

THE GEORGE WASHINGTON UNIVERSITY FOGGY BOTTOM CAMPUS

STREETSCAPE GUIDELINES

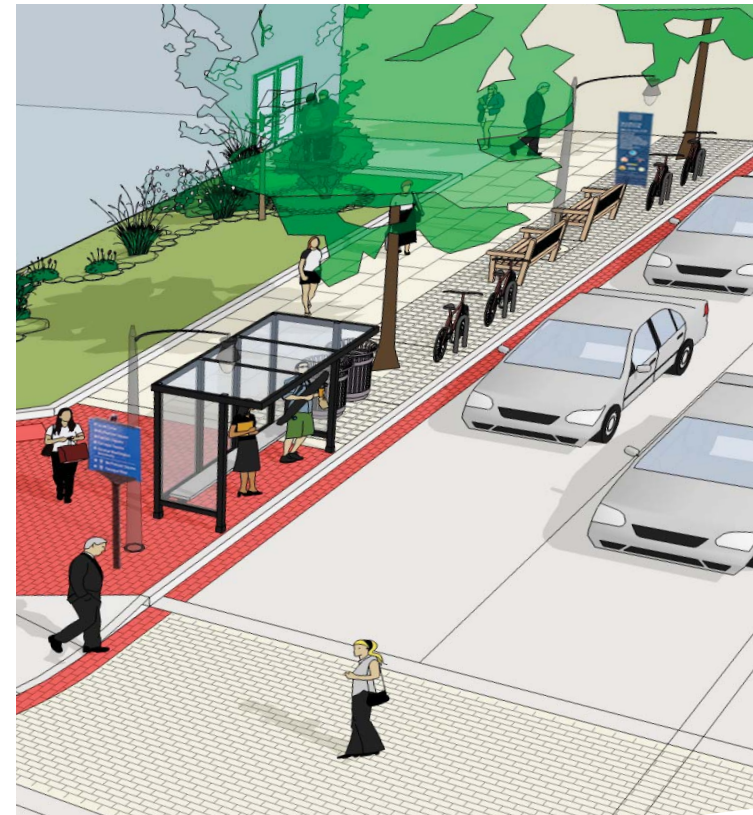




TABLE OF CONTENTS

2007 FOGGY BOTTOM CAMPUS PLAN 2

STREETSCAPE PLAN 3

DESIGN PRINCIPLES 4

STREET HIERARCHY 5

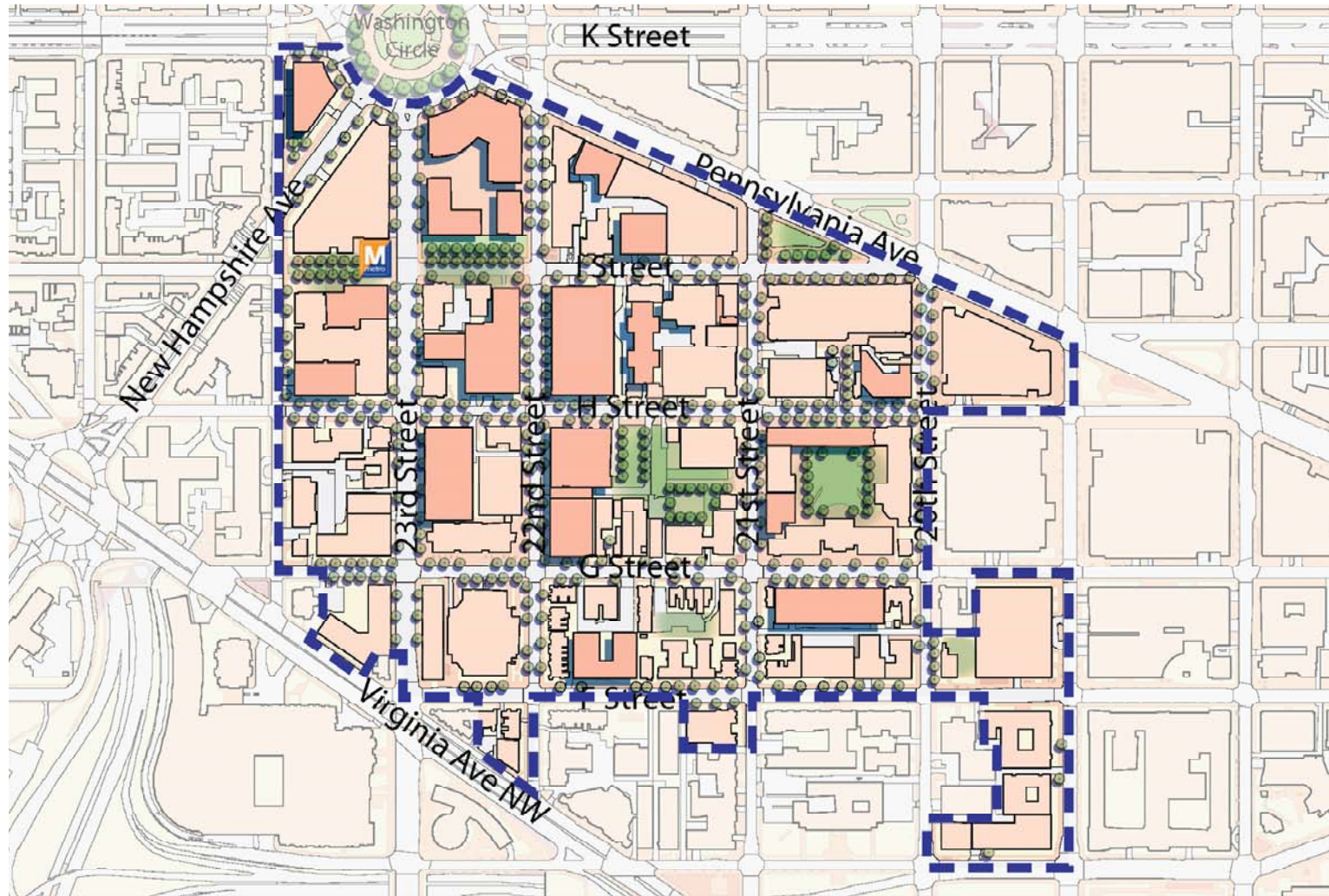
STREETSCAPE ZONES 6

STREETSCAPE LAYERS 7

STREETSCAPE ELEMENTS 8

MATRIX AND KIT OF PARTS 9

2007 FOGGY BOTTOM CAMPUS PLAN



The 2007 Foggy Bottom Campus Plan is the guiding document for growth of the campus. The concepts of this streetscape plan were developed and approved (in concept) by the Zoning Commission.



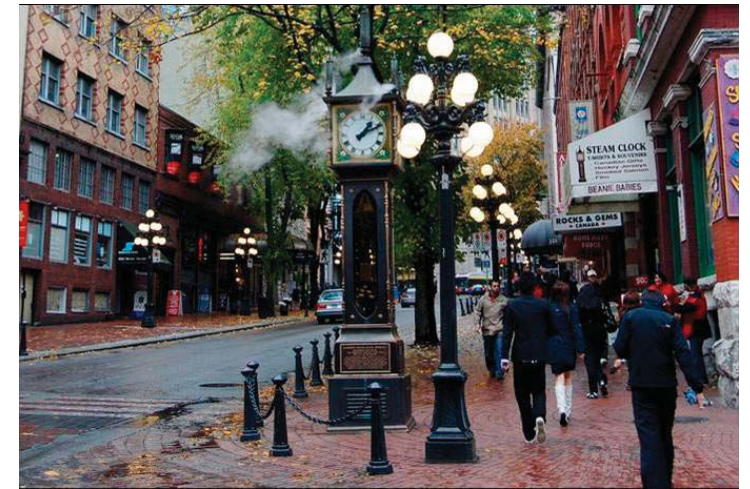
THE STREETSCAPE PLAN

This Streetscape document for George Washington University builds on the concepts approved as part of the University's 2007 Foggy Bottom Campus Plan.

The document references global best practices in the design of streets. Contemporary ideas on the design of streets cater to multiple modes, emphasize the need for a sense of identity for the cities, neighborhoods, campuses and places they are situated in, and promote a balance between the needs for mobility and access.

In creating a legible streetscape plan for George Washington University, five important components were developed:

1. A set of Design Principles, that build on the University's 2007 Foggy Bottom Campus Plan and that guide the future design and re-construction of Streets within the Campus.
2. A clear distinction between East-West Street and North-South Streets.
3. Distinct zones within the Streets, that cater to the demands placed on them by various constituents.
4. Three distinct "layers" which guide the deployment of streetscape elements such that the intensity of streetscape enhancements reflect the intensity of the adjacent university uses.
5. A "kit-of-parts" that the University will use as the many Streets within the Campus are built, over time. This "kit-of-parts" incorporates current best management practices in environmentally friendly construction techniques for streets.



THE STREETScape PLAN

DESIGN PRINCIPLES



Develop a vocabulary of standardized University elements to form the “kit-of-parts” for future streetscape development.



Identify “special places” on campus where enhanced streetscape embellishments could occur.



Promote an environment which provides ease of movement and safety for (and minimizes conflicts between) pedestrians and vehicles.



Design University way-finding, building identification & gateway signage to be clearly visible from the perspective of the pedestrian and the driver.



Maintain existing street trees where possible and provide tree boxes in the furnishing zone that facilitate healthy growth and easy maintenance.



Provide streetscape and landscape design elements that are sustainable, enhance context, and are consistent with applicable District standards.

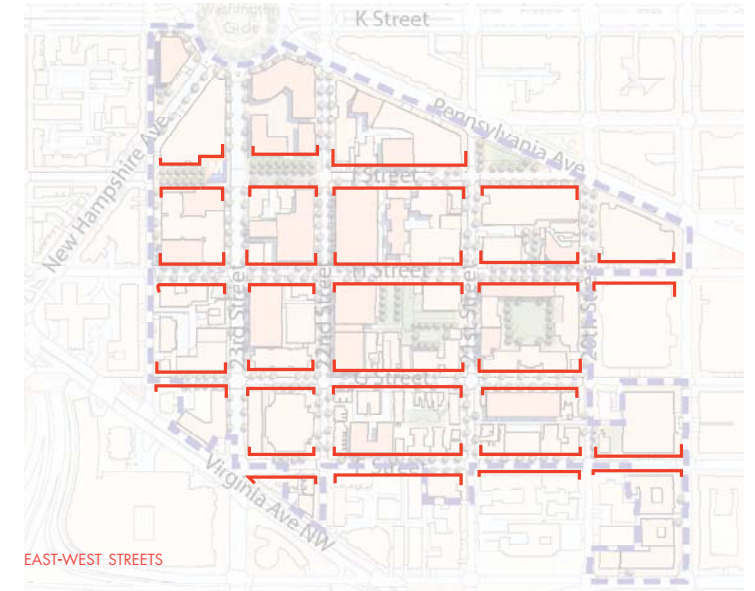
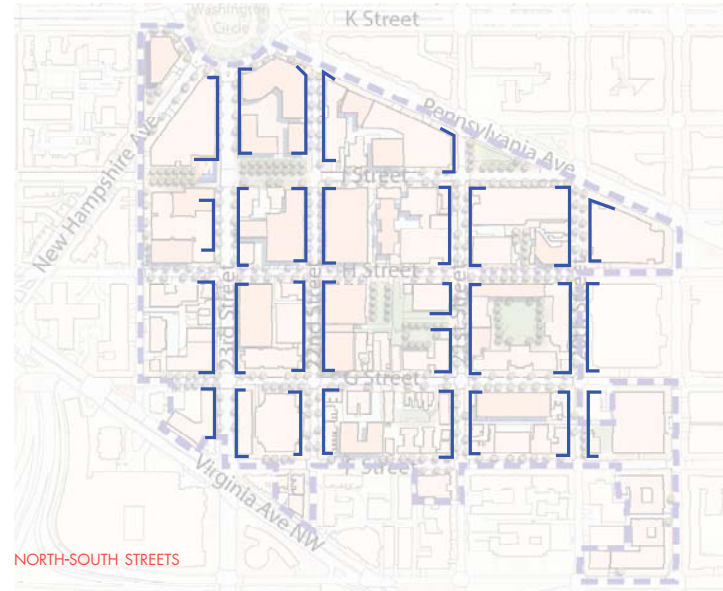
THE STREETSCAPE PLAN

STREET HIERARCHY

The Plan recommends a clear hierarchy of streets, that addresses the University's dual role with respect to the City and neighborhood it is situated in, and it's own need for a clear identity. This has been achieved by identifying two distinct types of streets: North-South Streets and East-West Streets.

The major North - South streets that pass through the Campus link it with the Downtown areas to the north and the Federal areas to the south. These streets are also carriers of high traffic volumes, relative to the East-West streets. The primary recommendations, included in the Streetscape Elements Matrix, are with regard to making a distinction between the paving materials and the street lighting fixtures. The Plan recommends concrete paving and cobblestones on sidewalks and the Twin-20 streetlight for the North-South streets.

This Plan recommends that the East-West streets sidewalks be paved with brick and cobblestone, which provides a smaller module that responds to the higher levels of pedestrian traffic along the East-West streets. It also recommends the Globe #16 streetlight for use along the East-West Streets.

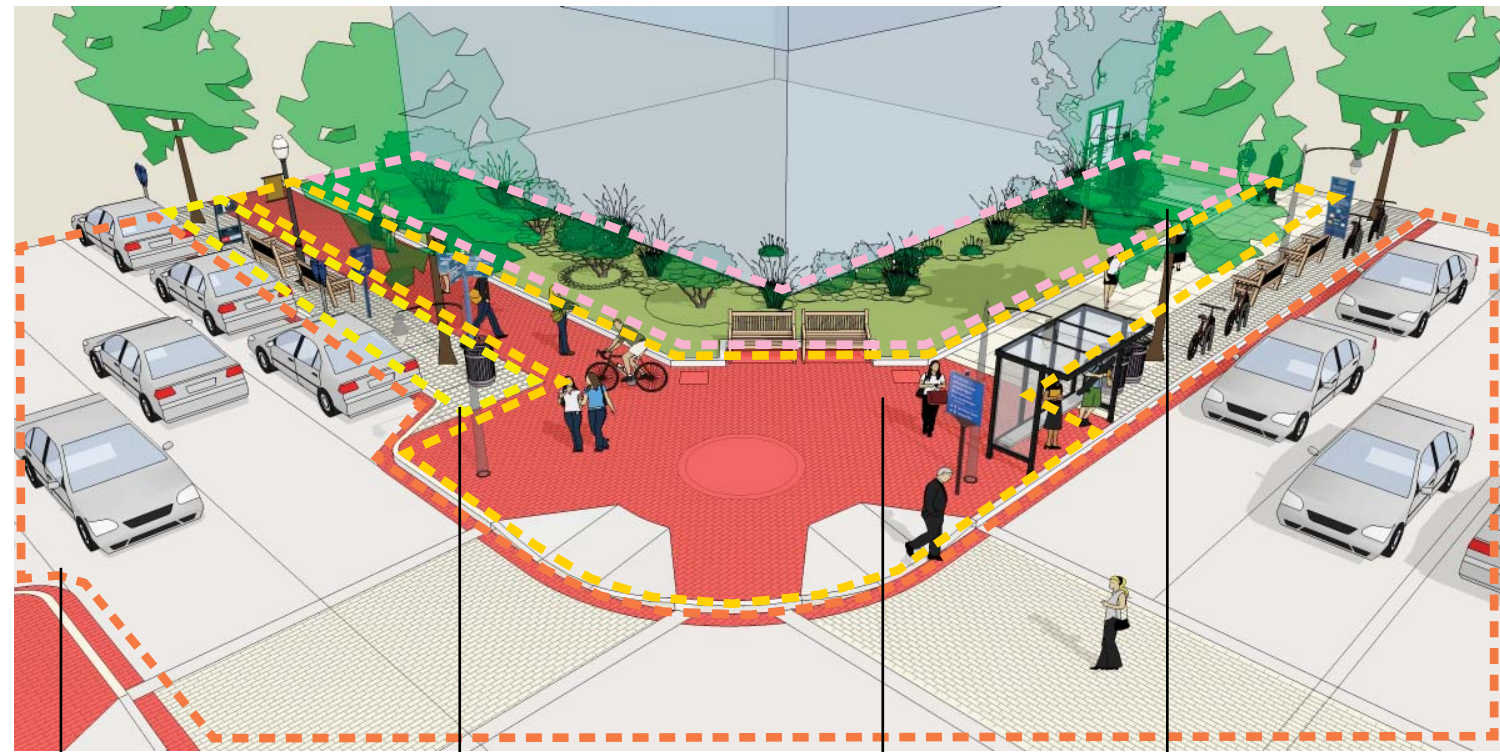


THE STREETSCAPE PLAN

STREETSCAPE ZONES

Clear zonal distinctions have been identified within the street rights-of-way, based on balancing vehicular and pedestrian mobility needs with essential elements of a legible street - such as signage, lighting, street trees and public art. The street zones include:

1. The Cartway, where vehicular, transit, bike movements and parking are accommodated.
2. The Furnishing Zone, where important streetscape elements are placed.
3. The Clear Walkway, where pedestrians are accommodated.
4. The Planting Zone where landscape elements, important way finding elements and building identifiers are placed.



**ZONE 1.
CARTWAY**

**ZONE 2.
FURNISHING ZONE**

**ZONE 3.
CLEAR WALKWAY**

**ZONE 4.
PLANTING ZONE**

Minimum recommended width - 5'

Minimum recommended width - 5'

THE STREETSCAPE PLAN

STREETSCAPE LAYERS



BASE LAYER

Building Identifiers

- Building Flags
- Placards
- Awnings
- Building Engravings

Street Furniture

- Benches
- Trash Receptacles
- Recycling Bins
- Bike Racks
- Emergency Stations

Way-finding Elements

- Vertical Way finding Elements

Paving

- Furnishing Zone
- Clear Walkway

Street Lighting

Planting

George Washington University Streetscape Guidelines



ENHANCED LAYER

Paving

- Special Intersection

Street Trees

- LID Tree Pits along furnishing zones

Streetlight Banners

Way-finding Elements

- Campus Maps



PREMIUM LAYER

Distinctive Design Elements

- GWU Busts
- Integrated Public Art
- Artifacts
- Plaques
- Clocks
- Chess Tables
- Notice Boards
- Sidewalk Art
- Paving Medallions

Planting

- LID Elements integrated within major Open Spaces

STREETSCAPE ELEMENTS

The Streetscape Elements “Kit-of-Parts” is intended to guide future design and construction efforts. It consists of a material and fixture palette that has been evolved through a consensus-building process that involved the University, members of the Foggy Bottom community and the District Department of Transportation.

The Matrix, on the facing page, provides a summary of the palette. It is organized by street zones and streetscape layers.

The Matrix is also a reference guide to the detailed technical information provided on the following pages. Using the Matrix is a 3-step process:

Step 1 - Locate the streetscape elements by Zone - Roadway, Furnishing, Clear Walkway or Planting.

Step 2 - Refer to the Element Code column.

Step 3 - Turn to the page with the referenced element Code number. The page provides information for each streetscape element and explains the purpose, location and relevant guidelines/standards.

STREETSCAPE ELEMENTS - MATRIX AND KIT OF PARTS

GW Streetscape Plan: Matrix of Streetscape Elements					
Streetscape Element	Element Code	Page	Base Layer	Enhanced Layer	Premium Layer
ZONE 1. ROADWAY					
Intersection	1.1	11	NA	Stamped Concrete in certain locations	Bump outs on H street
Midblock Crossing	1.2	12	NA	NA	H Street
ZONE 2. FURNISHING ZONE					
Paving	2.1	13	Cobblestone, 4"x4" Tumbled Concrete Paver	Same with the Base Layer	Same with the Base Layer
Bench	2.2	14	GWU Standard: Hyde Park 5' Bench, by Kingsley Bate	Same with the Base Layer	Same with the Base Layer
Streetlight	2.3	15	DC Standard: Washington Globe(#16)		
		16	DC Standard: Twin-20, mid-block locations on City Streets		
		17	DC Standard: Tear Drop Pendant at all intersections		
Tree	2.4	18	Maintain Existing, NewTree Species per DC Forester List; Coordinate with Casey Trees	Same with the Base Layer	Same with the Base Layer
Tree Box	2.5	19	DC Standard: Recommended 5'x10' Minimum size, with Metal Tree Fence	Same with the Base Layer	Same with the Base Layer
Bicycle Rack	2.6	20	DC Standard: U-Shaped Bike Rack	Same with the Base Layer	Same with the Base Layer
Trash Can/Recycling	2.7	21	GWU Standard: Victor-Stanley , Blue with University Signage, Green Recycling	Same with the Base Layer	Same with the Base Layer
University Branding Elements	2.8	22	NA	GWU Standard: Building flag poles (JXxY) and Streetlight Banners (XxY)	Same with the Enhanced Layer
Way finding Signage	2.9	23	DC Standard: Pole Mounted Signage (Refer to Public Realm Design Handbook)	Same with the Base Layer	Same with the Base Layer
Campus Map	2.10	24	NA	NA	GWU Standard: Illustrated GWU Maps, (2'6" x 7'6")
Building Identifier	2.11	25	GWU Standard: Pole mounted Signage, with directional arrow	Same with the Base Layer	Same with the Base Layer
ZONE 3. CLEAR WALKWAY					
Paving	3.1	26	Butt-colored Concrete, 2'x2' score lines, with appropriate slope to prevent ponding		
		27	Red Brick, laid on slab, with appropriate slope to prevent ponding		
Public Art (Horizontal)	3.2	28	NA	NA	Custom sidewalk art installations at select, high-visibility locations
Sub-Soil Treatment	3.3	29	Structural Soil, 24" to 36" recommended depth	Same with the Base Layer	Same with the Base Layer
		30	Silva Cells, with minimum 30" Sub-soil Strata		
ZONE 4. PLANTING ZONE/SETBACK					
Tree	4.1	31	Maintain Existing	Same with the Base Layer	Same with the Base Layer
Understory Planting	4.2	32	Maintain Existing	Same with the Base Layer	Same with the Base Layer
LID Opportunities	4.3	33	NA	LID Tree Pits in certain locations	LID Elements integrated with major Open Space
Building Identifier	4.4	34	NA	Maintain Existing, 2' x 7'	Same with the Enhanced Layer
Emergency Station	4.5	35	Talk A Phone WEBS-MT/R-OP411/ Code Blue CB 1-s	Same with the Base Layer	Same with the Base Layer
Interpretive Signage	4.6	36	NA	GW Standard	Same with the Enhanced Layer
Public Art	4.7	37	NA	NA	Customize
Campus Map	4.8	38	NA	NA	GWU Standard: Illustrated GWU Maps, (2'6" x 7'6")



ZONE 1 ROADWAY

1.1 Intersection



STAMPED CONCRETE

Purpose:

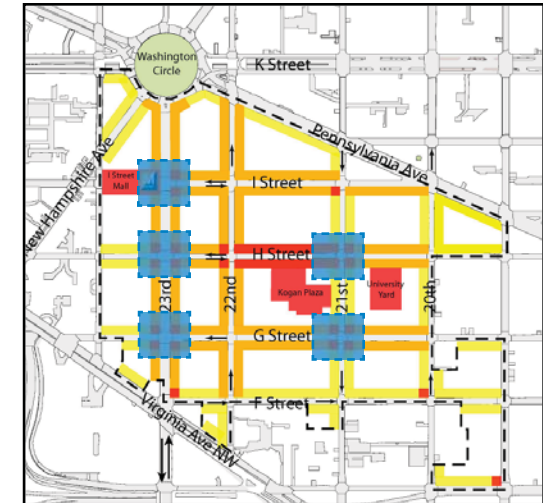
- Enhance pedestrian safety.
- Traffic calming.

Recommended Location:

- I & 23rd
- H & 21st
- H & 23rd
- G & 21st
- G & 23rd

Standards/Guideline:

- Per District Standard (Chap 31, Para 31.6.4, D.C. Department of Transportation - design and Engineering Manual, and the District of Columbia Public Realm Design Handbook, Pg. 31).
- Some locations could feature custom design for crossing, based on DDOT approval.



☐ Base Layer

☒ Enhanced Layer

☒ Premium Layer



BUMP OUTS

Purpose:

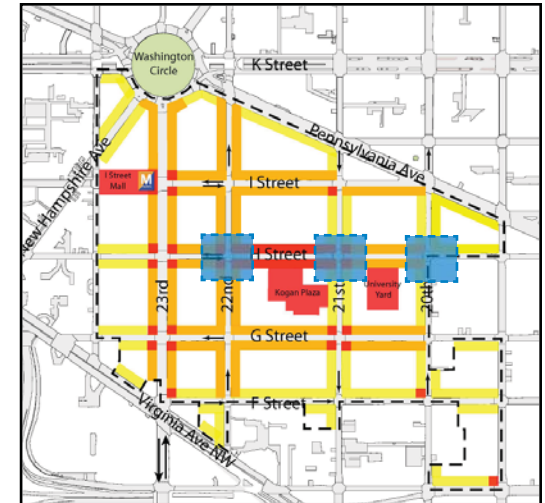
- Facilitate pedestrian crossing at key University locations.

Recommended Location:

- H & 20th
- H & 21st
- H & 22nd

Standards/Guideline:

- Per District Guidelines, DDOT approval
- Width of bump-out to not exceed width of parking lane.
- Bump-outs should only be installed on streets with dedicated parking lanes.



- ☐ Base Layer
- ☒ Enhanced Layer
- ☒ Premium Layer



Purpose:

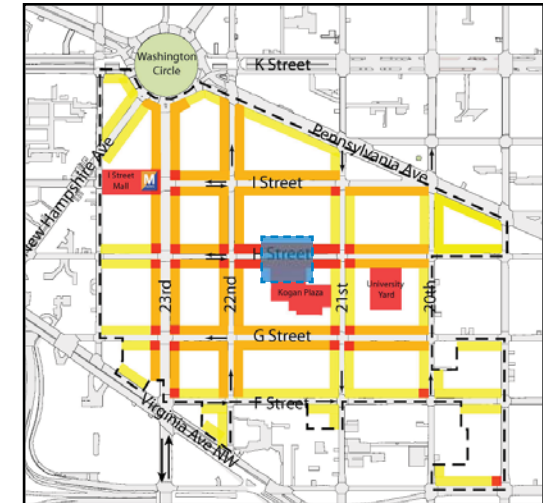
- Facilitate pedestrian crossing at key University locations.

Location:

- Kogan Plaza

Standards/Guideline:

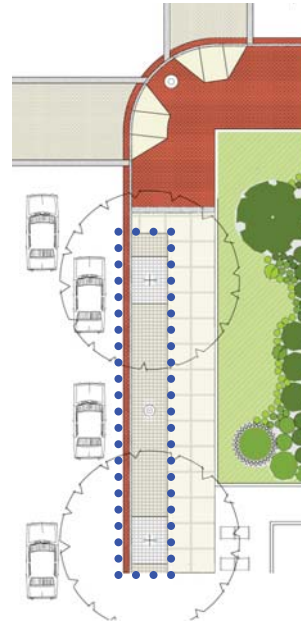
- Per City Standards.
- Minimize impact on existing street parking.



☐ Base Layer

☐ Enhanced Layer

☒ Premium Layer



COBBLE STONE

Purpose:

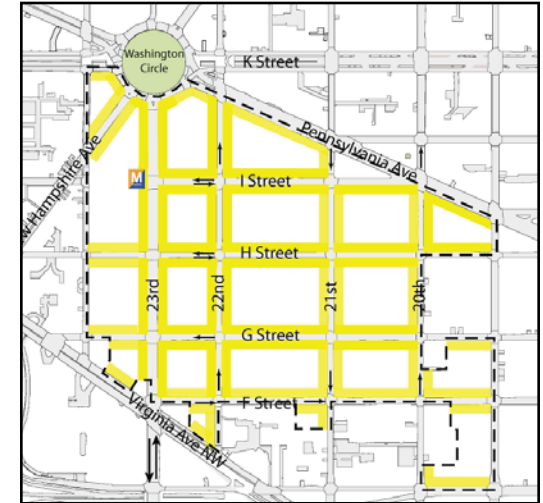
- Define Furnishing Zone
- Create a pervious surface that allows local catchment of storm water.

Location:

- Furnishing Zone along all streets.

Standards/Guideline:

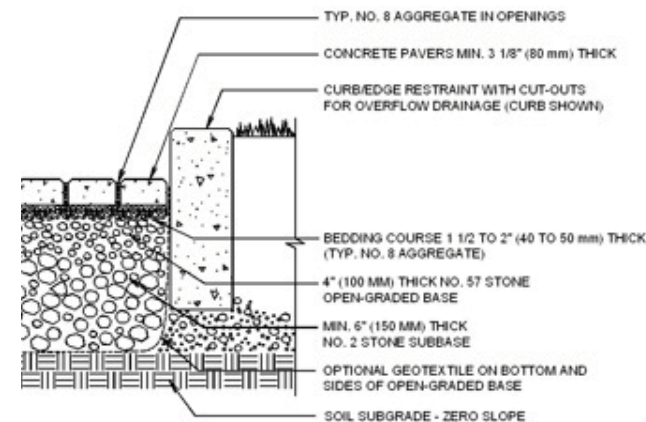
- Pervious joints.
- Material: tumbled concrete paver.
- Recommended Size "4x4".
- Texture: to allow ADA access.
- Color: Buff color on N/S city streets, to compliment concrete sidewalks.



☒ Base Layer

☒ Enhanced Layer

☒ Premium Layer





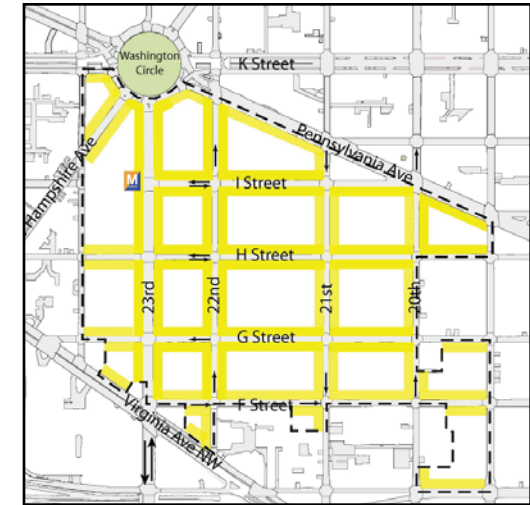
GW STANDARD: HYDE PARK 5'

Purpose:

- As a street amenity for GW community and residents of the Area.

Location:

- Furnishing Zone as appropriate
- Planting Zone as appropriate
- Important Open Spaces (Kogan Plaza, University Yard, etc.)



☒ Base Layer

☒ Enhanced Layer

☒ Premium Layer

Standards/Guideline:

- Make: Hyde Park 5'
- Manufacture: Kingsley Bate



George Washington University Streetscape Guidelines

WASHINGTON GLOBE (#16)

Purpose:

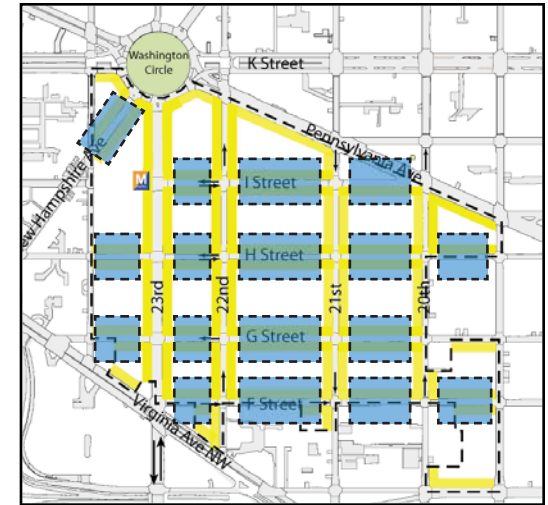
- Light fixtures provide lighting at mid-block locations to enhance pedestrian and vehicular safety.

Location:

- East-West University Streets.
- Mid block lighting, not for use at intersections.

Standards/Guideline:

- Recommended 60' spacing.
- Refer *District of Columbia Streetlight Grand Plan* for additional information on hardware and fixtures.



☒ Base Layer

☒ Enhanced Layer

☒ Premium Layer



TWIN-20

Purpose:

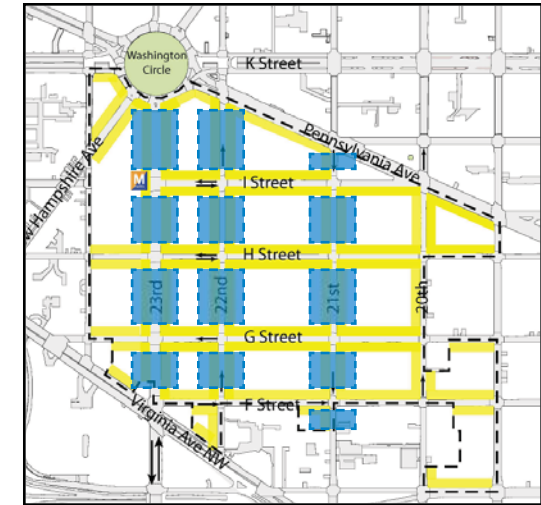
- To provide quality lighting at mid-block.

Location:

- North-South Streets.
- Mid-block lighting, not for use at intersections.

Standards/Guideline:

- Recommended 60' spacing.
- Refer *District of Columbia Streetlight Grand Plan* for additional information on hardware and fixtures.



☒ Base Layer

☒ Enhanced Layer

☒ Premium Layer



George Washington University Streetscape Guidelines

TEAR DROP PENDANT

Purpose:

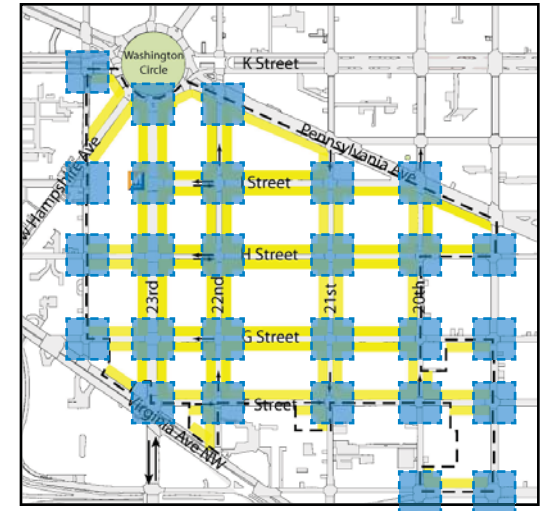
- To provide lighting at intersections for pedestrian and vehicular safety.

Location:

- Intersection (all streets).

Standards/Guideline:

- Recommended 60' spacing.
- Refer *District of Columbia Streetlight Grand Plan* for additional information on hardware and fixtures.



☒ Base Layer

☐ Enhanced Layer

☐ Premium Layer



Purpose:

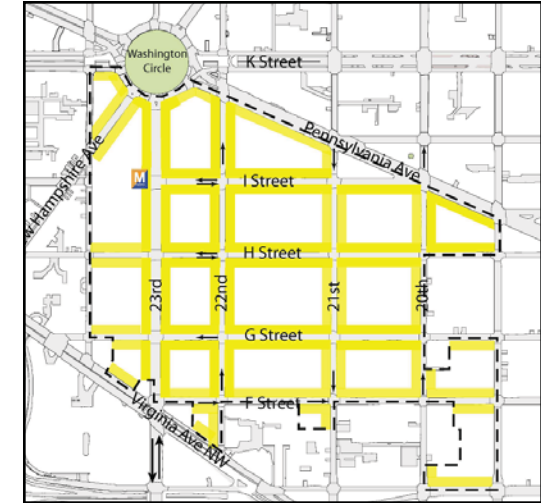
- Shade.
- Define Street Edge.

Location:

- Furnishing Zone.

Standards/Guideline:

- Per DC Arborist / Urban Forester.
- Recommended 30' spacing.
- Coordinate species with Casey Trees.



☒ Base Layer

☒ Enhanced Layer

☒ Premium Layer

ZONE 2 FURNISHING ZONE

2.5 Tree Box



Purpose:

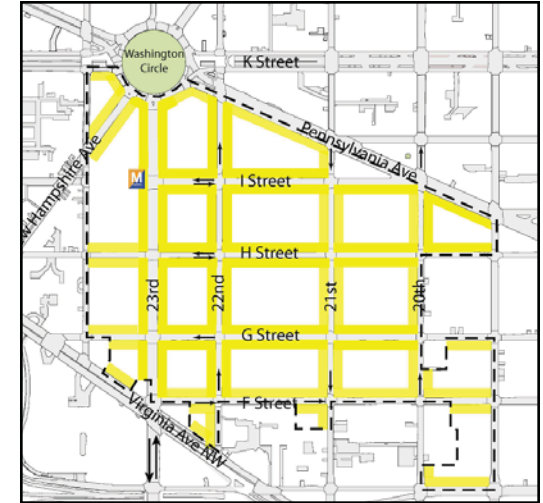
- To protect trees.
- To prevent undue compaction of soil.

Location:

- Furnishing Zone (all streets).

Standards/Guideline:

- Per City Safety Standards.
- Minimum recommended dimensions - 5' x 10'.
- Metal fencing for tree box should be three-sided, to allow doors of vehicles parked in the adjacent parking lanes to be opened.



☒ Base Layer

☒ Enhanced Layer

☒ Premium Layer



Purpose:

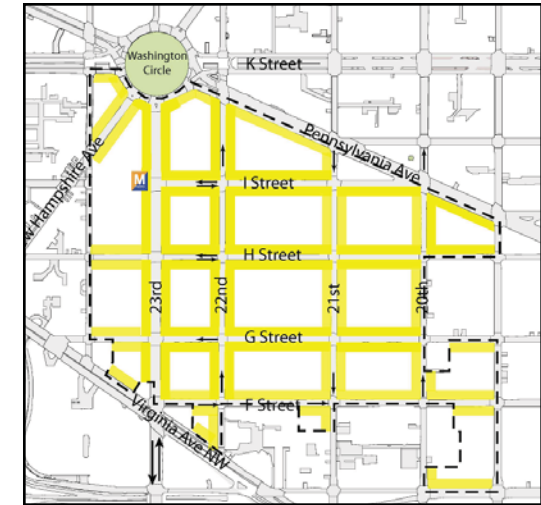
- Provide adequate facilities to encourage biking.

Location:

- Furnishing Zone
- Open spaces
- Near building entrances

Standards/Guideline:

- Bike racks should be placed parallel to the curb line.
- Where furnishing zone width permits, bike racks may be placed perpendicular to the curbline.



☒ Base Layer

☒ Enhanced Layer

☒ Premium Layer



Purpose:

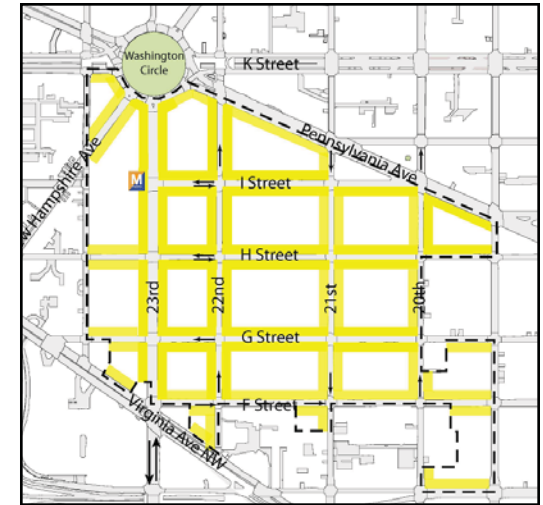
- Trash receptacles and recycling shall be installed along public rights-of-way. Receptacles shall be installed along highly visible and utilized locations, including but not limited to transit stops, public parks and plazas, and critical intersections.

Location:

- Furnishing zone, at intersections.
- Near bus stops, transit entrances, building entrances.

Standards/Guideline:

- Victor-Stanley.
- Capacity - 36 gallons (136 liters).
- Placement - minimum 2' from curb.
- Blue trash can.
- Green recycling can, with GW logo.



- ☒ Base Layer
- ☒ Enhanced Layer
- ☒ Premium Layer

ZONE 2 FURNISHING ZONE

2.8 University Branding Elements



Purpose:

- To reinforce the University's presence in the area.

Location:

- Furnishing Zone, on streetlight poles.
- Above building entrances.

Standards/Guideline:

- GW Standard Building Flags. Size varies with building size -
 - 30"W x 78"H
 - 42"W x 125"H
 - 42"W x 153"H
 - 42"W x 186.5"H
- GWU Standard Street Light Mounted Banners (18"W x 24"L).



☐ Base Layer

☒ Enhanced Layer

☒ Premium Layer



George Washington University Streetscape Guidelines

Purpose:

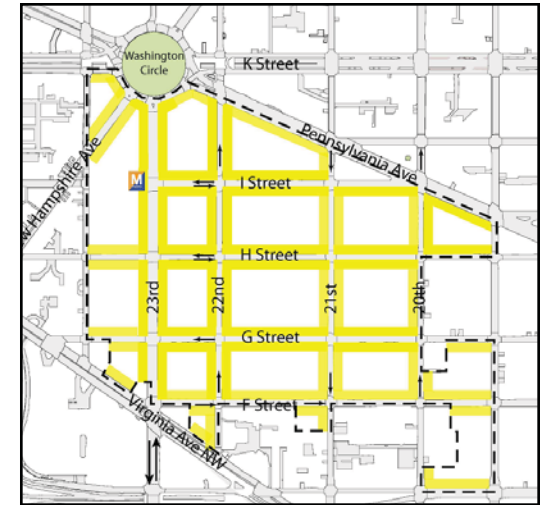
- To allow GW community residents & visitors a clear way to locate important destinations.

Location:

- Furnishing Zone.

Standards/Guideline:

- Per City Standards for approved design of Wayfinding sign.
- Placement - minimum 2' away from curb.
- References -
 - Pgs.24-25, *Public Realm Design Handbook*, http://www.ddot.washingtondc.gov/ddot/lib/ddot/information/publicrealm/publicrealmhandbook_2008.pdf
 - DDOT Wayfinding Signage Program, March 8, 2004, Construction Document Set.



☒ Base Layer

☒ Enhanced Layer

☒ Premium Layer

ZONE 2 FURNISHING ZONE

2.10 Campus Map



Purpose:

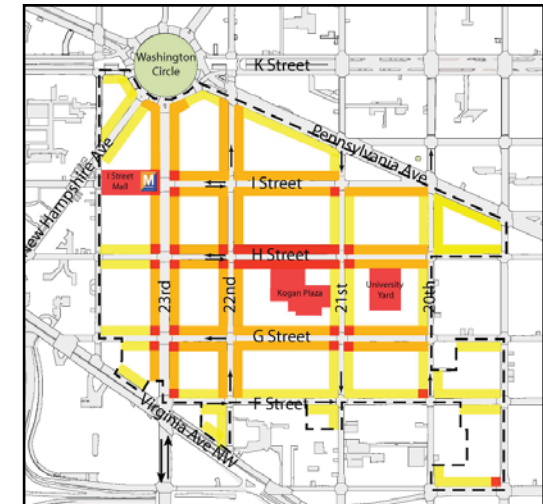
- To enhance way finding for the University community, visitors, residents.

Location:

- Furnishing Zone, as appropriate.
- At prominent locations: near transit entrances, bus stops, parking garages.

Standards/Guideline:

- Size - 2'-6" x 7'-6".
- Blue background, with GW logo.



☐ Base Layer

☒ Enhanced Layer

☒ Premium Layer

ZONE 2 FURNISHING ZONE

2.11 Building Identifier



Purpose:

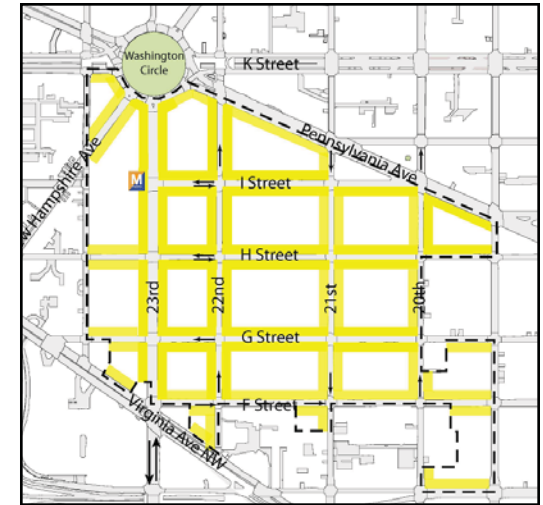
- To identify prominent building entrances.

Location:

- Furnishing Zone.

Standards/Guideline:

- Per GWU Standards (typical building identifier size – 2'W x 7'H).
- Includes GW logo, building name and address.



☒ Base Layer

☒ Enhanced Layer

☒ Premium Layer

ZONE 3 CLEAR WALKWAY

3.1 Paving



CONCRETE

Purpose:

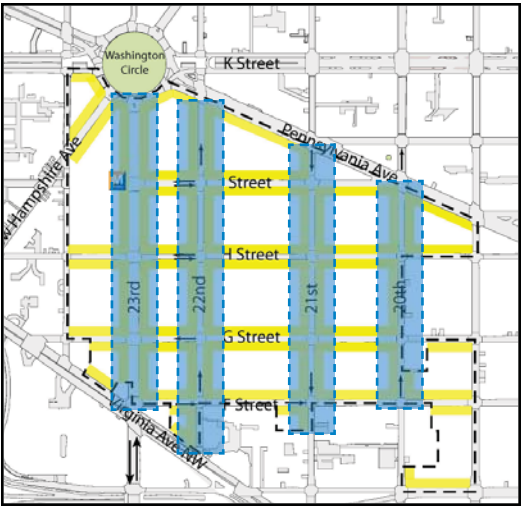
- To distinguish North-South Streets within the campus.

Location:

- Clear Walkway on North-South Streets.

Standards/Guideline:

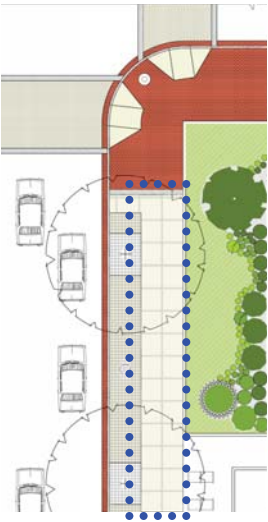
- 2'x2' score lines recommended.
- Buff color, to closely match sidewalk installed along Harvard Street NW, between Columbia Road NW and Argonne Place NW (refer photo to left).



☒ Base Layer

☒ Enhanced Layer

☒ Premium Layer



Material	Source	Amount Per Cubic Yard
CEMENT, lbs.	LAFARGE (Type I / II)	339
COARSE AGGREGATE, SSD lbs.	MILLVILLE # 57	1950
FINE AGGREGATE, SSD lbs.	SILVER HILL SAND	1165
WATER lbs./ gallons	CITY / WSSC	267 / 32 Max
WATER REDUCER, oz.	SIKA (PLASTOCRETE 161)	17.0
HIGH RANGE WATER REDUCER, oz.		
AIR ENTRAINING AGENT, oz.	SIKA (AEA-14)	4.0
OTHER (specify)	LAFARGE (NewCam)	226
UNIT WEIGHT OF PLASTIC CONCRETE, pcf		146.2

Description	Coarse Aggregate	Fine Aggregate	Portland Cement Concrete
DRY RODDED, pcf	103.5	105.1	
BULK DRY SP. GR.			
BULK SSD SP. GR.	2.83	2.61	
ABSORPTION, %	0.6	0.9	
FM		2.87	
% air			6
SLUMP, IN.			3" MAX
UNIT WEIGHT OF PLASTIC CONCRETE, pcf			146.2

ZONE 3 CLEAR WALKWAY

3.1 Paving



BRICK

Purpose:

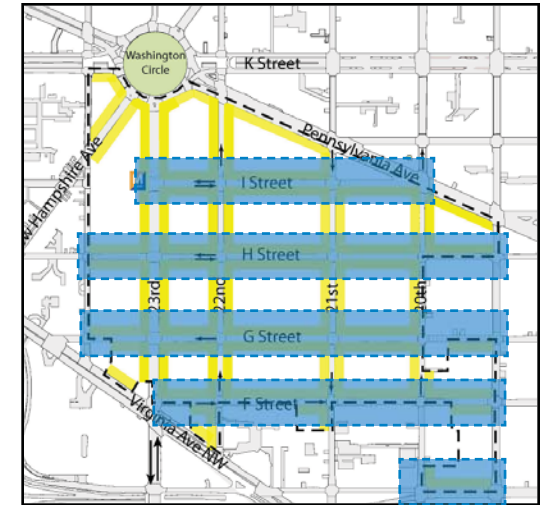
- Use on East-West Streets to define the campus better

Location:

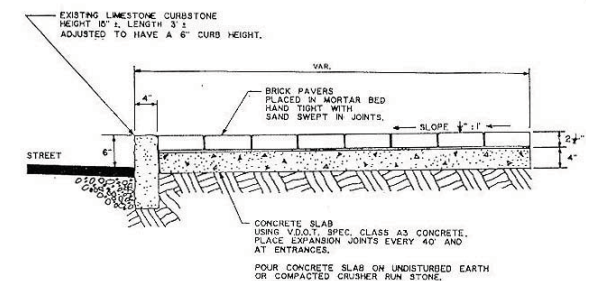
- Clear Walkway on East-West Streets

Standards/Guideline:

- Brick pavers to be laid on concrete slab, with adequate slope to ensure proper drainage, and to avoid heaving from tree roots.
- Refer to *Downtown Streetscape Regulations, August 2000*.
- The color shall be red as specified in the standard specifications.
- The pattern shall be as specified in the standard specifications.
- The joints (butt joints) shall be a maximum of one-eighth inch (1/8") and shall be swept with a dry sand cement mix of two (2) to one (1) by volume.
- Each paver shall have a non-slip finish.



- ☒ Base Layer
- ☒ Enhanced Layer
- ☒ Premium Layer



ZONE 3 CLEAR WALKWAY

3.2 Public Art (Horizontal)

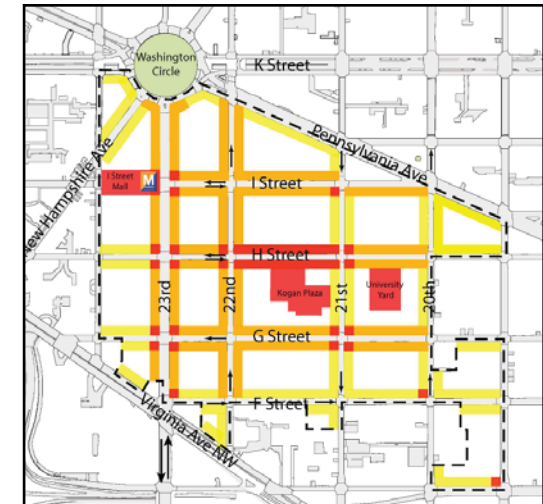


Purpose:

- To establish University presence and provide opportunity for public art.

Location:

- H Street NW.
- I Street Mall.



☐ Base Layer

☐ Enhanced Layer

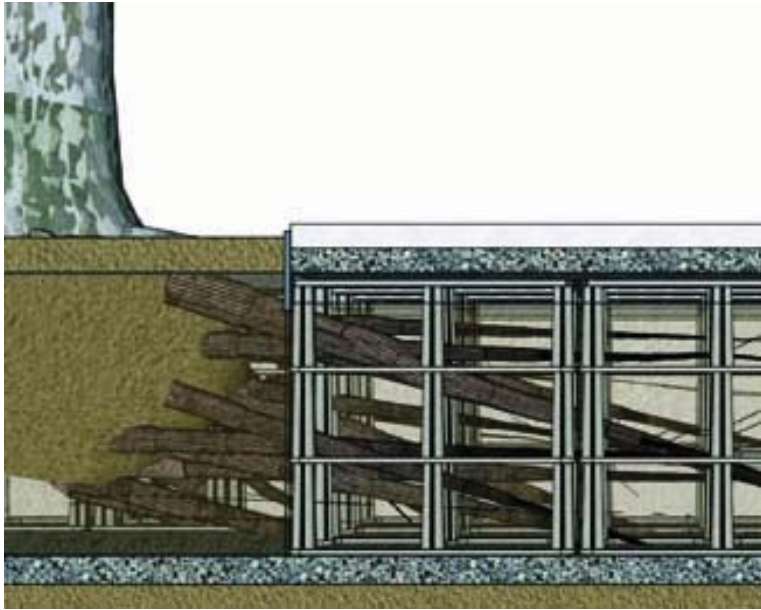
☒ Premium Layer

Standards/Guideline:

- Custom Designed.
- Must meet ADA Compliance for surface texture.

ZONE 3 CLEAR WALKWAY

3.3 Sub-Soil Treatment



OPTION 1: SILVA CELLS

Purpose:

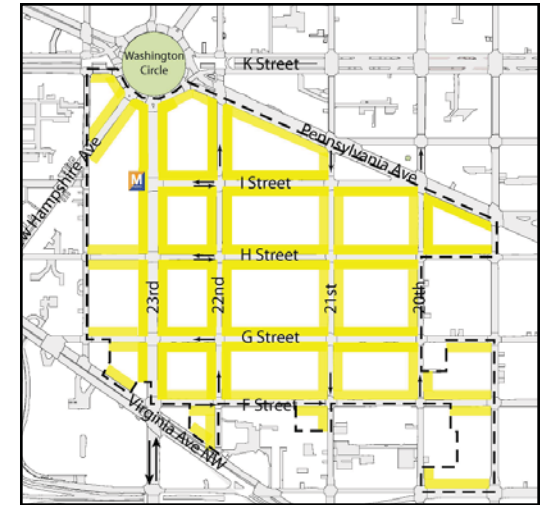
- To substantially increase the volume of soil available for tree roots by allowing expansion underneath the clear walkway, without causing the paving to heave.

Location:

- Below Clear Walkway.

Standards/Guideline:

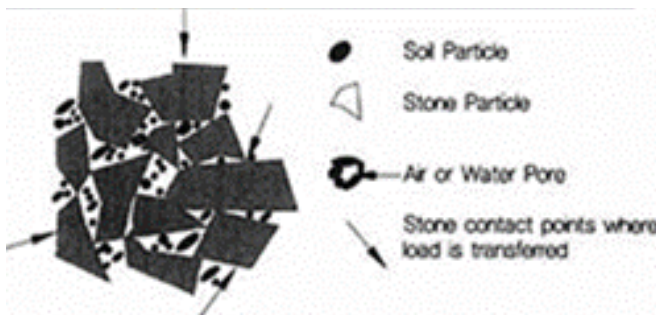
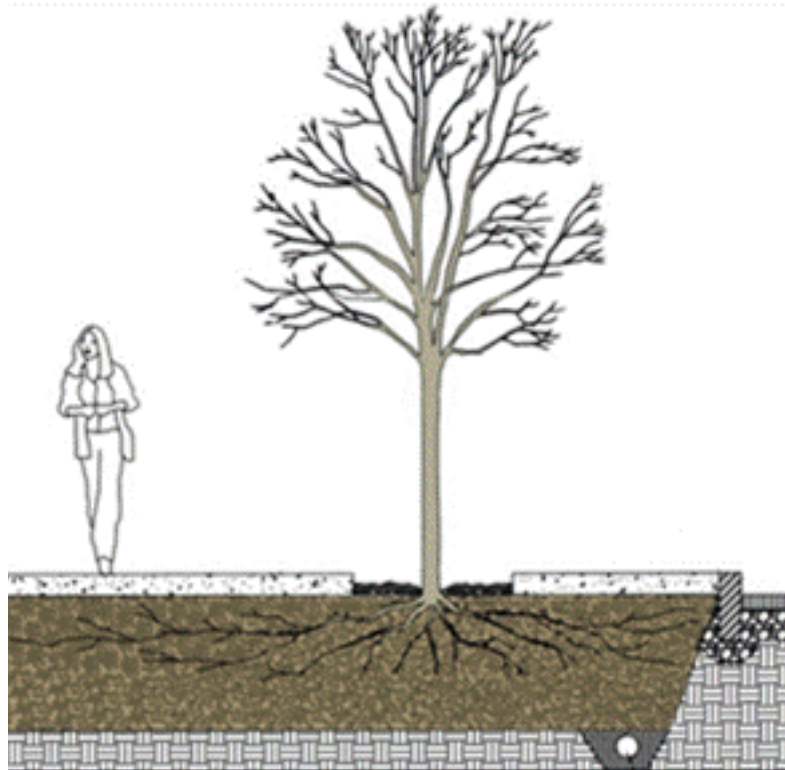
- Per Casey Trees Standards.



- ☒ Base Layer
- ☒ Enhanced Layer
- ☒ Premium Layer

ZONE 3 CLEAR WALKWAY

3.3 Sub-Soil Treatment



The stone lattice bears loading while the soil particle partially fills the lattice voids. *Courtesy: Cornell University Urban Horticulture Institute*

OPTION 2: STRUCTURAL SOIL

Purpose:

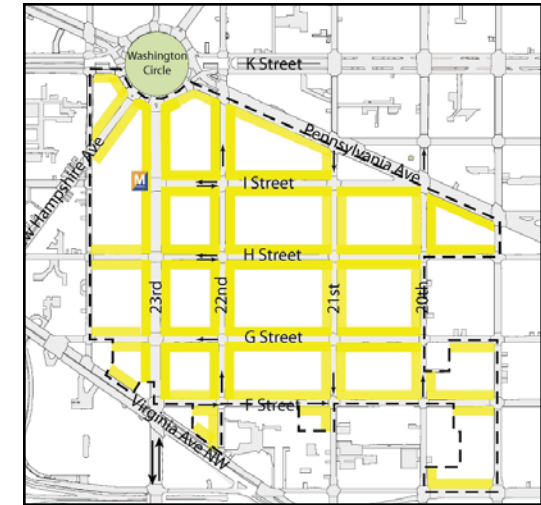
- As an optional treatment for sub soil installation below clear walkway, to substantially increase the volume of soil available for tree roots by suspending the walkway while providing rooting space for trees.

Location:

- Below Clear Walkway.

Standards/Guideline:

- Per Casey Trees Standards.



☒ Base Layer

☒ Enhanced Layer

☒ Premium Layer

ZONE 4 PLANTING ZONE

4.1 Tree



George Washington University Streetscape Guidelines

Purpose:

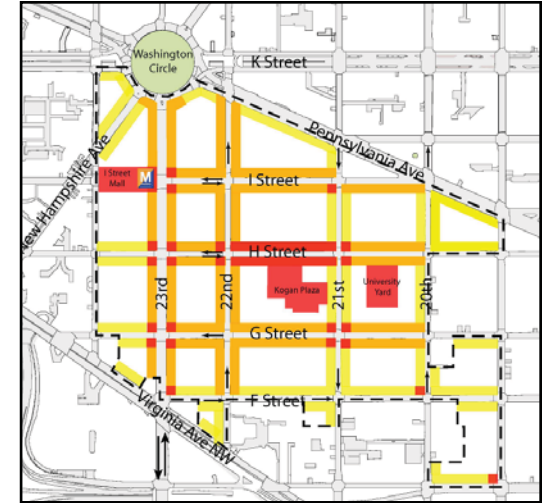
- Shade.
- Define street edge.

Location:

- Planting Zone.

Standards/Guideline:

- Species per DC Urban Forester, coordinate with Casey Trees.
- Recommended 30' Spacing.



☒ Base Layer

☐ Enhanced Layer

☐ Premium Layer

ZONE 4 PLANTING ZONE

4.2 Understory Planting



Purpose:

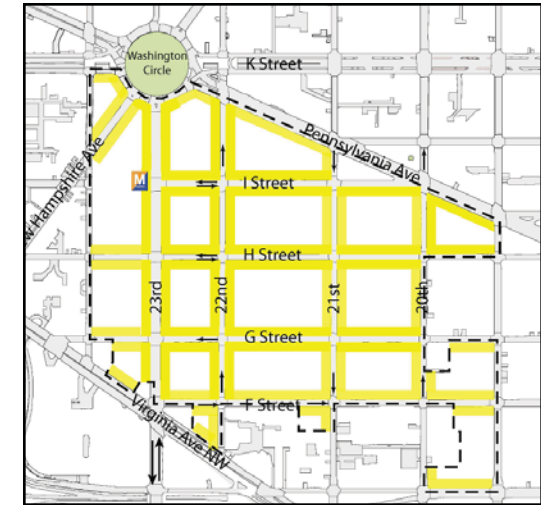
- To discourage pedestrians from walking into tree pits.
- Improve the appearance of the Planting Zone.

Location:

- Planting Zone.

Standards/Guideline:

- Per Casey Trees/ DC Urban Forester Standards.



☒ Base Layer

☒ Enhanced Layer

☒ Premium Layer

ZONE 4 PLANTING ZONE

4.3 LID Opportunities



*Permeable
Paving*



Bioswale

Purpose:

- To increase permeable surface area within the campus.

Location:

- Planting Zone.

Standards/Guideline:

- Refer AWI Transportation Design Guidelines, Section 5 LID, Pgs, 5-18, 5-27.



☐ Base Layer

☒ Enhanced Layer

☒ Premium Layer

ZONE 4 PLANTING ZONE

4.4 Building Identifier



Purpose:

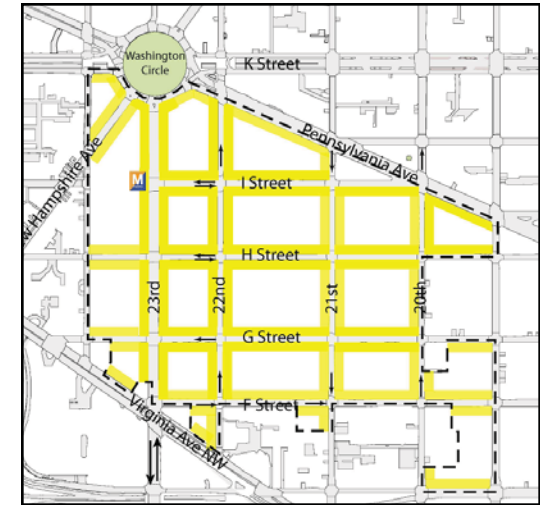
- To Identify prominent building entrances.

Location:

- Planting Zone.

Standards/Guideline:

- Per GWU Standards (typical building identifier size – 2'W x 7'H).
- Includes GW logo, building name and address.



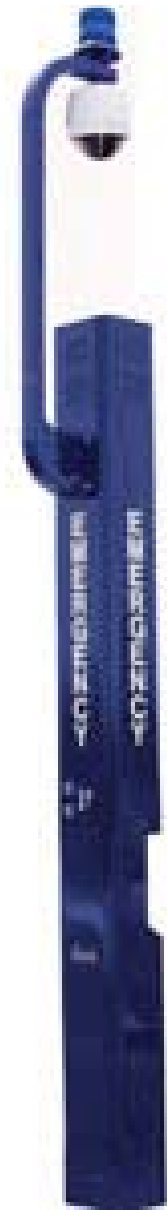
☒ Base Layer

☒ Enhanced Layer

☒ Premium Layer

ZONE 4 PLANTING ZONE

4.5 Emergency Station



Talk A Phone



Code Blue

Purpose:

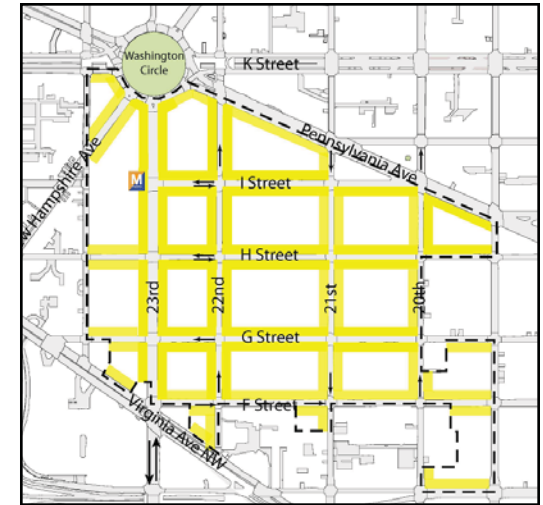
- To enhance campus safety.

Location:

- Planting Zone.

Standards/Guideline:

- (Left) Talk A Phone WEBS-MT/R-OP411
11"Width x 12.75" Depth x 124"
Height with 2" radius on each corner [H
= 160"with PTZ camera option].
- (Right) Code Blue CB 1-s Interactive
Voice Communication Unit
- 12.75"diameter x 9'-1 1/2"height.



☒ Base Layer

☒ Enhanced Layer

☒ Premium Layer

ZONE 4 PLANTING ZONE

4.6 Interpretive Signage



Purpose:

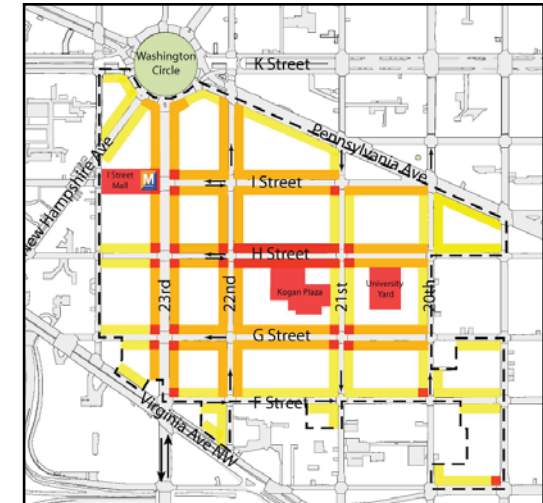
- To reinforce University presence with custom designed art and fixtures.

Location:

- Prominent open spaces:
University Yard
Kogan Plaza
I Street Mall

Standards/Guideline:

- Custom designed, per GW requirements.



☐ Base Layer

☒ Enhanced Layer

☒ Premium Layer

ZONE 4 PLANTING ZONE

4.7 Public Art



Purpose:

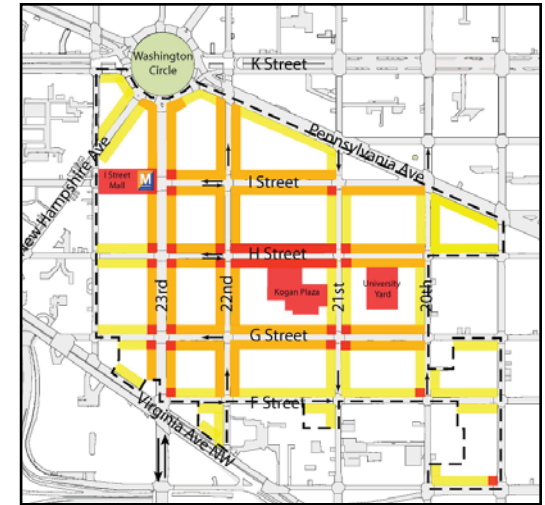
- To establish University presence and provide opportunity for public art

Location:

- Key intersections along H Street
- I Street Mall
- University Yard
- Kogan Plaza

Standards/Guideline:

- Custom Designed.



☐ Base Layer

☐ Enhanced Layer

☒ Premium Layer

GEORGE WASHINGTON UNIVERSITY
FOGGY BOTTOM CAMPUS, WASHINGTON DC

STREETSCAPE DESIGN GUIDELINES
DECEMBER 2009

EHRENKRANTZ
ECKSTUT
& KUHN
ARCHITECTS



THE GEORGE
WASHINGTON
UNIVERSITY
WASHINGTON DC