Public Works Building 345 South Fillmore	314-984-5907	meyercc@kirkwoodmo.org
Jack Schenck Building Commissioner	City Hall 139 South Kirkwood	314-822-5814	schencjw@kirkwoodmo.org
Russell Todd Deputy Building Commissioner	City Hall 139 South Kirkwood	314-822-5817	toddrd@kirkwoodmo.org
Leo Meyer Assistant Chief/Fire Marshal	Fire House 2 11804 Big Bend	314-822-5884	meyerla@kirkwoodmo.org
Rick McKinley Distribution Engineer	Utilities Building 212 South Taylor	314-984-5925	mckinlry@kirkwoodmo.org
Clarence Patterson Water Superintendent	Utilities Building 212 South Taylor	314-822-5810	patterca@kirkwoodmo.org

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CITY OF KIRKWOOD
2018 PLANNING AND ZONING COMMISSION
SUBMITTAL DEADLINE AND MEETING SCHEDULE

PRE-APPLICATION MEETING	APPLICATION DEADLINE	P&Z COMMISSION MEETING DATE (PRESENTATION)
	Friday	**Wednesday**
Each case must have at least one pre-application review meeting prior to formal application	12/15/2017	1/3/2018
	12/29/2017	1/17/2018
	1/19/2018	2/7/2018
	2/2/2018	2/21/2018
	2/16/2018	3/7/2018
	3/2/2018	3/21/2018
	3/16/2018	4/4/2018
	3/30/2018	4/18/2018
	4/13/2018	5/2/2018
	4/27/2018	5/16/2018
	6/1/2018	6/20/2018
	6/29/2018	7/18/2018
	7/27/2018	8/15/2018
	8/17/2018	9/5/2018
	8/31/2018	9/19/2018
	9/14/2018	10/3/2018
	9/28/2018	10/17/2018
	10/19/2018	11/7/2018
	11/16/2018	12/5/2018

Summer schedule

SPECIAL NOTES: All submittal deadlines are firm. Any deviation from these deadlines will result in delay of hearing date.
Dates and times of meetings are subject to change without notice
Applications requiring a public hearing before the PZ Commission will alter the initial meeting date.

CITY OF KIRKWOOD
2019 PLANNING AND ZONING COMMISSION
SUBMITTAL DEADLINE AND MEETING SCHEDULE

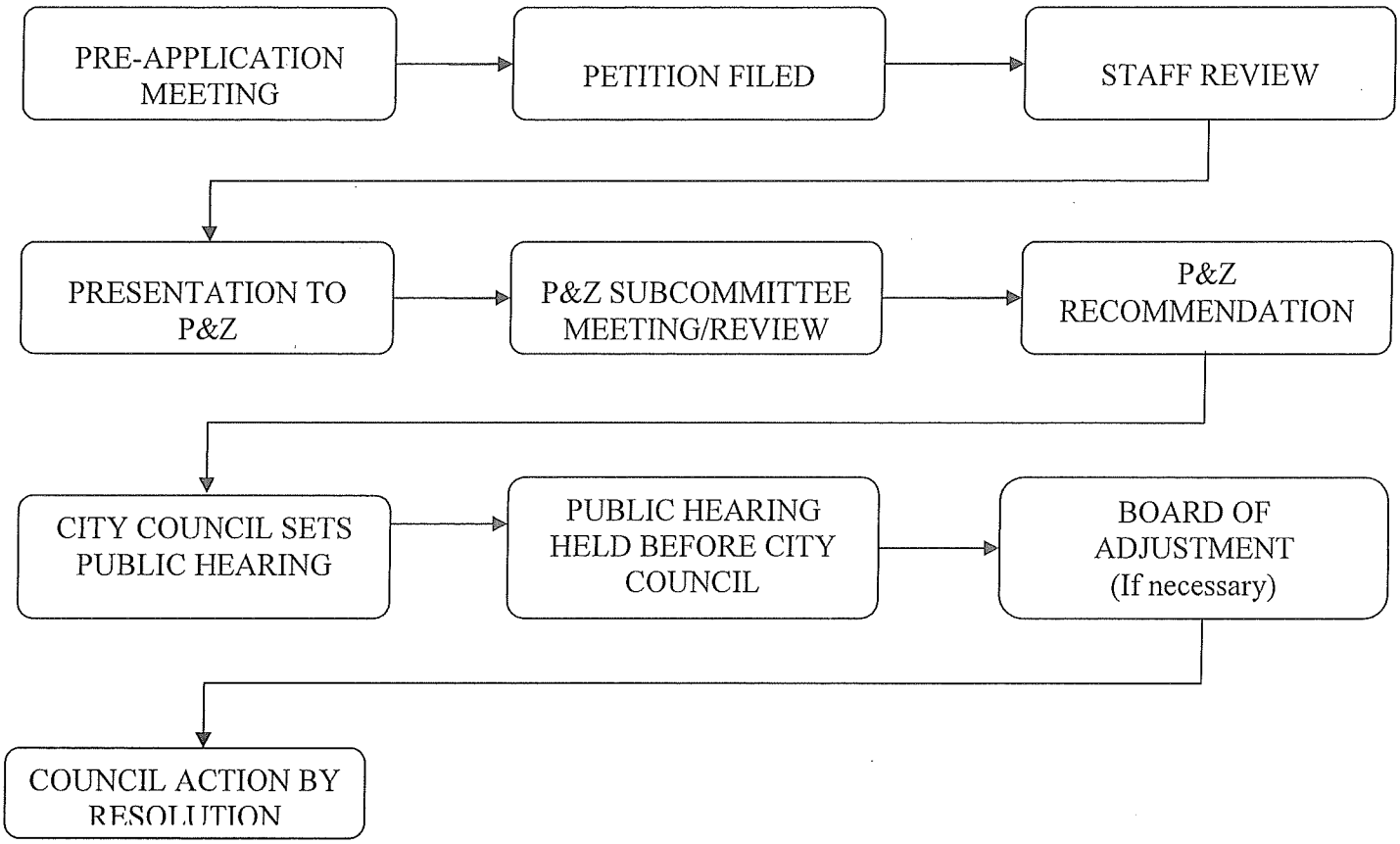
PRE-APPLICATION MEETING	APPLICATION DEADLINE	P&Z COMMISSION MEETING DATE (PRESENTATION)
	Friday	**Wednesday**
Each case must have at least one pre-application review meeting prior to formal application	12/14/2018	1/2/2019
	12/28/2018	1/16/2019
	1/18/2019	2/6/2019
	2/1/2019	2/20/2019
	2/15/2019	3/6/2019
	3/2/2018	3/20/2019
	3/15/2019	4/3/2019
	3/29/2019	4/17/2019
	4/12/2019	5/1/2019
	4/26/2019	5/15/2019
	5/31/2019	6/19/2019
	6/28/2019	7/17/2019
	8/2/2019	8/21/2019
	8/16/2019	9/4/2019
	8/30/2019	9/18/2019
	9/13/2019	10/2/2019
	9/27/2019	10/16/2019
	10/18/2019	11/6/2019
	11/1/2019	11/20/2019
	11/15/2019	12/4/2019

Summer schedule

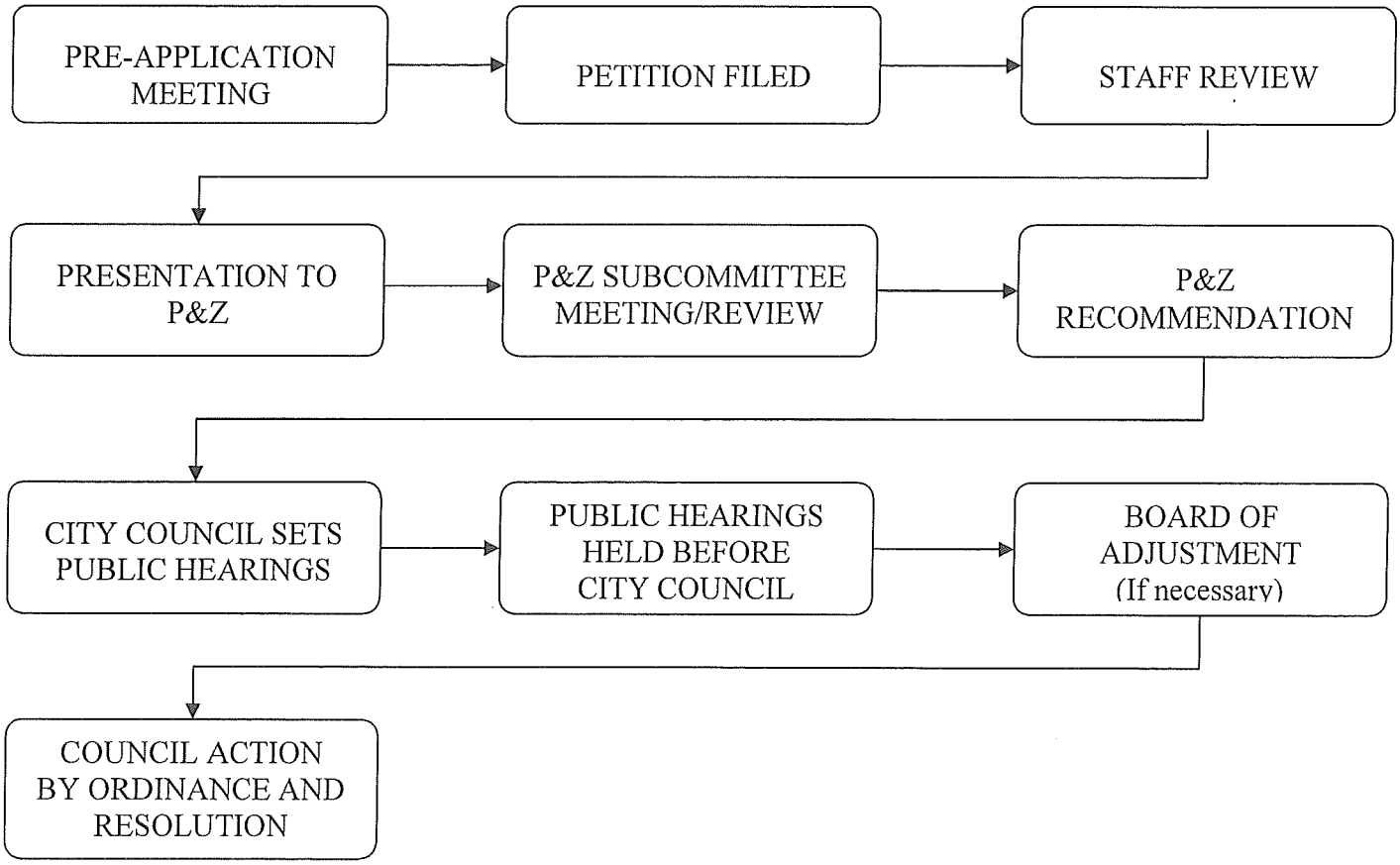
SPECIAL NOTES:

All submittal deadlines are firm. Any deviation from these deadlines will result in delay of hearing date.
Dates and times of meetings are subject to change without notice
Applications requiring a public hearing before the PZ Commission will alter the initial meeting date.

SITE PLAN REVIEW PROCEDURE

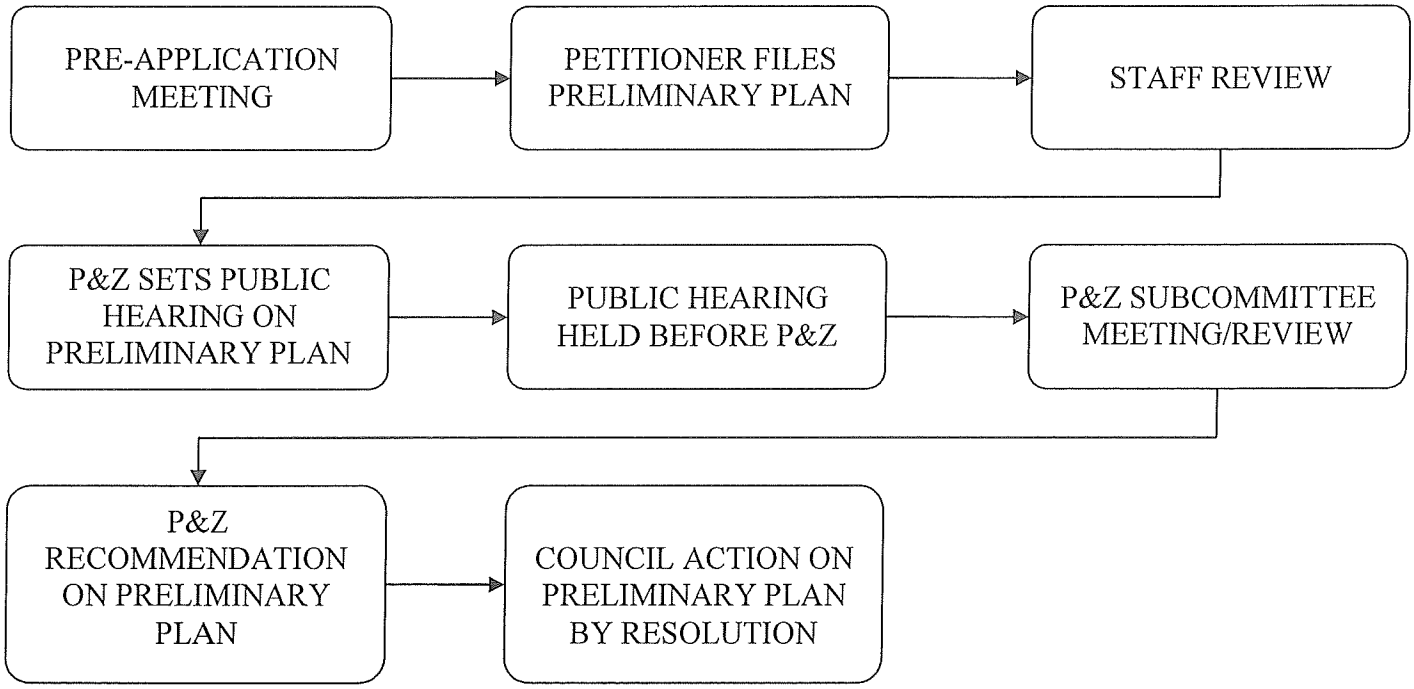


REZONING AND/OR SPECIAL USE PERMIT WITH SITE PLAN REVIEW PROCEDURE

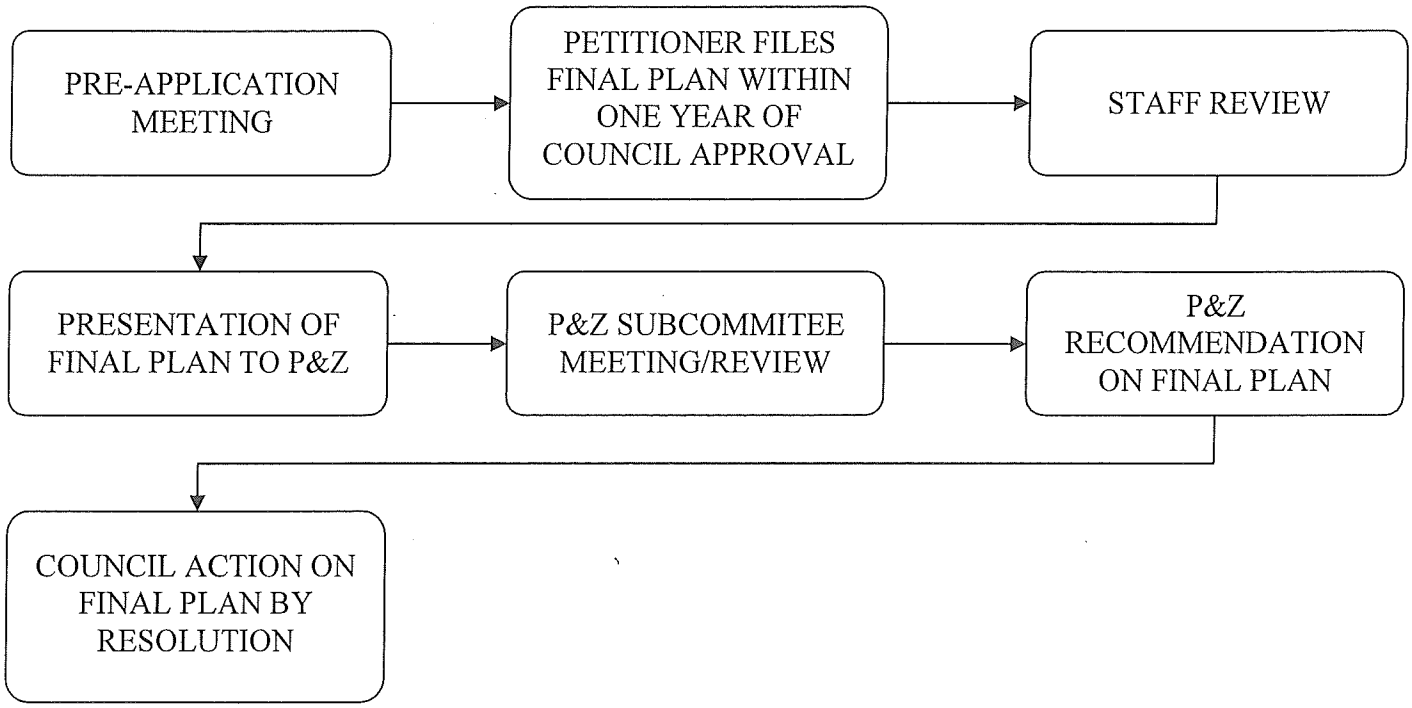


B-4/B-5 DEVELOPMENT PLAN
(WITHOUT REZONING)

PRELIMINARY DEVELOPMENT PLAN

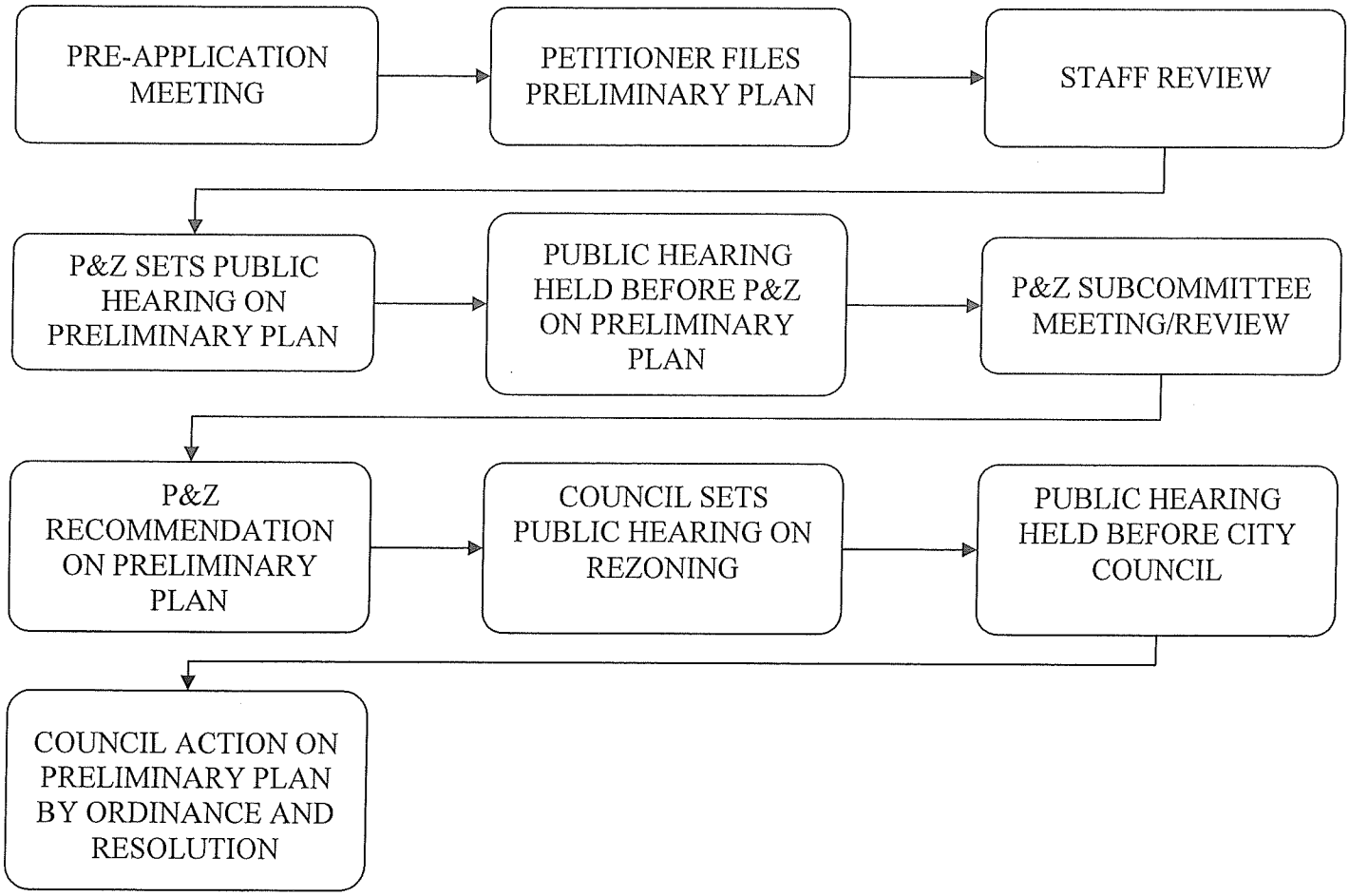


FINAL DEVELOPMENT PLAN

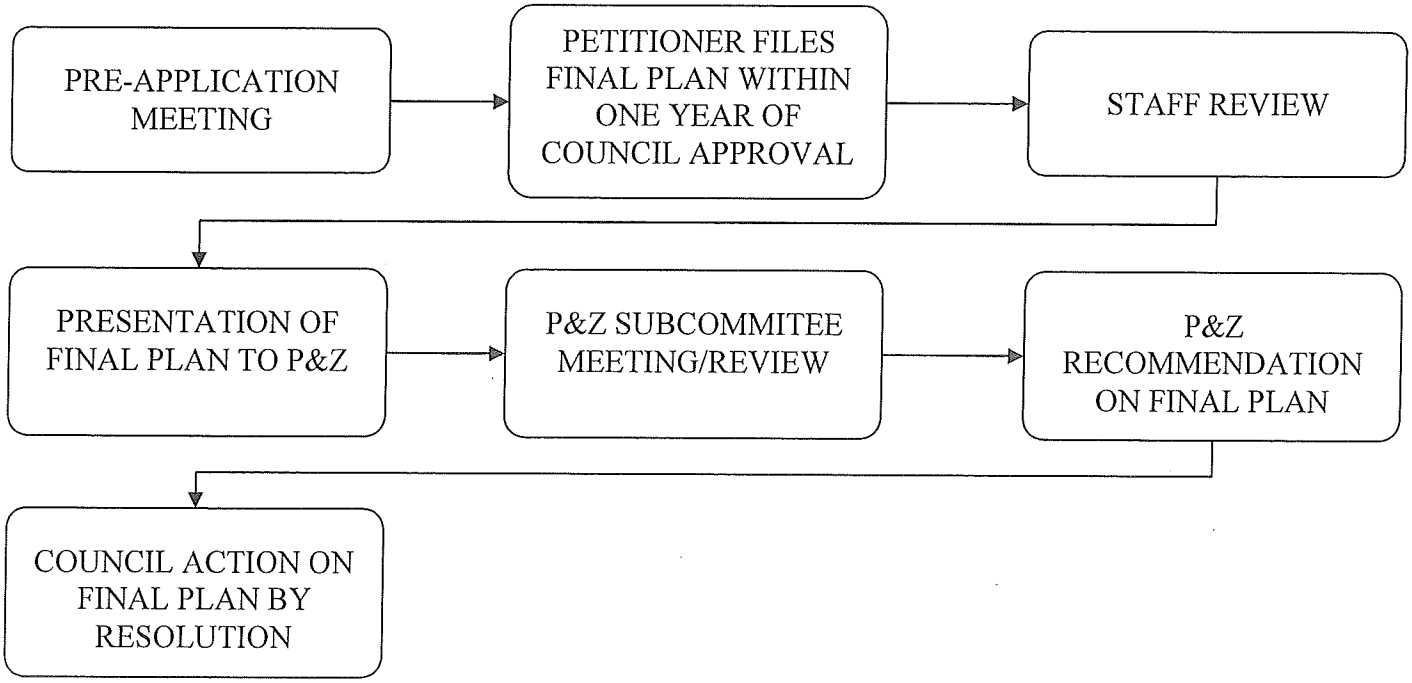


B-4/B-5 DEVELOPMENT PLAN
(REQUIRING REZONING)

PRELIMINARY DEVELOPMENT PLAN



FINAL DEVELOPMENT PLAN



SITE PLAN REVIEW CRITERIA

In conducting a site plan review and approval, the Planning and Zoning Commission and City Council shall consider the following:

(1) The extent of fulfillment of the objectives set forth in Zoning Code subsection 220.2;

(2) The harmonious relationship of the topography to the site plan, the size and type of lot, the character of adjoining property and the type and size of buildings proposed for development so as not to adversely affect the normal and orderly development or improvement of surrounding properties;

(3) General conformity to the requirements for property line setback(s) (except for the setback line(s) directly adjacent to properties zoned residentially), lot size, height, density, landscape requirements, and parking requirements and whether modifications should be made to such requirements;

(4) The landscaping and buffering should be preserved in its natural state, insofar as reasonably practicable, by minimizing tree and soil removal, and by topographic modifications which result in harmony with adjacent areas giving consideration to the landscape requirements set forth in Zoning Code Article X, Section A-1020;

(5) Visual and sound buffering should be provided for property located in the surrounding area;

(6) Site surface drainage should provide for the reasonable removal of storm water so as not to adversely affect neighboring properties;

(7) Fences and walkways should be used, as appropriate, for the protection and enhancement of property, for the safety of pedestrians, and for the privacy of its occupants and occupants of adjacent property;

(8) All structures should have access to a public street, walkway or other area designated for common use;

(9) A pedestrian circulation system should be reasonably insulated from the vehicular circulation system. Pedestrian and cyclist connectivity should be provided in accordance with the Kirkwood Pedestrian and Bicycle Plan;

(10) All loading and unloading areas and outside storage areas, other than for the storage of trash and recyclables as outlined below, which face or are visible from residential properties or thoroughfares should be screened for visual and sound mitigation;

(11) All outside storage areas for the storage of trash and/or recyclables shall be screened. Trash dumpster screening shall be constructed of sight-proof fence or wall of similar material as the main building and not less than six (6) feet in height with latching gates of similar or complementary materials to completely enclose the trash dumpster;

(12) Exterior lighting shall provide adequate safety for users of the site and should be arranged so that it is deflected away from adjacent properties and so that it does not impede the vision of motorists along adjacent streets in accordance with Zoning Code Article X, Section A-1040, "Lighting Regulations";

(13) Vehicular loading and unloading and parking, and vehicular and pedestrian circulation on the site and onto adjacent public streets and ways should not create hazards to safety, should not result in significant loss of natural features of the land, and should not impose a significant burden upon public facilities. Absent extraordinary circumstances, the proposed development must avoid vehicular circulation onto adjacent public streets in residential areas and should direct vehicular circulation onto adjacent public streets in commercial areas in order to promote safety and maintain the integrity of residential areas;

(14) A reasonable plan for the private care and maintenance of all open space should be provided; and

(15) The proposed development should not adversely affect offsite public services, including sewer, water, and streets; nor adversely affect the character of the neighborhood; nor adversely affect the general welfare of the community.

ZONING REQUIREMENT MODIFICATION REQUEST

The City may, upon proper application, take the following actions on an application for Site Plan Review: approve, deny, or approve with modifications to zoning requirements and/or additional conditions and restrictions as described herein. Modifications from existing zoning requirements may be considered by the Planning and Zoning Commission and the City Council in relation to property line setback(s) (except for the setback line(s) directly adjacent to properties zoned residentially), lot size, height, density, landscape requirements, and parking requirements designed for conventional developments. **If the developer can demonstrate that one or more of the numbered objectives listed below can be realized at a higher level with modification of certain zoning requirements than could be achieved if all zoning requirements were to be upheld, the City may grant a modification to one or more of the zoning requirements listed above.** Final determination of whether the proposed design warrants modification from existing zoning requirements is at the sole discretion of the City Council.

(1) Provision of landscaping that is of an equal or higher quality than is possible under the regulations otherwise applicable to the property. Quality includes vegetation that is appropriate to the climate as well as quantity;

(2) Functional and beneficial uses of open space areas and preservation and protection of natural features of a development site, inclusive of preservation, planting, maintenance, restoration, protection and survival of desirable tree canopy areas within a development site;

(3) Consideration of the impact on neighboring residential properties resulting from non-residential uses within the development including but not limited to protecting the existing neighborhood assets and quality of life;

(4) Rational and cost-effective development in relation to public services and the installation and maintenance of public and private infrastructure by reducing the distance utilities are extended and installed, and/or by reducing the width and length of streets;

(5) Design for efficient and effective traffic circulation, both within and adjacent to the development site, and the encouragement of pedestrian and non-motorized pathway utilizing site features compliant with the land use plan;

(6) Providing safe access to the development for all users including pedestrians, cyclists, and individuals with disabilities.

(7) To decrease or minimize negative storm water impacts by reducing the amount of impervious surfaces in site development.

(8) Consideration of the impact on nearby Historic Districts and Landmarks whether designated locally or nationally.

SPECIAL USE PERMIT CRITERIA

Granting of a Special Use Permit for any of the uses set forth in Zoning Code subsection 900.1 hereof shall, in addition to the conditions set forth in subsection 900.3 hereof, take into account the matters hereinafter set forth when applicable, and any one or more of such matters may be made a condition of the granting of the Special Use Permit.

(1) That the minimum yard requirements of the district in which the use is to be located are observed.

(2) That provision is made for appropriate lighting which will not disturb adjacent property or affect traffic on adjacent rights-of-way.

(3) That there is appropriate provision for greenery planting and its maintenance, both for division purposes from adjacent rights-of-way and also from adjacent properties, which planting may be required to be as high as eight (8) feet when for the purpose of screening from adjacent properties, and of sufficient width to accomplish the purpose.

(4) That the area or necessary portions thereof are adequately fenced so as to prevent unauthorized persons from having access to the area.

(5) That there is adequate off-street parking, taking into account the number of employees and number of members of the public that will be using the area.

(6) That appropriate provision is made for paving all parking and drive areas.

(7) That appropriate provision is made for all sanitary sewage and storm water run-off.

(8) That adequate provision is made for off-street loading and unloading docks or other facilities.

(9) That adequate provision is made for ingress and egress to abutting rights-of-way.

(10) That there is adequate area for the intended use, which area may be greater than the minimum specified in subsection 900.1 of this section and which shall be sufficient to protect all surrounding properties, taking into account all aspects of the intended use.

(11) No sales, dead storage, repair work, nor dismantling of motor vehicles shall be permitted on off-street parking areas. Except for the approved exits and entrances, the parking area shall be screened or enclosed in such manner as approved by the Building Commissioner or it shall be screened or enclosed by a planting screen not less than ten (10) feet in width as approved by the City and adequately maintained, provided that a planting screen shall not he required within ten (10) feet of any public street or right-of-way.

(12) That adequate provision has been made for the disposition of refuse and rubbish, garbage or other materials.

(13) That there is reasonable assurance that the proposed project or development will be completed if authorized and to guarantee such completion, a performance guarantee may be required.

(14) That in the case of standard outdoor advertising structures, such proposed structures will not:

a. Impair the visibility of adjacent businesses, or their permitted signs, or
b. Be inappropriate to the aesthetic environment of the surrounding structures and land use to the extent it would decrease property values, or
c. Impair an adequate amount of light or air to adjacent property.

CITY OF KIRKWOOD
SITE PLAN REVIEW/SPECIAL USE PERMIT
B-4/B-5 DEVELOPMENT PLANS
APRIL 2017

INFORMATION TO BE SHOWN ON SITE PLAN

An application for site plan review may be filed by any person with a financial, contractual or proprietary interest in the property to be developed according to the submitted plan.

All applications for site plan review shall be submitted to the Director of Public Services. The Director of Public Services shall forward appropriate applications to the Planning and Zoning Commission and City Council for review. All site plan review applications shall include a site plan skillfully drawn to scale, which shall include the following:

- ☐ Property line dimensions and bearings, or angles;
- ☐ All existing buildings and improvements;
- ☐ Existing zoning setback lines and proposed setback lines;
- ☐ New buildings or additions located with all dimensions to property lines;
- ☐ Parking layout and driveways, including parking stall size, aisle and driveway widths, entrance approach details, and the number of stalls in each row of parking spaces;
- ☐ Site topography showing existing and proposed contours at intervals of two (2) feet or less;
- ☐ Landscaping and/or buffering which meet the submittal requirements of Section A-1020 and the requirements of the applicable zoning district;
- ☐ When a site plan includes a significant tree(s), a tree study prepared and endorsed by an arborist certified by the International Society of Arboriculture, a landscape architect licensed in the State of Missouri, or a horticulturist shall be required. The study shall provide the City with a professional opinion regarding the survivability of significant trees existing on the site, proposed tree replacement, and the appropriateness of the proposed landscaping. This study shall include tree protection methods for each tree and the dollar value of each tree designated to be saved. The dollar value of the tree(s) shall be based on data contained in the International Society of Arboriculture's "Guide for Tree Appraisal." If the petitioner fails to provide such study or it is inadequate or deficient, the City may conduct an internal study or hire an external professional to conduct a study under the provisions of the code.
- ☐ Utilities. Indicate provisions for access to major utilities including water, storm sewers, sanitary sewers, gas and electricity;

- ☐ Storm water management and erosion control. Indicate provisions to be made to direct and detain storm water on-site in accordance with any applicable agencies (i.e. Metropolitan Sewer District) and applicable City regulations and to mitigate erosion both during and following completion of construction. Indicate location of any sinkholes, spring silt beams, ponds, and other silt control facilities;

- ☐ Lighting;

- ☐ Easements; and,

- ☐ Existing and proposed right-of-way, streets, and entrances.

The site plan shall be drawn accurately to scale.

The Director of Public Services may waive any of the items required by Section A-220.5 where it is deemed appropriate. However, such a waiver shall not prohibit the Planning and Zoning Commission or City Council from requesting items previously waived by the Director of Public Services or any other additional information as deemed appropriate by such body.

_____ _____

Petitioner/Engineer Date

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CITY OF KIRKWOOD
LANDSCAPE PLAN
APRIL 2017

INFORMATION TO BE SHOWN ON DRAWING

All applications submitted to the Planning and Zoning Commission that are subject to subsection 1020.2, shall submit a Landscaping Plan in conjunction with the submittal application. All other applications that are not subject to Planning and Zoning Commission review yet are subject to subsection 1020.2 shall submit a Landscape Plan in conjunction with the administrative site plan review and building permit application. The Landscaping Plan shall include the following:

(1) Location map, north arrow, scale and date;

(2) Name, signature, and contact information of preparer;

(3) Proposed buildings, additions, and other improvements on site including parking and driveway layout and refuse container, including trash and recycling, location with appropriate screening drawn to scale;

(4) Location of all existing and proposed trees, shrubs, and plants, including those to be removed from the site;

(5) Planting schedule;

(6) Ground cover type and location;

(7) Location and dimensions of proposed landscape buffers;

(8) Tree study;

(9) Tree preservation plan;

(10) Irrigation plan; and

(11) Calculations including lot size, proposed open space square footage, proposed landscape buffer square footage and proposed impervious area square footage

_____ _____

Petitioner/Engineer Date

These are the minimum submittal requirements needed for review. Failure to provide all information will result in application being returned.

y:\planningandzoning\forms\landscape plan checklist 2017.docx

CITY OF KIRKWOOD
DEPARTMENT OF PUBLIC WORKS

STORM WATER RUNOFF STANDARDS
FOR
NEW DEVELOPMENTS
AND/OR
THE EXPANSION OF IMPERVIOUS AREAS

REVISED SEPTEMBER 2016

1. GENERAL CONDITIONS

All storm water drainage facilities shall be designed and constructed in accordance with the latest rules and regulations and engineering design requirements of the Metropolitan Sewer District and the following additional minimum requirements.

2. IMPERVIOUS AREAS

Any impervious area, paved area, or parking area in excess of 3,000 square feet shall be provided with on-site storm water drainage facilities designed and constructed in accordance with the plans and specifications submitted to and approved by the City of Kirkwood and Metropolitan St. Louis Sewer District. (Exception: one single-family hose and accessory parking or building).

3. DRAINAGE ACROSS SIDEWALK AND DRIVEWAYS

No paved, impervious, or parking area greater than 3,000 square feet in area or over land flow greater than one c.f.s. shall discharge across a sidewalk or driveway.

4. MAXIMUM FLOW IN SWALE OR BEHIND BERM

The maximum capacity of a swale or behind a berm shall not exceed two c.f.s. The swale shall have adequate slope (2% minimum) and flow velocity to prevent ponding. Cross-section shall be provided for all swales. The maximum velocity in a swale shall not exceed five c.f.s. Sheet flow shall not be permitted over terraces.

5. STORM WATER DETENTION

Storm water detention shall be provided under the Rules and Regulations, and Engineering Design Requirements of the Metropolitan St. Louis Sewer District. However, if required by M.S.D., storm water detention in single-family residential

subdivisions shall be provided underground in pipes or chambers designed for such detention. The pipes or chambers shall be constructed of reinforced concrete and shall be covered with earth and shall not be located in the principle building area of any lot. Dry or wet above-ground detention shall not be permitted in single-family subdivisions.

6. SINKHOLE DISCHARGE

No project shall increase the storm water discharge into an existing sinkhole.

7. GRATED TROUGHS

Grated troughs may be required by the City of Kirkwood on streets of six percent grade or greater. Grated troughs may also be required at commercial entrances to the public right-of-way. Grated troughs, if required, shall be designed and constructed to the Standards of St. Louis County Department of Transportation. Grated troughs on City of Kirkwood public streets will become the maintenance responsibility of the City of Kirkwood upon final approval, inspection, dedication, and acceptance by the City of Kirkwood.

8. TRANSVERSE UNDER DRAINS

Transverse under drains shall be required under street pavement at all sags, low points, or other locations which contain a storm water inlet adjacent to the street pavement. The under drain shall be connected to the storm water inlet and shall be designed and constructed in accordance with City of Kirkwood standards. Under drains shall become the maintenance responsibility of the City of Kirkwood upon final approval, inspection, dedication, and acceptance by the City of Kirkwood.

9. INTERSECTIONS

Storm water flow through an intersection shall not exceed 0.5 c.f.s.

10. SPECIAL REQUIREMENTS

Development plans, parking lots, and commercial and multi-family buildings are subject to review by the City of Kirkwood Planning and Zoning Commission and Public Services Department. The City of Kirkwood may require additional storm water regulations or conditions of an approval to any project.

COST ESTIMATE GUIDELINES
July 1, 2013

1. **GRADING/CLEARING**
   Lump sum to be estimated by engineer and approved by City.

2. **STREET PAVEMENT** - Not less than $35 per square yard.

   PARKING LOT PAVEMENT -Not less than $15 per square yard.

3. **CURBS**
   Vertical curb & gutter with asphalt pavement, not less than $20 per liner foot.

   Rolled curb & gutter with asphalt pavement, not less than $15 per linear foot.

   Pinned-on curb (concrete pavement, cul-de-sacs, etc.), not less than $15 per linear foot.

4. **SIDEWALKS**-Not less than $7.50 per square foot of sidewalk pavement; Accessible sidewalk ramps - $2,000 each.

5. **WATER SERVICE** - Not less than $140 per linear foot of water main (includes hydrants, valves, etc.). If only hydrants, $3,500 per hydrant.

6. **STREET LIGHTS** - Not less than $1,800 per light.

7. **STORM SEWERS** - Itemized construction cost to be submitted by engineer and approved by City. Not less than St. Louis County schedule of unit prices.

8. **SANITARY SEWERS** - Itemized construction cost to be submitted by engineer and approved by City. Not less than St. Louis County schedule of unit prices.

9. **TREES ALONG FRONTAGE AND OTHER REQUIRED TREES** - Not less than $120 per tree.

10. **SPECIAL PLANTINGS/SCREENING OR BUFFERING AS REQUIRED BY CITY APPROVAL** - Not less than $120 per tree or $20 per shrub.

11. **LANDSCAPING** – Not less than $2,000 per landscaping island; watering system $5,000 plus $500 for each island.

12. **SAVED TREE GUARANTEE** – Not less than $500 per tree or amount established by Planning and Zoning Commission/Council.

13. **FENCES**
    Chain Link - 10$/L.F.
    Wood Board-on-Board - $20/L.F.
    Masonry - $30/L.F.
    Vinyl - $20/L.F.

14. **TRASH ENCLOSURES**
    Masonry - $5,000 Each
    Wood - $2,000 Each

15. **STREET SIGNS** - Not less than $200 per sign.

16. **SURVEY MONUMENTS** - Not less than $500 per concrete monument and $150 each corner marker.

17. **"AS BUILT" PLAN DEPOSIT** - $500 Minimum.

18. **DEPOSIT FOR DAMAGE TO CITY PROPERTY** (streets, curbs, etc.) - $5,000.

19. **COMPLIANCE WITH PLANS AND CONDITIONS OF APPROVAL** – Not less than $2,000.

20. **Items not listed shall be approved by City Engineer**.

NOTE: MINIMUM PERFORMANCE GUARANTEE AMOUNTS:

Multi-family residential	$10,000/unit
Subdivisions	$ 5,000/lot
All other projects	$ 5,000

PERFORMANCE GUARANTEES
MARCH 26, 2010

1. Performance Guarantees shall be provided as a cash deposit to be held by the City of Kirkwood or a Letter of Credit not less than the amount specified in the estimate as approved by the Public Works Director to guarantee conditions of approval and site restoration.

2. Letters of Credit shall be drawn on local commercial banking institutions and payable in person or by registered letter to an authorized representative of the City of Kirkwood.

3. Letter of Credit shall be issued for a minimum of 24 months.

4. The base amount of the Performance Guarantee may be reduced by the Public Works Department of the City of Kirkwood commensurate with work completed and accepted by the City. However, in no case shall the Performance Guarantee **be reduced below 25%** of the original amount until final acceptance by the City.

5. The City will attempt to notify the developer (Accountee) sixty (60) days in advance of the Letter of Credit expiration.

6. Failure to complete the improvements and/or site restoration (or renew the Letter of Credit) **requires that the City draw upon the Letter of Credit 30 days prior to its expiration** date and transfer such funds to a cash deposit held by the City.

7. Upon written request, the Letter of Credit will be returned to the banking institution upon completion of the improvements and site restoration and acceptance by the City.

8. Failure to satisfy the conditions of the approval or restore the site to City standards shall result in the performance guarantee being forfeited to the City of Kirkwood. The forfeiting of the performance guarantee does not relieve the developer or any other responsible party from completing all work and site restoration, and the City assumes no responsibility to complete such improvements.

9. Letters of Credit shall conform to the format attached.

_____ _____

Developer's signature Date

<BANK LETTERHEAD>

IRREVOCABLE LETTER OF CREDIT NO.:

DATE:

BENEFICIARY: CITY OF KIRKWOOD, MISSOURI
139 SOUTH KIRKWOOD ROAD
KIRKWOOD, MO 63122

ACCOUNTEE: (Name)
(Address)
(C/S/Z)

AMOUNT: $

EXPIRY: (24 months from date)

We hereby establish in your favor our Irrevocable Letter of Credit No. _____ which is available by your sight drafts on us and presented to the bank in person or by registered letter from an authorized representative of the beneficiary no later than (expiry date). This Letter of Credit shall expire at the close of business on expiry date).

FOR INFORMATION ONLY: The purpose of this original Letter of Credit is to cover 100% of the site restoration, construction, installations, and completion of required improvements and conditions of approval by Accountee for a City-approved project located at or about (address).

Subject to all of the terms and conditions of this Letter of Credit, the Maximum Available Credit shall be made available by your draft(s) at sight drawn on us accompanied by this letter of credit and any amendments thereto for presentation and by the following documents:

1. Your signed certificate, in the form attached hereto as Exhibit A, dated not more than ten days prior to its presentation to us; or

2. Your signed certificate, in the form attached hereto as Exhibit B, dated not more than ten days prior to its presentation to us; or

The aggregate sum of all drafts under this Letter of Credit must not exceed (amount).

We hereby agree with you that all drafts under and in compliance with the terms of the Letter of Credit shall be duly honored upon presentation to any office of the (Bank Name) in person or by registered letter by an authorized representative of beneficiary on or before (Expiry Date).

If demand for payment does not conform to the terms and conditions of this Letter of Credit, we will promptly notify you not later than the third business day after receipt of the draft and of the reasons therefore, such notice to be promptly confirmed in writing to you, and we shall hold all documents at your disposal or return the same to you, if directed by you.

This Letter of Credit shall be governed by the internal laws of the State of Missouri, but subject, however, to the Uniform Custom and Practices for Documentary Credits, 2007 Revision, International Chamber of Commerce Publication No. 600, but excluding the provisions of Article 32 thereof. Any dispute or litigation will be conducted in a St. Louis County Missouri Court or location designated by the City of Kirkwood.

(Bank Name)
(Authorized Signature)
(Typed Name)
(Title)
(Phone Number)

EXHIBIT A
TO LETTER OF CREDIT
FORM OF CERTIFICATE FOR "A" DRAWING
(Date)

Name of Issuing Bank
Bank Address

Attention:

Re: Your Letter of Credit No. _____
In Favor of City of Kirkwood, Missouri

Gentlemen:

The undersigned, a duly authorized official of City of Kirkwood, Missouri (the "Beneficiary"), hereby certifies to ***Name of Issuing Bank*** (The "Bank"), with reference to Irrevocable Letter of Credit No. _____ (The "Letter of Credit", any capitalized terms used herein and not defined shall have their respective meanings as set forth in the said Letter of Credit) issued by the Bank in favor of the Beneficiary, that:

1. The Account Party has failed to complete all improvements and site restoration required.

2. The draft in the sum of $_____ accompanying this Certificate is not in excess of the Maximum Available Credit of the Letter of Credit and shall result in a reduction of the Maximum Available Credit of the Letter of Credit.

Transfer the funds as stated above to the credit of City of Kirkwood to US Bank for the account of ABA 081000210, Account Number 152307768449, Attention Todd Rehg, Reference _____.

IN WITNESS WHEREOF, the Beneficiary has executed and delivered this Certificate this _____ day of _____, 20__.

CITY OF KIRKWOOD, MISSOURI

By _____

EXHIBIT B
TO LETTER OF CREDIT
FORM OF CERTIFICATE FOR "B" DRAWING
(Date)

Name of Issuing Bank
Bank Address

Attention:

Re: Your Letter of Credit No. _____
In Favor of City of Kirkwood, Missouri

Gentlemen:

The undersigned, a duly authorized official of City of Kirkwood, Missouri (the "Beneficiary"), hereby certifies to ***Name of Issuing Bank*** (The "Bank"), with reference to Irrevocable Letter of Credit No. _____ (The "Letter of Credit", any capitalized terms used herein and not defined shall have their respective meanings as set forth in the said Letter of Credit) issued by the Bank in favor of the Beneficiary, that:

1. The Expiration Date of the Letter of Credit is _____, which date is not more than thirty days from the date of this Certificate.

(EITHER)

2. The Beneficiary has not received written notification of any amendments to the Letter of Credit which extends the Expiration Date.

(OR)

2. The Beneficiary has received written notification that the Letter of Credit will not be renewed.

3. The draft in the sum of $_____ accompanying this Certificate is not in excess of the Maximum Available Credit of the Letter of Credit and shall result in a reduction of the Maximum Available Credit of the Letter of Credit.

Transfer the funds as stated above to the credit of City of Kirkwood to US Bank for the account of ABA 081000210, Account Number 152307768449, Attention Todd Rehg, Reference _____.

IN WITNESS WHEREOF, the Beneficiary has executed and delivered this Certificate this _____ day of _____, 20__.

CITY OF KIRKWOOD, MISSOURI

By _____

TREE STUDY
SITE PLAN REVIEW

PROPERTY LOCATION: _____

*** ATTACH SCALED LANDSCAPE/TREE LOCATION PLAN TO THIS STUDY/SHEET.**

List all significant trees (live, healthy trees, of a species suitable for the urban environment having a diameter of eight inches or greater) on premises, on abutting public rights-of-way, and on private property within five feet of all property lines.

KEY TO DRAWING	TREE SPECIES	DIAMETER	SAVE YES/NO IF NO, EXPLAIN IN NOTES	PROTECTION METHODS EXPLAIN IN NOTES, PROVIDE DRAWINGS	DOLLAR VALUE FROM GUIDE FOR TREE APPRAISAL
A					
B					
C					
D					
E					
F					

NOTE: Public trees abutting the site shall not be removed and require tree protection fencing.

NOTES:

A

B

C

D

E

F

I hereby certify that I have viewed the premises and provide this professional opinion regarding the survivability of significant trees on the site and abutting the site and the appropriateness of proposed tree replacement and landscaping. Attached is a landscape plan prepared by me or under my direction.

_____

Name/Signature/Certification

** Copy this form as needed for additional trees.

CITY OF KIRKWOOD
PUBLIC WORKS DEPARTMENT
March 27, 2017

COMPANY NAME	INDIVIDUAL'S NAME	COMPANY ADDRESS	PHONE NUMBER	E-MAIL ADDRESS
Allen's Tree Service	John Beckman	2755 West Pearce Blvd, Wentzville, MO 63385	(636) 332-5535	johnb.allenstree@gmail.com
Davey Tree Expert Co.	Tom Beshoar	1206 Hanley Industrial Ct, Brentwood 63144	(314) 961-5440	tom.beshoar@davey.com
Droege Tree Care, Inc.	Colleen Baum	6770 Olive Blvd., St. Louis, MO 63130	(314) 863-1903	colleen@droegetreecare.com
Gamma Tree Experts	Bryan Davidson	P.O. Box 16103, Clayton, MO 63105	(314) 725-6022	bryan@gammatree.com
Happy Tree Service	Dennis A Greene	639 St Louis Avenue, Valley Park, MO 63088	(314) 962-9272	info@happytreeservice.com
Trees, Forests, & Landscapes	Michael A Sestric	540 Clark Avenue, Kirkwood, MO 63122	(314) 821-6956	treesforests@sbcglobal.net
	Michael Garrett			

The above indivuals have expressed an interest to perform tree studies in accordance with the codes of the City of Kirkwood.
This list is not exclusive. Any arborist certified by the International Society of Arboriculture and qualified to perform tree studies may be utilized.
The City of Kirkwood has no obligation or responsibility for the performance of the arborist. This list is furnished only to assist in the retaining of an arborist interested in performing tree studies. Certified Arborists who have an interest in tree studies may contact the City of Kirkwood Public Works Department at 314-822-5822 to be included on the above list.

TREE PROTECTION SPECIFICATIONS

General – Tree protection has three primary functions: (1) to keep the foliage canopy and branching structure clear from contact by equipment, materials, and activities; (2) to preserve roots and soil conditions in an intact and non-compacted state; and (3) to identify the Tree Protection Zone (TPZ) in which no soil disturbance is permitted and activities are restricted.

Trees to be Protected – All public trees on City right-of-way and all trees designated to be saved in tree study for site.

Materials

a. The Tree Protection Zone (TPZ) is a restricted area around the base of the tree at the drip line with a minimum radius of ten (10) feet or as shown in the Tree Study, whichever is greater, enclosed by fencing. **No work, storage, or equipment operation shall be performed in this area.**

b. Tree Protection: The fence shall enclose the entire area of the TPZ of the tree(s) to be protected throughout the life of the construction project. In some parking areas, if fencing is located on paving or concrete that will not be demolished, then the posts may be supported by an appropriate grade level concrete base, if approved. For trees situated within a planting strip or near a sidewalk or driveway, only the planting strip and yard side of the TPZ shall be enclosed with the required chain link protective fencing in order to keep the sidewalk and street open for public use.

c. Size, type, and area to be fenced: All trees to be preserved shall be protected with four (4) foot high chain link fences. Fences are to be mounted on round steel posts driven into the ground to a depth of at least two feet and no more than 10-foot spacing.

d. Warning Sign: A warning sign shall be weatherproof and prominently displayed on each fence at 20-foot intervals on the tree protection fencing. The sign shall be a minimum 8.5 inches by 11 inches and clearly state: "WARNING – Tree Protection Zone". See exhibit A-S.

e. Duration. Tree fencing shall be erected before construction begins and remain in place until final inspection of the project, except for work specifically allowed in the TPZ.

f. During Construction.

1. All neighbors' trees that overhang the project site shall be protected from impact and protection fencing may be required.

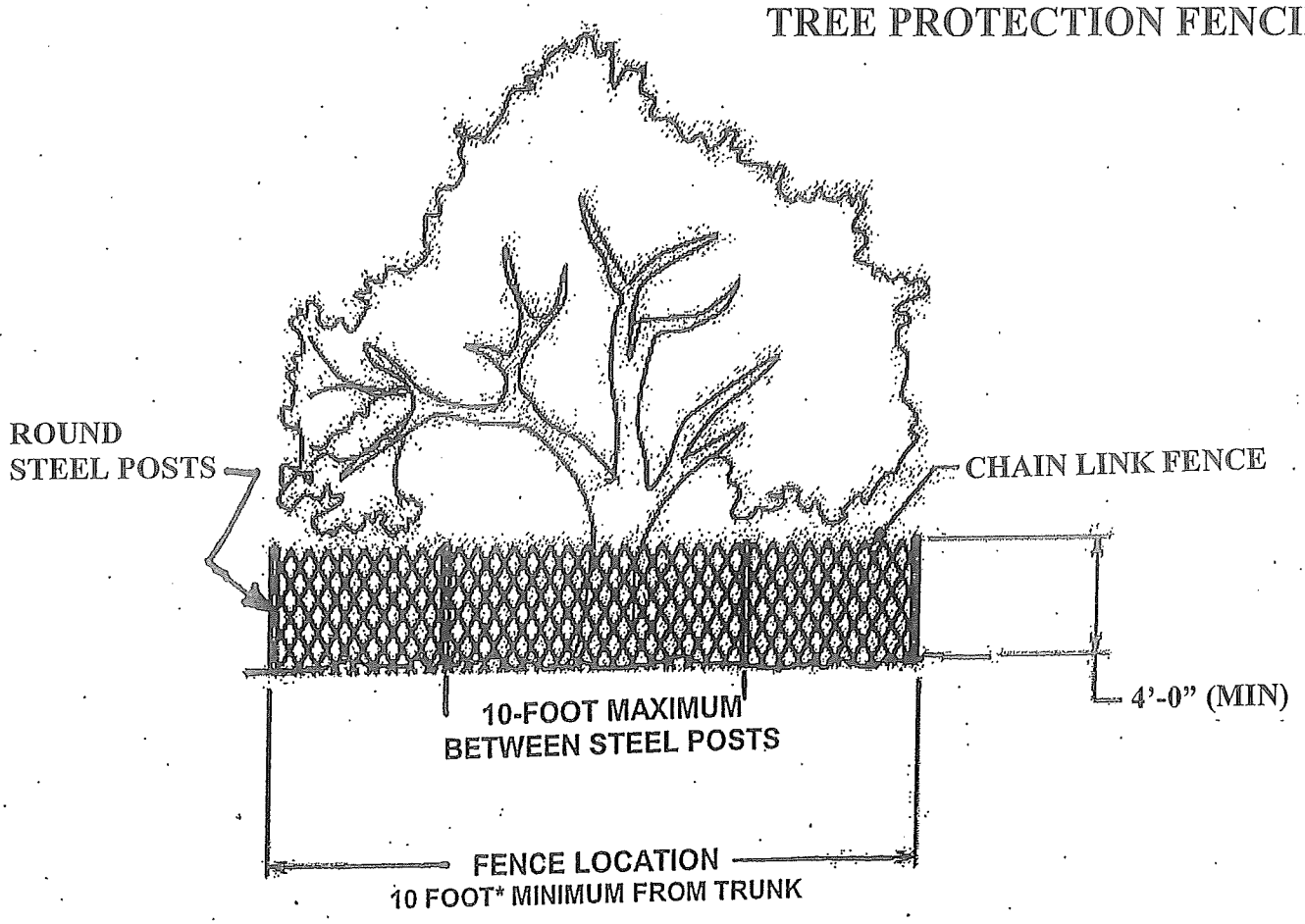
2. The applicant shall be responsible for the repair or replacement of any publicly-owned trees that are damaged during the course of construction.

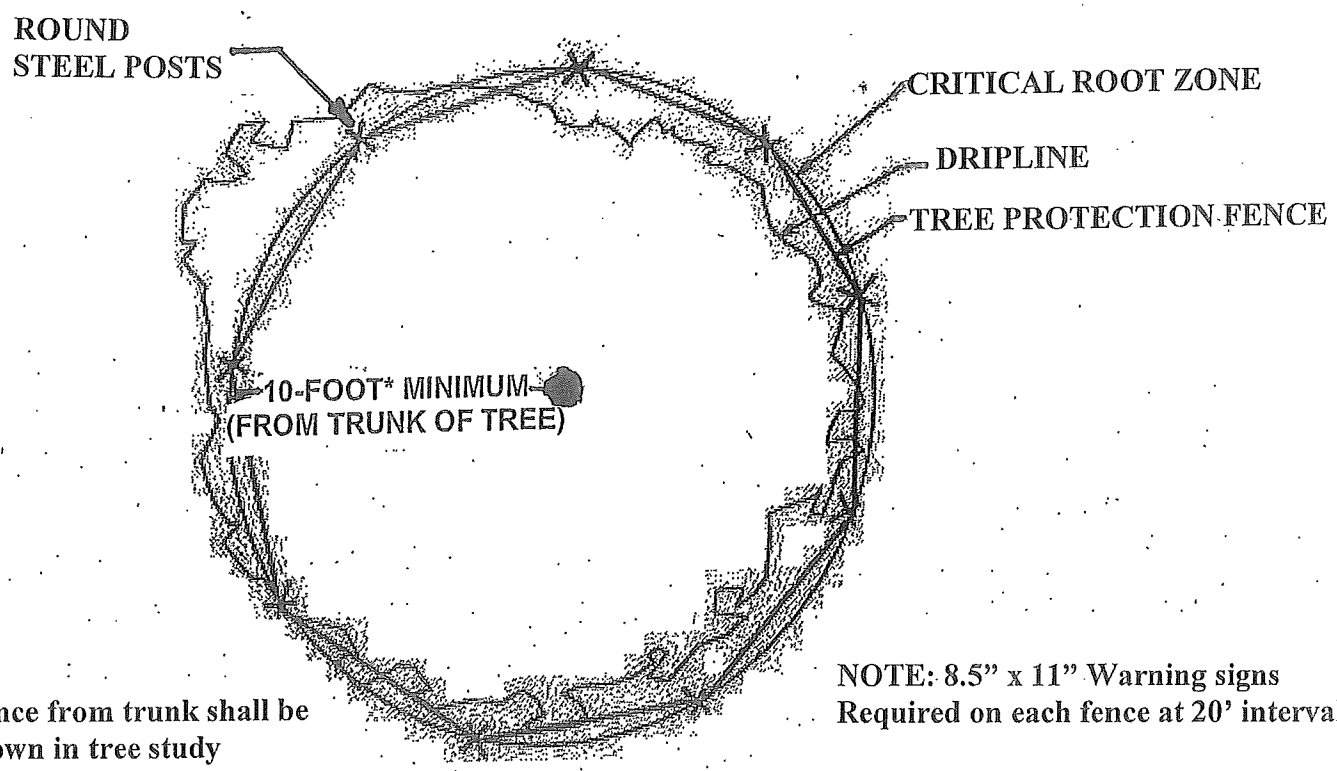
3. The following tree preservation measures apply to all trees to be saved:

(a) No storage of material, topsoil, vehicles, or equipment shall be permitted within the TPZ.
(b) The ground under and around the tree canopy area shall not be altered.
(c) Trees to be retained shall be irrigated, aerated, and maintained as necessary to ensure survival.

EXHIBIT A

TREE PROTECTION FENCING





* Distance from trunk shall be as shown in tree study or 10' minimum.

NOTE: 8.5" x 11" Warning signs Required on each fence at 20' intervals

2012

City of Kirkwood Street Tree Guide

City of Kirkwood

139 S. Kirkwood Road

Kirkwood, MO 63122

314-822-5801

Introduction

Introduction

The Kirkwood Urban Forestry Commission (KUFC) is pleased to present these updated lists of recommended street trees for enhancing Kirkwood's streets, avenues, boulevards, and ways. Development of this composite list is the result of significant research, incorporating the advice from local professionals including arborists, urban foresters, nurserymen, horticulturists, and landscaping managers. The intention of this effort is to provide urban planners, architects, landscape architects, public works managers, utility managers, and Kirkwood residents with a list of trees appropriate for street tree application, tailored to the Kirkwood environment. Since the world of living plants is quite dynamic, these lists will be reviewed periodically by the KUFC and updated if deemed necessary after reviewing the results of current urban forestry research.

The KUFC completed its most recent review and update of the city's current list of recommended street trees as of June, 2012. The Kirkwood Urban Forestry Commissions' primary intention associated with development of this highly researched document is to provide Kirkwood citizens and staff with state-of-the-art tree recommendations as the community continues to enhance Kirkwood's urban forest.

Kirkwood Urban Forestry Commission (Fall 2012)

Roger Vonder Bruegge, Chair
David Endres, Vice Chair
Alan Hautly
David Slane
Michelle Storgion
Priscilla Ward
Rita Schoenberg

Kirkwood City Council

Arthur McDonnell, Mayor
Iggy Yuan, Deputy Mayor
Gerry Biedenstein
Nancy Luetzow
Gina Jaksetic
Bob Sears
Paul Ward

A Note about the Organization of this Guide:

For the convenience of users, each list is offered twice: First, alphabetically sorted by **botanical name** and then alphabetically by **common name**.

Definitions

- **Botanical Name:** the scientific Latin name of a plant.
- **Cultivar:** a named plant variety selected for specifically unique and desired characteristics.
- **Invasive:** by introduction to the landscape, any plant that can cause economic or environmental harm or harm to human health.
- **Street Tree:** trees growing on city right-of-way of all streets, avenues, or ways within the city. [NOTE: Contact ***City of Kirkwood Public Works/Engineering*** 314-822-5822 for verification of city right-of-way locations.]
- **Tree-form**: a single trunk form of a tree species normally offered as a clump or multi-trunk tree
- **Tree Lawn:** the city right-of-way planting area between the street curb/edge and the sidewalk.

Undesirable Trees Not Recommended for Kirkwood

While many tree species are quite applicable and adaptable for Kirkwood's challenging urban streetscape, the KFUC has also identified a variety of trees not appropriate for use within the streetscape environment. Primary reasons for discouraging the use of these undesirable tree species include:

- Weak branching habit, resulting in frequent release of fallen branches.
- Producer of messy fruit, creating a slip hazard on the pavement and sidewalk surfaces.
- Prone to damage by insects, diseases and nutrient deficiencies.
- Producer of numerous viable seeds, creating an invasive plant impact upon the surrounding landscape.

Potentially Threatened Trees

The dynamic nature of plants and the environment requires constant monitoring of trees and their potential pest enemies. The increased presence of such pests as Emerald Ash Borer and Japanese Beetle can affect the decision to place trees on the recommended lists or on the list of undesirable trees. Potential pest problems are referenced in the comment section associated with each tree list.

Kirkwood Electric and Ameren Lines

Ameren does not recommend planting trees under power lines that will attain more than 25' in height. Kirkwood Electric does not recommend planting any trees under power lines. Cable and phone lines using the same power poles are only about 16' off the ground. Electric utilities are required to trim trees in the right-of-way so that they do not interfere with electric lines, which can be detrimental to the look and shape of the trees.

SELECTIONS
FOR KIRKWOOD

Small Trees
(>30 feet tall)

Small Trees (Under 30 Feet in Height)

SORTED BY BOTANICAL NAME
TL = Suited for Tree Lawn spaces

BOTANICAL NAME	SUGGESTED CULTIVAR(S)	COMMON NAME	TL
Acer buergeranum		Maple, Trident	YES
Tolerant of dry sites			
Acer ginnala		Maple, Amur	YES
Tolerant of dry sites; considered to be invasive in the eastern US, but not found to be problematic in the Midwest; suggest tree-form (single-trunk) selections for street tree application			
Acer palmutura		Maple, Japanese	YES
Acer tataricum		Maple, Tatarian	YES
Amelanchier x grandiflora	Autumn Brilliance Autumn Sunset Cumulus Princess Diana Snowcloud Tradition	Serviceberry	YES
Suggest tree form (single-trunk) selection for street tree application			
Cercis camadensis		Redbud, Eastern	YES
Cornus Florida		Flowering Dogwood	YES
Cratacgus punctate	Ohio Pioneer (thornless)	Hawthorne, Dotted	YES
Cratacgus viridis	Winter King	Hawthorne, Green	YES
Maintains attractive red fruit during the winter months			
Maackia amurensis		Maackia, Amur	YES
Not readily available			
Magnolia soulangiana	Merrill	Magnolia	YES
Suggest tree-form (single trunk) selections for street tree application			
Magnolia x hybrids	Centurion Harvest Gold Prairie Fire Professor Sprenger Snowdrift Sugar Tyme	Crabapple, Flowering	YES
Suggested cultivars are most resistant to foliar diseases			
Syringa reticulate	Ivory Silk Regent Summer Snow	Lilac, Japanese Tree	YES

Underlined Species =
Plants of Merit

Plants of Merit

STREET TREE
SELECTIONS
FOR KIRKWOOD

Medium Trees
(30 to 45 feet tall)

Medium Trees (30 to 45 Feet in Height)

SORTED BY BOTANICAL NAME
TL = Suited for Tree Lawn spaces

BOTANICAL NAME	SUGGESTED CULTIVAR(S)	COMMON NAME	TL
Acer campestre *Not readily available*	Queen Elizabeth	Maple, Hedge	YES
Acer miyabei *May be drought sensitive*	State Street (Morton)	Maple, Miyabe	YES
Acer x truncatum	Norwegian Sunset Pacific Sunset	Maple, Shantung	YES
Betula nigra	<u>Heritage</u> Dura Heat	Birch, River	YES
Extensive surface roots compete with ground cover plantings; suggest tree-form (single trunk) selections for street tree application; may be short lived as a street tree			
Carpinus betulus *Suggest tree-form (single trunk) selections for street tree application*	<u>Fastigiate (upright)</u>	Hornbeam, European	YES
Cladrastis kentukea		Yellowwood, American	YES
Corylus colurna *Tolerant of dry sites; not readily available*		Filbert, Turkish	YES
Eucommia ulmoides *Not readily available*		Hardy Rubber Tree	YES
Gleditsia triacanthos *Suggested cultivars are thornless*	Imperial	Honeylocust, Thornless	YES
Ilex opaca		Holly, American	YES
Magnolia acuminate		Magnolia, Cucumbertree	YES
Ostrya virginiana		Hophornbeam, American	YES
Phellodendron amurense *Tolerant of dry sites*	Macho	Corktree, Amur	YES

<u>Note:</u>
The Kirkwood Urban Forestry Commission discourages the use of ornamental pear (Pyrus) trees as street trees. Even the purported "improved" cultivars have been found to be subject to storm damage and fire blight disease. Arborists consider these species to be invasive, creating an adverse plant impact upon the surrounding landscape.

<u>Underlined Species</u> =
Plants of Merit

Plants of Merit

STREET TREE SELECTIONS FOR KIRKWOOD

Large Trees (<45 feet tall)

Large Trees (Greater than 45 Feet in Height)

SORTED BY BOTANICAL NAME
TL = Suited for Tree Lawn spaces

BOTANICAL NAME	SUGGESTED CULTIVAR(S)	COMMON NAME	TL
Acer rubrum	Autumn Flame Red Sunset	Maple, Red	YES
Leaf scorch may occur when growing among extensive paved areas			
Acer saccharum	Green Mountain Fall Fiesta (Balista)	Maple, Sugar	YES
Not well adapted to sites prone to soil compaction; may be sensitive to salt			
Acer x freemanii	Autumn Blaze	Maple, Hybrid	YES
Carya ovate		Hickory, Shag Bark	YES
Celtis occidentalis	Prairie Pride	Hackberry, Common	YES
Tolerant of dry sites			
Ginkgo biloba	Autumn Gold Lakeview Princeton Sentry	Gingko, Maidenhair Tree	YES
Only male cultivars are recommended; female trees produce messy and foul smelling fruit			
Gleditsia triacanthos	Moraine Shademaster Skyline	Honeylocust, Thornless	YES
Suggested cultivars are thornless			
Platanus x acerifolia	Bloodgood	Planetree, London	YES
Quercus bicolor		Oak, Swamp White	
Quercus macrocarpa		Oak, Bur	
Difficult to transplant; produces large acorns, better suited for large lawn areas			
Quercus phellos		Oak, Willow	
May be marginally cold hardy; prone to iron chorosis			
Quercus robur	Fastigiate (upright) Skymaster (upright)	Oak, English	
Foliage may be prone to powdery mildew disease			
Quercus rubra		Oak, Northern Red	
Quercus shumardii		Oak, Shumard	

Underlined Species = Plants of Merit

Plants of Merit

STREET TREE
SELECTIONS
FOR KIRKWOOD

Large Trees
(<45 feet tall)

Large Trees (Greater than 45 Feet in Height)

SORTED BY BOTANICAL NAME
TL = Suited for Tree Lawn spaces

BOTANICAL NAME	SUGGESTED CULTIVAR(S)	COMMON NAME	TL
Quercus x Warei	Regal Prince (Long)	Oak, Hybrid	
Attractive glossy foliage			
Taxodium distichum	Shawnee Brave	Bald Cypress	YES
Tolerant of poorly drained sites			
Tilia cordata	Chancellor (upright) Fairview Glenleven Greenspire	Linden, Littleleaf	
Subject to defoliation by the Japanese beetle; not always the most salt and drought tolerant			
Tilia tomentosa	Green Mountain Sterling	Linden, Silver	
Ulmus parvifolia	Dynasty Ohio	Elm, Lacebark or Chinese	YES
May be marginally cold hardy			
Zelkova serrata	Green Vase Halka Village Green	Zelkova, Japanese	YES

Underlined Species =
Plants of Merit

Plants of Merit

STREET TREE
SELECTIONS
FOR KIRKWOOD

Small Trees
(>30 feet tall)

Underlined Species =
Plants of Merit

Plants of Merit

Small Trees (Under 30 Feet in Height)

SORTED BY COMMON NAME
TL = Suited for Tree Lawn spaces

COMMON NAME	BOTANICAL NAME	SUGGESTED CULTIVAR(S)	TL
Crabapple, Flowering	Malus x hybrids	Centurion Harvest Gold Prairie Fire Professor Sprenger Snowdrift Sugar Tyme	YES
Suggested cultivars are most resistant to foliar diseases			
Dogwood, Flowering	Cornus Florida		YES
Hawthorne, Dotted	Crataegus punctate	Ohio Pioneer (thornless)	YES
Suggested cultivar is thornless; not readily available			
Hawthorne, Green	Crategus viridis	Winter King	YES
Maintains attractive red fruit during the winter months			
Lilac, Japanese Tree	Syringa reticulate	Ivory Silk Regent Summer Snow	YES
Maackia, Amur	Maackia amurensis		YES
Not readily available			
Magnolia	Magnolia x lebneri	Merrill	YES
Suggest tree-form (single trunk) selections for street tree application			
Magnolia, Saucer	Magnolia soulangiana		YES
Suggest tree-form (single trunk) selections for street tree application			
Maple, Amur	Acer ginnala		YES
Tolerant of dry sites; considered to be invasive in the eastern U.S., but not found to be problematic in the Midwest; suggest tree-form (single trunk) selections for street tree application			
Maple, Japanese	Acer palmatum		YES
Maple, Tatarian	Acer tataricum		YES
Maple, Trident	Acer buergeranium		YES
Tolerant of dry sites			
Redbud, Eastern	Cercis canadensis		YES
Tolerant of dry sites			

STREET TREE
SELECTIONS
FOR KIRKWOOD

Small Trees
(>30 feet tall)

Underlined Species =
Plants of Merit

Plants of Merit®

Small Trees (Under 30 Feet in Height)

SORTED BY COMMON NAME
TL = Suited for Tree Lawn spaces

COMMON NAME	BOTANICAL NAME	SUGGESTED CULTIVAR(S)	TL
Serviceberry	Amelanchier x grandiflora	Autumn Brilliance Autumn Sunset Cumulus Princess Diana Snowcloud Tradition	YES
Suggest tree-form (single trunk) selections for street tree application			

STREET TREE
SELECTIONS
FOR KIRKWOOD

Medium Trees
(30 to 45 feet tall)

Underlined Species =
Plants of Merit

Plants of Merit®

Medium Trees (30 to 45 Feet in Height)

SORTED BY COMMON NAME
TL = Suited for Tree Lawn spaces

COMMON NAME	BOTANICAL NAME	SUGGESTED CULTIVAR(S)	TL
Birch, River	Betula nigra	Heritage	YES
Extensive surface roots compete with ground cover plantings; suggest tree-form (single trunk) selections for street tree application; may be short lived as a street tree			
Corktree, Amur	Phellodendron amurense	Macho	YES
Tolerant of dry sites			
Filbert, Turkish	Corylus colurna		YES
Tolerant of dry sites; not readily available			
Hardy Rubber Tree	Eucommia ulmoides		YES
Not readily available in commerce			
Holly, American	Ilex opaca		YES
Honeylocust, Thornless	Gleditsia triacanthos	Imperial	YES
Suggested cultivars are thornless			
Hophornbeam, American	Ostrya virginiana		YES
Tolerant of dry sites			
Hornbeam, European	Carpinus betulus	Fastigiate (Upright)	YES
Suggest tree-form (single trunk) selections for street tree application			
Magnolia, Cucumbertree	Magnolia acuminate		YES
Maple, Hedge	Acer campestre	Queen Elizabeth	YES
Not readily available			
Maple, Miyabe	Acer miyabei	Morton (State Street)	YES
May be drought sensitive			
Maple, Shantung	Acer x truncatum	Norwegian Sunset Pacific Sunsest	YES
Yellowwood, American	Cladrastis kentukea		YES

NOTE:
The Kirkwood Urban Forestry Commission discourages the use of ornamental pear (Pyrus) trees as street trees. Even the purported "improved" cultivars have been found to be subject to storm damage and fire blight disease. Arborists consider these species to be invasive, creating an adverse impact upon the surrounding landscape.

STREET TREE
SELECTIONS
FOR KIRKWOOD

Large Trees
(<45 feet tall)

Large Trees (Greater than 45 Feet in Height)

SORTED BY COMMON NAME
TL = Suited for Tree Lawn spaces

COMMON NAME	BOTANICAL NAME	SUGGESTED CULTIVAR(S)	TL
Bald Cypress	Taxodium distichum	Shawnee Brave	YES
Tolerant of poorly drained sites			
Elm, Lacebark or Chinese	Ulmus parvifolia	Dynasty Ohio	YES
May be marginally cold hardy			
Gingko, Maidenhair Tree	Gingko biloba	Autumn Gold Lakeview Princeton Sentry	YES
Only male cultivars are recommended; female trees produce messy and foul smelling fruit			
Hackberry, Common	Celtis occidentalis	Prairie Pride	YES
Tolerant of dry sites			
Hickory, Shag Bark	Carya ovate		YES
Honeylocust, Thornless	Gleditsia triacanthos	Moraine Shademaster Skyline	YES
Suggested cultivars are thornless			
Linden, Littleleaf	Tilia cordata	Chancellor (upright) Fairview Glenleven Greenspire	
Subject to defoliation by the Japanese beetle; no always the most salt and drought tolerant			
Linden, Silver	Tilia tomentosa	Green Mountain Sterling	
Maple, Hybrid	Acer x freemanii	Autumn Blaze	YES
Maple, Red	Acer rubrum	Autumn Flame Red Sunset	
Leaf scorch may occur when growing among extensive paved areas			
Maple, Sugar	Acer saccharum	Green Mountain Fall Fiesta (Bailsta)	
Not well adapted to sites prone to soil compaction; may be sensitive to salt			
Oak, Bur	Quercus macrocarpa		
Difficult to transplant; produces large acorns, better suited for large lawn area			

Underlined Species =
Plants of Merit

Plants of Merit

STREET TREE
SELECTIONS
FOR KIRKWOOD

Large Trees
(<45 feet tall)

Underlined Species =
Plants of Merit

Plants of Merit®

Large Trees (Greater than 45 Feet in Height)

SORTED BY COMMON NAME
TL = Suited for Tree Lawn spaces

COMMON NAME	BOTANICAL NAME	SUGGESTED CULTIVAR(S)	TL
Oak, English	Quercus robur	Fasitigiate (upright) Skymaster (upright)	
Foliage may be prone to powdery mildew disease			
Oak, Hybrid *Attractive glossy foliage*	Quercus x Warei	Long (Regal Prince)	
Oak, Northern Red	Quercus rubra		
Oak, Shumard	Quercus shamardii		
Oak, Swamp White	Quercus bicolor		
Oak, Willow *May be marginally cold hardy; prone to iron chorosis*	Quercus phellos		
Planetree, London	Plantanus x acerifolia	Bloodgood	YES
Zelkova, Japanese	Zelkova serrata	Green Vase Halka Village Green	YES

STREET TREE
SELECTIONS
FOR KIRKWOOD

Undesirable Trees

Undesirable Trees

SORTED BY BOTANICAL NAME
TL = Suited for Tree Lawn spaces

BOTANICAL NAME	COMMON NAME	TL
Acer negundo *Messy fruit; weak branched*	Boxelder	
Acer saccharinum *Weak branched*	Maple, Silver/Soft	
Acsculus (species) *Messy fruit*	Horsechestnut	
Ailanthus altissima *Invasive weed*	Tree of Heaven	
Catalpa (species) *Messy fruit*	Catalpa	
Crataegus phaenopyrum *Highly susceptible to Cedar Apple Rust disease; thorns may be a hazard if planted along sidewalks*	Hawthorne, Washington	
Fraxinus Americana	Ash, White	
Fraxinus Pennsylvanica	Ash, Green	
Gingko biloba (female non-cultivars) *Female trees produce abundance of messy, malodorous fruit*	Ginkgo, Maidenhair Tree	
Gleditsia triacanthos (species with thorns) *Hazardous thorns*	Honeylocust	
Juglans nigra *Messy fruit*	Walnut, Black	
Liquidambar styraciflua *Messy fruit*	Sweet Gum	
Malus (species) (large fruit varieties) *Messy fruit*	Apple	
Malus x hybrids (disease prone varieties e.g.: Hopa, Radiant..) *Early leaf drop due to leaf disease*	Crabapple	
Morus (species) (fruiting varieties) *Messy fruit*	Mulberry	

STREET TREE
SELECTIONS
FOR KIRKWOOD

Undesirable Trees

Undesirable Trees

SORTED BY BOTANICAL NAME
TL = Suited for Tree Lawn spaces

BOTANICAL NAME	COMMON NAME	TL
Populus (species) *Invasive tree*	Poplar; Cottonwood	
Prunus (species) (fruiting varieties) *Messy fruit; short lived*	Cherry; Plum	
Pyrus (species) (fruiting varieties) *Messy fruit; invasive tree*	Pear	
Pyrus Calleryana *Invasive tree*	Bradford Pear	
Pyrus hybrids (all cultivars) *Quite subject to fire blight disease and wind damage; invasive tree*	Pear, Ornamental	
Quercus acutissima *Invasive tree*	Oak, Sawtooth	
Quercus imbricaria *Difficult to transplant; prone to oak wilt disease*	Oak, Shingle	
Quercus palustris *Prone to iron chorosis (yellow foliage) on sites with high PH soils*	Oak, Pin	
Robinia pseudoacacia *Weak branched*	Locust, Black	
Salix (species) *Produces abundance of fallen branches*	Willow	

NOTE:
All conifer (needled evergreen) trees (e.g.: pine, spruce, etc.) are discouraged for street tree use due to low branching characteristics (evergreen tree species do not favor lower branch removal).

STREET TREE
SELECTIONS
FOR KIRKWOOD

Undesirable Trees

Undesirable Trees

SORTED BY COMMON NAME
TL = Suited for Tree Lawn spaces

COMMON NAME	BOTANICAL NAME	TL
Apple *Messy fruit*	Malus (species)	(large fruit varieties)
Ash, White	Fraxinus Americana	
Ash, Green	Fraxinus Pennsylvanica	
Boxelder *Messy fruit; weak branched*	Acer negundo	
Catalpa *Messy fruit*	Catalpa (species)	
Cherry; Plum *Messy fruit; short lived*	Prunus (species)	(fruiting varieties)
Crabapple *Early leaf drop due to leaf disease*	Malus x hybrids	(disease prone varities e.g.: Hopa, Radiant…)
Ginkgo, Maidenhair Tree *Female trees produce abundance of messy, malodorous fruit*	Gingko biloba	(female non-cultivars)
Hawthorne, Washington *Highly susceptible to Cedar Apple Rust disease; thorns may be a hazard if planted along sidewalks*	Crataegus phaenopyrum	
Honeylocust *Hazardous thorns*	Gleditsia triacanthos	(species with thorns)
Horsechestnut *Messy fruit*	Aesculus (species)	
Locust, Black *Weak branched*	Robinia pseudoacacia	
Maple, Silver/Soft *Weak branched*	Acer saccharinum	
Mulberry *Messy fruit*	Morus (species)	(fruiting varieties)
Oak, Pin *Prone to iron chorosis (yellow foliage) on sites with high PH soils*	Quercus palustris	
Oak Sawtooth *Invasive tree*	Quercus acutissima	

STREET TREE
SELECTIONS
FOR KIRKWOOD

Undesirable Trees

Undesirable Trees

SORTED BY COMMON NAME
TL = Suited for Tree Lawn spaces

COMMON NAME	BOTANICAL NAME	TL
Oak, Shingle *Difficult to transplant; prone to oak wilt disease*	Quercus imbricaria	
Pear, Bradford *Invasive tree*	Pyrus Calleryana	
Pear, Ornamental *Quite subject to fire blight disease and wind damage; invasive tree*	Pyrus (all cultivars)	
Pear Pyrus (species) *Messy fruit; invasive tree*	Pyrus (fruiting varieties)	
Poplar, Cottonwood *Invasive tree*	Populus (species)	
Sweet Gum *Messy fruit*	Liquidambar styraciflua	
Tree of Heaven *Invasive weed*	Ailanthus altissima	
Walnut, Black *Messy fruit*	Juglans nigra	
Willow *Produces abundance of fallen branches*	Salix (species)	

NOTE:
All conifer (needled evergreen) trees (e.g.: pine, spruce, etc.) are discouraged for street tree use due to low branching characteristics (evergreen tree species do not favor lower branch removal).

For more information about the selection, planting, and care of urban trees, visit the following useful Websites:

Alliance for Community Trees

http://actrees.org

Ameren: Planting Trees from the Ground Up

www.ameren.com/sites/aue/Environment/VegetationManagement/Documents/PlantingTrees.pdf

Arbor Day Foundation

www.arborday.org

Find a Certified Arborist (International Society of Arboriculture)

www.isa-arbor.com/findArborist/findarborist.aspx

Forest ReLeaf of Missouri

www.moreleaf.org

Missouri Botanical Garden "PlantFinder"

www.mobot.org/gardeninghelp/plantfinder

Missouri Botanical Garden "Plants of Merit"

www.plantsofmerit.org

Missouri Department of Conservation/Forestry

www.mdc.mo.gov/forest

Right Tree in the Right Place

www.righttreerightplace.com

Trees are Good (International Society of Arboriculture)

www.treesaregood.com

Tree Selection Guide (University of IL Extension)

http://urbanext.illinois.edu/treeselect/

Plants of Merit®

Plants of Merit, a program of the Missouri Botanical Garden, promotes underused, reliable, and ecologically responsible plants for diversifying private and public landscapes.

This *Street Tree Selections for Kirkwood* publication is available online at www.kirkwoodmo.org.

CITY OF KIRKWOOD
DEPARTMENT OF PUBLIC WORKS
LANDSCAPING GUIDELINES

1. PLAN AND SCHEDULE

A landscape plan (drawing) and planting schedule is required for new developments and additions reviewed by the Planning and Zoning Commission under the Site Plan Review procedures.

PLANTING SCHEDULE

KEY	QUANTITY	COMMON NAME	BOTANICAL NAME	SIZE

2. PLANT MATERIALS

Recommended Trees and Shrubs Species

Appendix A contains a list of plant materials which will satisfy the requirements of this Section. The list is intended to suggest typical species which would be appropriate for the purposes of providing buffering and appropriate aesthetics along street frontages and within parking lots.

3. LANDSCAPING REQUIREMENTS

a. Standards

All new landscaping materials shall meet the following criteria:

1. Canopy (deciduous shade) trees - two (2) inch minimum caliper

2. Understory (ornamental or flowering) trees - one and one-half (1-1/2) inch minimum caliper.

3. Evergreen trees - six (6) feet minimum height.

4. Deciduous and/or evergreen shrubs
   I. Type A - Less than eighteen (18) inches in height.
   ii. Type B - Eighteen (18) to twenty-four (24) inches in height.
   iii. Type C - Greater than eighteen (18) inches in height.

5. Ground Cover - Suitable ground cover shall be provided throughout the site and appropriately identified. Ground Cover shall be construed to include any combination of low plants that cover the ground, grass, wood chips, bark mulch, crushed stone and similar substances.

b. Landscaping to New Development

1. Street frontage (within front yard setback), in the following manner:

   i. A minimum of one (1) canopy tree per every twenty-five (25) feet of frontage (excluding driveway openings).

2. Side and Rear (within the side and rear yard setbacks):

   i. a minimum of one (1) canopy tree or understory tree every thirty (30) linear feet of side and rear yard or
   a minimum of one (1) canopy tree and one evergreen tree for each fifty (50) feet with the evergreen trees clustered in groups of two or more

   ii. earthen berms, sight proof walls, and/or fences are encouraged, and may be required by the Planning and Zoning Commission.

c. Landscaping to Building Additions

A minimum of two (2) canopy trees; one (1) understory tree; and a sufficient distribution of Type C shrubs for every one-hundred (100) linear feet of exterior building addition, foot print, or portion thereof. The placement of this plant material shall be in the general area of the building addition.

d. Landscaping Accessory Structures

All accessory structures and/or mechanical equipment shall be landscaped around their respective footprints in the following manner:

One (1) evergreen tree per structure side, or one (1) understory tree per every twenty (20) linear feet.

e. Landscaping to New Parking Lots and Parking Lot Additions

1. Landscaping shall be required along all sides of parking lots, paved areas, and drive lanes as follows:

   i. At least one (1) canopy tree per every twenty-five (25) feet; or understory trees per every twenty (20) feet as approved by the Planning and Zoning Commission;

   ii. a sufficient distribution of Type A or Type B deciduous and/or evergreen shrubs as approved by the Planning and Zoning Commission;

   iii. the use of earthen berms, sight proof walls and/or fences is encouraged, and may be required by the Planning and Zoning Commission.

iv. Open space for the interior of parking lot areas shall be determined by the number of proposed parking spaces, as shown below:

Number of Parking Spaces	Required Open Space
Less than 10 spaces	200 sq. ft.
11 to 20 spaces	400 sq. ft.
21 to 30 spaces	600 sq. ft.
31 to 40 spaces	800 sq. ft.
41 to 50 spaces	1,200 sq. ft.
Greater than 50 spaces	1,200 sq. ft. plus additional 100 s.f. for each 10 spaces over 50.

2. Wherever possible, curbed traffic islands shall be located at the ends of parking aisles and shall be landscaped with one canopy tree or understory tree planted at twenty (20) foot centers, including appropriate ground cover.

f. Landscaping Around Trash Enclosures

All exterior trash areas shall be enclosed by a six (6) foot high sight proof fence and the placement of one (1) evergreen tree, per side, or one (1) evergreen tree per every ten (10) linear feet, whichever is greater. This requirement shall not apply to points of ingress/egress.

g. Additional Landscaping

The Planning and Zoning Commission may require additional landscaping when it is their opinion the landscaping requirements as they relate to a particular development do not provide an adequate buffer or screen and the adjoining properties or public right-of-way may be more than normally affected by the proposed development.

4. ALTERATIONS/EXCEPTIONS

In the event strict adherence to the requirements of this Section would serve no meaningful purpose or site conditions make it physically impossible to install and maintain the required landscaping, the Planning and Zoning Commission may alter or exempt these requirements. These alterations or exemptions may occur at the request of the property owner, who must demonstrate to the Planning and Zoning Commission that an alteration or exemption is justified. Criteria for demonstrating this need include having one or more of the following conditions present:

a. There are physical characteristics or defects associated with the land such as a severe ledge or unusual or extreme variations in grade;

b. The parcel of ground has an unusual shape or configuration;

c. There are safety considerations; or

d. The spatial arrangement or size of the existing buildings, structures, and/or other manmade features occupying the parcel of ground are unique.

e. The parcel of ground has space limitations.

5. SUBSTITUTIONS

a. Existing plant material shall be counted as contributing to or utilized as a substitute for the requirements of this Section.

b. The Planning and Zoning Commission may, in lieu of these landscape and buffering requirements, accept a compatible plan prepared by a professional landscaping architect or urban forester that satisfies the intent and spirit of these guidelines.

6. MAINTENANCE REQUIREMENTS

The owner or the owner's agent shall be responsible for providing, protecting, and maintaining all landscaping in a healthy and growing condition. Additionally, the repair or replacement of all fences, walls, and other visual barriers, including refuse disposal area screens, that have fallen into disrepair shall be made when necessary to insure continuous conformance with these requirements.