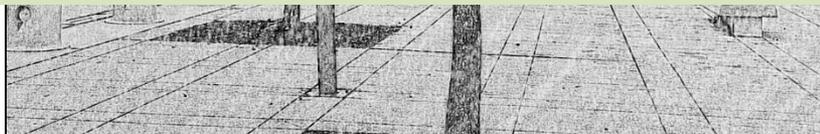
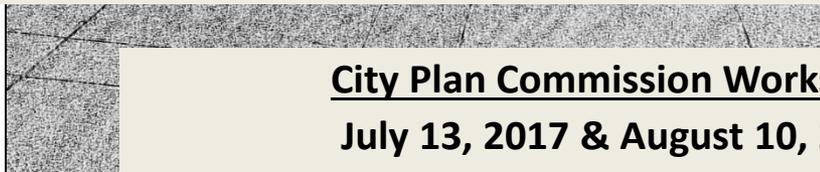




# **ARTICLE X LANDSCAPE AND TREE CONSERVATION REGULATIONS**

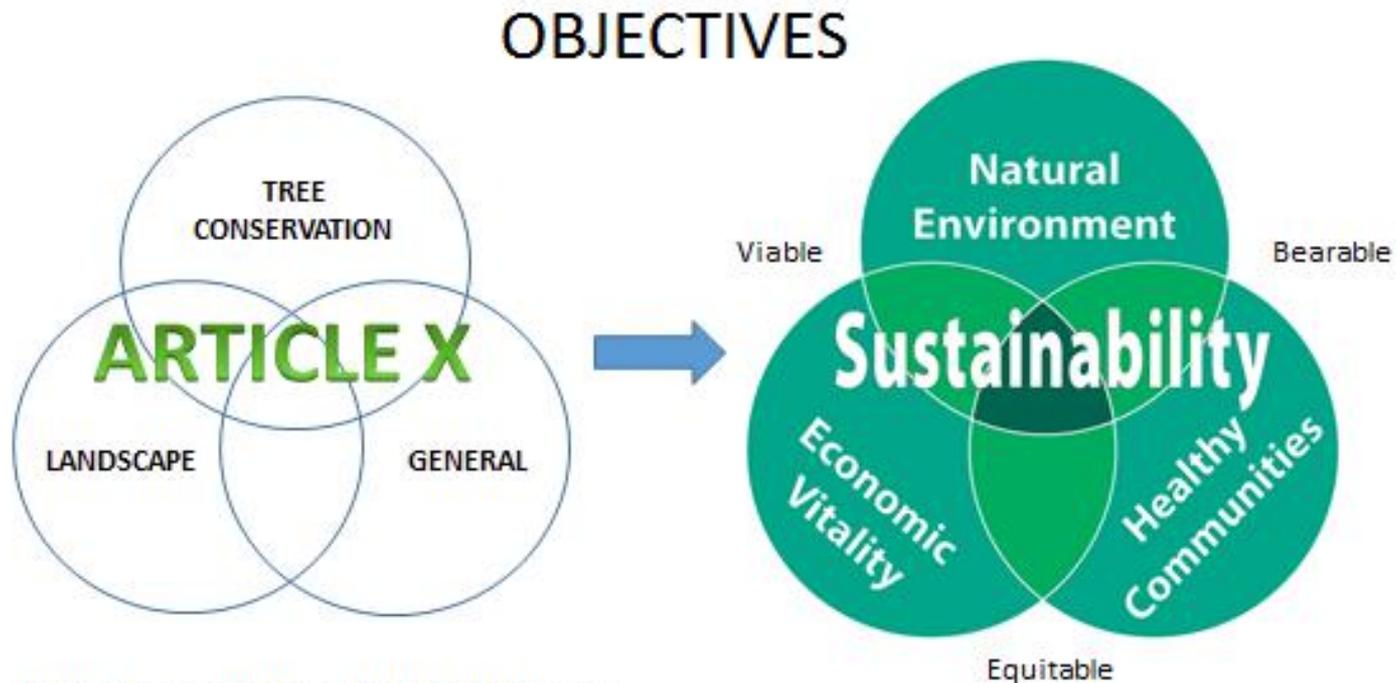


**IN GENERAL – Division 51A-10.100  
LANDSCAPING – Division 51A-10.120**



**City Plan Commission Workshop  
July 13, 2017 & August 10, 2017**

# Sustainable Development



Article X is comprised of 3 Divisions:  
General, Landscape, and Tree Conservation

# IN GENERAL (10.100)

## Existing

- .101 Definitions
- .102 Purpose
- .103 Acceptable Plant Material
- .104 Planting Area Requirements
- .105 Protection of Planting Areas
- .106 Irrigation Requirements
- .107 Planters allowed
- .108 General Maintenance
- .109 References
- .110 Special Exception

## Proposed

- .101 Definitions
- .102 Purpose
- .103 Acceptable Plant Material
- .104 Soil and Planting Area Requirements
- .105 Protection of Planting Areas
- .106 Irrigation Requirements
- .107 Planters allowed
- .107.1 Pedestrian Pathways
- .108 General Maintenance
- .109 Landscape and Tree Manual
- .110 Special Exceptions

# IN GENERAL (10.100)

**.101 Definitions**

**.102 Purpose**

**.103 Acceptable Plant Material**

**.104 Soil and Planting Area**

**Requirements**

.105 Protection of Planting Areas

.106 Irrigation Requirements

.107 Planters allowed

.107.1 Pedestrian Pathways

.108 General Maintenance

.109 Landscape and Tree Manual

.110 Special Exceptions

- Definitions added and/or amended **(10.101)**(p 1)
- Purpose statement amended: focus on conservation, address water conservation and green infrastructure **(10.102)**(p 10)
- Restricted artificial and invasive plants from meeting landscape requirements, associated acceptable plant materials will be listed separately in the Manual **(10.103)**(p 10-11)
- Soil and planting area requirements were significantly amended to specify general and alternative soil conditions, and to establish planting distances and restrictions **(10.104)**(p 11-13)

\*(p 1) – page number of the ordinance

# IN GENERAL (10.104)

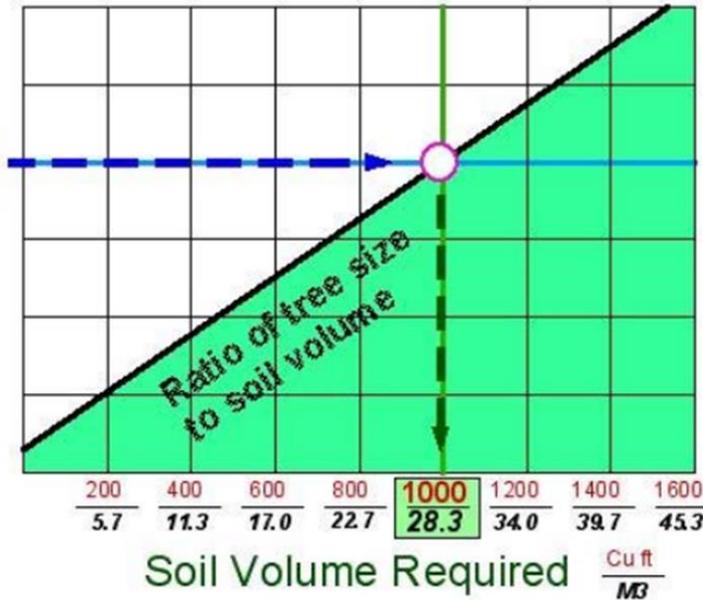
## (Soil quantity)

### Ultimate tree size

Crown Spread      DBH - Trunk Diameter

Sq Ft	Inch
M2	mm
1200	24
111.5	610
900	20
83.6	508
640	16
59.5	406
480	12
44.6	305
320	8
29.7	203
140	4
13.0	102

Example: A 16 inch/406 mm diameter tree requires 1000 cf/28.3 M3 of soil.



Tree/soil volume requirements

Chart: James Urban, (*Up By Roots*, ISA Press, 2008)



Soil Volume = 1000 cubic feet

Casey Trees

# IN GENERAL (10.104)

## (Soil quantity and quality)

### Soil Quality (10.104(b))

**Soil Resource Plan** – required with the submission of a **landscape plan** (10.123) or **tree protection plan** (10.136). (p 11)

Distinguish soil zones for landscaping from soil zones for construction on the building site.

Determine soil protection or soil modification for vegetation, if applicable.

### **Soil Zones:** (p 11)

\_\_\_\_\_ Protected zones – existing soil and vegetation is not disturbed

\_\_\_\_\_ Soil amendment or treatment zones – areas of minimal disturbance and soil is treated for nutrients and compaction.

\_\_\_\_\_ Construction traffic zones – areas of any construction use and activity

\_\_\_\_\_ Stockpiling topsoil and imported amendments zone – areas of soil retention on site for continued use on the site.

**Soil Resource Assessment**–required with some tree replacement methods.(p 11)

# IN GENERAL (10.106, 10.107.1)

## (Irrigation and Pedestrian Pathways)

- .101 Definitions
  - .102 Purpose
  - .103 Acceptable Plant Material
  - .104 Soil and Planting Area  
Requirements
  - .105 Protection of Planting Areas**
  - .106 Irrigation Requirements**
  - .107 Planters allowed**
  - .107.1 Pedestrian Pathways**
  - .108 General Maintenance**
  - .109 Landscape and Tree Manual**
  - .110 Special Exceptions**
- Irrigation requirements were amended **(10.106)**(p 15)
    - Automatic irrigation required for new landscaping except for small properties with only additions/renovations.
    - Alternate irrigation plan if applicable by licensed irrigator or landscape architect and adequately maintains plant materials.
  - Specified ‘pedestrian pathways’ when determining application for landscaping **(10.107.1)**(p 16)
    - Pathways are applied between 3’ and 15’ and distinguished from vehicular uses.
    - Not designated in the calculation for nonpermeable coverage on the lot or tract in determining application of ordinance.
  - Landscape and Tree Manual as a technical guide and educational source to the ordinance **(10.109)**(p 16)
  - Amended factors to be considered in tree conservation regulation special exceptions **(10.110)**(p 17-18)

# LANDSCAPING (10.120)

## Existing

- .121 Application of Division
- .122 Artificial Lot Determination
- .123 Landscape Plan Submission
- .124 Landscape Plan Review
- .125 Mandatory Landscape Requirements
- .126 Design Standards
- .127 When landscape must be completed
- .128 Enforcement by Building Official

## Proposed

- .121 Application of Division
- .122 Artificial Lot Determination
- .123 Landscape Plan Submission
- .124 Landscape Plan Review
- .125 Mandatory Landscape Requirements
- .126 Design Options Standards
- .127 When landscape must be completed
- .128 Enforcement by Building Official

# LANDSCAPING (10.120)

## **.121 Application of Division**

## **.122 Artificial Lot Determination**

## **.123 Landscape Plan Submission**

## **.124 Landscape Plan Review**

## .125 Mandatory Landscape Requirements

a) Single family uses

b) Other uses

1) Street Buffer Zones

2) Residential Buffer Zones

3) Interior Zones

## .126 Design Options Standards

## .127 When landscape must be completed

## .128 Enforcement by Building Official

- Adjusted the application of the division **(10.121)**(p 19)
- Required landscaping requirements in PDs to comply with the General Division requirements **(10.121(e))**(p 20)
- Amended areas to be included in artificial lots **(10.122)**(p 20)
- Required identification of utilities and other site elements, and landscape plan preparation requirements **(10.123)**(p 21)
- Allowed for minor landscape plan modification **(10.124)**(p21-22)
  - Building official may allow minor variations in a staff approved plan which further the spirit and intent of the ordinance.
  - Substitutes appropriate plant species
  - Modifies a location due to utility conflicts
  - Relocates plant materials up to 10 feet from planned location.

# Single Family and Duplex Uses (10.125(a))

.121 Application of Division

.122 Artificial Lot Determination

.123 Landscape Plan Submission

.124 Landscape Plan Review

## **.125 Mandatory Landscape Requirements**

### **a) Single family and duplex uses**

#### b) Other uses

1) Street Buffer Zone

2) Residential Buffer Zone

3) Interior Zone

.126 Design Options ~~Standards~~

.127 When landscape must be completed

.128 Enforcement by Building Official

- Landscape tree requirements for single family construction amended for builder tree installation to be based on lot size and restrict planting to be away from utilities **(10.125(a))**<sub>(p 23)</sub>
- Shared Access Development landscaping amended to provide one standard of landscaping for all scales of development for all zoning districts, with application of plant groups along the street front **(10.125(a))**<sub>(p 24)</sub>

# SF and Duplex Uses (10.125(a))

## SF / D - Current ordinance

- All single family and duplex lots require:
  - 3 trees per lot from Approved Replacement Tree List
  - 2” caliper, or an existing tree on list
  - Two trees in front yard

## SF / D - Proposed ordinance (p 23)

- Lots **7,500 sf or greater**:
  - 3 large or medium trees with 2 in front yard
- Lots **4,000 sf to 7,499 sf**:
  - 2 large or medium trees with 1 in front yard
- Lots **4,000 sf or less**:
  - 1 large or medium tree on lot
- 2” caliper, or an existing tree in front yard/parkway
- No closer than 20’ from utility

# SF and Duplex Uses

## (Shared Access Development)(10.125(a))

### Shared Access Development - Current Ordinance

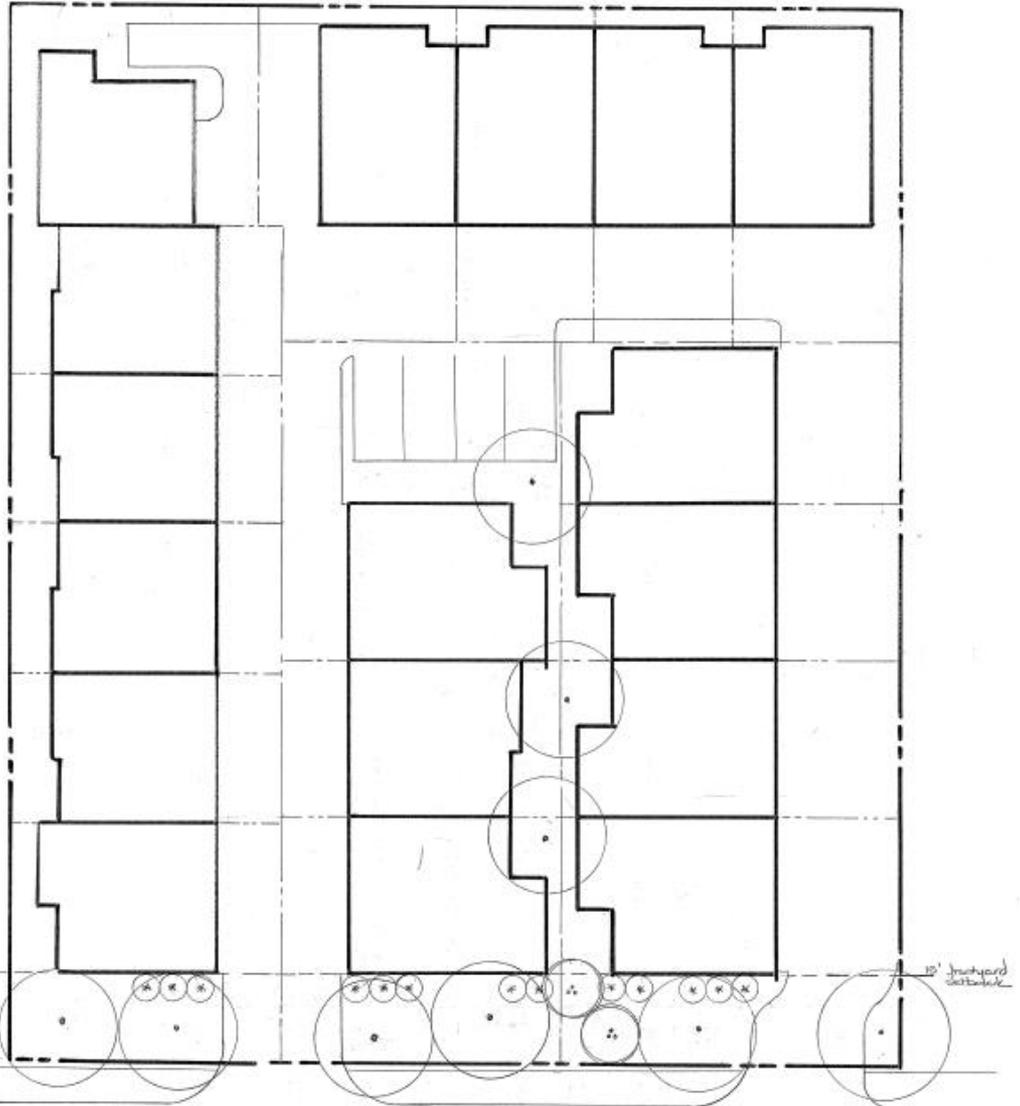
- Two standards: SF districts and other than SF districts
- SF districts – street front LA with three trees per lot, 2 in common front yard
- Other – 1 tree per 4,000 sf, 20% landscape area, plus provide street trees

### Shared Access Development - Proposed Ordinance(p 24-25)

- One standard for all sizes up to 36 individual lots in SAD
- Minimum landscape area determined by # of lots:
  - Up to 10 lots = minimum of 10% of SAD
  - 11 to 36 lots = minimum of 15% of SAD
- 1 tree per 4,000 sf of SAD, including street plant groups at 1 per 40 ft. of street frontage

# SF and Duplex Uses

## (Shared Access Development)(10.125(a))



Site: 21,600 sf - 17 individual lots

Street length: 146'

MF District – 15' required front yard

- Site Trees required: 5
- 15% Landscape Area required:  
3,240 sf
- 4 groups of street frontage plantings required:
  - 1 tree, 2 small trees, 1 lg evergreen shrub
  - 1 tree, 3 lg evergreen shrubs
  - 1 tree, 3 lg evergreen shrubs
  - 1 tree, 3 lg evergreen shrubs

\*Note:

10.104 planting area requirements apply.

# SF and Duplex Uses

## (Shared Access Development)(10.125(a))



Site: 21,600 sf - 17 individual lots

Street length: 146'

MF District – 15' required front yard

- Site Trees required: 5 (1/4,000sf)
- 15% Landscape Area required:  
3,240 sf (11-36 lots)  
(not required to be public, may be private areas)
- 1 plant group per 40' of frontage.  
(4 plant groups)
  - 1 tree, 2 small trees, 1 lg evergreen shrub
  - 1 tree, 3 lg evergreen shrubs
  - 1 tree, 3 lg evergreen shrubs
  - 1 tree, 3 lg evergreen shrubs

\*Note:

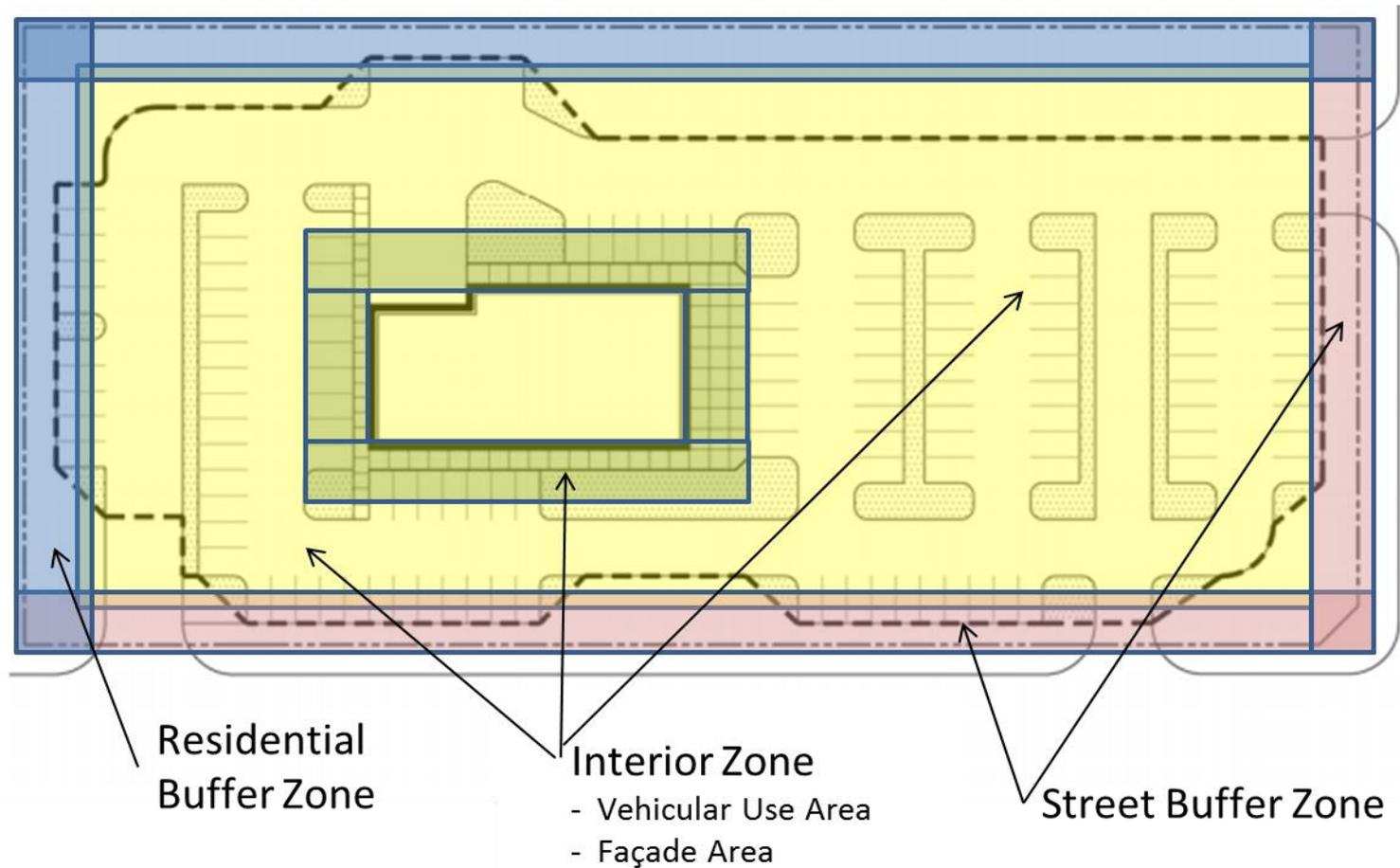
10.104 planting area requirements apply.

# Other Uses (10.125(b))

- .121 Application of Division
- .122 Artificial Lot Determination
- .123 Landscape Plan Submission
- .124 Landscape Plan Review
- .125 Mandatory Landscape Requirements
  - a) Single family and duplex uses
  - b) Other uses**
    - 1) Street Buffer Zone**
    - 2) Residential Buffer Zone
    - 3) Interior Zone
- .126 Design Options ~~Standards~~
- .127 When landscape must be completed
- .128 Enforcement by Building Official

- **Other uses** amended to provide adjustable mandatory landscape requirements based on site and street restrictions (10.125(b))(p 26)
- Created a **Street Buffer Zone (SBZ)** with an average (variable) depth requirement along street frontages, average depth based on street types - freeway, arterials/community collectors, and local/residential collectors (10.125(b)(1))(p 26)
- Provided for an **urban streetscape** alternative to the **SBZ** for Mixed Use development types (10.125(b)(1)(A))(p 26)
- Provided for modification of the **SBZ** when using right-of-way, subject to conditions (10.125(b)(1)(B))(p 26)
- Provided for a plant size modification when utilities prohibit planting large or medium trees (10.125(b)(1)(C))(p 27)
- Provided for a reduced **SBZ** for lots smaller than 10,000 square feet (10.125(b)(1)(D))(p 27)

# Zone Landscape (10.125(b))



# Other Uses (10.125(b))

## Current Code-Landscaping

- Street Trees
- Street Buffer (Design Standard - optional)
- Perimeter Landscape Buffer
- Buffer Plant Material
- Parking Lot Trees
- Design Standards
- **9 Design Standard Options** (many sites can comply with only a few, require a minimum of 2 on lot).

## Proposed Zone Landscaping

- Street Buffer Zone (street trees and street buffer with average buffer width)
- Residential Buffer Zone
- Interior Zone
- **Comprehensive Design Options** (rated by points - value and emphasis for design or conservation).

# Zone Landscape (10.125(b))

## Benefits of Zone Landscaping:

- Requires Landscape and Tree regulations to be considered and addressed at the onset of the project, not as an afterthought.
- Allows for flexibility and creativity in Landscape design of the site as a whole.
- Less conflict with utilities
- Less conflict with future redevelopment
- Places trees in the property for optimum locations: heat and pollution abatement, stormwater control, aesthetic quality, and community and property benefits
- Provides for improved growing area for trees to achieve fullest potential growth

# Zone Landscape (10.125(b))

## LANDSCAPE CHECKLIST – Non-residential Uses - Ordinance 22053 (Article X)

ADDRESS:

DATE:

REVIEWER:

TRACE #:

### MANDATORY PROVISIONS (must comply when applicable)

\_\_\_\_\_ **Street Buffer Zone (SBZ)** - Required \_\_\_\_\_ Provided \_\_\_\_\_ Must have one 3" caliper large or medium tree per 40' of street frontage, except when existing conditions allow two small trees to substitute for each required tree. All street trees must be provided along the entire length of the lot, excluding paved surfaces at points of ingress/egress, and within an area measured from the property boundary, unless authorized for distance from the street curb.

Right-of-way	Average Depth	Minimum Depth	Maximum Depth
Freeways	15 feet	5 feet	50 feet
Arterials and community collectors	10 feet	5 feet	30 feet
Local and residential collectors	7.5 feet	5 feet	25 feet

\_\_\_\_\_ **Urban Streetscape** – (Option) If approved, must have a six-foot wide planting area of open soil and covered soil conditions. A minimum of one design option must be provided in the front yard or right-of-way area.

\_\_\_\_\_ **Right-of-Way** – (Option) May be used for SBZ, if qualified. Must provide SBZ area of a minimum of 5' depth on the property.

\_\_\_\_\_ **Residential Buffer Zone (RBZ)** - Must be provided along the entire length of the portion of the perimeter of the lot where a residential adjacency exists, with an **average depth of 10' or greater, minimum depth of 5', and maximum depth of 30'**. Must include one plant group per 40' of adjacency, except when existing local utility conditions allow two small trees to substitute for each required tree, and excluding paved points of ingress/egress.

\_\_\_\_\_ **Screening is required:** Plant group is one large or medium tree per 40'.

\_\_\_\_\_ **Screening is not required:** Plant group is:

- \_\_\_\_\_ One large or medium tree and three small trees;
- \_\_\_\_\_ One large or medium tree and three large evergreen shrubs;
- \_\_\_\_\_ One large or medium tree, two small trees, and one large evergreen shrub; or
- \_\_\_\_\_ One large or medium tree, one small tree, and two large evergreen shrubs.

\_\_\_\_\_ **Interior Zone** – All required large and medium trees must be a minimum of 3" caliper. Minimum landscape area is 160 sf, with a minimum soil width of 8 feet. The center of trunk must be a minimum of 4 feet from pavement.

\_\_\_\_\_ **21 to 100 parking spaces.** No parking space may be located more than 70 feet from the trunk of a large/medium tree.  
 \_\_\_\_\_ **101 or more parking spaces.** Same as above, except for parking lots in IM or IR districts with industrial and \_\_\_\_\_ warehouse uses. Landscape area is required at end of each single row of parking spaces with a minimum of one tree, the maximum number of parking spaces between islands is 12, but no maximum number of parking spaces in a row when it abuts a median landscape area, a residential buffer zone landscape area, or a street buffer zone landscape area.

### Additional Provisions:

\_\_\_\_\_ **Screening of off-street loading spaces.** Must be screened from residential adjacency. Must also be screened from all adjacent public streets, except CS and industrial districts. Minimum 6' height.

### Site trees

- **Standard** - Required \_\_\_\_\_ Provided \_\_\_\_\_ Must have one 2" caliper tree per 4,000 square feet of lot area with minimum of 4 trees. All site trees must be located on the lot.
- **IM and IR zoning** - Required \_\_\_\_\_ Provided \_\_\_\_\_ Must have one 2" caliper tree per 6,000 square feet, when **contains industrial or warehouse uses.**
- > **site tree credits** - eligibility based upon protective measures taken, health of the tree(s), diameter measurement and species... see Sec. 51A-10.125(b)(4)(B) for details

CALIPER OF RETAINED TREE	NUMBER OF SITE TREES CREDIT GIVEN FOR RETAINED TREE
Less than 2 inches	0
2 inches or more but less than 8 inches	1
8 inches or more but less than 14 inches	2
14 inches or more but less than 20 inches	4
20 inches or more but less than 26 inches	8
26 inches or more and less than 32 inches	10
32 inches or more but less than 38 inches	18
38 inches or more	20

# Street Buffer Zone (10.125(b)(1))

**Street Buffer Zone (SBZ)** - Required   #   Provided   #  . Must have one 3" caliper large or medium tree per 40' of street frontage, except when existing conditions allow two small trees to substitute for each required tree. All street trees must be provided along the entire length of the lot, excluding paved surfaces at points of ingress/egress, and within an area measured from the property boundary, unless authorized for distance from the street curb. (p 26)

<u>Right-of-way</u>	<u>Average Depth</u>	<u>Minimum Depth</u>	<u>MaximumDepth</u>
<u>Freeways</u>	<u>15 feet</u>	<u>5 feet</u>	<u>50 feet</u>
<u>Arterials and community collectors</u>	<u>10 feet</u>	<u>5 feet</u>	<u>30 feet</u>
<u>Local and residential collectors</u>	<u>7.5 feet</u>	<u>5 feet</u>	<u>25 feet</u>

           **Urban Streetscape** – (Optional) If approved, must have a six-foot wide planting area of open soil and covered soil conditions. A minimum of one design option must be provided in the front yard or right-of-way area. (p 26)

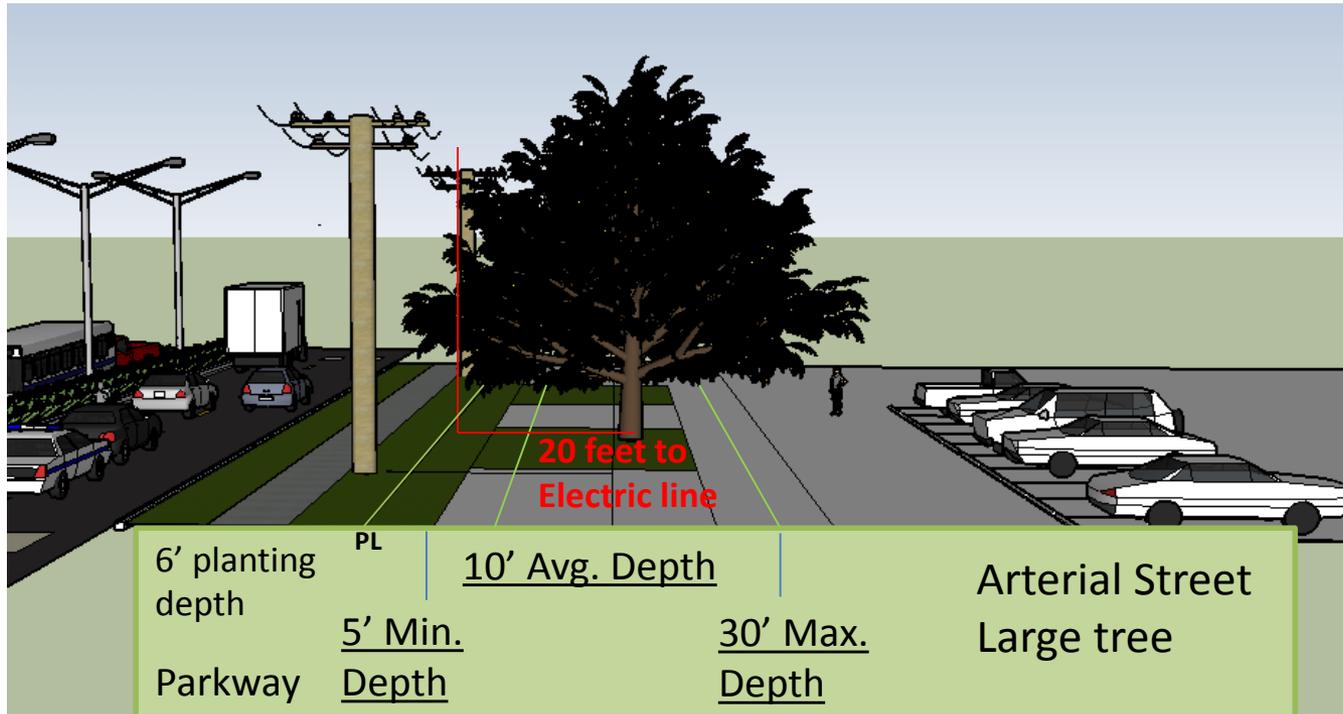
           **Right-of-Way** – (Optional) May be used for SBZ, if qualified. Must provide SBZ area of a minimum of 5' depth on the property. (p 26)

# Street Buffer Zone (10.125(b)(1))

<u>(A) Right-of-way</u>	<u>Average Depth</u>	<u>Minimum Depth</u>	<u>Maximum Depth</u>
<u>Highways/Freeways</u>	<u>15 feet</u>	<u>5 feet</u>	<u>50 feet</u>
<u>Major Streets (Arterials)</u>	<u>10 feet</u>	<u>5 feet</u>	<u>30 feet</u>
<u>Local Streets</u>	<u>7.5 feet</u>	<u>5 feet</u>	<u>25 feet</u>

Key Points:

- Each street depth requirement begins at the property line, not the curb.
- Parkways may be utilized to meet requirements if conditions allow.
- Proximity to overhead electric lines:
  - Large trees – 20 feet minimum; Medium trees – 15 feet minimum



# Residential Buffer Zone (10.125(b)(2))

- .121 Application of Division
- .122 Artificial Lot Determination
- .123 Landscape Plan Submission
- .124 Landscape Plan Review
- .125 Mandatory Landscape Requirements
  - a) Single family and duplex uses
  - b) Other uses**
    - 1) Street Buffer Zone
    - 2) Residential Buffer Zone**
    - 3) Interior Zone
- .126 Design Options ~~Standards~~
- .127 When landscape must be completed
- .128 Enforcement by Building Official

- **Residential Buffer Zone (RBZ)**, replacing “perimeter landscape buffer strip”, having an average (variable) depth requirement where residential adjacency exists **(10.125(b)(2))**<sub>(p27)</sub>
- **RBZ** must be an average 10 feet deep, but not less than 5 feet deep and no more than 30 feet deep at any point **(10.125(b)(2))**<sub>(p 27)</sub>
- Plant groups are required with a prohibition of planting large or medium trees within close proximity to utility lines **(10.125(b)(2))**<sub>(p 27)</sub>

# Residential Buffer Zone (10.125(b)(2))

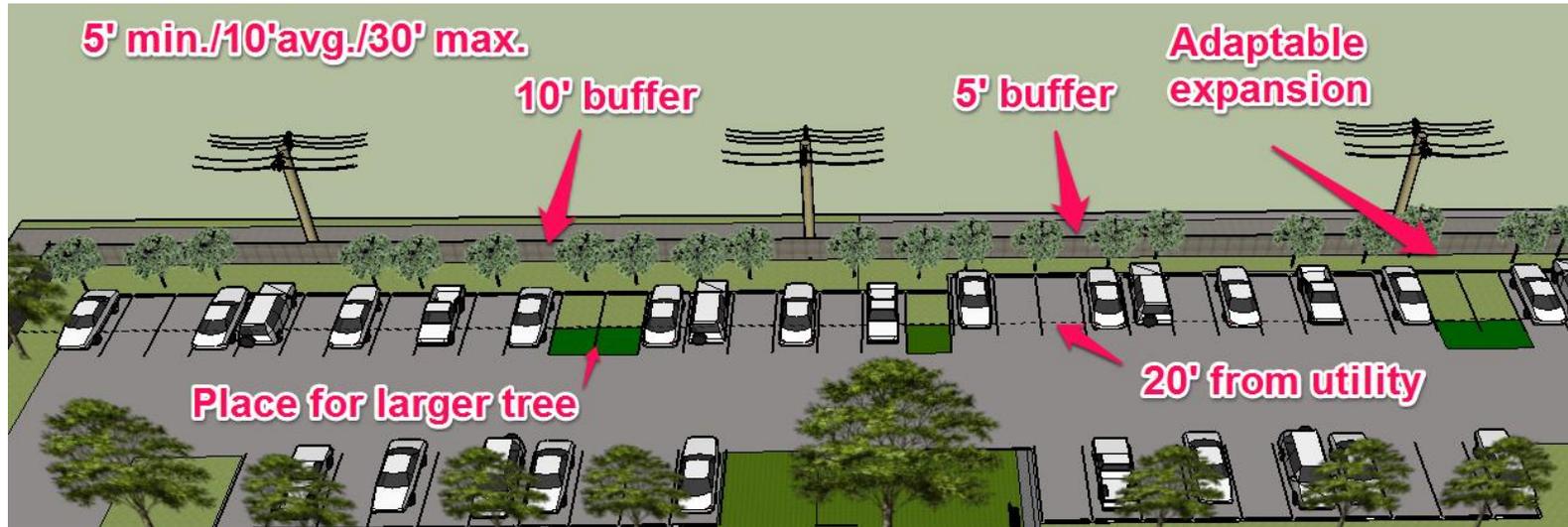
**Residential Buffer Zone (RBZ)** - Must be provided along the entire length of the portion of the perimeter of the lot where a residential adjacency exists, with an **average depth of 10' or greater, minimum depth of 5', and maximum depth of 30'**. Must include one plant group per 40' of adjacency, except when existing local utility conditions allow two small trees to substitute for each required tree, and excluding paved points of ingress/egress. (p 27)

\_\_\_\_\_ **Screening is required:** Plant group is one large or medium tree per 40'

\_\_\_\_\_ **Screening is not required:** Plant group is:

- \_\_\_ One large or medium tree and three small trees;
- \_\_\_ One large or medium tree and three large evergreen shrubs;
- \_\_\_ One large or medium tree, two small trees, and one large evergreen shrub; or
- \_\_\_ One large or medium tree, one small tree, and two large evergreen shrubs.

# Residential Buffer Zone (10.125(b)(2))



# Interior Zone (10.125(b)(3)(A))

- .121 Application of Division
- .122 Artificial Lot Determination
- .123 Landscape Plan Submission
- .124 Landscape Plan Review
- .125 Mandatory Landscape Requirements
  - a) Single family and duplex uses
  - b) Other uses**
    - 1) Street Buffer Zone
    - 2) Residential Buffer Zone
    - 3) Interior Zone**
- .126 Design Options ~~Standards~~
- .127 When landscape must be completed
- .128 Enforcement by Building Official

- **Interior Zone** to include Parking Lots (10.125(b)(3)(A))(p 28)
- Parking lot landscape areas must have at least **160 square feet soil area** with 3” trees a minimum of four feet from pavement (10.125(b)(3)(A))(p 28)
- Parking lot requirements amended based on the number of parking spaces(p 28)
  - 21-100 spaces – no space located more than 70 feet from the trunk of a large or medium tree
  - Greater than 100 spaces - A parking island landscape area must be at the end of a single row of spaces with at least 1 tree, maximum number of spaces between parking island landscape areas is 12 spaces, except where a median landscape area or buffer adjoins the spaces.

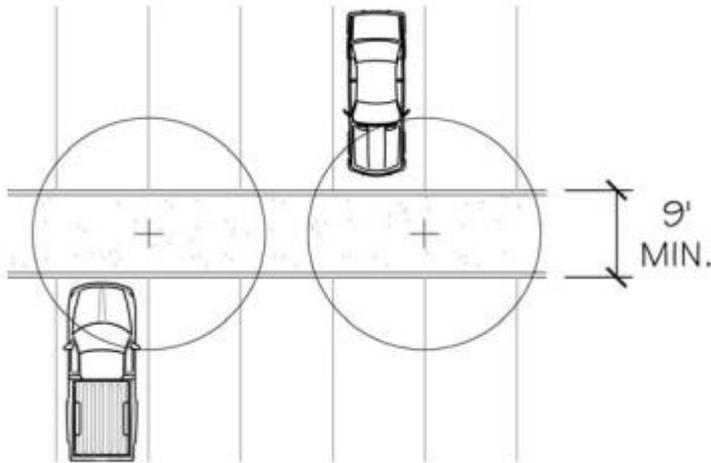
# Interior Zone (10.125(b)(3)(A))

**Interior Zone** – All required large and medium trees must be a minimum of 3” caliper. Minimum landscape area is 160 sf, with a minimum soil width of 8 feet. The center of trunk must be a minimum of 4 feet from pavement.(p 28)

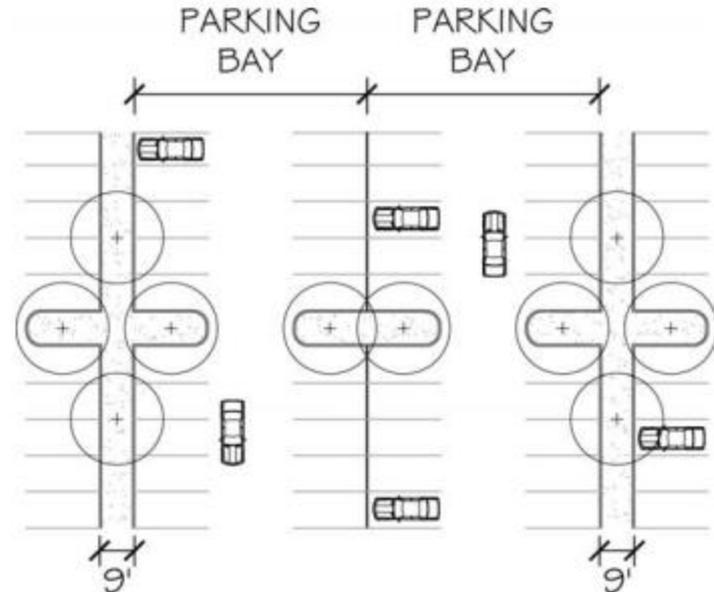
\_\_\_\_\_ **21 to 100 parking spaces.** No parking space may be located more than 70 feet from the trunk of a large/medium tree.(p 28)

\_\_\_\_\_ **101 or more parking spaces.** Same as above, except for parking lots in IM or IR districts with industrial and warehouse uses. Landscape area is required at end of each single row of parking spaces with a minimum of one tree, the maximum number of parking spaces between islands is 12, but no maximum number of parking spaces in a row when it abuts a median landscape area, a residential buffer zone landscape area, or a street buffer zone landscape area.(p 29)

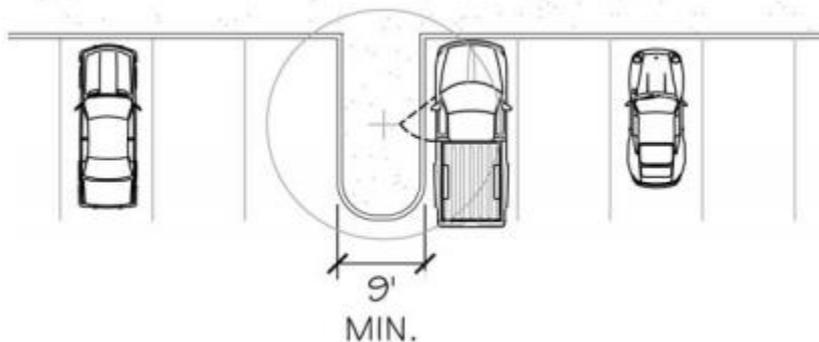
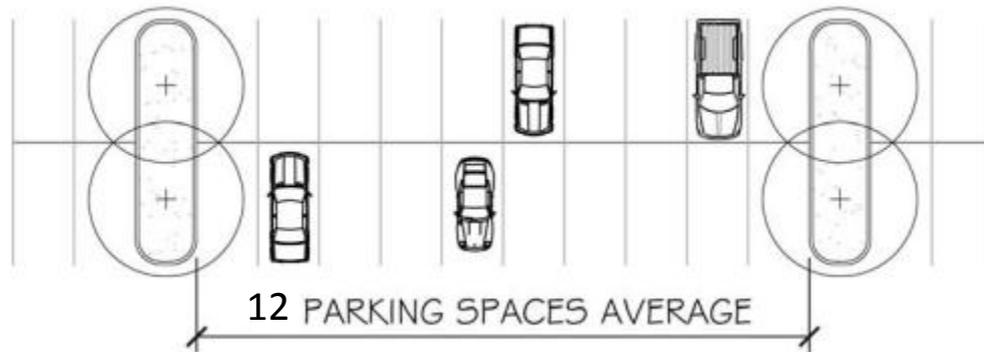
# Interior Zone (10.125(b)(3)(A))



- Medians may be used instead of, or in conjunction with, landscape islands.
- Center of tree must be a minimum of 4 feet from pavement.
- Minimum landscape area per tree is 160 square feet.



# Interior Zone (10.125(b)(3)(A))



## Parking lots – 21 to 100 spaces

- No space more than 70 feet from trunk of a large or medium tree.

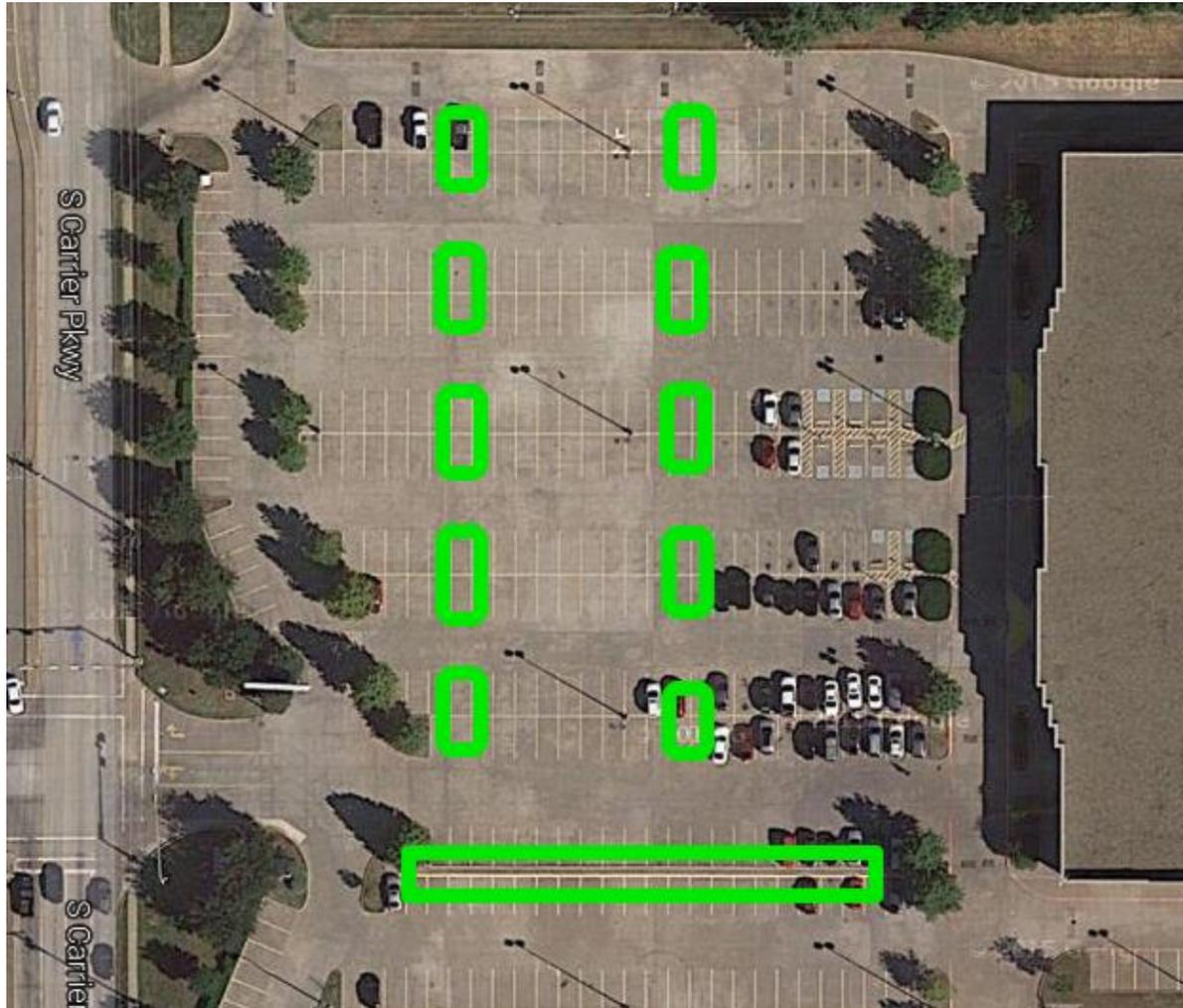
## Parking lots – minimum 101 spaces

- Same as above, and
- Landscape island with a tree at end of each row.
- Maximum number of spaces allowed between parking islands is 12 (may be credited as design option at 10).
- No maximum number of spaces when parking row abuts median landscape area with 1 tree per 40', abuts a residential buffer zone, or abuts a street buffer zone.
- Building official may waive requirement for site/tree preservation purposes.

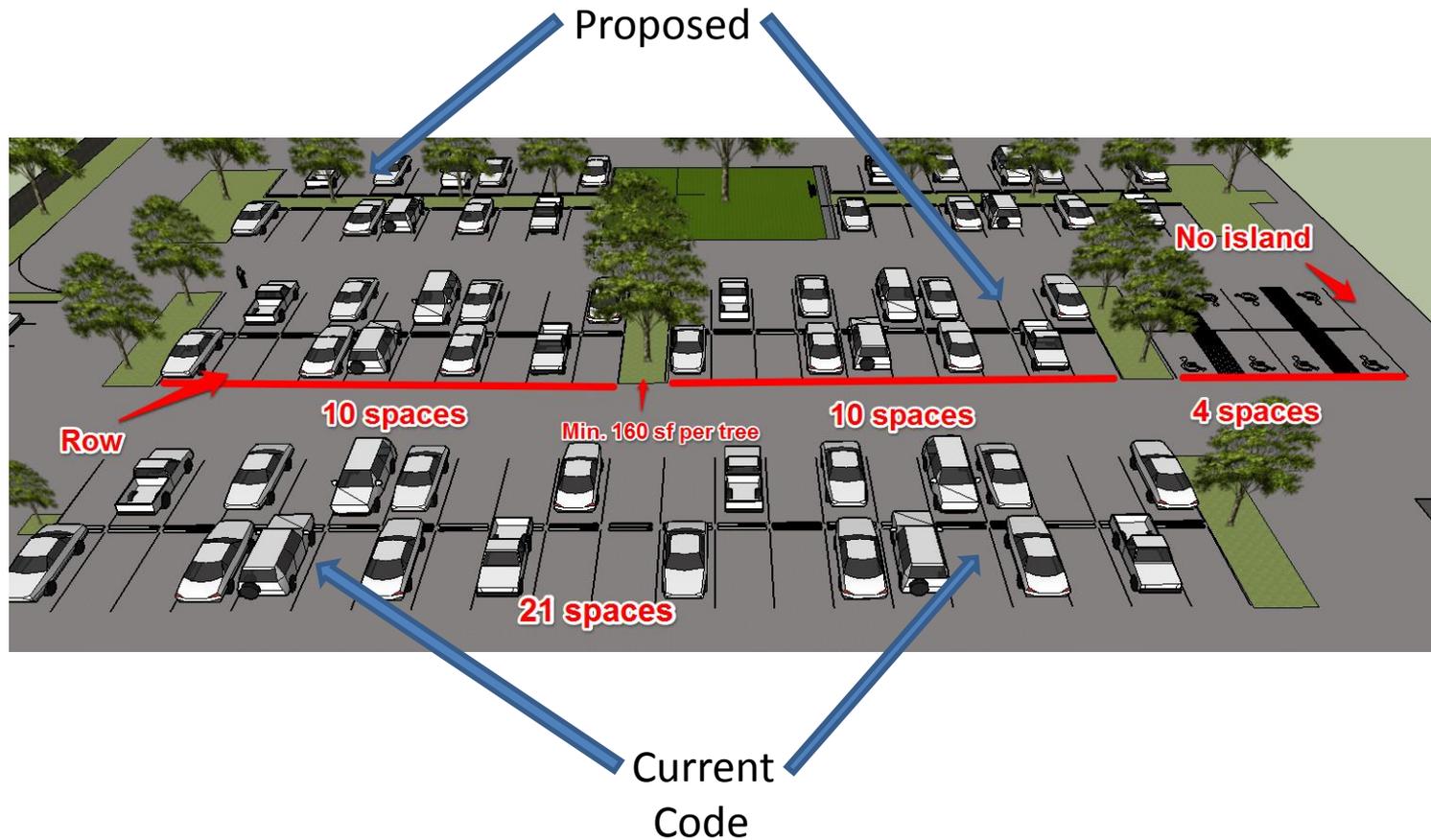
# Interior Zone (10.125(b)(3)(A))



# Interior Zone (10.125(b)(3)(A))



# Interior Zone (10.125(b))



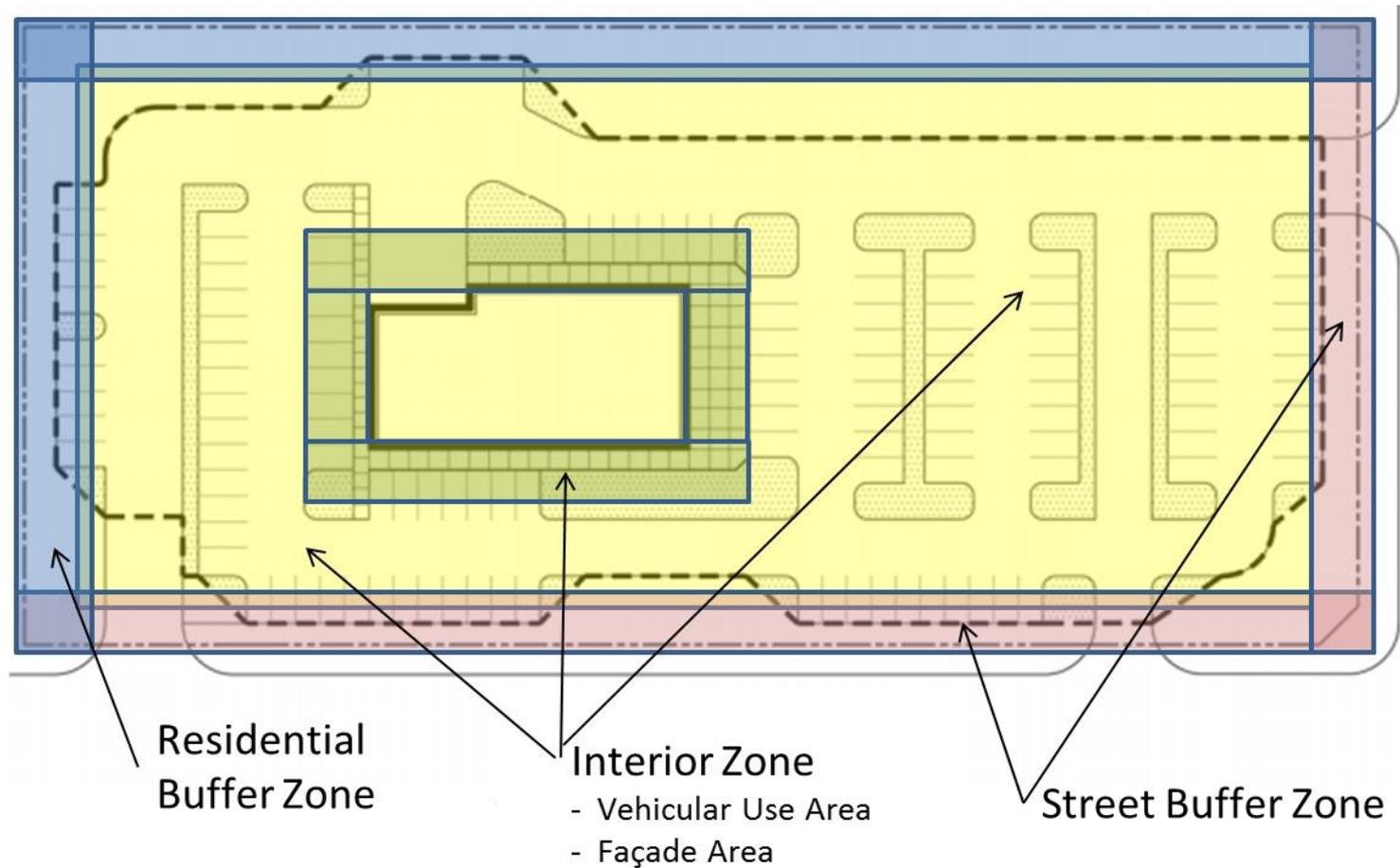
# Interior Zone (10.125(b))



# Interior Zone (10.125(b))



# Zone Landscape (10.125(b))



# Design Options (10.126)

- .121 Application of Division
- .122 Artificial Lot Determination
- .123 Landscape Plan Submission
- .124 Landscape Plan Review
- .125 Mandatory Landscape Requirements
  - a) Single family and duplex uses
  - b) Other uses
    - 1) Street Buffer Zone
    - 2) Residential Buffer Zone
    - 3) Interior Zone
- .126 Design Options Standards**
- .127 When landscape must be completed
- .128 Enforcement by Building Official

- **Design Options**, replacing “Design Standards”, are more adaptable and versatile (10.126)(p 31-38)
- Design Option point system was created on a scale from 0 to 50, and scaled for increasing property size (10.126)(p 31)
- Design Options are available in a number of areas to allow for the enhancement of site landscapes and site sustainability (10.126)(p 31-38)
  - Plant material bonus points
  - Buffer zone enhancements
  - Engineered solutions for soil volume
  - Screening
  - Building façade
  - Pedestrian uses
  - Pavements
  - Conservation
  - Low impact development
  - Parking lots
  - General

# Design Options (10.126)

Points are required for each building site. The minimum number of design option points required for a building site.<sup>(p 31)</sup>

## Lot size

Points required (Ex.: a 4500 square foot lot requires 4 points to be obtained)

<u>0 to 999 sf</u>	<u>0</u>
<u>1,000 sf to 1,999 sf</u>	<u>1</u>
<u>2,000 sf to 9,999 sf</u>	<u>2-9</u>
<u>(One point for every 1000 sf)</u>	
<u>10,000 sf to 19,999 sf</u>	<u>10</u>
<u>20,000 sf to 39,999 sf</u>	<u>15</u>
<u>40,000 sf to 2.99 acres</u>	<u>20</u>
<u>3 acres to 9.99 acres</u>	<u>30</u>
<u>10 acres to 19.99 acres</u>	<u>35</u>
<u>20 acres to 49.99 acres</u>	<u>40</u>
<u>50 acres and greater</u>	<u>50</u>

# Design Options (10.126)

- Design Options are available in a number of areas to allow for the enhancement of site landscapes and site sustainability (10.126)(p 31-31)
  - Plant material bonus points
  - Buffer zone enhancements
  - Engineered solutions for soil volume
  - Screening
  - Building façade
  - Pedestrian uses
  - Pavements
  - Conservation
  - Low impact development
  - Parking lots
  - General

# Design Options (10.126)

## LANDSCAPE CHECKLIST – ARTICLE X - DESIGN OPTIONS - NON-RESIDENTIAL

ADDRESS:

TRACE#:

DATE:

Points are required for each building site. The minimum number of design option points required for a building site:

Lot size	Points required (Ex.: a 4500 square foot lot requires 4 points to be obtained)
0 to 999 sf	0
1,000 sf to 1,999 sf	1
2,000 sf to 9,999 sf	2-3
<i>(One point for every 1000 sf)</i>	
10,000 sf to 19,999 sf	10
20,000 sf to 39,999 sf	15
40,000 sf to 79,999 sf	20
3 acres to 9.99 acres	30
10 acres to 19.99 acres	35
20 acres to 49.99 acres	40
50 acres and greater	50

**(1) Plant material bonus – 5 points maximum** – Plant materials added to the landscape design when the required amount of points for a standard design option is deficient by five points or less. All plant material must be placed in the front yard. **Added:**

- \_\_\_ Small tree 0.5 pts.;
- \_\_\_ large shrub 0.25 pts.;
- \_\_\_ large/medium tree 1 pt.

**(2) Buffer zone enhancements – 20 points maximum** – Each required buffer zone depth may be increased by a minimum number of feet. It is not available where the street buffer zone is reduced to no more than 5% of lot area.

**Options:**

- \_\_\_ Large enhanced buffer zone (5 feet): 5 pts.
- \_\_\_ Small enhanced buffer zone (2 feet): 2 pts.

**(3) Engineered solutions for soil volume – 10 points maximum** - Use engineered solutions for providing soil volume for a minimum of 75% of required street buffer trees. **Options:**

- \_\_\_ Minimum required soil volume, 5 pts.;
- \_\_\_ increase 10% above minimum requirements, 6 pts.;
- \_\_\_ + 15% , 7 pts.;
- \_\_\_ + 20% , 8 pts.;
- \_\_\_ + 25% , 9 pts.;
- \_\_\_ + 30% or more , 10 pts.

**(4) Screening – 20 points maximum.** Screen all parking lots on the lot along the entire adjacent public street frontages on a building site or artificial lot, excluding driveways and visibility triangles. Screening must be voluntary. **Options:**

- 1) \_\_\_ Standard design (shrub ht. min. of 2' at installation), 5 pts.;
- 2) \_\_\_ Enhanced design\*, 10 pts.;
- 3) \_\_\_ Grouped beds, 5 pts.\*\*;
- 4) \_\_\_ Screening wall or fence (min. ht. of 3'), 5 pts.\*\*;
- 5) \_\_\_ Berm (min. ht. of 3'), 5 pts.\*\*

(\* - landscape architect required, \*\* - may complement option 1 or 2)  
Screening is mandatory in NQ(A), LO(A), LO-1, LO-2, LO-3, MO(A), MO-1, MO-2 and GO(A) districts.

**(5) Building facade – 15 points maximum.** Facade planting areas adjacent to public streets or private driveways.

**Options:**

- 1) \_\_\_ Standard design, 5 pts.;
- 2) \_\_\_ Enhanced design\*, 10 pts.;
- 3) \_\_\_ Additional grouping of medium/small trees, 5 pts.;
- 4) \_\_\_ One small tree per 30 ft. within 15 feet of facade, 5 pts.

**(6) Pedestrian uses – 25 points maximum.** Provide private or publicly accessible pedestrian facilities for at least 5% of the building site. **Options:**

- 1) \_\_\_ Urban streetscape (minimum of 2 amenity types): \_\_\_ Benches; \_\_\_ Lamps; \_\_\_ Enhanced sidewalk (not available for option 7); \_\_\_ 8-ft. Unobstructed sidewalk; \_\_\_ Water feature; 10 pts.
- 2) \_\_\_ Special amenities in building site, 5 pts. (private), 10 pts. (public);
- 3) \_\_\_ Habitat restoration adjacency, 10 pts. (private), 15 pts. (public);
- 4) \_\_\_ Athletic fields, 10 pts., or 20 pts. (on lots over 10 acres).

**(7) Pavements – 15 points maximum.** Provide enhanced or special pavement to a minimum of 25% of all outdoor vehicular pavement, or 5% pedestrian-use pavement, on the lot, as applicable. **Options:**

- 1) \_\_\_ Enhanced vehicular pavement: Texture 3 pts., Color 3 pts.;
- 2) \_\_\_ Permeable vehicular pavement, 5 pts.;
- 3) \_\_\_ Enhanced pedestrian walkways: Texture 3 pts., Color 3 pts.

**(8) Conservation – 25 points maximum.** Provide conservation programs on the property. It must occupy at least 5% of the lot area. **Options:**

- 1) \_\_\_ Tree preservation in development impact area, 2 pts. for each tree up to 10 pts.;
- 2) \_\_\_ Habitat preservation and restoration (native grassland or woodland), 5 pts.;
- 3) \_\_\_ Habitat preservation and restoration – active management plan, 10 pts.;
- 4) \_\_\_ Habitat preservation and restoration – adjacent to primary natural areas, 15 pts.

**(9) Low Impact Development – 20 points maximum.** Improve the property with design to manage stormwater flow and provide surface heat abatement. **Options:**

- 1) \_\_\_ Rain garden, max. 6 pts.;
- 2) \_\_\_ Bioswale, max. 10 pts.;
- 3) \_\_\_ Water-wise plant materials and planting beds, max. 10 pts.

**(10) Parking Lots – 30 points maximum** for DIA 10 acres or larger; **20 points maximum** for DIA less than 10 acres. **Options:**

- 1) \_\_\_ Pedestrian pathway, 5 pts.;
- 2) \_\_\_ Parking islands – maximum of 10 parking spaces between landscape islands, 5 pts.;
- 3) \_\_\_ Parking islands - increase landscape area a minimum of 200 sf for each large/medium tree.
  - \_\_\_ +50% of required islands, 5 pts.
  - \_\_\_ +75% of required islands, 10 pts.
- 4) \_\_\_ Parking islands - increase landscape area a minimum of 300 sf for each large/medium tree.
  - \_\_\_ +50% of required islands, 7 pts.
  - \_\_\_ +75% of required islands, 12 pts.
- 5) \_\_\_ Parking islands – each additional parking island provided, 3 pts.
- 6) \_\_\_ Landscape medians – provide a minimum of 10 ft. wide landscape median with large/medium trees for a minimum of a 12 space parking row, 5 pts.
- 7) \_\_\_ Landscape medians – provide a minimum of 12 ft. wide landscape median with large/medium trees for a minimum of 12 space parking row, 10 pts. for each full median for a maximum of 20 points on the lot.
- 8) \_\_\_ Landscape medians – provide a minimum of 16 ft. wide landscape median with large/medium trees for a minimum of 12 space parking row, 15 pts. for each full median for a maximum of 30 points on the lot.
- 9) \_\_\_ Large trees located in minimum of 500 sf dedicated open soil area, 2 pts. for maximum of 20.
- 10) \_\_\_ Pocket park. Provide a minimum of 2,500 sf of contiguous open soil surface area, 20 pts.

**(11) General – Provide documentation** and demonstrate ability to achieve any of the following conditions.

**Options:**

- 1) \_\_\_ Provide SITES (Sustainable Sites Initiative) documentation and demonstrate ability to attain SITES certified level (65 points) or greater, 10 pts.
- 2) \_\_\_ Provide and implement a landscape maintenance plan for a minimum of a 3 year period, 3 pts.

TOTAL POINTS

REQUIRED POINTS

Reviewer

# Design Options (10.126(c))

(1) **Plant material bonus – 5 points maximum** – Plant materials added to the landscape design when the required amount of points for a standard design option is deficient by five points or less. All plant material must be placed in the front yard. (p 32)

## Added:

- \_\_\_ Large shrub 0.25 pts.;
- \_\_\_ Small tree 0.5 pts.;
- \_\_\_ Large/medium tree 1 pt.



*Burford Holly*

**4 x = 1.0**



*Desert Willow*  
*Chilopsis linearis*

Copyright © Robert O'Brien



*Desert Willow*  
*Chilopsis linearis*

Copyright © Robert O'Brien

**2 x = 1.0**



*Bur Oak*  
*Quercus macrocarpa*

Copyright © Robert O'Brien

**1 x = 1.0**

# Design Options (10.126(c))

**(2) Buffer zone enhancements - 20 points maximum** – Each required buffer zone depth may be increased by a minimum number of feet. It is not available where the street buffer zone is reduced to no more than 5% of lot area. (p 32)

## Options:

- \_\_\_\_\_ Large enhanced buffer zone (5 feet): 5 pts.
- \_\_\_\_\_ Small enhanced buffer zone (2 feet): 2 pts.



# Design Options (10.126(c))

**(3) Engineered solutions for soil volume – 10 points maximum** - Use engineered solutions for providing soil volume for a minimum of 75% of required street buffer trees. (p 32)

## Options:

- \_\_\_\_\_ Minimum required soil volume, 5 pts.;
- \_\_\_\_\_ increase 10% above minimum requirements, 6 pts.;
- \_\_\_\_\_ + 15%, 7 pts.;
- \_\_\_\_\_ + 20%, 8 pts.;
- \_\_\_\_\_ + 25%, 9 pts.;
- \_\_\_\_\_ + 30% or more, 10 pts.



# Design Options (10.126(c))

**(4) Screening – 20 points maximum.** Screen all parking lots on the lot along the entire adjacent public street frontages on a building site or artificial lot, excluding driveways and visibility triangles. Screening must be voluntary. (p 33)

## Options:

- 1) \_\_\_\_\_ Standard design (shrub ht. min. of 2' at installation), 5 pts.;
- 2) \_\_\_\_\_ Enhanced design\*, 10 pts.;
- 3) \_\_\_\_\_ Grouped beds, 5 pts.\*\*;
- 4) \_\_\_\_\_ Screening wall or fence (min. ht. of 3'), 5 pts.\*\*;
- 5) \_\_\_\_\_ Berm (min. ht. of 3'), 5 pts.\*\*

## Note:

\* landscape architect required

\*\* may complement option 1 or 2

*Screening is mandatory in NO(A), LO(A), LO-1, LO-2, LO-3, MO(A), MO-1, MO-2 and GO(A) districts.*

*Standard design (option 1) is equivalent to current design standard for screening of off-street parking.*



# Design Options (10.126(c))

**(5) Building facade – 15 points maximum.** Facade planting areas adjacent to public streets or private driveways. (p 34)

## Options:

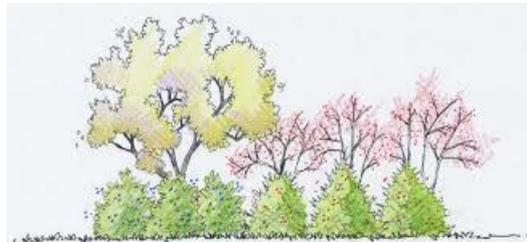
- 1) \_\_\_\_ Standard design, 5 pts.;
- 2) \_\_\_\_ Enhanced design\*, 10 pts.;
- 3) \_\_\_\_ Additional grouping of medium/small trees, 5 pts.;
- 4) \_\_\_\_ One small tree per 30 ft. within 15 feet of facade, 5 pts.

Note:

\* landscape architect required



Standard design



Enhanced design

# Design Options (10.126(c))

**(6) Pedestrian uses - 25 points maximum.** Provide private or publicly accessible pedestrian facilities for at least 5% of the building site. (p 34)

## Options:

- 1) \_\_\_\_\_ Urban streetscape (minimum of 2 amenity types): \_\_\_\_\_ Benches;  
\_\_\_\_\_ Lamps; \_\_\_\_\_ Enhanced sidewalk (*not available for option 7*);  
\_\_\_\_\_ 8-ft. Unobstructed sidewalk; \_\_\_\_\_ Water feature; 10 pts.
- 2) \_\_\_\_\_ Special amenities in building site, 5 pts. (private), 10 pts. (public);
- 3) \_\_\_\_\_ Habitat restoration adjacency, 10 pts. (private), 15 pts. (public);
- 4) \_\_\_\_\_ Athletic fields, 10 pts., or 20 pts. (on lots over 10 acres).

# Design Options (10.126(c))

**(7) Pavements – 15 points maximum.** Provide enhanced or special pavement to a minimum of 25% of all outdoor vehicular pavement, or 5% pedestrian-use pavement, on the lot, as applicable. (p 35)

## Options:

- 1) \_\_\_\_ Enhanced vehicular pavement: Texture 3 pts., Color 3 pts.;
- 2) \_\_\_\_ Permeable vehicular pavement, 5 pts.;
- 3) \_\_\_\_ Enhanced pedestrian walkways: Texture 3 pts., Color 3 pts.

Use of types of enhanced or permeable paving may be subject to a determination by city engineers that the materials are acceptable for the vehicular or pedestrian use on the property.

Examples of permeable paving:



Open joint pavers



Porous asphalt



Pervious concrete



Turf grid

# Design Options (10.126(c))

**(8) Conservation – 25 points maximum.** Provide conservation programs on the property. It must occupy at least 5% of the lot area. (p 36)

**Options:**

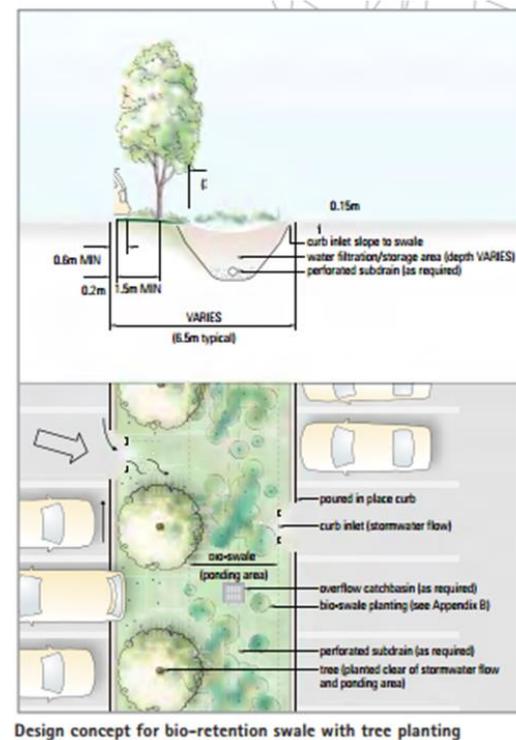
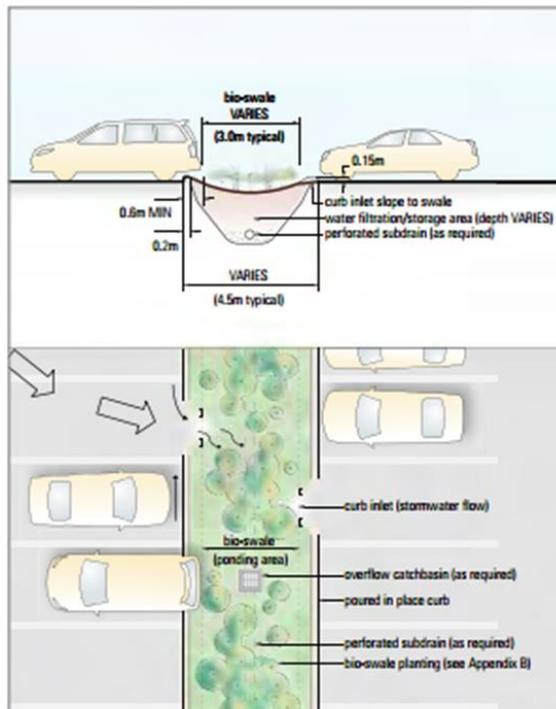
- 1) \_\_\_\_\_ Tree preservation in development impact area, 2 pts. for each tree up to 10 pts.;
- 2) \_\_\_\_\_ Habitat preservation and restoration (native grassland or woodland), 5 pts.;
- 3) \_\_\_\_\_ Habitat preservation and restoration – active management plan, 10 pts.;
- 4) \_\_\_\_\_ Habitat preservation and restoration – adjacent to primary natural areas, 15 pts.

# Design Options (10.126(c))

**(9) Low Impact Development – 20 points maximum.** Improve the property with design to manage stormwater flow and provide surface heat abatement. (p 36)

## Options:

- 1) \_\_\_\_ Rain garden, max. 6 pts.;
- 2) \_\_\_\_ Bioswale, max. 10 pts.;
- 3) \_\_\_\_ Water-wise plant materials and planting beds; max. 10 pts.



# Design Options (10.126(c))

**(9) Low Impact Development – 20 points maximum.** Improve the property with design to manage stormwater flow and provide surface heat abatement. (p 36-37)

## Options:

- 1) \_\_\_\_ Rain garden, max. 6 pts.;
- 2) \_\_\_\_ Bioswale, max. 10 pts.;
- 3) \_\_\_\_ Water-wise plant materials and planting beds; max. 10 pts.



# Design Options (10.126(c))

**(10) Parking Lots – 30 points maximum** for DIA 10 acres or larger; **20 points maximum** for DIA less than 10 acres.(p 37)

## Options:

- 1) \_\_\_ Pedestrian pathway, 5 pts.;
- 2) \_\_\_ Parking islands – maximum of 10 parking spaces between landscape islands, 5 pts.;
- 3) \_\_\_ Parking islands - increase landscape area a minimum of 200 sf for each large/medium tree.  
\_\_\_ +50% of required islands, 5 pts.  
\_\_\_ +75% of required islands, 10 pts.
- 4) \_\_\_ Parking islands - increase landscape area a minimum of 300 sf for each large/medium tree.  
\_\_\_ +50% of required islands, 7 pts.  
\_\_\_ +75% of required islands, 12 pts.
- 5) \_\_\_ Parking islands – each additional parking island provided, 3 pts.



# Design Options (10.126(c))

**(10) Parking Lots – 30 points maximum** for DIA 10 acres or larger; **20 points maximum** for DIA less than 10 acres.(p 37)

## Options:

- 6) \_\_\_\_ Landscape medians – provide a minimum of 10 ft. wide landscape median with large/medium trees for a minimum of a 12 space parking row, 5 pts.
- 7) \_\_\_\_ Landscape medians – provide a minimum of 12 ft. wide landscape median with large/medium trees for a minimum of 12 space parking row, 10 pts. for each full median for a maximum of 20 points on the lot.
- 8) \_\_\_\_ Landscape medians – provide a minimum of 16 ft. wide landscape median with large/medium trees for a minimum of 12 space parking row, 15 pts. for each full median for a maximum of 30 points on the lot.
- 9) \_\_\_\_ Large trees located in minimum of 500 sf dedicated open soil area, 2 pts. for maximum of 20 pts.
- 10) \_\_\_\_ Pocket park. Provide a minimum of 2,500 sf of contiguous open soil surface area, 20 pts.



# Design Options (10.126(c))

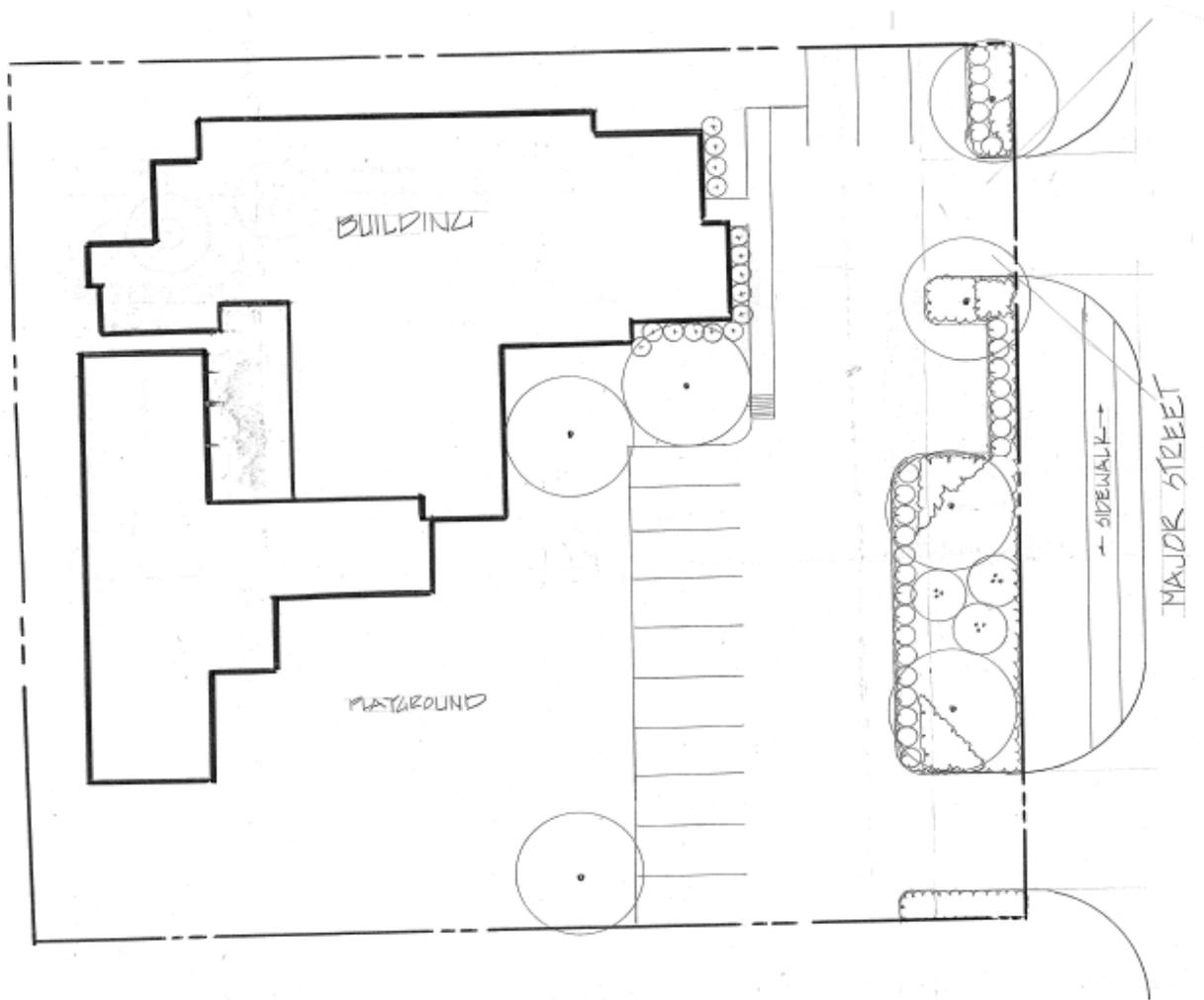
**(11) General** – Provide documentation and demonstrate ability to achieve any of the following conditions. (p 38)

**Options:**

- 1) \_\_\_\_\_ Provide SITES (Sustainable Sites Initiative) documentation and demonstrate ability to attain SITES certified level (65 points) or greater, 10 pts.
- 2) \_\_\_\_\_ Provide and implement a landscape maintenance plan for a minimum of a 3 year period, 3 pts.

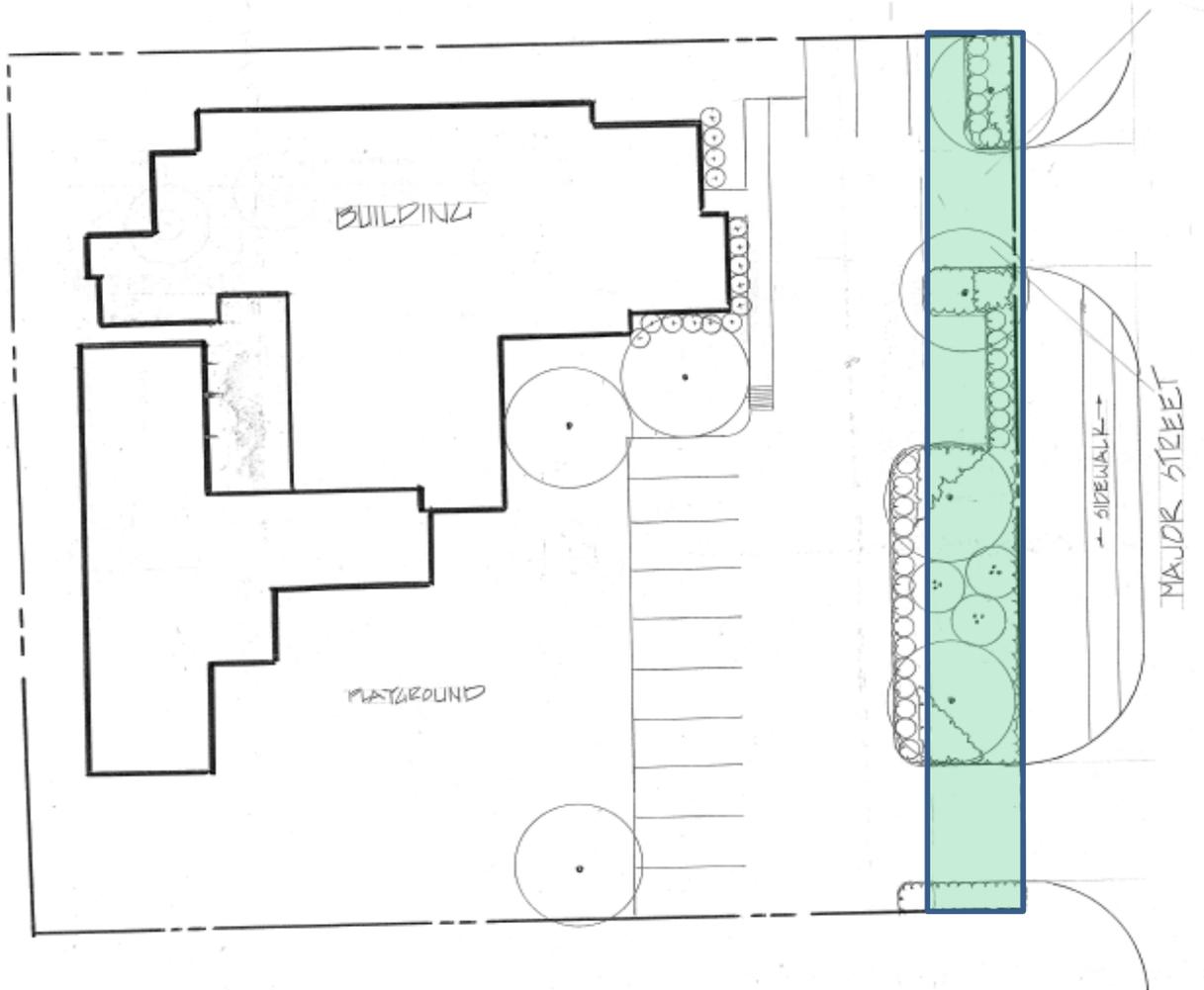
# Design Options (10.126)

## Example 1



# Design Options (10.126)

## Example 1



Site: 29,751 sf

Site Trees required: 7

Required Parking: 14 spaces

Street Buffer Zone:

Major: 15' wide,

150' = 2,250 sf

Trees required – 4 (1/40')

No parking lot requirements

because less than 20 parking spaces

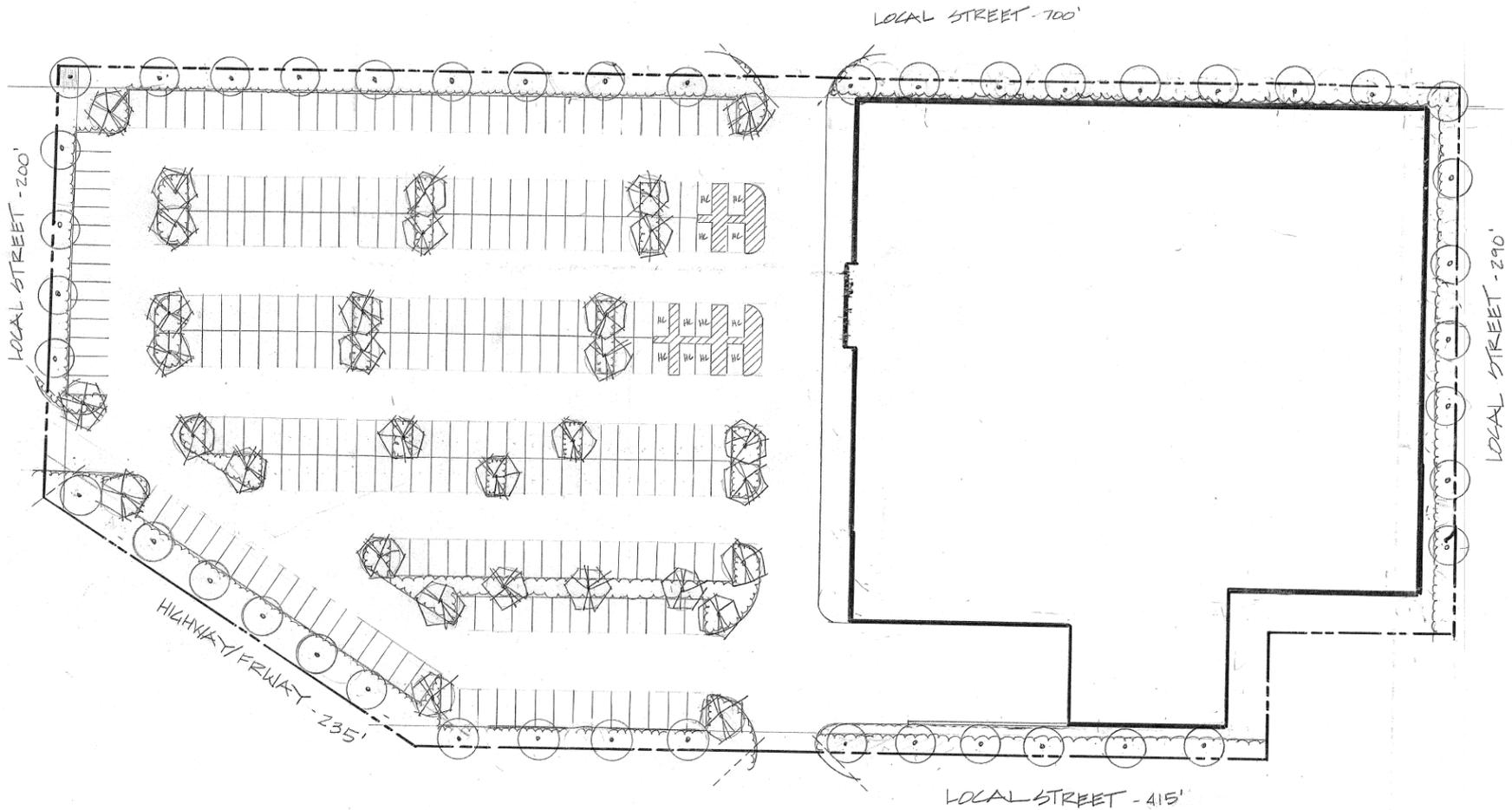
Design Option Points required:  
15

Design Options chosen:

- Screening of off-street parking, enhanced – 10 points
- Facade planting – 5 points

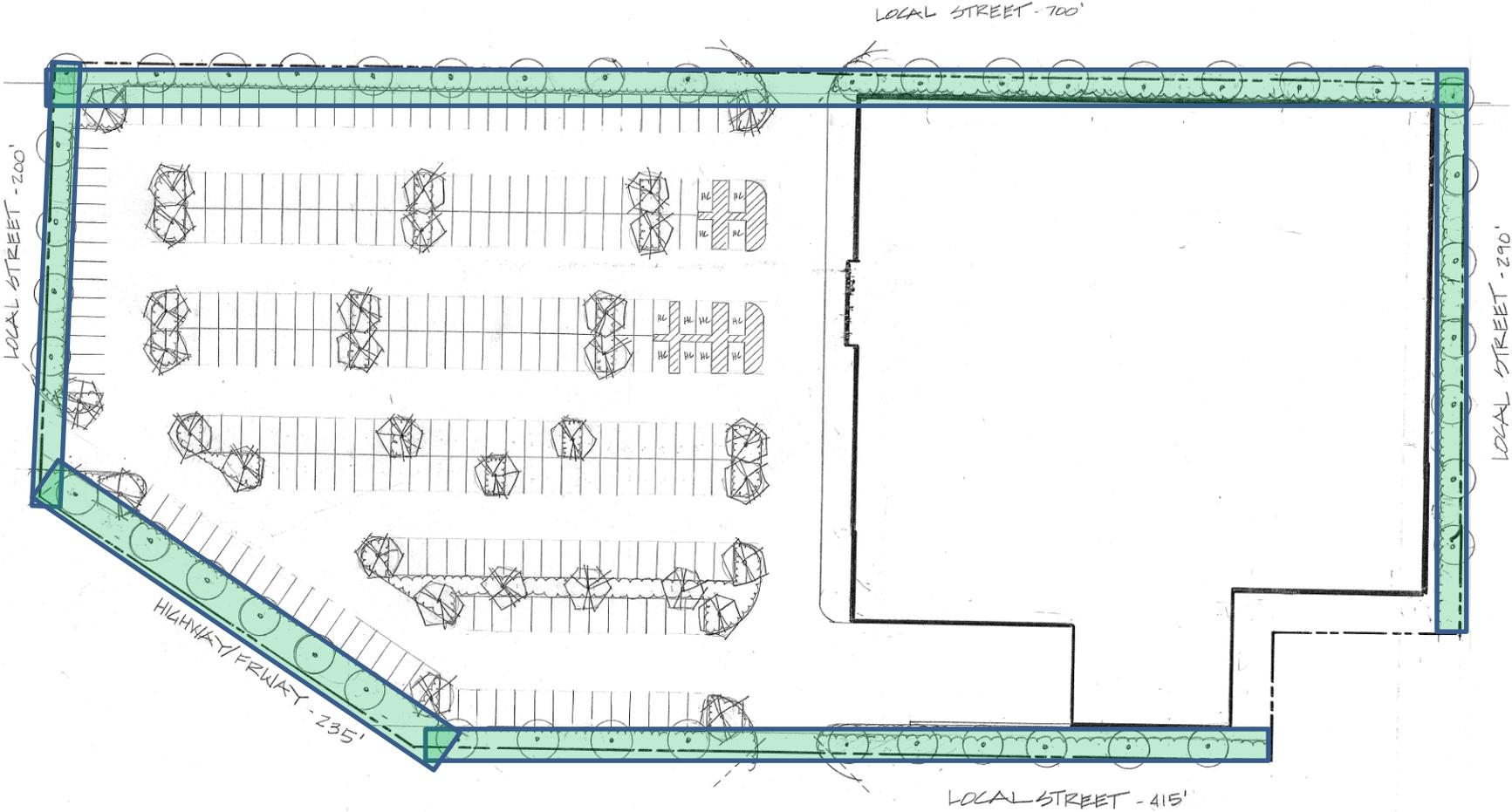
# Design Options (10.126)

## Example 2



# Design Options (10.126)

## Example 2



# Design Options (10.126)

## Example 2

Site: 235,563 sf

Site Trees required: 59

Required Parking (1/300 sf): 262 spaces, 268 provided

Interior Zone:

No parking space further than 70' from a tree

Terminus landscape islands

No more than 12 parking spaces between landscape islands unless abutting a landscape median or buffer zone

Street Buffer Zone: (length less vehicular ingress/egress) (1 tree/40')

Frwy/Hwy – 15' wide, 235' (6)

Local – 7.5' wide, 200' (5)

Local – 7.5' wide, 700' (18)

Local – 7.5' wide, 290' (7)

Local – 7.5' wide, 415' (10)

Design Option Points required: 30

Design Options chosen:

Screening of off-street parking, enhanced (Option 2), (c)(4)(D)(ii) - 10 points

Facade planting, enhanced (Option 2), (c)(5)(B)– 10 points

Facade planting, grouped with small trees (Option 3), (c)(5)(C)– 5

Landscape medians (Option 6), (c)(10)(F) – 5

# LANDSCAPING (10.120)

- .121 Application of Division
- .122 Artificial Lot Determination
- .123 Landscape Plan Submission
- .124 Landscape Plan Review
- .125 Mandatory Landscape Requirements
  - a) Single family and duplex uses
  - b) Other uses
    - 1) Street Buffer Zone
    - 2) Residential Buffer Zone
    - 3) Interior Zone
- .126 Design Options Standards
- .127 When landscape must be completed**
- .128 Enforcement by Building Official**

- Conditions of 10.127 and 10.128 have not been amended. (p 40)
- Landscaping must be completed before a final certificate of occupancy. A time extension is possible with required documentation. (p 40)
- As was amended in 2003, projects may be interrupted by an order to stop work if violations occur. This same provision is located for tree regulations in 10.137. (p 41)

# LANDSCAPING (10.120)

Link to webpage:

<http://dallascityhall.com/departments/sustainabledevelopment/planning/Pages/Code-Amendments.aspx>

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