



BOARD OF ALDERMEN
Work Session Agenda
CITY OF PARKVILLE, MISSOURI
Tuesday, December 17, 2024 6:00 PM
City Hall Board Room

1. GENERAL AGENDA

- A. Proposed Site and Landscape Design Standards to be incorporated into Parkville Municipal Code Chapter 407 (Community Development)

2. ADJOURN

**CITY OF PARKVILLE
Policy Report**

Date: December 11, 2024

Prepared By:

Stephen Lachky, Community Development Director

Reviewed By:

Alexa Barton, City Administrator

ISSUE:

Proposed Site and Landscape Design Standards to be incorporated into Parkville Municipal Code Chapter 407 (Community Development)

BACKGROUND:

Throughout the Architectural Design Standards project, members of the Steering Committee (i.e., Planning and Zoning Commission) expressed interest in reviewing the City's site and landscape design standards contained within Chapter 407 as a separate project. Members of the Community Land and Recreation Board (CLARB) also expressed interest in overhauling the City's landscape design standards.

The City's current landscape requirements were adopted on February 7, 2017, via Ordinance No. 2884, and dictate plant type (e.g., large tree, small or ornamental tree, evergreen, shrub, ground cover, turf), specification (i.e., caliper size and height), plant species (i.e., trees and shrubs according to the Great Trees for the Kansas City Region* tree list [December 2013 revision]) and tree diversity (i.e., number of genus and species per a specific number of trees).

PROJECT COMMENCEMENT:

The Planning and Zoning Commission has been serving as the Steering Committee for this project. A special workshop was held with the Steering Committee on June 11, 2024, to go over the current regulations of Chapter 407 and view proposed amendments from Confluence. Following this meeting, feedback from Commissioners and public comments, the Planning and Zoning Commission and Board of Aldermen held a joint work session on August 20, 2024. Since this meeting, Confluence has held one-on-one meetings with members of CLARB and received additional feedback from City staff and officials; and has prepared a comprehensive update of Chapter 407 via a formal text amendment to the Parkville Municipal Code.

NEXT STEPS:

A formal Application for Text Amendment to Chapter 407 (Case No. PZ 2024-32) has been initiated, and a public hearing was held at the December 10, 2024, regular meeting of the Planning and Zoning Commission. The next step is for the text to be considered by the Board of Aldermen later this evening. As a result, staff felt it'd be beneficial for Confluence to first provide a detailed recap and overview presentation to the Board of Aldermen for informational purposes (see Attachment 1).

BUDGET IMPACT:

Confluence is able to provide professional services for the landscape standards project at a cost of \$8,000 (2024 unbudgeted expense). No professional service agreement with Confluence is required,

as the City already has an on-call agreement with them for professional planning services, and the amount is within the approval authority of the Community Development Director.

ALTERNATIVES:

1. Recommend that the Board of Aldermen and Planning & Zoning Commission provide comments and feedback to Confluence for the Landscape Design Standards project.
2. Table the discussion.

STAFF RECOMMENDATION:

Staff recommends that the Board of Aldermen provide comments and feedback to Confluence for the Landscape Design Standards project.

ATTACHMENTS:

1. Presentation - Landscape Design Standards
2. Proposed Text Amendment - Chapter 407
3. Proposed Text Amendment - Native Plant Materials List



CONFLUENCE

Planning Commission Meeting

SITE & LANDSCAPE DESIGN STANDARDS

Parkville, Missouri

December 10, 2024

CONFLUENCE



Chapter 407. Site and Landscape Design Standards

Proposed Updates

Chapter 407. Site and Landscape Design Standards

- Section 407.010 Intent and Applicability
- Section 407.020 Site and Landscape Design Standards
- Section 407.030 Screens, Fencing, and Site Walls
- Section 407.040 Outdoor Lighting
- Section 407.050 Stormwater Management

❑ Rewrite of Section 407.020 Site and Landscape Design Standards

- Definitions
- Open Space Landscaping Required
- Off-Street Parking, Driveways and Loading Areas
- Plant Location Standards
- Minimum Plant Sizes
- Plant Species (*updated language*)
- Plant Substitutions
- Credits for Existing Vegetation
- Maintenance and Replacement

❑ Addition to Section 407.030 Screens, Fencing, and Site Walls

- New language for walls and retaining walls

❑ Addition to Section 407.040 Outdoor Lighting

- New language on visual character

Chapter 407. Site and Landscape Design Standards

Proposed Updates

❑ Chapter 407. Site and Landscape Design Standards

- **Section 407.010 Intent and Applicability**
 - A. Intent
 - B. Applicability
- **Section 407.020 Site and Landscape Design Standards**
 - A. Definitions
 - B. Open Space and Landscaping Required
 - 1. Site Design Standards
 - 2. Open Space Required
 - 3. Open Space Landscaping Required
 - 4. Building Foundation Plantings
 - 5. Streetscape Landscaping
 - C. Off-Street Parking, Driveways, and Loading Areas
 - 1. Parking Lot Design
 - 2. Landscaping Required
 - 3. Parking Lot Screening
 - D. Plant Locations
 - E. Minimum Plan Sizes
 - F. Plant Species
 - G. Plant Substitutions
 - H. Credits for Existing Vegetation
 - I. Design and Performance Criteria
 - J. Maintenance and Replacement

Chapter 407. Site and Landscape Design Standards

Section 407.010. Intent And Applicability.

A. Intent. It is the intent of this Chapter is to:

1. Improve the aesthetic character of development with natural landscape materials, and in particular emphasize distinct areas throughout the community as reflected in the Master Plan or any specific plans.
2. Improve the functional aspects of site design to provide safe and efficient circulation of vehicular, pedestrian, and bicycle users to improve connectivity between adjacent streets, sidewalks and trails with new development and redeveloped sites.
3. Coordinate landscape and design amenities across multiple sites, with special attention to the relationship between lots and streetscapes and improving the character of districts and neighborhoods.
4. Enhance the environmental and ecological function of unbuilt portions of sites, including reduced air or water pollution and reduced heat gain from large expanses of blank walls or paved surfaces.
5. Screen and mitigate the visual, noise or other impacts of high-intensity areas of sites, buildings and land uses.
6. Enhance the functional and aesthetic appeal of site grading solutions to improve each development's relationship with the existing site and surrounding site context, including provisions for the use of retaining walls and site walls.

Chapter 407. Site and Landscape Design Standards

Section 407.010. Intent And Applicability.

B. Applicability.

1. The standards of this Chapter shall apply to all new development except:
 - a. Detached houses and duplexes being built on an individual basis and on a previously platted lot, and which are not part of a larger residential neighborhood or subdivision plan; and
 - b. Improvements or repairs to existing development that do not result in an increase in building footprint by more than ten percent (10%), an increase in impervious surface, or changes in use that do not result in an increase in intensity.
2. In cases where improvements or repairs increase the building footprint by more than ten percent (10%), increase the impervious surface or intensity of use, the intent is to bring the site into full compliance with these standards, except that the Director or Planning Commission may prorate the requirements to the extent of new development on the site where full compliance is not possible or practical.

Chapter 407. Site and Landscape Design Standards

Section 407.020. **Site and Landscape Design Standards.**

A. Definitions. The following terms are defined for this Article:

1. **Deciduous Ornamental Tree.** A deciduous tree (often an ornamental type tree) that reaches a mature height of less than 30 feet.
2. **Deciduous Shade Tree.** Defined as a deciduous tree with one vertical stem or trunk which begins branching at a height of six (6) feet or more and has a distinct crown that reaches a mature height of at least 30 feet.
3. **Evergreen / Coniferous Tree.** Defined as a tree that has needle-shaped or scale like leaves that remain green throughout the year; commonly referred to as pine, fir, and spruce trees. These trees generally reach a mature height of over 25 feet.
4. **Green Mulch.** Defined as a layer of plants that are closer to the ground, such as grasses, sedges, or other groundcovers, that can be used to support taller plants.
5. **Invasive Plant Species.** A plant reproducing outside its native range and outside cultivation that disrupts naturally occurring native plant communities by altering structure, composition, natural processes or habitat quality.
6. **No Mow Grass.** Defined as a type of grass that grows slowly and does not need to be mowed frequently.

Chapter 407. Site and Landscape Design Standards

Section 407.020. **Site and Landscape Design Standards.**

A. Definitions. The following terms are defined for this Article: **(continued)**

- 7. Open Space.** Any area not covered by a building, structure, parking lot, loading area, driveway, or other similarly paved area. Open space may include sidewalks, trails, pedestrian plazas and patios, and landscaped parking lot islands.
- 8. Ornamental Grasses.** Defined as tall perennial grasses, generally over 24-inches at mature height, that are specifically grown and cultivated for their decorative properties. Most of the commonly used ornamental grasses are non-native, introduced species such as: Feather Reed Grass, Blue Oat Grass, Silvergrass, and Fountain Grass.
- 9. Prairie Grass Plantings.** Native grasses and forbs (flowering plants) found within the native prairie environment typical for the area prior to clearance and cultivation of the land by European settlers. For the purposes of this Article, prairie plantings may contain native grasses without forbs to simplify prairie plant installation and maintenance.
- 10. Turf Grass.** A continuous plant coverage consisting of a grass species that is mowed or maintained at an established height of 6 inches or less and can include native and non-native vegetation, e.g., Kentucky Blue Grass, Perennial Ryegrass, Tall Fescue, Fine Fescue, Buffalo Grass.
- 11. Xeriscaping.** Defined as the practice of landscaping with slow-growing, drought tolerant plants to conserve water and reduce yard trimmings.

Chapter 407. Site and Landscape Design Standards

Section 407.020. **Site and Landscape Design Standards.**

B. Open Space and Landscaping Required.

1. **Site Design Standards.** The site layout plan shall indicate the placement of each building (ground floor plan of the building with door and window placement noted), public streets, private drives and driveways, sidewalks, site walls, mechanical units, and above grade utility infrastructure (utility poles, light poles, utility boxes, meters, etc.). The following items shall be integrated into the design of site plan improvements:
 - a. **Pedestrian Access.** Each project site shall include a minimum 4' width concrete sidewalk connection to provide access from the adjacent public street or private drive through the proposed site (including through parking lots) to the front door of the proposed building and any other required doors. Any sidewalk that is placed adjacent to or within 2 feet of a curb (edge of pavement) of a public street, private drive shall be a minimum of 6' width to address pedestrian safety and comfort.
 - b. **Bicycle Access.** See city code Section 408.030.D for bicycle parking requirements.
 - c. **Above-Grade Site Utilities.** Each project shall properly coordinate the proposed locations of above-grade utilities to consolidate their location(s) on the site to the extent practical. The intent is minimizing locations that can each be adequately buffered with landscape plantings and/or other improvements to enhance the visual appearance of the site.
 - d. **Roof/Site Drainage.** Each project shall properly design and coordinate the proposed locations and alignment of roof and site drainage, including any downspouts or other devices designed to convey stormwater, to avoid creating situations where water runoff flows over and/or pools on pedestrian walkways, trail connections, and high-traffic parking areas and driveways. Methods such as connecting roof drains directly to underground stormwater drainage systems or conveying stormwater at-grade to and through integrated green infrastructure improvements should be used to create a safe environment for pedestrian and vehicle circulation.

Chapter 407. Site and Landscape Design Standards

Section 407.020. **Site and Landscape Design Standards.**

B. Open Space and Landscaping Required.

1. **Site Design Standards.** The site layout plan shall indicate the placement of each building (ground floor plan of the building with door and window placement noted), public streets, private drives and driveways, sidewalks, site walls, mechanical units, and above grade utility infrastructure (utility poles, light poles, utility boxes, meters, etc.). The following items shall be integrated into the design of site plan improvements: **(continued)**
 - e. **Site Sections.** Each project shall provide at least one overall scaled site section drawing (accurately depicted – no vertical exaggeration), the selection of which shall be in consultation with the Director of Planning. The Director may require other site sections to be created to fully illustrate proposed site development conditions and site grading. The site section shall accurately depict public and private streets adjacent to the project site while illustrating the relationship of view sheds and site lines from adjacent properties and streets to the subject site, and shall include buildings, parking and retaining walls to indicate proposed site development conditions. If the site sections and submitted information do not provide adequate information to properly illustrate proposed development conditions, the Director and/or Planning Commission may require additional exhibits or perspective illustrations to accurately portray proposed development conditions and to assist in the City's evaluation of the application.
2. **Open Space Required.** All sites shall provide no less than the minimum amount of landscaping as required for each zoning district. (See Table 404-6.)

Chapter 407. Site and Landscape Design Standards

Section 407.020. **Site and Landscape Design Standards.**

B. Open Space and Landscaping Required. *(continued)*

2. **Open Space Landscaping Required.** All landscape plans shall be prepared and stamped by a Landscape Architect licensed to practice in the State of Missouri.

a. Ground Cover. All areas unencumbered by buildings, paving or hard surfacing, shall be landscaped with turf grass, prairie grass plantings, plant beds, green mulch, xeriscaping, shrubs, and trees.

b. Use of Mulch. Except for single-family and duplex dwellings, wood-based mulch shall be used around all plantings and in all plant beds. Large areas of wood mulch that do not contain plantings shall not be permitted except when used around play structures. Inorganic ground cover material, including rock, chip brick, and synthetic turf (unless part of a designated sport field or play surface), is prohibited except along building foundations, around drainage structures, and in other limited applications as may be deemed acceptable by the Director of Planning.

c. Minimum Open Space Landscape Requirements. Each single-family and duplex dwellings constructed after the adoption of this ordinance shall be required to plant a minimum of two (2) trees (ornamental or shade) per lot or unit prior to the issuance of an occupancy permit. With the exception of single-family and duplex dwellings, the following minimum open space plantings shall be required for all sites:

- 1) One (1) deciduous shade tree, two (2) deciduous ornamental trees, and two (2) shrubs shall be planted for every 2,000 square feet of required open space. However, the minimum required landscape for all sites shall be no less than one (1) deciduous shade tree, two (2) deciduous ornamental trees, and two (2) shrubs.
- 2) This landscaping is in addition to landscaping required for street frontage and parking lot landscaping. Open space plant materials shall not count towards the fulfillment of any other landscaping requirement.

Chapter 407. Site and Landscape Design Standards

Section 407.020. **Site and Landscape Design Standards.**

B. Open Space and Landscaping Required. *(continued)*

4. **Building Foundation Plantings.** Except for single-family and duplex dwellings, low to medium height plant materials (shrubs, ornamental grasses, perennials) shall be planted and maintained **along 100%** of the street facing building foundation lines where not impeded by building entrances, loading areas and sidewalks. Foundation plant materials shall not count towards the fulfillment of the required open space landscaping.
5. **Streetscape Landscaping.** The following street frontage landscaping shall be required for all sites except for single-family and duplex dwellings. One overstory street tree shall be required for every 40 feet of public or private street frontage. A periodic cluster of **at least five (5)** ornamental grasses and/or shrubs shall be repeated along the streetscape at an average interval of one (1) cluster or grouping for every 20 feet of frontage. The required streetscaping may be arranged with varying spacing and need not be placed evenly at 40-feet and 20-feet intervals in order to address placement restrictions related to underground and overhead utilities, streetlights, driveways, and street intersections. These plantings are **required to be located within 15'** of the street right-of-way and may be located within the public street right-of-way, if approved by the City.

Chapter 407. Site and Landscape Design Standards

Section 407.020. Site and Landscape Design Standards.

C. Off-Street Parking, Driveways and Loading Areas. *(This section C is intended to replace Section 408.050.B)*

The following standards shall apply to all off-street parking and loading areas with ten (10) or more parking stalls or with more than 2,500 square feet of paved area. Off-street and loading area required plant materials shall not count towards the fulfillment of any other landscaping requirement.

1. Parking Lot Design.

- a. No dead-end parking lots or private drives will be permitted, as these create safety hazards for vehicular and pedestrian circulation. All site plans shall be designed to provide internal driveways and drive connections allowing vehicles to circulate through the site and all parking areas safely and efficiently.
- b. Parking islands with landscape plantings shall be located at the ends of each parking row to properly demarcate and buffer the parking stalls from adjacent driveways and drive aisles. These parking islands need to be configured with concrete curbs at a minimum of 9 feet wide (measured from back of curb to back of curb) and a length that matches the length of the adjacent parking stalls.
- c. Parking islands matching the above criteria shall be required to be integrated into each parking lot layout such that no more than a maximum of 10 contiguous parking stalls is provided in any given row of parking.
- d. No off-street parking or loading area shall be more than 100 feet from the center of an existing or proposed deciduous shade tree located within a landscaped open space area.
- e. Sidewalks that abut the front edge of any parking stall shall be no less than seven (7) feet wide to accommodate a two (2) feet vehicle overhang.

Chapter 407. Site and Landscape Design Standards

Section 407.020. **Site and Landscape Design Standards.**

C. Off-Street Parking, Driveways and Loading Areas. (continued)

2. Landscaping Required.

- a. All parking lot islands shall be landscaped with a combination of turf grass, no mow grass, prairie grass, shrubs, perennials, and trees with no less than three (3) different landscape materials being utilized.
- b. Turf grass, no mow grass, prairie grass, shrubs or perennials within parking lot islands shall not exceed 24 inches in height as to maintain visibility within parking lot.
- c. Crushed rock, chip brick, pavers, pavement, and similar hard surfacing shall not be permitted unless utilized as a necessary curb apron. Larger rock (2" or greater) shall not be permitted.
- d. Sidewalks in parking lot islands and medians may be permitted as necessary (in addition to the landscape requirements) to accommodate pedestrian circulation.
- e. One (1) deciduous shade tree shall be planted within each landscaped island.
- f. Quality soil shall be placed within each landscape island to a depth of 18 inches. Soil within islands shall be tested and amended accordingly, prior to tree planting, to ensure long term growth success for the tree. If parking lot island minimums cannot be achieved, structural soils and/or Silva cells will need to be considered as adequate alternatives for tree growth.
- g. Shade trees shall be evenly distributed throughout the parking lot to maximize shade.

Chapter 407. Site and Landscape Design Standards

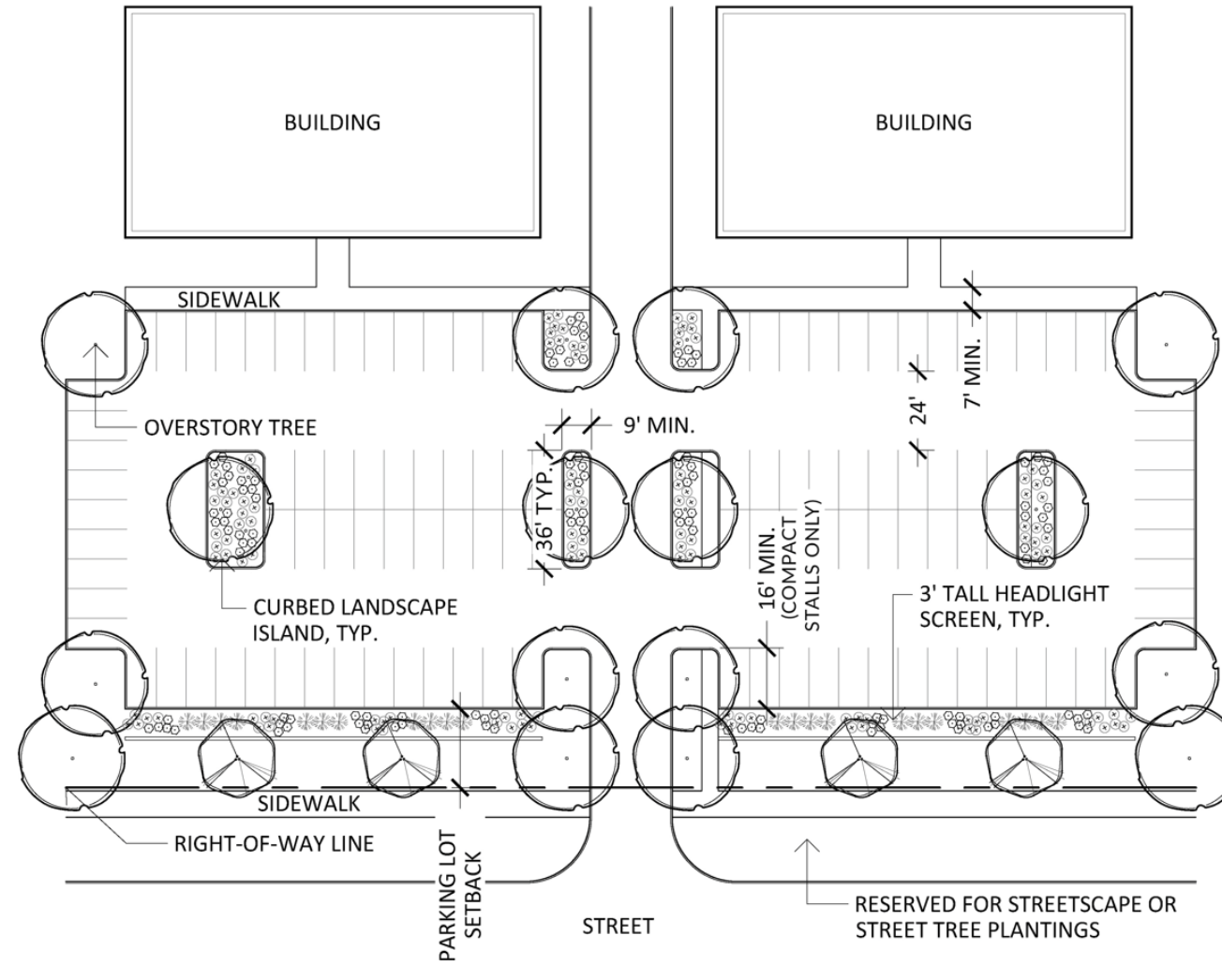
Section 407.020. Site and Landscape Design Standards.

C. Off-Street Parking, Driveways and Loading Areas. (continued)

3. Parking Lot Screening.

- a. Whenever an off-street parking area is placed along a public street or a private drive, a ratio of one (1) deciduous shade tree and two (2) deciduous ornamental trees shall be planted every 50 feet within the parking lot setback area (the area between the parking lot and adjacent street/drive).
- b. Additionally, a minimum three (3) foot tall vehicle headlight screen shall be installed between the parking lot and the adjoining street or private drive. These plantings shall be a minimum of 24" height at time of planting, and are in addition to the streetscape landscape requirements outlined herein. This screen can be constructed with any combination of prairie plantings, shrubs, ornamental grasses, earth berming, and low masonry walls.

PARKING LOT LANDSCAPING



Chapter 407. Site and Landscape Design Standards

Section 407.020. **Site and Landscape Design Standards.**

D. Plant Locations. All plantings shall comply with the following:

1. In general, all plants shall be sited and spaced in a manner to allow for appropriate growth to mature size.
2. Trees shall be located no closer than six (6) feet to the back of curb along any street or driveway and no closer than four (4) feet to the edge of any parking lot, sidewalk or walkway.
3. Ornamental and prairie grasses with a mature height of over four (4) feet shall not be permitted within the front yard area of any residential property.
4. Landscaping must meet minimum clearances from all fire hydrants and building sprinkler systems as required by the fire department.
5. Deciduous shade trees should not be placed within any public sanitary sewer, storm sewer or watermain utility easement.
6. No landscaping shall be planted or allowed to grow in violation of the City's sight distance triangle for corner lots
7. A permit must be obtained prior to planting any street tree or landscape material in the public right-of-way and shall comply with all City clearance and setback requirements.

Chapter 407. Site and Landscape Design Standards

Section 407.020. **Site and Landscape Design Standards.**

E. Minimum Plant Sizes. All plant sizes shall meet the following size and design requirements:

1. **Deciduous Shade Trees.** Minimum 2.0-inch caliper measured six (6) inches above the immediate ground level.
2. **Deciduous Ornament Trees.** Minimum 1.5-inch caliper measured six (6) inches above the immediate ground level.
3. **Evergreen / Coniferous Tree.** Minimum 6-feet in height.
4. **Shrubs.** Minimum three (3) gallon container.
5. **Ornamental Grasses.** Minimum one (1) gallon container.

Chapter 407. Site and Landscape Design Standards

Section 407.020. Site and Landscape Design Standards.

F. Plant Species. All trees and shrubs shall be non-invasive species, with a minimum of 60% of the selected plant material selected from the listing of *Native and Native Cultivar Plant Materials*. Other trees selected for use will be selected from the listing of *Great Trees for the Kansas City Region*. Both of these lists are incorporated in Appendix B.[1] The Director of Community Development is authorized to supplement and amend the list of required, preferred, and prohibited plant species. In addition to any species on these lists, alternative plant material may be proposed and considered by the Director of Community Development as part of the site plan submittal and review process, such as an updated list provided by CLARB, provided that they:

1. Are documented by a landscape architect or other credible information comparable in type and performance to any species on this list;
2. Are adaptable to the climate of the metropolitan region and the specific conditions in which they are proposed; and
3. Are not invasive or otherwise problematic to the overall health of the landscape.

Chapter 407. Site and Landscape Design Standards

Section 407.020. **Site and Landscape Design Standards.**

G. Plant Substitutions. Substitution of required plant materials may be considered by the City as follows, so long as the parking screening requirements are still met as a result of any substitution:

1. One (1) deciduous shade tree may be substituted in place of 10 required shrubs.
2. One (1) deciduous ornamental tree may be substituted in place of five (5) required shrubs.
3. One (1) evergreen/coniferous tree may be substituted in place of one (1) required deciduous shade tree.
4. One (1) deciduous shade tree may be substituted in place of two (2) required deciduous ornamental trees. Deciduous ornamental trees may not be substituted for required deciduous shade trees.
5. Three (3) ornamental grasses may be substituted for one (1) required shrub.

H. Credits for Existing Vegetation. Successful incorporation of existing and healthy vegetation that meets these performance criteria may be credited towards any landscape requirement. Credits shall be on a one-for-one basis for any vegetation that meets the minimum specifications, except that landscape material more than three (3) times the **minimum** specified size or otherwise of exceptional quality **(as determined by the Director of Community Development)** may be credited on a two-for-one basis.

Chapter 407. Site and Landscape Design Standards

Section 407.020. Site and Landscape Design Standards.

I. Design and Performance Criteria. Design and Performance Criteria. In addition to the above planting requirements, all landscape plans shall be designed according to the following performance criteria, and in individual cases additional plantings may be warranted in order to meet these criteria:

1. Existing natural features of the site, such as groves of trees, extreme slopes, areas intended to serve as buffers and areas not intended for development, shall be retained and incorporated into the design to the maximum extent practical.
 - a. Extreme or steep slopes are defined as having a grade of twenty-five percent (25%) or greater, meaning that the elevation increases by twenty-five (25) feet over a horizontal distance of one hundred (100) feet.
 - b. Extreme or steep slopes shall be identified on all development plans.
 - c. For instances where extreme or steep slope areas are disturbed or graded, the Director of Public Works may require **adequate slope stabilization measures and protection be installed integrating** trees, sod or other vegetative materials be placed or planted in these areas to protect the hillside.
 - d. The Director of Public Works may request an engineering, soil conditions or other related studies - prepared by an engineer certified in the State of Missouri - for development within extreme or steep slope areas.

Chapter 407. Site and Landscape Design Standards

Section 407.020. Site and Landscape Design Standards.

I. Design and Performance Criteria. Design and Performance Criteria. In addition to the above planting requirements, all landscape plans shall be designed according to the following performance criteria, and in individual cases additional plantings may be warranted in order to meet these criteria: **(continued)**

2. Landscape areas shall be utilized to the maximum extent possible for natural stormwater mitigation practices and to satisfy stormwater management criteria. Examples of natural stormwater mitigation and green infrastructure practices include filter strips, vegetative swales, rain gardens, pervious pavement systems and sand filters.
3. Native plants and vegetation shall be utilized to the maximum extent reasonable, i.e., drought tolerant plants should be planted in landscape islands and water-resistant plants should be planted near stormwater retention facilities.
4. All required landscape and open space areas shall remain free of debris and refuse and be appropriately maintained.
5. Designs shall best integrate sites and projects into their surroundings or promote any distinct characteristics of the area identified in the Master Plan or any specific plans.
6. Designs should emphasize any focal points of an area or project and pay particular attention to the relationship with the streetscapes.

Chapter 407. Site and Landscape Design Standards

Section 407.020. **Site and Landscape Design Standards.**

J. Maintenance and Replacement.

1. **Maintenance.** All property owners shall maintain all landscaping including regular mowing, trimming, and pruning and removal of dead, dying, or diseased plant material and keep the property clear from weeds, debris, and litter. Plant material shall be regularly trimmed and pruned to keep from encroaching sidewalks, walkways, driveway, and parking areas.
2. **Replacement.** The owner of any lot or parcel for which a landscape plan has been approved under this Article shall further be responsible for the replacement of any dead, dying, or diseased plant material to remain in compliance with the approved landscape plan. Should a tree for which a landscape credit was given, die, become diseased, or is otherwise removed, the owner of the property on which the tree is located shall replace the tree at the same ratio at which the credit was originally given. Failure to maintain the landscaping in accordance with this provision shall constitute a violation of the site's site plan and/or building permit approval and certificate of occupancy.

Chapter 407. Site and Landscape Design Standards

Proposed Updates

❑ Chapter 407. Site and Landscape Design Standards

- **Section 407.030 Screens, Fencing, and Site Walls**
 - A. Buffer Types
 - B. Buffer Requirements
 - C. Fence Specifications
 - D. Freestanding Site Walls
 - E. Site Retaining Walls
 - F. Design and Performance Standards
- **Section 407.040 Outdoor Lighting**
 - A. Visual Character
 - B. Mounting Height
 - C. Shielding
 - D. Design and Performance Criteria
- **Section 407.050 Stormwater Management**
 - A. General Requirements
 - B. Best Management Practices
 - C. Stream Buffer Protection

Chapter 407. Site and Landscape Design Standards

Section 407.030. Screens, Fencing, and Site Walls.

D. Freestanding Site Walls. All freestanding site walls for screening, security, or privacy shall meet the following standards:

1. Front And Street-Side Site Walls. All freestanding site walls in front of the front building line, or on both street sides of corner lots shall:
 - a. Be limited to no higher than forty -two (42) inches; and
 - b. Any site wall constructed shall be constructed with materials complementing the architectural style and materials of the principal building; and
 - c. Be placed on the site to visually buffer views to parking lots, service areas, and above-grade utility infrastructure to inhibit direct views from adjacent public streets and private drives within the development.
2. Rear And Side Site Walls. All rear and interior side site walls located behind the front building line:
 - a. Shall be limited to no higher than six (6) feet, or up to seven (7) feet in all non-residential districts.

Chapter 407. Site and Landscape Design Standards

Section 407.030. Screens, Fencing, and Site Walls.

D. Freestanding Site Walls. All freestanding site walls for screening, security, or privacy shall meet the following standards: **(continued)**

3. Other Site Wall Design Standards.

- a. Any site wall that could potentially create a sight obstruction for vehicles crossing pedestrian areas or entering the street may require the integration of fencing or other visually permeable design treatments to afford greater transparency or additional location restrictions to allow for safe sight distances for vehicles, pedestrians and bicyclists.
- b. All site walls located along adjacent lot lines shall be constructed so that either:
 - 1) The site wall is on the property line; or
 - 2) The site wall is at least three (3) feet from the property line. Any areas set back three (3) feet or more from the property line, which could become enclosed by other similarly located site walls or fences, shall provide at least one (1) architecturally appropriate gate for access and maintenance equipment.
- c. All site walls shall be constructed so that all readily visible sides of the wall are finished and match the adjacent architecture style and materials of the principal building.
- d. Site walls shall be constructed out of any of the following materials:
 - 1) Natural stone or brick to match building architecture.
 - 2) Concrete or CMU core wall with stone or brick veneer to match building architecture.
 - 3) Precast concrete panels to match building architecture.

Chapter 407. Site and Landscape Design Standards

Section 407.030. Screens, Fencing, and Site Walls.

E. Site Retaining Walls. All site walls used as retaining walls shall meet the following standards:

1. Be limited in height to six (6) feet; and
2. Be limited in placement to a minimum distance of four (4) feet of another retaining wall (existing or proposed); and
3. If a site proposes the use of more than one retaining wall to address grading conditions, the area between these retaining walls shall be fully landscaped and shall have a maximum slope of 4:1 (25%); and
4. Any retaining wall that could potentially impede the visibility of vehicles crossing pedestrian areas or connections with streets/drives may require additional location restrictions to allow for safe sight distances for vehicles, pedestrians and bicyclist; and
5. Any retaining wall shall be constructed with durable materials complementing the architectural style and materials of the principal building such as:
 - a. Natural stone or brick to match building architecture.
 - b. Concrete or CMU core wall with stone or brick veneer to match building architecture.
 - c. Precast concrete panels to match building architecture.
 - d. Modular concrete unit walls with wall caps and a decorative finish.
6. Any retaining wall over four (4) feet in height shall be designed by a licensed professional with competency in the design of retaining walls.

Chapter 407. Site and Landscape Design Standards

Section 407.030. Screens, Fencing, and Site Walls.

- F. Design And Performance Standards.** Buffers, screens, fences, and **site/retaining walls** shall be designed to meet the following performance standards. In addition to the requirements specified for each buffer type, the arrangement of plants, grading or berming of land, or inclusion of fences, walls or other screens may be necessary to meet these design and performance standards.
1. Eliminate glare from traffic internal to the site, outdoor lighting or other operations on the site.
 2. Mitigate noise to comparable ambient noise levels found by other compatible uses throughout the area or district.
 3. All buffers, screens, fences and **site/retaining walls** shall meet the proper lines of site at all intersections of streets, all driveway entrances and the intersection of internal access streets. The proper lines of site shall be based upon the control of the intersection or access, the stopping point, and the expected speeds of oncoming traffic as provided in Section 404.010(E)(2).
 4. All high-impact site elements, such as trash enclosures, service and loading areas, utility and mechanical equipment, or outdoor storage, shall be located on remote portions of sites away from streetscapes, public view and from adjacent residential property. In cases where these facilities are near interior boundaries which may impact abutting property, a combination of Level 1 and Level 2 buffers shall be designed to limit potential impacts.
 5. Trash receptacles, in addition to perimeter buffers for the site, shall be located on a remote area and stored inside a structure or enclosure compatible with the **architectural** design and materials of the **proposed buildings**. Enclosures shall be constructed of a durable material designed to withstand regular use by heavy equipment, including masonry, steel, and **architectural metal panels**.

Chapter 407. Site and Landscape Design Standards

Section 407.040. Outdoor Lighting.

- A. Visual Character.** The physical appearance of all exterior lighting, poles, and related appurtenances for sites located within a larger, multi-tenant project area shall match the visual character and performance standards of lighting used on adjacent sites throughout the larger project area. The intent is to create aesthetic consistency in the use and appearance of these lighting improvements throughout the entire development – even if this development occurs through phased implementation. If light fixtures matching those of adjacent development sites is no longer available, or if there is a functional need to modify the lighting equipment used, the applicant will notify the City and make every effort to select fixtures and equipment that match or substantially replicate the aesthetic appearance of adjacent site lighting. Light fixtures should be LED type and generate a soft white or near white light.
- D. Design And Performance Criteria.** In addition to the mounting height and shielding standards, exterior site lighting shall meet the following design and performance standards:
1. All lighting shall be designed and located to not provide direct light or glare onto any adjacent property.
 2. All lighting shall be reduced to levels necessary only for security purposes within one (1) hour after closing of the business.
 3. All facade lighting and or other externally illuminating lights shall use shielded, directional fixtures, designed and located to minimize uplighting and glare.
 4. All site and area lighting should be directed downward (not upward) to avoid creating light pollution and the potential for conflicts with adjacent properties. Buildings and landscaping may use accent lighting that aim certain lights upward to highlight various features, providing that measures are taken to limit the spill of this lighting off-site to avoid creating a negative impact for adjoining uses.

Chapter 407. Site and Landscape Design Standards

Section 407.060 Submittal Requirements

As part of the review and approval process for any new building, building addition, or site improvement, the following information shall be submitted. The Zoning Administrator may request additional information as necessary to show compliance with this chapter and may further waive any informational item determined not to be necessary for the review of the proposed building for compliance with this chapter.

- A. An existing conditions site plan (at a measurable scale) depicting a base map of the subject property including a minimum of 200' of area surrounding all sides of the subject property. The site plan shall include existing grading and topography, existing tree locations, adjacent streets, drives and pavement areas, existing buildings, existing streams, ponds or other water bodies, and other unique features of the existing site. Areas where existing slopes exceed 25% should also be noted on the plan.
- B. A proposed site development plan (at a similar measurable scale) depicting the proposed improvements to the site including all pavement, sidewalks, site and retaining wall locations, buildings, driveways, parking stalls, site lighting, site grading including topography, anticipated development sign locations, and utility infrastructure proposed to serve the site.
- C. A proposed site landscape plan (at a similar measurable scale) depicting all existing site vegetation to remain and all proposed landscape planting improvements. This plan shall include a detailed table outlining the amount, type and size of landscape plantings required for each identified area of the site, as well as the amount, type, and size of landscape plantings provided for each identified area of the site. This plan shall also detail the minimum requirement of 60% use of native and native-cultivar plants. Any requested deviations or substitutions are required to be clearly noted on the plan along with the rationale supporting the request.
- D. All site section illustrations prepared for the development application shall include proposed landscape planting types and locations depicting the mature height of plantings.
- E. All landscape plans shall be prepared and stamped by a Landscape Architect licensed to practice in the State of Missouri.

Comments + Consideration

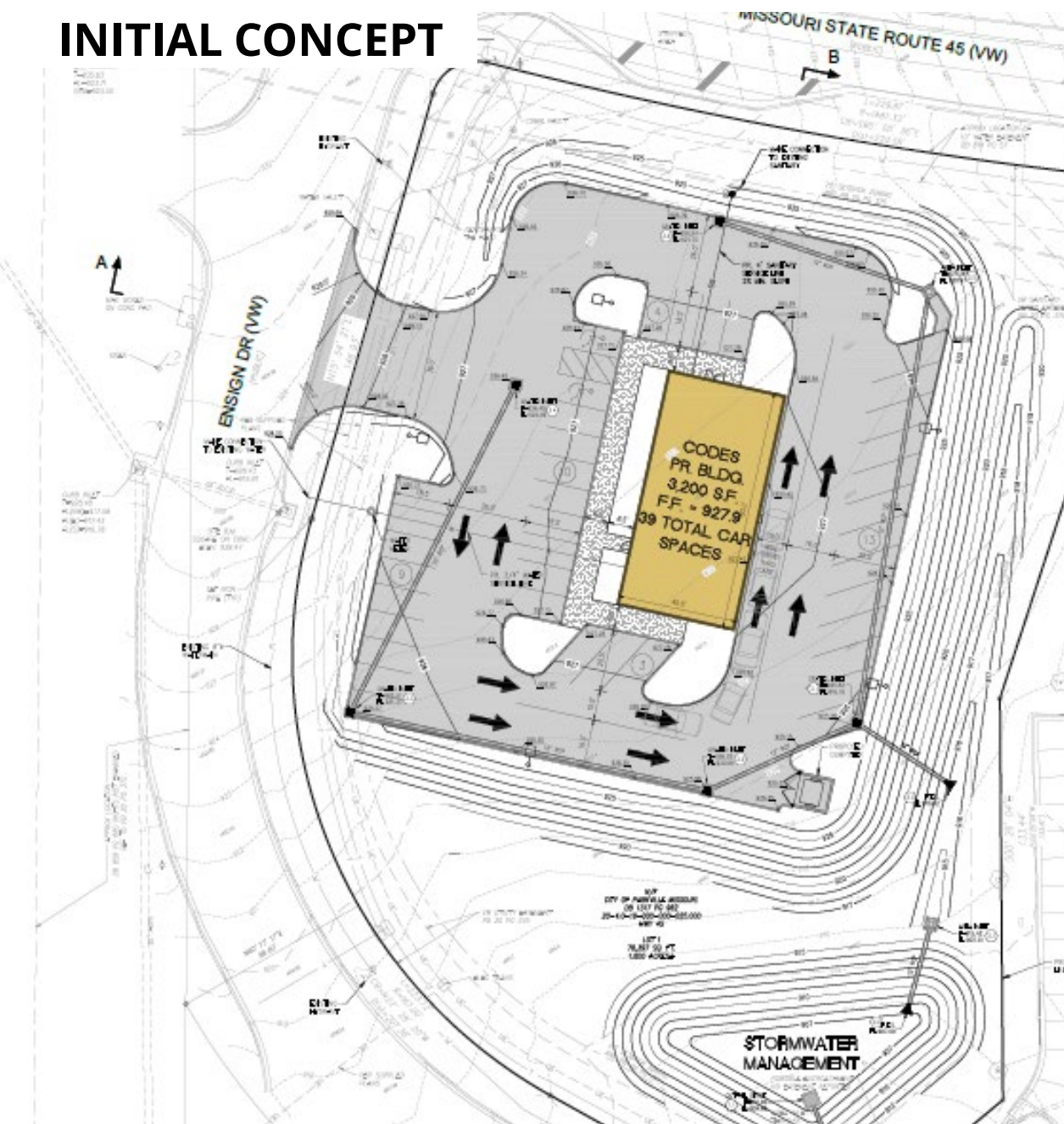
Our team received comments from Alderman, Planning Commissioners, CLARB Members, Development Representatives, and others throughout this process. We've reviewed and tried to balance each of these comments with those of other parties and with best practices for properly guiding future landscape and site design projects.

A quick synopsis is provided below:

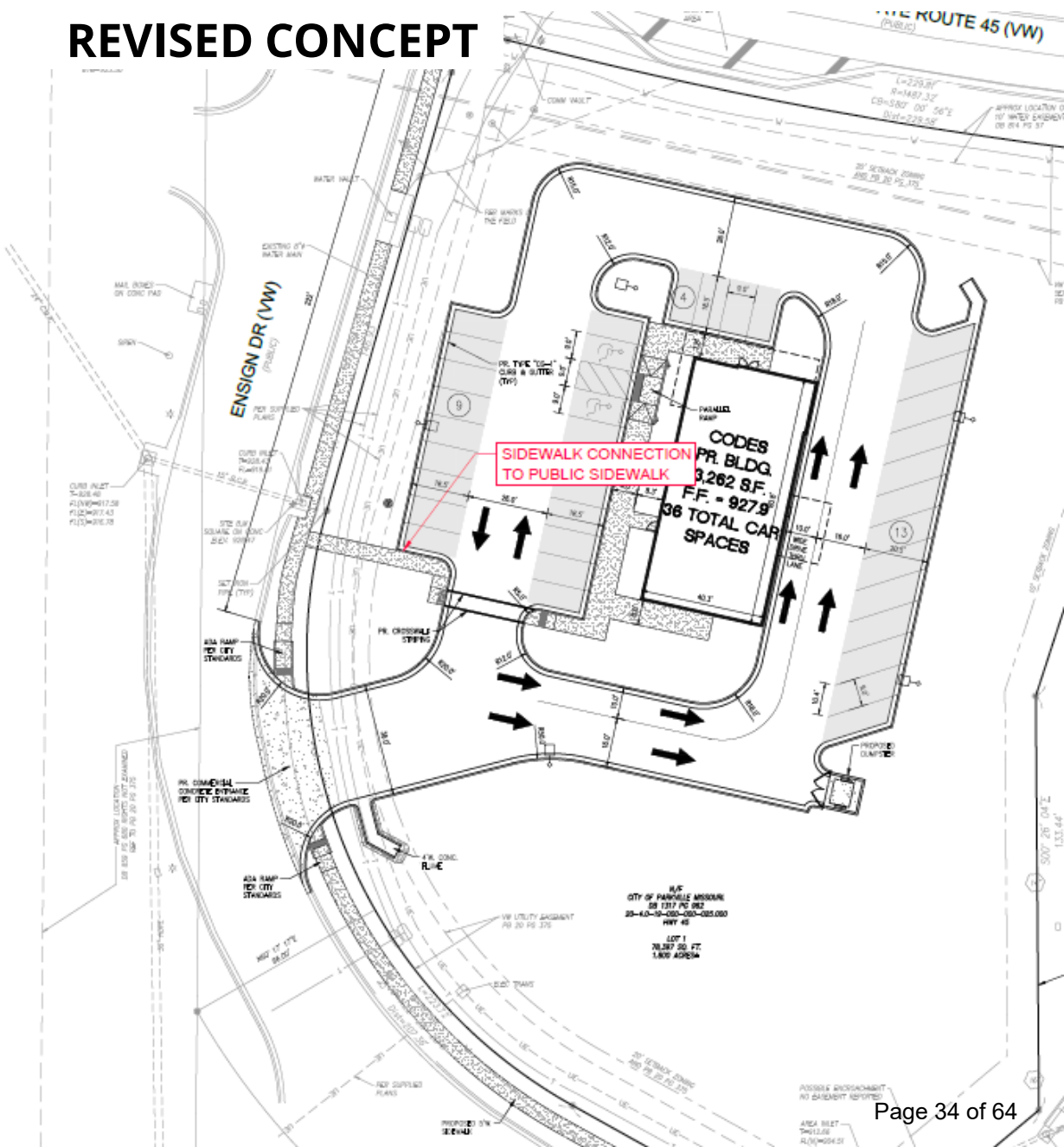
1. **Native Planting Requirement** - Our recommendation is for Parkville to begin implementing the native planting requirements for all projects at the 60% threshold. This positions Parkville as a leader in sustainability and resilience planning within the KC Metro – and we believe this is something our market can support. This requirement can be revisited in a year or so to decide if there is a desire to modify this percentage over time.
2. **Definitions** – We've received a few definition requests from a variety of sources. We believe it's best to include definitions within the document to provide more control for the City of Parkville than having to rely on third-parties to modify definitions or lists over time
3. **Third-Party References** – We believe it's advisable for the City to be in control of definitions, lists of plants, etc. while still maintaining flexibility for the City's ability to take new information into account and to easily update these lists from time to time instead of relying on third party sources/references.
4. **City Flexibility** – We recommend maintaining the City's ability to take new information into account and to update these definitions and plant lists from time to time as appropriate – and in keeping with the intent of these guidelines.
5. **Green Mulch** – We included a definition for green mulch. We included wood mulch in the requirements, as it is recommended anytime new plantings are being installed. In our opinion, green mulch typically occurs after plants fully mature and grow to their intended size (wherein additional mulch may not be needed). That is seldom, if ever, the case with a new planting project. The plants are planted at a small size that eventually grow larger. The addition of wood mulch helps in this interim period of plant establishment.

Draft Guidelines – Results to Date

INITIAL CONCEPT



REVISED CONCEPT



Planning Commission Meeting

SITE & LANDSCAPE DESIGN STANDARDS

Parkville, Missouri

December 10, 2024

CONFLUENCE



Chapter 407. Site and Landscape Design Standards

Section 407.010 Intent and Applicability

Section 407.020 Site and Landscape Design Standards

Section 407.030 Screens, Fencing, and Site Walls

Section 407.040 Outdoor Lighting

Section 407.050 Stormwater Management

Section 407.010. Intent And Applicability.

A. **Intent.** It is the intent of this Chapter is to:

1. Improve the aesthetic character of development with natural landscape materials, and in particular emphasize distinct areas throughout the community as reflected in the Master Plan or any specific plans.
2. Improve the functional aspects of site design to provide safe and efficient circulation of vehicular, pedestrian, and bicycle users to improve connectivity between adjacent streets, sidewalks and trails with new development and redeveloped sites.
3. Coordinate landscape and design amenities across multiple sites, with special attention to the relationship between lots and streetscapes and improving the character of districts and neighborhoods.
4. Enhance the environmental and ecological function of unbuilt portions of sites, including reduced air or water pollution and reduced heat gain from large expanses of blank walls or paved surfaces.
5. Screen and mitigate the visual, noise or other impacts of high-intensity areas of sites, buildings and land uses.
6. Enhance the functional and aesthetic appeal of site grading solutions to improve each development's relationship with the existing site and surrounding site context, including provisions for the use of retaining walls and site walls.

B. **Applicability.**

1. The standards of this Chapter shall apply to all new development except:
 - a. Detached houses and duplexes being built on an individual basis and on a previously platted lot, and which are not part of a larger residential neighborhood or subdivision plan; and
 - b. Improvements or repairs to existing development that do not result in an increase in building footprint by more than ten percent (10%), an increase in impervious surface, or changes in use that do not result in an increase in intensity.
2. In cases where improvements or repairs increase the building footprint by more than ten percent (10%), increase the impervious surface or intensity of use, the intent is to bring the site into full compliance with these standards, except that the Director or Planning Commission may prorate the requirements to the extent of new development on the site where full

compliance is not possible or practical.

Section 407.020 Site and Landscape Design Standards

A. **Definitions.** The following terms are defined for this Article:

1. Deciduous Ornamental Tree. A deciduous tree (often an ornamental type tree) that reaches a mature height of less than 30 feet.
2. Deciduous Shade Tree. Defined as a deciduous tree with one vertical stem or trunk which begins branching at a height of six (6) feet or more and has a distinct crown that reaches a mature height of at least 30 feet.
3. Evergreen / Coniferous Tree. Defined as a tree that has needle-shaped or scale like leaves that remain green throughout the year; commonly referred to as pine, fir, and spruce trees. These trees generally reach a mature height of over 15 feet.
4. Green Mulch. Defined as a layer of plants that are closer to the ground, such as grasses, sedges, or other groundcovers, that can be used to support taller plants.
5. Invasive Plant Species. A plant reproducing outside its native range and outside cultivation that disrupts naturally occurring native plant communities by altering structure, composition, natural processes or habitat quality.
6. No Mow Grass. Defined as a type of grass that grows slowly and does not need to be mowed frequently.
7. Open Space. Any area not covered by a building, structure, parking lot, loading area, driveway, or other similarly paved area. Open space may include sidewalks, trails, pedestrian plazas and patios, and landscaped parking lot islands.
8. Ornamental Grasses. Defined as tall perennial grasses, generally over 24-inches at mature height, that are specifically grown and cultivated for their decorative properties. ~~Most of the commonly used ornamental grasses are non-native, introduced species such as: Feather Reed Grass, Blue Oat Grass, Silvergrass, and Fountain Grass.~~
9. Prairie Grass Plantings. Native grasses and forbs (flowering plants) found within the native prairie environment typical for the area prior to clearance and cultivation of the land by European settlers. For the purposes of this Article, prairie plantings may contain native grasses without forbs to simplify prairie plant installation and maintenance.
10. Turf Grass. A continuous plant coverage consisting of a grass species that is mowed or maintained at an established height of 6 inches or less and can include native and non-native vegetation, e.g., Kentucky Blue Grass, Perennial Ryegrass, Tall Fescue, Fine Fescue, Buffalo Grass.
11. Xeriscaping. Defined as the practice of landscaping with slow-growing, drought tolerant plants to conserve water. ~~and reduce yard trimmings~~
12. Native Plants. Plants which have evolved in this region, ecosystem or habitat over thousands of years without human introduction. These plants include trees, shrubs (flowering perennials), grasses and sedges.

B. Open Space and Landscaping Required.

1. **Site Design Standards.** The site layout plan shall indicate the placement of each building (ground floor plan of the building with door and window placement noted), public streets, private drives and driveways, sidewalks, site walls, mechanical units, and above grade utility infrastructure (utility poles, light poles, utility boxes, meters, etc.). The following items shall be integrated into the design of site plan improvements:
 - a. **Pedestrian Access.** Each project site shall include a minimum 4' width concrete sidewalk connection to provide access from the adjacent public street or private drive through the proposed site (including through parking lots) to the front door of the proposed building and any other required doors. Any sidewalk that is placed adjacent to or within 2 feet of a curb (edge of pavement) of a public street or private drive shall be a minimum of 6' width to address pedestrian safety and comfort.
 - b. **Bicycle Access.** See city code Section 408.030.D for bicycle parking requirements.
 - c. **Above-Grade Site Utilities.** Each project shall properly coordinate the proposed locations of above-grade utilities to consolidate their location(s) on the site to the extent practical. The intent is minimizing locations that can each be adequately buffered with landscape plantings and/or other improvements to enhance the visual appearance of the site.
 - d. **Roof/Site Drainage.** Each project shall properly design and coordinate the proposed locations and alignment of roof and site drainage, including any downspouts or other devices designed to convey stormwater, to avoid creating situations where water runoff flows over and/or pools on pedestrian walkways, trail connections, and high-traffic parking areas and driveways. Methods such as connecting roof drains directly to underground stormwater drainage systems or conveying stormwater at-grade to and through integrated green infrastructure improvements should be used to create a safe environment for pedestrian and vehicle circulation.
 - e. **Site Sections.** Each project shall provide at least one overall scaled site section drawing (accurately depicted – no vertical exaggeration), the selection of which shall be in consultation with the Director of Planning. The Director may require other site sections to be created to fully illustrate proposed site development conditions and site grading. The site section shall accurately depict public and private streets adjacent to the project site while illustrating the relationship of view sheds and site lines from adjacent properties and streets to the subject site, and shall include buildings, parking and retaining walls to indicate proposed site development conditions. If the site sections and submitted information do not provide adequate information to properly illustrate proposed development conditions, the Director and/or Planning Commission may require additional exhibits or perspective illustrations to accurately portray proposed development conditions and to assist in the City's evaluation of the application.
2. **Open Space Required.** All sites shall provide no less than the minimum amount of open space as required for each zoning district. (See Table 404-6.)

3. Open Space Landscaping Required. All landscape plans shall be prepared and stamped by a Landscape Architect licensed to practice in the State of Missouri.
 - a. **Ground Cover.** All areas unencumbered by buildings, paving or hard surfacing, shall be landscaped with turf grass, prairie grass plantings, plant beds, green mulch, xeriscaping, shrubs, and trees.
 - b. **Use of Mulch.** Except for single-family and duplex dwellings, wood-based mulch shall be used around all plantings and in all plant beds. If green mulch is proposed, wood-based mulch shall still be used at the time of initial planting and shall remain in place until the green mulch plantings are of sufficient size to fill and cover the planting bed. Large areas of wood mulch that do not contain plantings shall not be permitted except when used around play structures. Inorganic ground cover material, including rock, chip brick, and synthetic turf (unless part of a designated sport field or play surface), is prohibited except along building foundations, around drainage structures, and in other limited applications as may be deemed acceptable by the Director of Planning.
 - c. **Minimum Open Space Landscape Requirements.** Each single-family and duplex dwelling constructed after the adoption of this ordinance shall be required to plant a minimum of two (2) trees (ornamental or shade) per lot or unit prior to the issuance of an occupancy permit. With the exception of single-family and duplex dwellings, the following minimum open space plantings shall be required for all sites:
 - (1) One (1) deciduous shade tree, two (2) deciduous ornamental trees, and two (2) shrubs shall be planted for every 2,000 square feet of required open space. However, the minimum required landscape for all sites shall be no less than one (1) deciduous shade tree, two (2) deciduous ornamental trees, and two (2) shrubs.
 - (2) This landscaping is in addition to landscaping required for street frontage and parking lot landscaping. Open space plant materials shall not count towards the fulfillment of any other landscaping requirement.
4. Building Foundation Plantings. Except for single-family and duplex dwellings, low to medium height plant materials (shrubs, ornamental grasses, perennials) shall be planted and maintained along 100% of the street facing building foundation lines where not impeded by building entrances, loading areas and sidewalks. Foundation plant materials shall not count towards the fulfillment of the required open space landscaping.
5. Streetscape Landscaping. The following street frontage landscaping shall be required for all sites except for single-family and duplex dwellings. One overstory street tree shall be required for every 40 feet of public or private street frontage. A periodic cluster of at least five (5) ornamental grasses and/or shrubs shall be repeated along the streetscape at an average interval of one (1) cluster or grouping for every 20 feet of frontage. The required streetscaping may be arranged with varying spacing and need not be placed evenly at 40-foot and 20-foot intervals in order to address placement restrictions related to underground and overhead utilities, streetlights, driveways, and street intersections. These plantings are required to be located within 15' of the street right-of-way and may be located within the public street right-of-way, if approved by the City.

C. **Off-Street Parking, Driveways and Loading Areas.**

This section C is intended to replace Section 408.050.B

The following standards shall apply to all off-street parking and loading areas with ten (10) or more parking stalls or with more than 2,500 square feet of paved area. Off-street and loading area required plant materials shall not count towards the fulfillment of any other landscaping requirement.

1. Parking Lot Design.

- a. No dead-end parking lots or private drives will be permitted, as these create safety hazards for vehicular and pedestrian circulation. All site plans shall be designed to provide internal driveways and drive connections allowing vehicles to circulate through the site and all parking areas safely and efficiently.
- b. Parking islands with landscape plantings shall be located at the ends of each parking row to properly demarcate and buffer the parking stalls from adjacent driveways and drive aisles. These parking islands need to be configured with concrete curbs at a minimum of 9 feet wide (measured from back of curb to back of curb) and a length that matches the length of the adjacent parking stalls.
- c. Parking islands matching the above criteria shall be required to be integrated into each parking lot layout such that no more than a maximum of 10 contiguous parking stalls is provided in any given row of parking.
- d. No off-street parking or loading area shall be more than 100 feet from the center of an existing or proposed deciduous shade tree located within a landscaped open space area.
- e. Sidewalks that abut the front edge of any parking stall shall be no less than seven (7) feet wide to accommodate a two (2) feet vehicle overhang.

2. Landscaping Required.

- a. All parking lot islands shall be landscaped with a combination of turf grass, no mow grass, prairie grass, shrubs, perennials, and trees with no less than three (3) different landscape materials being utilized.
- b. Turf grass, no mow grass, prairie grass, shrubs or perennials within parking lot islands shall not exceed 24 inches in height as to maintain visibility within parking lot.
- c. Crushed rock, chip brick, pavers, pavement, and similar hard surfacing shall not be permitted unless utilized as a necessary curb apron. Larger rock (2" or greater) shall not be permitted.
- d. Sidewalks in parking lot islands and medians may be permitted as necessary (in addition to the landscape requirements) to accommodate pedestrian circulation.
- e. One (1) deciduous shade tree shall be planted within each landscaped island.
- f. Quality soil shall be placed within each landscape island to a depth of 18-36 inches. Soil within islands shall be tested and amended accordingly, prior to tree planting, to ensure long term growth success for the tree. If parking lot island minimums

cannot be achieved, structural soils and/or Silva cells will need to be considered as adequate alternatives for tree growth.

- g. Shade trees shall be evenly distributed throughout the parking lot to maximize shade.

3. Parking Lot Screening.

- a. Whenever an off-street parking area is placed along a public street or a private drive, a ratio of one (1) deciduous shade tree and two (2) deciduous ornamental trees shall be planted every 50 feet within the parking lot setback area (the area between the parking lot and adjacent street/drive).
- b. Additionally, a minimum three (3) foot tall vehicle headlight screen shall be installed between the parking lot and the adjoining street or private drive. These plantings shall be a minimum of 24" height at time of planting, and are in addition to the streetscape landscape requirements outlined herein. This screen can be constructed with any combination of prairie plantings, shrubs, ornamental grasses, earth berming, and low masonry walls.

PARKING LOT LANDSCAPING

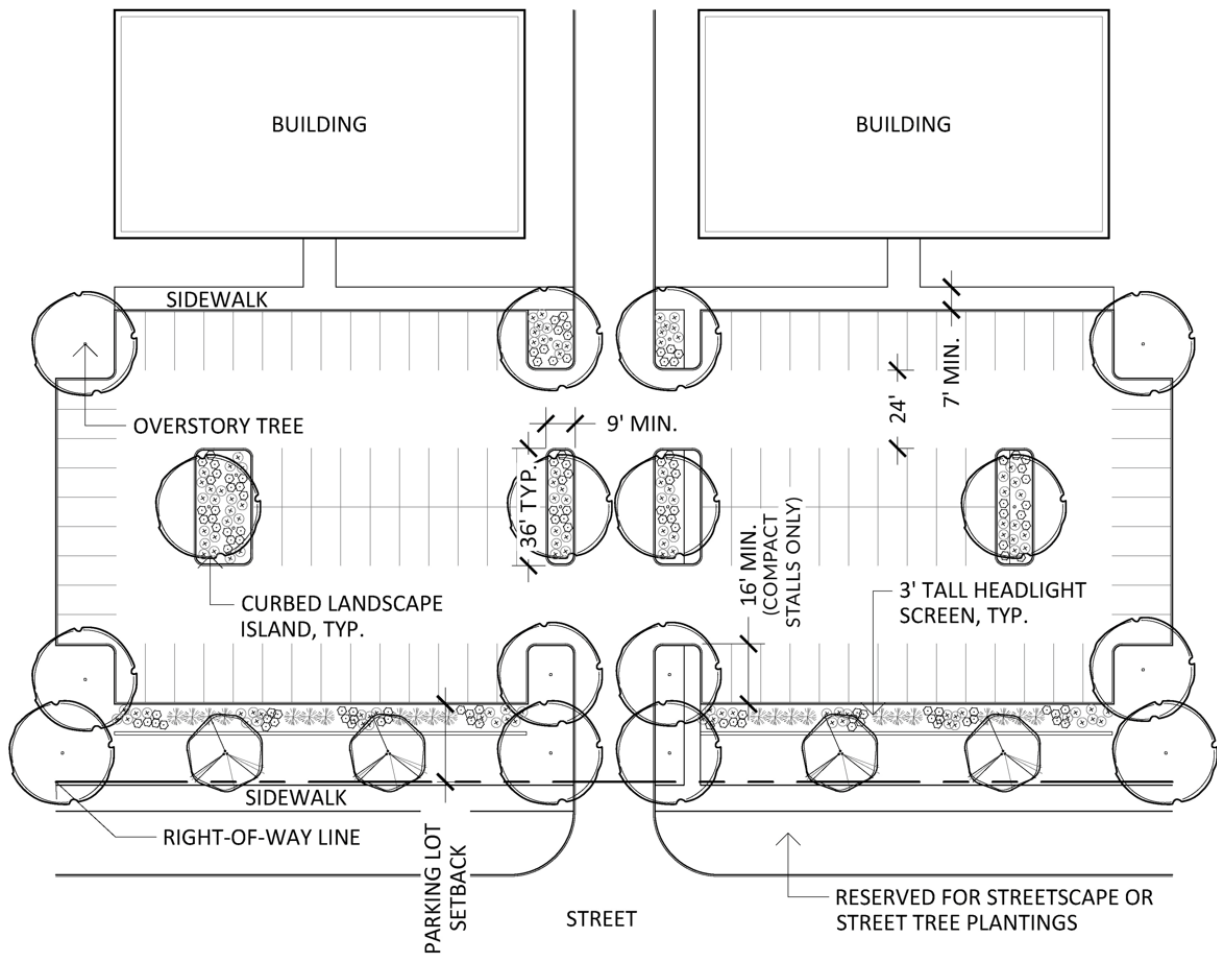


Figure 404.020.1

D. Plant Locations. All plantings shall comply with the following:

1. In general, all plants shall be sited and spaced in a manner to allow for appropriate growth to mature size.
2. Trees shall be located no closer than six (6) feet to the back of curb along any street or driveway and no closer than four (4) feet to the edge of any parking lot, sidewalk or walkway.
3. Ornamental and prairie grasses with a mature height of over four (4) feet shall not be permitted to be planted across the entire within the front yard area of any residential property, and shall only be planted in relatively small groupings as accent plantings and/or visually buffer above-grade utility infrastructure.
4. Landscaping must meet minimum clearances from all fire hydrants and building sprinkler systems as required by the fire department.
5. Deciduous shade trees should not be placed within any public sanitary sewer, storm sewer or watermain utility easement.
6. No landscaping shall be planted or allowed to grow in violation of the City's sight distance triangle for corner lots
7. A permit must be obtained prior to planting any street tree or landscape material in the public right-of-way and shall comply with all City clearance and setback requirements.

E. Minimum Plant Sizes. All plant sizes shall meet the following size and design requirements:

1. Deciduous Shade Trees. Minimum 2.0-inch caliper measured six (6) inches above the immediate ground level.
2. Deciduous Ornament Trees. Minimum 1.5-inch caliper measured six (6) inches above the immediate ground level.
3. Evergreen / Coniferous Tree. Minimum 6-feet in height.
4. Shrubs. Minimum three (3) gallon container.
5. Ornamental Grasses. Minimum one (1) gallon container.

F. Plant Species. All trees, shrubs and groundcover plants shall be non-invasive species, with a minimum total of 70% of all proposed trees and shrubs the selected plant material selected from the listing of Native and Native Cultivar Plant Materials. This 70% minimum shall include at least 50% of all proposed trees and 50% of all proposed shrubs selected from the listing of Native Plant Materials, and the remaining portions of this 70% requirement for all proposed trees and shrubs be selected from the listing of Native Cultivar Plant Materials. Other trees selected for use shall will be selected from the listing of Great Trees for the Kansas City Region. Both of these lists are incorporated in Appendix B.^[1] The Director of Community Development is authorized to supplement and amend the list of required, preferred, and prohibited plant species. In addition to any species on these lists, alternative plant material may be proposed and considered

by the Director of Community Development as part of the site plan submittal and review process, such as an updated list provided by CLARB, provided that they:

1. Are documented by a landscape architect or other credible information comparable in type and performance to any species on this list;
 2. Are adaptable to the climate of the metropolitan region and the specific conditions in which they are proposed; and
 3. Are not invasive or otherwise problematic to the overall health of the landscape.
- G. **Plant Substitutions.** Substitution of required plant materials may be considered by the City as follows, so long as the parking screening requirements are still met as a result of any substitution:
1. One (1) deciduous shade tree may be substituted in place of 10 required shrubs.
 2. One (1) deciduous ornamental tree may be substituted in place of five (5) required shrubs.
 3. One (1) evergreen/coniferous tree may be substituted in place of one (1) required deciduous shade tree.
 4. One (1) deciduous shade tree may be substituted in place of two (2) required deciduous ornamental trees. Deciduous ornamental trees may not be substituted for required deciduous shade trees.
 5. Three (3) ornamental grasses may be substituted for one (1) required shrub.
- H. **Credits for Existing Vegetation.** Successful incorporation of existing and healthy vegetation that meets these performance criteria may be credited towards any landscape requirement. Credits shall be on a one-for-one basis for any vegetation that meets the minimum specifications, except that landscape material more than three (3) times the **minimum** specified size or otherwise of exceptional quality (**as determined by the Director of Community Development**) may be credited on a two-for-one basis.
- I. **Design and Performance Criteria.** Design and Performance Criteria. In addition to the above planting requirements, all landscape plans shall be designed according to the following performance criteria, and in individual cases additional plantings may be warranted in order to meet these criteria:
[Ord. No. 3187, 5-2-2023]
1. Existing natural features of the site, such as groves of trees, extreme slopes, areas intended to serve as buffers and areas not intended for development, shall be retained and incorporated into the design to the maximum extent practical.
 - a. Extreme or steep slopes are defined as having a grade of twenty-five percent (25%) or greater, meaning that the elevation increases by twenty-five (25) feet over a horizontal distance of one hundred (100) feet.
 - b. Extreme or steep slopes shall be identified on all development plans.
 - c. For instances where extreme or steep slope areas are disturbed or graded, the Director of Public Works may require **adequate slope stabilization measures and protection be installed integrating** trees, sod or other vegetative materials be placed or planted in these areas to protect the hillside.

- d. The Director of Public Works may request an engineering, soil conditions or other related studies - prepared by an engineer certified in the State of Missouri - for development within extreme or steep slope areas.
4. Landscape areas shall be utilized to the maximum extent possible for natural stormwater mitigation practices and to satisfy stormwater management criteria. Examples of natural stormwater mitigation and green infrastructure practices include filter strips, vegetative swales, rain gardens, pervious pavement systems and sand filters.
5. Native plants and vegetation shall be utilized to the maximum extent reasonable, i.e., drought tolerant plants should be planted in landscape islands and water-resistant plants should be planted near stormwater retention facilities.
6. All required landscape and open space areas shall remain free of debris and refuse and be appropriately maintained.
7. Designs shall best integrate sites and projects into their surroundings or promote any distinct characteristics of the area identified in the Master Plan or any specific plans.
8. Designs should emphasize any focal points of an area or project and pay particular attention to the relationship with the streetscapes.

J. Maintenance and Replacement.

1. **Maintenance.** All property owners shall maintain all landscaping including regular mowing, trimming, and pruning and removal of dead, dying, or diseased plant material and keep the property clear from weeds, debris, and litter. Plant material shall be regularly trimmed and pruned to keep from encroaching sidewalks, walkways, driveway, and parking areas.
2. **Replacement.** The owner of any lot or parcel for which a landscape plan has been approved under this Article shall further be responsible for the replacement of any dead, dying, or diseased plant material to remain in compliance with the approved landscape plan. Should a tree for which a landscape credit was given, die, become diseased, or is otherwise removed, the owner of the property on which the tree is located shall replace the tree at the same ratio at which the credit was originally given. Failure to maintain the landscaping in accordance with this provision shall constitute a violation of the site's site plan and/or building permit approval and certificate of occupancy.

Section 407.030. Screens, Fencing, and Site Walls.

- A. **Buffer Types.** In addition to the general site and landscape requirements, certain projects, land uses, or elements of site design have potential impacts that require them to be buffered or screened from adjacent property. The following buffer types are established to be incorporated into site designs in specific contexts.

Table 407-4: Buffer Planting Requirements	
Buffer Type	Buffer Size and Planting Requirement

Type 1: A compact, and more densely landscaped area used to screen and mitigate potential impacts on abutting property. Type 1 buffers may be necessary in combination with other buffers on particular portions of the site plan.	At least 5 feet wide 1 evergreen per 8 linear feet or 1 shrub per 5 linear feet Or a fence or ornamental wall that provides a solid screen between 6 feet and 8 feet with a lesser combination of plant material to soften the wall or fence
Type 2: A landscape strip used to soften and provide aesthetic improvements within the setback area and improve the compatibility of certain land use transitions.	At least 10 feet wide 1 shade tree or 2 ornamental trees per 50 linear feet 1 shrub per 10 linear feet

Table 407-4: Buffer Planting Requirements

Buffer Type	Buffer Size and Planting Requirement
Type 3: A landscape strip used to separate and screen potentially incompatible sites or land use transitions.	At least 20 feet wide 1 shade tree or 2 ornamental trees per 40 linear feet 1 evergreen per 20 linear feet 1 shrub for every 10 linear feet Or a 6-foot berm or solid fence combination with a lesser combination of plant materials to the outside
Type 4: A landscape area along the frontage of thoroughfares and corridors designed to preserve or strengthen the natural features and characteristics of the area through more dense vegetation in a compact area.	At least 35 feet wide along frontage 1 shade, ornamental or evergreen tree per 4 linear feet 1 shrub or evergreen per 2 linear feet of frontage
Type 5: A landscape area along the frontage of thoroughfares and corridors designed to preserve or strengthen the natural features and characteristics of the area through more moderate vegetation in a larger area.	At least 50 feet wide along frontage 1 shade, ornamental or evergreen tree per 10 linear feet 1 shrub 4 linear feet
Type 6: A landscape area along the frontage of thoroughfares and corridors designed to preserve or strengthen the natural features and characteristics of the area through dispersed vegetation in a wide area.	At least 100 feet wide along frontage 1 shade, ornamental or evergreen tree per 20 linear feet 1 shrub per 20 linear feet

- B. **Buffer Requirements.** In general, each buffer type is required in the following specific circumstances. In instances where the specifics of any particular project or context would allow a different buffer type to equally or better meet the intent of this Chapter and the design and performance criteria of this Section, the Director or Planning Commission may approve an alternative buffer through the site plan application. In addition to these specific circumstances, any combination of these buffers may be required as a condition of any special use permit review for particular uses.

Table 407-5: Buffer Requirements	
Buffer Type	When Required
Type 1	For screening high-intensity portions of site from streetscape or abutting property according to design and performance standards in Section 407.030(F) . Specifically applicable for trash enclosures; outdoor storage; drive-through, loading, or service areas abutting residential areas; or surface parking located within 10 feet of residentially used or zoned property. Type 1 buffers may be required in addition to or in combination with other buffer types.
Table 407-5: Buffer Requirements	
Buffer Type	When Required
Type 2	Along non-commercial frontages of collector and arterial streets, except those with activity street designs. Any multibuilding or apartment project greater than 1/2 acre but less than 2 acres abutting R-4 or lesser intense zoning Any non-residential project under 1 acre abutting residentially used or zoned property Any 1-1 project abutting lesser intense districts
Type 3	Any 1-2 or 1-3 abutting lesser intense districts Any multi-unit building or apartment project of 2 acres or more abutting R-4 or lesser intense zoning Any non-residential property of 1 acre or more abutting R-4 or lesser intense zoning
Types 4, 5 and 6	Along frontages of major thoroughfares that have a natural street design Landscape should be designed to provide a mix of deciduous and evergreen trees and shrubs dispersed throughout the buffer area. May incorporate civic and open space requirements, if any, into this area

C. **Fence Specifications.** All fencing for screening, security, or privacy shall meet the following standards:

1. Front And Street-Side Fencing. All fencing in front of the front building line, or on the street side on corner lots shall:
 - a. Be limited to no higher than forty -two (42) inches; and
 - b. Have a transparency of at least thirty-three (33%) up to four (4) feet [i.e., a three-and-one- half-foot-high picket fence shall have a picket to void ratio of two to one (2:1) or greater transparency; or ornamental walls should similarly have voids comprising at least thirty- three percent (33%) of the area below three and one-half (3 1/2) feet].
 - c. Any fence or wall constructed within fifteen (15) feet of the street right-of-way shall be limited to decorative or ornamental fencing and screening, with materials

complementing the architectural style and materials of the principal building.

- d. On corner lots, street-side fencing behind the front building line may meet the standards for rear and side fencing in Subsection (C)(2) below, provided that it is no closer than five (5) feet from any sidewalk located in the right-of-way.
- 2. **Rear And Side Fencing.** All rear and interior side fencing located behind the front building line:
 - a. Shall be limited to no higher than six (6) feet, or up to seven (7) feet in all non-residential districts.
 - b. May have a solid screen.
- 3. **Other Fencing Design Standards.**
 - a. Any fencing that could potentially create a sight obstruction for vehicles crossing pedestrian areas or entering the street may require greater transparency or additional location restrictions to allow for safe sight distances for the vehicle.
 - b. All fencing located along adjacent lot lines shall be constructed so that either:
 - (1) The fence is on the property line; or
 - (2) The fence is at least three (3) feet from the property line. Any areas set back three (3) feet or more from the property line, which could become enclosed by other similarly located fences, shall provide at least one (1) gate for access and maintenance equipment.
 - c. All fences shall be constructed so that the finished side faces adjacent property or any public right-of-way.
 - d. Fences shall be constructed out of any of the following materials:
 - (1) Wood or vinyl simulating wood;
 - (2) Wrought iron or aluminum simulating wrought iron;
 - (3) Chain-link or vinyl clad chain-link:
 - (a) In all residential districts, in the rear or side yard only with a maximum height of four (4) feet;
 - (b) In the I-1, I-2, and I-3 Districts, in the rear and side only, but no closer than thirty (30) feet from any public street;
 - (c) In commercial districts, in the rear or side only, except prohibited in the OTD District.

D. Freestanding Site Walls. All freestanding site walls for screening, security, or privacy shall meet the following standards:

- 1. **Front And Street-Side Site Walls.** All freestanding site walls in front of the front building line, or on both street sides of corner lots shall:

- a. Be limited to no higher than forty-two (42) inches; and
 - b. Any site wall constructed shall be constructed with materials complementing the architectural style and materials of the principal building; and
 - c. Be placed on the site to visually buffer views to parking lots, service areas, and above-grade utility infrastructure to inhibit direct views from adjacent public streets and private drives within the development.
2. **Rear And Side Site Walls.** All rear and interior side site walls located behind the front building line:
 - a. Shall be limited to no higher than six (6) feet, or up to seven (7) feet in all non-residential districts.
3. **Other Site Wall Design Standards.**
 - a. Any site wall that could potentially create a sight obstruction for vehicles crossing pedestrian areas or entering the street may require the integration of fencing or other visually permeable design treatments to afford greater transparency or additional location restrictions to allow for safe sight distances for vehicles, pedestrians and bicyclists.
 - b. All site walls located along adjacent lot lines shall be constructed so that either:
 - (1) The site wall is on the property line; or
 - (2) The site wall is at least three (3) feet from the property line. Any areas set back three (3) feet or more from the property line, which could become enclosed by other similarly located site walls or fences, shall provide at least one (1) architecturally appropriate gate for access and maintenance equipment.
 - c. All site walls shall be constructed so that all readily visible sides of the wall are finished and match the adjacent architecture style and materials of the principal building.
 - d. Site walls shall be constructed out of any of the following materials:
 - (1) Natural stone or brick to match building architecture.
 - (2) Concrete or CMU core wall with stone or brick veneer to match building architecture.
 - (3) Precast concrete panels to match building architecture.
- E. **Site Retaining Walls.** All site walls used as retaining walls shall meet the following standards:
 1. Be limited in height to six (6) feet; and
 2. Be limited in placement to a minimum distance of four (4) feet of another retaining wall (existing or proposed); and
 3. If a site proposes the use of more than one retaining wall to address grading conditions, the area between these retaining walls shall be fully landscaped and shall have a maximum slope

of 4:1 (25%); and

4. Any retaining wall that could potentially impede the visibility of vehicles crossing pedestrian areas or connections with streets/drives may require additional location restrictions to allow for safe sight distances for vehicles, pedestrians and bicyclist; and
5. Any retaining wall shall be constructed with durable materials complementing the architectural style and materials of the principal building such as:
 - a. Natural stone or brick to match building architecture.
 - b. Concrete or CMU core wall with stone or brick veneer to match building architecture.
 - c. Precast concrete panels to match building architecture.
 - d. Modular concrete unit walls with wall caps and a decorative finish.
6. Any retaining wall over four (4) feet in height shall be designed by a licensed professional with competency in the design of retaining walls.

F. **Design And Performance Standards.** Buffers, screens, fences, and site/retaining walls shall be designed to meet the following performance standards. In addition to the requirements specified for each buffer type, the arrangement of plants, grading or berming of land, or inclusion of fences, walls or other screens may be necessary to meet these design and performance standards.

1. Eliminate glare from traffic internal to the site, outdoor lighting or other operations on the site.
2. Mitigate noise to comparable ambient noise levels found by other compatible uses throughout the area or district.
3. All buffers, screens, fences and site/retaining walls shall meet the proper lines of site at all intersections of streets, all driveway entrances and the intersection of internal access streets. The proper lines of site shall be based upon the control of the intersection or access, the stopping point, and the expected speeds of oncoming traffic as provided in Section 404.010(E)(2).
4. All high-impact site elements, such as trash enclosures, service and loading areas, utility and mechanical equipment, or outdoor storage, shall be located on remote portions of sites away from streetscapes, public view and from adjacent residential property. In cases where these facilities are near interior boundaries which may impact abutting property, a combination of Level 1 and Level 2 buffers shall be designed to limit potential impacts.
5. Trash receptacles, in addition to perimeter buffers for the site, shall be located on a remote area and stored inside a structure or enclosure compatible with the architectural design and materials of the proposed buildings. Enclosures shall be constructed of a durable material designed to withstand regular use by heavy equipment, including masonry, steel, and architectural metal panels.

Section 407.040 Outdoor Lighting

- A. **Visual Character.** The physical appearance of all exterior lighting, poles, and related appurtenances for sites located within a larger, multi-tenant project area shall match the visual character and performance standards of lighting used on adjacent sites throughout the larger

project area. The intent is to create aesthetic consistency in the use and appearance of these lighting improvements throughout the entire development – even if this development occurs through phased implementation. If light fixtures matching those of adjacent development sites is no longer available, or if there is a functional need to modify the lighting equipment used, the applicant will notify the City and make every effort to select fixtures and equipment that match or substantially replicate the aesthetic appearance of adjacent site lighting.

Light fixtures should be LED type and generate a soft white or near white light.

- B. **Mounting Height.** All exterior lighting shall be limited to the mounting heights specified in the following table:

Table 407-6: Mounting Height	
Location	Height Limit (feet)
Driveways and parking areas	37.5 in B-2, B-4, 1-1, 1-2, 1-3 Districts 25 in all other districts
Pedestrian walkways, plazas or courtyards	16
Facade lights	Below the eave or cornice line, provided that the light is directed downward
Other site lighting	12

- C. **Shielding.** All exterior lighting shall be shielded as specified in the following table:

Table 407-7: Required Shielding			
Watts (or Equivalent Lumens) or Mounting Height	Shield Type		
	Full Cutoff ¹	Cutoff ²	Semi-Cutoff ³
All lights mounted above 25 feet; or all lights above 450 watts	Required	Prohibited	Prohibited
All lights between 100 watts and 450 watts	Permitted	Required	Prohibited
All lights between 55 watts and 99 watts; or Any light mounted between 12 feet and 25 feet	Permitted	Permitted	Required
All lights mounted below 12 feet and less than 55 watts	No shielding is required; all shielding types permitted.		

NOTES:

¹ Full cutoff fixtures emit zero percent (0%) of its light above ninety degrees (90°) and ten per- cent (10%) above eighty percent (80%) from horizontal.

2. Cutoff fixtures emit no more than two and five-tenths percent (2.5%) of its light above ninety degrees (90°) and ten percent (10%) of its light above eighty percent (80%) from horizontal.
3. Semi-cutoff fixtures emit no more than five percent (5%) of its light above ninety percent (90%) and twenty percent (20%) of its light above eighty degrees (80°).

D. **Design And Performance Criteria.** In addition to the mounting height and shielding standards, exterior site lighting shall meet the following design and performance standards:

1. All lighting shall be designed and located to not provide direct light or glare onto any adjacent property.
2. All lighting shall be reduced to levels necessary only for security purposes within one (1) hour after closing of the business.
3. All facade lighting and or other externally illuminating lights shall use shielded, directional fixtures, designed and located to minimize uplighting and glare.
4. All site and area lighting should be directed downward (not upward) to avoid creating light pollution and the potential for conflicts with adjacent properties. Buildings and landscaping may use accent lighting that aim certain lights upward to highlight various features, providing that measures are taken to limit the spill of this lighting off-site to avoid creating a negative impact for adjoining uses.

Section 407.050 Stormwater Management

- A. **General Requirement.** All sites shall provide improvement necessary to adequately handle stormwater. In areas already subject to a stormwater management plan at the block- or area-scale as provided in Chapter 404, compliance with that plan shall satisfy the site design requirements. In all other cases, site specific best management practices shall be used to manage the peak flow, quantity and quality of stormwater runoff expected from development activity in a manner that poses no significant impact on other sites compared to predevelopment conditions.
- B. **Best Management Practices.** In general, stormwater management should prioritize strategies that manage stormwater at the largest scale possible, strategies that infiltrate stormwater into the ground within or as close to the site as possible, and strategies that integrate stormwater functions into other site and landscape design elements. The appropriate strategy will be highly dependent on the surrounding natural systems, the presence of broader stormwater facilities, and the specific topography and soil conditions of the site. The following strategies should be used in descending order of preference to meet site-specific stormwater standards.
1. Integration into a district, area, or block stormwater management plan.
 2. Constructed wetlands that mimic retention, filtration and infiltration of natural systems.
 3. Infiltration systems and porous materials that infiltrate runoff into the ground.
 4. Filtration systems that use natural materials to slow, filter and convey stormwater to other systems.
 5. Retention areas that capture and store runoff in permanent ponds, provided that they are designed as an amenity to the site or vicinity.
 6. Detention ponds or detention vaults that capture and store runoff temporarily but serve

little other purpose on the site.

- C. **Stream Buffer Protection.** The following standards have been established to help prevent property damage, reduce the severity of floods, prevent stream bank erosion, protect natural habitat, improve water quality and prevent water quality degradation from development.

[Ord. No. 3186, 5-2-2023]

1. All stream channels shall be identified on development plans. This includes identifying the ordinary high-water mark - often referred to as the "Active Stream Zone" - and identifying the stream bank on both sides of the stream channel.
 - a. For Type 1 (perennial) streams, a one hundred (100) foot stream corridor setback shall be identified on development plans, measured horizontally outward from both sides of the top of the stream channel bank.
 - b. For Type 2 (intermittent) streams, a fifty (50) foot stream corridor setback shall be identified on development plans, measured horizontally outward from both sides of the top of the stream channel bank.

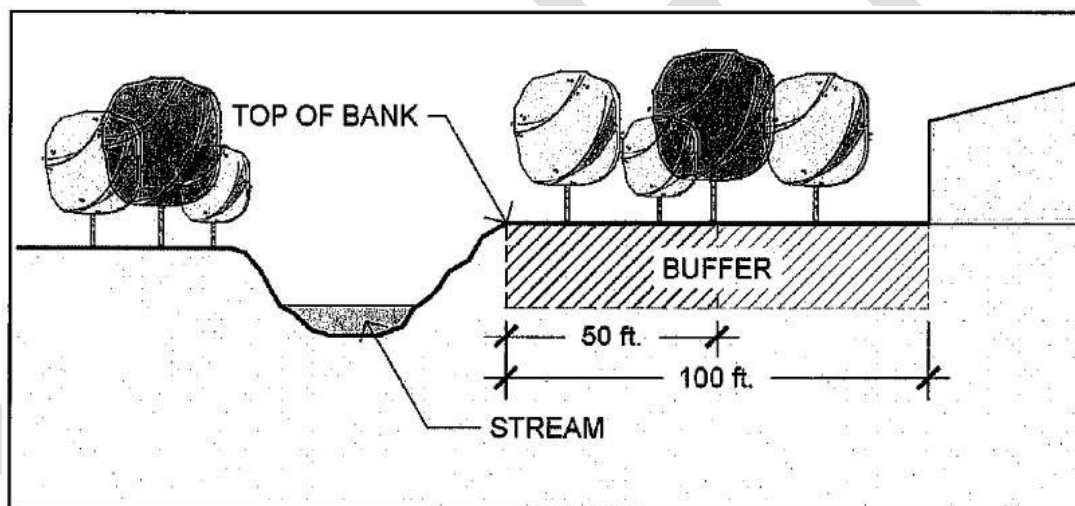


Figure 407-1: Stream Buffer Diagram

2. The stream corridor setback shall establish a conservation buffer area consisting of the contiguous, undisturbed natural vegetation (ideally existing, mature riparian forest); but may allow roadway crossings, recreational trails and uses, utility right-of-way, and other limited- impact uses.
 - a. Any variances within the stream corridor setback shall be reviewed and approved by the Director.
 - b. Limited tree clearing and removal of vegetation is allowed if reviewed and approved by the Director.
3. The Director of Public Works may require an engineering, stream profile or other related studies for development or potential impacts near a stream corridor.

Section 407.060 Submittal Requirements

As part of the review and approval process for any new building, building addition, or site improvement, the following information shall be submitted. The Zoning Administrator may request additional information as necessary to show compliance with this chapter and may further waive any informational item determined not to be necessary for the review of the proposed building for compliance with this chapter.

- A. An existing conditions site plan (at a measurable scale) depicting a base map of the subject property including a minimum of 200' of area surrounding all sides of the subject property. The site plan shall include existing grading and topography, existing tree locations, adjacent streets, drives and pavement areas, existing buildings, existing streams, ponds or other water bodies, and other unique features of the existing site. Areas where existing slopes exceed 25% should also be noted on the plan.
- B. A proposed site development plan (at a similar measurable scale) depicting the proposed improvements to the site including all pavement, sidewalks, site and retaining wall locations, buildings, driveways, parking stalls, site lighting, site grading including topography, anticipated development sign locations, and utility infrastructure proposed to serve the site.
- C. A proposed site landscape plan (at a similar measurable scale) depicting all existing site vegetation to remain and all proposed landscape planting improvements. This plan shall include a detailed table outlining the amount, type and size of landscape plantings required for each identified area of the site, as well as the amount, type, and size of landscape plantings provided for each identified area of the site. This plan shall also detail the minimum requirement of 60% use of native and native-cultivar plants. Any requested deviations or substitutions are required to be clearly noted on the plan along with the rationale supporting the request.
- D. All site section illustrations prepared for the development application shall include proposed landscape planting types and locations depicting the mature height of plantings.
- E. All landscape plans shall be prepared and stamped by a Landscape Architect licensed to practice in the State of Missouri.



City of Parkville Plant Material List

December 17~~August 15~~, 2024

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Large Native Shade Trees

American Basswood/Linden	<i>Tilia americana</i>
American Beech	<i>Fagus grandifolia</i>
American Hornbeam	<i>Carpinus caroliniana</i>
American Sycamore	<i>Platanus Occidentalis</i>
Bitternut hickory	<i>Carya cordiformis</i>
Black Cherry	<i>Prunus serotina</i>
Black Gum (Tupelo)	<i>Nyssa sylvatica</i>
Black Oak	<i>Quercus velutina</i>
Black Walnut	<i>Juglans Nigra</i>
Bur Oak	<i>Quercus macrocarpa</i>
Chinkapin Oak	<i>Quercus muehlenbergii</i>
Hackberry	<i>Celtis occidentalis</i>
Hop Hornbeam	<i>Ostrya virginiana</i>
Kentucky Coffeetree	<i>Gymnocladus dioicus</i>
mockernut hickory	<i>Carya tomentosa</i>
Nuttall Oak	<i>Quercus texana</i>
Overcup Oak	<i>Quercus lyrata</i>
Pecan	<i>Carya illinoensis</i>
Persimmon	<i>Diospyros virginiana</i>
Pin Oak	<i>Quercus palustris</i>
Post Oak	<i>Quercus stellata</i>
Red hickory	<i>Carya ovalis</i>
Red Maple	<i>Acer rubrum</i>
River Birch	<i>Betula nigra</i>
Sassafras	<i>Sassafras albidum</i>
Shagbark Hickory	<i>Carya ovata</i>
Shellbark hickory	<i>Carya laciniosa</i>
Shingle Oak	<i>Quercus imbricaria</i>
Shumard Oak	<i>Quercus shumardii</i>
Sugar Maple	<i>Acer saccharum</i>
Swamp Chestnut Oak	<i>Quercus michauxii</i>
Thornless Honey Locust	<i>Gleditsia Fabales</i>
Tulip Poplar	<i>Liriodendron tulipifera</i>
White Oak	<i>Quercus alba</i>

Smaller Native Flowering Trees

Alleghany Serviceberry	Amelanchier laevis
American Smoke Tree	Cotinus obovatus
Bladdernut	Staphylea Sapindales
Buttonbush	Cephalanthus occidentalis
Cockspur Hawthorn	Crataegus crus-galli
Downy Hawthorn	Crataegus mollis
Downy Serviceberry	Amelanchier arborea
Eastern Redbud	Cercis Canadensis
Flowering Dogwood	Cornus Florida
Green Hawthorn	Crataegus viridis
MO Prairie Crabapple	Malus ioensis
Ohio Buckeye	Aesculus glabra
Pawpaw Tree	Asimina triloba
Red Buckeye	Aesculus pavia
Shadblow Serviceberry	Amelanchier canadensis
Washington Hawthorn	Crataegus phaenopyrum
Wild Plum	Prunus Americana

Native Shrubs

American Beautyberry	<i>Callicarpa americana</i>
American Filbert; Hazelnut	<i>Corylus americana</i>
Arrowwood	<i>Viburnum dentatum</i>
Black Chokeberry	<i>Aronia melanocarpa</i>
Black Haw Viburnum	<i>Viburnum prunifolium</i>
Chokecherry	<i>Prunus virginiana</i>
Deciduous Holly	<i>Ilex decidua</i>
Elderberry	<i>Sambucus canadensis</i>
Fragrant Sumac	<i>Rhus aromatica</i>
Golden Currant	<i>Ribes odoratum</i>
Indigo Bush	<i>Amorpha fruticosa</i>
Lead Plant	<i>Amorpha canescens</i>
Leatherwood	<i>Dirca palustris</i>
Nannyberry Viburnum	<i>Viburnum lentago</i>
New Jersey Tea	<i>Ceanothus americanus</i>
Ninebark	<i>Physocarpus opulifolius</i>
Prairie Willow	<i>Salix humilis</i>
Red Chokeberry	<i>Aronia arbutifolia</i>
Rusty Blackhaw	<i>Viburnum rufidulum</i>
Shrubby St. John's Wort	<i>Hypericum prolificum</i>
Spicebush	<i>Lindera benzoin</i>
Strawberry Bush	<i>Euonymus americanus</i>
Vernal Witch Hazel	<i>Hamamelis vernalis</i>
Virginia Sweetspire	<i>Itea virginica</i>
Wahoo	<i>Euonymus atropurpureus</i>
Wild Hydrangea	<i>Hydrangea arborescens</i>
Winged Sumac	<i>Rhus copallinum</i>
Winterberry Holly	<i>Ilex verticillata</i>
Witch Hazel	<i>Hamamelis virginiana</i>

Native Trees to Missouri but not KC

Bald Cypress	Taxodium distichum
Cucumber Tree	Magnolia acuminata
Mexican Plum	Prunus Mexicana
Southern Red Oak	Quercus Falcata

Native Evergreen Trees

American Holly	Ilex opaca
Eastern Red Cedar	Juniperus Virginiana
Shortleaf Pine	Pinus echinata
Thuja/Arborvitea	Thuja occidentalis
White Pine	Pinus strobus

Native Cultivars – Trees and Shrubs

Common Name	Scientific Name	Cultivars
Shade Trees		
American Sycamore	Platanus Occidentalis	'Bloodgood' 'Columbia' 'Liberty' 'Sutternii'
Shumard Oak	Quercus shumardii	
Nuttall Oak	Quercus texana	'Sangria'
Shingle Oak	Quercus imbricaria	
Overcup Oak	Quercus lyrata	
Chinkapin Oak	Quercus muehlenbergii	
Swamp White Oak	Quercus michauxii	'American Dream'
Bur Oak	Quercus macrocarpa	'Boomer' 'Lippert'
White Oak	Quercus alba	
Black Oak	Quercus velunina	
Pin Oak	Quercus palustris	Green Pillar'
Post Oak	Quercus stellata	
Tulip Poplar	Liriodendron tulipifera	'Ardis' 'Arnold' 'Fastigiata' 'Aureomarginatum'
American BasswoodLinden	Tilia americana	
American Beech	Fagus grandifolia	
Black Cherry	Prunus serotina	
Kentucky Coffeetree	Gymnocladus dioicus	'Espresso' 'Prairie Titan' 'Statel Manor'
Pecan	Carya illinoiensis	

Persimmon	Diospyros virginiana	
River Birch	Betula nigra	'Cully'
Sassafras	Sassafras albidum	
Hackberry	Celtis occidentalis	
Sugar Maple	Acer saccharum	'Morton' 'Bailsta' 'Barrett Cole' 'JFS-KW8' 'Commemoration' 'Green Mountain' 'Legacy'
Red Maple	Acer rubrum	'Autumn Flame' 'Autumn Radiance' 'Autumn Spire' 'Bowhall' 'Karpick' 'Northwood' 'October Glory' 'Redpointe' 'Red Sunset' 'Scanlon'
Black Gum (Tupelo)	Nyssa sylvatica	'David Odom' 'Autumn Cascades' 'JFS-Red' 'Green Gable' 'Miss Scarlet' 'Red Rage' 'Red Splyndor' 'Sheri's Cloud' 'Snow Flurries' 'Sparkler' 'Swamp Tupelo' 'Wildfire' 'Zydeco Twist' var. biflora
Hop Hornbeam	Ostrya virginiana	
American Hornbeam	Carpinus caroliniana	'Native Flame' 'Palisade' 'Ball o' Fire' 'Rising Fire'
Thornless Honey Locust	Gleditsia fabales	gleditsis triacanthos 'skyline'
Shagbark Hickory	Carya ovata	
Bitternut Hickory	Carya cordiformis	
Mockernut hickory	Carya tomentosa	
Shellbark Hickory	Carya laciniata	'Fayette' 'Henry' 'Keystone' 'Missouri Mammoth'
Red Hickory	Carya ovalis	
Black Walnut	Juglans nigra	'Black Gem' 'Kwik-Krop'
Ornamental Trees		
Eastern redbud	Cercis canadensis	'Columbus strain'
Prairie Crabapple	Malus loensis	'Prince Georges' 'Plena'
Flowering Dogwood	Cornus Florida	'Appalachian Spring' 'Appalachian Joy' 'Cloud nine'
Wild Plum	Prunus Americana	
American Smoke tree	Cotinus obovatus	'Northstar' 'Grace' 'Royal Purple'
Washington Hawthorn	Crataegus phaenopyrum	'Clark' 'Fastigiata' 'Manbeck Select' 'Princeton Sentry' 'Winter King'
Cockspur Hawthorn	Crataegus crus-galli	
Downy Hawthorn	Crataegus mollis	
Green Hawthorn	Crataegus viridis	'Winter King'
Red Buckeye	Aesculus pavla	
Ohio Buckeye	Aesculus glabra	'Autumn Splendor'

Buttonbush	Cephalanthus occidentalis	'Sugar Shack' 'Bailoptics'
Bladdernut	Staphylea Sapindales	
Downy Serviceberry	Amelanchier arborea	
Pawpaw Tree	Asimina triloba	
Shadblow Serviceberry	Amelanchier canadensis	'Prince William' 'Rainbow Pillar' 'Spring Glory'
Alleghany Serviceberry	Amelanchier laevis	
Shrubs		
American Filbert; Hazelnut	Corylus americana	
American Beautyberry	Callicarpa americana	var. lactea
Arrowwood	Viburnum dentatum	'Autumn Jazz' 'Morton' 'Blue Blaze'
Black Chokeberry	Aronia melanocarpa	'Viking' 'Nero' 'Morton'
Red Chokeberry	Aronia arbutifolia	'Brilliantissima' 'Erecta'
Black Haw Viburnum	Viburnum prunifolium	'Summer Magic' 'Ovazum'
Chokecherry	Prunus virginiana	'Schubert' 'Canada Red'
Deciduous Holly	Ilex decidua	
Elderberry	Sambucus canadensis	
Fragrant Sumac	Rhus aromatica	'Gro-Low'
Golden Currant	Ribes odoratum	'Crandall' 'Gwen's Buffalo'
Indigo Bush	Amorpha fruticosa	
Lead Plant	Amorpha canescens	
Leatherwood	Dirca palustris	
Nannyberry Viburnum	Viburnum lentago	
New Jersey Tea	Ceanothus americanus	
Ninebark	Physocarpus opulifolius	'Jefam'
Prairie Willow	Salix humilis	
Rusty Blackhaw	Viburnum rufidulum	
Shrubby St. John's Wort	Hypericum prolificum	
Spicebush	Lindera benzoin	
Strawberry Bush	Euonymus americanus	
Vernal Witch Hazel	Hamamelis vernalis	
Virginia Sweetspire	Itea virginica	'Fizzy Mizzzy' 'Scentlandia' 'Little Henry' 'Henry's Garnet' 'Merlot'
Wahoo	Euonymus atropurpureus	
Wild Hydrangea	Hydrangea arborescens	'Annabelle' 'Grandiflora' 'Abetwo' 'NACH1' 'Dardom' 'Haas Halo' 'Hayes Starburst' 'Incrediball' 'Invincibelle Ruby'
Winged Sumac	Rhus copallinum	'Morton'

Winterberry Holly	<i>Ilex verticillata</i>	'Cacapon' 'Shaver' 'Sparkleberry' 'Sunset' 'Winter Gold' 'Winter Red'
Witch Hazel	<i>Hamamelis virginiana</i>	x intermedia 'Arnold Promise' 'Diane'
Evergreen Trees		
Eastern Red Cedar	<i>Juniperus virginiana</i>	'Glauca' 'Blue Mountain' 'Burkii' 'Canaertii' 'Cupressifolia' 'Grey Owl' 'Taylor'
Shortleaf pine	<i>Pinus echinata</i>	
American Holly	<i>Ilex opaca</i>	
Thuja/Arborvitea	<i>Thuja occidentalis</i>	'Golden Globe' 'Golden Tuffet' 'Woodwardii' 'American Pillar' 'Globosa Aurea' 'Rheingold' 'Danica' 'Green Giant' 'Smaragd' 'Degroot's Spire' 'Anna's Magic Ball' 'Filips Magic Moment' 'Polar Gold'
White Pine	<i>Pinus strobus</i>	'Fastigiata' 'Alba' 'Pendula' 'Nana' 'Macopin' 'Sea Urchin' 'Torulosa' 'Verkade's Broom'

Native – But Not Recommended

Alternate-leaved dogwood (Pagoda Dogwood)	<i>Cornus alternifolia</i>
American Jointweed	<i>Polygonum americanum</i>
American Snowbell	<i>Styrax americanus</i>
American Spikenard	<i>Aralia racemosa</i>
Box Elder	<i>Acer negundo</i>
Coralberry	<i>Symphoricarpos orbiculatus</i>
Corkwood	<i>Leitneria floridana</i>
Cottonwood	<i>Populus deltoides</i>
Fringetree	<i>Chionanthus virginicus</i>
Gray dogwood (stiff dogwood)	<i>Cornus foemina</i>
Green Ash	<i>Fraxinus pennsylvanica</i>
Hercules' Club	<i>Aralia spinosa</i>
Indian Cherry; Carolina Buckthorn	<i>Rhamnus caroliniana</i>
Lanceleaf Buckthorn	<i>Rhamnus lanceolata</i>
Littlehip Hawthorn	<i>Crataegus spathulata</i>
Locust, Black Locust, Rose Acacia	<i>Robinia Fabales</i>
Missouri Gooseberry	<i>Ribes missouriense</i>
Mulberry	<i>Morus Urticales</i>
Parsley Hawthorn	<i>Crataegus marshallii</i>
Pasture Rose	<i>Rosa carolina</i>

Prairie Red Root	Ceanothus herbaceus
Rough Leaf Dogwood	Cornus drummondii
Scarlet Elder; Red Elderberry	Sambucus racemosa
Smooth Sumac	Rhus glabra
Southern Catalpa	Catalpa bignonioides
Swamp dogwood (silky dogwood; pale dogwood)	C. amomum
Sweetgum	Liquidambar styraciflua
Wafer Ash	Ptelea trifoliata
Western Soapberry	Sapindus drummondii
White Ash	Fraxinus americana

INVASIVE - DO NOT PLANT

Amur Bush Honeysuckle	Lonicera maackii
Autumn Clematis	Clematis terniflora
Autumn olive	Elaeagnus umbellata
Buddleia/ Butterfly Bush	Buddleja davidii
Burning Bush	Euonymus alatus
Callery Pear	Pyrus calleryana
Caucasian bluestem	Bothriochloa bladhii
European/common Buckthorn	Rhamnus cathartica
Heavenly Bamboo	Nandina domestica
Japanese knotweed	Fallopia japonica
Japanese stilt grass	Microstegium vimineum
Japanese Vining Honeysuckle	Lonicera japonica
Japanese/European Barberry	Berberis thunbergii
Morrow's Bush Honeysuckle	Lonicera morrowii
Purple loosestrife	Lythrum salicaria
Rose of Sharon	Hibiscus syriacus
Sericea lespedeza	Lespedeza cuneata
Star of Bethlehem	Ornithogalum umbellatum
Tree of Heaven	Ailanthus altissima
Wintercreeper	Euonymus fortunei
Yellow bluestem	Bothriochloa ischaemum

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