

RESOLUTION NO. 430

A RESOLUTION OF THE WOODINVILLE CITY COUNCIL ADOPTING THE DOWNTOWN STREETScape MASTER PLAN AND DIRECTING THE CITY MANAGER TO RETURN WITH IMPLEMENTING ACTIONS TO ESTABLISH THESE CONCEPTS AS REQUIRED DEVELOPMENT STANDARDS.

WHEREAS, the City Council desires to implement new design standards for the Downtown-Little Bear Creek Corridor in order to create a unique and identifiable image to enhance the character of downtown Woodinville and attract tourists, businesses, and residents; and

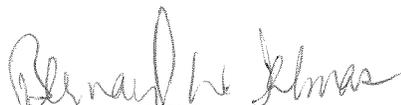
WHEREAS, the City retained a consultant to help develop a Downtown Streetscape Master Plan to articulate the overall vision of the Downtown-Little Bear Creek Corridor Master Plan; and

WHEREAS, the City Council has sought public feedback on the proposed Plan through public hearings, open houses, articles on the City's webpage and in the City's newsletter, and press releases;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF WOODINVILLE, WASHINGTON, HEREBY RESOLVES AS FOLLOWS:

Section 1. The Woodinville City Council hereby adopts the 2012 Downtown Streetscape Master Plan, including amendments, as shown in Exhibit A, and directs the City Manager to return with implementing actions to establish these concepts as required development standards.

RESOLVED this 11th day of December, 2012.



BERNARD W. TALMAS, MAYOR

ATTEST/AUTHENTICATED:



JENNIFER KUHN, CITY CLERK

City of Woodinville

Downtown Streetscape Master Plan

12/14/2012

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1 INTRODUCTION

DOWNTOWN STREETSCAPE MASTER PLAN PURPOSE

The intent of the *Downtown Streetscape Master Plan* is to illustrate an overall vision for the downtown circulation network and define the character and role of each of street in the network. The master plan primarily addresses aesthetic improvements, such as planting, lighting, public and/or private on-street parking, and street furnishings that contribute to the image and define the character of each street. It does not address engineering issues, such as traffic flow, street channelization, and on-street bicycle facilities on existing streets, which are addressed in the Transportation Plan.

Implementation of the *Downtown Streetscape Master Plan* will create a unique and identifiable image to enhance the character of downtown Woodinville and attract tourists, businesses, and residents. The *Downtown Streetscape Master Plan* is also intended to improve the comfort, visual interest, safety and security of pedestrian environment; thereby making walking and biking an attractive transportation alternative in Woodinville. Meeting these two objectives will consequently improve the livability and commercial viability of downtown Woodinville.

RELATED PROJECTS

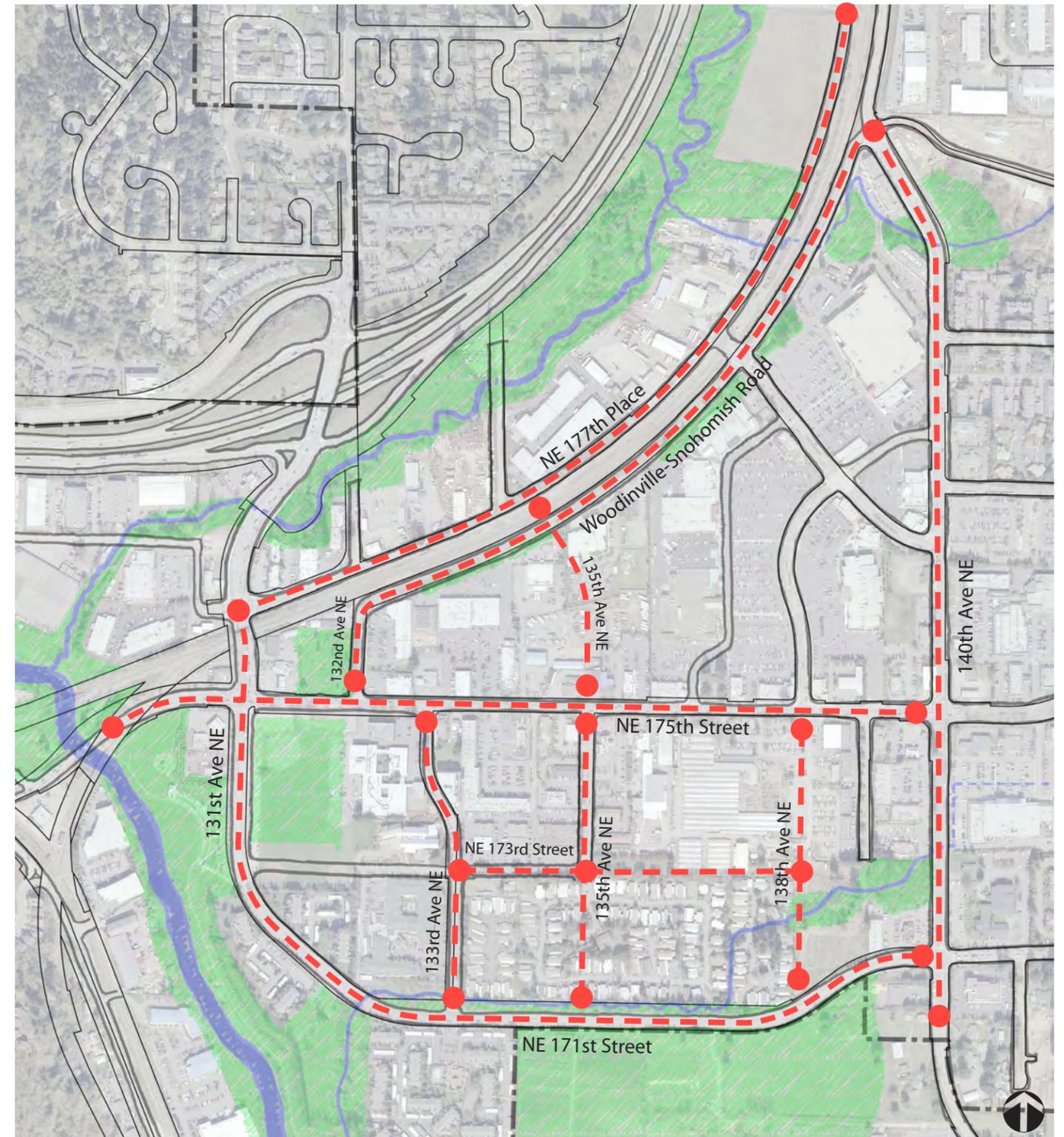
The *Downtown Streetscape Master Plan* dovetails with the *Downtown - Little Bear Creek Corridor Master Plan*, which provides a framework for private development and public investment activities in the downtown. As part of the *Downtown - Little Bear Creek Corridor Master Plan*, the community articulated a vision statement and guiding principles. This vision statement is as follows:

“Woodinville is a pleasant place in which to live, work, play, and visit, with a compact, inviting downtown that is attractive and functional.”

PROJECT SCOPE

The streetscape master plan will address the following streets in the downtown:

- NE 175th Street between Woodinville-Redmond Road and Woodinville-Duvall Road (“Main Street”)
- 131st Avenue NE and NE 171st Street (“South Bypass”) between SR 202 and 140th Avenue
- 132nd Avenue NE and Woodinville-Snohomish Road from NE 175th Street to 140th Avenue NE
- 133rd Avenue NE between NE 171st Street and NE 175th Street
- 140th Avenue NE between Woodinville-Snohomish Road and NE 171st Street
- The proposed extension of 135th Avenue NE between 171st Street and NE 177th Place
- The proposed 138th Avenue (“Garden Way”) between 171st Street and 175th Street
- NE 177th Street/NE 177th Place from 131st Avenue NE to Woodinville-Snohomish Road (“Little Bear Creek Parkway”)
- 173rd Street between 133rd Avenue and 138th Avenue (and possible extension to 140th Avenue)



Scope diagram

2 EXISTING CONDITIONS

NE 175TH STREET

Key characteristics:

- Three lane cross-section
- Continuous two-way left turn lane
- Bike lanes
- No on-street parking
- Lack of sidewalk buffer
- High prevalence of curb cuts
- Many auto-oriented businesses that are set back from the right of way

- Sidewalk-edge elements, such as walls and trellises, help define the street envelope
- Inconsistent street trees distribution and spacing
- Long distances between crosswalks (400 to 700 feet)
- Minimal crosswalk treatment
- Lots of visual clutter
- Substandard ADA compliance
- Minimal transit stop amenities (Metro transit routes 236, 237, 251, 311, 372, 931)



CONTEXT MAP



NE 175th Street cross section



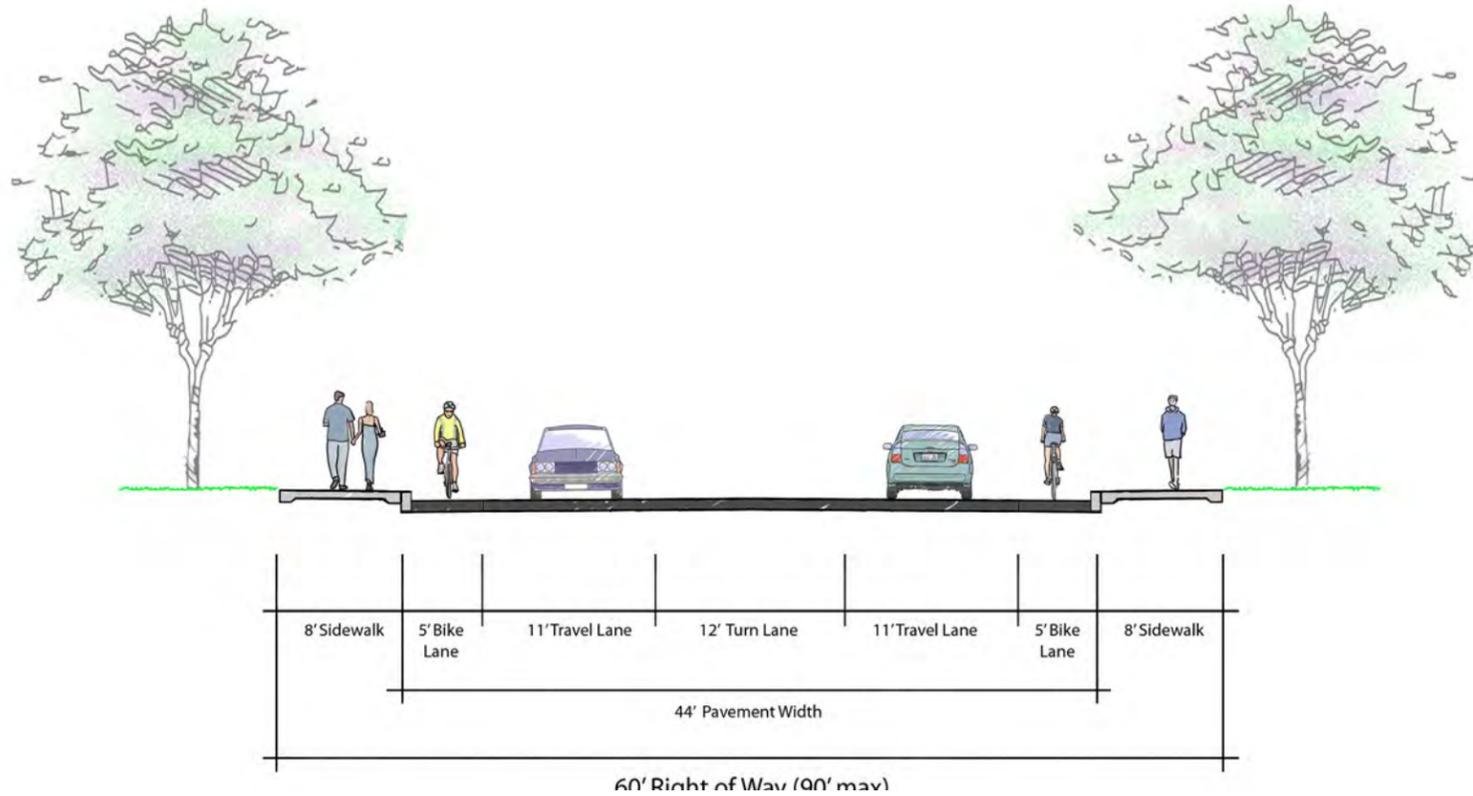
Visual clutter



Lack of sidewalk buffer



Frequent curb-cuts



NE 175th Street - Typical Existing Cross Section



Substandard ADA compliance



Minimal transit stop amenities



NE 175th Street cross section



Sidewalk-edge element helps define the street envelope

131ST AVENUE NE AND NE 171ST STREET (“SOUTH BYPASS”)

Key characteristics:

- Five lane cross-section
- Continuous two-way left turn lane
- No bicycle facilities
- No on-street parking
- Lack of sidewalk buffer
- Naturalistic landscaped background
- Formal, evenly spaced flowering pear trees
- Rural/agricultural character (south side)
- Riparian street edge (Woodin Creek on north side)
- Very limited pedestrian crossing opportunities
- Minimal adjacent development
- Minimal transit stop amenities (Metro transit route 236)



CONTEXT MAP

EXISTING CONDITIONS



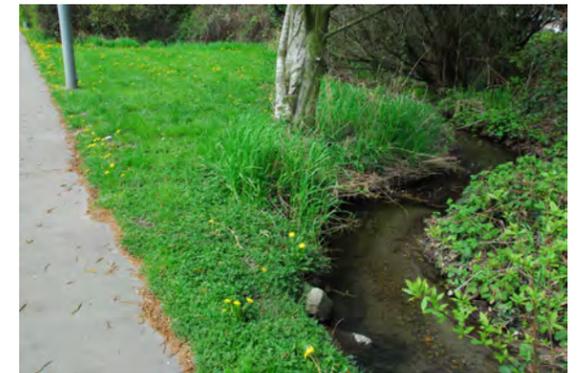
NE 173rd Street cross section



Set back land uses



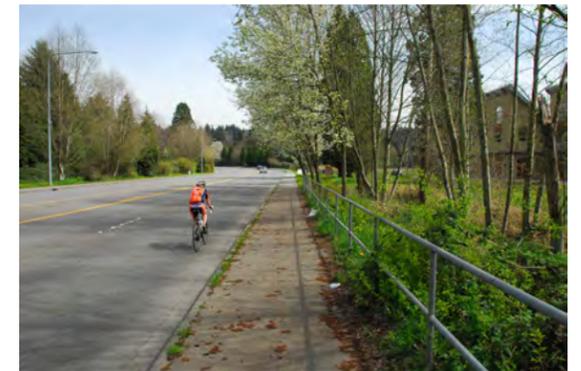
Rural/agricultural character



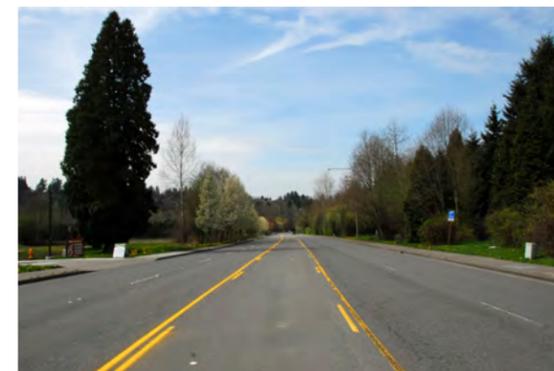
Riparian street edge



131st Avenue NE cross section



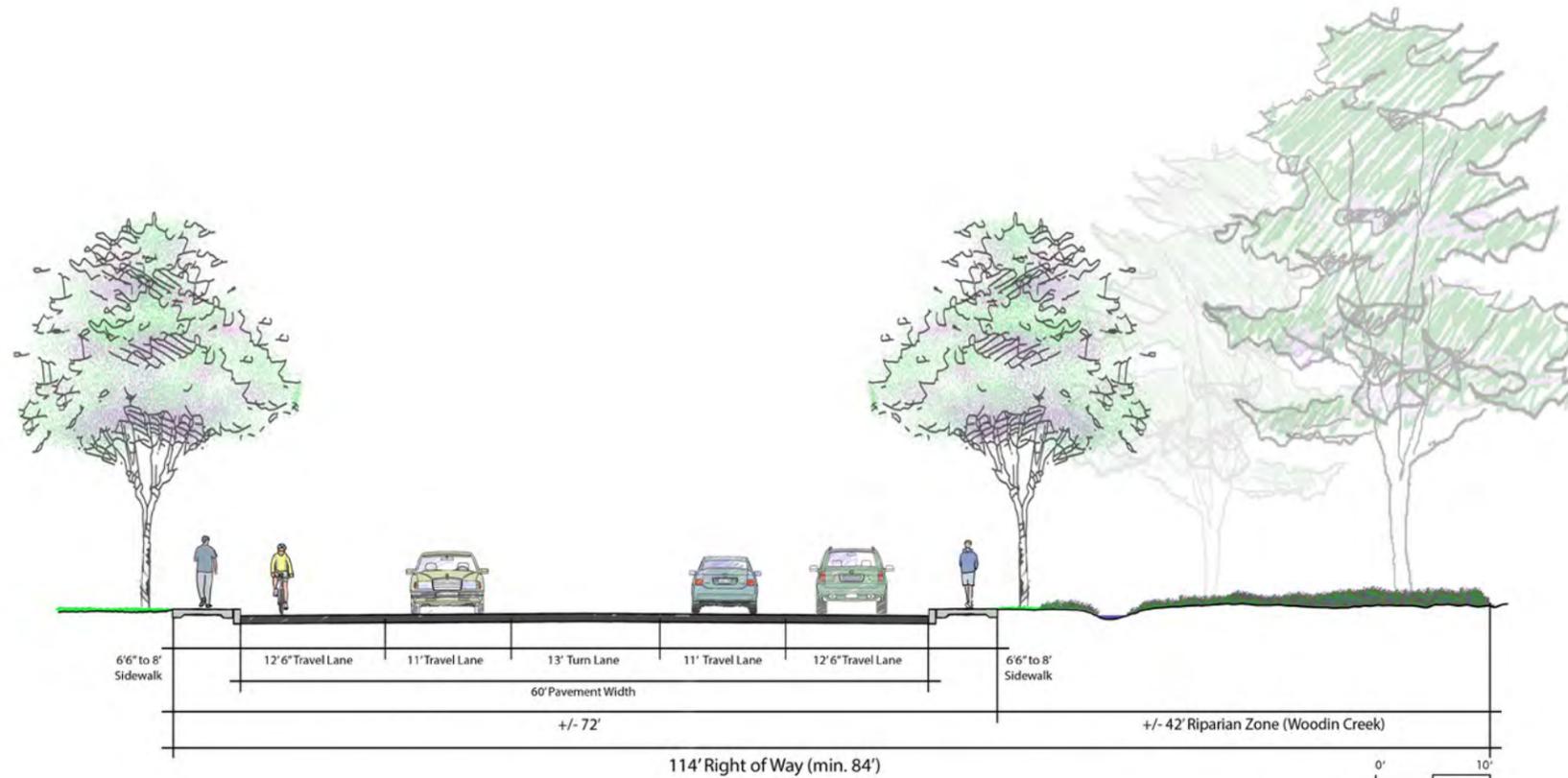
Typical sidewalk condition and lack of bicycle facilities



NE 171st Street cross section



Lack of sidewalk buffer



131st Avenue NE and NE 171st Street ("South Bypass") - Existing Cross Section

133RD AVENUE NE

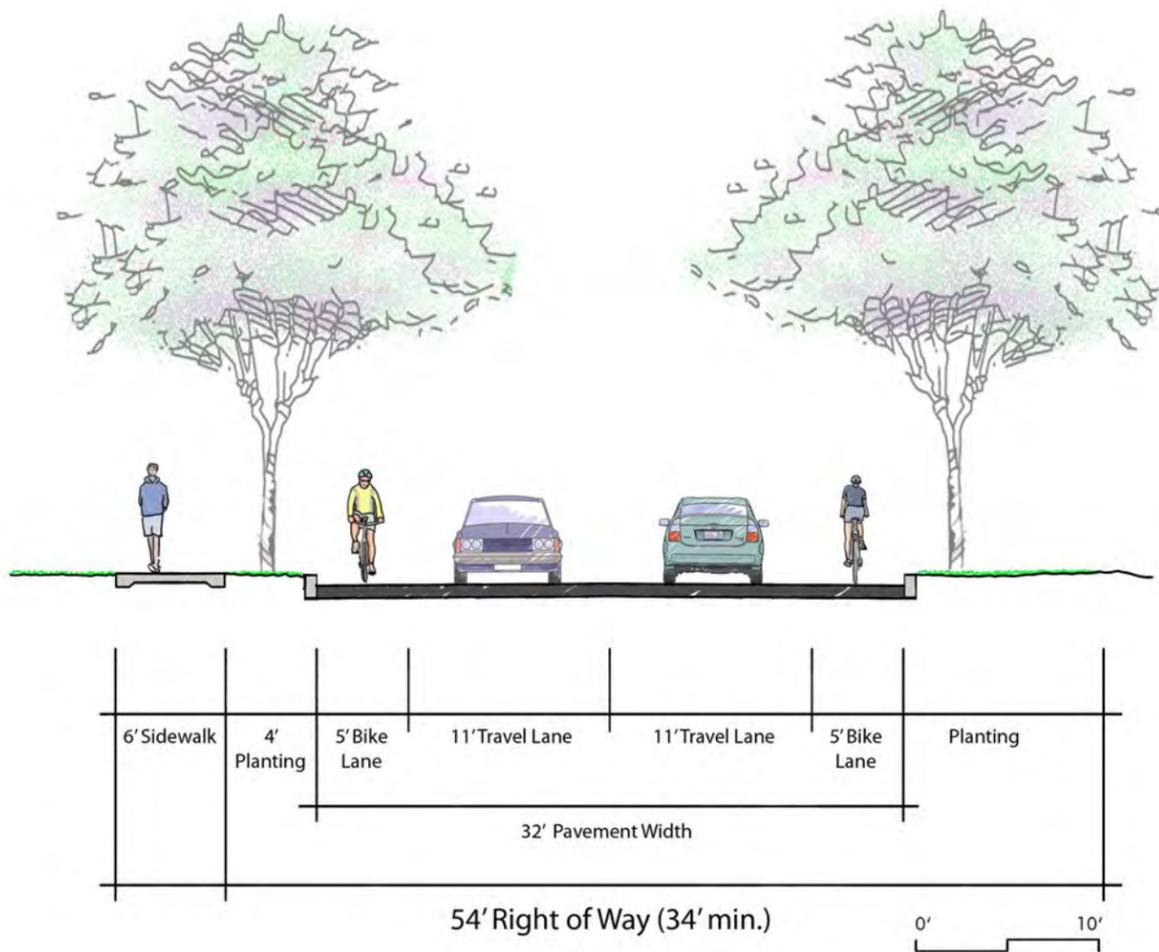
Key characteristics:

- Two lane cross-section
- Left turn lanes at intersections
- Bike lanes on south segment
- Some on-street parking on north segment
- No sidewalk on east side (south segment); buffered sidewalk on west side
- Limited pedestrian crossing opportunities
- Development set back from street edge



CONTEXT MAP

EXISTING CONDITIONS

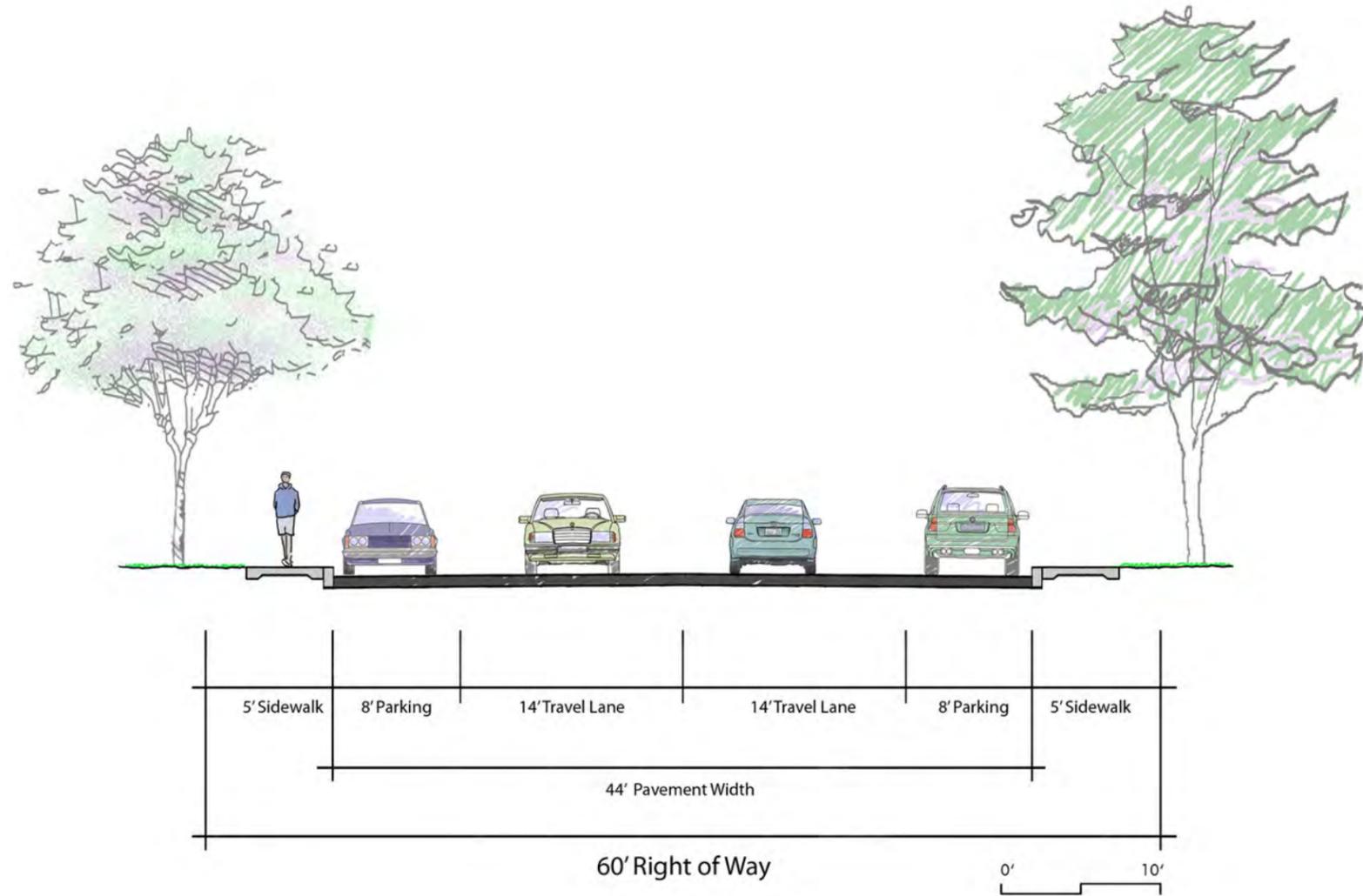


133rd Avenue NE - Existing Cross Section

135TH AVENUE NE

Key characteristics:

- Two lane cross-section
- Parallel parking on both sides
- Very low traffic volumes
- Inconsistent street edge
- Varied landscaping



135th Avenue NE - Existing Cross Section



CONTEXT MAP

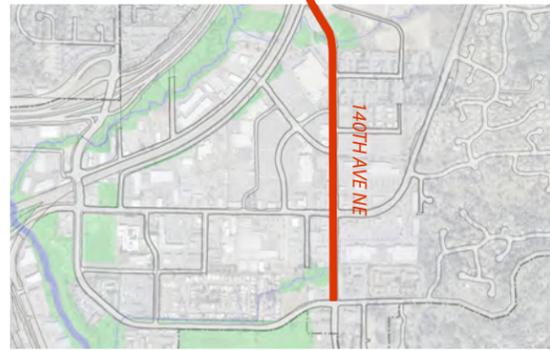
EXISTING CONDITIONS



140TH AVENUE NE

Key characteristics:

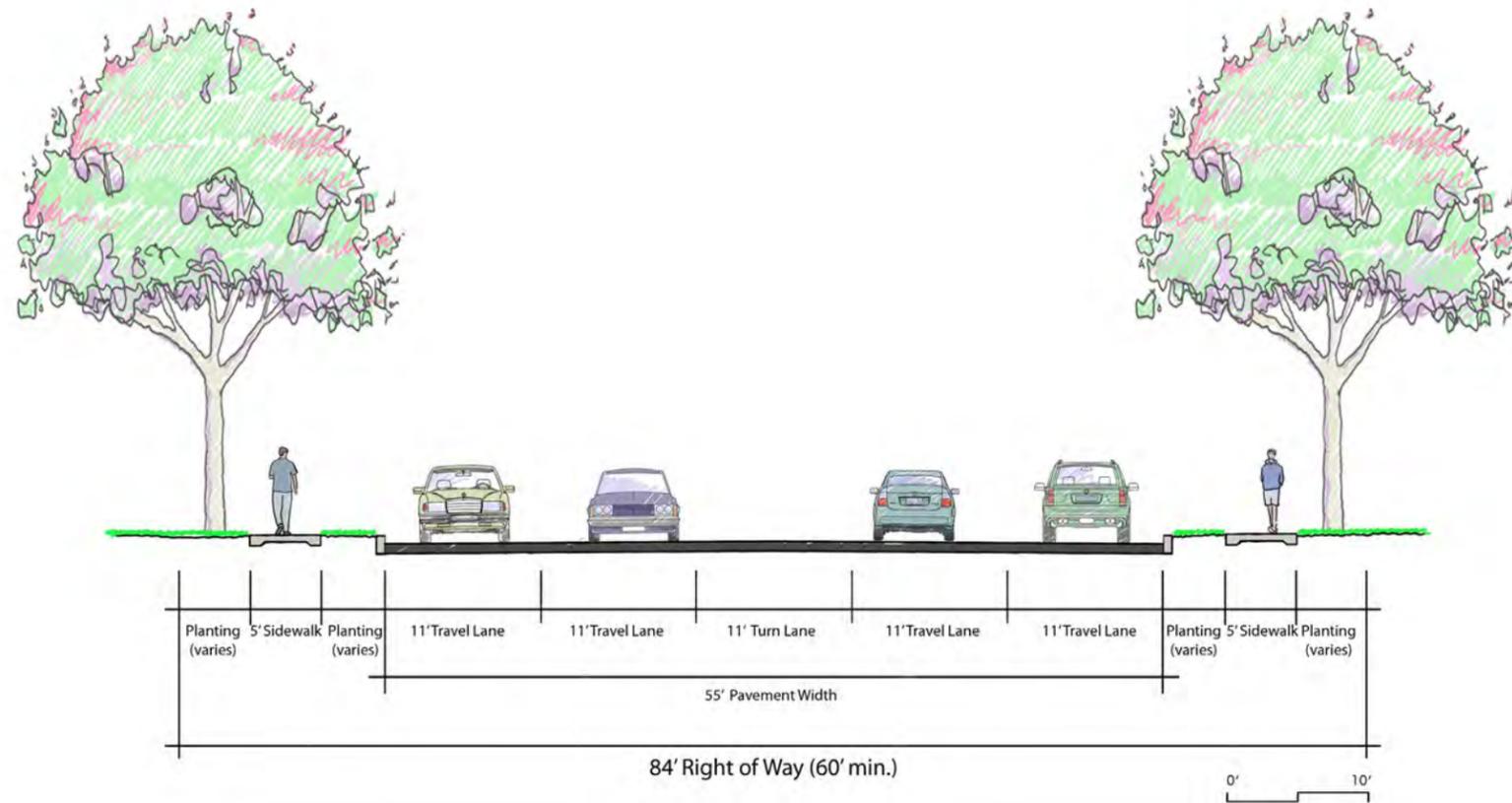
- Five lane cross-section
- Continuous two-way left turn lane
- No bicycle facilities
- No on-street parking
- Lack of sidewalk buffer in places
- Street trees inconsistent
- Very limited pedestrian crossing opportunities
- Adjacent development varies
- Substandard ADA compliance
- Woodinville Park-and-Ride lot at NE 179th Street
- Minimal on-street transit stop amenities (Metro transit route 236)



CONTEXT MAP



140th Ave NE cross section



140th Avenue NE- Existing Cross Section

EXISTING CONDITIONS



Crosswalk



Adjacent land use



Sidewalk conditions



Substandard ADA compliance



Sidewalk conditions



Adjacent land use



Sidewalk conditions



NE 173rd Street Intersection

NE 177TH PLACE

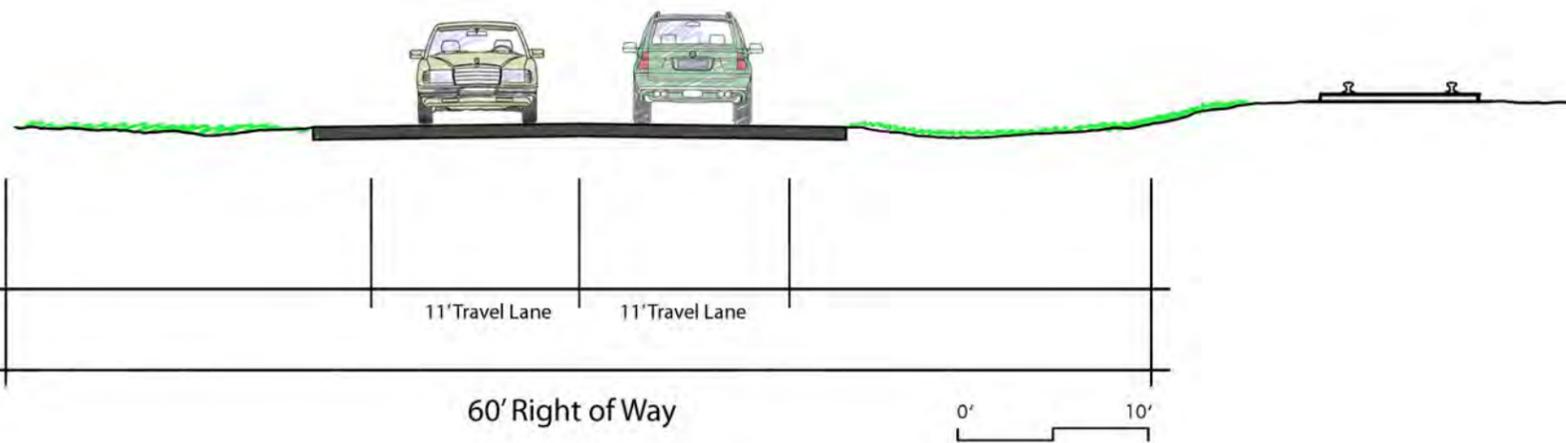
Key characteristics:

- Two lane cross-section
- Left turn lanes at intersections
- No sidewalks
- Railroad right of way on east side
- Very limited pedestrian crossing opportunities
- Set back adjacent development



CONTEXT MAP

EXISTING CONDITIONS



NE 177th Place - Existing Cross Section

WOODINVILLE-SNOHOMISH ROAD

Key characteristics:

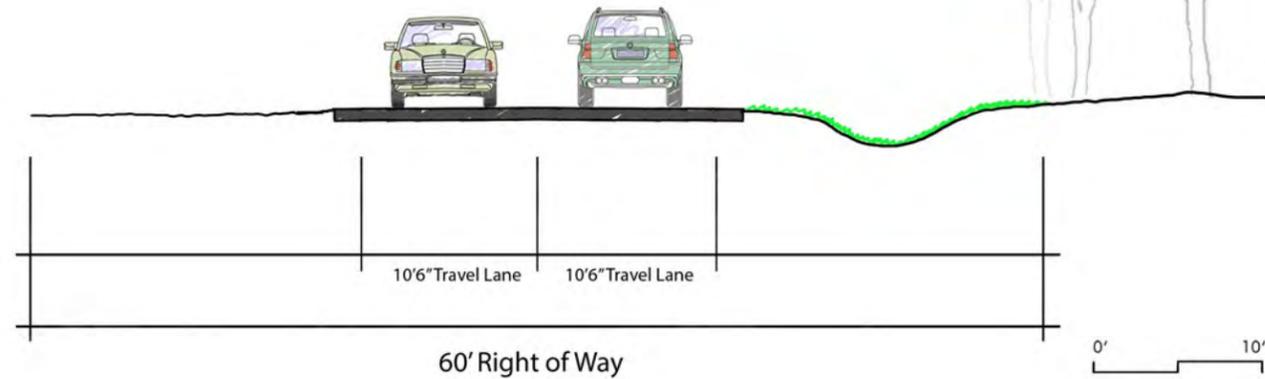
- Two lane cross-section
- Left turn lanes at intersections
- Bike lanes in some locations
- Some on-street parking
- No sidewalk on west side; buffered sidewalk on east side
- Naturalistic, evergreen landscaped edge on east side
- Railroad right of way on west side
- Very limited pedestrian crossing opportunities
- Minimal adjacent development
- Development set back from street edge



CONTEXT MAP



132nd Avenue NE



Woodinville-Snohomish Road - Existing Cross Section

EXISTING CONDITIONS



Woodinville-Snohomish Road



Railroad Right of Way



Evergreens on east side



Naturalistic landscape on east side



Woodinville-Snohomish Road



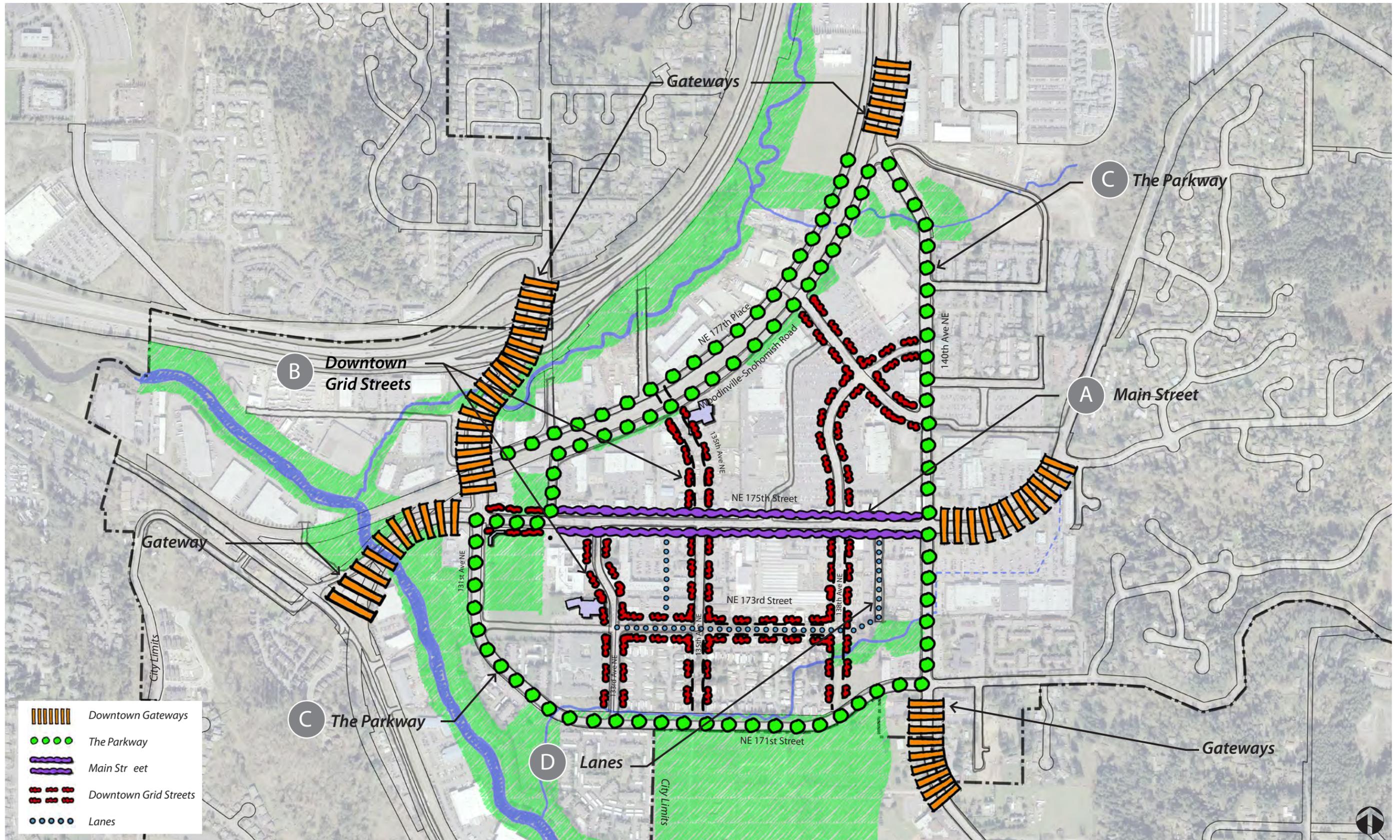
140th Avenue NE intersection



North end



Critical area on east side



3 STREETScape FRAMEWORK PLAN

The *Streetscape Framework Plan* illustrates an overall strategy for how each street fits within the downtown street network. Each street in the downtown contributes to the overall image of the downtown, but not all streets will have the same function and character. The framework plan identifies four different types of streets and illustrates the geographic relationship between them. The *Streetscape Framework Plan* ensures that the different street types and street design standards compliment each other and together support a single vision for Downtown Woodinville.

Street segments that serve as gateways to downtown Woodinville are identified on the *Streetscape Framework Plan*. Gateway signage is addressed in the *Signage and Wayfinding Plan*.

STREET TYPES

The *Streetscape Master Plan* recommends expanding the range of street types to four from three streets that were in the previously proposed *Little Bear Creek Corridor Master Plan*, there are as follows:

- A *Main Street*
- B *Downtown Grid Streets*
- C *Parkways*
- D *Lanes*

A MAIN STREET (NE 175TH ST.)

NE 175th Street serves as Woodinville's *Main Street* and should have its own unique character. Functionally, it is the main route through the downtown, is geographically in the center of the downtown and provides access to a majority of the businesses and destinations in the downtown. *Main Street* must accommodate up to 17,000 vehicles per day and have smooth traffic flow, while providing a comfortable pedestrian environment along the sidewalks.

For NE 175th Street to achieve a unique design character, many of the streetscape elements should be different from those chosen for the other streets, such as the street tree species, lighting, or paving materials.

B DOWNTOWN GRID STREETS

The *Downtown Grid Streets* do not have to accommodate large traffic volumes, so are intended to provide parking, access to businesses, and urban open space. *Downtown Grid Streets* will be narrow and have lots of "friction" along the edges to keep traffic speeds low. They will have a mix of parking ranging from parallel to angled to perpendicular depending on the specific right of way.

C PARKWAYS

Parkways encircle downtown Woodinville and provides relatively high vehicular capacity at moderate speeds; these streets include: Woodinville-Snohomish Road, 140th Avenue NE, NE 171st Street and 131st Avenue NE. *Parkway* streets will be planted to reinforce and connect the existing open space features adjacent to them. Once built out, the *Parkways* will create an informal naturalistic landscape ring around the downtown core and will contrast with the other more urban and formal downtown street types.

D LANES

Similar to alleys, *Lanes* are narrow and very slow mixed-mode streets, typically without sidewalks, that allow vehicular access but give priority to pedestrians and cyclists. *Lanes* provide connections between streets and through parking lots and provide access to the sides and backs of buildings.

4 STREET PROTOTYPES

A MAIN STREET (NE 175TH ST.)

NE 175th Street is effectively Woodinville's "Main Street" and should have its own unique character that distinguishes it from the other streets in the town center. The design of NE 175th Street should balance vehicular traffic flow and business access with safe and secure pedestrian and bicycle access and transit operations.

For NE 175th Street to have a unique design character, the primary streetscape elements, such as street trees, lighting, and paving materials, need to be different from those selected for the other streets.

Street tree and shrub planting along NE 175th Street should be formal and evenly spaced to create a rhythm down the street. Shrub planting should be fine-grained to provide interest at slower speeds.

PROPOSED CROSS SECTION

The streetscape design for NE 175th Street should be bold and distinguish it from the other downtown streets.

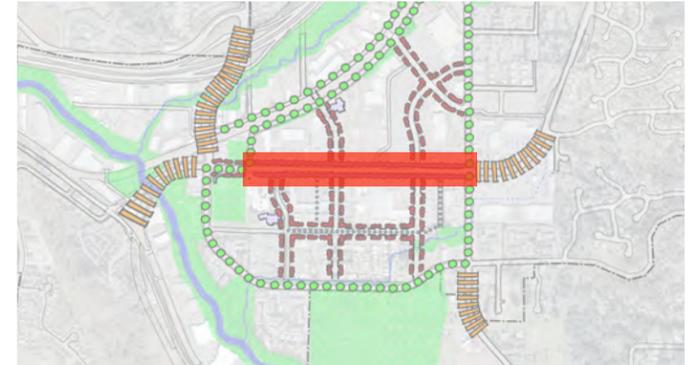
NE 175th Street will have one travel lane in each direction, a two way left turn lane and bike lanes on both sides. It will not have parking. Parallel parking serves as a buffer between the travel lane and the sidewalk and the lack of parking on NE 175th Street eliminates this buffer. Therefore, an important consideration for NE 175th Street is the provision of a buffer between the traveled way and the sidewalk.

NE 175th Street should have different streetscape features, including street trees, pedestrian lighting, and furnishings. NE 175th Street will have the following dimensions:

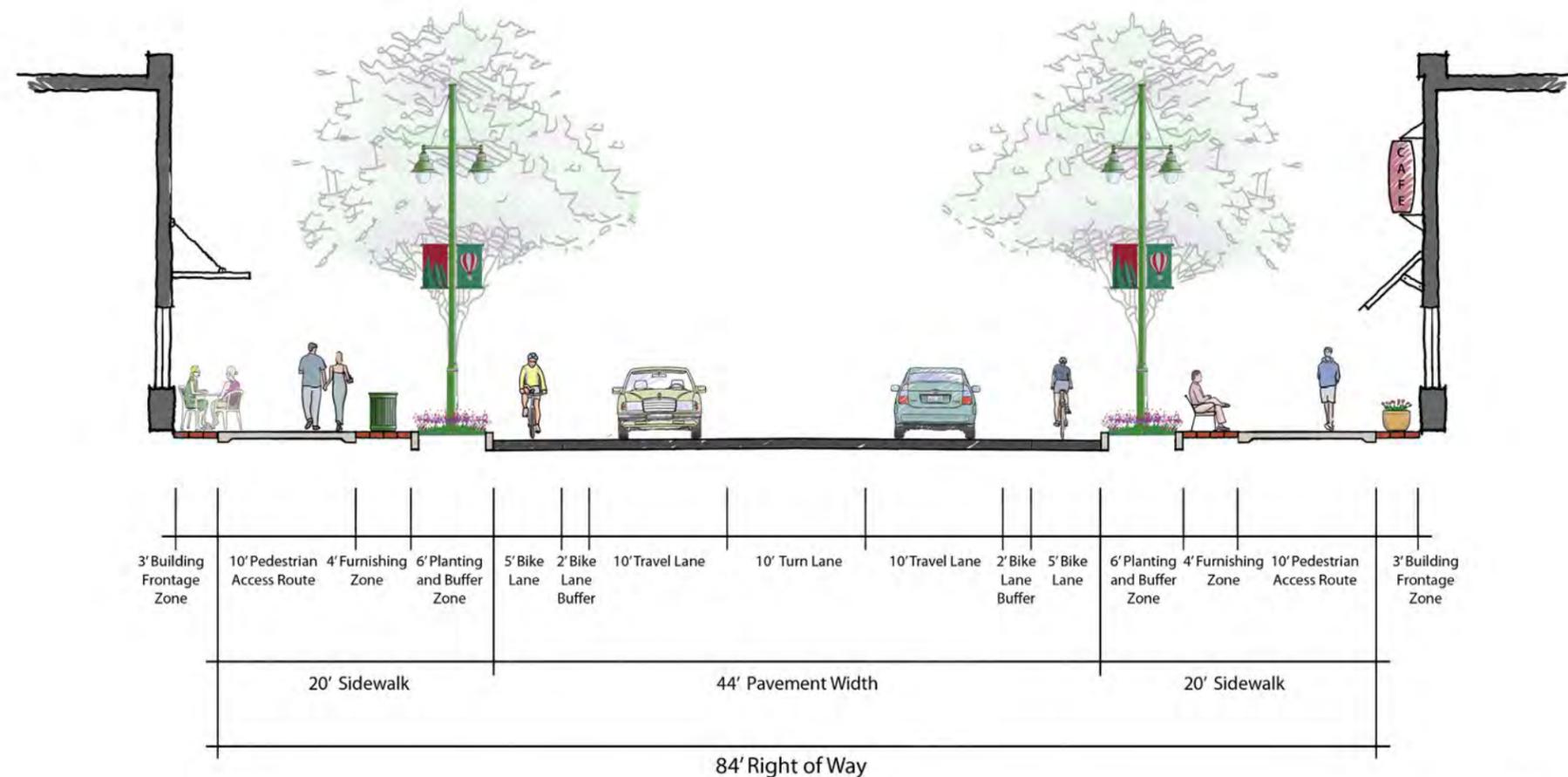
- 14-foot wide sidewalks on both sides of the street comprised of 10-foot wide pedestrian access route, a 4-foot wide furnishing zone

- A 6-foot wide planting and buffer zone
- A 3-foot wide building frontage zone abutting the sidewalk (outside of the right of way)
- Two 10-foot wide vehicle travel lanes
- 10-foot wide two-way left turn lane
- Two 5-foot wide buffered bike lanes with 2-foot wide buffers

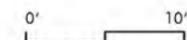
The 10-foot wide pedestrian access route will be kept clear of obstructions and have a relatively smooth surface to accommodate people in wheelchairs and senior citizens who may have difficulty walking. The 3-foot wide building frontage zone will be designated along the edge of the right of way to accommodate sidewalk cafes, seating, narrow planters, and outwardly swinging building doors. The 4-foot wide furnishing zone will accommodate all street furnishings, street lighting, bicycle racks, bollards, benches or seats.

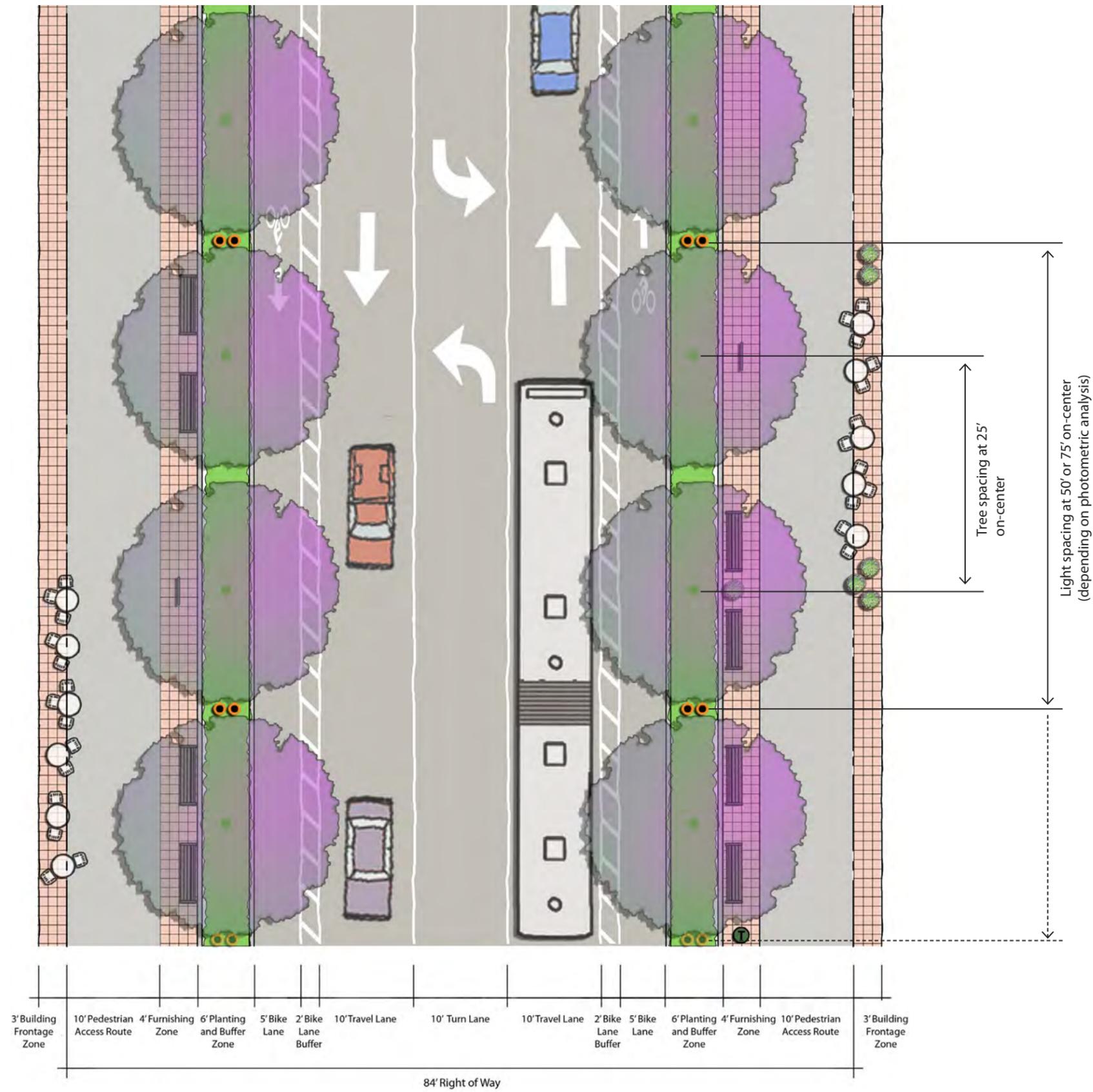


CONTEXT MAP



Typical Cross Section (NE 175th St.)

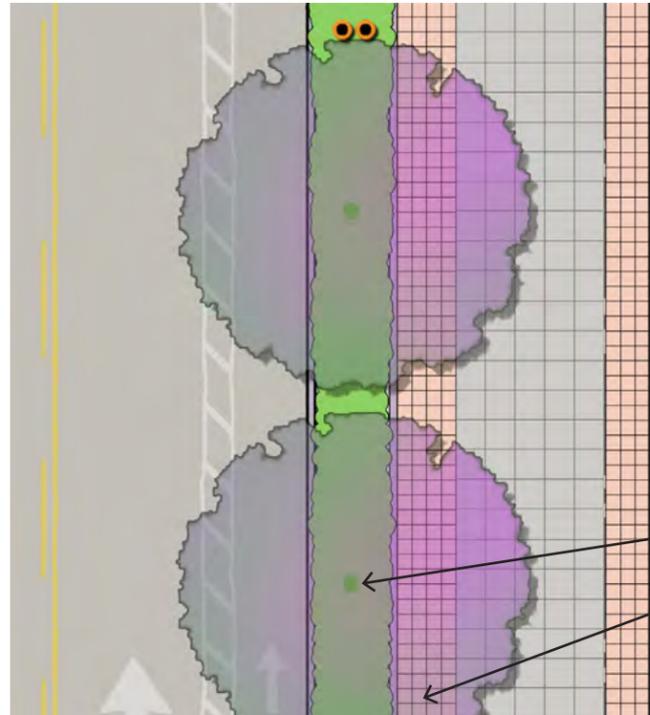




Typical Plan (NE 175th St.)

PLANTING OPTIONS

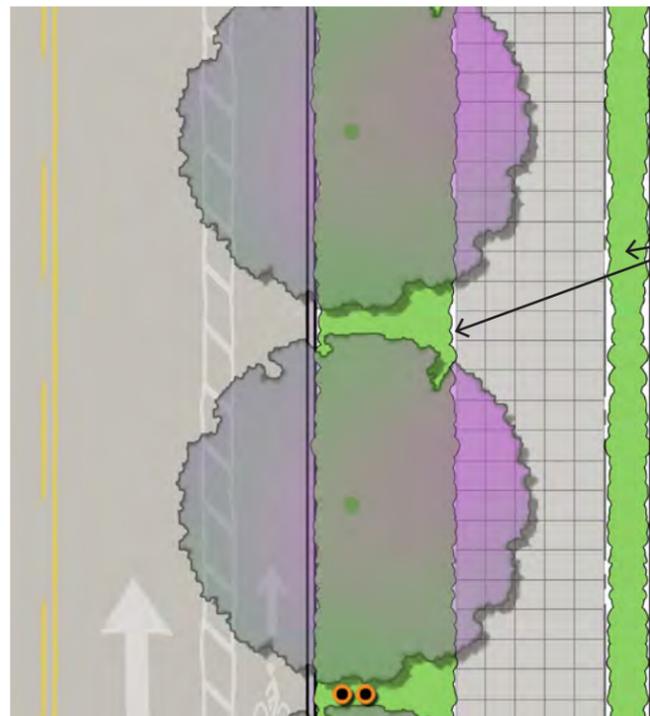
Option A - Narrow planting, sidewalk, and furnishing zone



The planting and buffer zone will have continuous planting in locations that have low pedestrian volumes and higher vehicular traffic volumes and speeds, such as at 131st Avenue NE and 140th Avenue NE. These locations will be less appealing for pedestrians to linger, so should provide more a buffer between the sidewalk and the street.

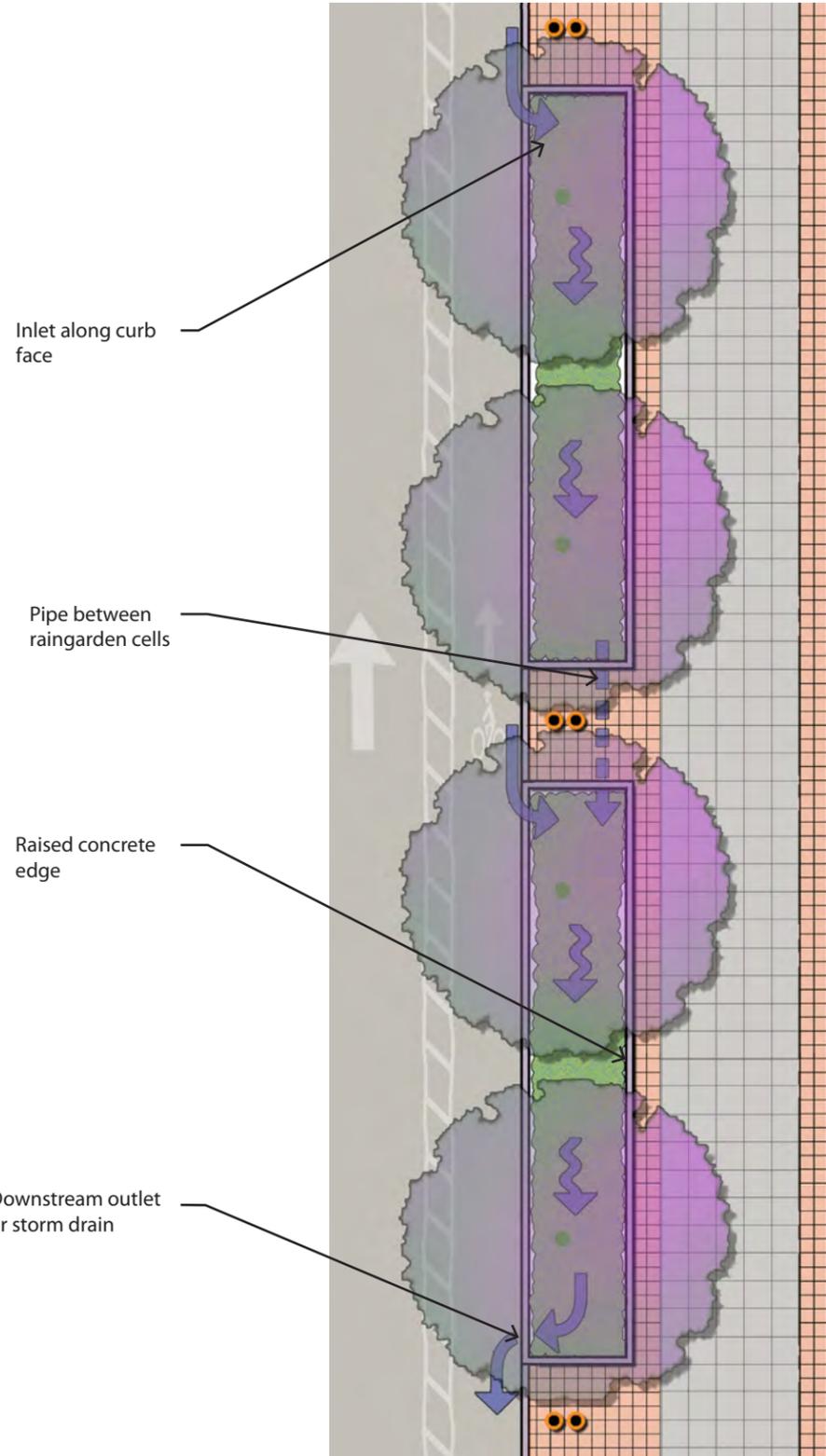
Continuous planting
Furnishing zone

Option B - Wide planting and sidewalk



Full planting

Option C - Raingarden



Inlet along curb face

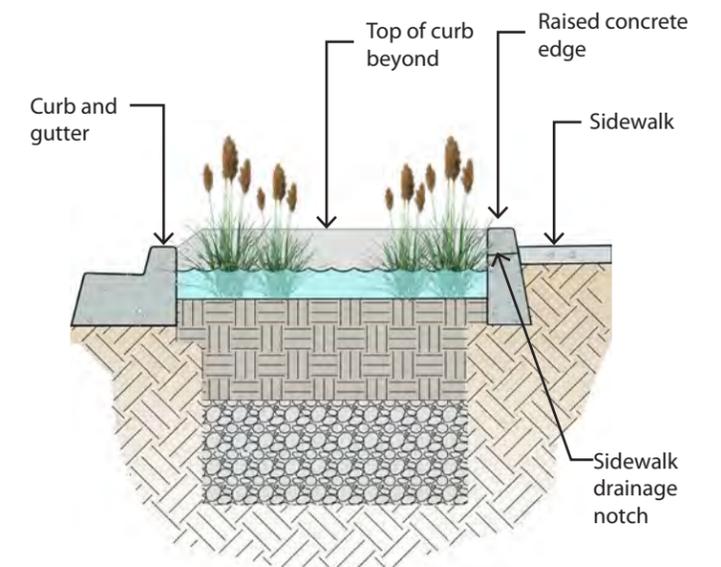
Pipe between raingarden cells

Raised concrete edge

Downstream outlet or storm drain

The planting and buffer zone could have raingardens where drainage and subgrade conditions are suitable. Stormwater would enter the raingarden through gaps in the curb, infiltrate or flow through the raingarden and overflow back into the street or directly into a storm drain.

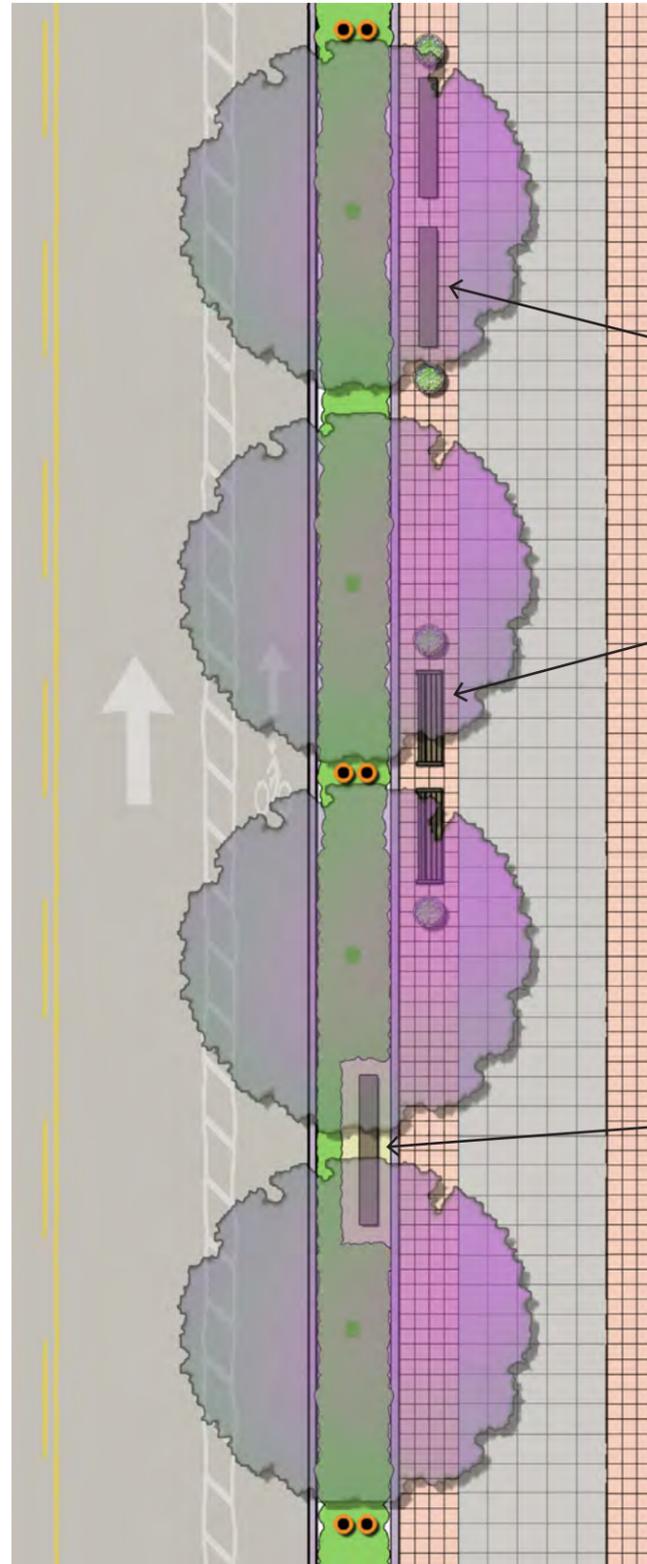
Examples of raingardens



RAINGARDEN - TYPICAL DETAIL

FURNISHING ZONE OPTIONS

Option A - Seating



Seating will primarily be located in the 4-foot wide furnishing zone, however seating can also be located within the planting and buffer zone. Seating will face the sidewalk and can be supplemented with planter pots.

Alternate custom seating in furnishing zone

Primary off-the-shelf benches in furnishing zone

Alternate custom seating in planting and buffer zone

Option B - Bike Parking



The default bike parking will comprise a single rack located in the furnishing zone that accommodates two bikes. Single racks should be spaced approximately 75 feet apart along each side of NE 175th Street. Locations for these racks should also be determined based on adjacent land uses on a case-by-case basis. Bikes are positioned parallel to the sidewalk with this arrangement.

Ganged racks that can accommodate up to 8 bikes should be used at popular destinations and located within the planting and buffer zone. Bikes are positioned perpendicular to the sidewalk when parked at a ganged rack.

Single bike racks in furnishing zone (each rack accommodates 2 bikes)

Ganged bike racks in planting and buffer zone (accommodates 8 bikes)

Option C - Widened sidewalk



Where pedestrian volumes are high and additional sidewalk space is needed, pavers can be used in the planting and buffer zone.

Pervious pavers

Concrete header at tree pit

TRANSIT FACILITIES

Currently, six different bus transit routes follow 175th Street, including Metro routes 236, 237, 251, 311, 372 and 931. With the scarcity of pedestrian-supportive land uses, these existing transit routes should be kept on 175th Street to generate pedestrian and bicycle trips in the heart of the downtown. Frequent transit service can also serve as an incentive for redevelopment along 175th Street and in the downtown and provide a rationale for reducing parking requirements in such redevelopment.

Option A - Transit stop at corner

Transit stops along 175th Street are to be located on the far side of intersections or mid-block crosswalks. Locating transit stops on the far side of intersections will keep stopped buses from interfering with right-turn and through movements (and the associated increased frequency of rear-end, sideswipe and pedestrian collisions). The bus can also reenter the travel lane more easily from a far-side stop, since intersections tend to create gaps in traffic.

On 175th Street, the bus will need to encroach on the buffered bike lane in order to pull over to the curb. Bike lanes at bus stops will be provisional and the bike lane buffer should be dashed rather than solid.

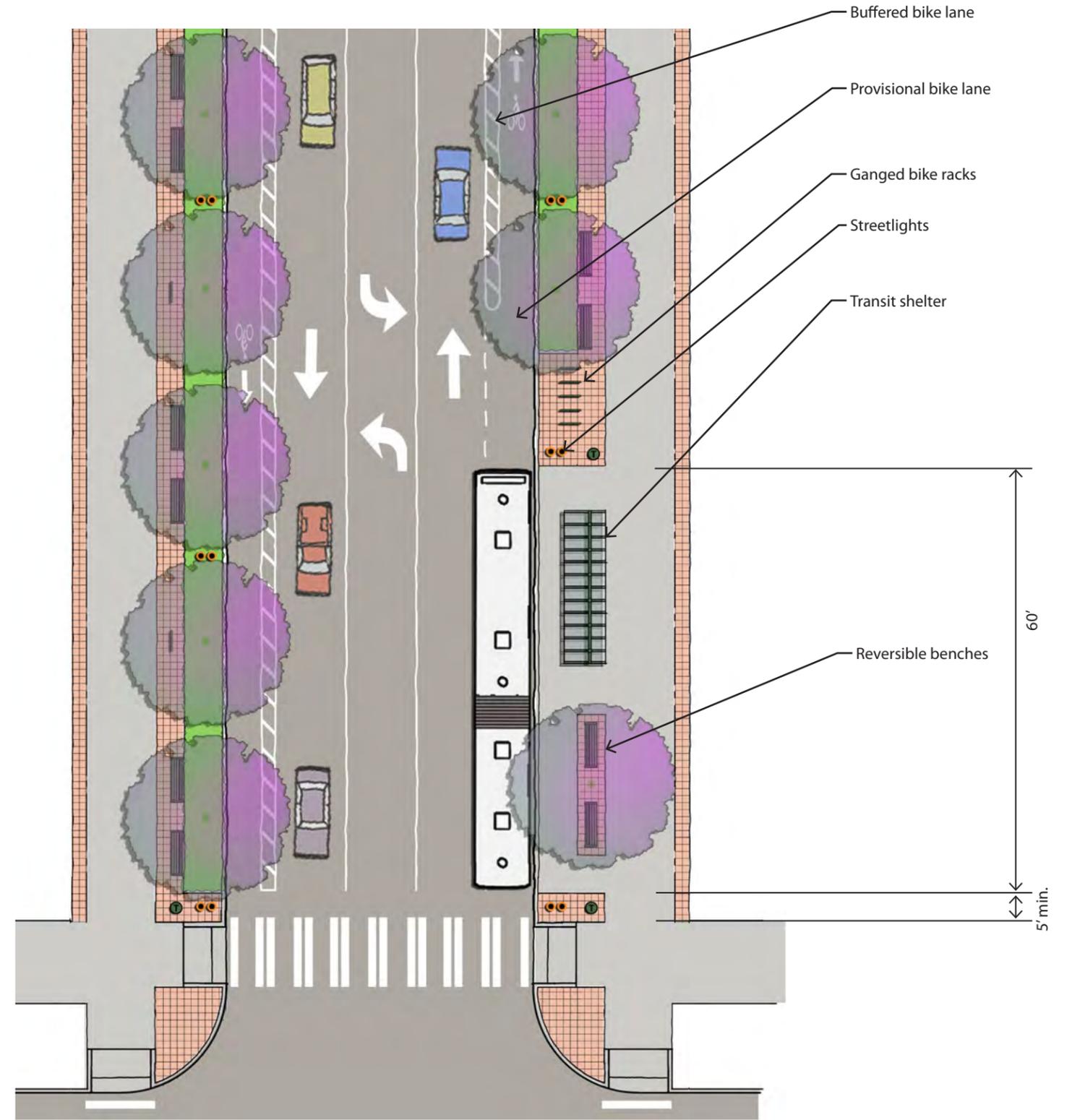
Option B - Bus Bulb

A bus bulb is created by extending the sidewalk out into the bike lane. This approach allows the bus to stay in the lane of travel which thereby prevents bicyclists from getting stuck behind the bus when it is stopped at the bus stop. Bicyclists will transition from the bike lane up to the elevated bus bulb via bike ramps (see diagram on page 21).

TRANSIT AMENITIES,

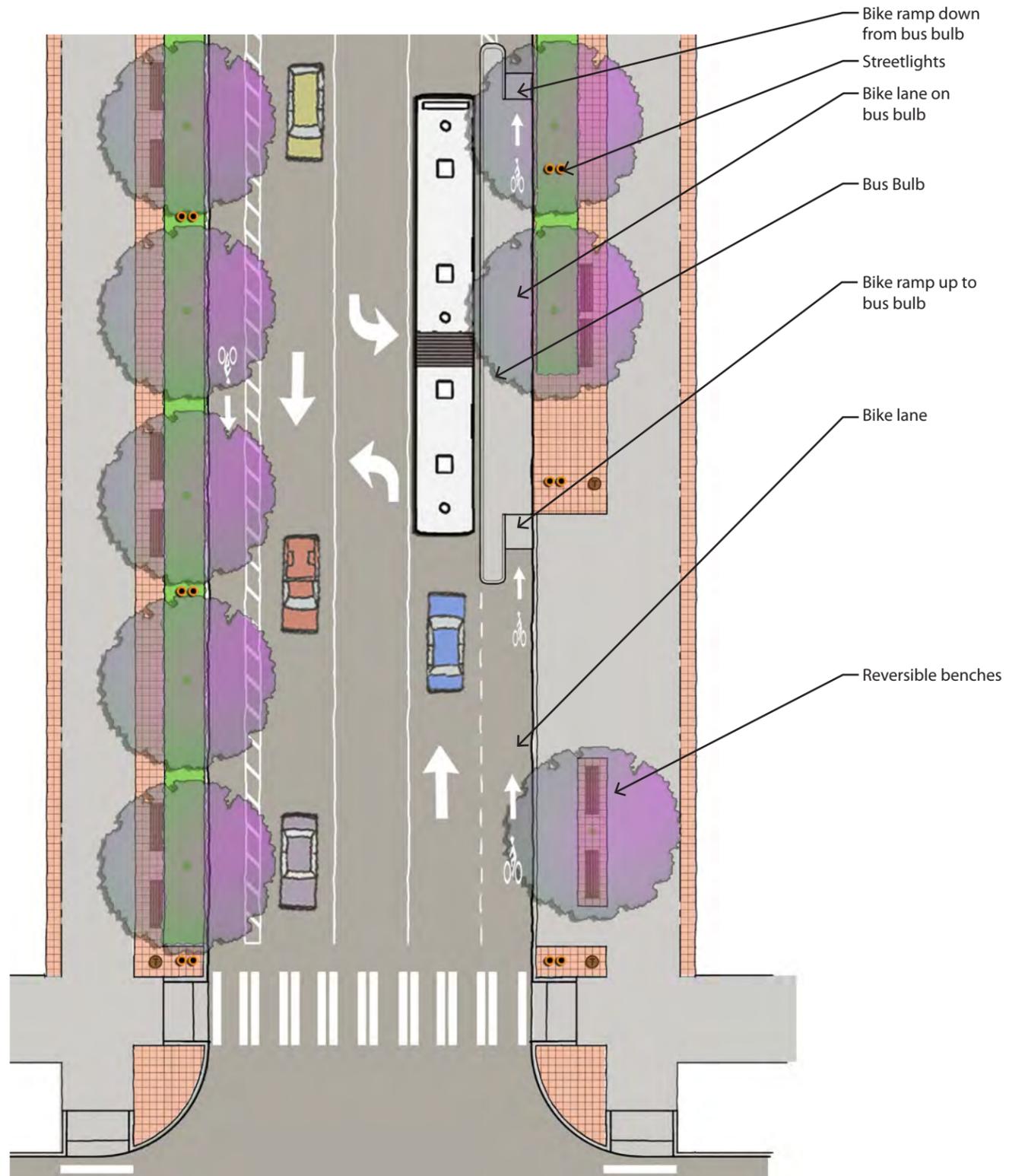
Shelters and benches, are currently minimal along 175th Street. Benches consistent with those selected for other locations on 175th Street should be provided at all bus stops. Transit shelters can be standard Metro shelters, off-the-shelf shelters from a street furnishings vendor, or custom. Off-the-shelf or custom shelters should relate to the other furnishings on 175th Street.

Option A - Transit stop at corner



Prototypical far-side transit stop

Option B- Bus Bulb (Potential Future Condition)



MEDIANS

The two way left turn lane on NE 175th Street currently provides vehicular access to a relatively high number of adjacent parcels via driveways and curbcuts. However, raised medians could be installed in a certain locations where few or no turning movements exist.

Research has found that raised medians reduce crashes by over 40 percent in urban areas. Raised medians also provide extra protection for pedestrians. A study of median treatments in Georgia found that raised medians reduced pedestrian-involved crashes by 45 percent and fatalities by 78 percent, compared to two-way left-turn lanes.

The potential benefits of raised medians include:

1. Improved appearance
2. Opportunity for additional planting, lighting and signage
3. Safer pedestrian crossings (i.e. marked crosswalks at unsignalized locations)
4. Reduced vehicle speeds and crashes
5. Better access management resulting in fewer turning movements and smoother traffic flow
6. Reduction in impervious surface

As parcels redevelop along NE 175th Street, driveways should be consolidated and raised medians installed to improve traffic flow and increase safety. Some driveways should also be converted into right-in/right-out configurations to reduce turning movements and improve traffic flow.

CROSSWALKS

For *Main Street* the marked crosswalks on NE 175th Street are excessively spaced, ranging from 400 to 700 feet apart. Crosswalk spacing on a pedestrian oriented downtown retail street should be in the 150 to 250 foot range to prevent pedestrians from having to walk too far out of their way to safely cross the street.

New crosswalks should be considered and constructed incrementally over time at the following locations:

1. 132nd Avenue NE
2. East side of 133rd Avenue NE intersection
3. Two crosswalks between 133rd Avenue NE and 135th Avenue NE
4. Two crosswalks between 135th Avenue NE and 138th Avenue NE
5. Between 138th Avenue NE and 140th Avenue NE

Raised medians and pedestrian crossing islands allow pedestrians to cross one direction of traffic at a time, which significantly reduces the complexity of the crossing. They also provide a space for additional lighting, which has been shown to reduce nighttime pedestrian fatalities at crosswalks by 78 percent. Safety and driver yielding at new unsignalized crosswalks can also be improved with supplemental traffic control devices, such as Rectangular Rapid Flashing Beacons (RRFB) and/or in pavement flashing beacons.



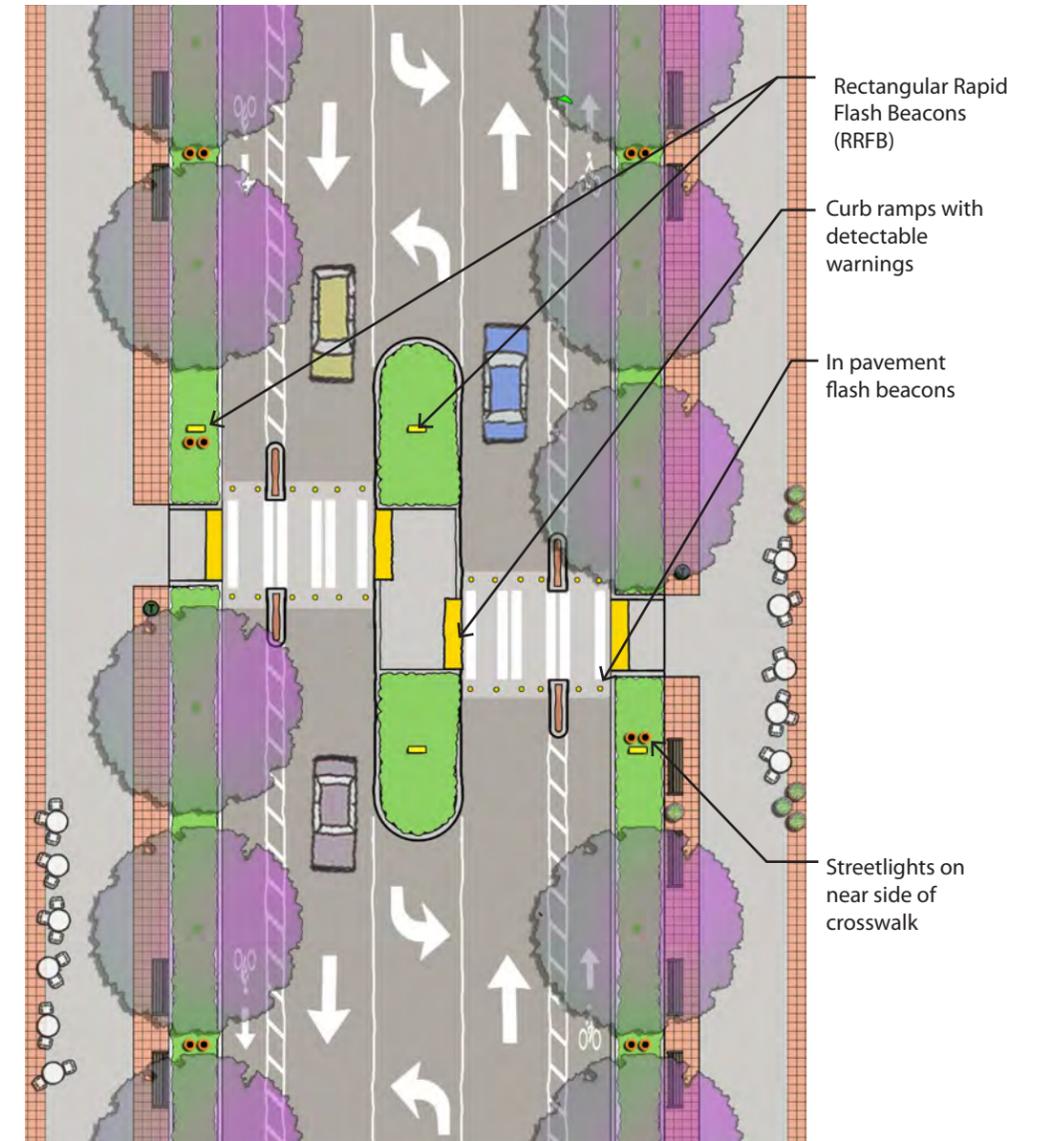
Example of Flashing Beacon



Example of in pavement lighting



Example of Median with Z-crosswalk



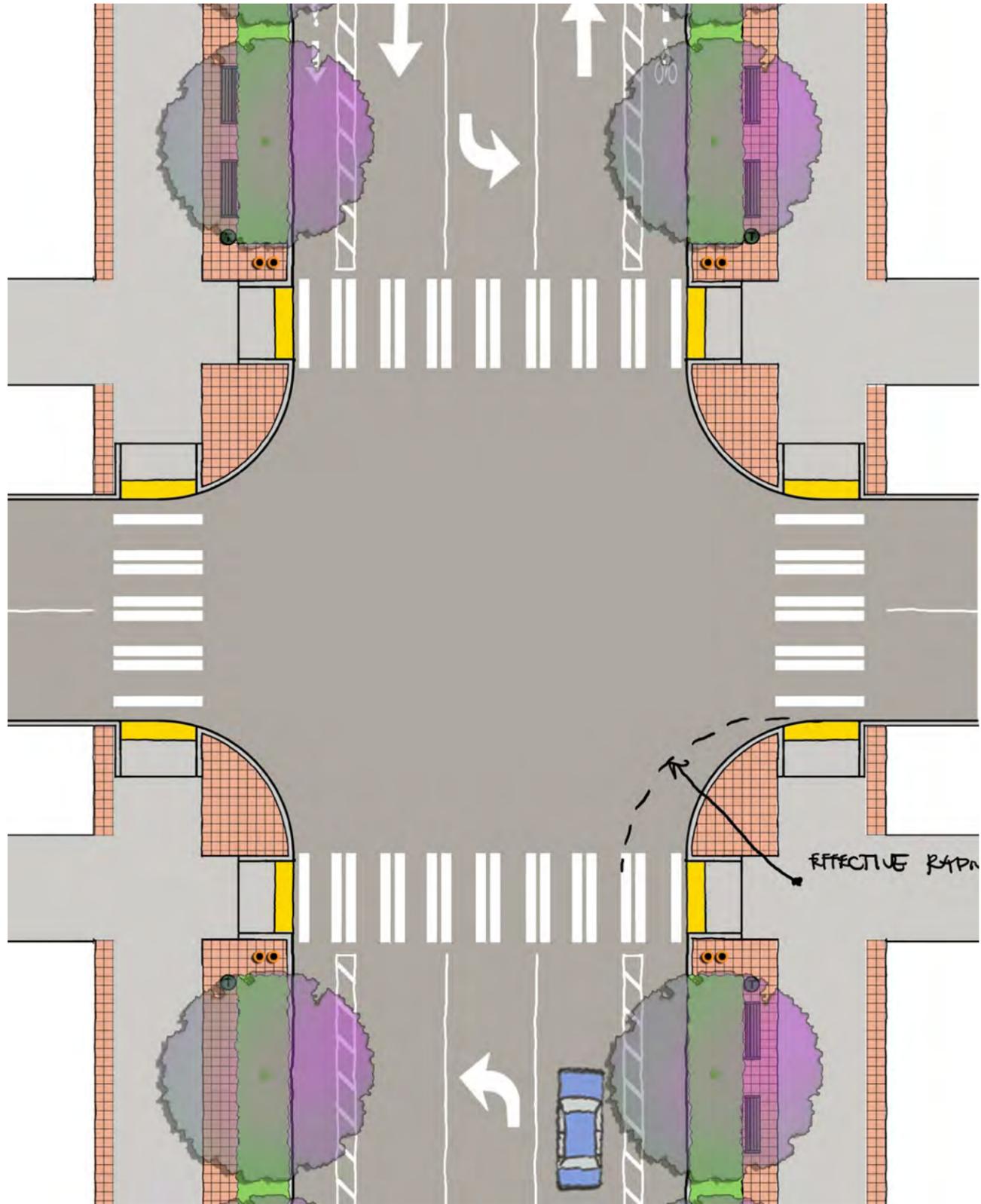
Median with Z-crosswalk



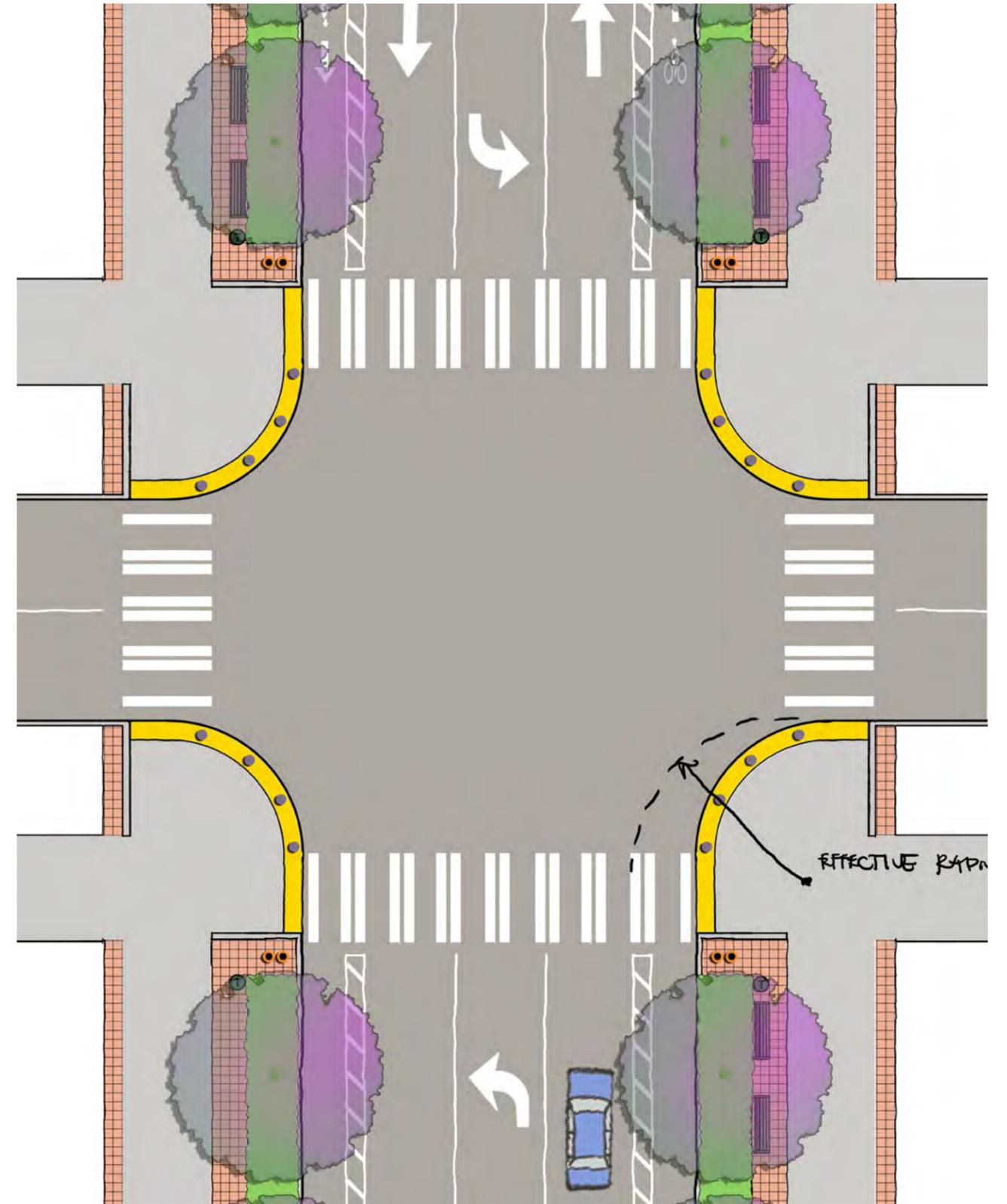
Potential Crosswalk Locations

INTERSECTION OPTIONS

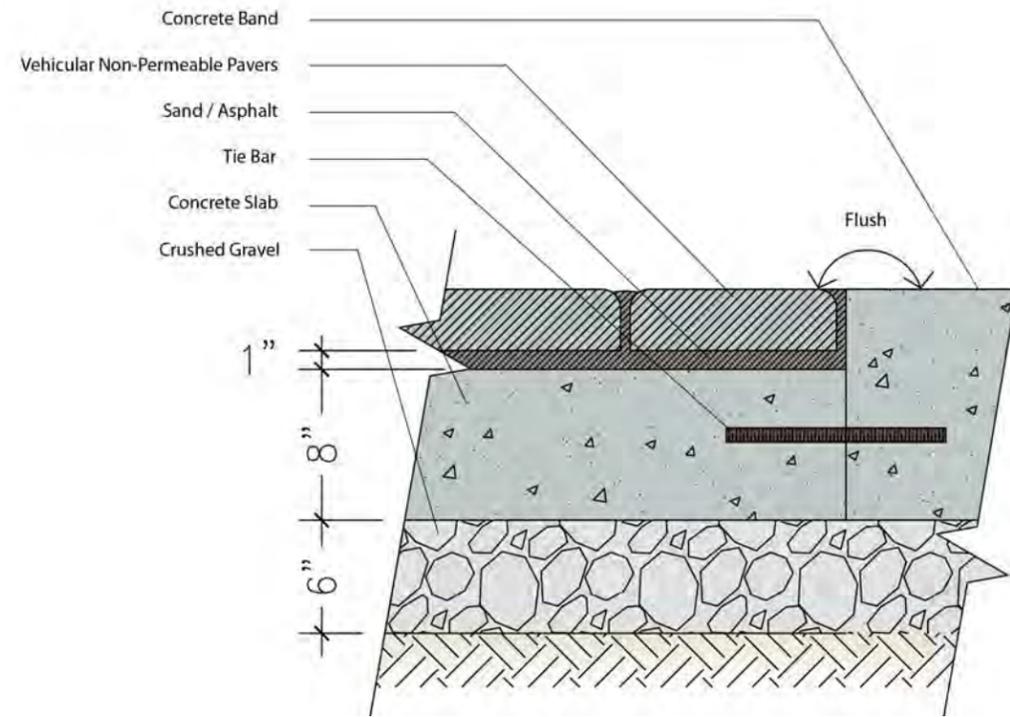
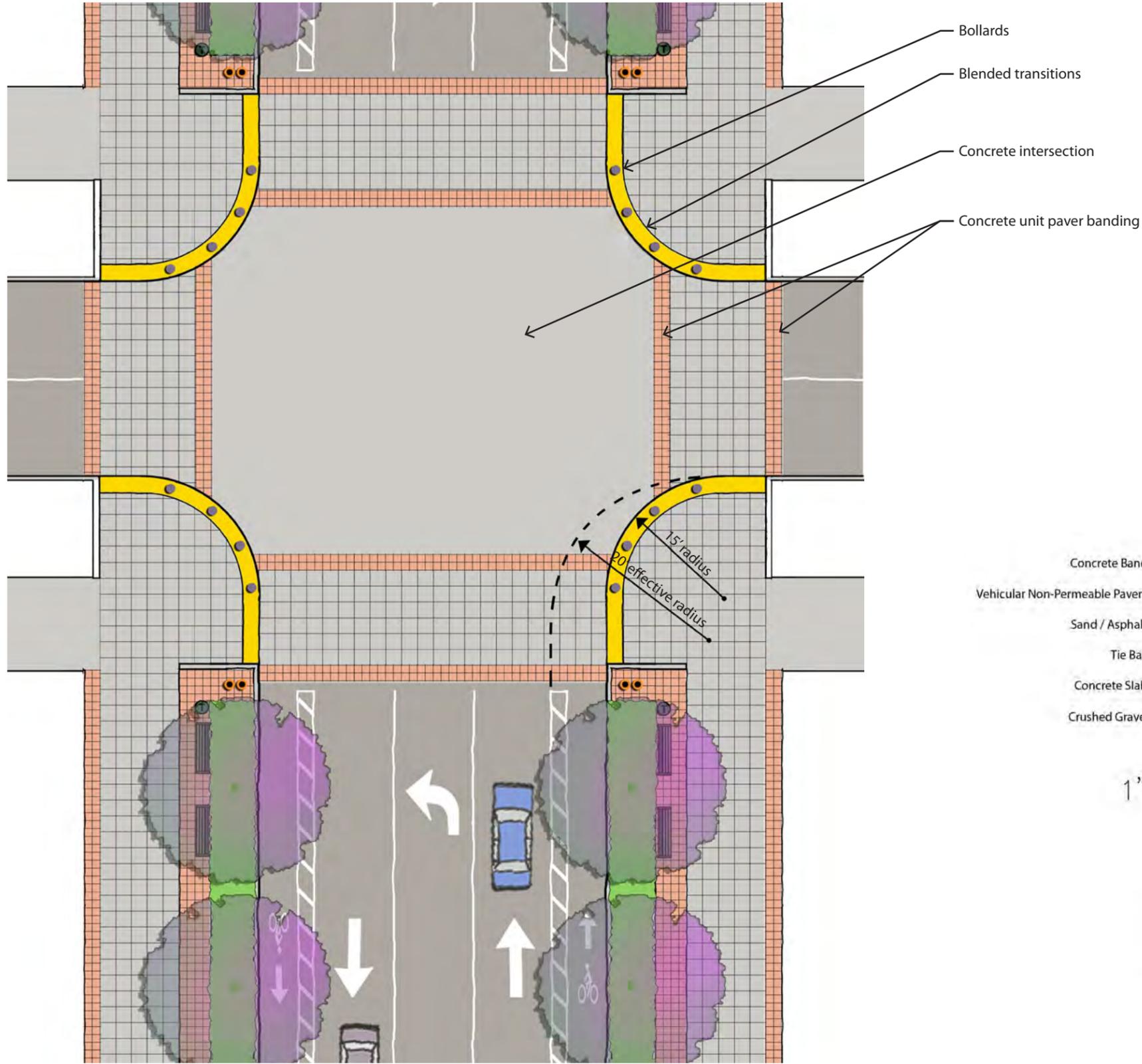
Intersection A - Basic intersection with curb ramps



Intersection B - Basic intersection with flush corners



Intersection C - Enhanced Intersection



CONCRETE UNIT PAVER BANDING - TYPICAL DETAIL

B DOWNTOWN GRID STREETS

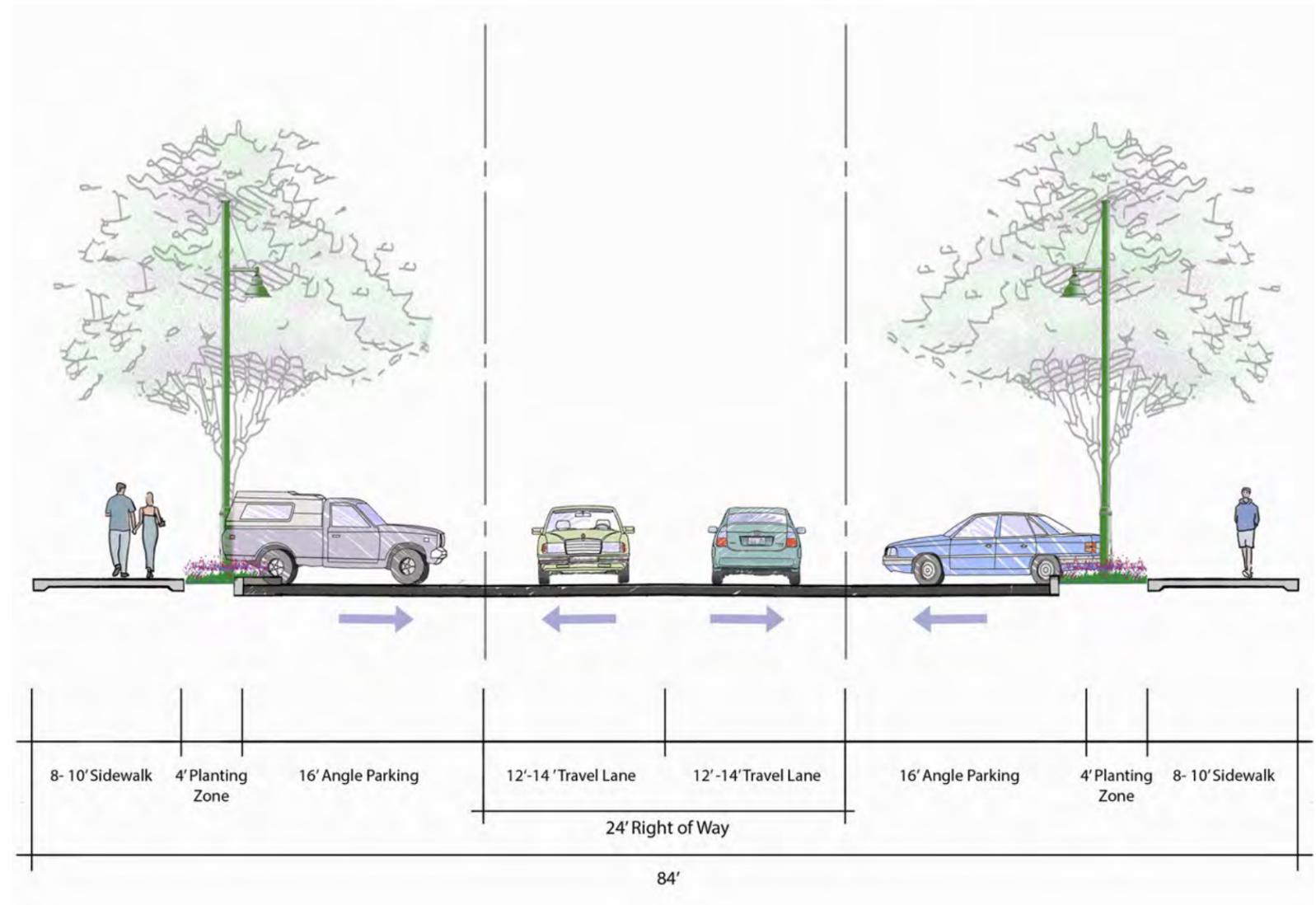
The Downtown Grid streets allow slow through-traffic to connect to other city streets, provide on-street parking, and allow access to residences and businesses. Downtown Grid streets are narrow and have lots of “friction” along the edges to keep traffic speeds low. They may have a mix of parking configurations, ranging from parallel to angled to perpendicular depending on the specific right of way.

PROPOSED CROSS SECTION

The Downtown Grid Streets should be relatively narrow streets with generous pedestrian amenities to support adjacent retail and residential uses. Downtown Grid streets will have on-street parallel or angled parking on both sides, wide sidewalks, street trees and a common family of street furnishings.

Typical Downtown Grid Streets will have the following dimensions:

- 10-foot wide sidewalks on both sides of the street
- 4-foot wide planting zone
- Parking on both sides (dimensions vary)
- Two 12-foot wide vehicle travel lanes



CONTEXT MAP



Example of a Downtown Grid Street



Example of a Downtown Grid Street

PARKING OPTIONS

Option A - Reverse Angle Parking

Reverse angle parking (or “back-in angled parking”) is similar to traditional angled parking, but is safer for a number of reasons. Instead of pulling forward into the parking space, cars back into the space. The main safety benefit is that, when exiting the parking space, the driver can more easily see and make eye contact with oncoming traffic.

Benefits:

1. Improved visibility and increased field of vision. When leaving the parking space, motorists are able to see oncoming traffic.
2. Fewer crashes. Motorists no longer have to back out blindly from their parking space. When used on steep streets, reverse angle parking automatically curbs a driver’s wheels, which reduces the threat of runaway vehicles.
3. Improved safety:
 - For children - Car doors open towards the street directing children toward the sidewalk.
 - For cyclists - As vehicles exit their parking stall, they are able to see cyclists in the roadway.
4. Easier loading and unloading. Trunks are adjacent to the sidewalk and open car doors offer protection from the street, allowing loading and unloading to occur away from traffic.
5. Improved accessible parking. Accessible parking spaces can be placed adjacent to curb ramps.
6. Increased space. Reverse angle parking does not require as much space to maneuver as traditional angle parking, resulting in an increased number of parking spaces or additional room for sidewalks, bike lanes, or landscaping.

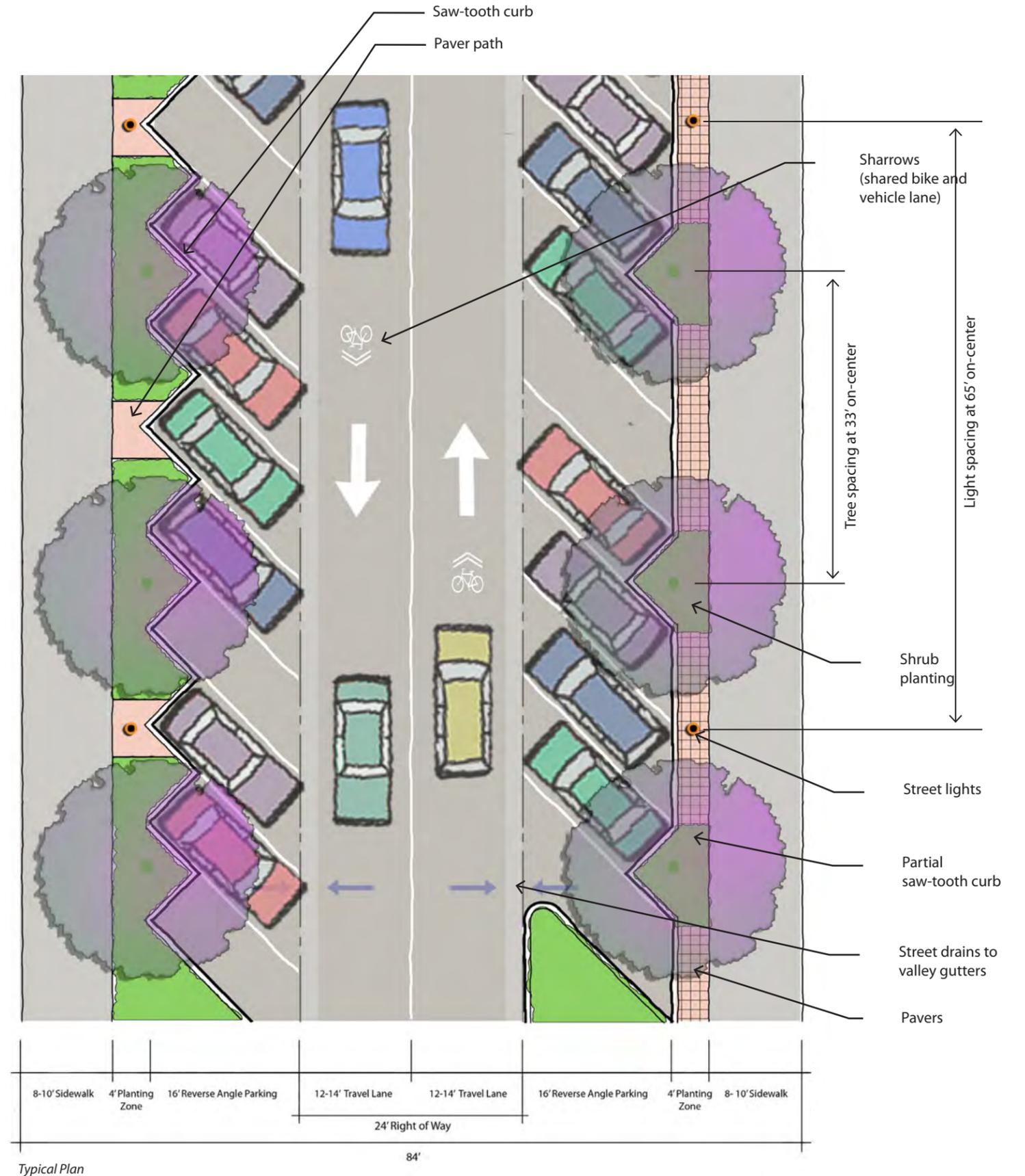
Potential drawbacks :

1. Vehicles overhanging sidewalk. This can be alleviated with proper design and placement.
2. Vehicles backing into street furniture. This can be alleviated with proper design and placement.
3. Vehicle exhaust over sidewalks.

4. Vehicles may enter the spaces head-in from the opposite side of the street. This can be alleviated with enforcement, signs, and driver education.
5. Potential congestion. As with parallel parking, backing in may cause some delay while traffic waits for the parking driver to maneuver, but the same delay occurs with traditional front-in angled parking when the parked car backs into traffic.



Example of Saw tooth curb



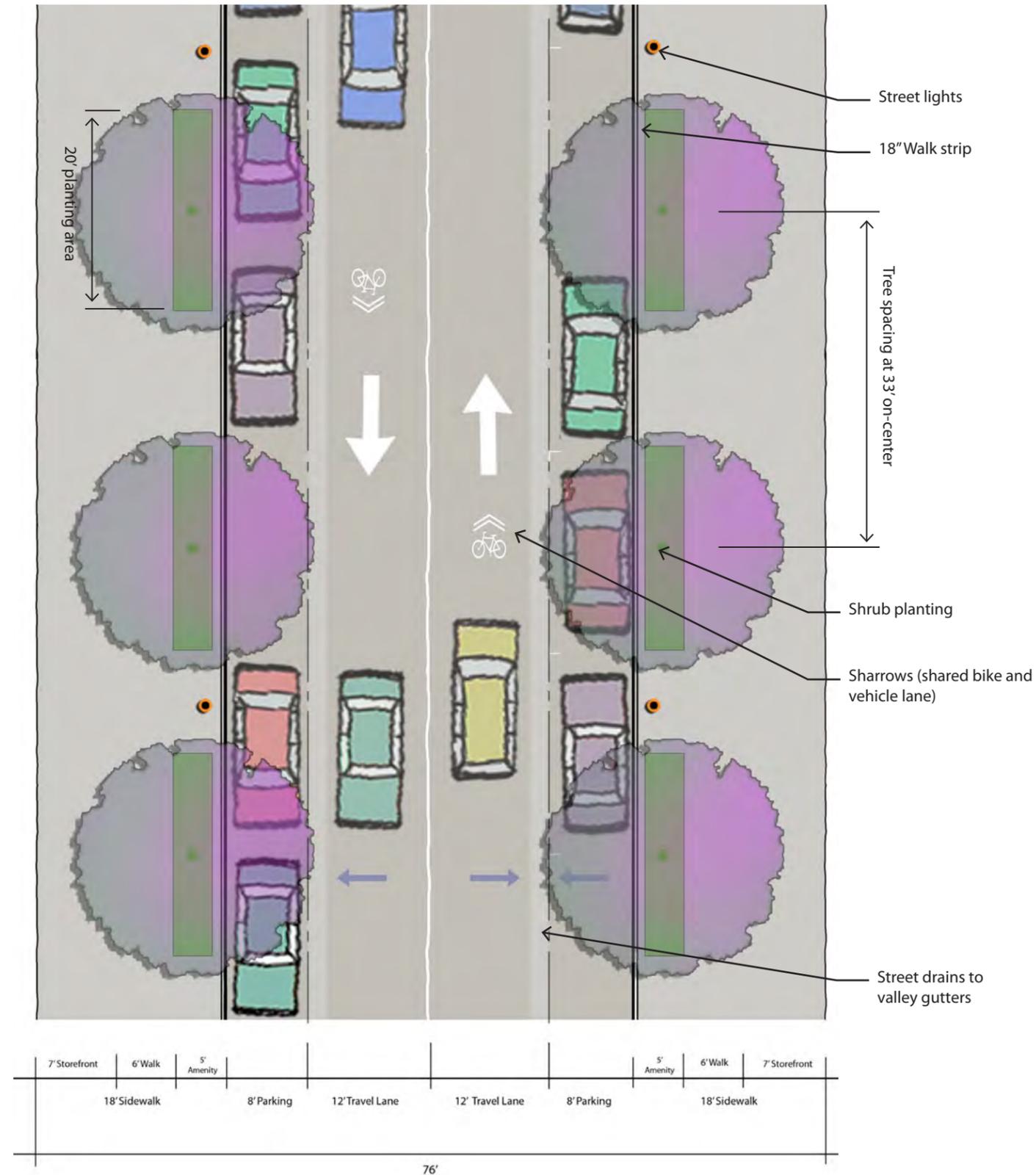
Option B - Parallel Parking

Benefits:

1. Narrower right-of-way can help with controlling vehicular speed and to create a more intimate streetscape experience for pedestrians.
2. Wider sidewalk with three distinct zones:
 - Storefront zone (8') measured from the face of the building. This is a great area for outdoor dining and sidewalk sales.
 - Walking zone (6') provides clear circulation routes for pedestrians and does not interfere with storefront zone.
 - Amenity zone (5') is for street trees, benches, light posts, and other street furniture. At the face of the curb there is an 18" walk strip that allows people to enter and exist their cars easily

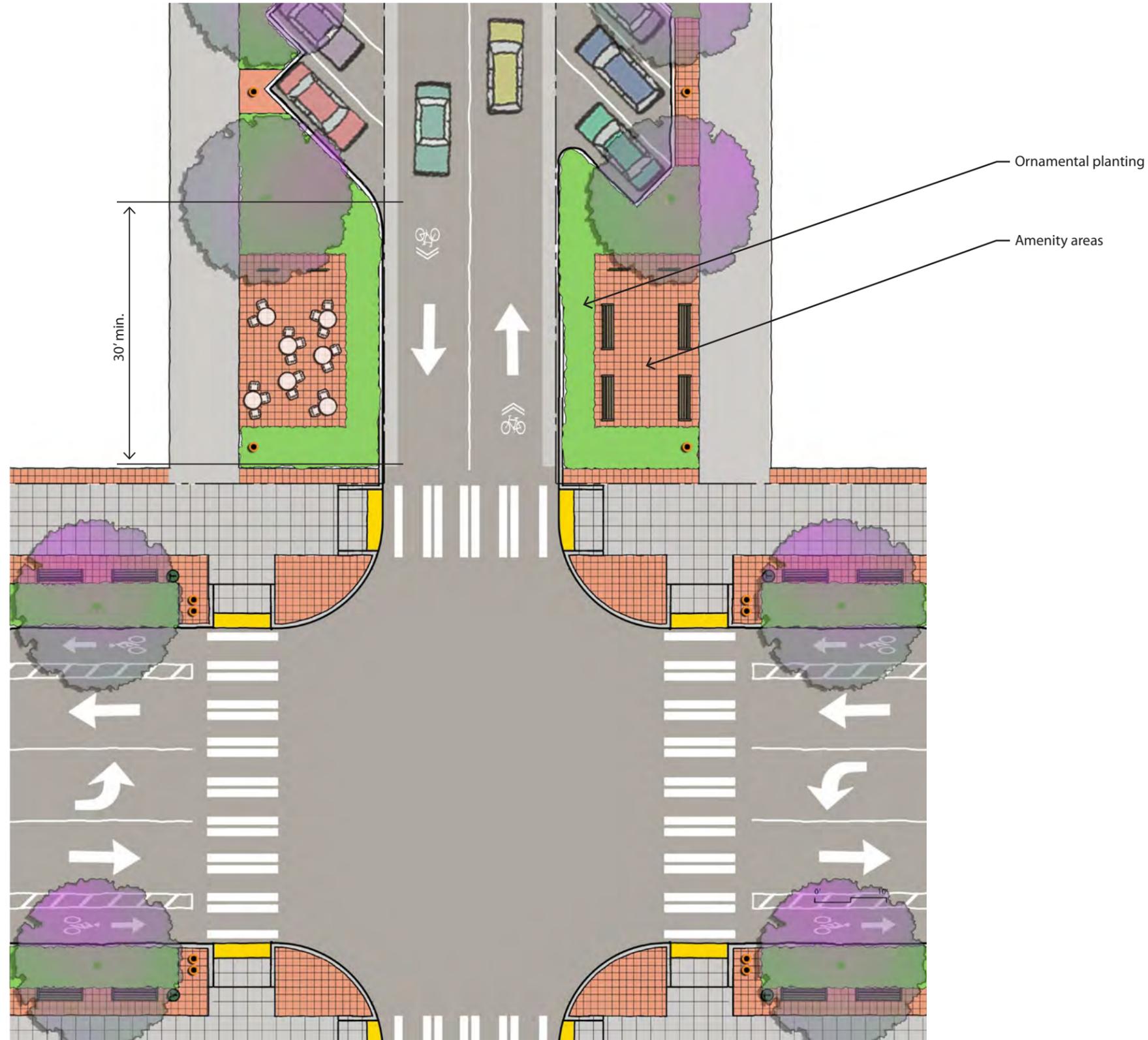
Potential drawbacks:

1. Fewer parking spaces available.
2. Less vegetation



INTERSECTION

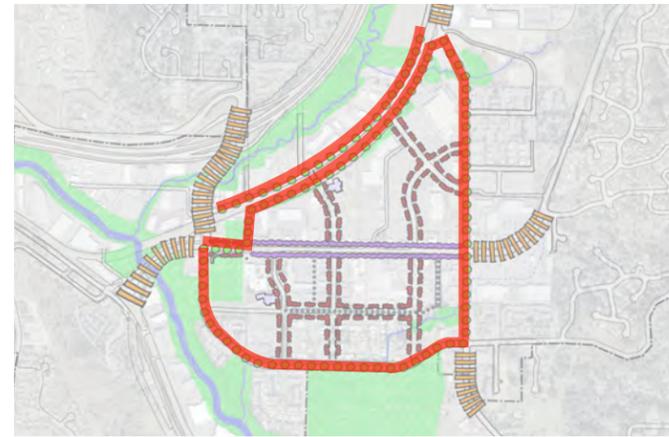
Basic intersection with curb ramps



C PARKWAYS

The streets comprising the *Parkways* will be a heavily landscaped to reinforce and connect the existing open space features adjacent to them and provide an informal, naturalistic open space ring around the downtown that contrasts with the other more urban and formal downtown street types.

Parkway landscapes should be informal and naturalistic with trees planted in homogeneous groves and shrubs planted in large masses. Such large scale planting massings are more appropriate for the slightly higher speeds permitted on *Parkways*.



CONTEXT MAP



PROPOSED CROSS SECTION

Parkways will vary in width and function depending on their role in the street network, but will all have generous naturalistic landscaping along the edge of the right of way and in planted medians.

Traffic volumes are typically higher on the *Parkways* and land uses are less supportive of pedestrians resulting in a less comfortable pedestrian environment. Therefore, *Parkways* will have minimal pedestrian amenities adjacent to the street. However, opportunities to provide strategically located pedestrian amenities that are setback from the street should be explored.

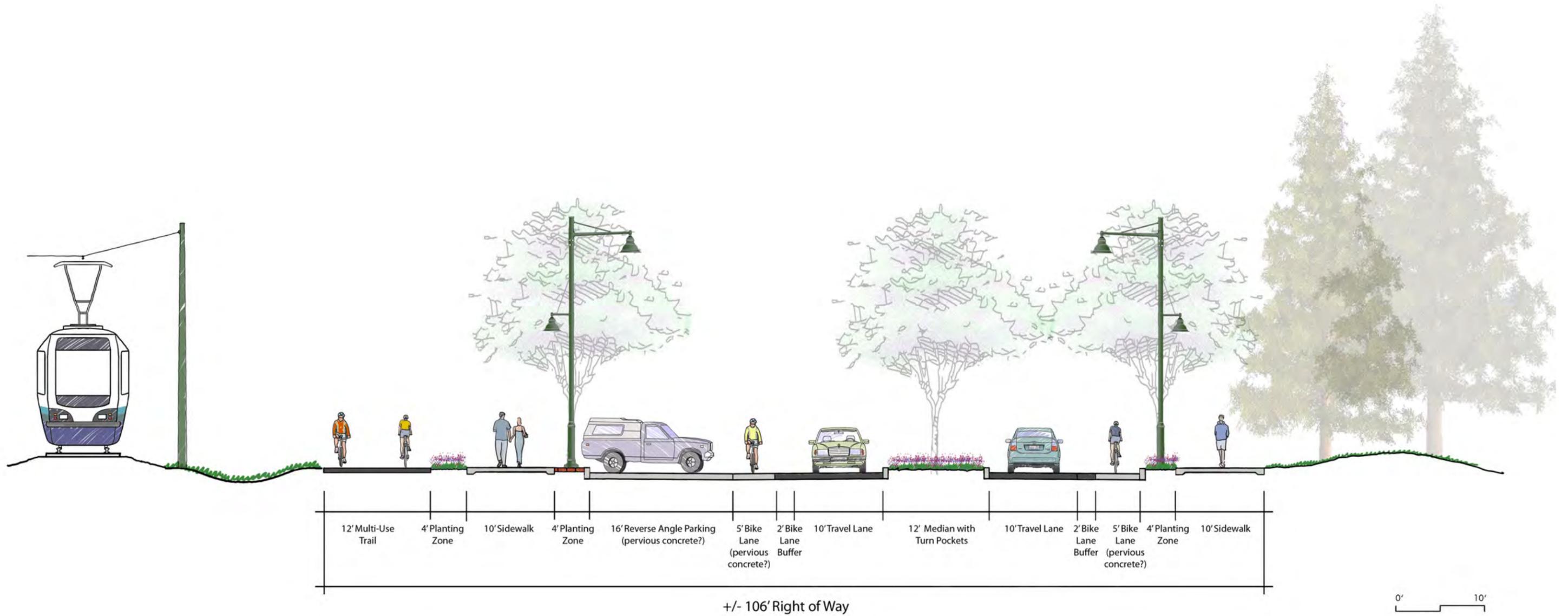
Most of the proposed *Parkway* streets do not have on-street parking, so should provide some form of buffer between the travel lanes and sidewalks. Where possible, the sidewalk should be separated from the curb and gutter to create a generous landscaped buffer. Sidewalks should also be designed as multi-use trails to accommodate less competent cyclists who are uncomfortable riding in bike lanes next to heavy traffic.

The *Parkways* should have low expenditure on furnishings and special materials.



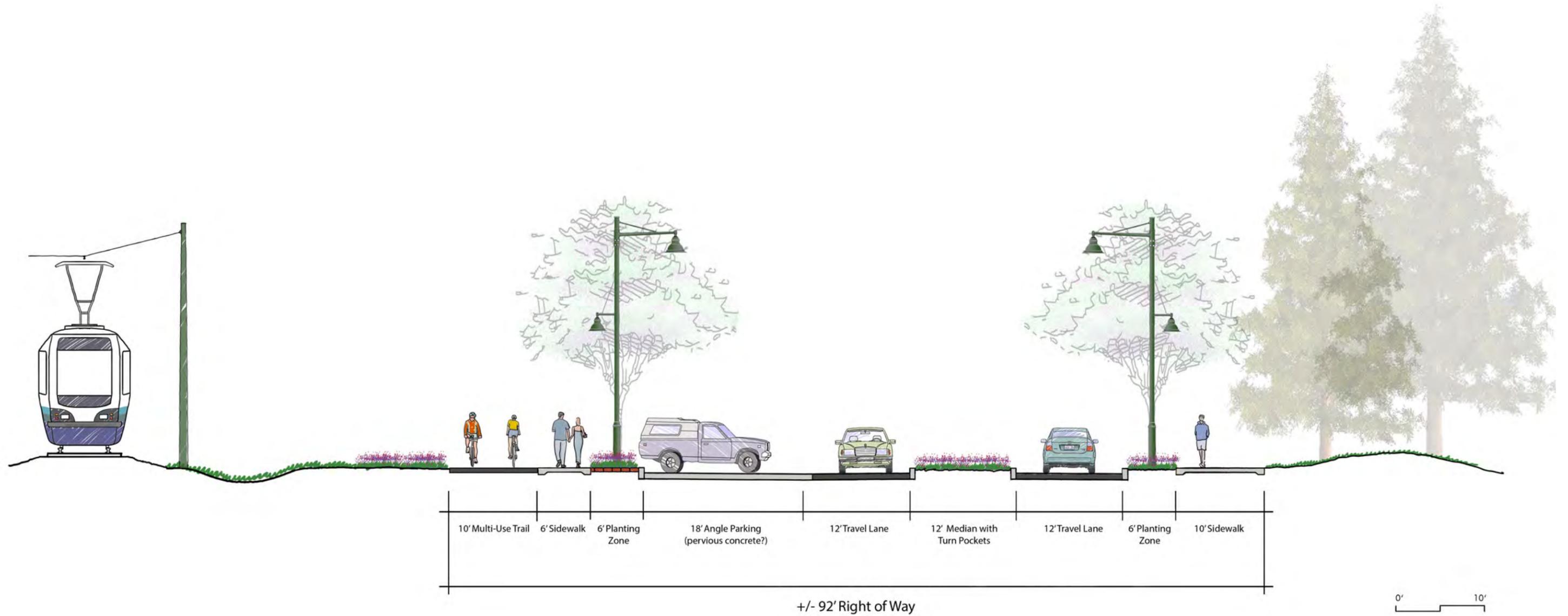
WOODINVILLE-SNOHOMISH ROAD PROPOSED SECTION

Alternative A

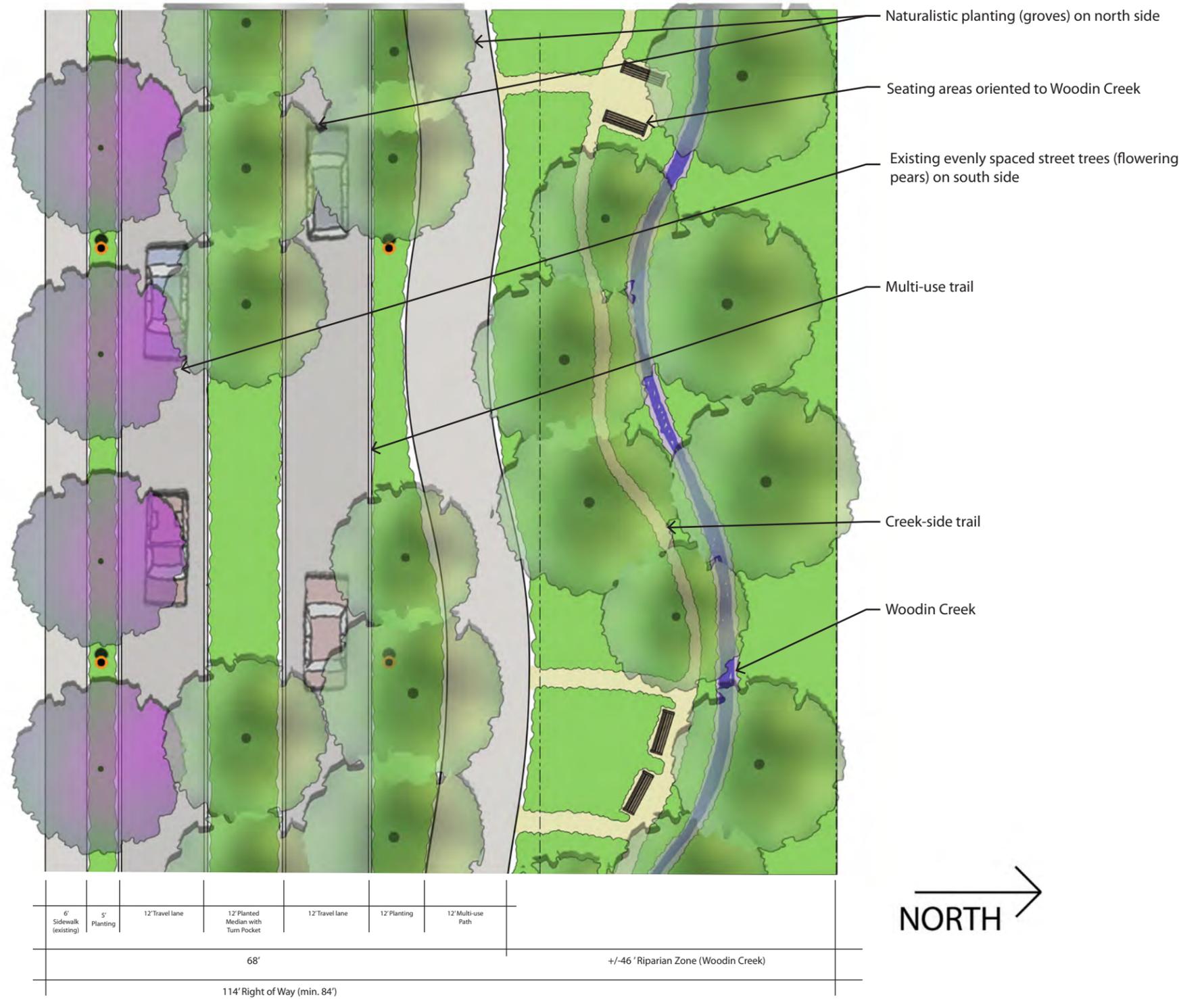


WOODINVILLE-SNOHOMISH ROAD PROPOSED SECTION

Alternative B



NE 171ST STREET PROPOSED PLAN



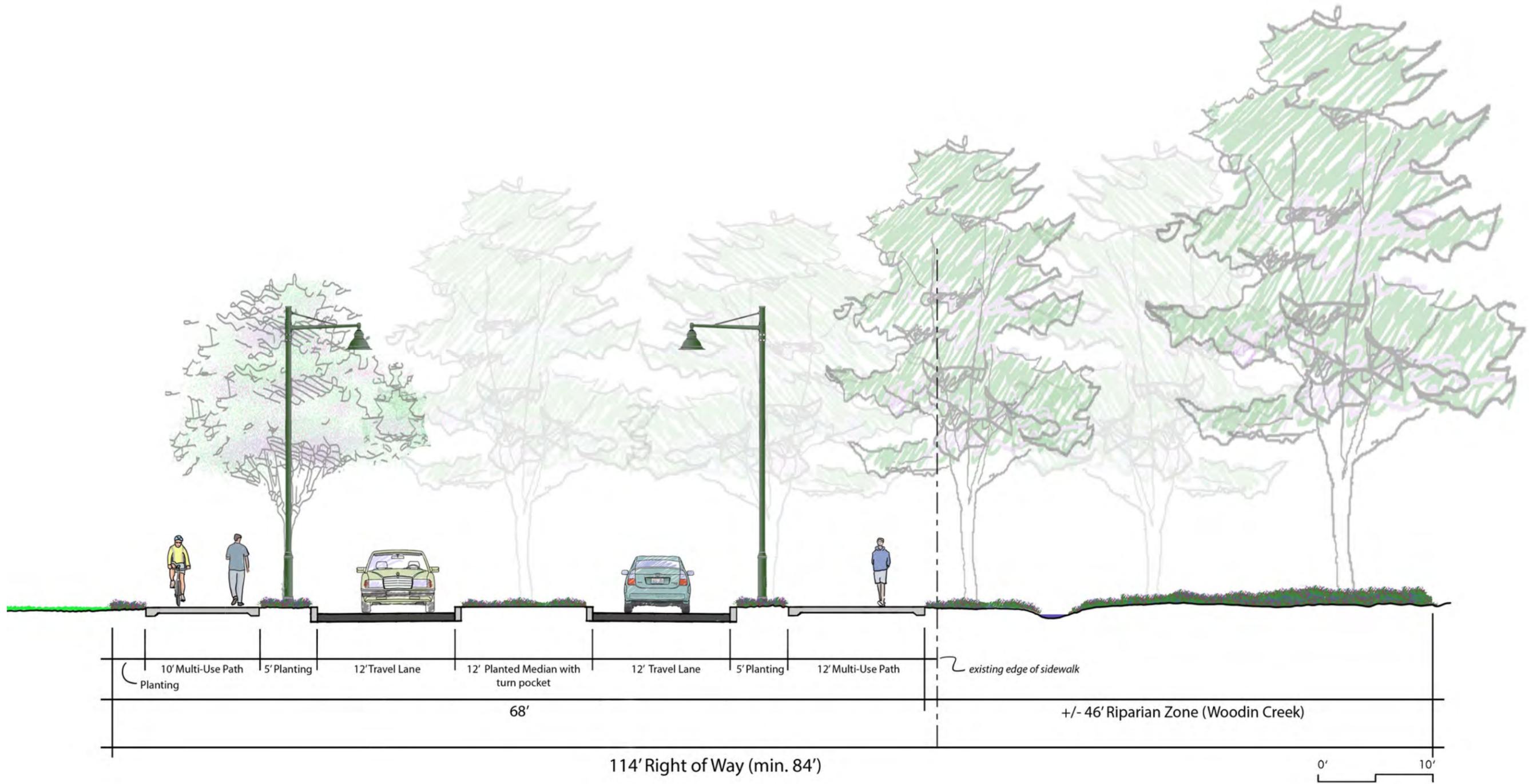
NE 171ST STREET PROPOSED SECTION

Alternative A - Street center-line shifted south



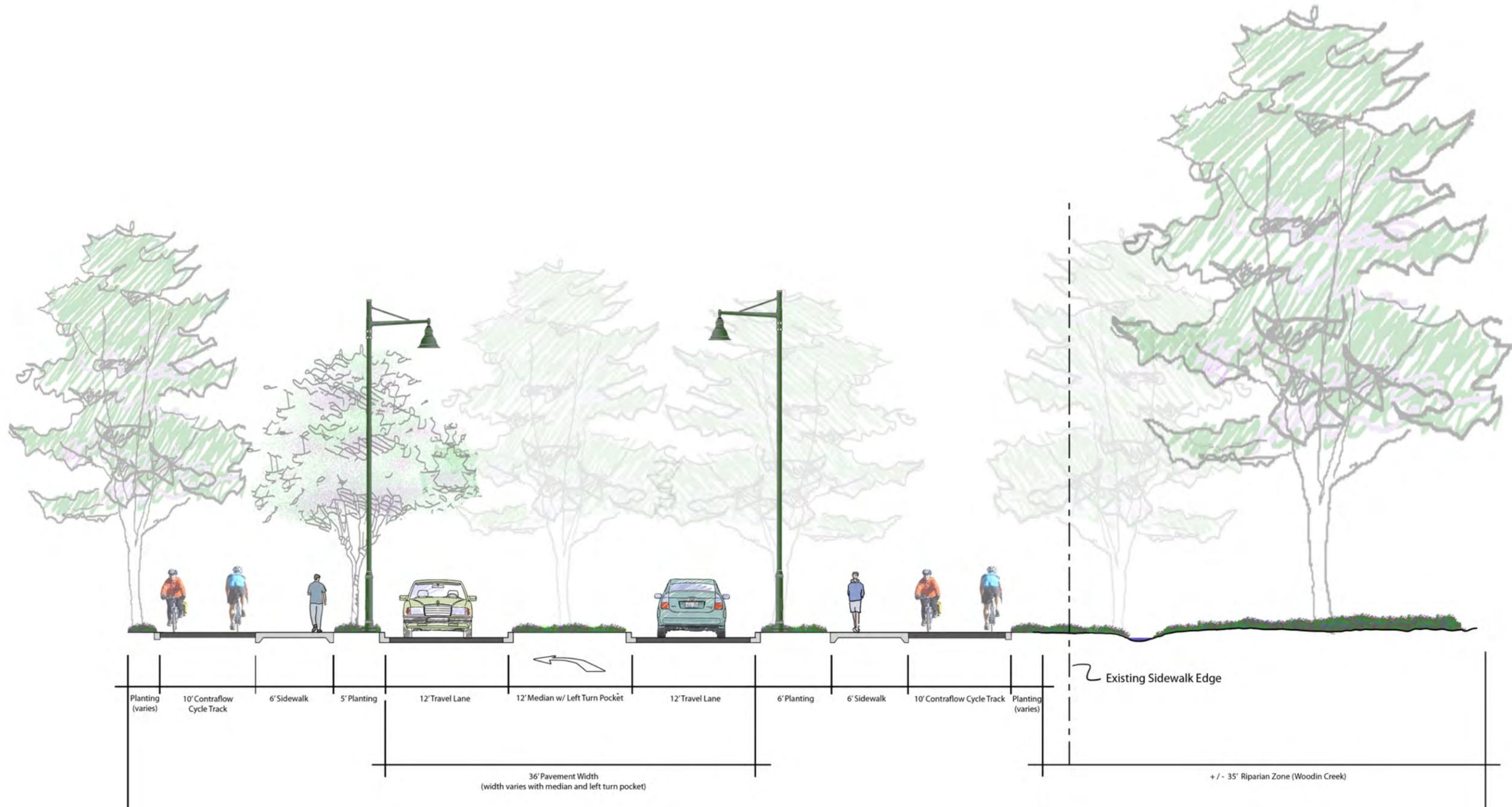
NE 171ST STREET PROPOSED SECTION

Alternative B - Street aligned with existing center-line



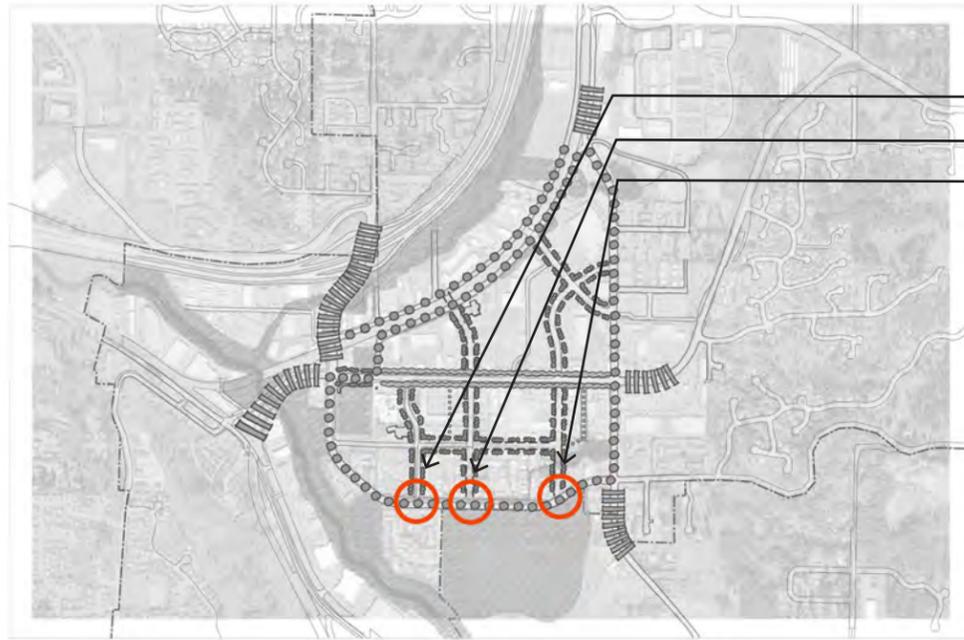
NE 171ST STREET PROPOSED SECTION

Alternative C



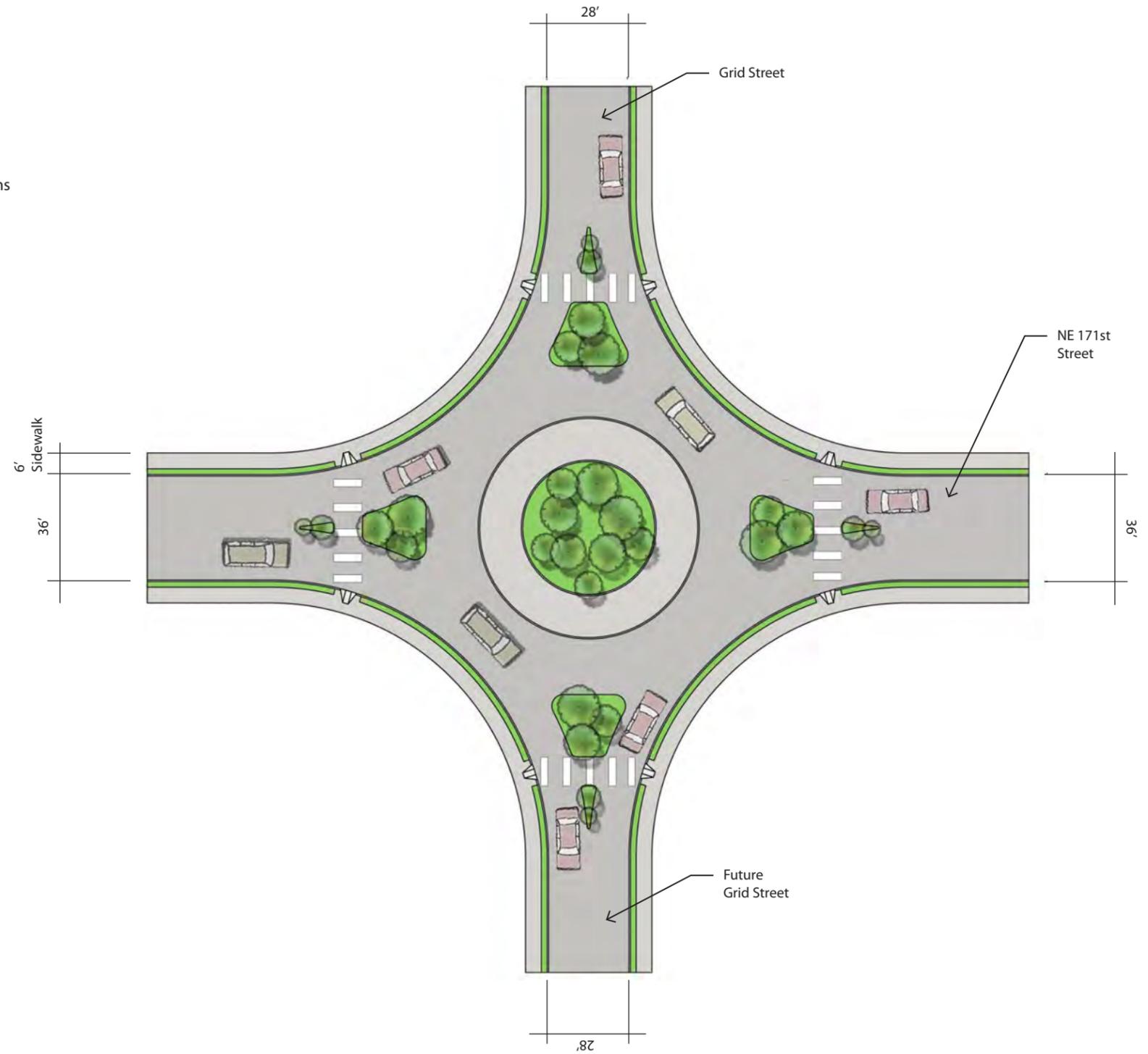
NE 171ST STREET & TYPICAL ROUNDABOUT

CONTEXT MAP



Potential Locations

- 133rd Ave NE
- 135th Ave NE
- 138th Ave NE



D LANES

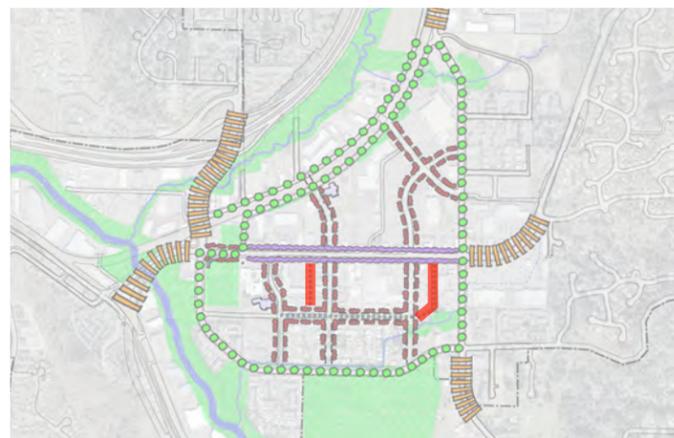
PROPOSED CROSS SECTION

Lanes are narrow streets similar in function to alleys. *Lanes* generally do not have sidewalks or on-street parking, but allow vehicular access. Pedestrians and bicycles mix with vehicles, which travel very slowly. *Lanes* may form connections between the downtown grid streets, NE 175th Street, or the parkways

In most cases, *Lanes* will be private streets that are accessible to the public. City policies encourage developers to provide *Lanes*, but do not require them outright.



Examples of Lanes



CONTEXT MAP



(Photo credit: [www.pedbikeimages.org/Ryan Snyder](http://www.pedbikeimages.org/Ryan_Snyder))

5 PLANTINGS

STREET TREE BENEFITS

Research on street trees has shown that they have many benefits, including:

- Significant “place making” value
- Traffic calming effect and crash reduction
- Air pollutant and particulate absorption
- Carbon dioxide absorption
- Stormwater quality and quantity mitigation
- Summer shade and associated energy savings
- Physical and mental health benefits
- Increase in retail sales and rental values

TREE SELECTION

Trees are one of the more important design elements when defining the character and quality of a street.

Criteria for the selection of the street trees for the different streets in the downtown include:

- Relatively small scale to preserve views.
- Native or regionally appropriate.
- Deciduous, to provide summer shade and allow winter sun.
- Relatively small leaf size to allow filtered sunlight and minimize maintenance problems (clogging storm drains, major leaf removal program).
- Open, irregular branch structure to allow views and sunlight to penetrate to surrounding buildings and serve as a counterpoint to the strong lines of existing background architecture.
- Generally upright oval or pyramidal shape to fit within narrow sidewalk area.
- Provide interest and color in more than one season if possible (particularly spring and fall).

- Adaptability to urban environment.
- Maintenance needs of tree such as leaf size, branch strength, water requirement, privacy, fruit or sap issues.

CANDIDATE SPECIES INCLUDE:

Main Street - match existing trees along NE 175th Ave

- *Acer rubrum* ‘Scarsen’, Scarlet Sentinel Maple

Downtown Grid Streets - medium size trees up to 40’ tall (not to be planted under utility wires)

- *Pyrus calleryana* ‘Aristocrat’, Ornamental pear
- *Ginkgo biloba* ‘Autumn Gold’, Autumn Gold Ginkgo
- *Cercidiphyllum japonicum*, Katsura tree

Parkways - large trees 60 -70’ tall (not to be planted under utility wires)

- *Liriodendron tulipifera*, Tulip Tree
- *Liquidambar styraciflua*, Sweetgum
- *Acer saccharum*, Sugar Maple

Lanes - small trees up to 30’ tall

- *Prunus Sargentii*, Sargent cherry
- *Styrax Japonica*
- *Acer buegerianum*, Trident Maple
- *Acer Griseum*, Paperbark Maple
- Japanese Stewartia

MAIN STREET



Acer rubrum, Red maple

DOWNTOWN GRID STREETS



Pyrus calleryana ‘Aristocrat’, Ornamental Pear



Ginkgo biloba ‘Autumn Gold’, Autumn Gold Ginkgo



Cercidiphyllum japonicum, Katsura Tree

PARKWAYS



Liriodendron tulipifera, Tulip Tree



Liquidamber styraciflua, Sweetgum



Acer saccharum, Sugar Maple



Pseudotsuga menziesii, Douglas Fir



Cedrus atlantica, Atlas Cedar

LANES



Prunus sargentii, Sargent Cherry



Styrax japonicus, Japanese Snowbell



Acer buergerianum, Trident Maple



Acer griseum, Paperbark Maple

STREET TREE SOILS

To improve the health and life expectancy of the street trees, structural soil is recommended adjacent to all tree pits under the flexible zones, where the concrete unit pavers will also allow some air to pass through to the soil and roots. Structural soil can be compacted to 95% of dry density to support sidewalks and other paved areas, but will allow tree roots to extend through it and under the paved areas. Structural soil mixes typically comprise about 20% clay loam soil mixed with 80% 1 to 3/4-inch angular gravel, which forms voids for the soil and roots.

Since structural soil has 80% less soil per cubic foot than regular soil, approximately five times as much volume of structural soil should be used to provide each tree with an adequate growing medium. The structural soil zone should be at least 36" deep.

Planting soil should be used in the tree pit itself, where 95% compaction is unnecessary.

SHRUBS AND GROUNDCOVERS

The sidewalk extensions at tree planters, and individual planting strips will be planted with ornamental plants or groundcovers to provide visual interest, reinforce the separation between the street and the sidewalk, and to help mitigate the impacts of traffic on pedestrians.

Design criteria for selection of ornamental planting include:

- Low maintenance.
- Hardy and able to withstand occasional foot traffic.
- Bright color, preferably in all seasons.
- Low in height to allow drivers and pedestrians to see one another, particularly at intersections.
- Seasonal color.

Ornamental shrubs and groundcovers to be considered in the detailed design phase include:

- *Cistus x purpureus* 'Brilliancy', Pink rockrose
- *Lavandula angustifolia*, Lavender
- *Festuca ovina* 'Glauca', Blue fescue
- *Pennisetum alopecuroides*, Fountain grass
- *Phormium tenax*, New Zealand flax
- *Rosmarinus officinalis*, Rosemary
- *Miscanthus sinensis*, Maidenhair grass
- *Calamagrostis arundinacea* 'Karl Foerster', Feather reed grass
- *Gaultheria shallon*, Salal
- *Viburnum davidii*, Viburnum
- *Berberis thunbergii*, Japanese barberry
- *Equisetum hyemale*, Horsetail
- *Arctostaphylos uva ursi*, Kinnikinnick
- *Cotoneaster dammeri*, Bearberry cotoneaster
- *Ceanothus gloriosus* 'Heart's Desire', Wild lilac



Rosmarinus officinalis, Rosemary



Lavandula angustifolia, Lavender



Calamagrostis arundinacea 'Karl Foerster', Feather reed grass



Equisetum hyemale, Horsetail



Cistus x purpureus 'Brilliancy', Pink rockrose



Phormium tenax, New Zealand flax



Miscanthus sinensis, Maidenhair grass



Mahonia nervosa, Longleaf mahonia



Gaultheria shallon, Salal



Miscanthus sinensis, Maidenhair grass



Festuca ovina 'Glauca', Blue fescue



Berberis thunbergii, Japanese barberry



Viburnum davidii, Viburnum



Ceanothus gloriosus 'Heart's Desire', Wild lilac



Arctostaphylos uva ursi, Kinnikinnick



Cotoneaster dammeri, Bearberry cotoneaster

6 STREET LIGHTING

Along with street trees, decorative street lighting can play a significant role in creating a consistent image of a city.

LIGHTING CRITERIA

The following criteria should be used when selecting the downtown streetlights:

- Not too historic, not too contemporary, but traditional
- Strong, solid looking pole and fixture (not too delicate or wimpy)
- Available in vehicular (20'-25') and pedestrian (12'-15') heights
- Visible luminaire (not a 'cut-off' type fixture) to create a rhythm and guide the eye down the street
- Minimal light pollution ("Dark Sky Friendly")
- Interesting daytime appearance
- Capable of being dual headed
- Capable of accommodating an LED light source
- Good color rendering index ("CRI")
- Adequate light levels
- High efficiency
- Low maintenance

EXISTING STREET LIGHTS

There are at least three different existing streetlights in the city. These include:

1. The cobraheads for roadway illumination. The cobrahead lights have a High Pressure Sodium light source.
2. The contemporary decorative lights that were installed as part of the Downtown Woodinville

Shopping Center project. The shopping center light is the Lumec "Domus 55" Series and has a metal halide light source. These lights are on both streetlight height poles (+/- 30') and pedestrian light poles (+/- 20').

3. The Tourist District decorative lights at the south gateway and roundabouts which have Aal Providence prol-h3-1dl (high pressure sodium. These lights are on an 18 ft. pole, and have a cutoff type 3.

STREET LIGHTING LEVELS

Uniformity ratios are an important part of a complete set of lighting criteria and can have a positive effect on the quality of lighting installations. Lighting uniformity affects our perception of environment and our ability to navigate it. Uniform lighting allows us to perceive the environment continuously and without sudden breaks caused by lighting level drops. Light levels and uniformity ratios should not exceed recommended values, per IESNA RP-33 or 20.

STREET TYPE	*FOOTCANDLE
Main St.	.9
Downtown Grid Streets	.9
Parkways	1.3
Lanes	.7

* Assumes using regular asphalt paving.



Existing Downtown Shopping Center Pedestrian Light



Existing Cobrahead Street Lights



Existing Downtown Shopping Center Street Light

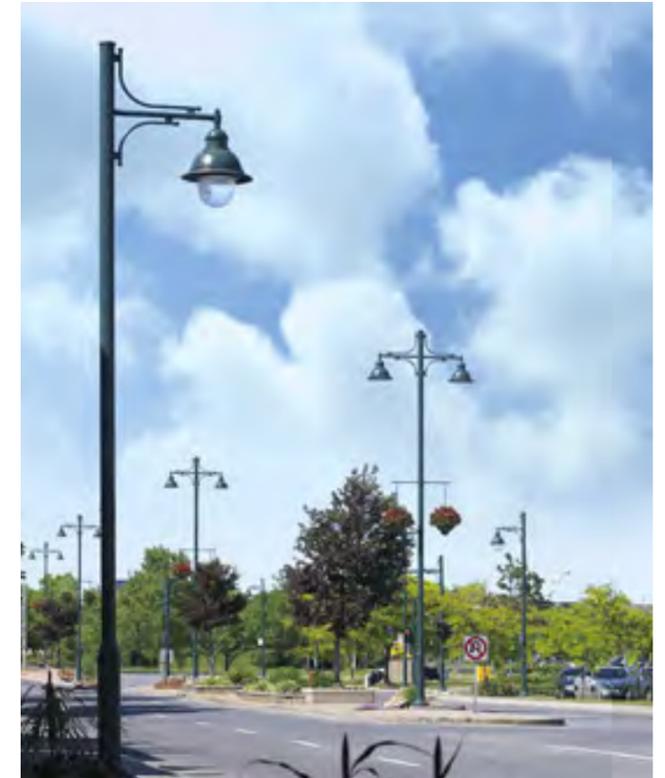
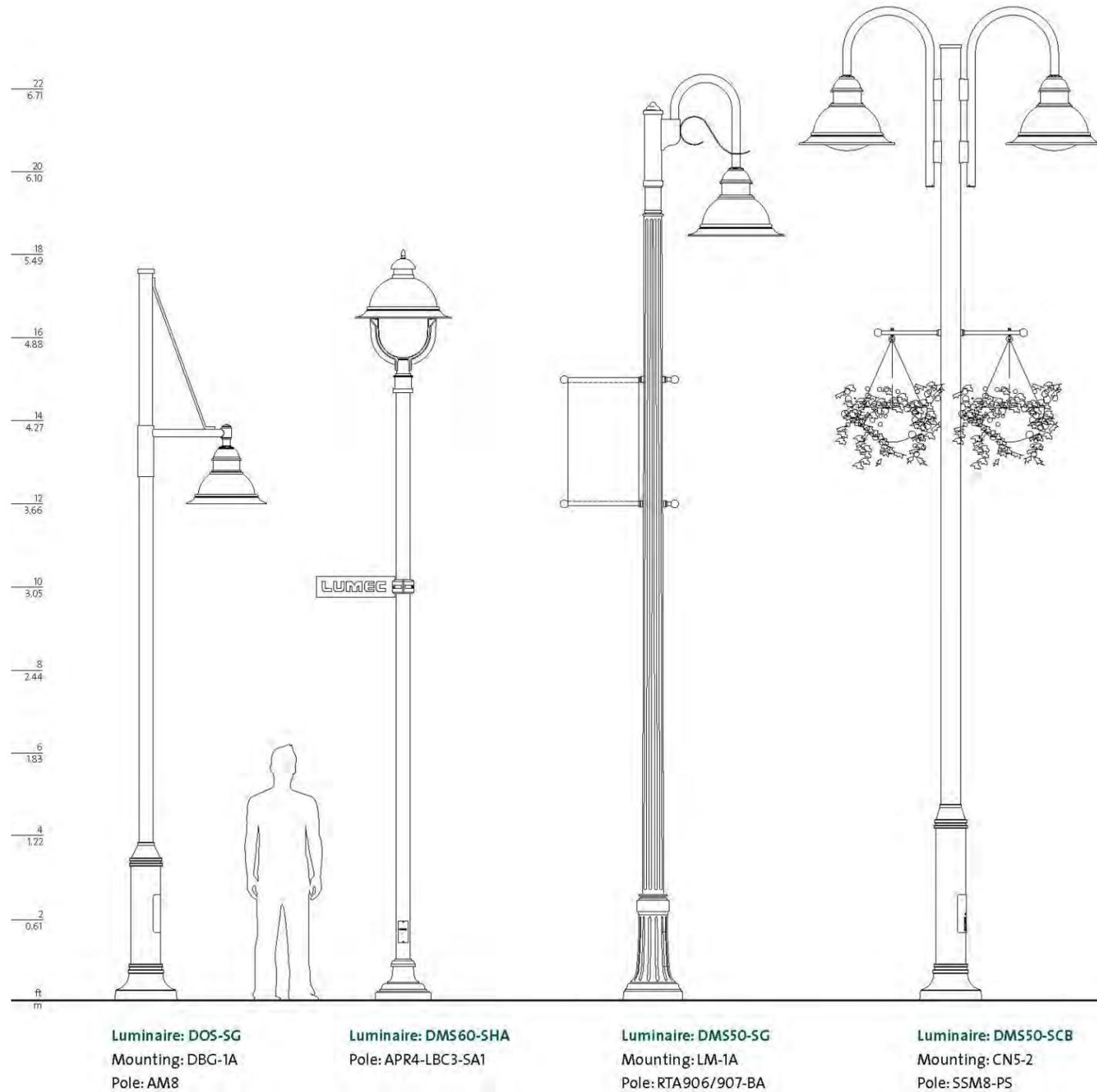


Existing Tourist District Light

PROPOSED STREET LIGHTS

In general, a city with a downtown the size of Woodinville's should use a single model of street light to reduce maintenance issues and create a consistent appearance. However, choosing a special light for NE 175th Street may be warranted to set it apart from the other streets in the downtown. NE 175th Street could have a unique light that is nevertheless still compatible with other lights in the city. Using a double-headed light with the same fixture to distinguish NE 175th Street, rather than a different fixture, may be another more economical approach. All light types should have a LED light source.

LUMEC "DOMUS" AND "DOMUS 55" SERIES (EXISTING DOWNTOWN SHOPPING CENTER LIGHT)



SPECIAL LIGHTING

Special lighting, including gateway lights, tree uplights and lighted bollards, should be considered.

GATEWAY LIGHTING

Lighting the gateway signs can add character and color, and light the sign for nighttime legibility

TREE UPLIGHTS

Uplighting trees is an effective way to highlight specimen trees and add warmth to the streetscape

LIGHTED BOLLARDS

Lighted bollards can be used at crosswalks to improve visibility at corners and mid-block crossings.

SEASONAL LIGHTS

Electrical outlets should also be located on light poles or in tree wells to provide power for seasonal “twinkle” lighting on trees.



Example of Gateway lighting



Example of Tree Uplighting



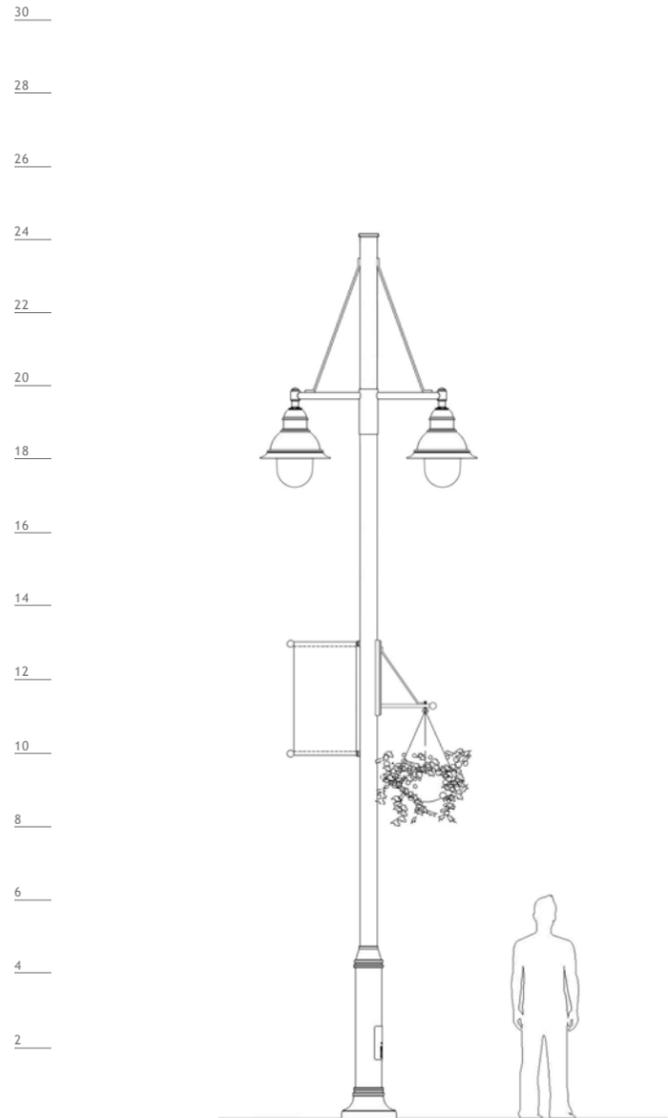
Example of Seasonal “Twinkle” Lights



Example of Lit Bollards

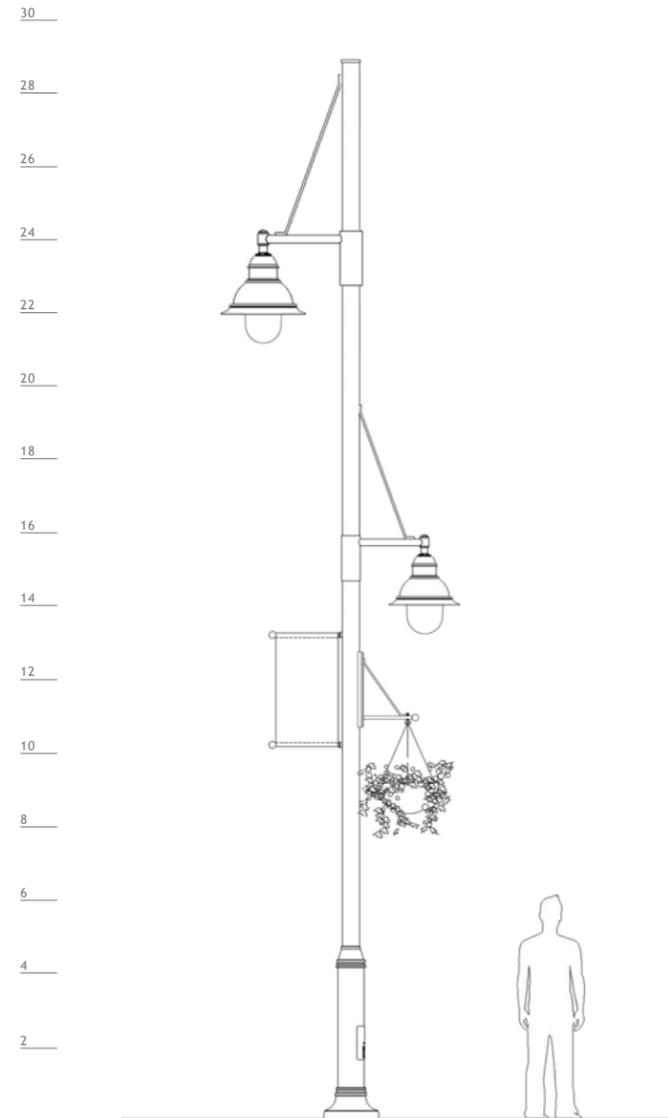
PROPOSED LIGHTING
MAIN STREET

Alternative A



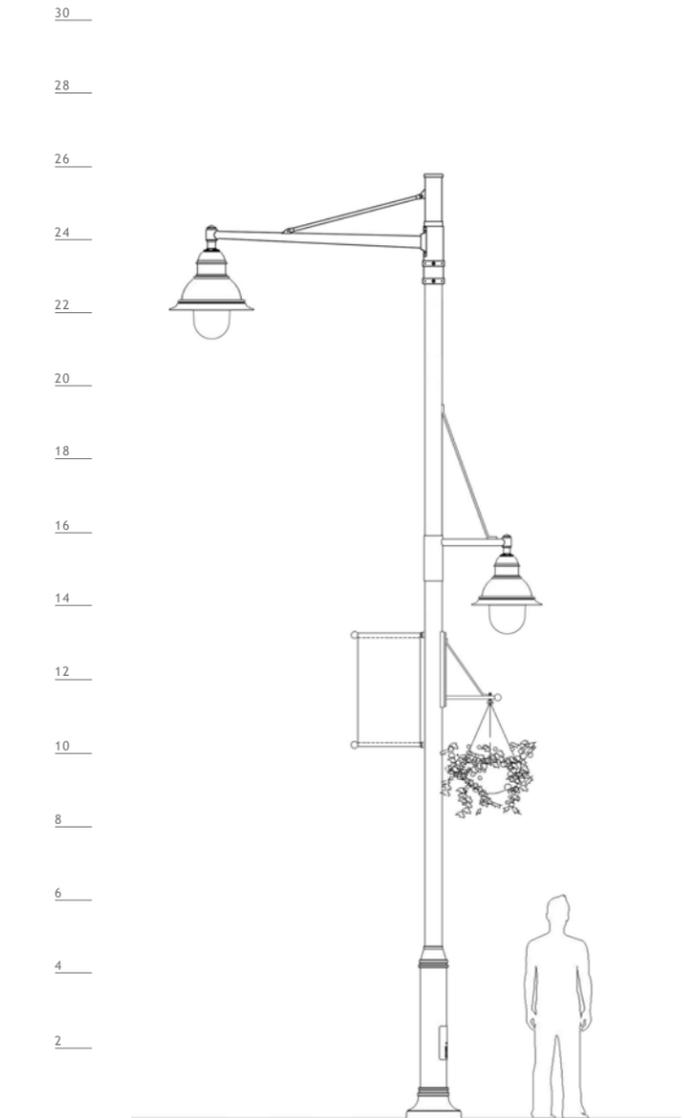
Lumec "Domus 55" Series
 Luminaire: DMS55
 Source: Asymmetrical Prismatic Globe with LifeLED
 Pole: SSM8
 Street and Pedestrian Light Bracket: PC-1A-F medium reach
 Hanging baskets: PSPCD
 Banner arms: BAD(2)18"

Alternative B



Lumec "Domus 55" Series
 Luminaire: DMS55
 Source: Asymmetrical Prismatic Globe with LifeLED
 Pole: SSM8
 Street and Pedestrian Light Bracket: PC-1A-F medium reach
 Hanging baskets: PSPCD
 Banner arms: BAD(2)18"

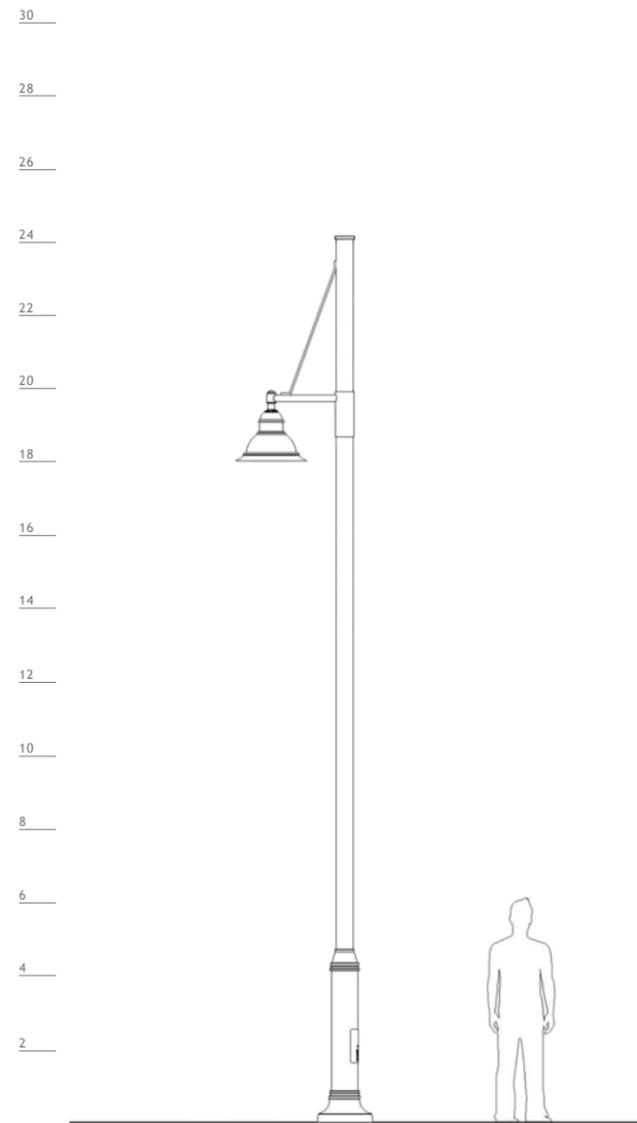
Alternative C



Lumec "Domus 55" Series
 Luminaire: DMS55
 Source: Asymmetrical Prismatic Globe with LifeLED
 Pole: SSM8
 Streetlight Bracket: PC-6 Extended reach
 Pedestrian light Bracket: PC-1A-F Medium reach
 Hanging baskets: PSPCD
 Banner arms: BAD(2)18"

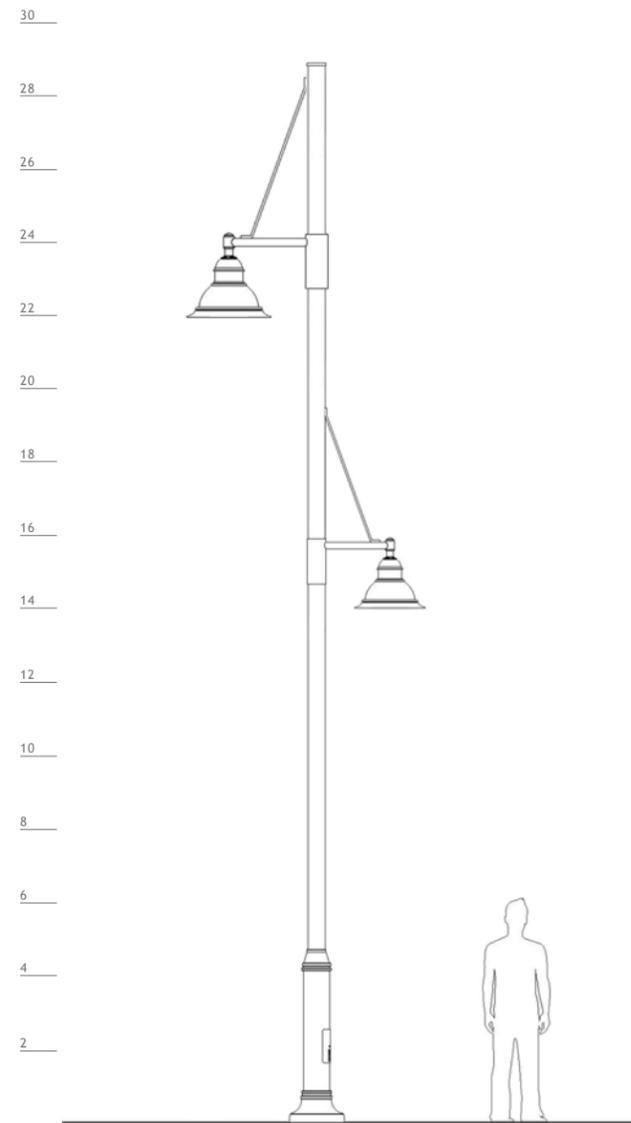
DOWNTOWN GRID STREETS

Alternative A



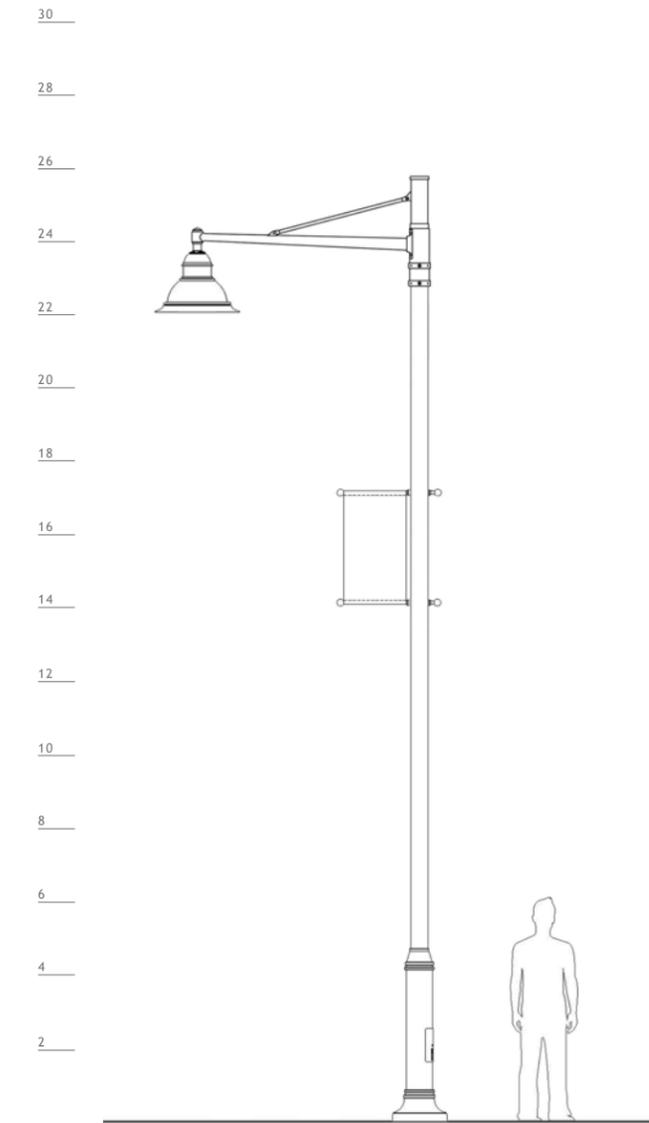
Lumec "Domus 55" Series
 Luminaire: DMS55
 Source: Sag lens with LifeLED
 Pole: SSM8
 Streetlight Bracket: PC-1A-F medium reach

Alternative B



PARKWAYS

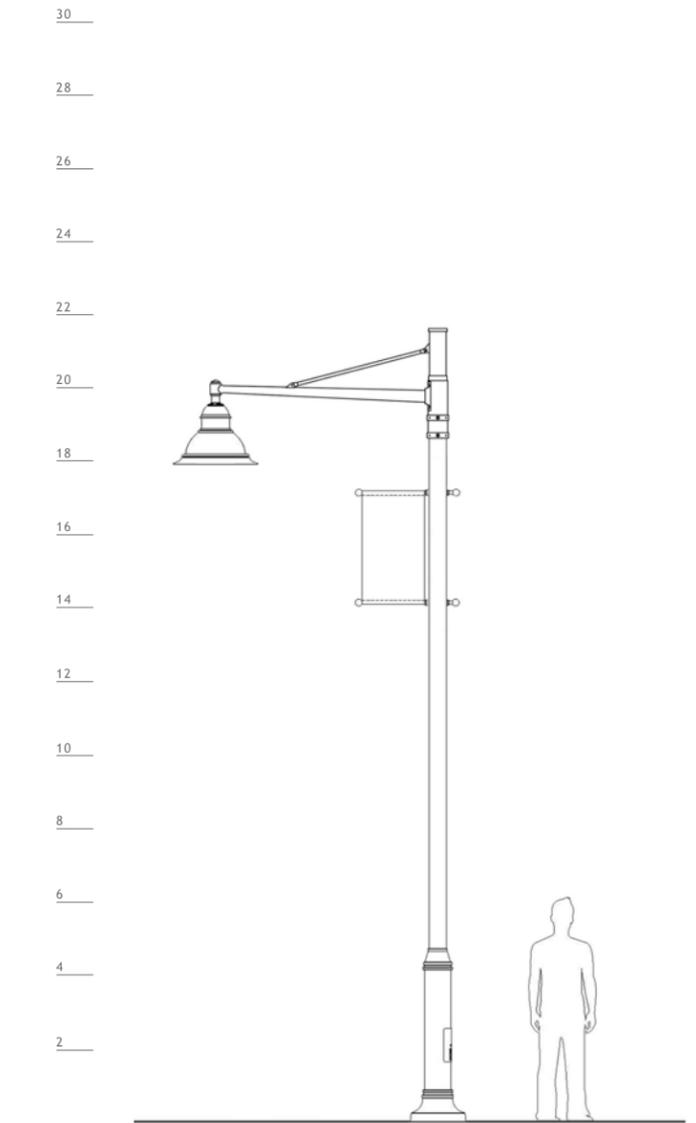
Alternative A



Lumec "Domus 55" Series
 Luminaire: DMS55
 Source: Sag lens with LifeLED
 Pole: SSM8
 Streetlight Bracket: PC-6 Extended reach
 Banner arms: BAD18"

LANES

Alternative A



Lumec "Domus 55" Series
 Luminaire: DMS55
 Source: Sag lens with LifeLED
 Pole: SSM8
 Streetlight Bracket: PC-6 Extended reach
 Banner arms: BAD18"

7 STREET FURNISHINGS & AMENITIES

SEATING

The style of furnishing could be contemporary while also alluding to the past and integrate with existing benches. The style of seating on NE 175th Street should differ from other streets to give NE 17th Street a unique identity.

Proposed benches would be located at corners and mid-block sidewalk extensions. They should be arranged in groups creating informal rooms. The proposed material for seating is steel with a powder-coated paint finish.

EXISTING BENCHES



Woodinville Fields Bench



Victor Stanley "Steelsites RB-28"



Downtown Bench and Trash Receptacle



Victor Stanley, "Steelsites RB-12"

PROPOSED BENCHES

Option 1: Victor Stanley (PREFERRED)

Location: Main street, Downtown Grid Streets

Specs: 4, 6 or 8 ft lengths, all fabricated metal components are steel shotblasted, etched, phosphatized, preheated and electrostatically powder-coated with TGIC polyester powder coatings

Option 2: - Fairweather // Reversible Bence

This bench could be appropriate at mid-block crossings and other locations where the bench can face either the street or the sidewalk. Bench models with wooden slats are recommended to fit the NW woodland landscape theme of Woodinville.

Location: Special locations along Parkways

Specs: 6' or 8' length, powder-coated steel and wood or recycled plastic



FairWeather "Thea Foss"



FairWeather "Thea Foss"

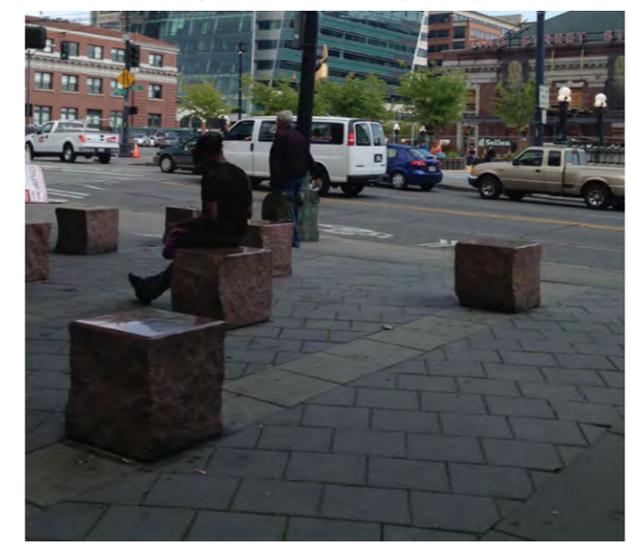
Option 3: Custom timber, stone, or concrete block seating

Location: Main street, Lanes

Specs: Custom length, reclaimed cedar



Custom timber seating - Unique locations along Parkways



Custom stone seating - Unique locations along Main Street

TRASH RECEPTACLES

Trash receptacles will be located near corners and mid-block crossings within the furniture zone along the curb and should not protrude into the pedestrian access route.

EXISTING TRASH RECEPTACLES



Downtown Shopping Center Trash Receptacle



Downtown Shopping Center Trash Receptacle



Woodinville Fields Trash Receptacle

PROPOSED TRASH RECEPTACLES

Victor Stanley, "NSDC-36"
36 gallon
Powder-coated steel

Location : Main street, Downtown Grid streets,



Victor Stanley, "Streetsites TH-24"
24 or 36 gallon
Powder-coated steel and wood

Location : Parkways



BICYCLE RACKS

The proposed rack is a simple inverted “U” type rack, such as the “Hoop Rack” by Dero. All of these models allow the locking of two bicycles and are simple in their design, thereby not adding excessive clutter to the street. They also encourage cyclists to park their bicycles parallel to the curb, minimizing interference with the pedestrian path of travel along the sidewalk. Custom bike racks that fit the character of Woodinville should also be considered.

Bicycle racks would be located in the street furniture zone or in curb extensions to not interfere with the pedestrian access route along the sidewalk. They will also be placed to maintain at least 36 inches of clearance between the bicycles parked at racks and any other street furniture.

Where sidewalk space is at a premium and bike racks cannot be accommodated, on-street bicycle parking should be considered. On-street bike parking entails temporarily or permanently installing bike racks in one or more parking spaces. Racks for multiple bikes could also be accommodated in curb extensions.



Dero "Rolling Rack"



Permanent on-street bike parking

PLANTERS

Planters can be located along sidewalks to add seasonal color, used to close off intersection for seasonal events, and provide separation between private establishments and the public realm, such as for enclosing sidewalk cafes.

Planters should be simple and compliment other streetscape furniture. Two types of planters are recommended:

1 - Rectangle Corten Steel Planters - these planters use the same material as the proposed City of Woodinville signage and add warm colors to the pedestrian realm.

2 - Round Ceramic Planters - round shaped planters provide additional flexibility to locate planters in small or odd shaped areas.

Planters and maintenance programs can also be paid for by local improvement districts



Example of Round Ceramic Planters



Example of a Rectangle Corten Steel Planter

PAVING

SIDEWALKS

The pedestrian access route for sidewalks should be paved with concrete to provide a smooth surface for pedestrians and wheelchair users. The concrete should have 2' X 2' troweled or saw-cut scoring to create interest for pedestrians. The concrete would have a smooth finish but still have a high enough coefficient of friction to prevent slips when wet.

Decorative brick banding would be located in the furniture zone outside of the pedestrian access route.



Troweled concrete with smooth finish



Sawcut concrete with smooth finish



Brick banding

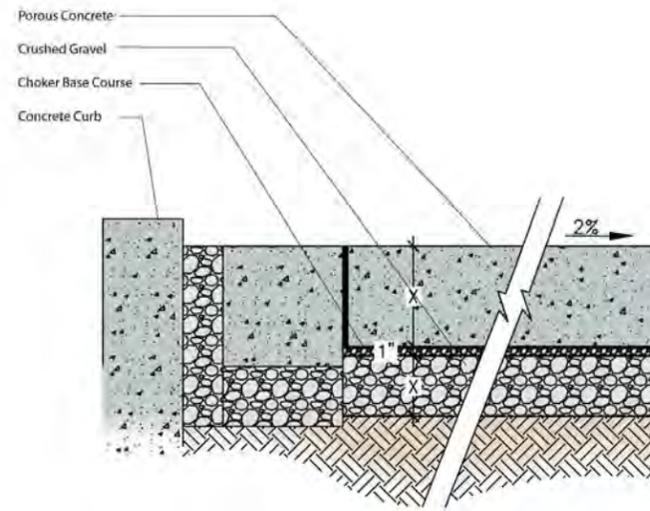


SUSTAINABLE PAVING

Sustainable paving strategies such as porous concrete and permeable pavers provide many benefits over traditional pervious paving techniques. Porous concrete can eliminate untreated storm water and creates zero runoff; directly recharges groundwater; mitigates “first flush” pollution, protects streams, watersheds, and ecosystems; mimic the drainage and filtration of bioswales and natural soils; reduce surface temperatures and heat island effects, and eliminates need for expensive collection and detention systems



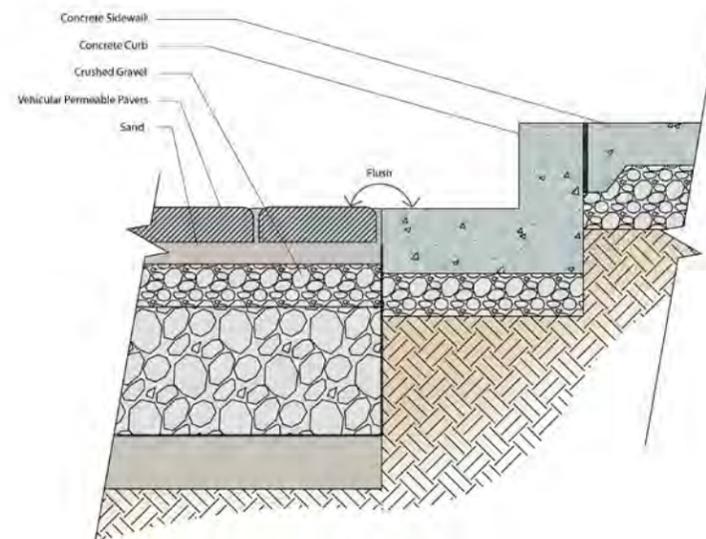
Example of a Porous Concrete Street



POROUS CONCRETE - TYPICAL DETAIL



Example of Vehicular Permeable Pavers



VEHICULAR PERMEABLE PAVERS - TYPICAL DETAIL

BOLLARDS

Bollards are used to separate vehicle and pedestrians where along streets where there no curbs, such as along *Lanes and* curbsless intersections. Bollards can also be used to separate pedestrian uses, provide nighttime lighting, and increase pedestrian safety.

Bollards are available in various sizes, colors, and mounting styles. The appropriate bollard should be selected depending on it's intended use.



Examples of Bollards

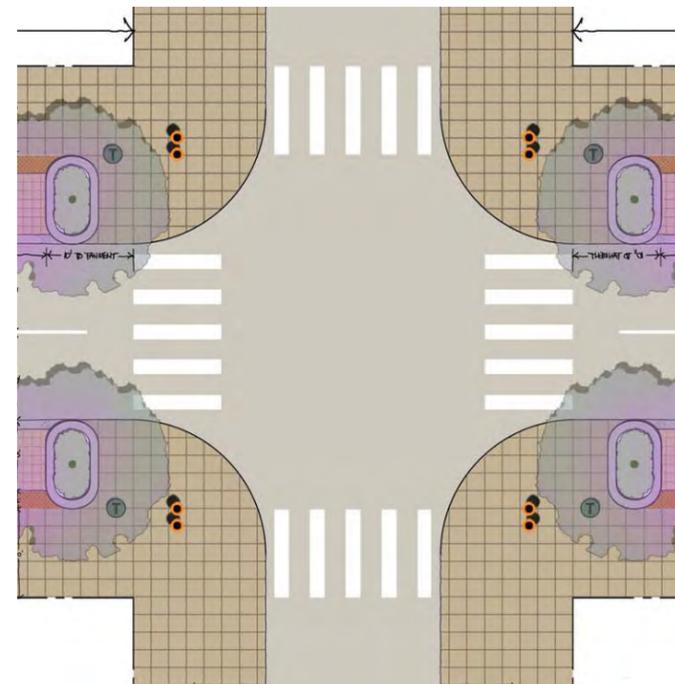
8 INTERSECTIONS AND CROSSWALKS

CROSSWALKS

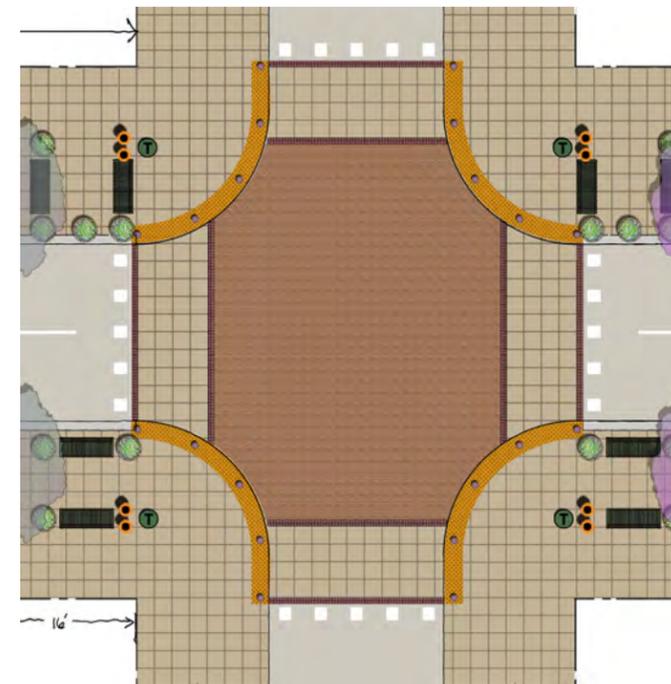
Marked crosswalks define where pedestrians would cross the street and alert drivers where to expect pedestrians. Above all, crosswalks would improve the safety for pedestrians crossing the street. They would be slip resistant and as visible as possible for both pedestrians and drivers. Crosswalks would also avoid rough textures, which can create challenges for mobility impaired pedestrians.

The path of travel for marked crosswalks would be paved with concrete to provide a smooth surface for pedestrians and wheelchair users. The concrete would be scored to match the adjacent sidewalks. Rougher and more decorative paving bands can abut the concrete path of travel on both sides to increase driver awareness of the crosswalk. In addition, white thermoplastic ticks would be used in conjunction with the concrete and special paving to increase visibility of the crosswalk in low light conditions, particularly where street lighting levels are low.

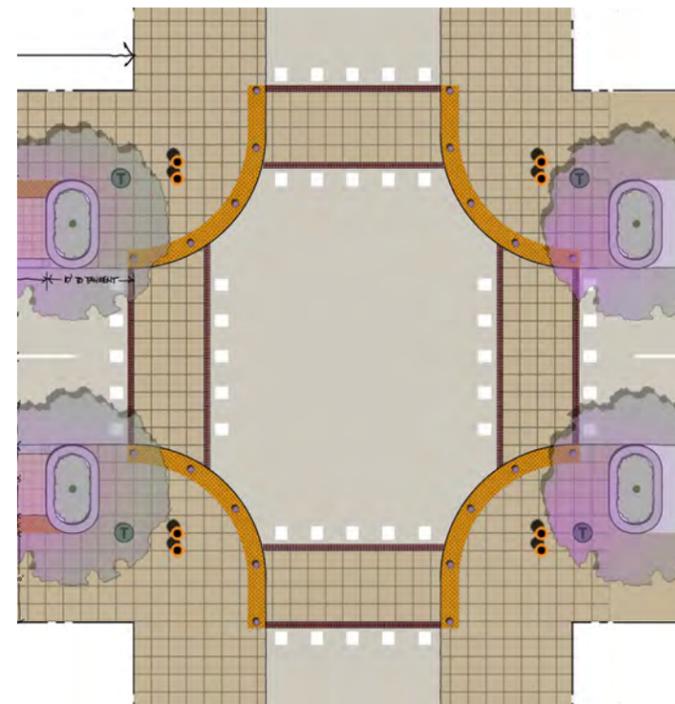
In low priority locations where the expense of special crosswalks is unjustified, standard "continental" crosswalks would be used. As with the special crosswalk treatment, the thermoplastic stripes would still be spaced to avoid tires. This spacing will also help the different crosswalks relate to one another visually.



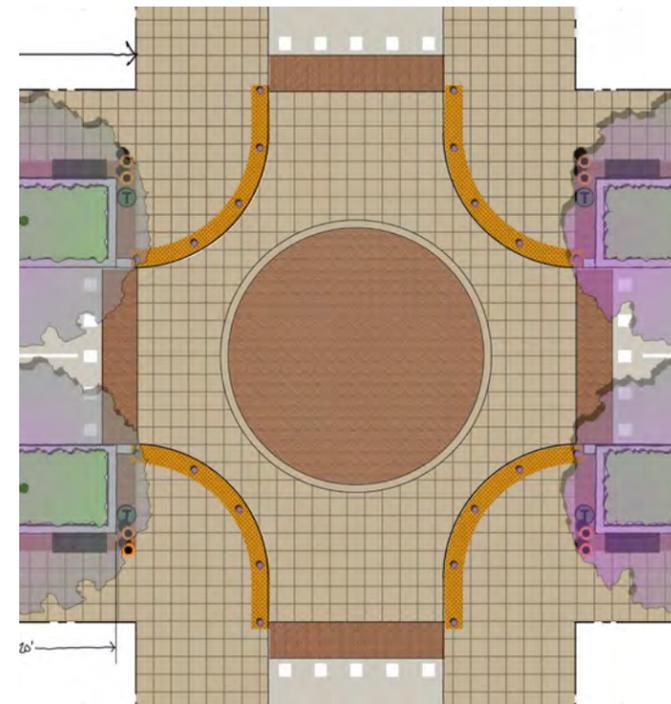
Standard "Continental" Crosswalk Treatment



Special Crosswalk Treatment - B



Special Crosswalk Treatment - A



Special Crosswalk Treatment - C



Crosswalk with brick banding



Concrete Crosswalk with Brick Intersection Paving



Brick Intersection Paving

DETECTABLE WARNINGS

Detectable warnings for visually impaired pedestrians must be used wherever a sidewalk crosses a vehicular way, except at unsignalized driveways. Situations where the sidewalk is flush with the street must also have detectable warnings. Requirements for detectable warnings include:

1. Minimum 24" width
2. Aligned with the back of curb
3. Should have over 70% contrast, but not required
4. Either light-on-dark or dark-on-light
5. Certain colors will fade more over time, reducing contrast (e.g. red)

Detectable warnings are available in various colors and materials. To the extent possible, the color and material should fit the character of Woodinville.



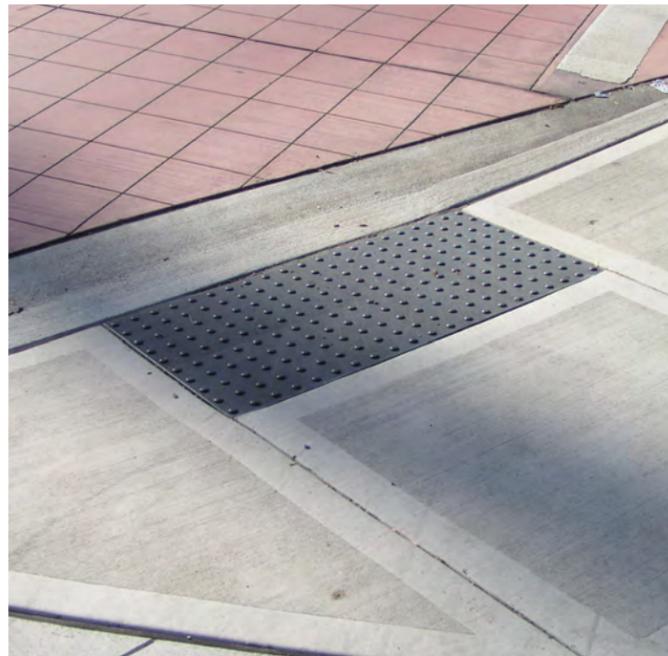
Cast Iron Detectable Warning (preferred)



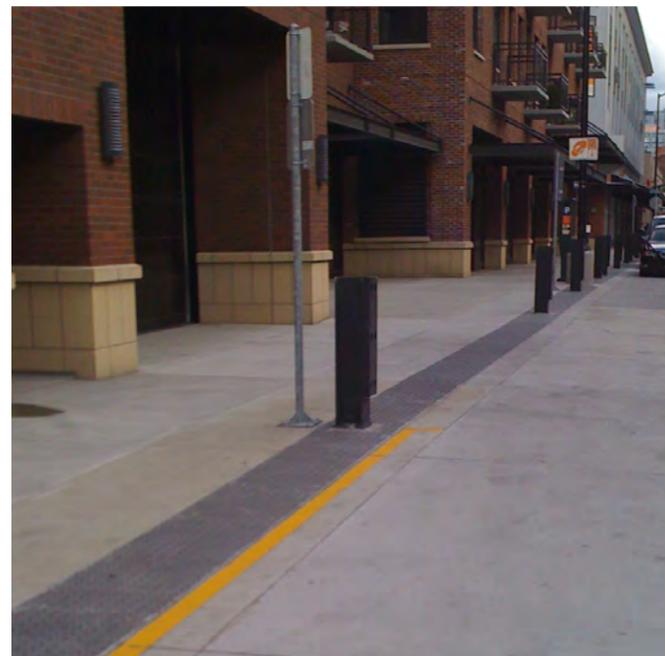
Yellow Rubber Detectable Warning



Detectable warning colors



Black Rubber Detectable Warning



Blended Transition with Black Rubber Detectable Warning

