5.12 HAZARD MITIGATION STANDARDS

5.12.1 Each structure or other improvement installed, constructed or built in the City shall comply with the Manchester, Ballwin, Ellisville, Winchester or Wildwood Building Code and applicable FEMA requirements, as the same may be amended and in effect at the time of installation, construction or building.

5.12.2 Notwithstanding anything to the contrary contained in the Existing Local Codes, following any declaration of emergency or disaster by the Governor of the State or the President of the United States of America that is applicable to Manchester, Ballwin, Ellisville, Winchester and Wildwood, the following shall pertain:

a. The owner of any lot whose residence is destroyed or rendered uninhabitable by the event causing the emergency may place a travel trailer on such lot for a period not to exceed two (2) years from the date of the event, provided that an application for a building permit is being made to the building official within one year of the time that the structure was destroyed.

b. Any structure pre-approved by the Planning Commission for interim housing following an emergency may be placed on such lot pending completion of the permanent structure on the lot.

5.12.3 **Specific to T3**

a. All specified Building Heights may be increased by the difference between the actual lot elevation and the base elevations required by applicable FEMA standards, provided that any first level space shall be designed for use as

(i) parking or storage space set into the structure into the second and deeper Layers, concealed from view of all streets or

(ii) an open market, a loggia or porch or combination thereof, or other open-air area for recreation, relaxation or gathering, to the extent permitted by applicable FEMA requirements, or other use permitted by the Planning Commission.

5.12.4 **Specific to T4, T5**

a. All specified Building Heights may be increased by the difference between the actual lot elevation and the base elevations required by applicable FEMA standards, provided that any first level space shall be designed for use as

(i) parking or storage space set into the structure into the second and deeper Layers, concealed from view of all streets,

(ii) an open market, a loggia or porch or combination thereof, or other open-air area for recreation, relaxation or gathering, or

(iii) enclosed Commercial or Retail space, to the extent permitted by applicable FEMA requirements, or other use permitted by the Planning Commission.

6.1 PARKING AND DENSITY CALCULATIONS

6.1.1 INTENT

a. Promote a "park once" environment that will enable people to conveniently park and access a variety of commercial and civic enterprises in pedestrian friendly environments by encouraging shared parking.

b. Reduce fragmented, uncoordinated, inefficient, reserved single-purpose parking.

c. Avoid adverse parking impacts on neighborhoods adjacent to redevelopment areas.

d. Maximize on-street parking.

e. Provide flexibility for redevelopment of small sites and for the preservation of historic buildings.

f. Increase visibility and accessibility of parking.

g. Promote early prototype projects using flexible and creative incentives.

6.1.2 GENERAL TO ZONES T3, T4, T5

a. Parking requirements may be met either on-site or within a 1/2-mile "parking zone" in which the development is located (including newly developed on-street parking).

b. Sites under 20,000 square feet in land area have no minimum parking requirements.

c. Sites over 20,000 square feet in land area have the following requirements:

- A minimum of 1 and 1/8 parking spaces per residential unit, of which a minimum of 1/8 parking space per residential unit shall be provided as Shared Parking. There are no maximum limits on shared parking. Any limitations on the shared parking (time limits or hours of the day) shall be subject to approval by the Director which shall be given upon a finding that at least 12 hours of public parking are provided in any 24-hour period and that at least 8 of those hours are provided during either business or nighttime hours depending on whether the Director determines that the primary public use will be for commercial or residential uses.
- A minimum of 1.5 spaces per 1,000 square feet of non-residential Gross Floor Area (GFA) shall be provided as Shared Parking; there are no set maximum limits on Shared Parking. New on-street parking spaces created in conjunction with the development, which did not previously exist, may be counted toward the minimum requirement for Shared Parking.
- A maximum of 3.5 spaces per 1,000 square feet of non-residential GFA or two spaces per residential unit may be made available for Reserved Parking.

d. Reserved Parking above the maximum may be provided upon payment to the Manchester Road Redevelopment District (based on the approximate cost to build structured parking). Parking requirements may be met either on-site or within a 1/2-mile "parking zone" in which the development is located (including newly developed on-street parking). In lieu of minimum parking requirements, the Manchester Road Redevelopment District may accept a one time payment per each space, based on the approximate cost to build structured parking. Surface and structured parking spaces may be reserved for a specific tenant or unit, provided that the following standards are not exceeded:

TABLE 6. PARKING CALCULATIONS

This table categorizes Building Functions within Transect Zones. Parking requirements are correlated to functional intensity.

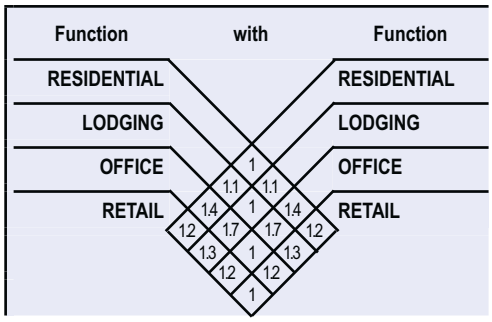
	T3	T4	T5
a. RESIDENTIAL	**Restricted Residential:** The number of dwellings on each Lot is restricted to one within a Principal Building and one within an Accessory Building, with 2.0 parking places for each. Both dwellings shall be under single ownership. The habitable area of the Accessory Unit shall not exceed 440 sf, excluding the parking area.	**Limited Residential:** The number of dwellings on each Lot is limited by the requirement of 1.5 parking places for each dwelling, a ratio which may be reduced according to the shared parking standards.	**Open Residential:** The number of dwellings on each Lot is limited by the requirement of 1.0 parking places for each dwelling, a ratio which may be reduced according to the shared parking standards.
b. LODGING	**Restricted Lodging:** The number of bedrooms available on each Lot for lodging is limited by the requirement of 1.0 assigned parking place for each bedroom, up to five, in addition to the parking requirement for the dwelling. The Lodging must be owner occupied. Food service may be provided in the a.m. The maximum length of stay shall not exceed ten days.	**Limited Lodging:** The number of bedrooms available on each Lot for lodging is limited by the requirement of 1.0 assigned parking places for each bedroom, up to twelve, in addition to the parking requirement for the dwelling. The Lodging must be owner occupied.Food service may be provided in the a.m. The maximum length of stay shall not exceed ten days.	**Open Lodging:** The number of bedrooms available on each Lot for lodging is limited by the requirement of 1.0 assigned parking places for each bedroom. Food service may be provided at all times. The area allocated for food service shall be calculated and provided with parking according to Retail Function.
c. OFFICE	**Restricted Office:** The building area available for office use on each Lot is restricted to the first Story of the Principal or the Accessory Building and by the requirement of 3.0 assigned parking places per 1000 square feet of net office space in addition to the parking requirement for each dwelling.	**Limited Office:** The building area available for office use on each Lot is limited to the first Story of the principal building and/or to the Accessory building, and by the requirement of 3.0 assigned parking places per 1000 square feet of net office space in addition to the parking requirement for each dwelling.	**Open Office:** The building area available for office use on each Lot is limited by the requirement of 2.0 assigned parking places per 1000 square feet of net office space.
d. RETAIL	**Restricted Retail:** The building area available for Retail use is restricted to one Block corner location at the first Story for each 300 dwelling units and by the requirement of 4.0 assigned parking places per 1000 square feet of net Retail space in addition to the parking requirement of each dwelling. The specific use shall be further limited to neighborhood store, or food service seating no more than 20.	**Limited Retail:** The building area available for Retail use is limited to the first Story of buildings at corner locations, not more than one per Block, and by the requirement of 4.0 assigned parking places per 1000 square feet of net Retail space in addition to the parking requirement of each dwelling. The specific use shall be further limited to neighborhood store, or food service seating no more than 40.	**Open Retail:** The building area available for Retail use is limited by the requirement of 3.0 assigned parking places per 1000 square feet of net Retail space. Retail spaces under 1500 square feet are exempt from parking requirements.

The Shared Parking Factor for two Functions, when divided into the sum of the two amounts as listed on the Required Parking table below, produces the Effective Parking needed for each site involved in sharing. Conversely, if the Sharing Factor is used as a multiplier, it indicates the amount of building allowed on each site given the parking available.

REQUIRED PARKING

	T3	T4	T5
RESIDENTIAL	2.0 / dwelling	1.5 / dwelling	1.0 / dwelling
LODGING	1.0 / bedroom	1.0 / bedroom	1.0 / bedroom
OFFICE	3.0 / 1000 sq. ft.	3.0 / 1000 sq. ft.	2.0 / 1000 sq. ft.
RETAIL	3.5 / 1000 sq. ft.	3.5 / 1000 sq. ft.	3.0 / 1000 sq. ft.
CIVIC	To be determined by Warrant		
OTHER	To be determined by Warrant		

SHARED PARKING FACTOR



Use	Reserved (non-shared) Spaces (maximum)
Residential	2.0 per single-family dwelling unit 1.0 per one-bedroom multifamily unit 1.0 per two-bedroom multifamily unit 2.0 per three-bedroom multifamily unit
Nonresidential	1.0 per 1,000 SF

e. A parking space located on a public street may be included in the calculation of parking requirements if it is adjacent to the building site (where more than 50% of the space is fronting). Each on-street parking space may only be counted once.
f. Structured or underground parking may exceed the required quantity of parking without the imposition of maximum standards.
g. Off-site parking must be the subject of a long term lease approved as to form by the City Attorney or permanent dedicated off-site parking use.
h. Sites abutting one another shall physically connect their surface parking areas at the lot line to create connecting drive aisles where such surface parking areas lie within 50 feet of one another, provided a mutual access easement acceptable to the Director has been executed. Sites configurations existing pre-Code are exempt from this requirement. The agreement must ensure that maneuvering space for required parking spaces in both parking areas is preserved.
i. Tandem parking is allowed for in single-family residential projects, multifamily projects and the residential component of mixed-use projects. Two parking spaces in tandem shall have a combined minimum dimension of 9 feet in width by 34 feet in length. Up to 75 percent of the total off -street parking spaces provided for residential projects may incorporate tandem parking. For residential, tandem spaces shall be assigned to the same dwelling unit. Tandem parking may not be used to provide guest parking.

6.1.2 **Specific to zones T4, T5**

a. The actual parking may be adjusted upward according to the Shared Parking Factor of Table 6 to determine the Effective Parking. The Shared Parking Factor is available for any two Functions within any pair of adjacent Blocks.
b. Based on the Effective Parking available, the Density of the projected Function may be determined according to Table 6.
c. Within the T4 and T5 zones, the Effective Parking may be further adjusted upward by 30%.
d. Accessory Units do not count toward Density calculations.
e. Liner Buildings less than 30 feet deep and no more than two stories in height shall be exempt from parking requirements.

6.2 PARKING AND LOADING STANDARDS

6.1.1 **Intent**

6.1.2 **General to zones T3, T4, T5**

a. Parking shall be accessed from B streets or by Rear Lanes, when such are available on the Regulating Plan.
b. Open parking areas shall be masked from the Frontage by a Building or Streetscreen.

c. For buildings on B-Grids indicated on Exhibit E, open parking areas may be allowed unmasked on the Frontage by Warrant, except for corner lots at intersections with the A-Grid.

6.2.2 **Specific to zones T3**

a. Open parking areas shall be located at the second and third Lot Layers, except that Driveways, drop-offs and unpaved parking areas may be located at the first Lot Layer. (Appendix Illustrative Definitions)

b. Garages shall be located at the third Layer except that side- or rear-entry types may be allowed in the first or second Layer by Warrant.

6.2.3 **Specific to zones T3, T4**

a. Driveways at Frontages shall be no wider than 10 feet in the first Layer.

6.2.4 **Specific to zone T4**

a. All parking areas and garages shall be located at the second or third Layer.

6.2.5 **Specific to zones T5**

a. All parking lots, garages, and Parking Structures shall be located at the second or third Layer.

b. Vehicular entrances to parking lots, garages, and Parking Structures shall be no wider than 24 feet at the Frontage.

c. Pedestrian exits from all parking lots, garages, and Parking Structures shall be directly to a Frontage Line (i.e., not directly into a building) except underground levels which may be exited by pedestrians directly into a building.

d. Parking Structures on the A-Grid as indicated in Exhibit E shall have Liner Buildings lining the first and second Stories.

e. A minimum of one bicycle rack place shall be provided within the Public or Private Frontage for every ten vehicular parking spaces.

6.2.6 **Loading Facilities**

a. No loading facilities are required.

b. Where loading facilities are provided, they shall be located on B streets or on the Alley side of buildings.

6.3 BICYCLE PARKING STANDARDS

6.3.1 **General to zones T3, T4, T5**

a. For office development, the developer must provide 1 employee bicycle parking rack or bicycle locker (2-bike capacity) per 7,500 square feet of GFA and 1 visitor/customer bicycle parking rack (2-bike capacity) per 20,000 square feet of GFA.

b. For residential development, the developer must provide 1 tenant bicycle parking rack or bicycle locker (2-bike capacity) per 3 units and 1 visitor bicycle parking rack (2-bike capacity) per 50 units.

c. For retail development, the developer must provide 1 employee bicycle parking rack or bicycle locker (2-bike capacity) per 5,000 square feet of GFA and 1 visitor/customer bicycle parking rack (2-bike capacity) per 12,500 square feet of GFA.

d. All bicycle parking facilities are to be highly visible to intended users and protected from rain and snow within a structure. The bicycle parking facilities shall not encroach on any area in the public right of way intended for use by pedestrians, nor shall they encroach on any required fire egress.

e. On-street bicycle parking spaces may be counted toward the minimum customer/

visitor bicycle parking requirement.

6.4 CIVIC SPACE STANDARDS

6.4.1 Intent

a. These standards apply to those spaces that are either publicly owned or publicly accessible, as designated on the regulating plan.

b. Squares, civic greens and plazas should be situated at prominent locations within each urban neighborhood and should be dedicated to important events or citizens. The green plants and trees of squares and civic greens provide a landscape and civic architecture that complement the surrounding private building architecture.

c. Squares are active pedestrian centers. Civic greens are spaces intended for less intensive foot traffic. Surface treatment is regulated accordingly.

d. Pervious paving materials (to allow oxygen for tree roots and absorb stormwater run-off are encouraged in both squares and civic greens, and the percentage of impervious paving material is limited.

6.4.2 Standards

Squares and civic greens must be designed, planted and maintained according to the following requirements:

a. Squares and civic greens shall have at least 60 percent of their perimeter fronting public rights-of-way. Both types of spaces shall be surrounded by street trees. Their dimensions shall be no narrower than a 1:5 ratio and no square or civic green width or breadth dimension shall be less than 25 feet.

b. Appropriate to their high (pedestrian) traffic level they must be designed with a higher percentage of paved surface area.

c. A clear view through the square or civic green (from two to eight feet in height) is required, both for safety and urban design purposes.

d. Squares and civic greens may not include active recreation structures such as ball fields and courts.

6.4.3 Materials and Configurations

1. General

a. Street trees shall be planted along the alignment shown in the street type specification. They may (generally will) be of a different species than the connecting streets.

b. The ground surface level elevation shall be between 0 and 18 inches above the top of the adjacent curb.

c. The maximum slope across any square or civic green shall not exceed ten percent.

d. Except for tree trunks, street lights, civic buildings, public art or monuments, there shall be a clear view between two and seven feet above grade. The foliage of newly planted trees may intrude into this area until the tree has sufficient growth to allow such a clear trunk height.

e. Trees within a square or civic green may also be selected from the public space tree lists (see Sec. 507. Tree Lists).

f. Asphalt is prohibited within a square or civic green tract.

2. Squares

Appropriate to their high (pedestrian) traffic level, squares shall incorporate a

higher percentage of paved surface area. Surface treatment and materials (within the area back-of-curb to back-of-curb, excluding any civic use building, public art or monument footprint) shall be a minimum 20 percent and maximum 35 percent unpaved pervious surface (turf, groundcover, gravel, soil or mulch).

3. Civic Greens

Appropriate to their less intensive character, civic greens shall be designed with a lower percentage of paved surface area. Surface treatment and materials (within the area back-of-curb to back-of-curb excluding any civic use building, public art or monument footprint) shall be a minimum 50 percent unpaved pervious surface area (such as turf, groundcover, gravel, soil or mulch).

4. Pedestrian Pathway

The area within a pedestrian pathway shall be a public access easement or public right of way. The easement width for these pathways must not be less than 20 feet with a paved walkway not less than ten feet wide and must provide an unobstructed view straight through its entire length, except where otherwise specified on the regulating plan.

6.5 LANDSCAPE STANDARDS

6.5.1 General to zones T3, T4, T5

a. Street trees shall be selected based on the types shown on Exhibit K and Tables 7 and 8.

b. The landscape installed shall consist primarily of native species (See Appendix) requiring minimal irrigation, fertilization, and maintenance. The landscape installed shall consist primarily of durable species tolerant of soil compaction.

c. At the time of planting, trees shall be at least 3 inches in caliper as defined by the American Standard for Nursery Stock and at least 12 feet in overall height.

d. Control and manage known invasive species on site. Use non-invasive plant species. Use native plants.

e. Street trees shall be “limbed up” so as to not interfere with pedestrian or auto/truck travel (minimum 7 feet clear over the sidewalk and 14 feet over the travel lanes of the street and to provide retail visibility).

f. All turf grass must be solidly sodded at installation—not seeded, sprigged, or plugged. It is recommended that turf grass only be utilized where used for active recreation and foot traffic and not for only ornamental purposes.

g. Street trees should be placed at 40 foot spacing.

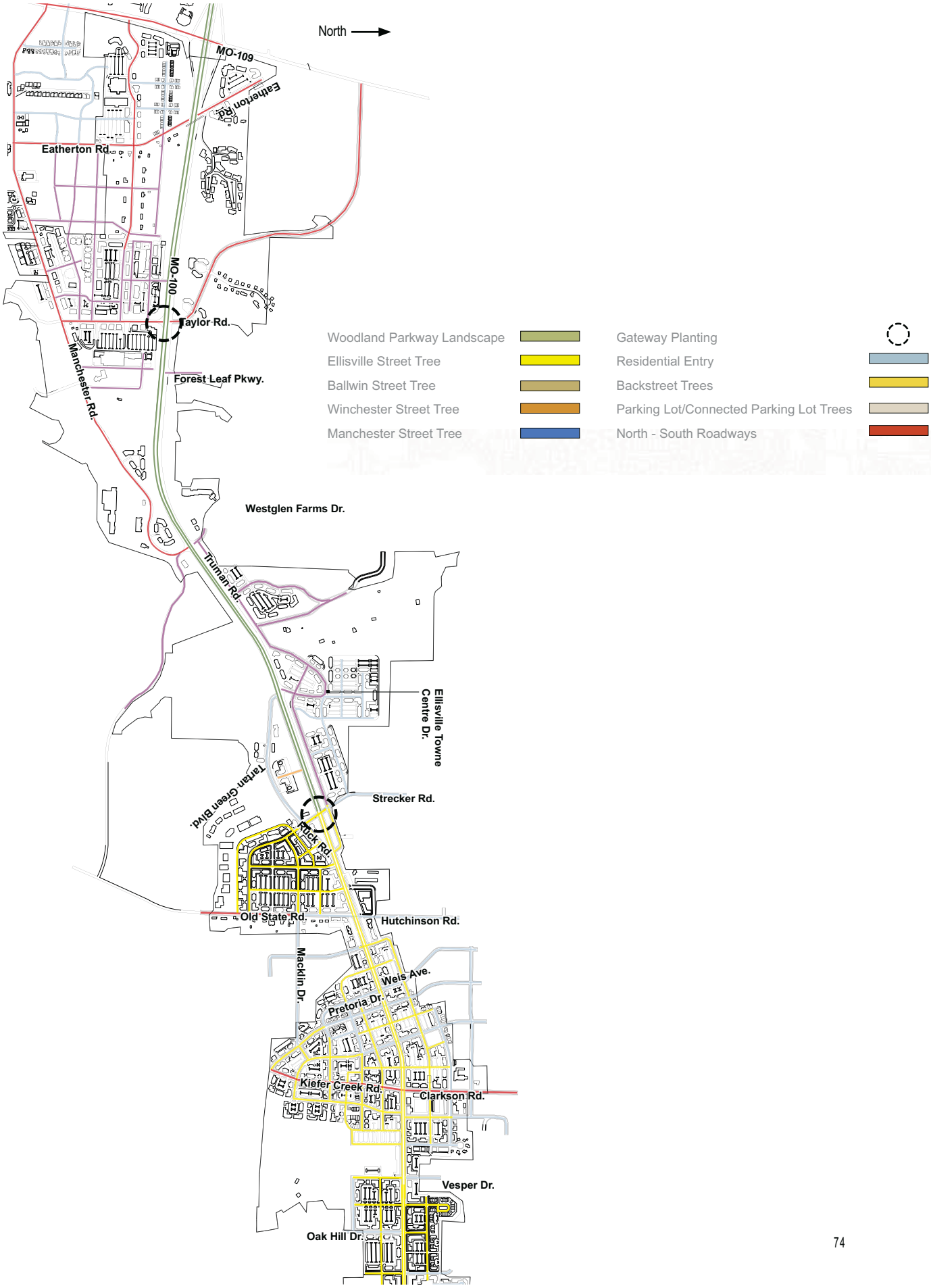
h. Where necessary, spacing allowances may be made to accommodate curb cuts, fire hydrants and other infrastructure elements

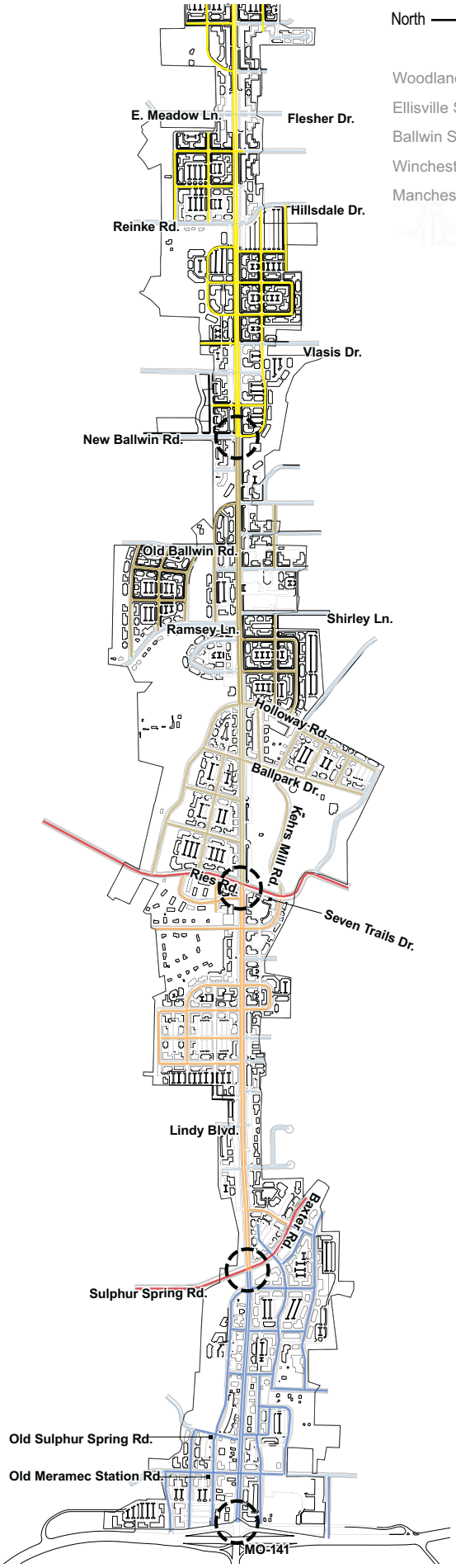
i. Cisterns may be used to capture and recirculate stormwater from buildings.

j. Native plant perennial landscapes should replace turf grass where possible or be native turf requiring minimal water use.They should be placed lower than walkways, not mounded up.

k. Planter boxes should be bottomless, flow-through boxes with native plants, placed next to buildings and designed to capture building runoff. They may be placed in courtyards or adjacent sidewalks with runoff sent to them via French drains or hidden pipes.

l. Streetscreens should be between 3.5 and 8 feet in height. The Streetscreen may be replaced by a hedge or fence by Warrant. Streetscreens shall have openings no larger than necessary to allow automobile and pedestrian access.


North
MO-109
Eatherton Rd.
Eatherton Rd.
MO-100
Taylor Rd.
Manchester Rd.
Forest Leaf Pkwy.
Westglen Farms Dr.
Truman Rd.
Ellisville Towne Centre Dr.
Tartan Green Blvd.
Strecker Rd.
Rock Rd.
Old State Rd.
Hutchinson Rd.
Macklin Dr.
Weis Ave.
Pretoria Dr.
Kiefer Creek Rd.
Clarkson Rd.
Vesper Dr.
Oak Hill Dr.
Woodland Parkway Landscape
Ellisville Street Tree
Ballwin Street Tree
Winchester Street Tree
Manchester Street Tree
Gateway Planting
Residential Entry
Backstreet Trees
Parking Lot/Connected Parking Lot Trees
North - South Roadways



North

Woodland Parkway Landscape		Gateway Planting	
Ellisville Street Tree		Residential Entry	
Ballwin Street Tree		Backstreet Trees	
Winchester Street Tree		Parking Lot/Connected Parking Lot Trees	
Manchester Street Tree		North - South Roadways	

TABLE 7. PLANTING TYPES

This table describes the recommended tree species for each throughfare type or specified location in the corridor.

Location	Description	Recommended Native Species
Town Center	Trees along arterial roadways should have a high urban stress tolerance, ability to grow in full sun, and have attractive fall color. Depending on the proximity to buildings and walkways, trees may need to have a medium spread (35' or less), but should remain tall to provide viewing of commercial signage.	American Linden, Hackberry, Blackgum, Freeman Maple, Red Maple, Willow Oak, Pin Oak, Shingle Oak, Swampwhite Oak, Sycamore
Parkway	Parkways are encouraged to be a mix of native tree species that have an intermediate to high urban stress tolerance (including air pollution, poor drainage, compacted soil and drought). These trees should demonstrate a mix of heights and fall color.	Native species are recemmended for parkways: all trees included in this chart are native. Shortleaf pine is also appropriate.
Gateway	Gateway trees should identify entries into each town with showy flowers and fall color. These trees should be of a medium mature height and spread (35' or less) due to their proximity to building faces, and have an intermediate to high urban stress tolerance.	Gateways can include showey trees such as theTuliptree, River Birch, Eastern Redbud, Flowering Dogwood or larger trees including the American Hornbeam, Columnar Red Maple, Willow Oak, Pin Oak, Shingle Oak and Swampwhite Oak
Boulevard (adjacent to highway)	Boulevard tree planting (along Manchester Road) should have a high urban stress tolerance, ability to grow in full sun, a large spread and attractive fall color. Trees should provide an architecturally consistent habit, while tall and open enough to provide the ability to locate signage and building frontages. Tree plantings should vary within each town along the corridor in species, color and fall color to strengthen the separation provided by the gateway plantings. Selected tree should remain a single species in each town along Manchester Road.	Hackberry, American Linden, Blackgum, Red Maple, Willow Oak, Pin Oak, Shingle Oak and Swampwhite Oak, Sycamore
Boulevard (adjacent to building)	Boulevard and Backstreet plantings (adjacent to buildings) should have an intermediate to high urban stress tolerance, small spread (35' or less), an attractive fall color and/or showy flowers, ability to grow in full sun/ partial shade, as well as the ability to grow in small areas, such as tree boxes/lawns. Trees should have a tall height (at least 30') and dense shade to provide a comfortable walking and dining area. Therefore, selected tree type may differ from the scheme along the roadway itself. Trees should be tall to provide viewing of commercial signage.	American Hornbeam, Columnar Red Maple, Willow Oak, Pin Oak, Shingle Oak and Swampwhite Oak, Sycamore
Residential Entries	Residential Entry tree plantings should signify residential areas through showy flowers, fall color and scale. Trees may have a low to high urban stress tolerance, and may also range in height and spread. Due to their likely proximity to utility wires, trees may need to remain of a medium height and spread.	Eastern Redbud, Flowering Dogwood, Serviceberry, River Birch and American Hornbeam
Parking Lot	Trees within parking lots should provide dense shade, have a large spread, high urban stress tolerance and ability to grow in full sun. Large parking areas and parking areas adjacent to one another should vary in species, color and fall color to avoid monoculture plantings.	Hackberry, Blackgum, Red Maple, Willow Oak, Pin Oak, Shingle Oak and Swampwhite Oak, Sycamore

Native Plant Source: Missouri Botanical Garden "plant finder"

TABLE 8. TREES WITHIN PUBLIC FRONTAGE

This table describes the recommended tree species' growth environment, size and color.

	Height	Spread	Fall Color	Urban Stress Tolerance	Sun/Shade	Native
American Hornbeam	30'	20-25'	Yellow	High	Both	Yes
Blackgum	over 45'	65-75'	Red	Intermediate	Full/Part Shade	Yes
River Birch	30-45'	30-40'	Yellow	Intermediate	Full/Part Shade	Yes
Hackberry	over 45'	40-60'	Yellow	High	Full/Part Shade	Yes
American Linden	over 45'	45'	Yellow	Intermediate	Full/Part Shade	Yes
Red Maple	over 45'	25-35'	Red	High	Full/Part Shade	Yes
Pin Oak	over 45'	35-40'	Bronze, Red	Intermediate	Full	Yes
Shingle Oak	over 45'	40-60'	Red/Yellow	Intermediate	Full	Yes
Swampwhite Oak	over 45'	50-60'	Bronze	Intermediate	Full	Yes
Willow Oak	over 45'	35-50'	Yellow	Intermediate	Full	Yes
Eastern Redbud	under 30'	15-30'	Yellow	Low	Both	Yes
Serviceberry	under 30'	15-20'	Org, Red, Yellow	Intermediate	Full/Part Shade	Yes
Flowering Dogwood	20-25'	20-30'	Red	Intermediate	Full Sun/Full Shade	Yes
Tuliptree	over 45'	25-45'	Yellow	Low	Full/Part Shade	Yes

Source for table: City of St. Louis Forestry Division – Street Tree Information List.
Note: Flowering Dogwood and Willow Oak are not included in the City of St. Louis Forestry Division – Street Tree Information List

It is not recommended that no one tree should comprise more than 10% of the urban forest of Manchester Road and that the total tree canopy with the Manchester Road Redevelopment should be a minimum of 15% in developed areas.

m. Each plan submitted under this Code shall include a site plan showing and describing in detail by species and size all existing trees, including any trees of 6" caliper or larger (as defined by the American Association of Nurseyman Stock Standards) proposed to be removed, and all proposed new trees, shrubs and other landscape components. Compliance of the plan with the existing tree ordinance shall be subject to the approval of the Planning Commission.

6.5.2 **Specific to zones T3, T4**

a. The first Layer may not be paved, with the exception of Driveways

6.5.3 **Specific to zone T3**

a. Trees shall be naturalistically clustered.

b. Lawn shall be permitted by Right.

6.5.4 **Specific to zones T4 and T5**

a. Trees shall not be required in the first Layer.

c. The first Layer may be paved to match the pavement of the Public Frontage if sufficient plant soil and adequate tree opening as described below are provided.

d. Lawn shall be permitted By Warrant.

e. Trees should be planted below the grade of the sidewalk and the street in structural cells with sufficient root space. A minimum of 1,000 square feet of soil or soil mix shall be provided for each tree. Tree openings in pavement shall be a minimum of 100 square feet in order to accommodate the full growth of the tree. Curb and fencing is encouraged to prevent compaction. Till and scarify the subgrade prior to planting to prevent barriers to roots between the subgrade and the new planting medium.

f. Avoid placing utilities (street light lines, irrigation lines, conduit for parking meters, etc.) within the tree root zone.

g. Planters are to be continuous where outdoor dining is provided.

h. The edge of any surface parking lot adjacent to a single family residential (detached or attached) lot shall be planted with canopy shade trees from the Tree List, planted at an average distance not to exceed 40' on center and aligned three to seven feet behind the common lot line.

i. Parking lot edges along a common lot line shall have a street wall, garden wall or privacy fence.

j. Surface parking shall be provided with one canopy shade tree per 12 square feet of parking field.

k. Invasive species may not be used anywhere within the Manchester Road Form Based Code District (see Appendix).

6.6 GRADING, DRAINAGE AND STORMWATER STANDARDS

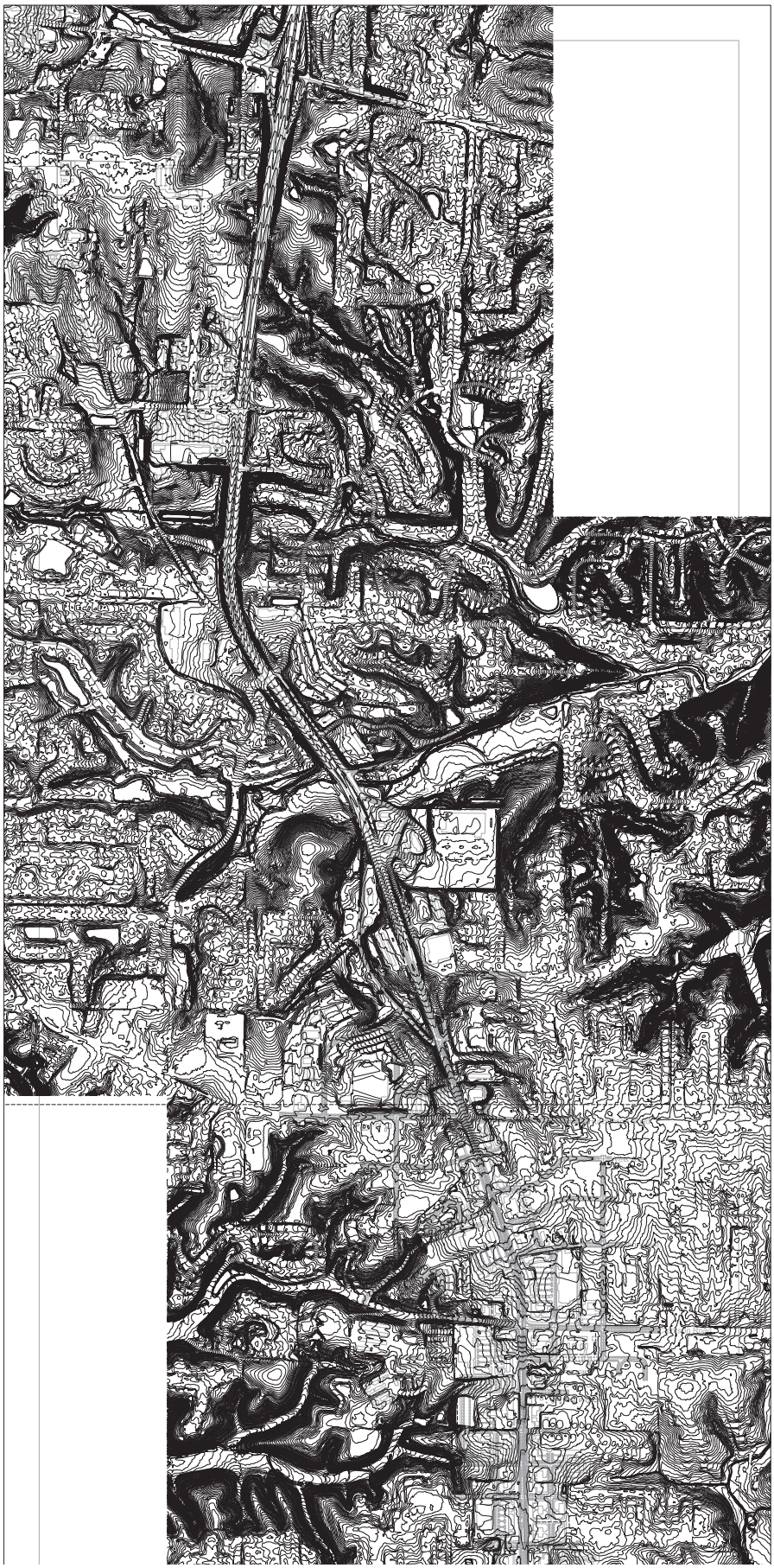
6.6.1 **General to all zones T3, T4, T5,**

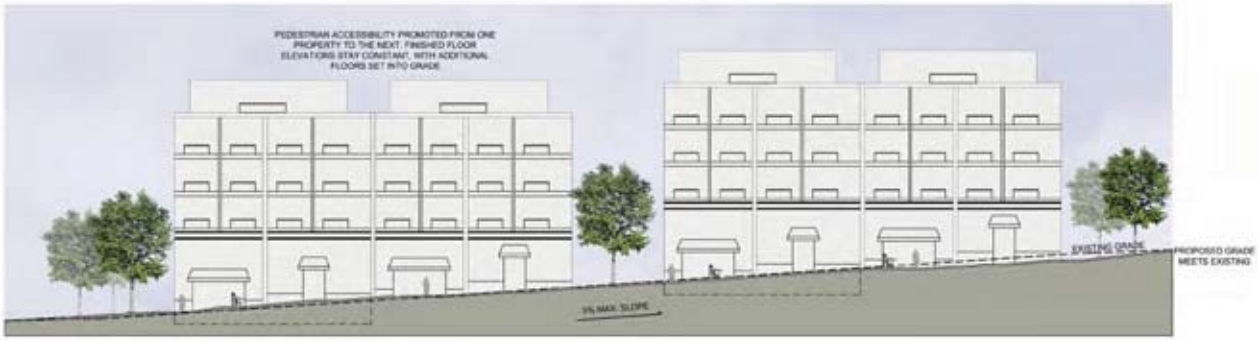
a. Rain Gardens and Bioswales should be installed to infiltrate runoff from parking lots, Thoroughfares, Plazas and other impervious surfaces. Stormwater quality treatment systems should be provided through best management practices (BMPS) such as flow-through planters, bio retention basins, vegetated swales, green roofs, and water-quality basins.

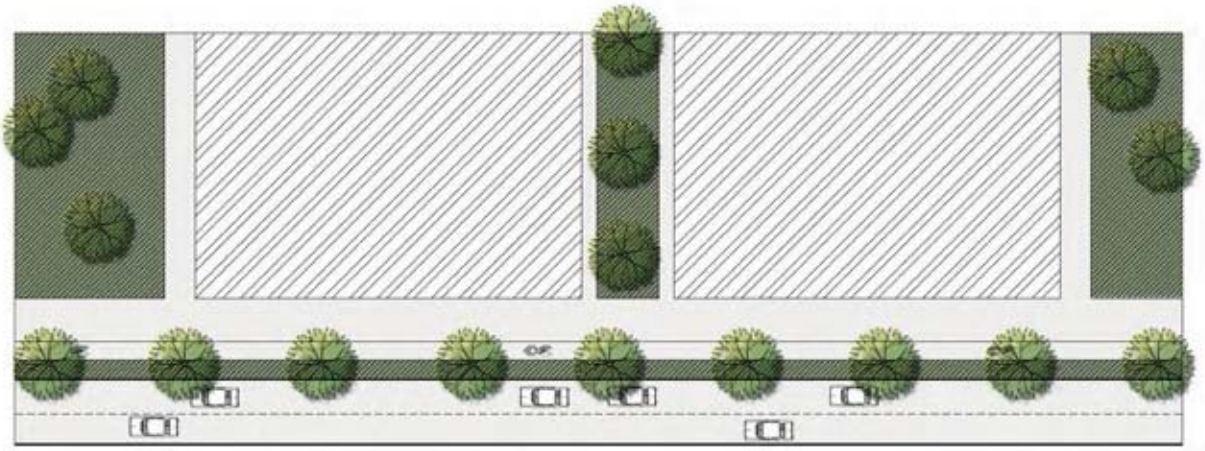
b. Where vegetative solutions are not feasible, porous concrete or porous asphalt should be specified for Sidewalks, parking lots, and Plazas to infiltrate stormwater

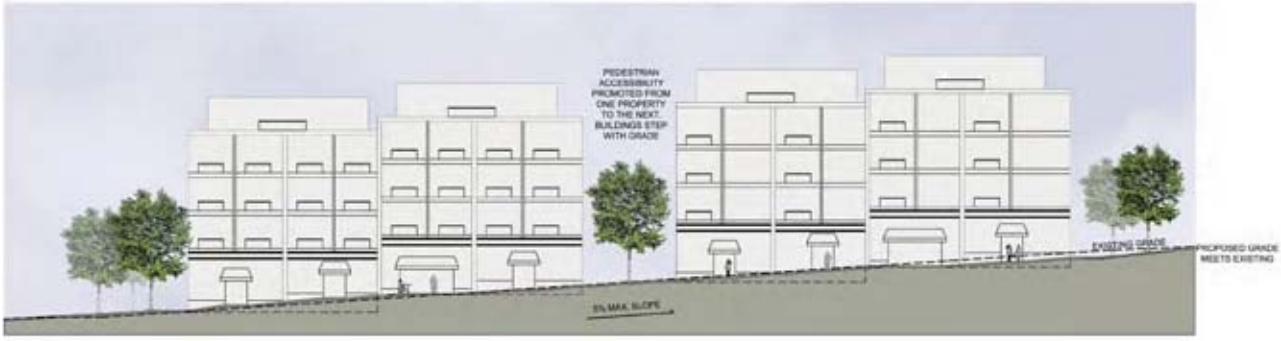
c. Exhibit L Grading Plan provides guidance for grading activities.

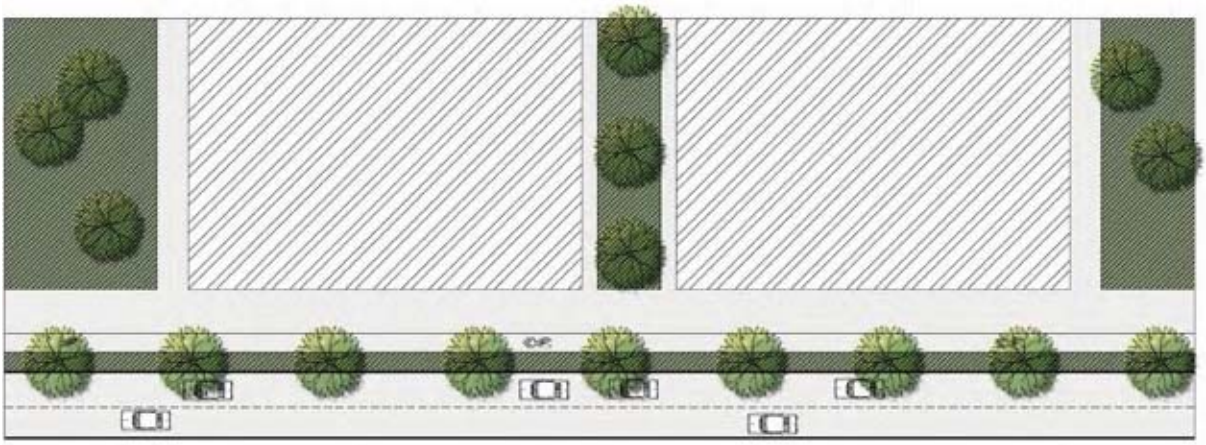
d. Block to block grading between parcels should generally conform to the Master

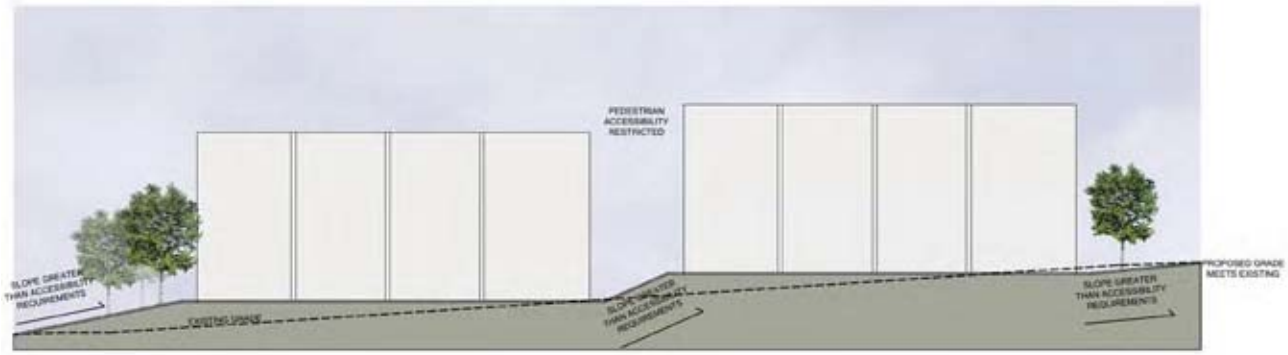


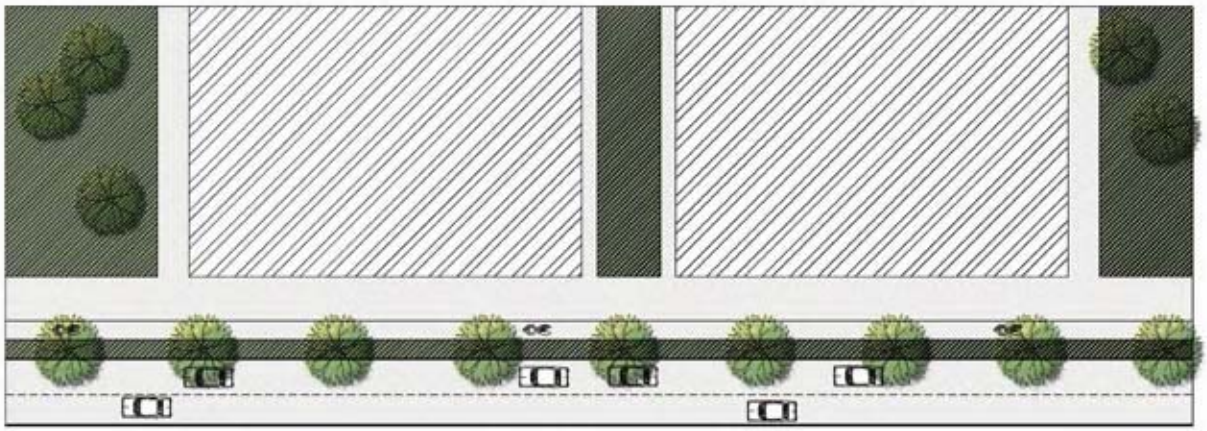

PEDESTRIAN ACCESSIBILITY PROMOTED FROM ONE PROPERTY TO THE NEXT. FINISHED FLOOR ELEVATIONS STAY CONSTANT, WITH ADDITIONAL FLOORS SET INTO GRADE
EXISTING GRADE
PROPOSED GRADE MEETS EXISTING
5% MAX. SLOPE


C/L


PEDESTRIAN ACCESSIBILITY PROMOTED FROM ONE PROPERTY TO THE NEXT. BUILDINGS STEP WITH GRADE
EXISTING GRADE
PROPOSED GRADE MEETS EXISTING
5% MAX. SLOPE


C/L


PEDESTRIAN ACCESSIBILITY RESTRICTED
SLOPE GREATER THAN ACCESSIBILITY REQUIREMENTS
EXISTING GRADE
SLOPE GREATER THAN ACCESSIBILITY REQUIREMENTS
SLOPE GREATER THAN ACCESSIBILITY REQUIREMENTS
PROPOSED GRADE MEETS EXISTING



Grading Plan to insure that roadways and parking lots connect together seamless from parcel to parcel. Sidewalks and bike lanes should also interconnect at reasonable grades to ensure efficient pedestrian and bicycle access. Development of adjacent parcels should insure connectivity consistent with the American with Disabilities Act.

e. As shown in Exhibit M, buildings should step with grade if needed to insure that parking lots, roadways, sidewalks and bike lanes connect efficiently.

6.6.2 **Specific to Zones T4, T5**

a. Buildings should be equipped with roofs of shallow 4-inch soils and drought tolerant plants. Buildings approved for Intensive Green Roofs may hold soils deeper than 4" and larger plants and trees.

c. Balconies should be equipped with planter boxes designed to capture runoff from the balcony.

6.7 SIGNAGE STANDARDS

6.7.1 **General to all zones T3, T4, T5**

a. Purpose: This section contains standards and guidelines for signage to ensure signs installed in the Corridor are consistent with the overall quality and character of new development. Please refer to Manchester, Winchester, Ballwin, Ellisville and Wildwood specific sign ordinances for all sign related information or regulations not specifically addressed in this signage section. Photographic examples as shown in the Appendix are advisory only.

b. Applicability: The signage standards determine the allowed type and size, material, design, and maintenance requirements for signage on commercial development. All issues not specifically addressed herein shall be addressed pursuant to each City's Municipal Code.

c. Definitions:

- Animation: More than one change in a sign's message or lighting within a single twenty four (24) Hour period.
- Exposed Neon Tube Illumination: The illumination of a sign by neon tubes mounted directly to the face of the sign.
- External Illumination: The illumination of a sign by projecting light on to the face of the sign from a light source located outside of the sign, such as "gooseneck" lamps.
- Halo Illumination: The illumination of a sign by projecting light behind an opaque letter or emblem which results in the appearance of a ring of light around the non-illuminated letter or emblem.
- Animation: More than one change in a sign's message or lighting within a single twenty four (24) Hour period.

d. Prohibited Signs:

- Any sign that directs attention toward a business, product, commodity, service or entertainment by means of a flag, pennant, streamer, tent, balloon, wind-operated mechanism, electronic message boards, flashing lights, revolving sign, searchlight or any other type of fluttering, flashing, mechanical movement, including any person or animal used for such purpose.
- Any sign using lighting that is not constant and fixed or on which colors change.

- Any flashing, fading, moving, sign. Only fixed, non-moving, non-animated letters, characters may be utilized Exposed Neon Tube Illumination:

e. Guidelines:

- In general, only natural construction materials such as wood, metals, ceramic, and stone should be used for signs. Synthetic materials should only be used if they are designed to resemble the recommended natural materials. Plastic or acrylic panels are strongly discouraged.
- Illumination should consist of incandescent, fluorescent, halogen, neon, LED, and metal halide light sources only. High pressure sodium and low pressure sodium lighting are strongly discouraged.
- Contrasting colors should be used between the color of the background and the letters of symbols used. Light letters on a dark background or dark letters on a light background are most legible.
- Colors or color combinations that interfere with the legibility of the sign copy should be avoided. Too many colors can confuse the message of a sign.
- Fluorescent colors should be limited to ten (10) square feet of sign area per facade per establishment.
- Sign design, including color, should be appropriate to the establishment, conveying a sense of what type of business is being advertised.
- The location of all permanent signs should be incorporated into the architectural design of the building. Placement of signs should be considered part of the overall facade design. Sign locations should be carefully considered, and align with major architectural features.
- Storefront signage should help create architectural variety from establishment to establishment. In multi-tenant buildings, signage should be used to create interest and variety.
- All signs (including temporary signs) should present a neat appearance.
- All signs (including temporary signs) should be constructed and installed utilizing the services of a professional sign fabricator.
- Sources for signage illumination (interior or exterior) shall be limited to "white light" sources such as Induction, Linear or Compact Fluorescent, Metal Halide, or LED. High Pressure Sodium should be avoided because of its poor color rendering characteristics. Incandescent and Halogen should be avoided because of their relatively short life. Low Pressure Sodium and Mercury Vapor are prohibited. Daytime and nighttime brightness levels shall be suitable for the context or environment in which the sign is installed. Signs shall be equipped to provide variable brightness (or output) during day viewing or dark viewing.
- The Appendix provides signage examples.

6.7.2 **Specific to Zones T3 and T4**

a. Refer to Manchester, Winchester, Ballwin, Ellisville and Wildwood specific sign ordinances for Sub-urban Zone sign regulations.

b. Refer to Manchester, Winchester, Ballwin, Ellisville and Wildwood specific sign ordinances for Neighborhood Commercial Zone sign regulations.

6.7.3 **Specific to Zone T5**

a. Monument Sign. A Monument Sign is a permanent sign supported by one or

more braces in or upon the ground. Monument Signs are permitted subject to Design Review. The following Monument Sign standards apply:

- A Monument Sign may have a maximum sign area of 40 square feet and a maximum height of six feet as measured from the highest point of the sign structure.
- Any such Monument Sign and all its structural supports shall be located a minimum of three feet from all property lines and a minimum of ten feet from the face of any curb line.
- No part of a Monument Sign or its structural supports shall extend over any public right-of-way.
- Monument signs may be located in a landscape area only to the extent approved by the decision-making authority through the design review process.

b. Wall Signs. Wall Signs are signs that are located on, and parallel to, a building wall. The following Wall Sign standards apply:

- Signage Height: The height of all signs, including logos or other representations, cannot exceed a total size of twenty-four (24) inches. Therefore, if particular signage is made up of two (2) separate bands, the combination of the two (2) lines of wording cannot equal an amount greater than twenty-four (24) inches.
- Square Footage: The outline area of each sign shall not exceed one (1) square foot of size for every liner foot of building length, unless having direct frontage onto a City-designated arterial roadway, which then the Zoning Ordinance accommodates up to two (2) square feet of size for every linear foot of building length. However, no attached Wall Sign shall exceed fifty (50) square feet in outline area, regardless of roadway location.
- Logos: The size of any logo cannot exceed twenty-four (24) inches in height and is calculated as part of the signs overall square footage.
- Mounting: All signage shall be limited to the use of individual letters (pin-on) types. Additionally, a minimum separation of one (1) inch between the wall facade and the sign lettering must be maintained.
- For buildings located on corner lots, or lots with double frontage, each business may have one (1) attached business sign on any two (2) walls of a building that are exterior walls of that particular tenant space. Buildings fronting onto a commercial plaza, and adjoining two (2) abutting roadways, may be authorized a third sign, but the total square footage of all signage shall not exceed that allowed by a combination of the two (2) permitted signs. A third sign shall not be authorized, if a major or minor projection sign exists on the building's end cap area, whether existing or planned. In this instance, a maximum of two (2) signs shall be authorized, including the major or minor projection type.

c. Awning Signs. Awning Signs are signs applied to the primary face of an awning, including sloped awning and vertical "box" awning. The following Awning Sign standards apply:

- No Awning Sign shall exceed twenty percent (20%) of the area of the awning face.
- Awning Signs shall project no farther from the building than its associated

awning.

- No portion of an Awning Sign shall be less than eight (8) feet above the level of the sidewalk or other public right-of-way over which it projects.
- Awning Signs should consist of vinyl or paint applied directly to the awning.
- Awning Signs should be illuminated by external illumination only.

d. Projecting Blade Signs:

Major Projecting Blade Signs: Major Projecting Blade Signs are tall, large, vertically oriented signs which project from the building perpendicular to the facade and which are structurally integrated into the building. The following major Projecting Blade Sign standards apply:

- Only one (1) Major Projecting Sign shall be permitted per establishment.
- Major projection signs cannot exceed thirty (30) square feet in size or ten (10) feet in height and must be lit by external sources only.
- Major Projecting Signs shall project no more than six (6) feet from the facade of the building.
- Letter width shall not exceed two-thirds (2/3) of the sign width.
- No portion of a Major Projecting Sign shall extend more than ten (10) feet above the roof line.
- Materials used in Grand Projecting Signs should be metal and paint only.
- Major Projecting Signs should be illuminated by exposed neon tube illumination or halo illumination.
- Letters should be oriented right-side-up or stacked in a single upright row.

Minor Projecting Blade Signs: Minor Projecting Blade Signs are oriented perpendicularly to the building facade and which are suspended under a bracket, armature, or other mounting device. The following minor Projecting Blade Sign standards apply:

- Each tenant space is authorized to install one (1) projection sign.
- If business activity is located on the ground floor, a maximum size of four (4) square feet can be authorized.
- If the business activity is located on the second (2nd) floor of the building, a maximum size of this sign cannot exceed two (2) square feet in overall area.
- Signs shall project no more than four (4) feet from the facade of the building.
- Signs should be illuminated by external illumination only.
- Projection signs cannot be placed closer than twenty (20) feet to an adjoining projection sign that is located on the same floor and must be structurally secure in their installation, as authorized under a building permit from the City and St. Louis County.
- The placement of projection signs must allow for a minimum of eight (8) feet of separation from the bottom of the signboard to the finish grade elevation of the abutting sidewalk.
- The type of materials and design of the projection signs must be reviewed and acted upon by the CRC, before any permits shall be issued by the Department of Planning for their erection.
- Projection signs (minor types), as determined by the CRC, having special

character created by its shape, representation, or design, may be allowed an additional thirty percent (30%) of overall area relative to their allowable size referenced above.

e. Window Signs:

Window Signs are signs applied directly to a window. Window Signs shall be located on a transom window above a primary entrance, the glazed area of primary door or other storefront window glazing. The following Window Sign standards apply:

- Painted window signs can be authorized in the Town Center Area on any window, but cannot exceed thirty percent (30%) of the glazed area.
- A permit for window sign is required from the City.
- Window Sign should consist of vinyl or paint applied to the glass only.
- Window Sign should not be illuminated.

f. Sandwich Board Signs:

A sandwich board sign is a sign that is self-supporting, designed to be moveable and not structurally attached to the ground, a building, a structure or another sign. The following Sandwich Board standards apply:

- One (1) Sandwich Board is allowed per building during normal business hours, seven (7) days a week.
- Sandwich Board signs shall be placed on private property immediately in front of the business, within the width of store frontage and not, for example, at the street corner in front of other businesses. For businesses located in an arcade or plaza, a portable sign may be placed at the street entrance to the arcade or plaza.
- Sandwich Board signs shall be stored indoors after hours of operation.
- The size of the sign face cannot exceed ten (10) square feet in overall area and it is not counted toward the allowable attached Wall Signage referenced above.
- Sandwich Board signs cannot be lighted.
- Sandwich Board signs cannot obstruct the public right-of-way or sidewalk located adjacent to or abutting the business space.
- Sandwich Board signs, and their support structures, cannot exceed a height of four (4) feet, as measured from the surface where they are placed, or thirty (30) inches in width.
- The frame of the Sandwich Board sign is to be constructed of wood or metal materials only.
- Sandwich Board signs are to have the appearance of an “A” frame construction, but can either be single or double-faced in design style.
- The type of materials and design of the sandwich board signs must be reviewed and acted upon by the CRC, before any permits can be issued.

g. Temporary Banners

Temporary Banners, which are located on, and parallel to a building wall and are designed, constructed, and intended for display on private property for a period of not more than ninety (90) consecutive days per year. Examples include “grand opening”, “special sale,” and seasonal temporary banner signage. The following Temporary Banner standards apply:

- Temporary Wall Signs shall only be mounted on a wall area below the

second floor level that faces a public street or a parking lot.

- A maximum of one (1) Temporary Wall Signs is allowed per establishment.
- No Temporary Wall Signs shall exceed thirty-two (32) square feet in area.
- Temporary Wall Signs shall project no more than one (1) foot from the facade of the building.
- Materials used in Temporary Wall Signs should consist of a flexible vinyl material with grommet holes installed around the edges to accommodate attachment to a building.
- Temporary Wall Signs should not be illuminated.

h. Events Kiosk

The Events Kiosk is a freestanding single or double-sided sign that consists of a Town Center directory map and/or local temporary events.

6.8 LIGHTING STANDARDS

6.8.1 General Intent

A successful exterior lighting design improves nighttime visibility by using layers of light. In this way, excessive or undesirable brightness (glare) is avoided because no single layer is relied upon to provide all of the required illumination. This type of approach begins with the street lighting system and includes pedestrian and building façade lighting as well. Lighting should provide uniform lighting on the street and strong vertical light at crosswalks and intersections. The lighting of sidewalks and trees can then be used to provide a soft backdrop. Lighting will be minimized to provide light only where safety and visibility are critical. Specific lighting control measures and technologies will ensure that lighting is not energized when it is not needed. As the architectural and streetscape design evolves, selection of luminaires, arms, and pole combinations should be coordinated with the urban design effort to achieve integration of the aesthetics and retain the desirable performance characteristics of good lighting. Urban design issues such as storm water drainage, underground utilities, grading, and traffic flow must also be addressed by the lighting design. The integration of the lighting equipment into the urban environment will be important to the overall success of the streetscape. Implementation of a successful streetscape lighting plan can be achieved by applying the following guidelines to future projects:

6.8.2 General Guidelines

a. Prime consideration shall be given to light sources which emit “white light” such as Induction, Fluorescent, Ceramic Metal Halide or Light Emitting Diodes (LED). Halogen and other incandescent sources are to be minimized.
b. All light sources shall have a correlated color temperature (CCT) of 3500K.
c. All sources shall have a color rendering index (CRI) of at least 80.
d. Visual clutter shall be reduced as much as possible by integrating lighting with signals, signage and other elements within the urban design.
e. Pedestrian poles shall be located with respect to building entries and curb cuts to maintain consistent spacing along the street from intersection to intersection.
f. Parking and turn lanes shall be acknowledged where appropriate to maintain key visual cues for pedestrians and motorists.
g. The beginning and end of the commercial district shall be defined with appropriate

lighting equipment.

h. Transition zones between commercial and residential districts shall respond to pedestrian traffic needs.

i. Intelligent controls shall be implemented for street lighting where a need is identified for a reduction of light level (e.g. dimming of street lights).

j. Dynamic displays (i.e. flashing, travelling, blinking, animated, intermittent, etc.) shall be reviewed by the City to ensure safe travel for pedestrians and motorists.

k. Site lighting for adjacent properties along the corridor shall consider motorist and cyclist view and reduce glare accordingly.

l. Specific exemptions for holiday lighting and displays must be obtained from the jurisdiction in which the installation is intended.

m. Table 9 provides representative examples of appropriate lighting equipment.

n. Streetlights shall be located between 9 feet and 16 feet above grade with a maximum average spacing (per block face) of 50 feet on center on Storefront General frontages and General Urban frontages, and 75 feet on all other frontages along the street tree alignment line on each side of the street-space and travel lanes (unless otherwise indicated on the regulating plan).

o. At the front of the building, exterior lights shall be mounted between 6 feet and 14 feet above the adjacent grade.

p. All lots with alleys shall have lighting fixtures within five feet of the alley. These fixtures shall illuminate the alley, be between 9 and 16 feet in height, and not cause glare in adjacent lots.

q. Lighting elements shall be specified to proscribe those that cast a clearly/perceptively unnatural spectrum of light (such as low pressure sodium). LED, metal halide, or halogen elements with a spectrum of light more perceptively natural are preferred. HID or fluorescent lights (excepting compact fluorescent bulbs that screw into standard sockets) shall not be used on the exterior of buildings. These standards may be updated by the CRC as technologies advance and produce additional equivalent or better lighting elements.

r. Floodlights or directional lights (maximum 100-watt bulbs) may be used to illuminate alleys, parking garages and working (maintenance) areas, but shall be shielded or aimed in such a way that they do not shine into other lots, the street-space, or direct light out of the Form District.

s. Flood or uplighting may not be used to illuminate private building walls. Accent lighting may be permitted on civic use buildings, historic buildings, or monuments to highlight architectural features (such as church steeples or courthouse domes).

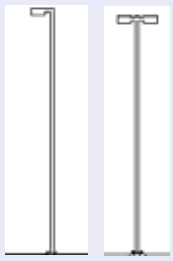
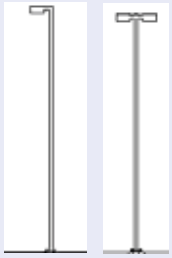
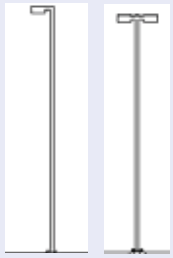
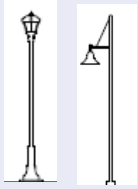
t. Site lighting shall be of a design and height and be located so as to illuminate only the lot. An exterior lighting plan shall be approved as consistent with these standards by the CRC.

u. Flashing, traveling, animated, or intermittent lighting shall not be mounted on the exterior of any building whether such lighting is of temporary or long-term duration.

v. Lighting for parking garages shall consider general Crime Prevention Through Environmental Design (CPTED) intent.

w. Holiday Lighting (temporary) is exempt.

Public Lighting. Lighting varies in brightness and also in the character of the fixture according to the Transect. The table shows five common types.

	T3	T4	T5	Specifications
30' Roadway 		▪	▪	Source: Induction, Metal Halide or LED Lumens: 22,000 IND and CMH, 15,400 LED Shielding: Fully shielded BUG Rating: B2 U2 G2 Mounting Height: 30' to Lamp Center Spacing: 130' - 160' (Continuos Lighting Application) Absolute Allowable Max (fc): 4 Control Strategies: Photocell only OR photocell (On) with time switch (Dim/Off) at designated curfew
25' Roadway 	▪	▪	▪	Source: Induction, Metal Halide or LED Lumens: 22,000 IND and CMH, 15,400 LED Shielding: Fully shielded BUG Rating: B2 U2 G2 Mounting Height: 25' to Lamp Center Spacing: 110' - 130' (Continuos Lighting Application) Absolute Allowable Max (fc): 4 Control Strategies: Photocell only OR photocell (On) with time switch (Dim/Off) at designated curfew
20' Roadway 	▪	▪		Source: Induction, Metal Halide or LED Lumens: 14,000 IND and CMH, 9800 LED Shielding: Fully shielded BUG Rating: B2 U2 G2 Mounting Height: 20' Spacing: 300' Absolute Allowable Max (fc): 4 Control Strategies: Photocell only OR photocell (On) with time switch (Dim/Off) at designated curfew
12' Pedestrian 	▪	▪		Source: Induction, Ceramic Metal Halide or LED Lumens: 3800 IND and CMH, 2660 LED Shielding: Fully shielded BUG Rating: B2 U2 G2 Mounting Height: 12' - 14' to Lamp Center Spacing: XXX Absolute Allowable Max (fc): 3 Control Strategies: Photocell only OR photocell (On) with time switch (Dim/Off) at designated curfew
3' Bollard	▪	▪		Source: Compact Fluorescent or LED Lumens: 1800 CFL, 1260 LED Shielding: Fully shielded BUG Rating: B1 U2 G1 Mounting Height: 3' to Lamp Center Spacing: XXX Absolute Allowable Max (fc): 10 Control Strategies: Photocell only OR photocell (On)

6.9 UTILITIES AND MECHANICAL EQUIPMENT

6.9.1 Utilities

Mechanical equipment is generally any heating, ventilation, and air conditioning (HVAC) or electrical machinery but also includes air compressors, hoods, mechanical pumps, exterior water heaters, water softeners, utility and telephone equipment transformers, substations, meters or boxes, garbage cans, dumpsters, storage tanks and similar elements. These elements should be accessed by B streets only, not located in any public areas, be visible from the street, or detract/ interfere with the pedestrian space or sight triangles. Roof mounted equipment shall be placed behind and away from any Required Building Line and be screened from view from the street.