

**TOWN OF HERNDON, VIRGINIA
WORK SESSION AGENDA
HERNDON COUNCIL CHAMBERS BUILDING
765 LYNN STREET
MAY 21, 2019
7:00 P.M.**

6:00 P.M.

CLOSED MEETING

1. A closed meeting as provided under Section 2.2-3711(A)(1) of the Code of Virginia pertaining to discussion of specific public employee relative to annual performance review.

PRESENTATIONS

2. Certificate of Appreciation, to recognize Charlie Kemp, Department of Public Works, on the occasion of his retirement

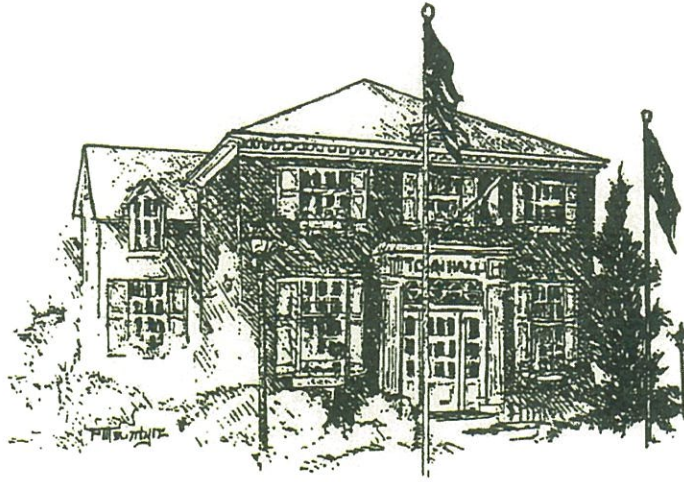
PUBLIC HEARINGS

3. Resolution, to consider two additional chapters of the Urban Design & Architectural Guidelines for the Herndon Transit-Oriented Core (HTOC); one for signs within the HTOC, and the other for landscaping within the HTOC

GENERAL

4. Resolution, to approve an agreement with the Fairfax County Water Authority authorizing an Engineering Consulting Study of a Water Pumping Station and to reimburse Fairfax Water for the cost of the study.

ROUNDTABLE



Town of Herndon, Virginia

Certificate of Appreciation

to

Charles Kemp

For more than 32 years of loyal and dedicated service to the
citizens of the Town of Herndon and for your outstanding
contributions to the quality of life in the Herndon community.

September 1986 to June 2019

Sheila A. Olem, Vice Mayor

Pradip Dhakal, Councilmember

Jennifer K. Baker, Councilmember

Signe Friedrichs, Councilmember

Cesar del Aguila, Councilmember

Bill McKenna, Councilmember

Lisa C. Merkel, Mayor





STAFF REPORT

Town Council
May 21, 2019

Title: Proposed Landscaping and Signage Guidelines for the HTOC

Staff Contact: Bryce A. Perry, Deputy Director of Community Development
Bryce.perry@herndon-va.gov (703) 787-7380

Elizabeth M. Gilleran, Director of Community Development
Lisa.Gilleran@herndon-va.gov (703) 787-7380

Summary:

This is an initiative of the Town to amend the existing Urban Design and Architectural Guidelines for the Herndon Transit Oriented Core, by adding two new sections of guidelines for landscaping and signage.

Background:

In 2012, the Town Council adopted a Comprehensive Plan Amendment for nine properties on the north side of the Herndon Metro Station. The properties, now designated as the Herndon Transit Oriented Core (HTOC), are eligible for greater densities upon redevelopment. In order to guide the design of the redevelopment, the Urban Design and Architectural Guidelines for the HTOC were adopted in 2013. This document includes architectural guidelines, design for private access ways, and public spaces, sustainability, safety and security and interim conditions for phasing development.

At the time of initial adoption the landscaping and signage chapters had not yet been developed. Staff has worked closely with the Town's design consultants to complete drafts of those chapters for incorporation into the guidelines document.

The Architectural Review Board reviewed the draft landscaping and signage guidelines chapters at a special meeting on November 14, 2018. After an assessment and discussion regarding specific guidelines and their implementation, the Board supported the proposed guidelines with the amendments proposed in the errata sheets attached to this report.

The Planning Commission reviewed the draft landscaping and signage guidelines chapters at its April 2019 work session and public hearing. The Planning Commission supported the draft guidelines with some additional changes, which have been added to the errata sheets and are underlined and in red. The Planning Commission's resolution recommending approval of the guidelines with errata sheets (List of Amendments) is Attachment #2. The errata sheets are Attachment #4 and Attachment #6.

Description:

The Urban Design and Architectural Guidelines for the HTOC provide assistance to developers and property owners proposing to redevelop their property and to Town

decision makers, in accordance with the Herndon Transit Oriented Core plan adopted by the Town Council in 2012. The Guidelines assist the Town Council, Planning Commission and the Architectural Review Board in the evaluation of development proposals.

The two proposed sections are meant to supplement the existing guidelines by adding guidelines for the appropriate size and location of signs and proper open space and landscaping improvements in both public and private spaces.

The Guidelines are used as a tool to guide redevelopment proposals by articulating expectations for the Town Council for the equality and type of redevelopment. However, the Guidelines are not exclusive. Any redevelopment proposal that strives for excellence in design, quality materials, and superior public space will be evaluated by the Town for the proposal's own merit.

The signage guidelines were developed with the following design philosophy (page 84):

Signage in the HTOC will take on many different forms and voices based on the intended use. Civic or municipal signs and wayfinding signs will mark streets, parks, and trails. Signs for individual buildings or tenants will provide opportunities to add character and variety to Herndon Transit Oriented Core. Signage diversity creates a dynamic district, while informing users. The location, materials and architectural details of the signs shall be consistent with the palette and design ethic of Herndon in order to create cohesiveness. All signs shall be subject to review by the Town of Herndon so that signs are consistent and in harmony with the Herndon signage guidelines.

The signage section includes general design objectives and principles, and guidelines for sizes, placement, material, and fabrication. The chapter also contains standards for fourteen different sign types that regulate size, number, location, and means on illumination. Examples of each sign type are provided for reference.

The landscaping guidelines focus on all outside ground plane design, both private and public. design intent states (page 2):

Site and landscape features help establish the urban fabric, while contributing to aesthetics, wayfinding, and the identity of the development. In a dense urban core, landscapes become a critical component to the aesthetic quality of life for users and residents in the area.

Staff Analysis:

Since the draft of the landscaping and signage guidelines was completed, staff has compiled a list of amendments to be made to improve clarity and to address ARB and staff comments. Those amendments are listed in errata sheets for each set of guidelines and are attached to this report. More notable amendments include adding guidelines specific to the design of the Promenade connecting Herndon Parkway to the Herndon Metro Station, setting specific site furnishings for private streets, creating a specific design for

the private street that will also include the Sugarland Run Trail, and adding guidelines encouraging the use of focal points, public art, and historic references.

The proposed guidelines, with the amendments, are meant to seamlessly integrate into the existing guidelines document. Collectively, the combined guidelines ensure a visually appealing and engaging environment as envisioned by the HTOC plan.

Motion Alternatives:

The following alternatives are available to the Town Council for its decision on this item:

1. Approval of draft resolution, adopting the Signage and Landscaping Chapters of the Urban Design & Architectural Guidelines for the HTOC to include the “List of Amendments to the Proposed Landscaping Guidelines for the Herndon Transit Oriented Core” and “List of Amendments to the Proposed Signage Guidelines for the Herndon Transit Oriented Core.”
2. Approval of draft resolution with additional changes to the draft guidelines.
3. Recommendation for continuance to a future Town Council public hearing.
4. Recommendation for denial.

Staff Recommendation:

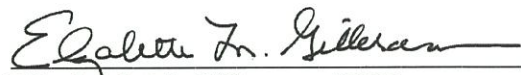
Staff recommends approval in accordance Alternative #1.

Attachments:

1. Draft Resolution, dated May 28, 2019
2. Planning Commission Resolution Recommending Approval, Dated April 22, 2019
3. Proposed Urban Design and Architectural Guidelines for the HTOC -Landscaping
4. List of Amendments to the Proposed Landscaping Guidelines for the Herndon Transit Oriented Core (Landscaping Errata Sheet)
5. Proposed Urban Design and Architectural Guidelines for the HTOC - Signage
6. List of Amendments to the Proposed Signage Guidelines for the Herndon Transit Oriented Core (Signage Errata Sheet)



Bryce A. Perry
Deputy Director of Community Development



Elizabeth M. Gilleran, AICP
Director of Community Development

TOWN OF HERNDON, VIRGINIA

DRAFT RESOLUTION

MAY 28, 2019

Resolution- to consider the Landscaping and Signage Chapters of the Urban Design Guidelines for the Herndon Transit-Oriented Core.

WHEREAS, in 2009 the Town Council directed the staff to pursue a special planning effort for the future Herndon Metrorail Station as contained in the 2030 Comprehensive Plan adopted in 2008; and

WHEREAS, the Town Council adopted a Comprehensive Plan amendment for the Herndon Metro Station Area Plan on February 28, 2013; and

WHEREAS, on November 26, 2013 the Town Council adopted Urban Design and Architectural Guidelines for the Herndon Transit-Oriented Core, prepared by Urban Design Associates, to provide assistance to developers and property owners proposing to redevelop their lands and to Town decision makers in accordance with the Plan; and

WHEREAS, landscaping and signage have been developed to supplement the existing Guidelines that were built upon the principles articulated in the Plan; and

WHEREAS, the Architectural Review Board has reviewed the proposed guidelines and expressed its support for the guidelines, at a public meeting on November 14, 2018; and

WHEREAS, the Planning Commission has reviewed the proposed guidelines and has held a public hearing, in accordance with the provisions of §15.2-2204 of the State Code, on April 22, 2019 and found that the proposed guidelines meet the purpose and intent of the Herndon Metro Station Area Plan; and

WHEREAS, the Town Council has conducted a public hearing and has reviewed the Planning Commission recommendation for approval.

NOW THEREFORE, BE IT RESOLVED that the Town Council of the Town of Herndon, Virginia, hereby:

Approves the addition of the landscaping and signage guidelines, prepared by Urban Design Associates and LaQuatra Bonci Associates, for inclusion in the adopted Urban Design and Architectural Guidelines for the Herndon Transit-Oriented Core, including the attached "List of

Amendments to the Proposed Landscaping Guidelines for the Herndon Transit Oriented Core” and the “List of Amendments to the Proposed Signage Guidelines for the Herndon Transit Oriented Core.”

BE IT FURTHER RESOLVED that the Town Council of the Town of Herndon, Virginia, authorizes staff to make certain revisions to the Urban Design and Architectural Guidelines for the Herndon Transit-Oriented Core, as amended, without prior Town Council approval for correction of clerical and administrative errors and updates of an administrative nature, excluding substantive changes.

TOWN OF HERNDON, VIRGINIA

PLANNING COMMISSION

RESOLUTION

APRIL 22, 2019

Resolution- Urban Design Guidelines for the Herndon Transit-Oriented Core.

WHEREAS, in 2009 the Town Council directed the staff to pursue a special planning effort for the future Herndon Metrorail Station as contained in the 2030 Comprehensive Plan adopted in 2008; and

WHEREAS, the Town Council adopted a Comprehensive Plan amendment, Herndon Metro Station Area Plan on February 28, 2013; and

WHEREAS, On November 26, 2013 the Town Council adopted Urban Design and Architectural Guidelines for the Herndon Transit-Oriented Core, prepared by Urban Design Associates, to provide assistance to developers and property owners proposing to redevelop their lands and to Town decision makers in accordance with the Plan; and

WHEREAS, landscaping and signage have been developed to supplement the existing Guidelines that were built upon the principles articulated in the Plan; and

WHEREAS, the Planning Commission has considered comments from the public and staff and certified and recommended urban design guidelines for landscaping and signage for the Herndon Transit-Oriented Core on April 22, 2019.

NEW THEREFORE, BE IT RESOLVED by the Planning Commission of the Town of Herndon, Virginia that the Planning Commission recommends approval of the addition of landscaping and signage guidelines, prepared by Urban Design Associates and LaQuatra Bonci Associates, for inclusion in the adopted Urban Design and Architectural Guidelines for the Herndon Transit-Oriented Core, , including the attached “List of Amendments to the Proposed Landscaping Guidelines for the Herndon Transit Oriented Core” and the “List of Amendments to the Proposed Signage Guidelines for the Herndon Transit Oriented Core.”

BE IT FURTHER RESOLVED that, the Planning Commission recommends that the Town Council authorize staff to make certain revisions to the Urban Design and Architectural Guidelines for the Herndon Transit-Oriented Core, as amended, without prior Town Council approval for correction of clerical and administrative errors, updates of an administrative nature, excluding substantive changes.



INTRODUCTION

This section of the guidelines illustrates and identifies the design intent for both public and private realms outside of the buildings. Site and landscape features help establish the urban fabric, while contributing to aesthetics, wayfinding, and the identity of the development. In a dense urban core, landscapes become a critical component to the aesthetic quality of life for users and residents in the area.

Public, semi-public, and private landscapes should all adhere to the recommendations in this section. In general, these guidelines require the following:

- » Great Streets: As part of the public open space realm, they should be pedestrian oriented and multi-modal in nature with lush planting.
- » Quality Pedestrian Spaces: They are defined by tree canopies or other elements to provide intimacy and shade.
- » Animated Pedestrian Zones: Sidewalks and passages are ideal for outdoor dining, gathering and sitting.
- » Lush Landscape Planting: These are critical in both complementing and softening the built environment. Their patterns lend character to the architecture and ease their interaction with the ground plane. Furthermore, the planting can create intimate outdoor rooms, reinforce entrances, and delineate property boundaries.



Lush sidewalk planting



An urban tree canopy and movable seating to create vibrant outdoor spaces



Animated sidewalk with cafe seating

Street & Open Space Map

Herndon Transit-Oriented Core (HTOC) will have four broad landscape categories ranging from public streets to pocket parks. Each landscape type will have its own character and material palette. Whether developed collectively or separately, it will be essential for the parcels and circulation systems to apply these principles and interface with adjacent development to ensure a seamless urban environment.



Note: This map shows the various connections and spaces expected within the HTOC. While not prescriptive of exact private open space arrangement and size, this map offers a recommended vision for internal circulation and public plaza space.

Key Landscape Categories

- Public Streets (Herndon Parkway, Van Buren Street, Worldgate Drive)
- Alternative A Private Streets
- Alternative B Private Streets
- Pedestrian Passages
- Public Open Space
- Mid-block Pedestrian Option
- Building Zones

Connections Overview

The following pages illustrate the design guidelines and criteria necessary to develop a pedestrian friendly, walkable environment, that is rich in landscape character. These are defined as connections.

Connection types:

A. Public Streets

- » Within the Herndon Transit-Oriented Core, potential high-density redevelopment provides an opportunity for an urban landscape with a greater emphasis on walkability. In this area, streetscape design should accommodate, encourage and invite activity at the street level. Creative and environmentally-conscience solutions should be sought when designing the public and private components of the pedestrian network within the metro area. The various streetscapes within the HTOC are regulated by the Landscaping chapter of the Urban Design and Architectural Guidelines. Public Streets include:
 - » Herndon Parkway
 - » Van Buren Street
 - » Worldgate Drive

B. Private Streets

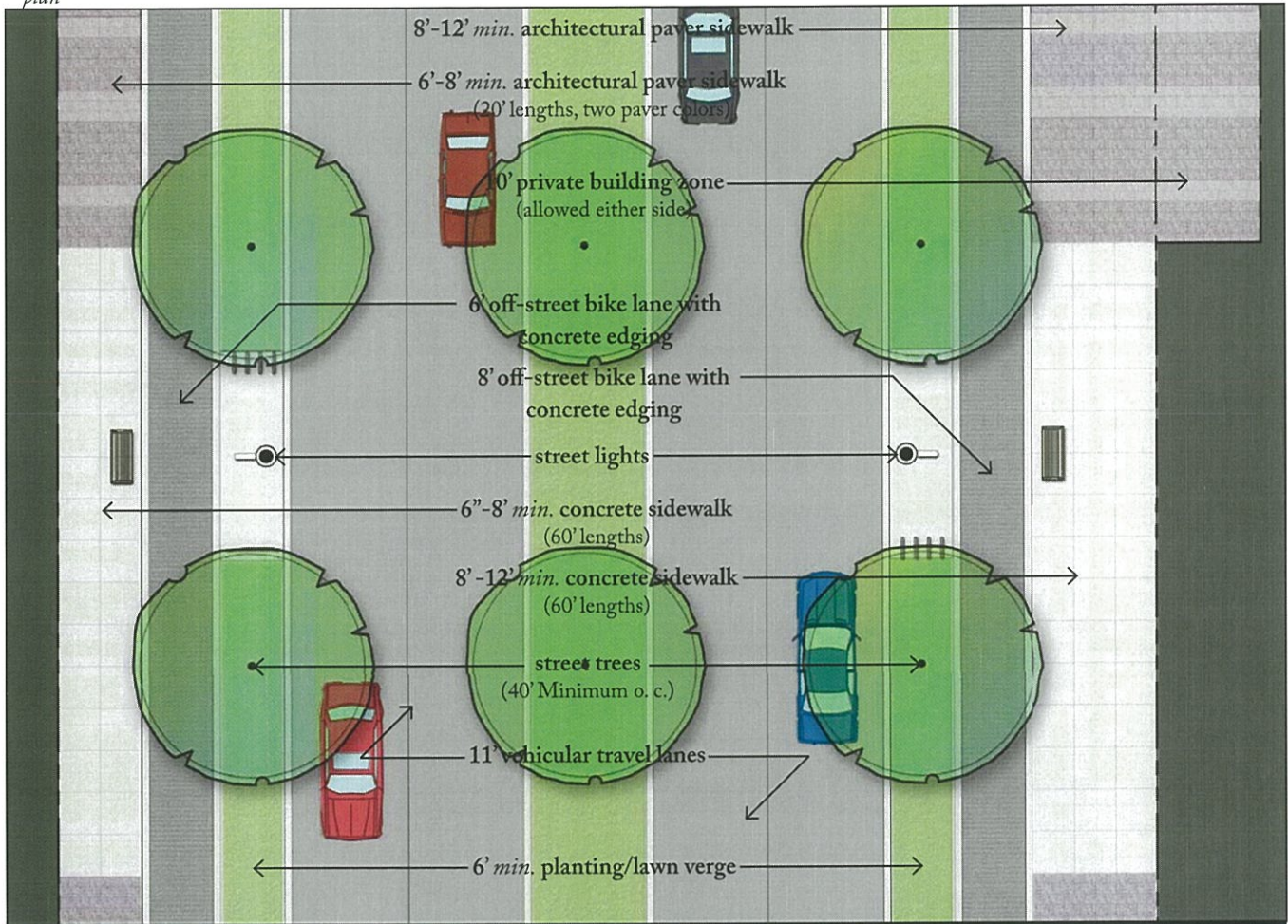
- » The balance of the streets within the HTOC will be private in nature. These streets are internal and provide access to the development blocks.

In each connection type or category, there are variable options for site elements, material palettes, and planting requirements within the Right-of-Way's of the public and private streets. Dimensions for sidewalks and planting verges in the following graphics are posted as minimums. In addition, beyond the Right-of-Way, a 10' Private Building Zone can be aligned with the materials defined for each connection type. In some instances, certain features can encroach into the sidewalk up to 4' where there is a sidewalk width of a minimum of 12'. These include planters and other such amenities. Refer to Site Furnishings in this section. All dimensions for sidewalk width and tree verge width on the following pages are minimum dimensions required.

Public Streets

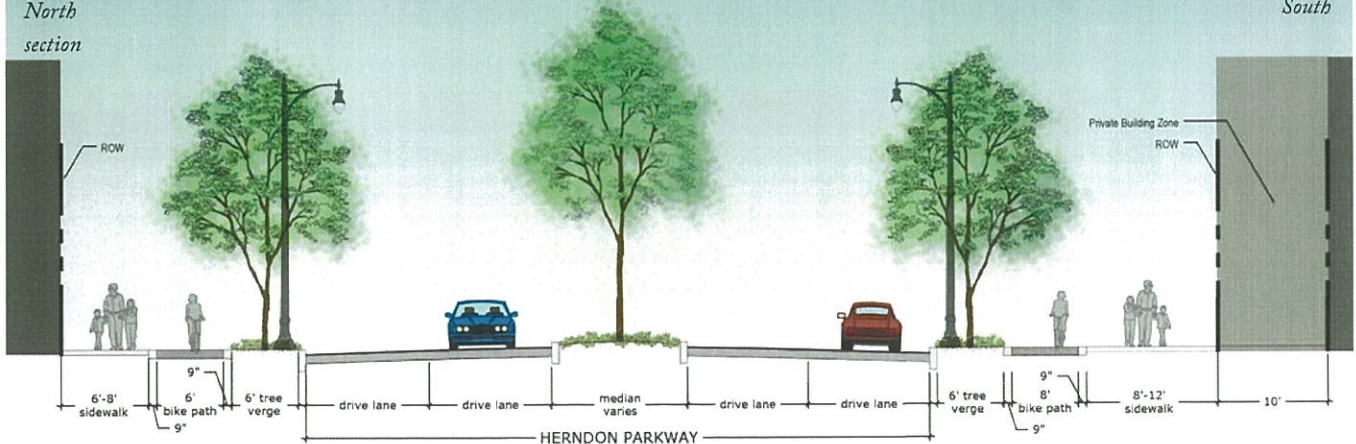
HERNDON PARKWAY

plan



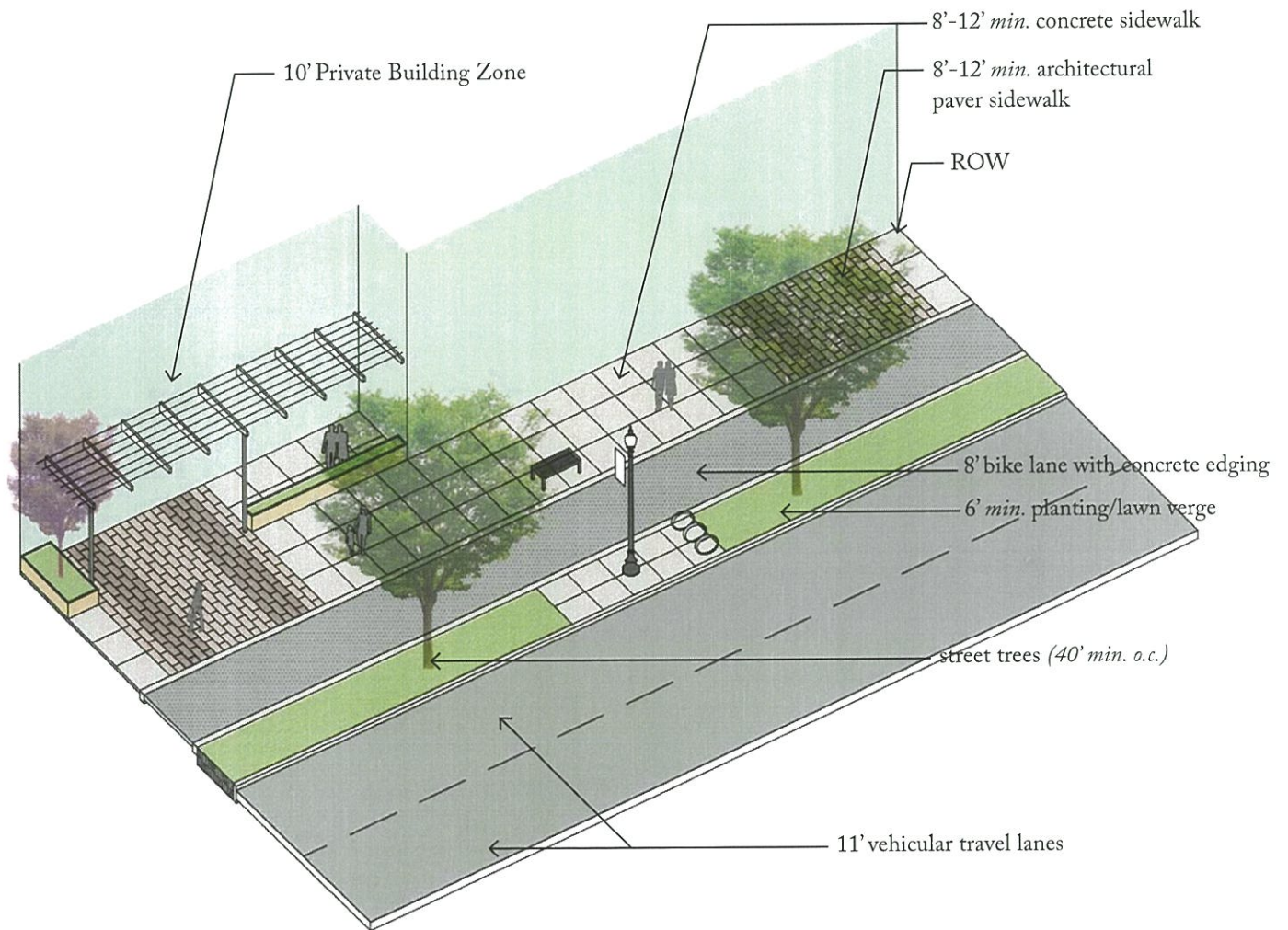
North
section

South



Public Streets

HERNDON PARKWAY

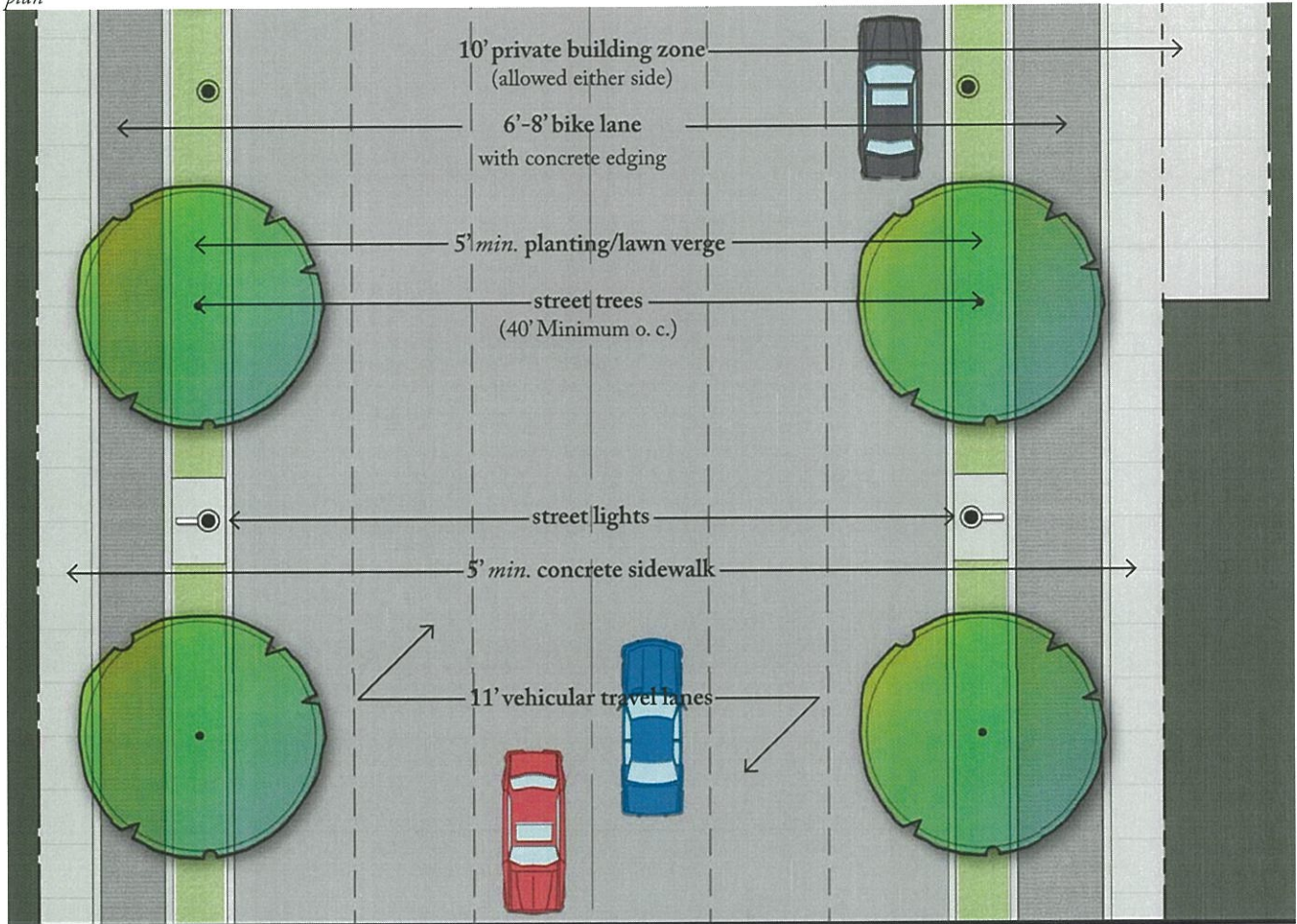


Axonometric drawing herndon parkway configuration

Public Streets

VAN BUREN STREET

plan



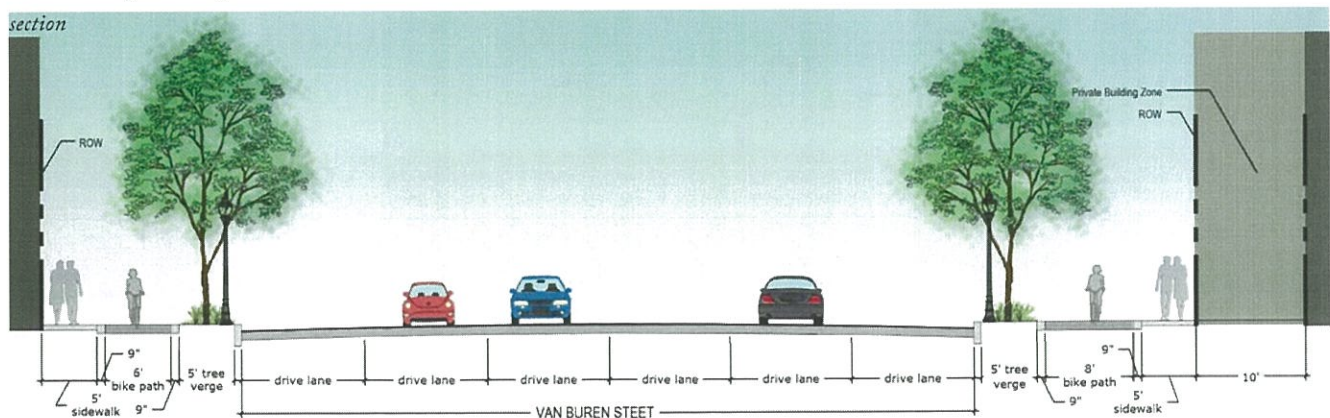
West

East

Exact design of the West side of the street may differ and depending on the location of a future pedestrian/cyclist bridge over the Dulles Toll Road, may not include a dedicated off-street bicycle facility.

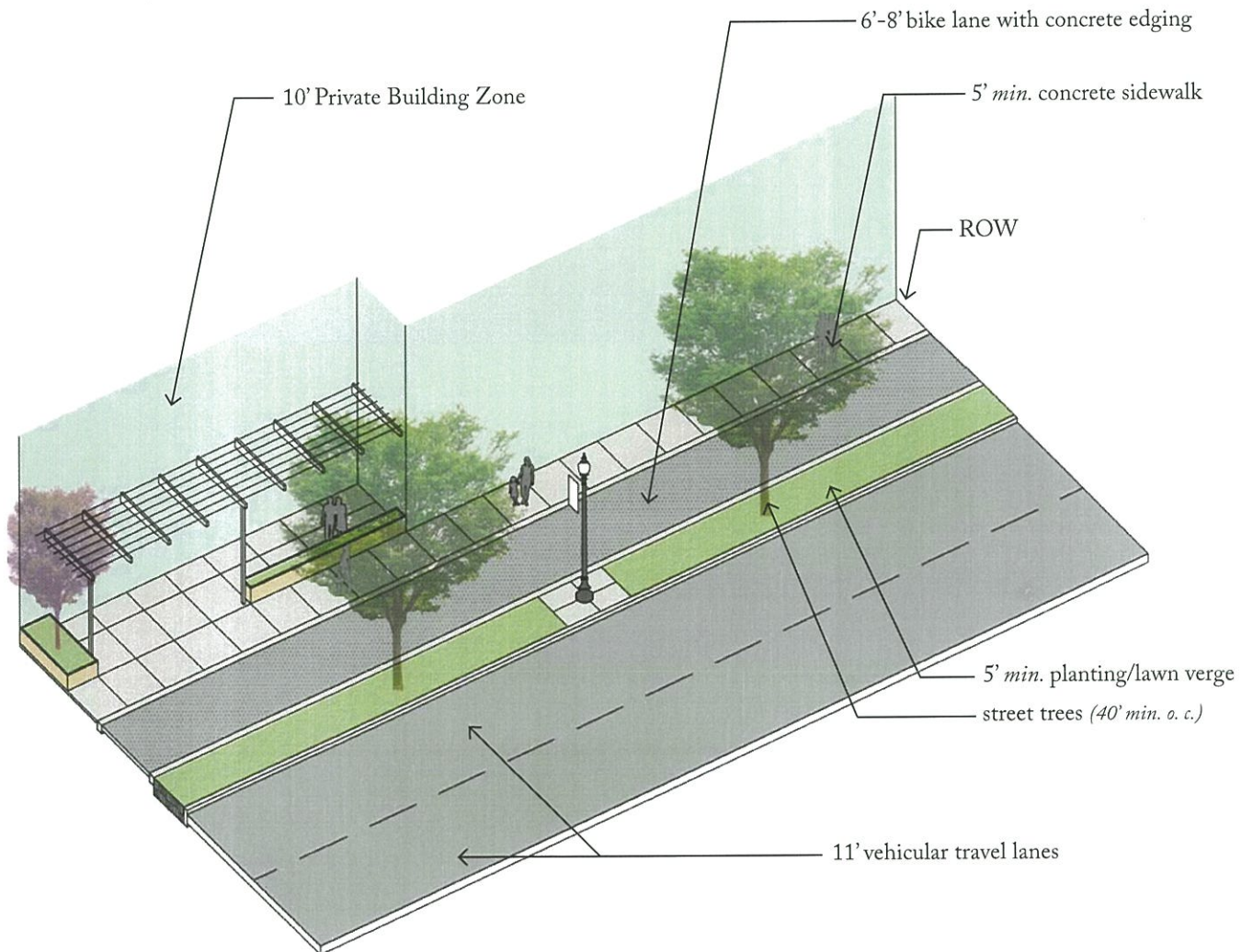
Exact lane configuration varies.

section



Public Streets

VAN BUREN STREET

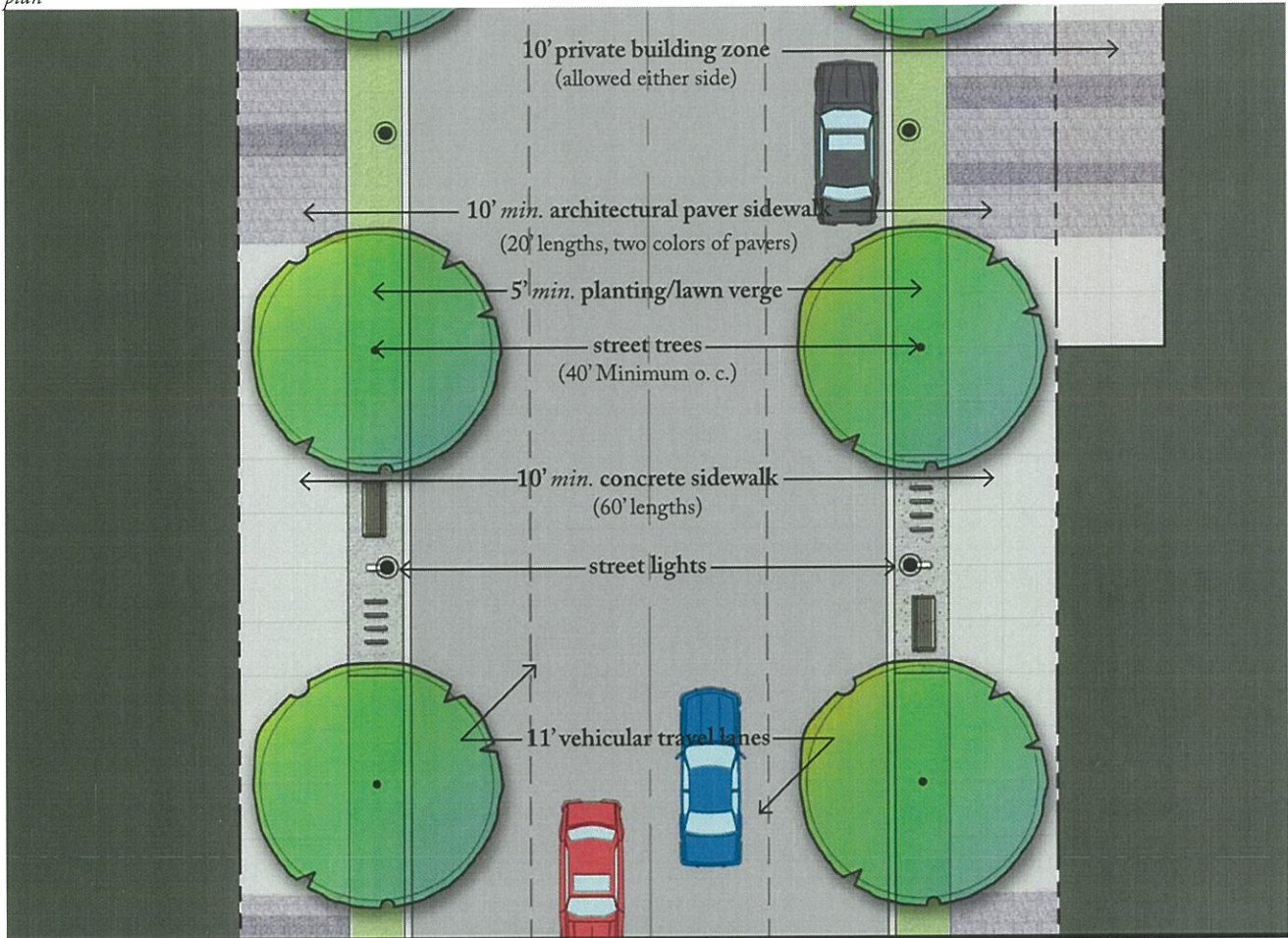


Axonometric drawing van buren street configuration

Public Streets

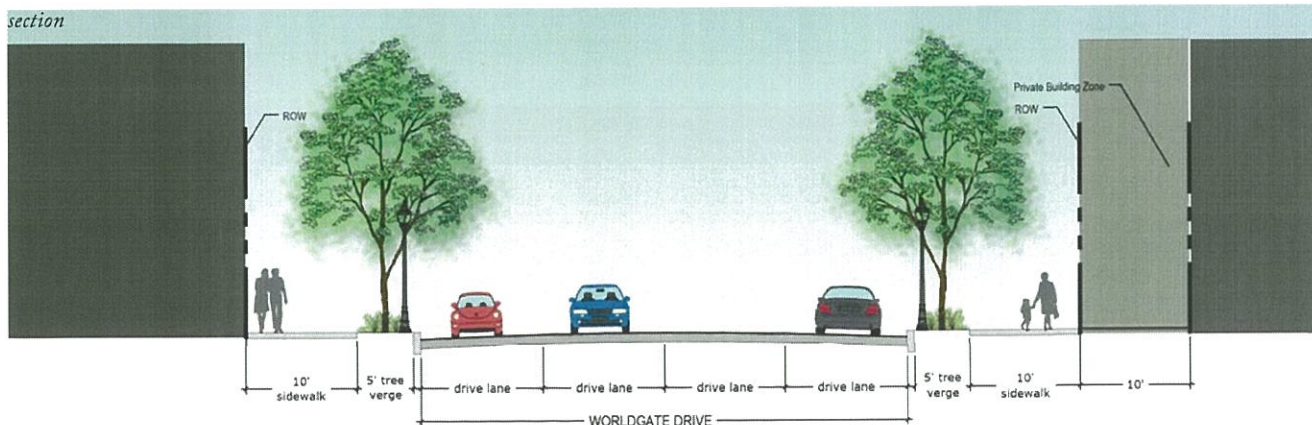
WORLDGATE DRIVE

plan



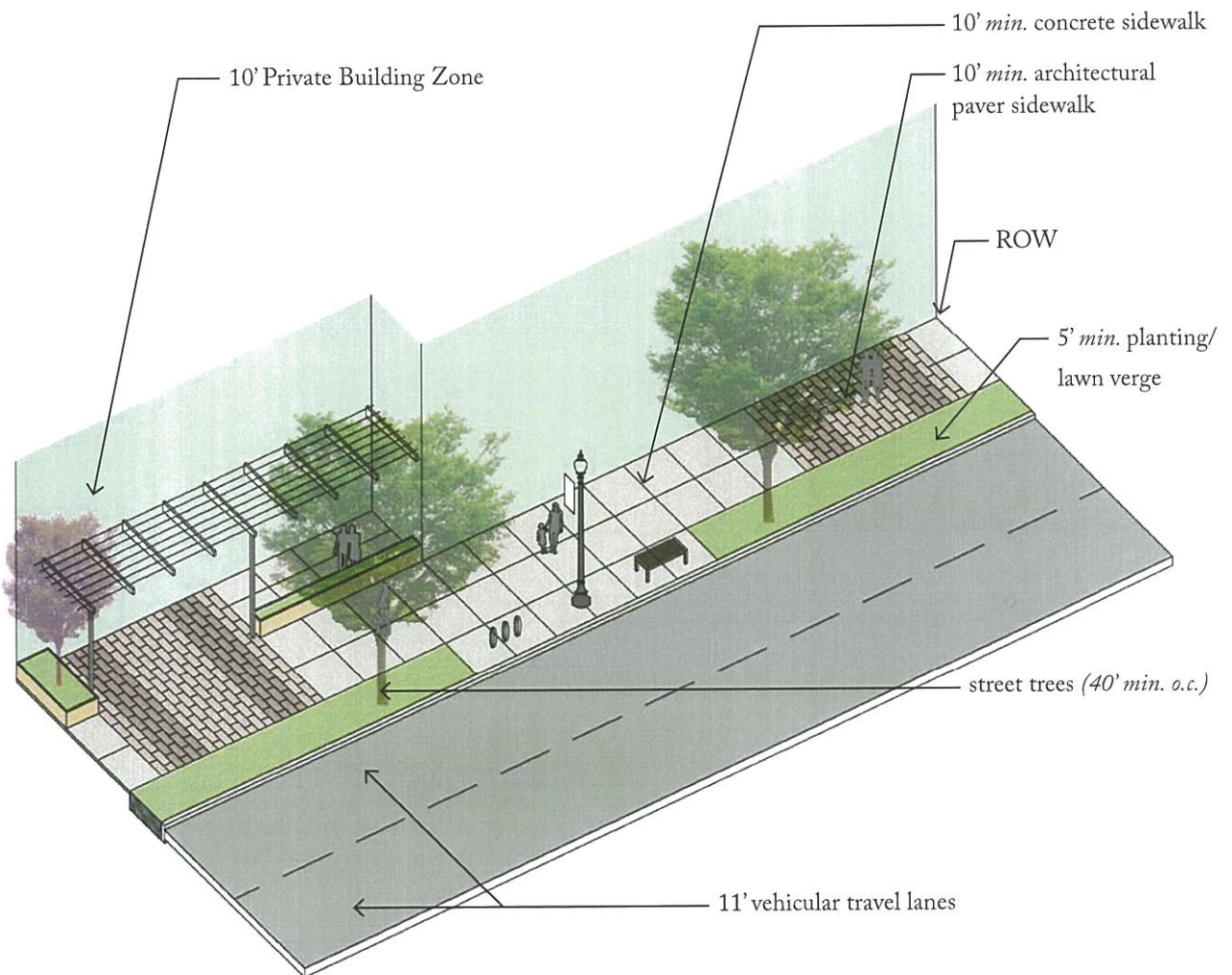
Exact lane configuration will be determined when the road is designed and engineered. May include parking lanes and/or travel lanes.

section



Public Streets

WORLDGATE DRIVE

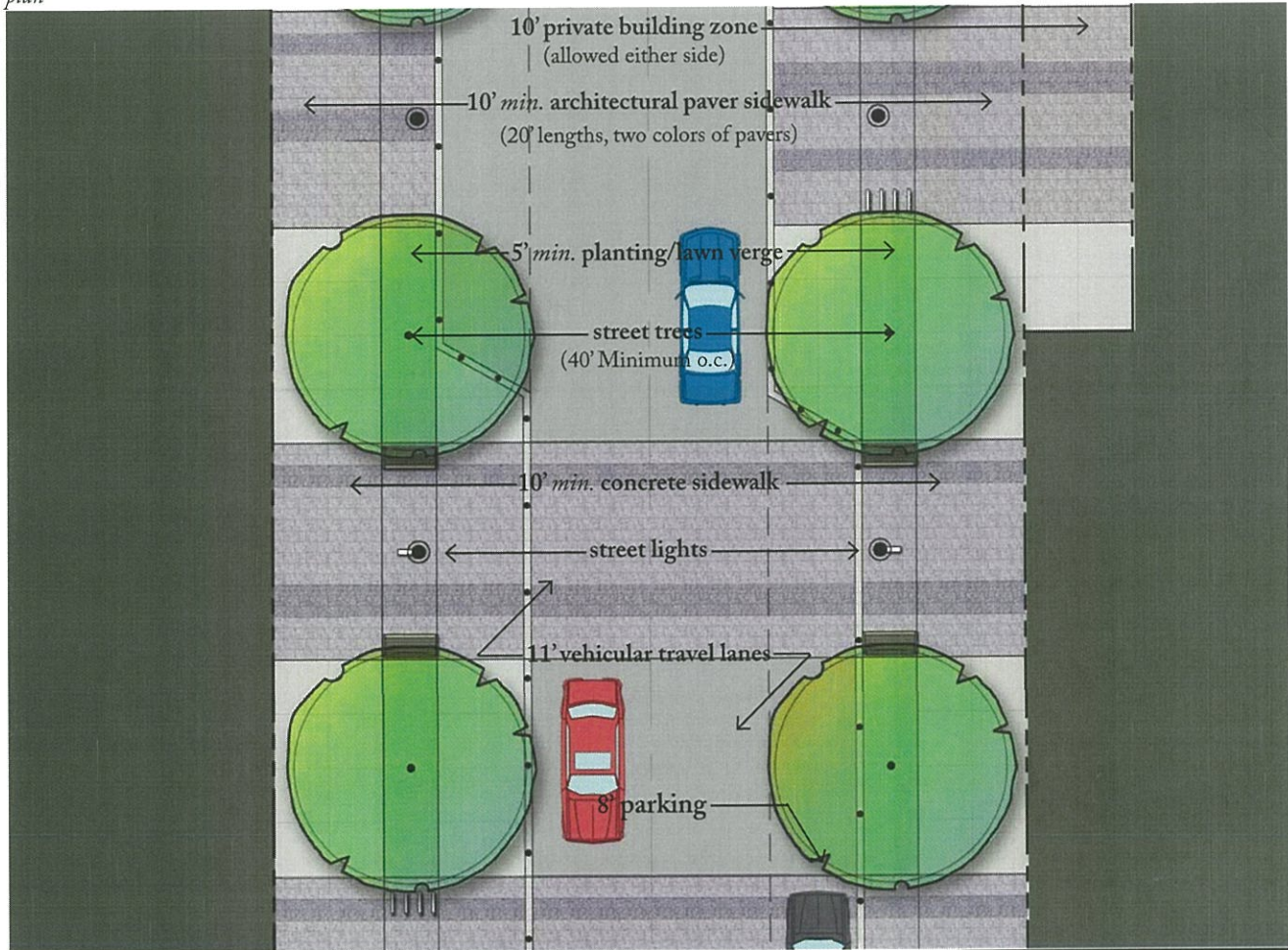


Axonometric drawing worldgate way configuration

Private Streets

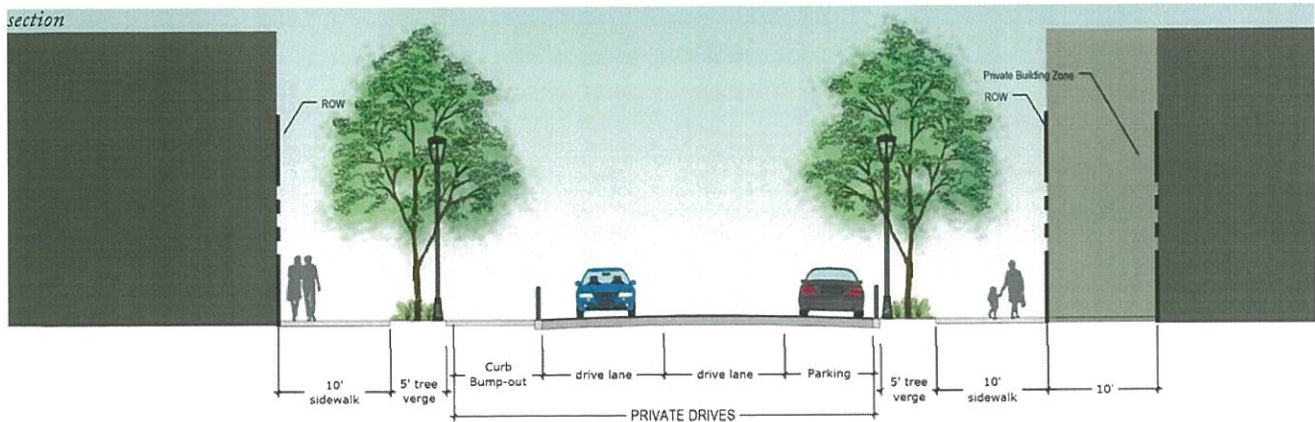
ALTERNATIVE A

plan



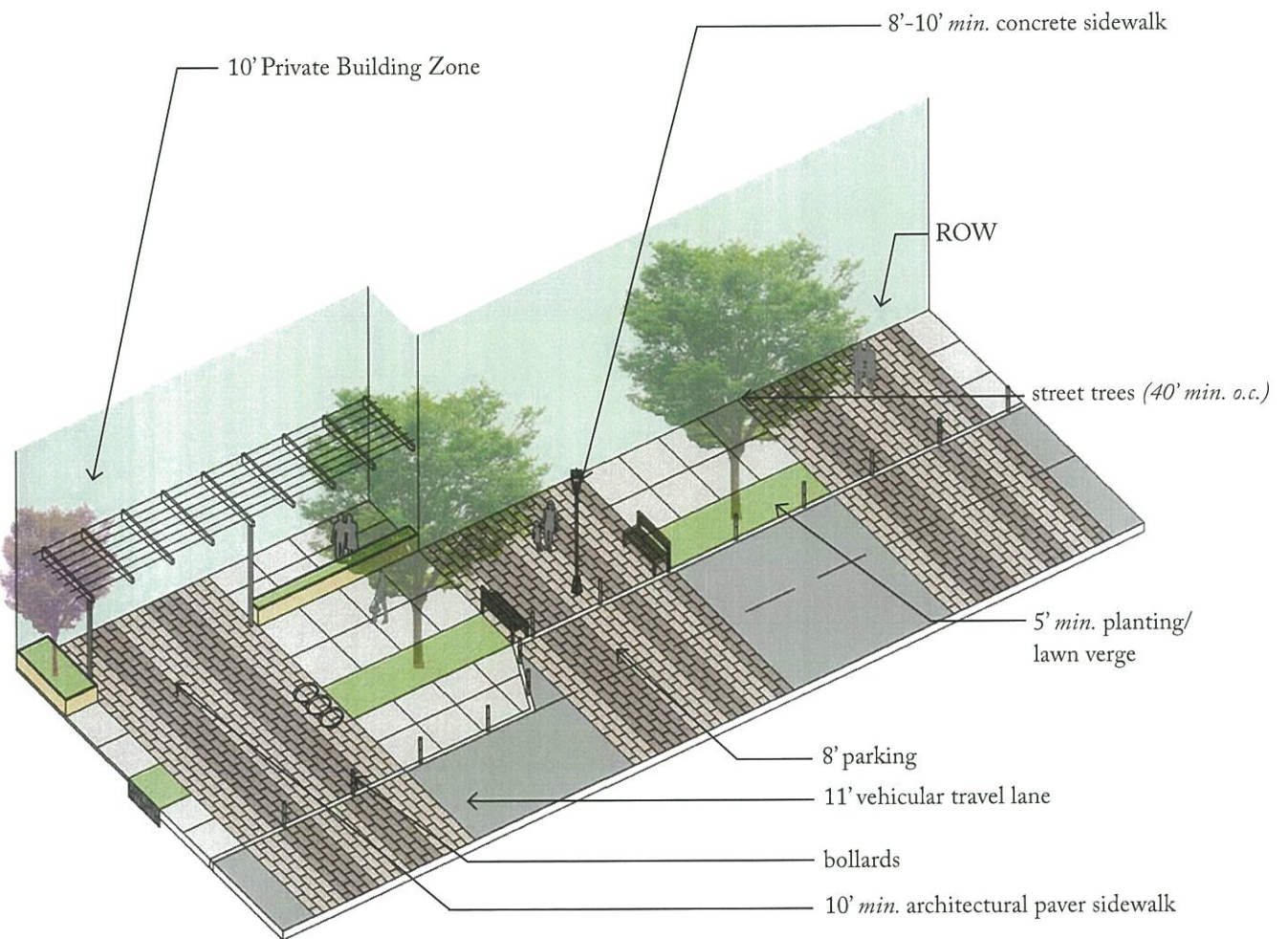
Exact lane configuration will be determined when the road is designed and engineered. May include parking lanes and/or travel lanes. Curb extensions may be used within the parking lane up to 30% of the block length. When used, the sidewalks may be reduced to 8'.

section



Private Streets

ALTERNATIVE A

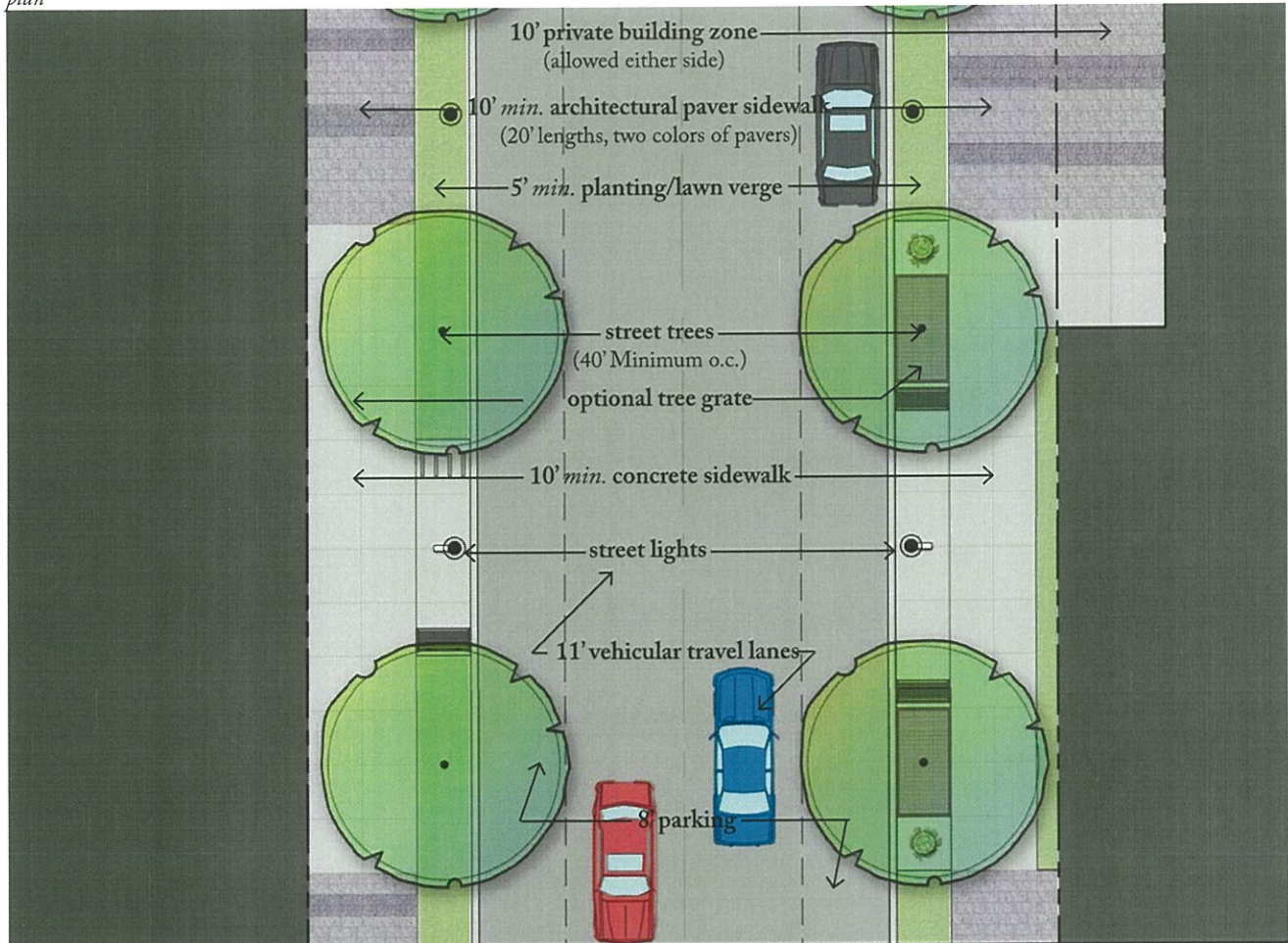


Axonometric drawing private drive configuration

Private Streets

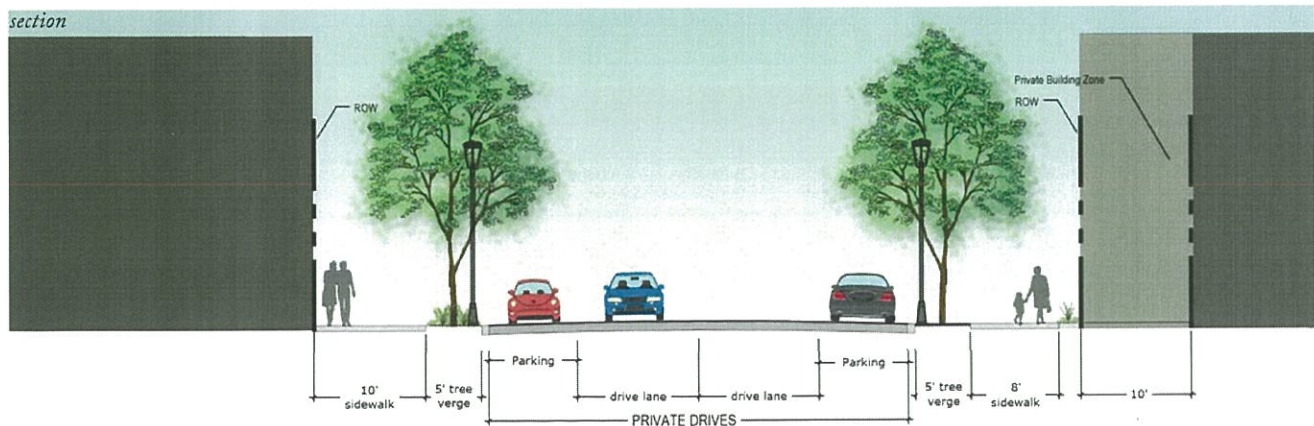
ALTERNATIVE B

plan



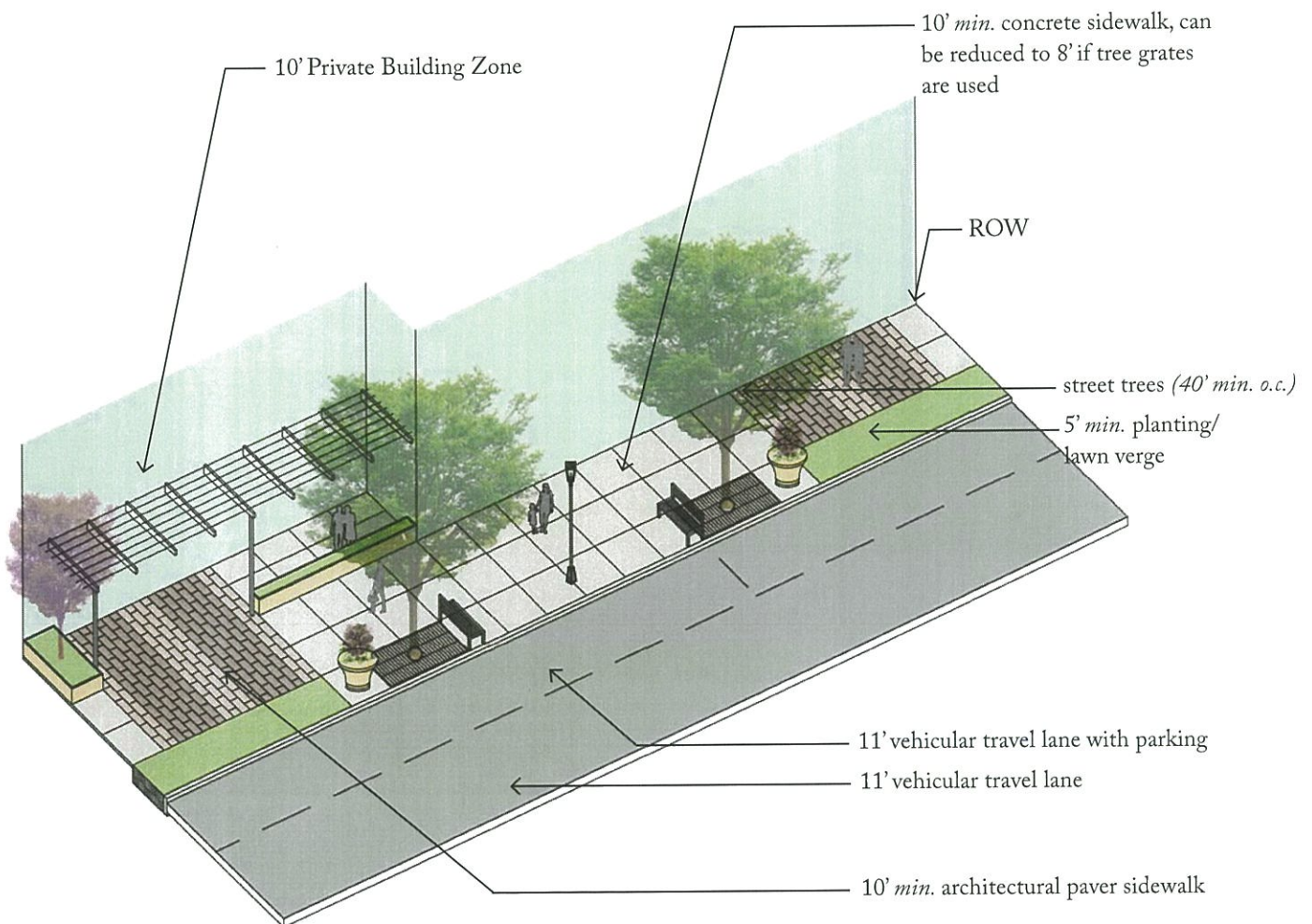
The planting verge may have a continuous planting bed or tree grates and movable planters.
On blocks with active ground floor uses, the tree grate design shall be used.

section



Private Streets

ALTERNATIVE B



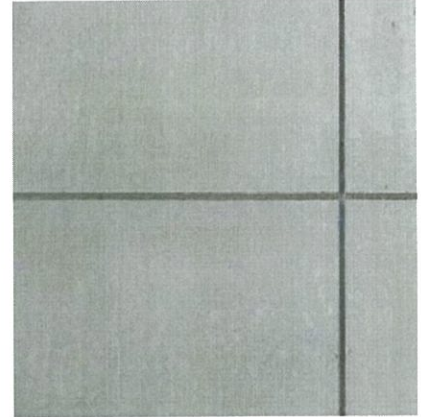
Axonometric drawing private drive configuration with option showing tree grates

CONNECTIONS – MATERIALS

This section provides regulations that confirm the applicable Town standards for rights of way and open spaces within Herndon.

A key segment of the public realm, the Private Streets will contribute to the fundamental quality of life of the pedestrians that will use these spaces on a daily basis. These streets must be safe and inviting, as well as comfortable, dynamic and spontaneous, just as the public spaces of the HTOC. In essence, these streets are part of the public open space system. Therefore the entire public realm must be highly amenitized. The aesthetic and durability of site and landscape elements used in these streets are essential to long term sustainability of a dynamic public realm. The design and specification of any streetscape, park or public realm element shall be creative and state of the art in nature, with careful research and selection of materials of the highest quality and durability. Materials specified shall be used in a creative manner and a diverse palette is desired. Durability of selections should be of the highest grade of materials in strength and performance.

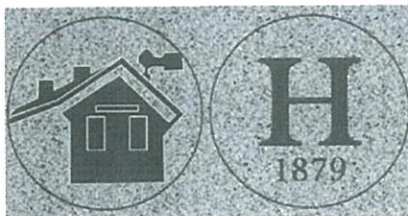
- A. Main Sidewalk Area: For streets with 8' or greater depth of sidewalk, a minimum 4" thick pattern of alternate bands of paving shall be installed using broom finish or trowel finish concrete with architectural pavers from Nitterhouse Masonry Products LLC in two color alternating bands in 20' sections. On public streets, within the paver areas, etched granite motif pavers shall be installed in pairs every 100' of streetscape. For streets with less than 8' depth of sidewalk, a minimum 4" thick of continuous broom finish concrete shall be installed. All sidewalks shall be a maximum of 60% concrete and 40% pavers.
- B. Tree Planter Verge: In the planter verge on streets with bike lanes, an optional architectural paver area can be installed for bike rack and movable planter placement. If tree grates and movable planters are used in tree verge, sidewalk may be reduced to 8' width.
- C. Tree Planter Protection: An optional 4"-6" concrete curbs can be used to define the edges of each tree planter to protect planting and reduce damage. Fencing can also be used in lieu of curbs. In some instances, tree grates can be used in narrow sidewalk locations.
- D. Crosswalks: A minimum 10' wide decorative paver crosswalk shall be used at all approaches to all intersections and curb cuts. All crosswalks shall include some degree of reflective thermoplastic and access shall be gained via ADA compliant curb ramps with detectable warning surfaces. Crosswalk paver design



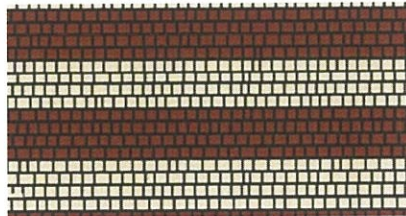
Concrete paving



Concrete planter curb & planter



Granite motif pavers



Crosswalk pattern



Architectural pavers

CONNECTIONS – MATERIALS

shall adhere to the Town of Herndon Street Standards.

- E. Intersection Design: In instances where private streets are designed with curbs, intersections shall be raised beginning at the curb return to the level of the sidewalk. The raised area shall include the crosswalk and be fully faced with pavers to reflect the pavers used in either the sidewalk or crosswalk.
- F. Cycle Track: Cycle tracks or off-street bicycle lanes are designed to separate bicycle traffic from pedestrians. The cycle track will be designed with flush textured borders or concrete strips to serve as detectable warning surfaces and as visual cues separating the cycle track from the sidewalk and tree verge. Concrete divider strips: 9" wide of belgian block finish concrete, match to sidewalk depth.

CONNECTIONS – SITE FURNISHINGS

This section includes standards for site furnishings in public and private rights of way that are intended to enhance the existing Town standards. Such furnishings include bicycle racks, benches, trash/recycling receptacles, and bus shelters. Refer to the Town's Streetscape Guidelines for further guidance and specifications of site furnishings.

A. Seating

- » High quality and durable metal benches, stainless steel or aluminum with a powder coat finish, shall be used. Benches, with backs or backless styles, shall be placed as to not block pedestrian flow and may be arranged to create outdoor rooms. Other opportunities for respite within the private building zone and within pocket parks along streets may include seating walls and chairs. Seating shall be coordinated with transit stops, shaded areas, activity nodes, extended open spaces such as plazas, and near building entrances. Benches or other seating options shall be installed along every block, however, exactly how many depends on the development.

B. Bike racks

- » High quality and durable metal bike racks shall be installed at key areas throughout the district. Bike racks shall be placed as to not block pedestrian flow and should be integrated into, but not limited to, the Tree Planting Verge. Finishes shall be compatible to the finish of the benches.

C. Litter receptacles

- » High quality and durable recycling and litter receptacles shall be used and combined receptacles are desired. Litter receptacles shall be placed at street intersections and at convenient mid-block locations. Receptacles shall not be placed immediately adjacent to seating, however should be coordinated with



Trash receptacle



Recycling receptacle



Benches



Bicycle racks

CONNECTIONS – SITE FURNISHINGS

a nearby location. Litter receptacle locations shall not block pedestrian flow. Finishes shall be compatible to the finish of the benches. Both litter and recycling receptacles shall match.

D. Bus Shelters

- » High quality and durable bus shelters shall be placed at designated bus stops along the public streets. Free pedestrian flow around bus shelters shall be maintained.
- » Bus shelters can be of custom design to match the architectural styles of the open space areas or development blocks, or be one of the Town of Herndon Standard Shelters.

E. Bollards

- » Bollards should be used for traffic control and security. Bollards may be lighted. Removable and regular bollards shall be located where necessary to control traffic and enhance pedestrian safety. Bollards shall be stainless steel or powder coated steel.

F. Planters

- » Movable planters are permitted along all sidewalks to enhance the beauty of the streetscape. If used, planters shall be placed to define entries and seating areas, or be used to buffer cafes and other private uses along the sidewalks.

G. Wayfinding Signage

- » Wayfinding signage along public streets shall match Herndon's standard street signage system. Along private streets and spaces, custom wayfinding signage can be used and shall be an integral design component of the architectural and landscape vocabulary. All signage shall conform to Herndon's signage ordinance and these Design Guidelines.

H. Other Amenities

- » Other site elements, such as Power Pedestals and Cigarette Urns are permitted and must match the vocabulary and style of the other site furnishings. Power Pedestals shall be located in designated smoking areas.



Bollards



Planters



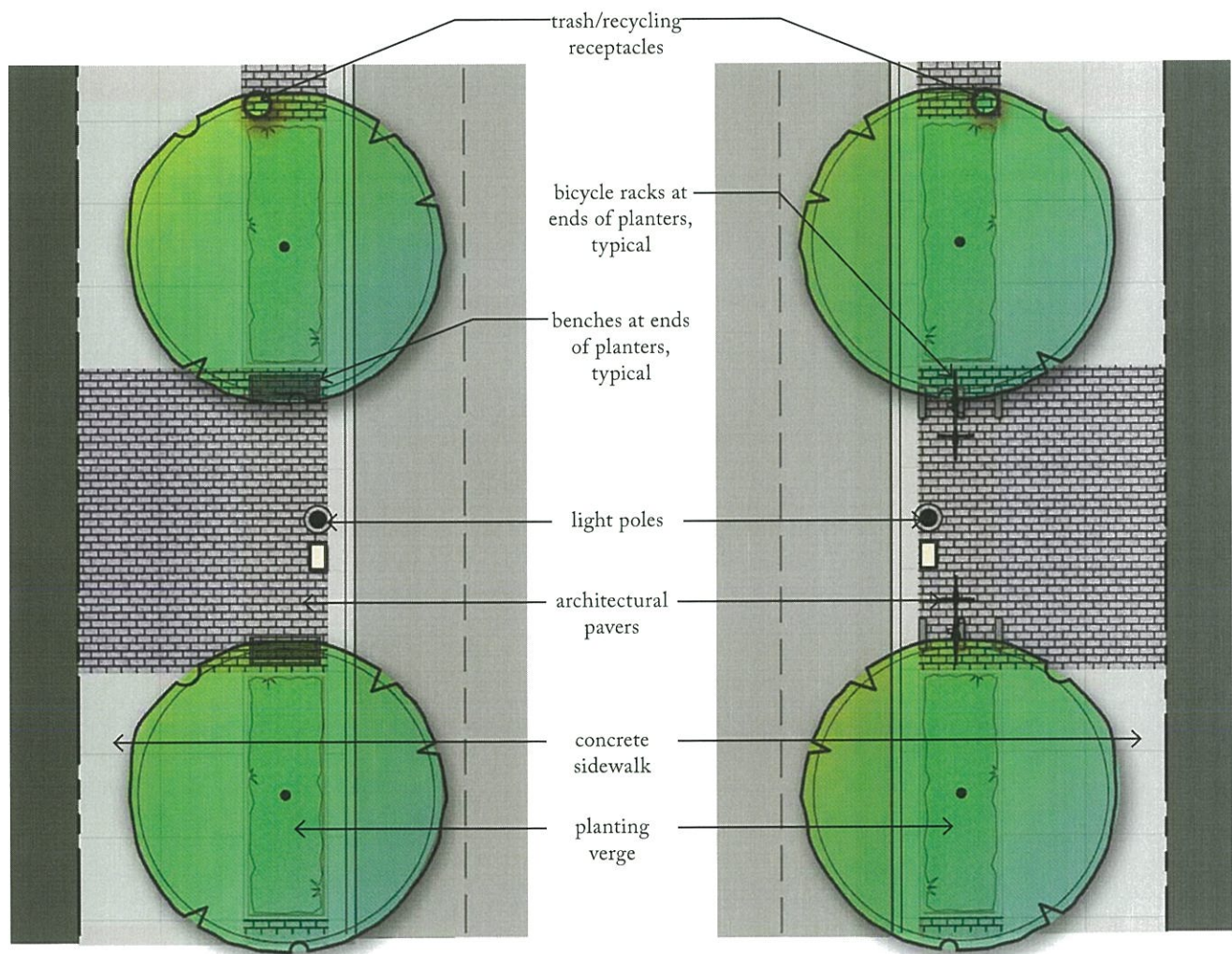
Wayfinding signage



Power pedestals

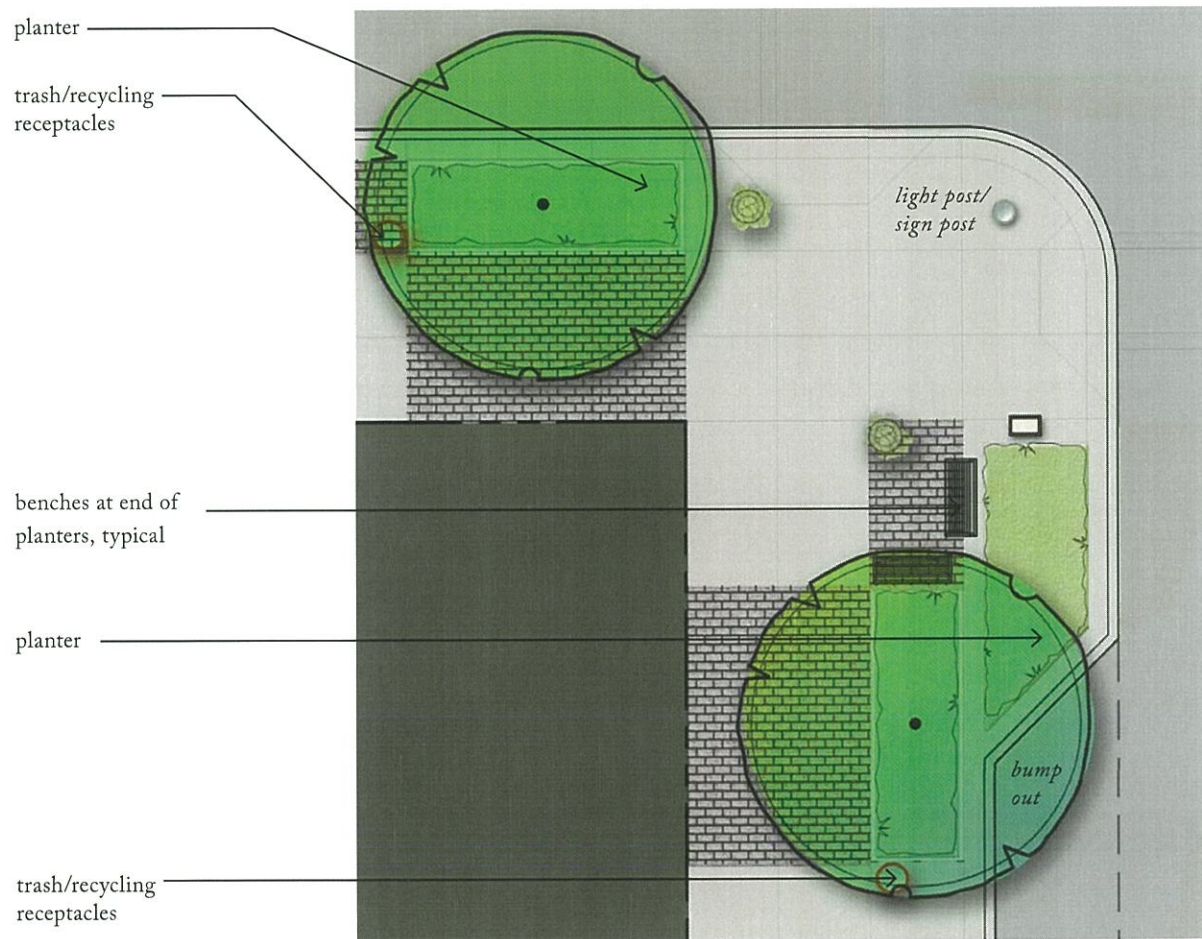
Placement of Site Elements - Along Streets

The following images show desired configurations of site furnishings along typical public and private streets. These furnishings include bicycle racks, benches, trash/recycling receptacles, and planters.



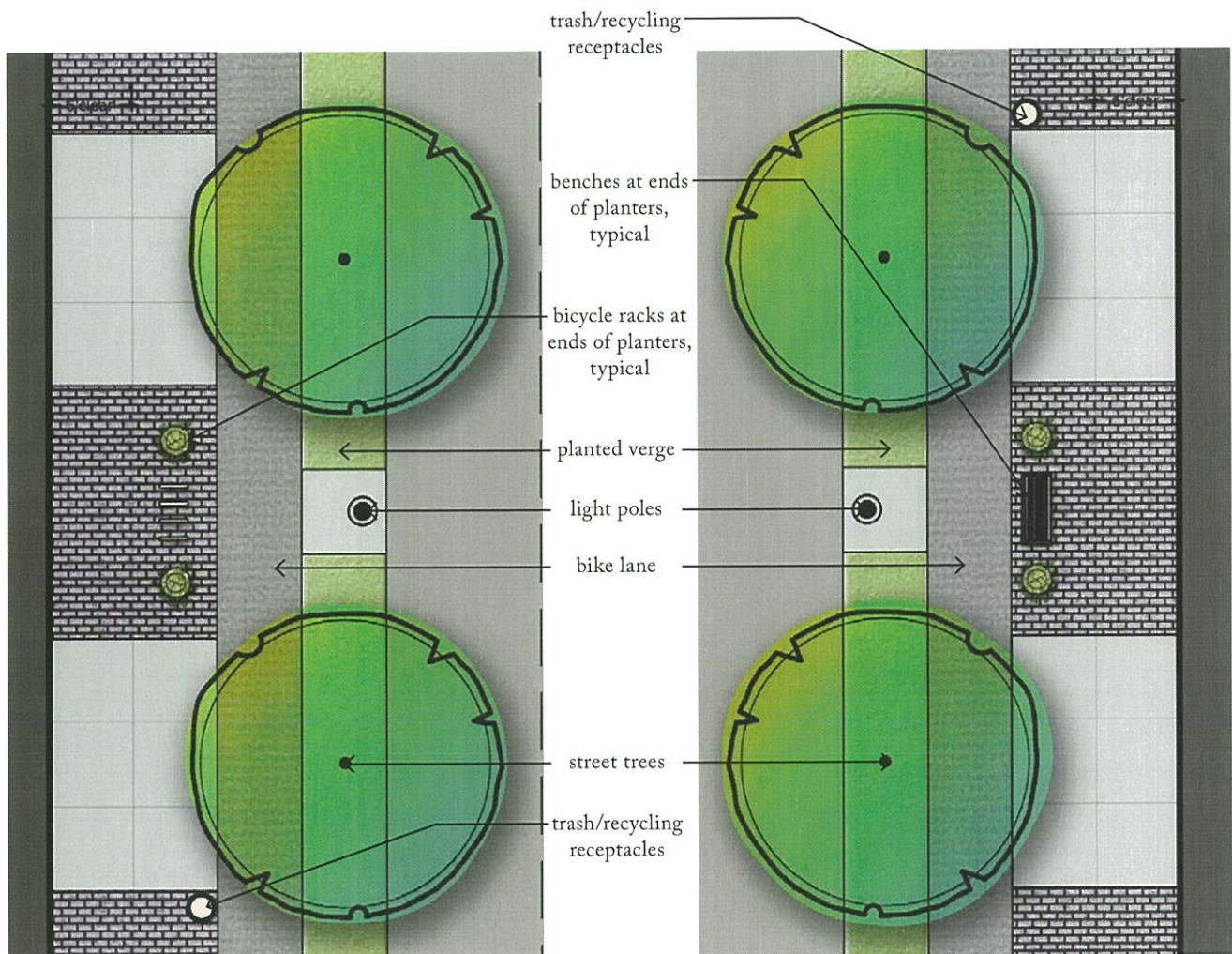
Street furniture configuration showing benches or bike racks at the ends of planters with light post centered in between. A trash/recycling receptacle on opposite side of planter away from seating areas.

Placement of Site Elements - Intersections



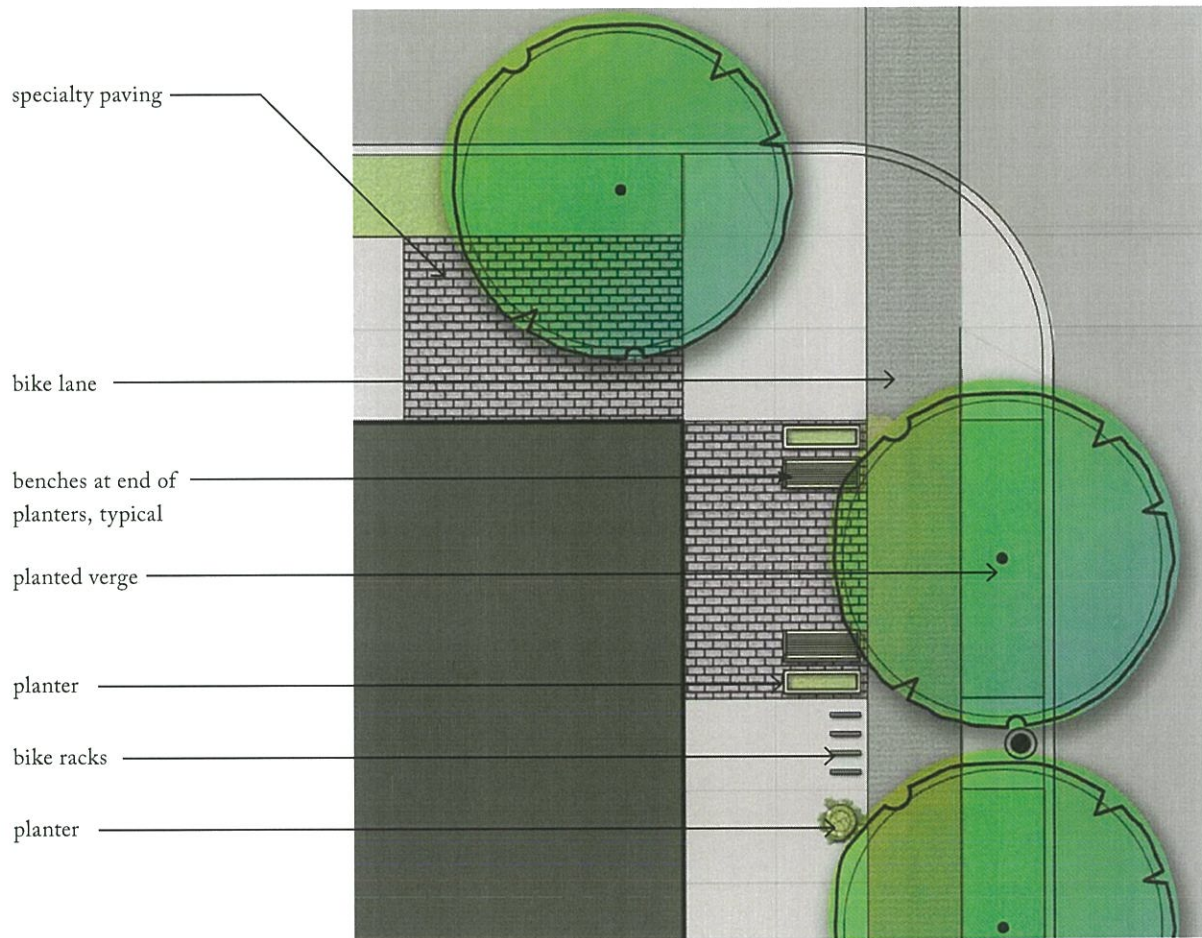
Example of street furniture configuration at an intersection showing benches and planters creating a small "garden room". A trash/recycling receptacle located on opposite end of planter, away from seating areas. Additional plant material is incorporated in the curb bump outs.

Placement of Site Elements - Along Streets with Bike Lanes



Street furniture configuration showing benches or bike racks between planters in sidewalk along bike lane, with a 6' clearing from building. A trash/recycling receptacle located further down the street away from seating areas.

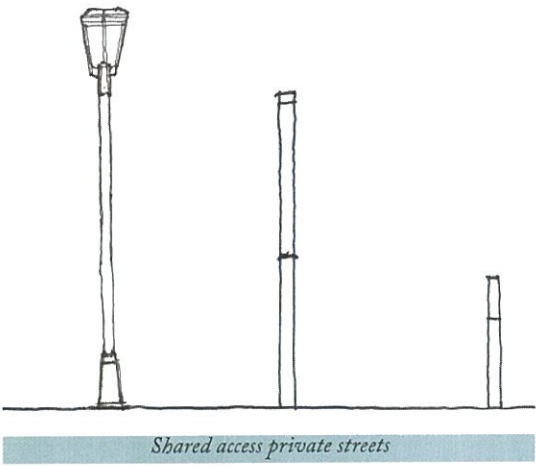
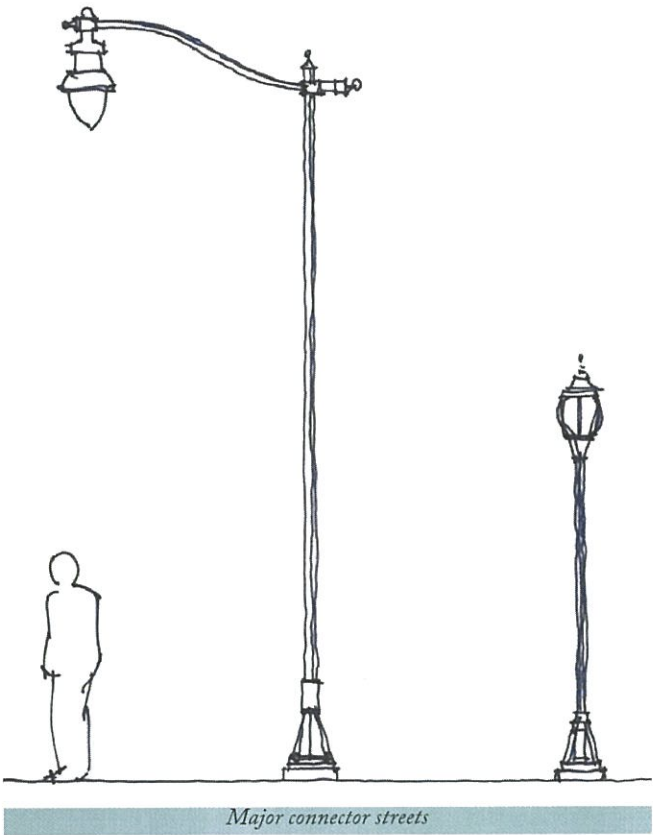
Placement of Site Elements - Intersections with Bike Lanes



Example of street furniture configuration at an intersection with a bike lane showing benches and planters creating a small "garden room". Additional plant material is incorporated in the planted verge.

CONNECTIONS - LIGHTING

The following images represent the Herndon site lighting standards:



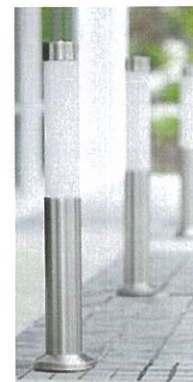
CONNECTIONS - LIGHTING

Fixtures shall be selected for lighting capacity, architectural detailing, and energy efficiency. To the maximum extent possible, they should be consistent throughout Herndon neighborhood streets and public spaces, and coordinated for coherent character with all other site furnishings.

- » Street lighting shall be of two types, tall poles (25'-30') for major connecting streets and shorter pedestrian-scaled poles (15'-18') for smaller streets. Typical spacing for luminaires on 25'-30' poles can vary from 80' to 160'. On 15' -18' poles the spacing is usually 40'. For each installation, the developer will obtain a photometric study to ascertain the appropriate spacing based on the specific fixture and site condition.
- » Lighting shall be limited to the amount and intensity necessary for safety and security and to complement architectural character, minimum .5fc and uniform lighting intensity on the ground plane.
- » Lighting that is visible from adjacent properties or roads shall, to the extent feasible, be indirect or incorporate full shield cutoffs.
- » Fixtures are to be white color LED, preferably 3,500 Kelvin, but with any adjustable range from 2,800 to 5,000 Kelvin. The Color Rendering Index must be 80 or greater.
- » The fixtures shall be primarily down-firing. Up-firing fixtures, if used for aesthetic effect, must be aimed at white horizontal reflectors to produce diffused light downward to prevent Dark Sky intrusion.
- » The LED source should not be visible to driver, bicyclists, or pedestrian unless they are directly under the fixture.
- » LED luminaires should be guaranteed for a minimum ten-year life span with no more than a 30% deterioration of illuminance as measured by footcandles.
- » The preferred lighting pattern on the ground shall be overlapping ovals.
- » All luminaires should be control-ready with the ability in the future to be individually monitored and controlled by wired or wireless central networks. Back-lighting of building facades should not exceed a height of 6" above the sidewalk.
- » Luminaire design should be compatible with the local context.
- » All luminaires shall be directed inward to eliminate excess light from spilling onto adjacent parcels by using cut-off or asymmetrical fixtures.



Landscape Forms Ashbery pedestrian light



Forms+Surfaces bollard



Forms+Surfaces light column



Philips Hadco r34 post top light



Halophane tear drop luminaire

Spaces Overview

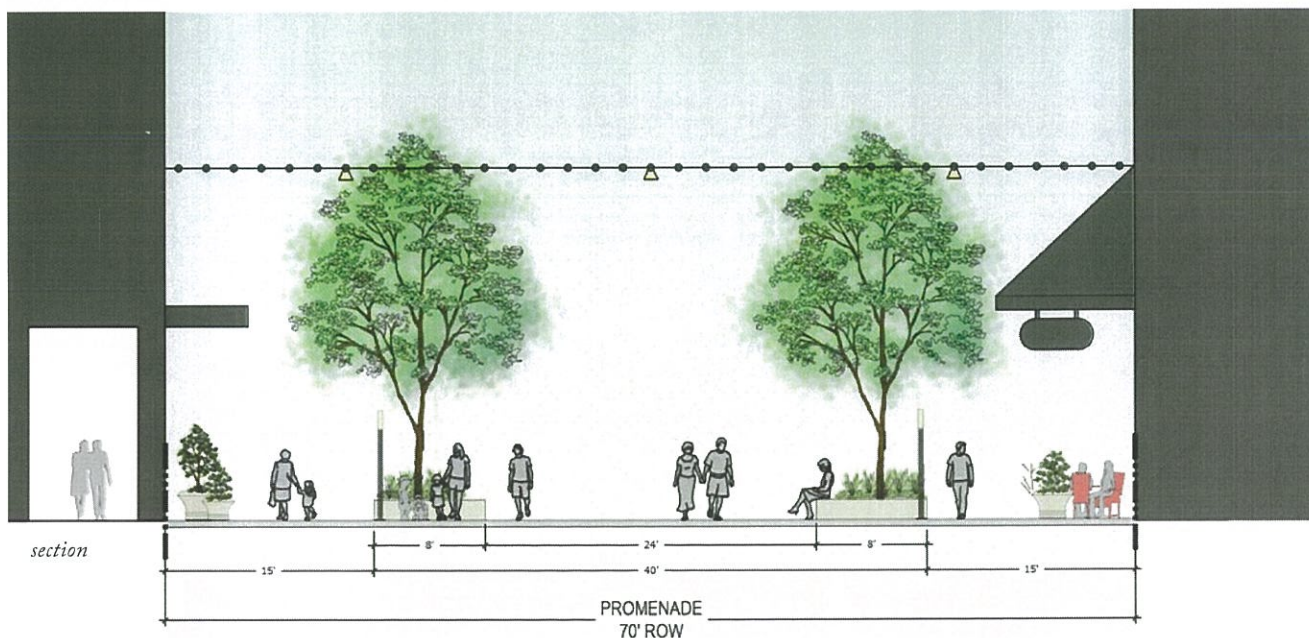
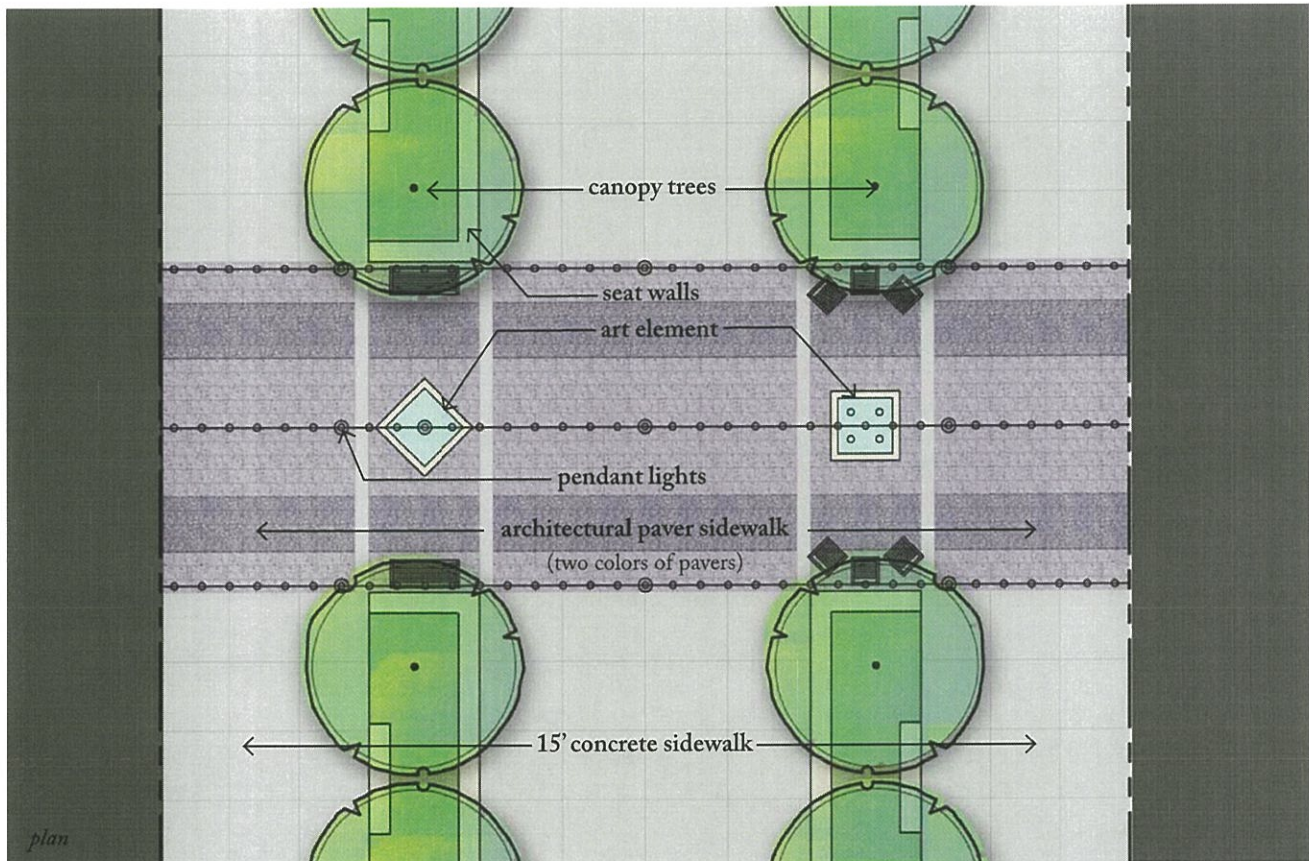
Beyond the public and private street requirements, there are two other components of the public realm that will enhance the character and spatial experience of the HTOC.

These include:

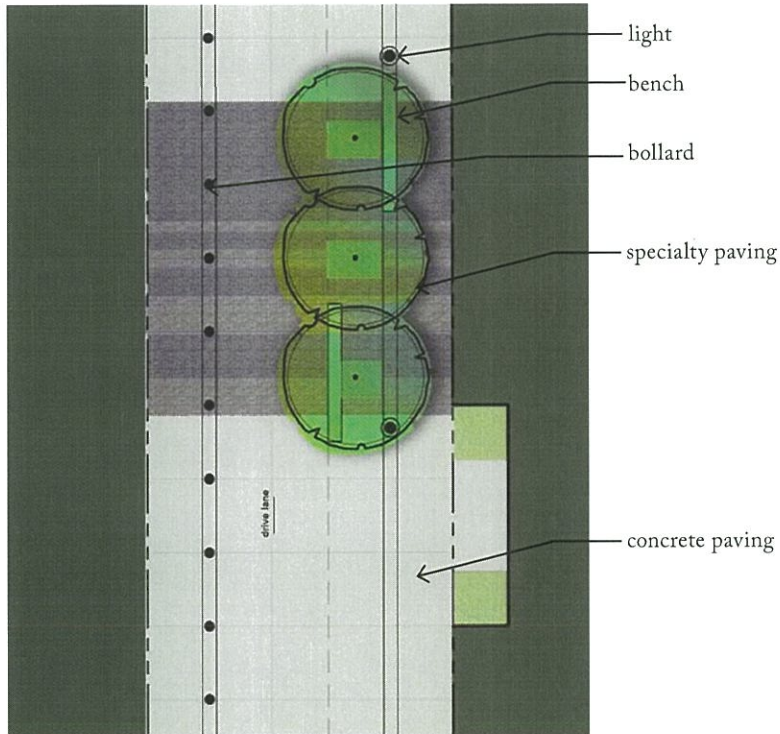
- » Promenade. A primary address in the HTOC, this pedestrian promenade will be lined with commercial activity, including restaurants and shops. This shall be considered a linear park and highly amenitized. Fixed amenities, such as planters, seat walls, water features, sculptures and lighting, are typical features. Movable elements, such as benches, planters, cafe tables and chairs, umbrellas, and sign boards are permitted to enliven the space.
- » Passages. These are considered to be part of the public open space realm of the HTOC and include the pedestrian spine connecting the Herndon Metro Station to the Herndon parkway as well as internal block connections. These are smaller, pedestrian oriented streets internal to the urban blocks connecting streets and public open spaces. The passages are of a width so that they can also accommodate service and emergency vehicles. These spaces should be considered a linear park with amenities such as planting, seating areas, overhead canopies, art, and unique lighting.
- » Public Open Spaces. These are located in a variety of settings throughout the HTOC and can be in or adjacent to public right of ways. These are smaller parks or parklets. They can be internal, at the corner, or recessed along the frontage of the urban blocks. These are intended to be signature address that allow users to casually relax or gather for an event or social function. They can be primarily hardscape with edge landscape amenities, or more lush and garden like.

The following guidelines illustrate the desired design intent for these two types of spaces and have complimentary materials and furnishings. Just as the public and private streets share a vocabulary, these two elements of the public realm do as well. The intent is to provide continuity and give a clear distinction between the vehicular realm and the pedestrian realm.

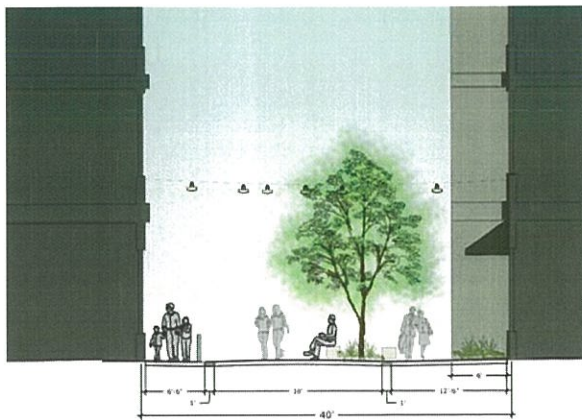
Pedestrian Promenade



Pedestrian Passages



plan



section



Central landscaped seating area

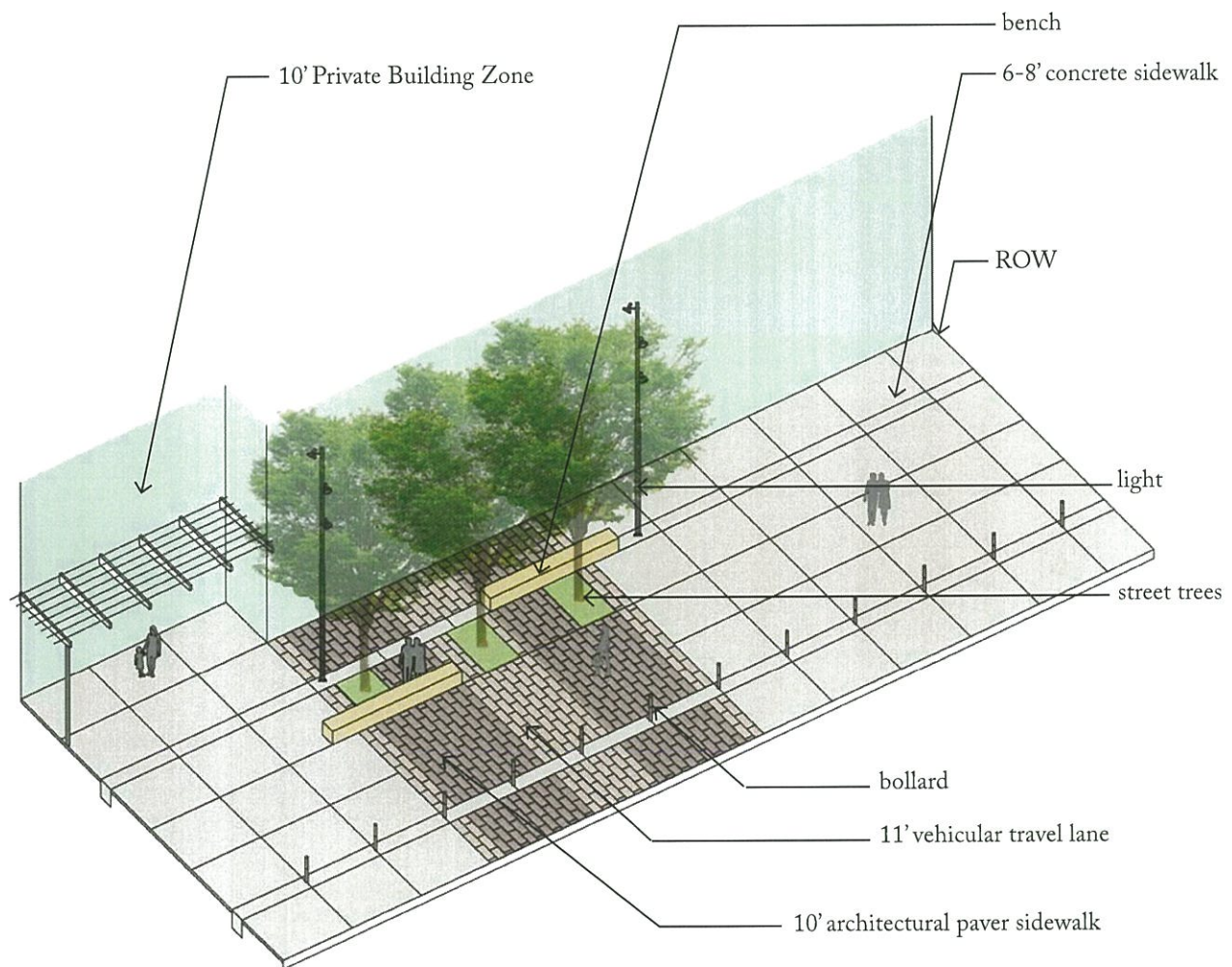


Architectural feature as focal



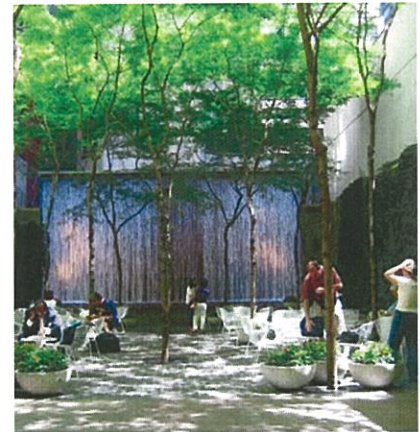
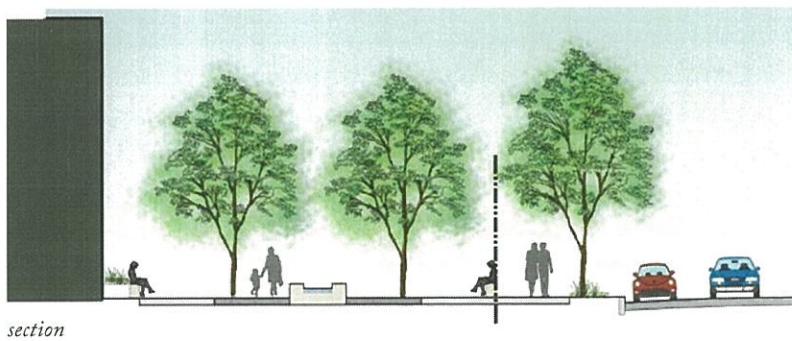
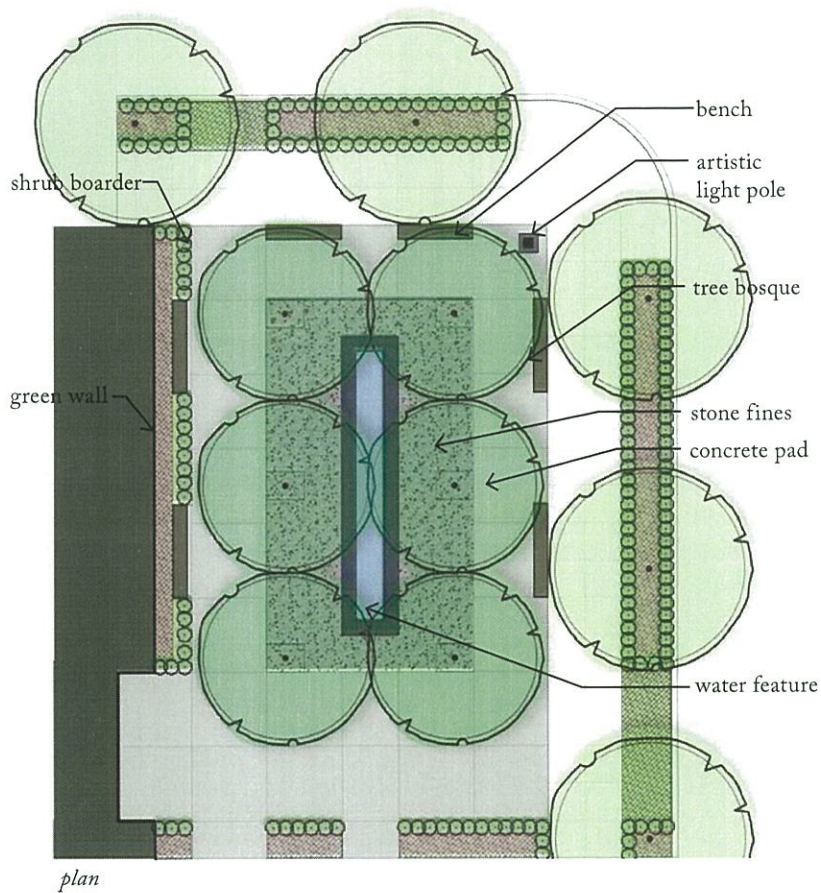
Edge planting

PEDESTRIAN PASSAGES



Axonometric drawing pedestrian passage configuration

Public Open Space/Parklets



Small public space between buildings

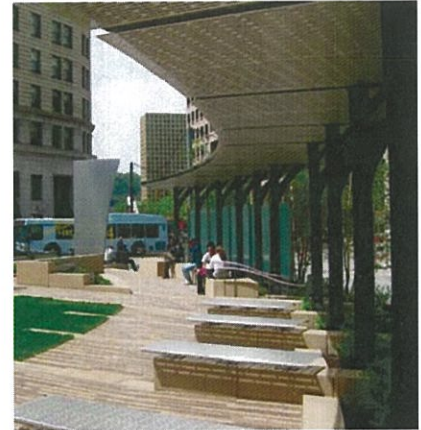
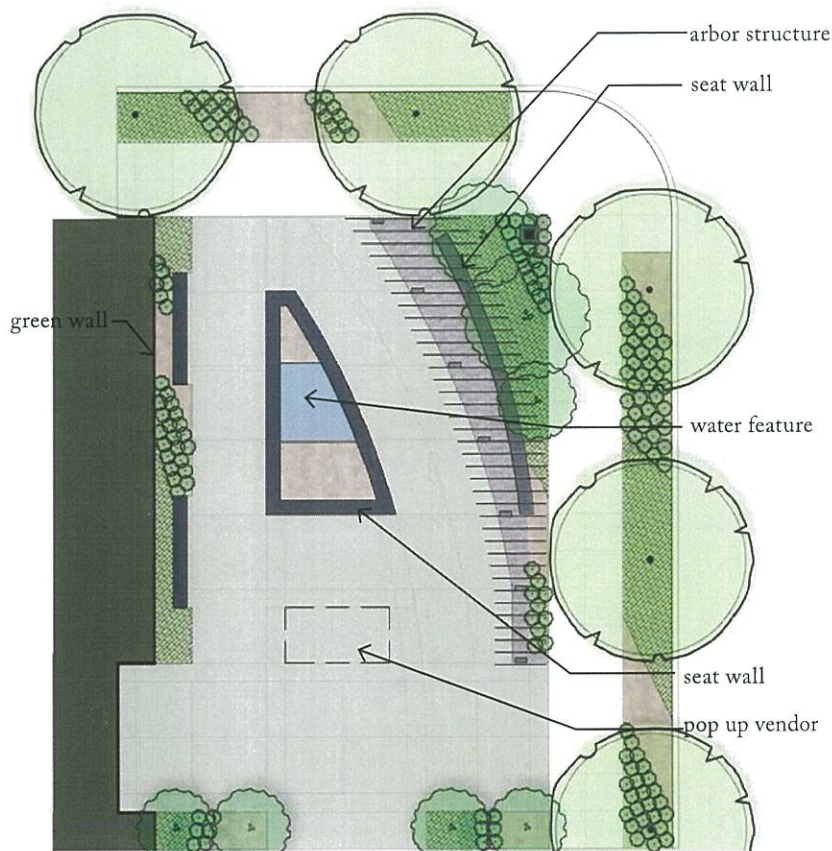


Corner public space

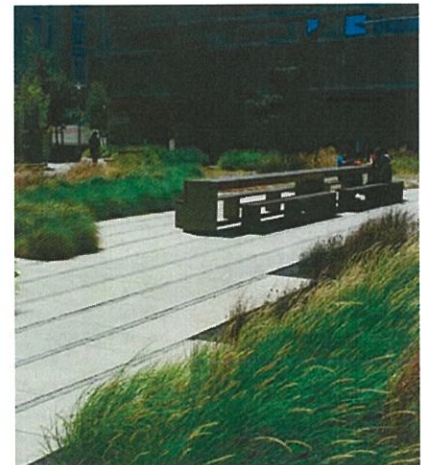


Public space with art as a focal

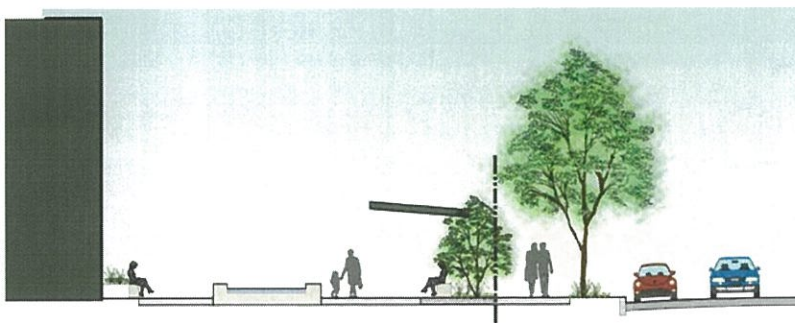
Public Open Space/Parklets



Architectural feature at edge



Outdoor work areas



Lush garden setting

PUBLIC OPEN SPACE & PEDESTRIAN PASSAGES

This section provides requirements for the use of durable site and landscape elements for public open spaces and pedestrian passages.

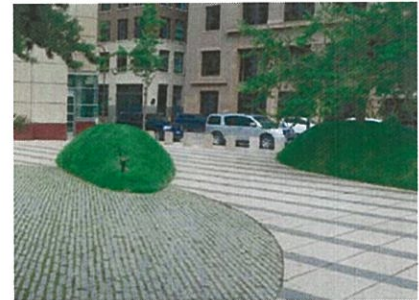
All public spaces in the district, including squares, private streets, and parks, shall be designed in a flexible manner and at various scales that address use and function. They should be adjacent to main pedestrian flow patterns. They should be transparent; in other words, visible and perceived safe. They should be comfortable and welcoming. They should be attractive and dynamic; incorporating features that draw people in to use them. They should be well managed, easily maintained and built with durable lasting materials.

Each space shall be designed for casual use by pedestrians on a daily basis where they can find comfort and respite allowing for leisure activities such as sitting, outdoor dining, or simply walking. The same spaces shall also have a more civic component programmed, such as open areas for setting up events like lunchtime concerts, urban farmers markets, food truck and cart vendors, tents for special events, and areas for creative play and gathering for all ages. This requires understanding the scale of design, allowing for a diverse array of site and landscape elements to accommodate a variety of uses.

Intimate seating areas with rich materials can be contrasted with open plaza spaces using high quality pavers that can be used for events and special functions. Elements mitigating the exposure to the outside elements, such as rain, wind and harsh sunlight, should be integrated into the design as well. Creative use of canopies, arbors, and trees for shade and space definition can separate and frame event spaces or provide a soft overhead canopy of filtered light. Lush plantings and gardens are critical to the urban landscape. The use of raised and ground plane landscape plantings can be used to define the entrances and the perimeter of these spaces. Lighting can enhance the spaces' identity while highlighting special features within the spaces. The use of art and water as focal points is desired. Public Art is a magnet that can enhance and personalize a space. Water softens the ambient noise of urban life and cools the spirit. In all, quality of materials are critical to the success of a space. Individual users respond positively to a simple palette of rich material textures and colors, as well as, to their comfort and durability.

PUBLIC OPEN SPACE & PEDESTRIAN PASSAGES – MATERIALS

- A. Paved surfaces can be broom finish or exposed aggregate concrete with decorative pavers accenting seating areas, gathering spaces and building entries. These decorative pavers may include natural stone materials, concrete unit pavers or precast concrete pavers. For surfaces that need vehicular access for emergencies or service, provide for a minimum 6" reinforced paving base. Paving shall be a mixture of 60% stone or concrete unit pavers and 40% concrete, either broom finished, colored, stained, exposed aggregate or a mix there of. No more than 40% of the area can be paved in concrete paving.
- B. Landscaped areas can be flush with the adjacent paving or protected by curbed planters as described on the street pages or with decorative protective fencing.
- C. Vertical elements or overhead structures should be designed to match the building vocabulary and materials. These materials can be metal, wood, glass, or a combination there of.
- D. Planting can take a variety of forms, from tree bosque to more naturalized planting. An 85% native palette of plant materials is desired.
- E. Specific to The Promenade, referenced on Page 25 and as guided by the Master Plan, a unique pedestrian oriented street that is required to accommodate emergency and service vehicles shall have minimum width of 24' clear zones in the center to accommodate this access. However, this central clear area, considered the main pedestrian spine, shall not read as one. Pavers shall match other material patterns found elsewhere in the HTOC. Cross bands of pavers, ninety degrees to the linear nature of the street, shall define use areas. These cross bands shall be a minimum of 24' in depth for the entire width of the street. Within these bands, amenities such as water features, public art, movable seating, movable planters, and other such elements should be organized. In between these bands, 40' sections of fixed, in-ground or above-ground planters, with fixed edge seating, canopy or ornamental trees, and ground plane plantings are required. Paving in these areas shall be concrete, either broom finish, exposed aggregate, or a combination there of. Lighting shall be overhead with the use of catenary lighting, building mounted that respects the architectural character of the building. Indirect lighting shall be used to uplight tees, on the underside of bench seating to wash the ground plan, or other creative lighting measures. Post lights are not desired in this area and should be minimally used and limited to theatrical or delicate light sticks. Outdoor dining areas are desired and must meet the Town of Herndon requirements. They are limited to a 12' depth from the face of buildings and have perimeter fencing or planters to define them. Temporary signage boards and other features are allowed.

*Flush decorative paving**Creative use of pavers and texture**Edge planting detail**Vertical elements and seating*

*Canopy edge definition**Custom furnishings**Decorative paving with integrated LED lighting**Shade structure**Place making with sculpture and art**Artful canopy and stormwater collection**Pop-up vendor in plaza**Paving and seating integration*

PUBLIC OPEN SPACE & PEDESTRIAN PASSAGES – FURNISHINGS

This section provides requirements for site furnishings.

- A. Site furnishings can be similar to one specified for private streets, or custom fabricated to add an artistic touch. Materials may include wood, steel, aluminum, stone, cast in place or precast concrete, or a combination thereof.
- B. Furnishings should complement the architectural elements of the adjacent buildings as well as the ground plane paving material.
- C. Furnishings can be fixed to define edges or the perimeter of the public space. Ideally they are used along the edges of use areas and can either be free standing or planting behind. Movable furnishings should be considered to animate large paving areas allowing them to be moved when events take place.
- D. Movable planters should be considered where fixed planters are not desired.



Wood and steel furnishings



Steel and stone custom furnishings



Movable furnishings



Stone furnishings of different textures



Concrete and wood furnishings

PUBLIC OPEN SPACE & PEDESTRIAN PASSAGES - LIGHTING

As for streets, fixtures shall be selected for lighting capacity, architectural detailing, and energy efficiency. Lighting for open spaces and passages should reflect the architectural context of the space.

- A. Lighting should be designed for the space and address safety lighting as well as more artistic, ambient, and indirect lighting to personalize the space.
- B. No specific light standards are specified, but they can include overhead catenary lights, bollard lights, decorative pylon lights, and decorative wall or bench lighting.
- C. Lighting shall be limited to the amount and intensity necessary for safety and security and to complement architectural character, minimum .5fc applied uniformly.
- D. Lighting that is visible from adjacent properties or roads shall, to the extent feasible, be indirect or incorporate full shield cutoffs.
- E. Fixtures are to be white color LED, preferably 3,500 Kelvin, but with any adjustable range from 2,800 to 5,000 Kelvin. The Color Rendering Index must be 80 or greater.
- F. The LED source should not be visible to driver, bicyclists, or pedestrian unless they are directly under the fixture.
- G. LED luminaires should be guaranteed for a minimum ten-year life span with no more than a 30% deterioration of illuminance as measured by footcandles.
- H. All luminaires shall be directed inward to eliminate excess light from spilling onto adjacent parcels by using cut-off or asymmetrical fixtures.



Landscape Forms arne light



Forms+Surfaces bollard



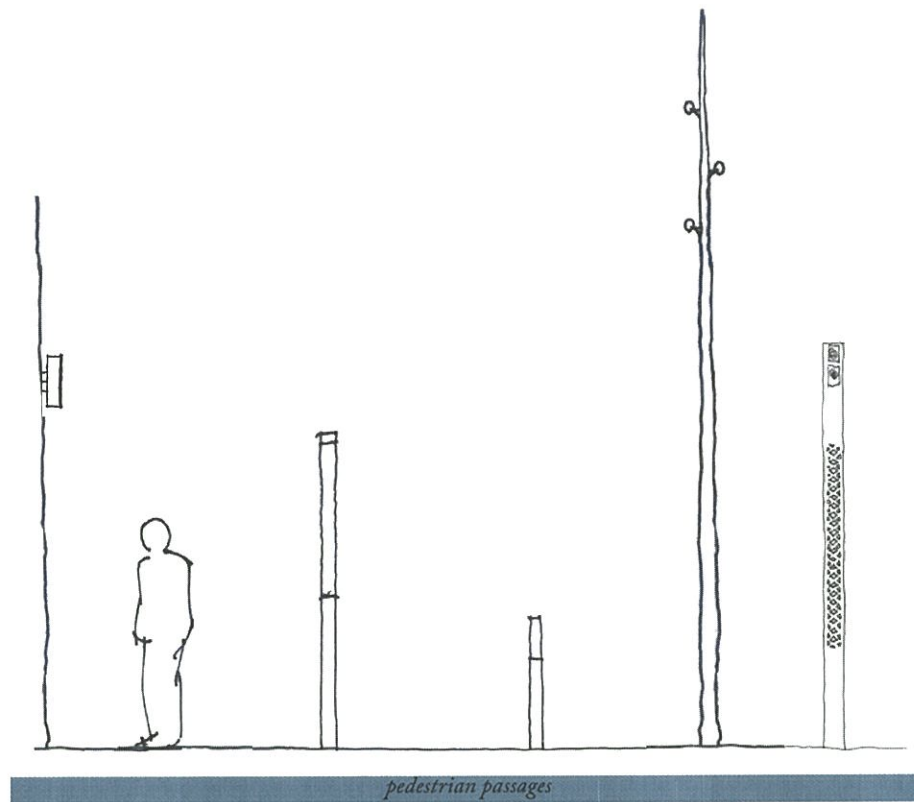
Decorative wall or bench lighting



Technilum light column

PUBLIC OPEN SPACE & PEDESTRIAN PASSAGES - LIGHTING

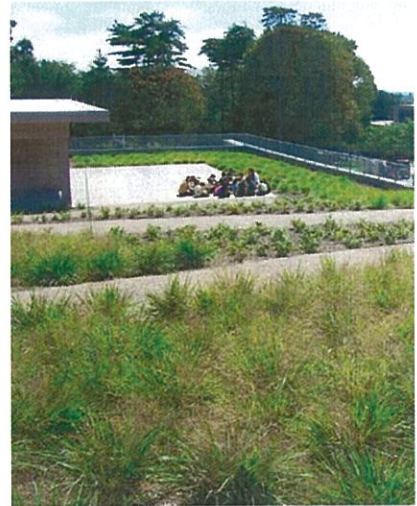
The following images represent the Herndon site lighting standards:



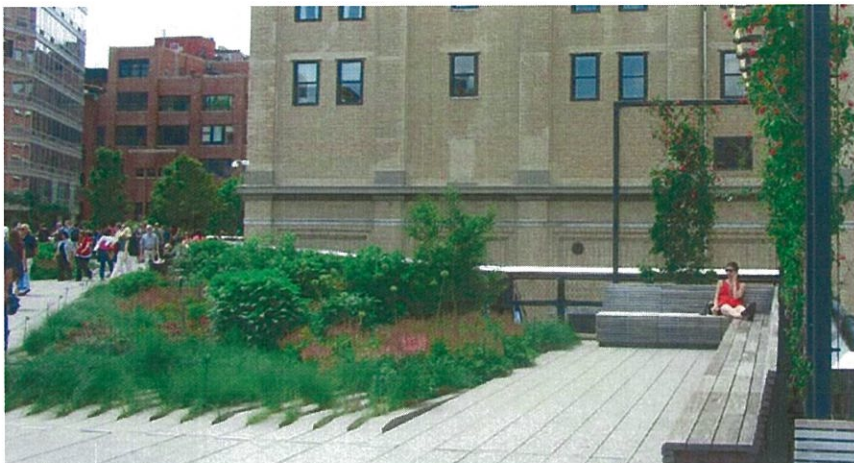
SUSTAINABILITY STRATEGIES

In the book *Ten Shades of Green - Architecture and the Natural World* (Peter Buchanan and Kenneth Frampton, 2005) ten strategies are laid out:

- » Low Energy Performance - Achieved by making maximum use of natural light and ventilation.
- » Replenishable Sources - Harvest non-depletable ambient energies of the sun, wind, waves, gravity and geothermal power.
- » Recycling: Eliminating Waste and Pollution - Re-use building materials, design buildings that are flexible and easily reused, recycle water and heat.
- » Embodied Energy - Look at energy efficiency in material selection in terms of life-time energy use.
- » Long Life, Loose Fit - Build with materials that endure and improve with age; green buildings not only accommodate change easily but are timeless and pleasant in character so that people prefer to conserve them.
- » Total Life Cycle Costing - Balance capital cost with long term maintenance costs.
- » Embedded in Place - Green buildings fit seamlessly into, help integrate and minimize negative impacts on their surroundings.
- » Access and Urban Context - To be green, integrate multimodal transportation alternatives.
- » Health and Happiness - Natural light, fresh air, and contact with nature and community provide a healthy lifestyle.
- » Community and Connection - Achieve a sustainable culture by regenerating a sense of community and connections with the natural world.



Outdoor classroom on green roof



Higline, New York



Green roof planting

SUSTAINABILITY STRATEGIES

Developers should consider an array of localized or centralized techniques, including green roofs, blue roofs, porous pavement, amended soils, infiltration practices and rainwater harvesting, to retain on-site and infiltrate, evapotranspiration, and reuse all rainfall depths up to the 1.2-inch depth. To the extent that on-site retention is not sufficient to meet stormwater retention requirements, shared facilities for holding stormwater should be considered.

A. Green Roofs

- » Developers should consider incorporating green roofs into their roof plan design. Numerous benefits can result from the adoption of green roof technologies including the recovery of green space, moderation of the urban heat island effect, improved stormwater management, water and air purification, and the reduction in energy consumption. A major benefit of green roofs is their ability to absorb stormwater and release it slowly over a period of several hours. Green roof systems have been shown to retain 60%-100% of the stormwater they receive. In addition, green roofs have a longer life-span than standard roofs because they are protected from ultraviolet radiation and the extreme fluctuations in temperature that cause roof membranes to deteriorate.



Green roof



Green roof planting

B. Blue Roofs

- » Developers should consider incorporating blue roofs into their roof plan designs when not using green roofs. Blue roofs are a type of green infrastructure that functions similar to green roofs, but without vegetation. Blue roofs temporarily store water to help mitigate the “first flush” of rainfall and then release the captured stormwater incrementally. These systems typically cost less than green roofs and produce the desired stormwater management results.

C. Permeable Pavers

- » In addition to using green roofs to capture run-off, permeable paving may be used in private alleys, courtyards, and pedestrian ways in order to help control stormwater.

D. Stormwater Catchment

- » The design intent is to capture, control and treat the first flush of rainfall during storm events. This water can be directed to stormwater infiltration tree basins or tree box filters.



Green roof planting

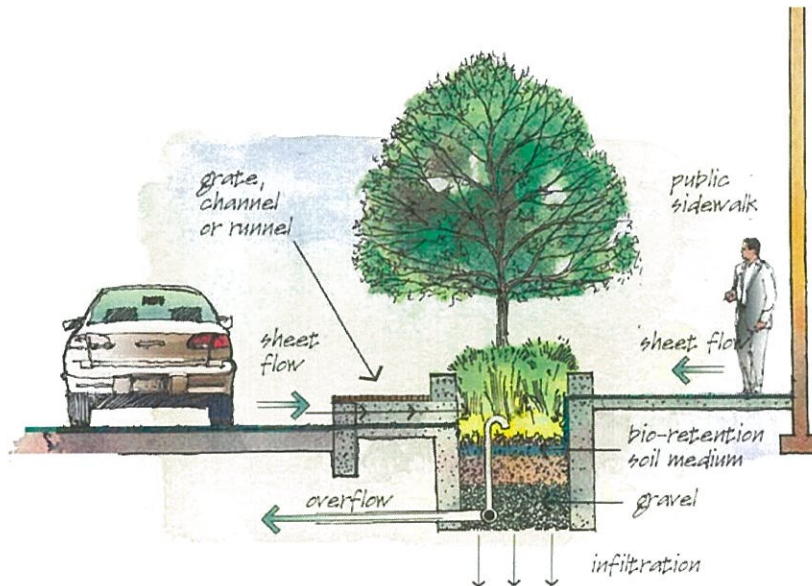
SUSTAINABILITY STRATEGIES – STORMWATER CATCHMENT

For private streets, passages, and public open spaces, stormwater collection and treatment is required. The following site elements can be part of this stormwater catchment system:

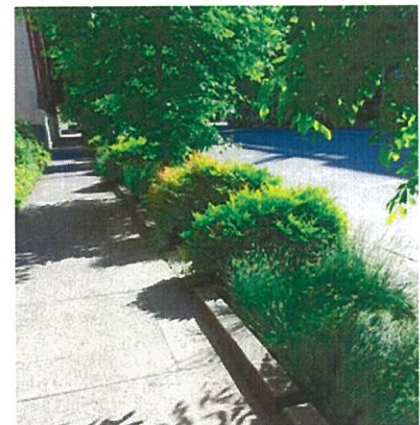
- » Street verge planters that capture stormwater from streets and sidewalks.
- » Rain gardens.
- » Below grade catchment areas and cisterns.



street verge stormwater catchment area with adjacent below grade storage



Street verge stormwater detail



Plant Material

PLANT PALETTE

Native Plants

Indigenous plants have evolved with the local climate and the soil; therefore, they are perfectly suited to the region. There are many advantages to using local plants besides their ability to thrive. They are often low maintenance and thrive without the addition of fertilizers or pesticides, and they provide food and shelter for native wildlife.

The following list consists of the “best of the best” plant materials for use in the development area, and should serve as both a guide and a starting point for plant selection. The plant list focuses exclusively on native plant material suitable to the region.

Many factors were considered in selecting the short list of plant materials including form and size, tolerance to urban conditions such as soil compaction, salt and brine spray, availability and hardiness, wildlife value, and beauty and seasonal color. The ideal plant for the proposed dense urban setting would be readily available and grow in almost any microclimate. It should be non-invasive, long lived, and provide forage and habitat for many songbirds and butterflies. This plant would also resist any disease or environmental stress and provide a vivid display of changing color throughout all seasons. Although this “ideal” plant is a fabrication, it is useful to underscore that plants making the following list needed to perform well in multiple categories versus being a standout in one particular category and showing poorly in several others. For additional information on using native plant material, reference the following websites:

- » www.plantnative.org/nd_patova.htm#va
- » www.earthtonesnatives.com
- » www.virginiawildflowers.org

Ornamental Plants

In some cases, ornamental plants (non native plants that are not invasive but do well in the climate) are acceptable. These plants will typically only be used at formal garden areas in limited quantities.

Green Roof Plants

If green roofs are used on development blocks, plant material should be selected from non-invasive materials recommended by the manufacturer to insure compatibility with soil depths. As another part of the urban forest, Green Roof planting is either intensive or extensive. Extensive Green Roof planting typically relies on a mixture of low lying plants such as sedums. Intensive planting requires more soil and structure for support, but are able to provide habitat for birds, butterflies, and insects. Intensive planting may use the perennials, groundcovers and grasses on the list on the pages that follows.



Native perennials



Lush plantings along street verge



Formal plantings in park setting

PLANT PALETTE

SCIENTIFIC NAME

COMMON NAME

CANOPY TREES

<i>Acer rubrum</i>	Red Maple
<i>Acer saccharum</i>	Sugar Maple
<i>Carya ovata</i>	Shagbark Hickory
<i>Fagus grandifolia</i>	American Beech
<i>Larix laricina</i>	American Larch
<i>Nyssa sylvatica</i>	Black Tupelo
<i>Prunus serotina</i>	Black Cherry
<i>Quercus alba</i>	White Oak
<i>Quercus rubra</i>	Red Oak
<i>Tilia americana</i>	Basswood
<i>Ulmus americana</i> 'Princeton'	Princeton American Elm

UNDERSTORY TREES

● <i>Amelanchier canadensis</i>	Shadblow Serviceberry
<i>Betula lenta</i>	Black Birch
● <i>Betula nigra</i>	River Birch
<i>Cornus florida</i>	Flowering Dogwood
<i>Hamamelis virginiana</i>	Witchhazel
<i>Malus coronaria</i>	Sweet Crabapple
● <i>Ostrya virginiana</i>	American Hophornbeam
<i>Pyrus malus</i>	Apple (domestic)

DECIDUOUS SHRUBS

<i>Aronia melanocarpa</i>	Black Chokeberry
<i>Cornus racemosa</i>	Grey Dogwood
● <i>Cornus sericea</i>	Red-osier Dogwood
● <i>Ilex verticillata</i>	Winterberry (1male:3female)
<i>Rosa virginiana</i>	Virginia Rose
<i>Salix</i> g. 'Melanostachys'	Black Pussy Willow
<i>Sambucus canadensis</i>	American Elder
● <i>Spiraea alba</i>	Meadowsweet
● <i>Viburnum lentago</i>	Nannyberry

EVERGREEN SHRUBS

<i>Gaultheria hispidula</i>	Creeping Snowberry
● <i>Juniperus communis</i>	Common Juniper
<i>Kalmia angustifolia</i>	Sheep Laurel
<i>Ledum groenlandicum</i>	Labrador Tea
● <i>Taxus canadensis</i>	Canada Yew
● <i>Simple palette</i>	

*Crape Myrtle**Red-osier Dogwood**Oakleaf Hydrangea*

PLANT PALETTE

SCIENTIFIC NAME

COMMON NAME

GRASSES

Andropogon gerardii	Big Bluestem
Eragrostis spectabilis	Purple Lovegrass
● Panicum Virgatum	Switch Grass
Schizachyrium scoparium	Little Bluestem
Sorghastrum nutans	Yellow Indian Grass
● Spartina pectinata	Prairie Cordgrass
Tridens flavus	Tall Redtop

GROUND COVER

Arctostaphylos uva-ursi (6"-12")	Bearberry
Asarum canadense (6"-12") (12"-18")	Wild Ginger
Cornus canadensis (3"-6")	Bunchberry
Dennstaedtia punctilobula (12"-18")	Hay-scented Fern
● Dryopteris marginalis	Leatherwood Fern
Gaultheria hispidula	Creeping Snowberry
Juniperus horizontalis	Bar Harbor Juniper
Pachysandra procumbens (6")	Allegheny Spurge
● Phlox divaricata (8"-18")	Canadian Phox
● Sedum ternatum 'Larinem Park'	Stonecrop
Tiarella cordifolia (6"-12")	Foamflower
Trifolium repens	White Clover

PERENNIALS

Anemone canadensis	Roundleaf Thimbleweed
Anemone quinquefolia	Wood Anemone
● Aquilegia canadensis	Wild Columbine
Asclepias syriaca	Common Milkweed
● Asclepias tuberosa	Butterflyweed
Aster novae-angliae	New England Aster
Caulophyllum thalictroides	Blue Cohosh
Cypripedium reginae	Showy Lady's Slipper
● Eupatorium purpureum	Joe Pye Weed
Heliopsis helianthoides	Sweet Ox-eye
● Iris versicolor	Blue Flag Iris
● Rudbeckia hirta	Sweet Black-Eyed Susan
Penstemon digitalis	Foxglove Beardtongue
● Verbena hastata	Blue Vervain
Viola labradorica	Labrador Violet

● Simple palette



Switch Grass



Blue Flag Iris



Astilbe



Black-eyed Susan

PLANT PALETTE - STREETSCAPES

Streetscape and the Urban Forest

An urban forest is the collection of trees that grow within a city. An urban forest provides many ecological as well as economical benefits to its citizens including moderating the local climate, slowing stormwater, and shading homes and businesses to reduce energy consumption. Street trees and streetscape planting are a large component of Herndon's urban forest and as such will be the hardiest materials on our urban plant list. These plants are low maintenance, salt and pollution tolerant, and offer a variety of forms, textures, and colors providing interest for pedestrian traffic. Often a variety of tree species will be planted along a street in order to strengthen the urban forest of Herndon.

The Understory Trees: Group A category applies to most planting under utility lines. This is necessary to consider because most lines are less than 25' above ground. Where possible, trees should be offset so that they are not directly under the wires.

The Understory Trees: Group B applies only to utility planting where the bottom wire is over 25' above the ground. Where possible, these trees should also be offset so as not directly under the wires.

The shrubs, groundcovers, and perennials on this streetscape list are also known to be extremely tolerant of road salt and wind.

SCIENTIFIC NAME

COMMON NAME

UNDERSTORY TREES - GROUP A

<i>Acer ginnala</i>	Amur Maple
<i>Acer tataricum</i>	Tatarian Maple
<i>Crataegus laevigata</i> 'Superba'	Crimson Cloud Hawthorn
<i>Magnolia stellata</i>	Star Magnolia
<i>Malus floribunda</i>	Japanese Flowering Crabapple

UNDERSTORY TREES - GROUP B

<i>Acer campestre</i>	Hedge Maple
<i>Acer griseum</i>	Paperbark Maple
<i>Amelanchier laevis</i> 'Majestic'	Apple Serviceberry
<i>Carpinus caroliniana</i>	American Hornbeam
<i>Cercis canadensis</i>	Eastern Redbud
<i>Koelreuteria paniculata</i>	Goldenrain Tree
<i>Syringa reticulata</i>	Japanese Tree Lilac

SHRUBS AND GROUNDCOVERS

<i>Arctostaphylos uva-ursi</i>	Bearberry
● <i>Aronia</i> spp.	Chokeberry

● *Simple palette*



Thriving streetscape planting



Star Magnolia form and flower



Eastern Redbud flower

PLANT PALETTE - STREETSCAPES

SCIENTIFIC NAME

COMMON NAME

SHRUBS AND GROUNDCOVERS (CONT.)

- | | |
|----------------------------------|-------------------------|
| ● <i>Cornus racemosa</i> | Gray Dogwood |
| ● <i>Cotoneaster divaricatus</i> | Spreading Cotoneaster |
| <i>Cotoneaster horizontalis</i> | Rock Cotoneaster |
| <i>Hibiscus syriacus</i> | Rose-of-Sharon |
| ● <i>Hydrangea</i> spp. | Hydrangea |
| <i>Hypericum</i> spp. | St. Johnswort |
| ● <i>Ilex verticillata</i> | Winterberry |
| ● <i>Myrica pensylvanica</i> | Bayberry |
| <i>Philadelphus</i> spp. | Mockorange |
| <i>Potentilla fruticosa</i> | Potentilla |
| <i>Ribes alpinum</i> | Alpine Currant |
| <i>Rosa rugosa</i> | Saltspray Rose |
| <i>Symphoricarpos</i> spp. | Snowberry or Coralberry |
| <i>Syringa</i> spp. | Lilacs |
| <i>Vaccinium</i> spp. | Blueberry/Cranberry |
| ● <i>Viburnum dentatum</i> | Arrowwood |

PERENNIALS

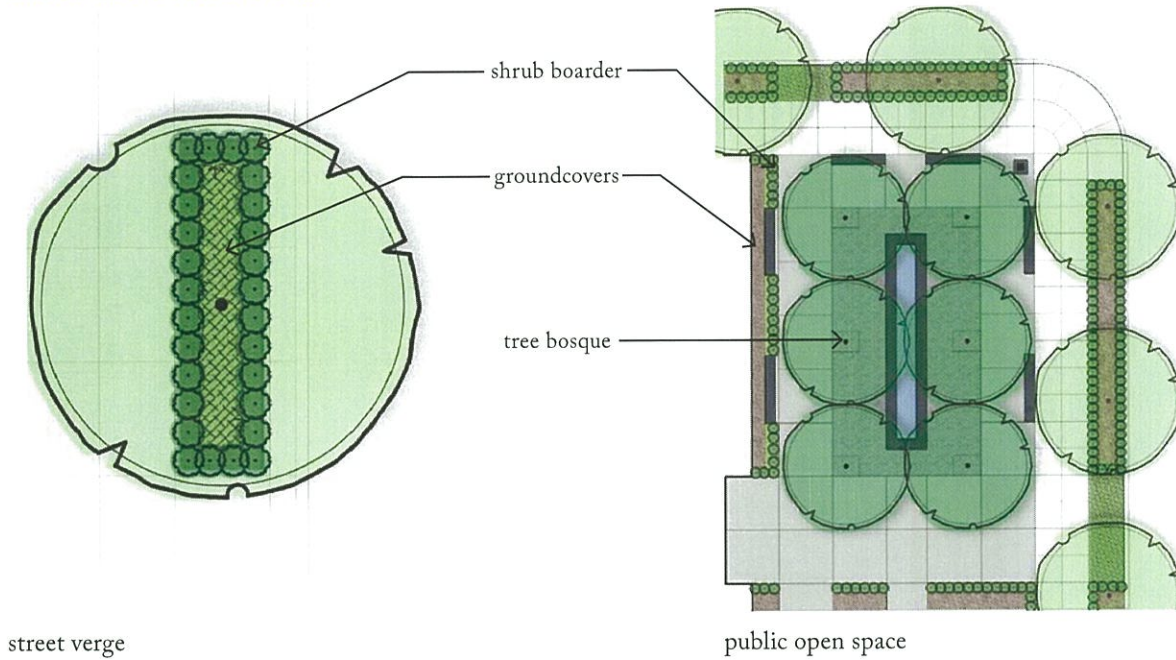
- | | |
|--------------------------------------|--|
| ● <i>Artemisia</i> x 'Powis Castle' | 'Powis Castle' Artemisia |
| <i>Artemisia schmidtiana</i> | 'Silver Mound' Silver Mound Artemisia |
| ● <i>Calamagrostis acutiflora</i> | 'Karl Foerster' 'Karl Foerster' Reed Grass |
| <i>Dianthus gratianopolitanus</i> | Cheddar Pink |
| <i>Festuca glauca</i> 'Elijah Blue' | Blue Fescue Grass |
| <i>Helleborus orientalis</i> | Lenten Rose |
| ● <i>Heemerocallis</i> spp. | Daylily |
| ● <i>Hosta</i> spp. | Hosta |
| <i>Iberis sempervirens</i> | Candytuft |
| <i>Limonium latifolium</i> | Sea Lavender |
| ● <i>Liriope spicata</i> | Lilyturf |
| ● <i>Pennisetum alopecuroides</i> | Fountain Grass |
| <i>Sedum spectabile</i> 'Autumn Joy' | Sedum 'Autumn Joy' |
| <i>Schizachyrium scoparium</i> | Little bluestem |
| <i>Yucca filamentosa</i> | Adam's-needle Yucca |

● *Simple palette**Bayberry shrub**Hydrangea shrub**Native grasses and perennial*

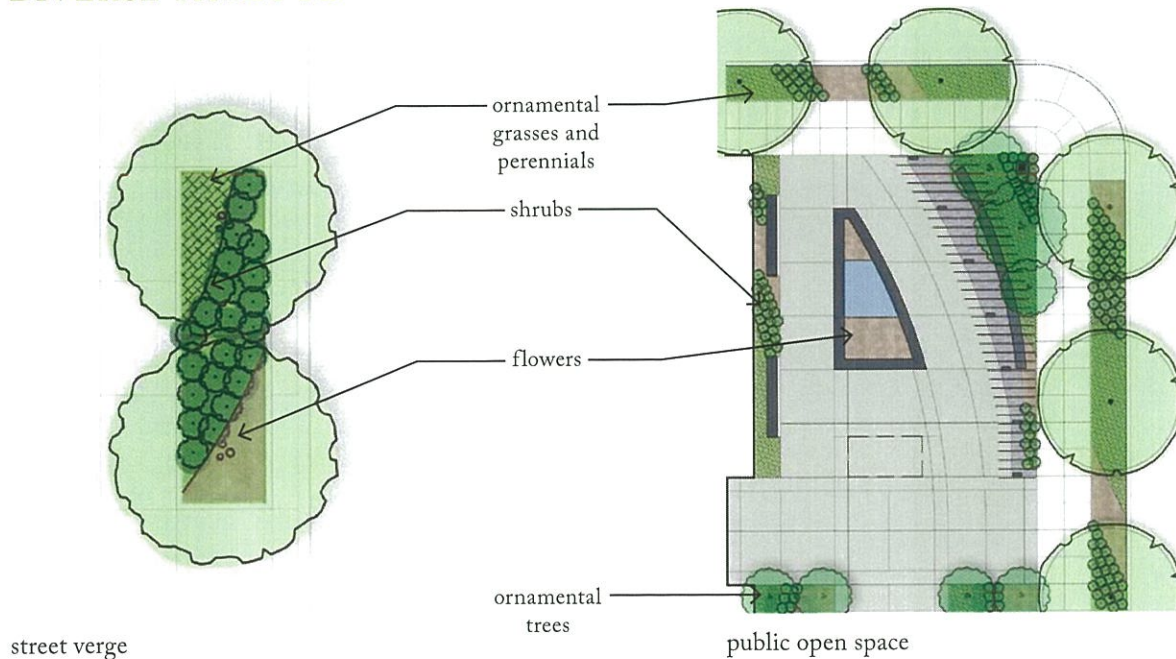
Typical Planting Plans

The following graphics illustrate typical planting suggestions for street verge planting and public open spaces.

SIMPLE PALETTE



DIVERSE PALETTE



List of Amendments to the Proposed Landscaping Guidelines for the HTOC

4/12/19

#	Location	Type	Comment
1	Page 31	new standard; add after "B"	"Public open spaces shall consist of a minimum of 30% softscapes to break up hardscaping and accommodate shade trees and other plants."
2	Page 3	map update	insert identifier labels for reference. Add "Herndon Parkway", "Van Buren Street", "Worldgate Drive", and "Herndon Metrorail Station"
3	Page 3	map update	include open space as approved with DP#17-01
4	Page 7, 8	sidewalk dimensions in plan view, section view, and axo view	Change sidewalk dimension label on eastern side of Van Buren Street to "5'-10' variable width" and include an asterisk or footnote. Then include the asterisk/footnote below the plan view stating..."the sidewalk shall be a minimum of 8' when the adjacent property is redeveloped by Special Exception or Development Plan."
5	Page 7,8	note arrangement	Convert the two existing notes below the plan view into a bulleted list that includes the new note regarding sidewalk width. The section view should be move the next page to fit this or the notes should be moved to the next page.
6	Page 7	bike lane label	change bike lane label to indicate 6' on the west side and 8' on the east side. Similar to how its labeled for Herndon Parkway.
7	Page 6,8,10,12,14	private building zone label	do not capitalize
8	Page 6,8,10,12,14	image caption	Capitalize street names.
9	Page 10	image caption	change to "Worldgate Drive"
10	Page 3	legend update	change "Alternative A Private Streets" to Private Streets. Change "Alternative B Private Streets" to "Private Street with Sugarland Run Trail"
11	Page 11	note after title	remove "Alternative A" from title
12	Page 11	in plan view	Add label for "10' min. brushed concrete sidewalk (20' lengths)".
13	Page 13	in plan view	change title to "Private Street with Sugarland Run Trail"
14	Page 13	note after title	add label in plan view referencing 60' lengths for brushed concrete sidewalks.
15	Page 17	title	remove title at top of page; this is a continuation from the previous page and is not needed.
16	Page 16	title	remove title at top of page; this is a continuation from the previous page and is not needed.

17	Page 16	first line	change to "Town of Herndon Streetscape Manual"
18	Page 16	3rd full paragraph, last line	"Town's Streetscape Manual".
19	Page 17	add additional page	after page 17; this new page would include a table identifying the specifications of the site furnishings to be used on private streets. See below:
20			Litter Receptacle Manufacturer: Forms & Surfaces or equal as approved by TOH Type: 36gUrban Renaissance, side opening, vertical pattern Color/Finish: Slate texture powdercoat Graphics: Custom Herndon graphics backer Use: At least one per block frontage, at all bus stops, at least one per 1000SF of off-street open space Placement: Paired with litter receptacles, at least 10' from any seating
21			Recycling Receptacle Manufacturer: Forms & Surfaces or equal as approved by TOH Type: 36g Urban Renaissance, side opening, vertical pattern Color/Finish: Azure texture powdercoat Graphics: Custom recycling graphics backer Use: At least one per block frontage, at all bus stops, at least one per 1000SF of off-street open space Placement: Paired with recycling receptacles, at least 10' from any seating
22			Bench Manufacturer: Forms & Surfaces or equal as approved by TOH Type: Cordia, backed or backless Primary Color/Finish: Extruded aluminum slats, slate texture powdercoat Accent Color/Finish: Jatoba Hardwood Slats, Slate Texture Powdercoat Use: At least two per block frontage along streets and at least two per 1000SF of off-street open space, at all transit stops Placement: at least 10' from any receptacle, under canopy tree or other source of shade to greatest extent possible

23		Bike Rack Manufacturer: Forms & Surfaces or equal as approved by TOH Type: Twist Color/Finish: Primary color required with optional accent colors. Primary to accent ratio is minimum of 3:1. - Slate texture powdercoat (primary) - Lime texture powdercoat (accent) - Azure texture powdercoat (accent) Use: At least two per block frontage, at all bus stops, at least two per 1000SF of off-street open space Placement: placed to ensure no obstruction of pedestrian access, coordinated with building entrances, high visibility and covered areas encouraged.	
24		Private Street lights Manufacturer: TBD (in consultation with Dominion Energy) Luminaire: Carlyle Acorn (Dominion Energy Basic Option), Black finish Pole: Cast aluminum, Smooth round, Tapered, Black finish, 14' height limit Base: TBD (in consultation with Dominion Energy) Options: Internal glass refractor for light control Lights Source: LED 3500K Color Temperature Placement: Centered within the tree zone between curb and sidewalk	
25	Page 15	in "D", first sentence	Add "...crosswalks shall be used..."all intersections, curb cuts, <i>and at entrances into pedestrian passages</i> "
26	Page 25	promenade images	remove drawings of Promenade; do not want to be prescriptive
27	Page 25	add additional page	in place of drawings on page 25; include several precedent images of well designed quality promenade or similar open space designs.
29	Page 31	rewrite "E"	rewrite to be less prescriptive. See below: Specific to the design of The Promenade:
			A unique community plaza space and pedestrian environment featuring appealing and engaging surface treatments and focal points, opportunities for passive recreation, areas for respite and programmable spaces. Accommodates emergency and service vehicle access.
			Full lighting is required and can be achieved by a diversity of illumination types. Most of the lighting shall be provided using overhead catenary fixtures. Additional lighting includes building façade accentuating fixtures, indirect tree uplighting, underside bench lighting, or other creative lighting measures that may be integrated into another features of the Promenade.

		All hardscaped areas shall be comprised of a variety of decorative pavers. The pavers shall be arranged to enliven the walking surface with different patterns and possible interactive or interpretative displays. The paver design may coordinate with the pavers used within the public and private streetscapes and relate to the location of building entrances along the Promenade.
		Softscape areas to include canopy trees, ornamental trees, and ground plantings shall cover at least 30% of The Promenade. Shade trees shall be used to the greatest extent possible. Native plant gardens, pollinator gardens, and/or stormwater retention planters are encouraged.
		A variety of amenities shall be integrated into the design of the Promenade and should include movable and fixed seating, café seating areas, kiosks for pop-up shops, temporary or permanent public art displays, wayfinding signage, movable and fixed planters, bicycle racks and/or shelters, interactive or interpretative displays.
		for the Promenade, the site furnishing specified for the private streets shall be used.
29	Page 38 planter detail	confirm whether this graphic was created by consultant; if not the caption should include a reference to the source.
30	Page 4, page 24 add language	in regards to incorporating focal points, historical references, and public art along/within connections and spaces to create a engaging environment and reinforce unique Herndon character.
31	Page 15 add language	add guideline for pet accommodations
32	Page 17 add language	under "Other Amenities" add language for drinking fountains and dog waste stations
33	Page 31 add language	add guideline for pet accommodations
34	Page 33 add language	for drinking fountains and dog waste stations



Design Philosophy

Signage in Herndon will take on many different forms and voices based on the intended use. Civic or municipal signs and wayfinding signs will mark streets, parks, and trails. Signs for individual buildings or tenants will provide opportunities to add character and variety to Herndon Transit Oriented Core. Signage diversity creates a dynamic district, while informing users. The location, materials and architectural details of the signs shall be consistent with the palette and design ethic of Herndon in order to create cohesiveness. All signs shall be subject to review by the Town of Herndon so that signs are consistent and in harmony with the Herndon signage guidelines. The Town of Herndon will use the graphics and language in these guidelines to make a determination of compliance.



OBJECTIVES

1. There will be several coexisting sign voices within the community, with different characters from subtle to vibrant, that provide variation and visual interest. Accordingly, civic signage will be relatively “quiet,” while commercial, hospitality and retail and entertainment signage may be more “lively.”
2. All civic, residential, and commercial signage shall complement the architecture, creating a lively atmosphere and visually enriching the fabric of the overall community.
3. Signs shall work with the other street amenities in establishing the character of the street on which they front while clearly identifying a business, encouraging window shopping, and enhancing the pedestrian experience. Avoid an overabundance of signage that creates visual clutter.
4. A cohesive family of municipal or civic signs shall provide a quiet street presence that unifies the community throughout, and becomes the constant backdrop to the widely varying commercial spectrum of signage.
5. Signs may vary in expression and have a unique character.



Projecting blade sign



Simple directional signage



Temporary signs mounted on building and visible at street level

GENERAL DESIGN PRINCIPLES

A. Size and Placement

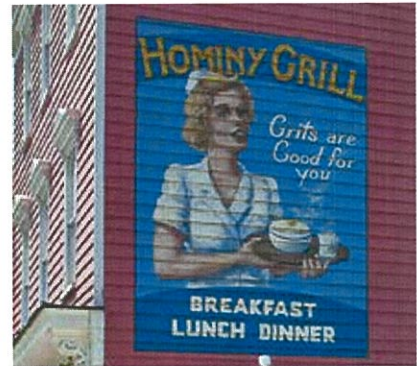
1. The design, size, and location of each sign will be reviewed and approved in context with the design of the building to which it pertains and its specific use.
2. Sign area shall be calculated in accordance with the Herndon signage ordinance.
3. No signage is permitted within the vision clearance triangle at street intersections.
4. Signs mounted on buildings should be clearly visible from the street level.
5. Signage shall be sized to be appropriately scaled to its specific location and adjacent uses.

B. Sign Material and Fabrication

1. Allowed signage materials for all signage other than ground signs include the following:
 - a. Metal finishes. Polished, brushed, patterned, and weathering metals with natural patinas
 - b. Cast/stone concrete
 - c. Glass tile/terra-cotta
 - d. Wood: painted or natural hardwood (small hanging signs and sandwich boards only)
 - e. Metal: copper, bronze, brass, galvanized steel, raw steel, brushed aluminum
 - f. Painted or engraved directly on facade surface or glazing
 - g. Etched glass
 - h. Acrylic with matte finish, combined with other materials
 - i. Printed canvas (awnings)
 - j. Additional materials approved by the Architectural Review Board



Metal, wall mounted sign



Painted wall mural sign



Metal, wall mounted sign with neon lights

2. Allowed fabrication methods and signage types include the following:

- a. Fabricated, crafted and assembled signs that combine several complementary materials
- b. The layering and use of materials in innovative ways
- c. The use of environmentally responsible materials
- d. Individual letter forms used as signage
- e. Halo illuminated letters
- f. Additional fabrication methods approved by the Architectural Review Board
- g. Allowed ground monument materials include the following:
 - i. Formed concrete: specialty finish (with integral color or stain)
 - ii. Brick and stone masonry
 - iii. Metal: bronze, brushed aluminum, stainless steel, galvanized steel, raw steel
 - iv. Glass: etched, frosted, colored, luminous
 - v. Green screen (metal mesh combined with vines or groundcover plantings)
 - vi. Additional materials approved by the Architectural Review Board

3. Prohibited ground monument base materials include:

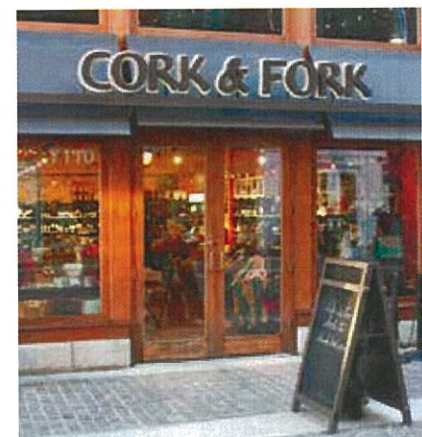
- a. Concrete block (unfinished, textured/colored)
- b. Acrylic
- c. Fiberglass
- d. Wood
- e. Faux Stone



Individual letter forms used as a sign and colored glass

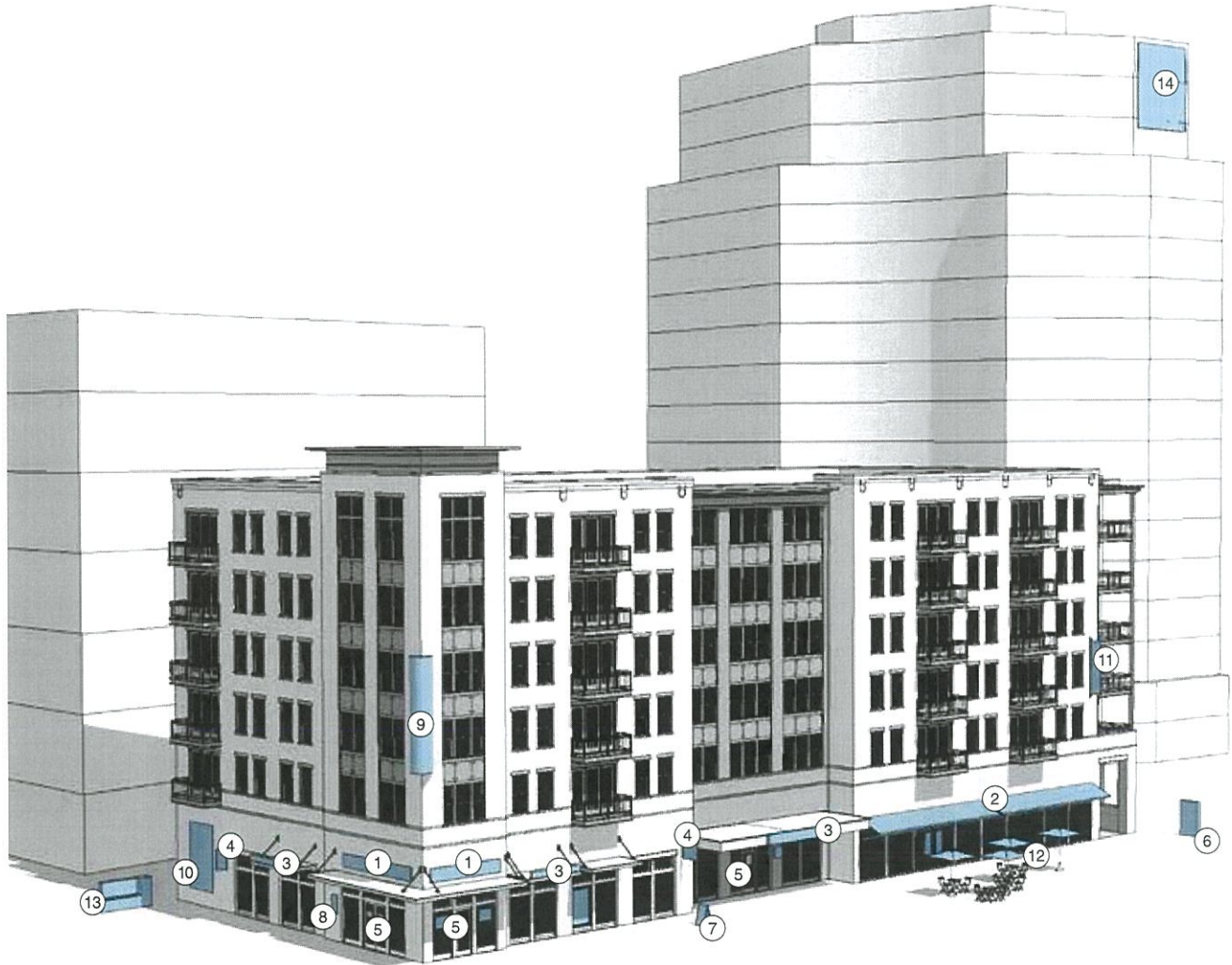


Halo illuminated letters



Layering materials in innovated way

SIGN TYPES KEY

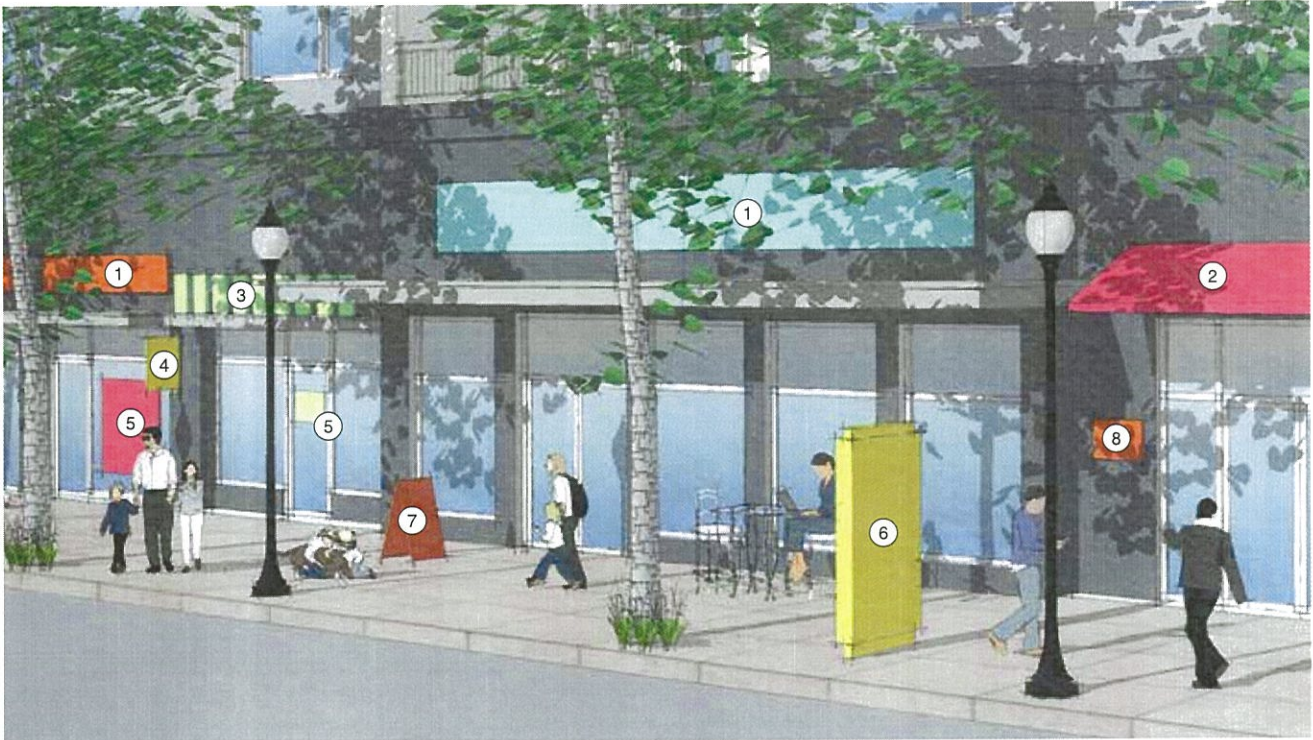


1. Sign Band
2. Awning Sign
3. Canopy Sign
4. Projecting Blade Sign
5. Door/Window Sign
6. Directory

7. Sandwich Board and Menu Board Sign
8. Plaque
9. Feature Sign
10. Painted Wall Sign
11. Projecting Banner Sign

12. Umbrella Sign
13. Monument Sign
14. Dulles Toll Road Tower Sign

GROUND FLOOR SIGN TYPES



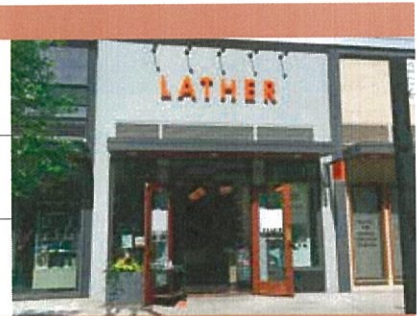
1. Sign Band
2. Awning Sign
3. Canopy Sign
4. Projecting Blade Sign
5. Door/Window Sign
6. Directory
7. Sandwich Board and Menu Board Signs
8. Plaque

SIGN DIRECTORY

The design, size, and location of each sign will be reviewed and approved in context with the design of the building to which it pertains and its specific use.

1 Sign Band

Location	› Architectural Sign Band above storefront › First floor occupancy only › One per establishment
Maximum Area for Sign	› 80% width of business › 1 sq. ft. for every 1 linear feet of Business Frontage
Lighting	› Internal or external*



2 Awning Signs

Location	› On top of awning or on the awning flap with a maximum height of 10 inches › One awning sign per business › First floor occupancy only
Maximum Area for Sign	› 10% of awning surface area (top and valance). › Maximum 10-inch lettering
Lighting	› Externally only*



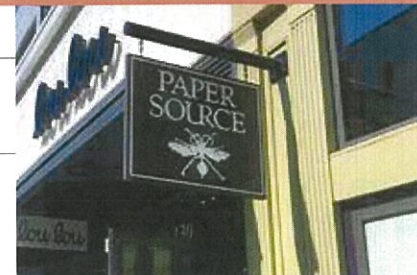
3 Canopy Signs

Location	› First floor occupancy only › Minimum clearance above a pedestrian passage is 9 feet › Maximum height of canopy sign is 8 feet. › Maximum overhang is 6 feet from building facade › One per business
Maximum Width for Sign	› 10% larger than the width of the opening below › Maximum height of letters is 18"
Lighting	› Internal or external*



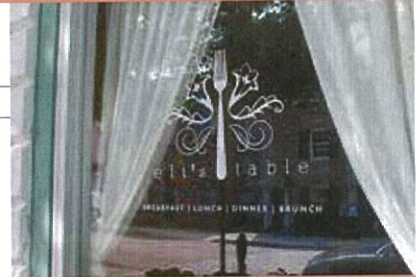
4 Projecting Blade Signs

Location	› Minimum clearance above a pedestrian passage is 9 feet.
Maximum Area for Sign	› 12 square feet excluding bracket › Maximum height is 4 feet › Maximum width is 3 feet
Lighting	› External illumination only



5 Door/Window Signs

Location	› One sign at entry door glazing and one sign for each window › Clear background
Maximum Area for Sign	› 25% of door/window glazed area
Lighting	› Internal only*



6 Directory

Maximum Height Limit	› 8 feet
Maximum Area for Sign	› 24SF max on public street; 18SF max on private street, limit two per block frontage
Lighting	› Internal or external*



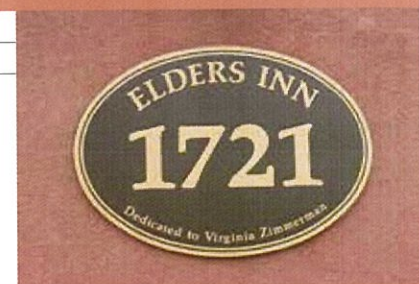
7 Sandwich Board and Menu Board Signs

Location	› 1 each per business located outside pedestrian passage
Maximum Area	› Maximum width 3 feet › Maximum height 4 feet
Lighting	› Not permitted



8 Plaques

Maximum Height Limit	› 2 feet
Maximum Area for Sign	› 4 square feet
Lighting	› External illumination only



9 Feature Signs

Maximum Height Limit	› 24 feet
Maximum Area for Sign	› 10% of facade area, not to exceed 100 square feet per side
Lighting	› Internal or external*
Orientation	› Back to back permitted

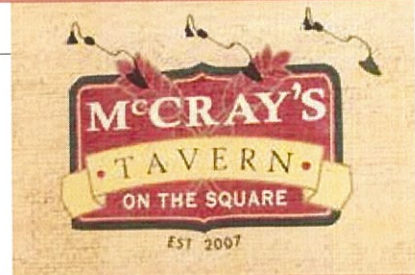


SECTION H

SIGNAGE GUIDELINES

10 Painted Wall Signs

Maximum Height Limit	› Limit height to 30 feet or first three floors, whichever is less
Lighting	› External only



11 Projecting Banner Signs

Location	› 1 spaced every 15 feet minimum › Limited to 1st, 2nd, or 3rd floors › Limited to one business per block frontage
Maximum Area for Sign	› 24 square feet, 4 feet maximum projection › Maximum height 10 feet
Lighting	› Not allowed



12 Umbrella Signs

Location	› One umbrella sign for every 25 square feet of outdoor dining or service area
Maximum Area for Sign	› 36 square inches and is displayed on a maximum of 50% of the panels › Display is also permitted on a flap no greater than 6 inches in height
Lighting	› Not allowed



13 Monument Signs

Location	› Entrances and corners, limited to frontage on public streets › Limit to one per block
Maximum Area for Sign	› Limited to 32 square feet › Maximum height 8 feet
Lighting	› External



14 Tower Sign

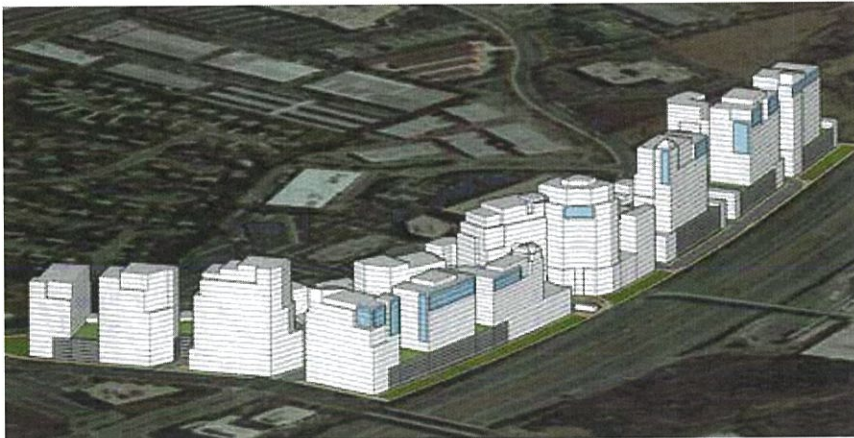
Location	› At the top of buildings over 15 stories or greater than 180 feet in height › Signs must be oriented towards Dulles Toll Road
Maximum Area for Sign	› 320 SF maximum for each sign; up to three per tower, not on the same frontage
Lighting	› External or Internal



SIGN DIRECTORY



Permitted locations for tower signs along westward bound Dulles Toll Road.



Permitted locations for tower signs along eastern bound along Dulles Toll Road

TOWER SIGN

** Internally lit signage may only be considered with individually lit letters and should use LED technology. All internally lit signage will be approved.*

SECTION I

GLOSSARY

List of Amendments to the Proposed Signage Guidelines for the HTOC

4/12/19

#	Location	Type	Comment
1	Page 86	change language	"sign area shall be calculated in accordance with the <i>individual sign standards specified within this document</i> "
2	Page 90	add language	for "sign bands"; limit internal illumination to halo-lit
3	Page 90	add language	for "canopy sign" allow upper floor occupancy at lobby entrances. Limit to external lighting
4	Page 90	change title of sign type	to just "projecting sign"
5	Page 91	change title of sign type	change from "directory" to "freestanding". Remove option for placement on public street.
6	Page 91	change title of sign type	change from "feature signs" to "Blade Signs".
7	Page 91	change max height	increase "feature sign" placement height to 35'. Clarify that height is related to placement and not size of sign. Also clarify sign's vertical orientation.
8	Page 91	change language	for "door/window signs" change lighting to "not permitted"
9	Page 91	add language	for "plaques" limit one per business
10	Page 92	change language	for "monument signs"; allow on private streets as well
11	Page 92	change language	for "tower signs"; modify "Location": <i>At the top of tower building; visible from the Dulles Toll Road. On the south facing building elevation, left half of the east facing building elevation, or right half of the west facing building elevation.</i>
12	Page 92	change language	for "tower signs"; modify "Maximum Area for Sign": <i>250SF maximum for each sign when building is 14 stories or 180 feet in height. 150SF maximum for each sign when building is 6 stories or 80' in height.</i>
13	Page 92	add language	for "projecting banner signs": add standard for material - <i>durable exterior commercial grade fabric</i>
14	Page 93	in graphic captions	change "permitted locations" to "potential locations".



DEPARTMENT OF PUBLIC WORKS

STAFF REPORT

Town Council
May 21, 2019

Title:

Resolution - To Approve an Agreement with the Fairfax County Water Authority authorizing an Engineering Consulting Study of a Water Pumping Station and To Reimburse Fairfax Water for the cost of the study.

Staff Contact:

Tammy Chastain, Deputy Director of Public Works
(phone) 703-435-6860
(e-mail) tammy.chastain@herndon-va.gov

Background:

In 2016, the Town's water and sewer engineering consultant developed a Water Utility Master Plan. This plan was based on anticipated future increases in water demands due primarily to redevelopment in the downtown and Metro station areas, or Herndon Transit Oriented Core (HTOC). The key element of the proposed infrastructure improvements was a pair of transmission mains that would be needed due to the limited capacity of the three existing supply connections with Fairfax Water.

In recent months, discussions with Fairfax Water have led to the concept of an alternative means of meeting future water demands that is more effective from both a cost and operational perspective. In 2014, Fairfax Water acquired the 24-inch transmission main running through the Town along the W&OD trail from the City of Fairfax. This main was the sole source of supply for the Town prior to 1985. At which time the City of Fairfax could no longer meet the combined demands of their system, the demands of the Town of Herndon and the demands of eastern Loudoun County. Therefore, as suggested by Fairfax Water staff, a pump station connected to this transmission main would provide for any increased water needs of the Town.

The concept calls for this station to be designed, owned and operated by Fairfax Water as the most efficient way to operate this facility. At this time, a preliminary engineering study is proposed by Fairfax Water's engineering consultant to confirm a location adjacent to the Herndon Police Department facility, establish pump and pipe sizing, layout and operations, develop a pump station footprint, and study flood plain and related permitting issues.

Fiscal Impact:

Funds to support this expenditure are in the Water Utility Master Plan Improvements portion of the FY 2020-FY 2025 CIP.

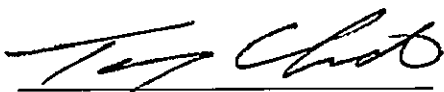
Staff Recommendation:

Staff has reviewed the proposal and recommends Town Council authorize the Agreement and reimbursement of up to \$107,000 to Fairfax Water for a preliminary engineering study of a water pumping station to provide future water service to the Town.

Attachments:

Draft Resolution.

Staff:

A handwritten signature in black ink, appearing to read "Tammy Chastain", written over a horizontal line.

Tammy Chastain
Deputy Director of Public Works

TOWN OF HERNDON, VIRGINIA

RESOLUTION

MAY 28, 2019

Resolution- to approve an Agreement with the Fairfax County Water Authority authorizing an Engineering Consulting Study of a Water Pumping Station and to Reimburse Fairfax Water for the cost of the study.

WHEREAS, The Town of Herndon is a wholesale water customer of Fairfax Water; and

WHEREAS, the Town will require additional water transmission capacity in the future; and

WHEREAS, the Town desires that Fairfax Water undertake an engineering study for a pumping station to supply the town's future water supply needs; and

WHEREAS, Fairfax Water has submitted a proposal to the Town for \$107,000 to perform this study; and

WHEREAS, funds to support this contract are available in the FY 2020-FY 2025 CIP.

NOW, THEREFORE, BE IT RESOLVED that the Town Council of the Town of Herndon, Virginia, hereby approves the Agreement to authorize an engineering consulting study of a water pumping station and to reimburse Fairfax Water up to \$107,000 for the study and that the Mayor is hereby authorized to sign and deliver the agreement on such form approved by the Town Attorney and any other instrument necessary to evidence or effectuate this agreement.



FAIRFAX COUNTY WATER AUTHORITY
8570 Executive Park Avenue, Fairfax, Virginia 22031-2218
www.fairfaxwater.org

FINANCE DIVISION

Michele L. Moore
Director
(703) 289-6015
mimoore@fairfaxwater.org

April 22, 2019

Jennie A. Tripoli, CPA
Director of Finance
Town of Herndon
777 Lynn Street
Herndon, VA 20170

Re: Town of Herndon Booster Pump Station Proposal – Preliminary Engineering Report
FW Project 2642, Division I

Dear Jennie:

The Town of Herndon (the "Town") recently purchased additional water supply capacity from Fairfax Water, exceeding the amount available from existing metered connections. Additional metered connections and/or system improvements are required to support the Town's total purchased capacity of 5.7 MGD. Based on discussions between Fairfax Water and Town staff, a new booster pump station supplied from Fairfax Water's existing 24-inch transmission main along the Washington and Old Dominion (W&OD) Trail has been identified as a viable alternative to provide adequate additional capacity and meet projected Town water needs.

Fairfax Water's engineering consultant, Hazen and Sawyer, has prepared a scope of services and fee (enclosed) to evaluate the feasibility of a new booster pump station on Town of Herndon Police Department property, located at 397 Herndon Parkway and adjacent to Fairfax Water's existing 24-inch main, and prepare a Preliminary Engineering Report. The scope of work has been reviewed by Town engineering staff and includes development of a conceptual design and preparation of a planning-level construction cost estimate.

Execution of this proposal obligates the Town to fully reimburse Fairfax Water for all costs associated with preparation of the Town of Herndon Booster Pump Station Preliminary Engineering Report, estimated as follows:

Hazen and Sawyer Engineering Services Task Order	\$84,800
Contingency (10%)	\$8,480
Fairfax Water Staff Time (15%)	\$13,992
Total Estimated Cost	\$107,272

Town of Herndon Booster Pump Station Proposal – Preliminary Engineering Report
FW Project 2642, Division 1
April 22, 2019

Please acknowledge your acceptance of this proposal by signing and returning this letter to my attention at Fairfax Water, 8570 Executive Park Avenue, Fairfax, Virginia 22031. Execution of this agreement is required prior to Fairfax Water issuing the Notice to Proceed to Hazen and Sawyer to prepare the Preliminary Engineering Report.

Please contact me at (703) 289-6015 or email at mmoore@fairfaxwater.org if you have any questions or would like to discuss further.

Sincerely,



Michele L. Moore
Director, Finance Division

Enclosure as noted

cc: Jamie Bain Hedges
Director, Planning & Engineering
Fairfax Water

Robert J. Etris
Operations Manager
Town of Herndon

ACCEPTED:

Authorized Signature _____ **Date:** _____

TOWN OF HERNDON

SCOPE OF SERVICES

General Engineering Services – Agreement 4600000027

Task Order No. 21

Project 2642 Division 001

Town of Herndon Booster Pump Station Preliminary Engineering Report

A. PURPOSE

The Town of Herndon (the "Town") recently increased their purchased water supply capacity to 5.7 MGD. This exceeds the amount available from Fairfax Water's existing metered connections to the Town and requires that the Town fund a system improvement to provide the necessary upgrades for the required supply. The increased demand will require a new booster pump station located near Fairfax Water's existing 24-inch transmission main routed along the Washington and Old Dominion (W&OD) Trail. The purpose of this task is for Hazen to assist FW with developing the conceptual design and cost estimate for the booster pump station.

B. TASK OVERVIEW

This task encompasses developing a concept design and preparation of a planning level cost estimate to determine the feasibility of moving forward with the project.

Task 1 consists of the review of information provided by Fairfax Water, performing a site visit, and developing conceptual designs for up to three alternatives on the Town of Herndon Police Station Site, including conceptual pump station layouts. The pump station will be a pre-engineered structure complete with equipment, piping, electrical and controls. Hazen will perform a site visit to determine if there are any visible utilities, environmental constraints or other features that could affect the development of the site. Hazen will identify permits and approvals to construct the facility, and temporary and permanent easements. Project costs and schedules will also be developed.

Task 2 (Optional) consists of flood plain modeling. The proposed location of the pump station may conflict with the existing 100-year flood plain. An allowance is being provided for these services.

C. BACKGROUND INFORMATION

Fairfax Water recommends locating the booster pump station on the Town's property at the Town's Police Department site which will connect to the existing 24-inch transmission main along the W&OD trail. The proposed site offers the following:

1. There is open space off the southeast corner of the building that would be suitable for locating the booster pump station.
2. The site is adjacent to or partially in a floodplain which would require above ground pump station construction
3. Access to the site can be achieved from either W&OD or Sugarland Run trails
4. The site is near the 24-inch transmission main, minimizing yard piping installation costs.

This scope of work is based on the following assumptions:

1. The pump station design criteria will be provided by Fairfax Water
2. The pump station equipment will be housed in a pre-engineered structure with equipment, piping, valves and electrical panels. Hazen will evaluate pre-engineered systems that include structure, equipment, piping, valves, and electrical that will be factory assembled and systems that will provide separate pre-engineered structure and components that will require field installation. Hazen will provide a recommendation based on cost, available systems, architectural features, and the ability to meet future conditions.
3. The pump station will have an initial firm capacity of 6 MGD with provisions to increase the capacity to 10 MGD. Pumps will be centrifugal pumps equipped with VFD's.
4. The pump station site layout will include bypass piping and valves
5. The standby generator will be sized to operate one 3 MGD pump

D. CONCEPTUAL DESIGN

Task 1 – Technical Memorandum

The technical memorandum will describe the proposed booster pump station and waterline connections in detail and contain the following:

1. Introduction
 - a. Background
 - b. Purpose
2. Description of Alternatives
 - a. Summary of Alternatives. Hazen will develop up to three pump station alternatives located on the Police Station site, considering different locations on the site, different pumping station footprints, pumping configurations, etc.

- b. **Recommended Alternative.** Hazen will provide a recommendation for the pump station arrangement that best meets Fairfax Water's and the Town of Herndon's requirements.
3. **Pump and Pipeline Sizing.** This project scope is based on the design of a pump station with an initial 6 MGD firm capacity (three 3-MGD pumps) with provisions to expand to 10 MGD (three 5-MGD pumps). Fairfax Water will provide the design criteria to be used for development of the alternatives. Hazen will provide a recommendation on whether to install the electrical service capacity required to support the future 5-MGD pumps with the initial 3-MGD pump installation.
4. **Preliminary Pump Station Layouts** will be developed showing the general arrangement of equipment and major piping. The layouts will be presented on 11 x 17-inch drawings.
5. **Preliminary Site Layouts** will be developed to show the pump station, access roads, pipeline routing, site piping and utilities. This will include a field reconnaissance of the site to visually observe potential utilities and surface features that may conflict with the pump station and pipelines.
6. **Conduct a field reconnaissance** for the site to identify the likely environmental development constraints, such as the presence/absence of wetlands, streams, and Chesapeake Bay Resource Protection Areas (RPA). This effort is not an official wetland or RPA delineation; it does not include compiling data sheets, flagging the boundaries, or an onsite survey to locate any boundary flags, etc. It includes the necessary research and initial investigations to determine: whether there are areas of the properties that appear to be wetlands or RPA that will require formal delineations; an estimate of where and how much of the subject property is wetland or RPA; and an assessment of the impacts that these resources will have on the ability to develop that subject property.
7. **Conduct easement research** on the parcels that may be impacted by the proposed station and waterline. Determine the precise property boundaries between the Town, Fairfax County Park Authority, and NOVA Parks if pump station or associated pipelines cross property lines.
8. **Using Fairfax County GIS data** and any plans provided by others, prepare base mapping, review the conceptual layout and address key items such as site layout options, site/routing constraints, preliminary grading, drainage, utility services, connection and routing of water mains, access alternatives, easement requirements and other issues as necessary to aid the assessment and feasibility of this project.
9. **Review the improvements shown on the concept design options** against existing conditions and stormwater management regulations and assess what SWM/BMP facilities may be required to meet the regulations. This concept

submission does not include any design of the SWP/BMP facilities only an identification of what may be required.

10. **Electrical Service.** Electrical service will be coordinated with Virginia Dominion Power regarding location of source, connection requirements, and costs. A standby generator will be used to provide back-up power. Hazen will evaluate natural gas and diesel as the fuel source for the generator and provide a recommendation based on cost, availability, and environmental considerations.
11. **Permit Requirements.** Hazen will identify the permits and approvals required to construct the booster pump station. A description and the anticipated duration to obtain the permits will be included with the identified permits. The anticipated permits include:
 - a. Town of Herndon approval of the rough grading permit,
 - b. Other Fairfax Water-controlled (non-contractor) permits from Town of Herndon
 - c. Town of Herndon contractor-controlled permits
 - d. Virginia Department of Health Certificate to Construct
 - e. NOVA Parks
 - f. Town of Herndon Parks and Recreation
12. **Special Construction Requirements and Constraints**
 - a. Connection to Existing 24-inch Transmission Main
 - b. Coordination with Other Projects and Police Station Operations
13. **Estimate of Probable Construction Costs and Project Schedule.** Hazen will prepare an AACE Level 3 cost estimate to be used for budget authorization. Hazen will develop a project schedule using Microsoft Project in a Gantt chart format, which will show major planning, design, permitting and construction activities.
14. **Pump Station Exterior Architecture –** Hazen to coordinate the exterior architecture with the Town of Herndon.

Task 2 – Meetings

Meetings anticipated in this scope of work include:

1. Project kick-off meeting
2. Coordination meeting with Fairfax Water, Town of Herndon and the design engineer for the planned sewage pump station that will be located on the same site.
3. Five coordination meetings with the Town and/or regulatory agencies, including NOVA Parks and Herndon Parks and Recreation.
4. Draft technical memorandum review meeting.

Task 3 – Floodplain Alteration Type II Study (Optional Service)

The main purpose of this Task is to provide professional engineering services to evaluate impacts to the Sugarland Run floodplain related to grade changes due to the construction of the booster pump station and appurtenances.

This will involve the following activities:

- Acquisition and review of the Effective FEMA model from the Fairfax County Floodplain Administrator or from the FEMA Library (typically HEC-RAS model). Activities related to this step include:
 - Running the Effective model to create a Duplicate model and verify results
 - Correcting the Effective model as needed to address identified discrepancies and preparing a Corrected Effective model
 - Running the Corrected Effective model to verify results
- The Corrected Effective model will be renamed to be “Existing Conditions model” and will be updated by using new and/or modified FEMA cross sections of the area using existing grades, and if needed, complementing the cross sections with available LiDAR data
- Design of grade modifications
- Evaluation of impacts to the floodplain based on grade modifications
 - A Proposed Conditions model will be developed based on the proposed grades and pump station location (and related appurtenances)
 - The model will be run
 - Detailed hydraulic results and “analysis reach” comparisons will be evaluated to demonstrate no off-site increases in base-flood water surface elevation, floodway water surface elevation, no increases in velocities and/or floodway widths
- Given that there can be no-rise and no impacts to the existing floodway for the proposed pump station, up to two additional model runs will be performed based on station location and grade adjustments to arrive at a no-rise/no impact situation (if possible)
- Completion of a no-rise report (if possible)
- Coordination with the Fairfax County Floodplain Administrator as required
- One (1) Meeting with Fairfax Water to Discuss Results of the Flood Plain Study
- One (1) round of revisions to the Floodplain Study

E. DELIVERABLES

Task - 1 Hazen shall provide:

Preliminary Technical Memorandum: One (1) electronic copy in PDF format

Final Technical Memorandum: Four (4) hard copies and one (1) electronic copy in PDF format

Task – 2 Hazen shall provide:

Design of Grade Modifications: Three (3) hard copies (11 X 17 drawings) and one (1) electronic copy in PDF format

No Rise Report: Three (3) hard copies and one (1) electronic copy in PDF format

F. SCHEDULE

The work included in this Task Order shall be completed in accordance with the following schedule:

- | | |
|-------------------------------------|--|
| 1. Project Kick-off Conference Call | 2 Weeks after Notice to Proceed (NTP) |
| 2. Preliminary Technical Memorandum | 8 Weeks after NTP |
| 3. Preliminary TM Review Meeting | 2 Weeks after TM Submittal |
| 4. Final TM Submittal | 2 Weeks after Comments received from FW on the Preliminary TM |
| 5. Final Submittal | 3 Weeks after Comments received from FW on the Final Submittal |
| 6. No Rise Report | 8 Weeks after Authorization to Proceed |

G. FEES

The authorized not-to-exceed fee for providing engineering and related services described herein is \$84,800 as shown on the attached Excel sheet. This includes \$47,900 for the basic services and \$34,300 for the Floodplain Alteration Study if authorized by Fairfax Water to perform this work.

Basis of Payment

This work is being performed in accordance with the Basic Ordering Agreement for General Engineering Services between Fairfax Water and Hazen and Sawyer dated March 27, 2017.

1.069

Summary of Costs

	<u>Fw's Share</u>	<u>Applicant's Share</u>	<u>Total Cost</u>
	---	\$107,000.00	\$107,000.00
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TOTAL COST	---	\$107,000.00	\$107,000.00
	PRIOR APPROPRIATIONS		\$0.00
	ADDITIONAL APPROPRIATIONS		\$107,000.00