



Bell Street Concept Plan

ACKNOWLEDGMENTS

CITY OF SEATTLE

Seattle Department of Transportation (SDOT)

Seattle Department of Construction & Inspections (SDCI)

COMMUNITY

Denny Triangle Neighborhood Association

Belltown Community Council

CONSULTANT TEAM

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1: INTRODUCTION

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1: INTRODUCTION

Background & Community Process

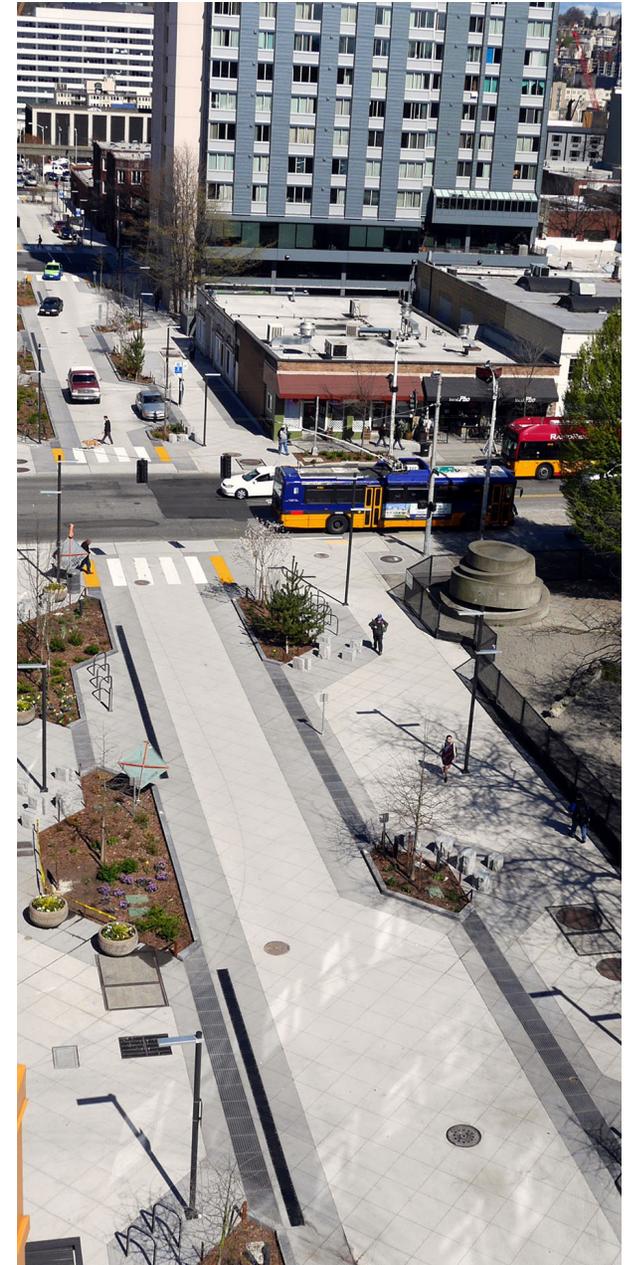
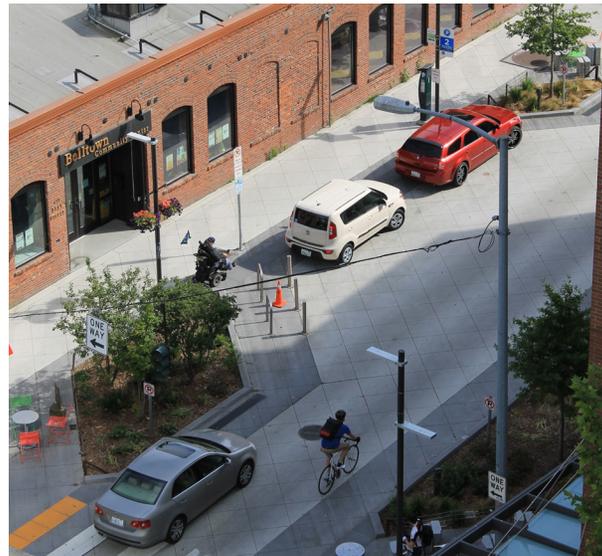
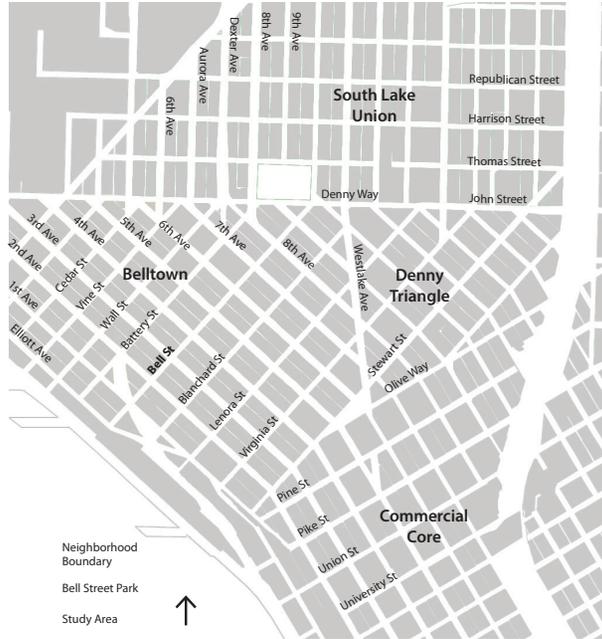
Background

The Denny Triangle neighborhood is currently experiencing unprecedented residential and commercial development. With this development have come significant shifts in population, demographics, land uses, and expectations for the public realm. The Bell Street corridor between 5th Avenue and Denny Way, which provides a primary connection between Belltown and South Lake Union via Denny Triangle, is now a focus of redevelopment efforts. There are 13 parcels fronting on this designated Green Street corridor. Of these parcels, two are recently completed projects, four are active redevelopment projects, six are considered feasible redevelopment opportunities, and one is anticipated to remain as a parking garage.

Process

The project team convened a series of public work sessions with the Denny Triangle Neighborhood Association (DTNA) and the Belltown Community Council (BCC) to inform the development of the street concept plan. Initial sessions focused on establishing project framework and community vision for the corridor. As the concept plan developed, sessions focused on review and feedback from community members/stakeholders. This process provided critical feedback/direction for the project team.

The concept plan was further informed by concurrent and previous planning efforts within the study area and surroundings. These efforts include the Denny Triangle Neighborhood Plan (1998), the Belltown neighborhood Plan (1998), Bell Street Park Concept Plan (2010), Denny Way Street Concept Plan (2013), Westlake and 7th Avenue Street Concept Plan (2012), Belltown and Denny Triangle Connected Public Realm Plan (2015), and the Market to MOHAI Plan.



1: INTRODUCTION

Vision



- Apply the principles of the Bell Street Park to the study area corridor to create a cohesive pedestrian experience from Denny Way to Western Avenue (acknowledging that 5th Avenue to Denny is an SDOT facility that is expected to provide full functionality for vehicles)
- Create a vibrant corridor through a combination of comprehensive public and private realm solutions that complement each other. The relationship of public realm elements to private building entries, canopies, retail visibility, and outdoor seating is a critical factor to the success of the corridor.
- Incorporate building setbacks from property lines to expand usable open space (given narrow right-of-way) and take advantage of good solar access, especially along the north side of the corridor.
- Acknowledge the constraints and work with the opportunities presented by the sloping street segments and unique street/building relationships of the Denny Triangle.
- Facilitate larger bicycle connections to and through the neighborhood, including Dexter Avenue, 9th Avenue, 7th Avenue, Bell Street Park, and 2nd and 4th Avenues.
- Acknowledge and support the evolving role of transit along the corridor. While the corridor currently includes both transit stops and layover, the City of Seattle intends to relocate both over time to nearby corridors that are more compatible.

This street concept plan provides a framework for future development along the Bell Street corridor between 5th Avenue and Denny Way that can be used to inform planning/design decisions as parcels continue to redevelop. The plan concepts relate to both the public right-of-way (sidewalk and street paving, parking, lighting, furnishings) and on-site elements (building setbacks, access, canopies, furnishings, etc). The intent is that property owners will work with city agencies and neighborhood groups to implement this vision as individual parcels are redeveloped.

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2: EXISTING CONDITIONS

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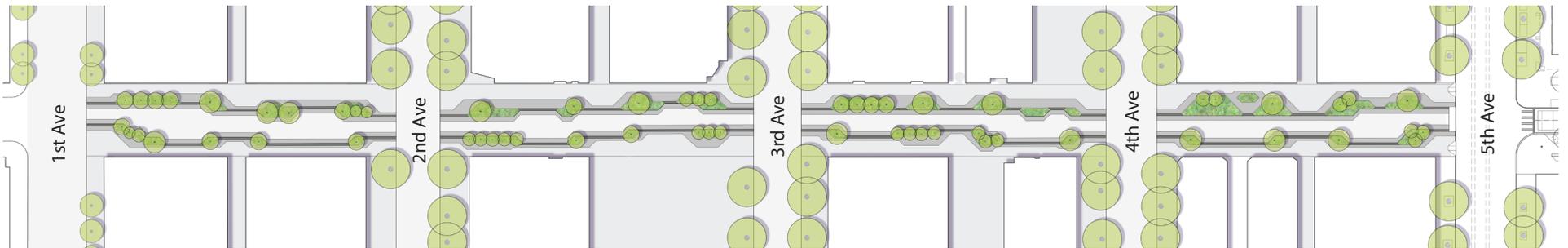
2 : EXISTING CONDITIONS

Bell Street Park

Typical Characteristics:

- Curbless
- 66' Right-of-Way
- Park Owned/Maintained by Seattle Parks (transferred from SDOT)
- Limited vehicle access (one-block then turn); Through transit access
- Generally level between 5th and 2nd Avenues; Sloping between 2nd and 1st
- Typically low- and mid-rise frontage oriented along property line; typically side of buildings due to short blocks
- Rotated geometry expressed in paving/curbs/planters/furnishings
- Unique pedestrian-scale light fixtures

*Existing conditions as of September 2017



Existing Bell Street Park (1st Ave - 5th Ave)

2 : EXISTING CONDITIONS

Bell Street (Between 5th Ave & Denny Way)



Typical Characteristics:

- Designated Green Street
- Curb and gutter
- 66' Right-of-Way
- Owned/maintained by SDOT
- One-way vehicular access; on-street parallel parking/bus layover
- Sharrows between 5th and 8th Avenues; Bike lane between 8th and Denny Way
- Generally sloping (6-7%) between 6th Avenue and Denny Way
- Existing frontage is typically low-rise with surface parking; recent development has been high-rise
- Narrow sidewalks (6' typical width) and tree pits
- Standard SCL roadway light fixtures

*Existing conditions as of September 2017



Existing Bell Street (5th Ave - Denny Way)

2 : EXISTING CONDITIONS

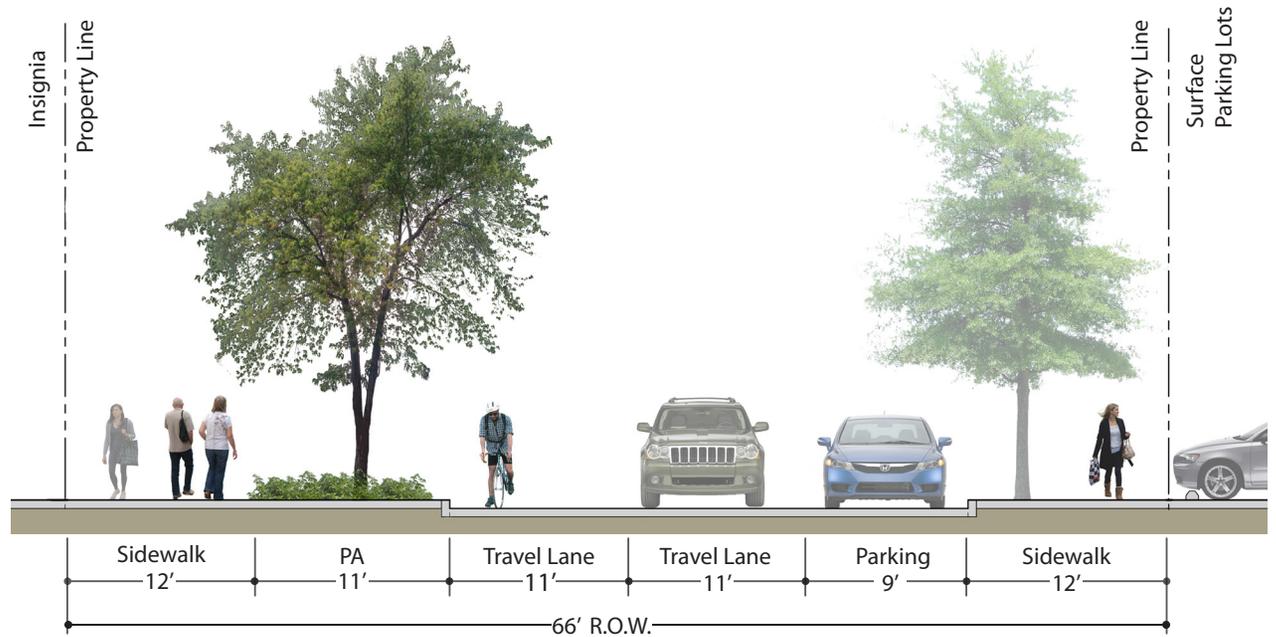
5th Ave to 6th Ave

The North side of Bell Street between 5th and 6th Avenues has seen significant change with the opening of the Insignia condominium development. Street improvements associated with this project included the shifting of the curb approximately 11' into the adjacent travel lanes and re-allocation of space for pedestrian and planting purposes. Widened sidewalks, deep building setback(s), generous planting areas, and increased seating opportunities have helped establish a more pedestrian-focused space along the North side.

There is no on-street parking along the north side of the street. Travel lanes are one-way and travel west.

The south side currently includes two surface parking lots with on-street and Metro bus layover parking. There is a data center proposed for the corner of Bell Street and 6th Avenue.

*Existing conditions as of September 2017



Existing street configuration



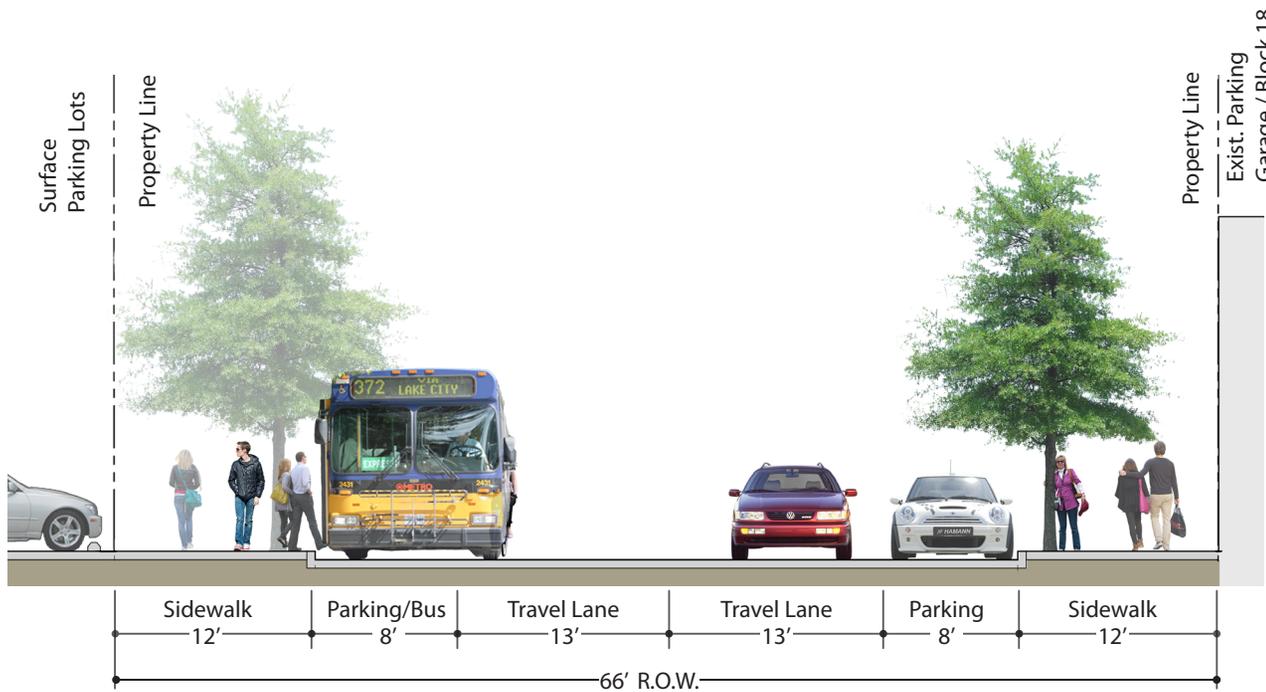
New seating in the R.O.W. at Insignia



New streetscape at Insignia

2 : EXISTING CONDITIONS

6th Ave to 7th Ave



The block between 6th and 7th is emblematic of the remainder of the corridor in that it is geared primarily towards vehicular traffic with limited space allocated for pedestrians (or planting). Travel lanes are one-way heading west.

There is an existing bus stop along the north side of the street near the intersection with 7th Avenue and on-street parking that is used for Metro bus layover along the remainder of the frontage.

There are mixed-use (high-rise) developments proposed for both parcels along the north side of the corridor. There is an existing parking garage for the Denny Building and low-rise commercial building (Block 18) along the south side. The Block 18 site is being redeveloped.

*Existing conditions as of September 2017



Existing sidewalk conditions



Existing bus stop



Existing street configuration

2 : EXISTING CONDITIONS

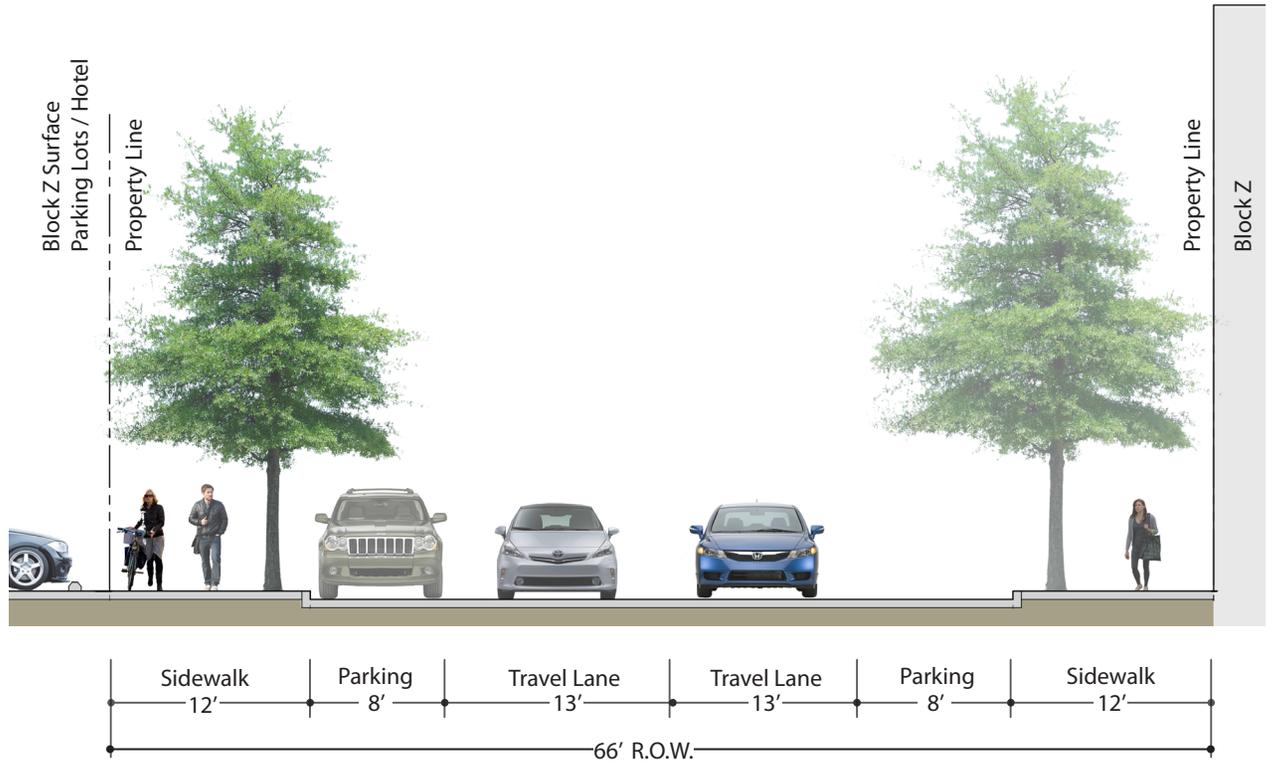
7th Ave to 8th Ave

Between 7th and 8th Avenues, the north side of the street corridor is defined by a parking garage wall and surface parking lot edge. These facilities serve existing hotel and commercial uses. There are vacant hotel and restaurant building along the south side that awaiting demolition.

Travel lanes are one-way west. There is on-street parking on both sides of the corridor with Metro bus layover along the north side.

A mixed-use development is proposed for the south side of the corridor (Block 21) with a mixture of office and retail space. The parcels along the north side (Block Z) are anticipated to be redeveloped in the future.

*Existing conditions as of September 2017



Existing intersection at 8th Ave and Bell St



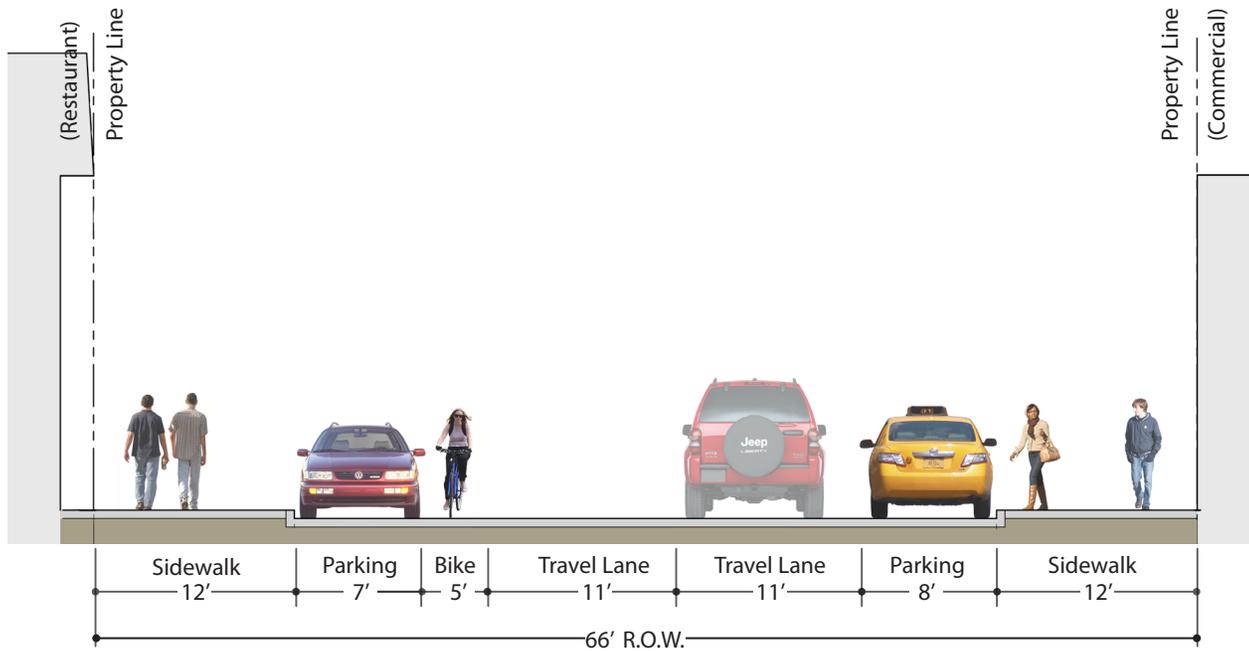
Existing planting



Existing street configuration

2 : EXISTING CONDITIONS

8th Ave to Denny Way



The block between 8th Ave and Denny Way is unique from the rest of the corridor in that it includes two-way travel lanes. In addition, there is a dedicated bike lane along the north side of the street and sharrow along the south side.

Planting along this segment is significantly limited with no street trees except in the newer planter adjacent to the Enso project.

The north side of the street is fronted by a restaurant. The south side of the street includes an existing low-rise commercial building and newer mixed-use building (2220 Westlake/Enso). It is anticipated that both the restaurant and low-rise commercial parcels could be redeveloped in the future.

On-street parking is provided on both sides of the street and there are no Metro bus layover requirements.

*Existing conditions as of September 2017



Existing sidewalk conditions



Existing two-way traffic pattern



Existing bike lane

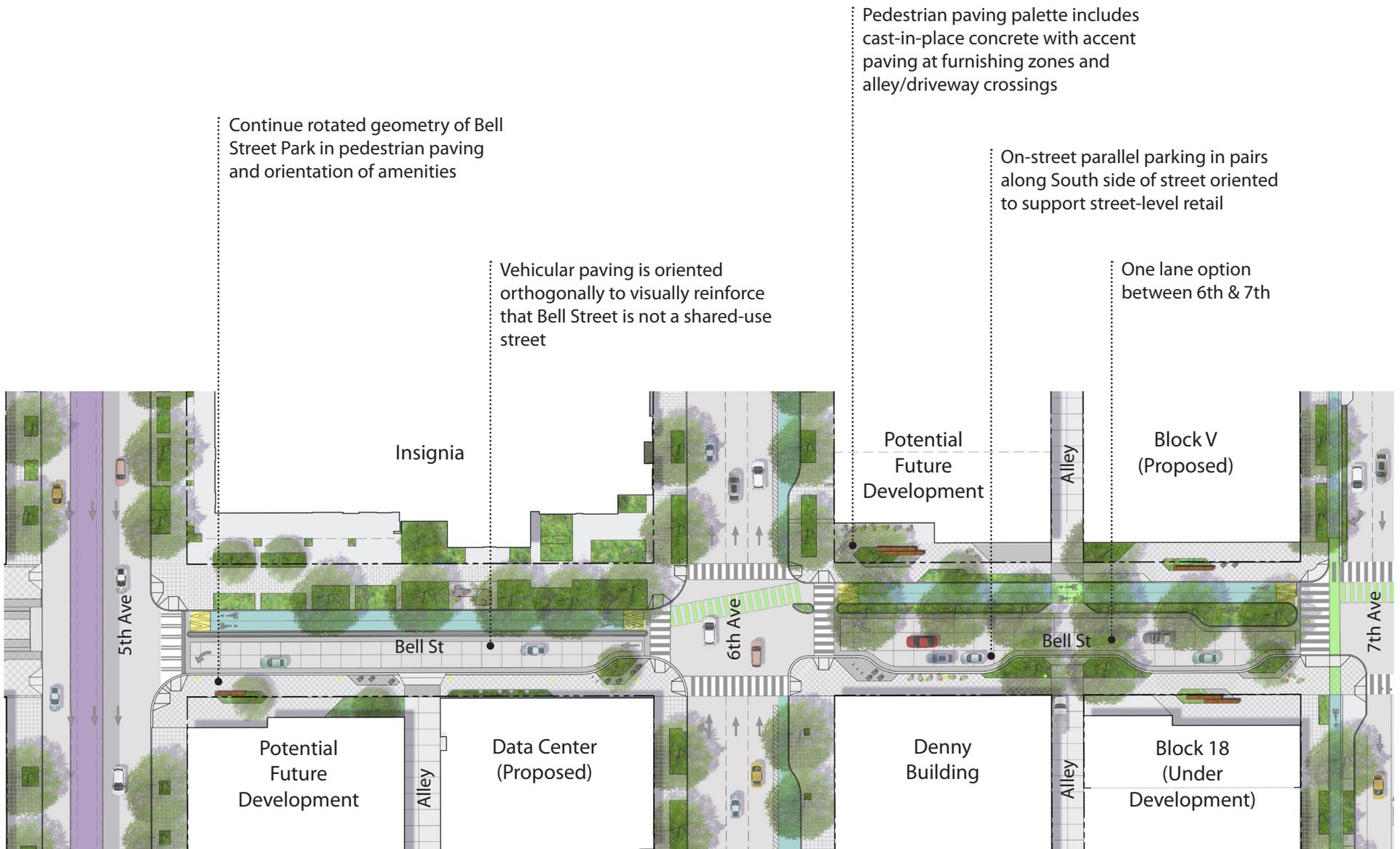
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3: CONCEPT PLANS

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3 : CONCEPT PLANS

Overview - One Lane Option



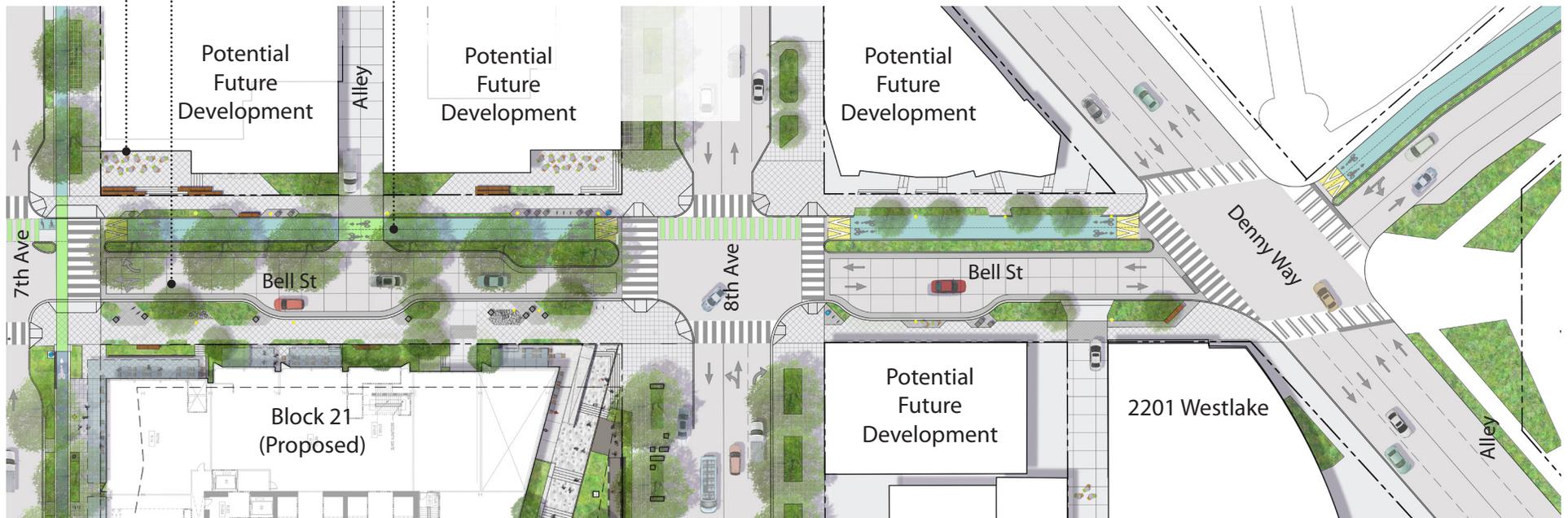
3 : CONCEPT PLANS

Overview - One Lane Option

Generous building setbacks provide opportunities to expand pedestrian open space via consistent paving, furnishings, outdoor seating, and canopies

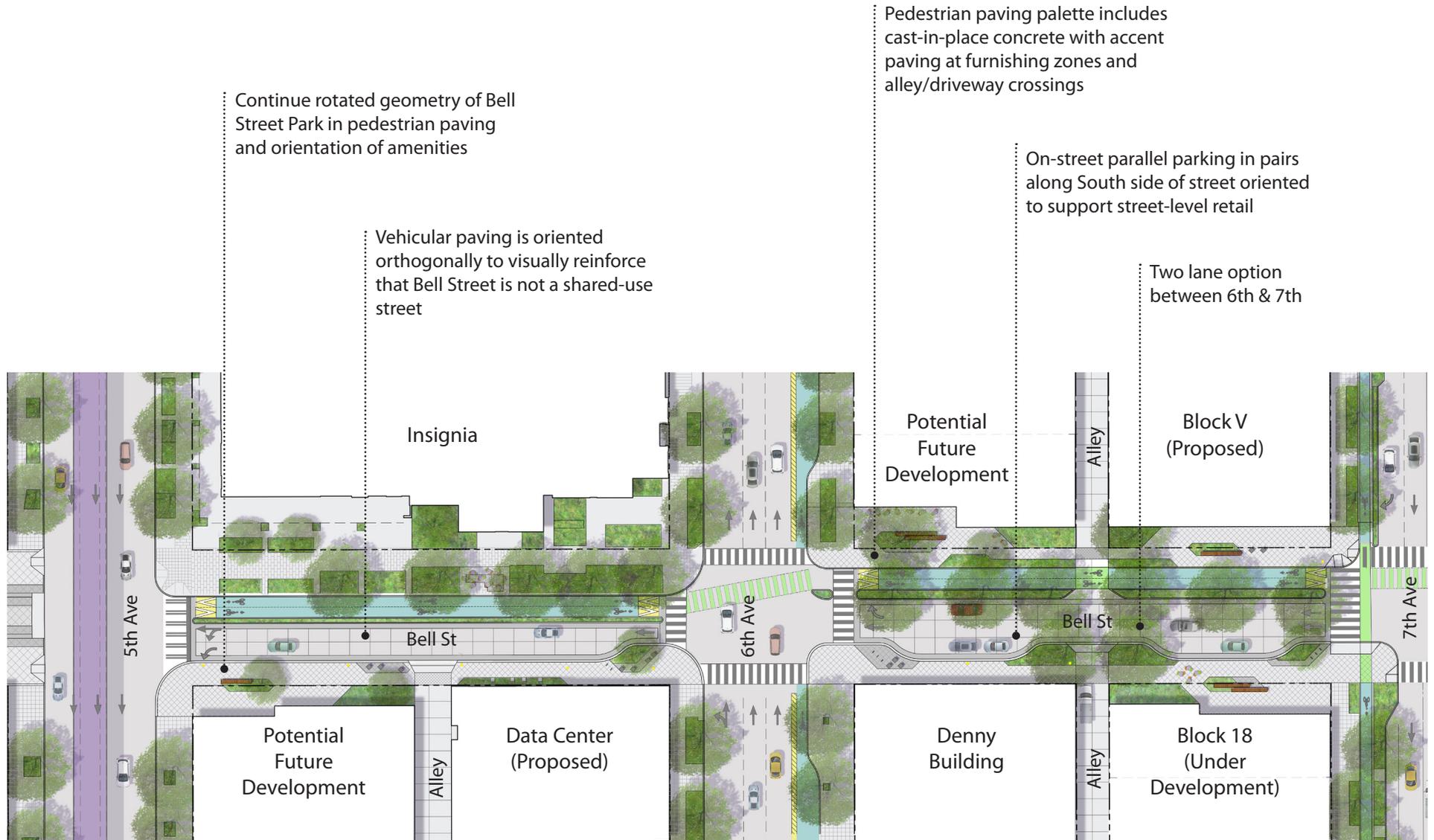
One lane option between 7th & 8th

Protected bike lane connections between Denny Way/9th Avenue and 5th Avenue; Long-term grade-separated two-way protected bike lane along north side of street; Short-term in-street protected two-way cycle track



3 : CONCEPT PLANS

Overview - Two Lane Option



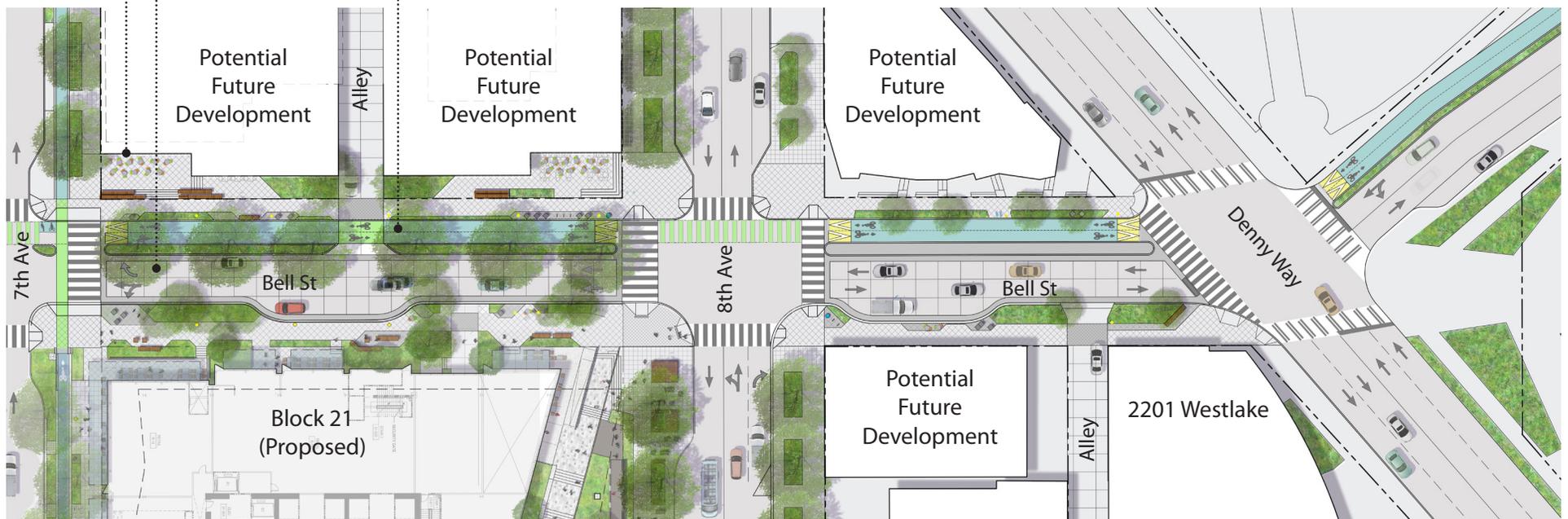
3 : CONCEPT PLANS

Overview - Two Lane Option

Generous building setbacks provide opportunities to expand pedestrian open space via consistent paving, furnishings, outdoor seating, and canopies

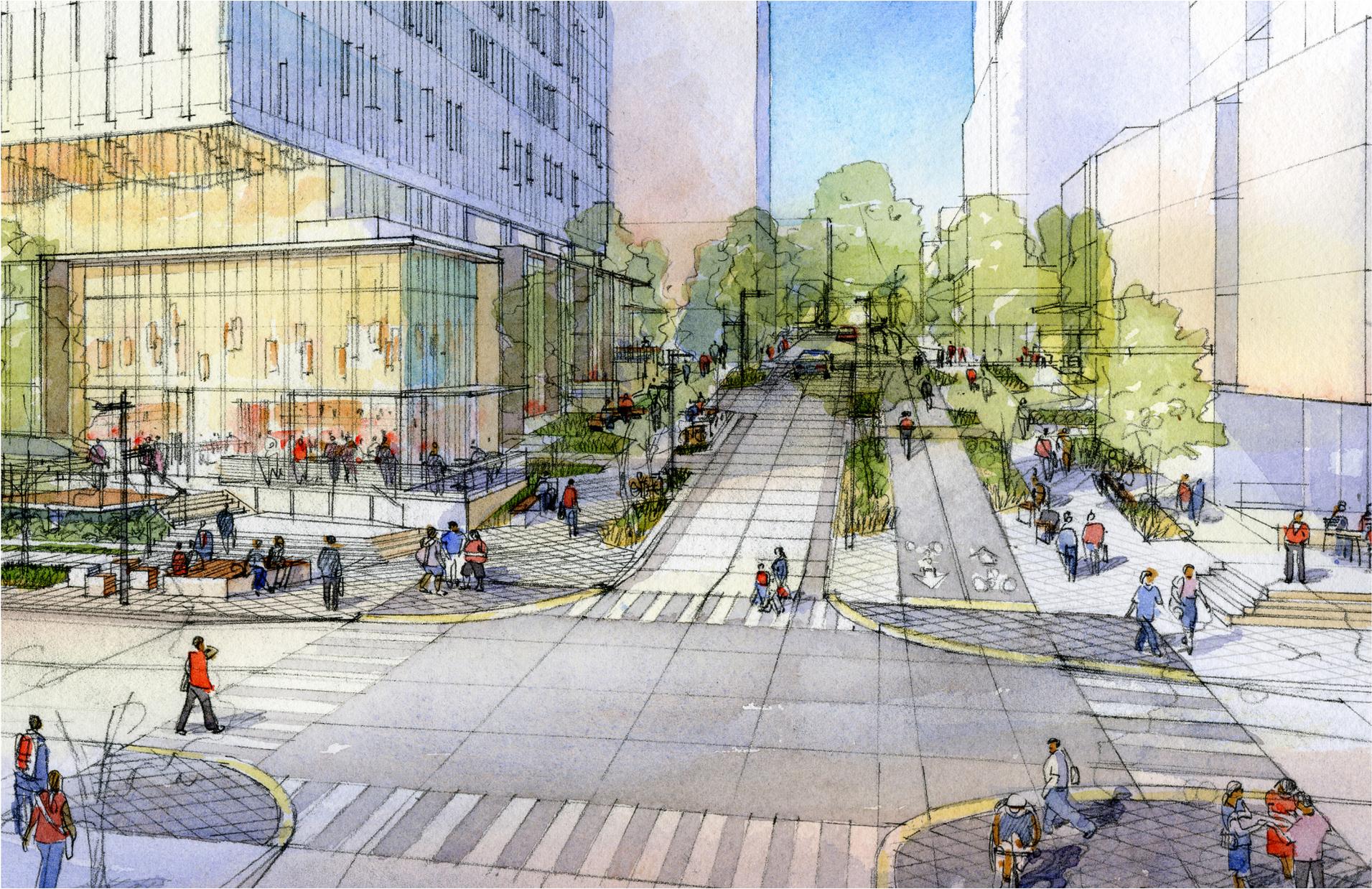
Two lane option between 7th & 8th

Protected bike lane connections between Denny Way/9th Avenue and 5th Avenue; Long-term grade-separated two-way protected bike lane along north side of street; Short-term in-street protected two-way cycle track



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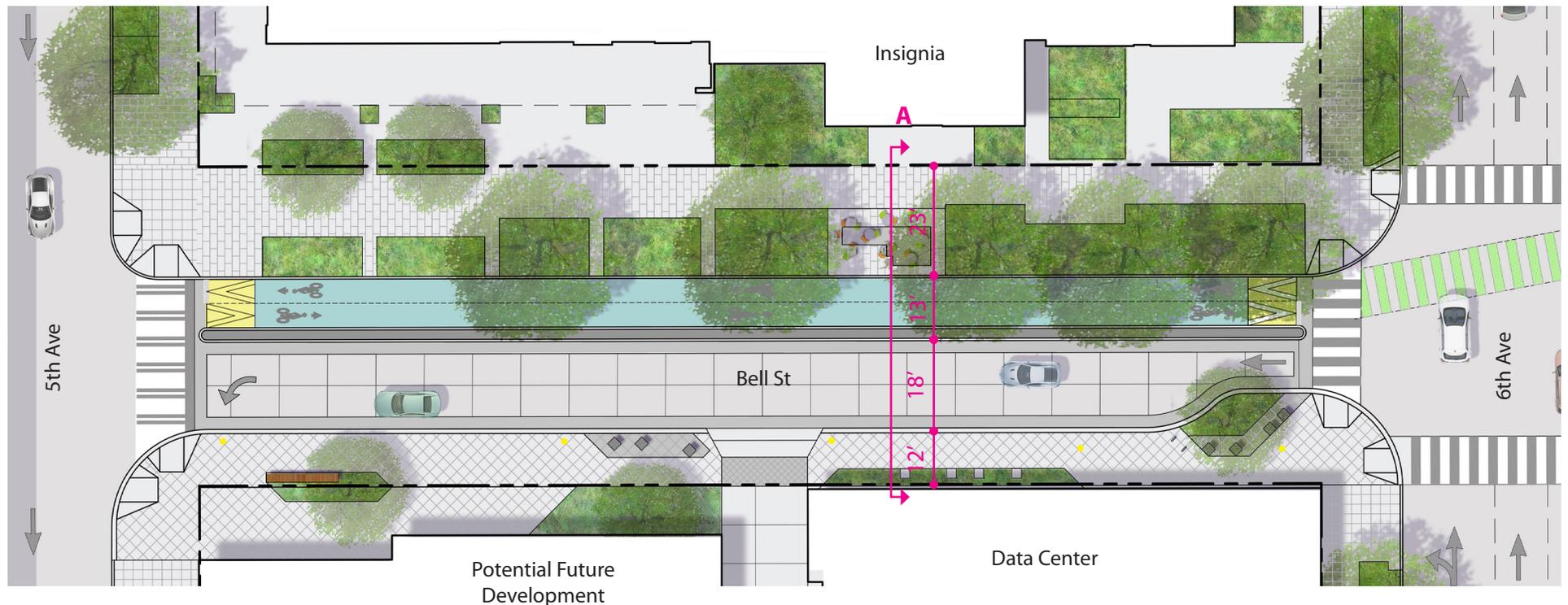




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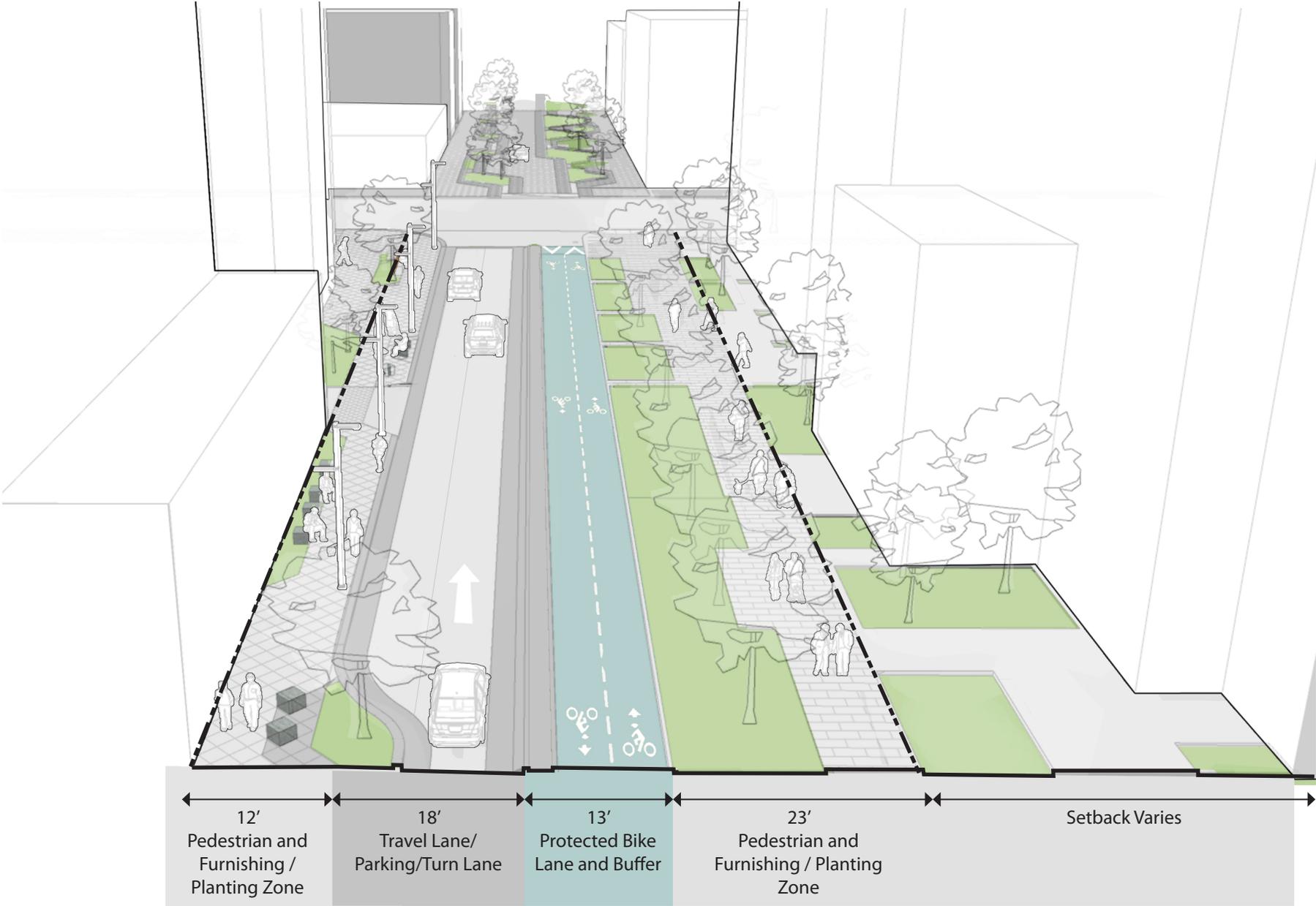
5th Ave to 6th Ave

- Transition between Bell Street Park and Bell Street Green Street
- Continue rotated geometry of Bell Street Park in pedestrian paving and orientation of amenities; Intent is to provide a sense of 'meandering' along corridor while providing consistent minimum clear width to sidewalk
- Vehicular paving is oriented orthogonally to visually reinforce that Green Street is not a shared-use street; Accent band in gutter reduces perceived width of paving
- Pedestrian paving palette includes cast-in-place concrete with accent paving at furnishing zones and alley/driveway crossings
- Protected bike lane connections between Denny Way/9th Avenue and 5th Avenue; Long-term two-way bike lane along north side of street; Short-term, in-street, protected two-way cycletrack; On-street parallel parking along South side of street in pairs oriented to support street-level retail
- Insignia project (recently completed) does not match geometry or paving but provide substantial pedestrian space, planting, and furnishings that are consistent with intent of street concept plan. Opportunities to supplement existing amenities with movable furnishings and pedestrian-scale lighting to tie together with vision of street concept plan.
- Reference Section 4 for detailed Design Elements such as paving, furnishings, lighting, and planting



3 : CONCEPT PLANS

5th Ave to 6th Ave

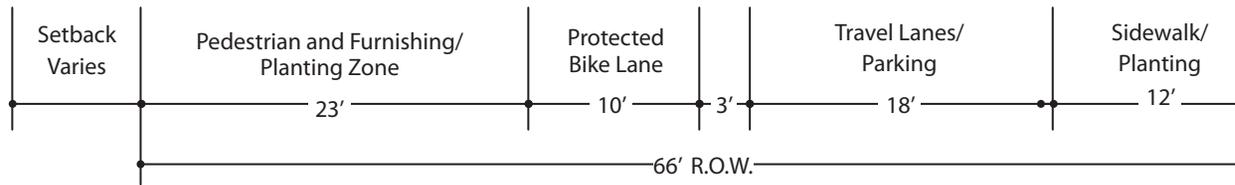


3 : CONCEPT PLANS

5th Ave to 6th Ave



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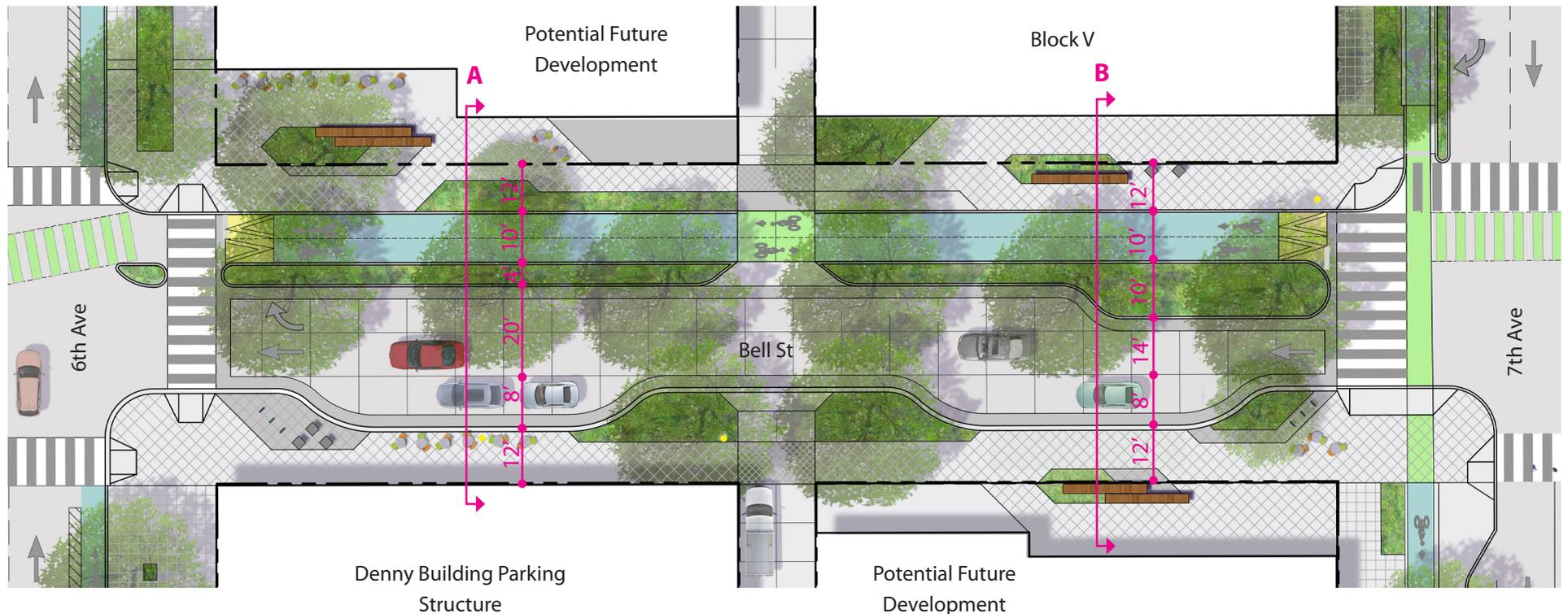


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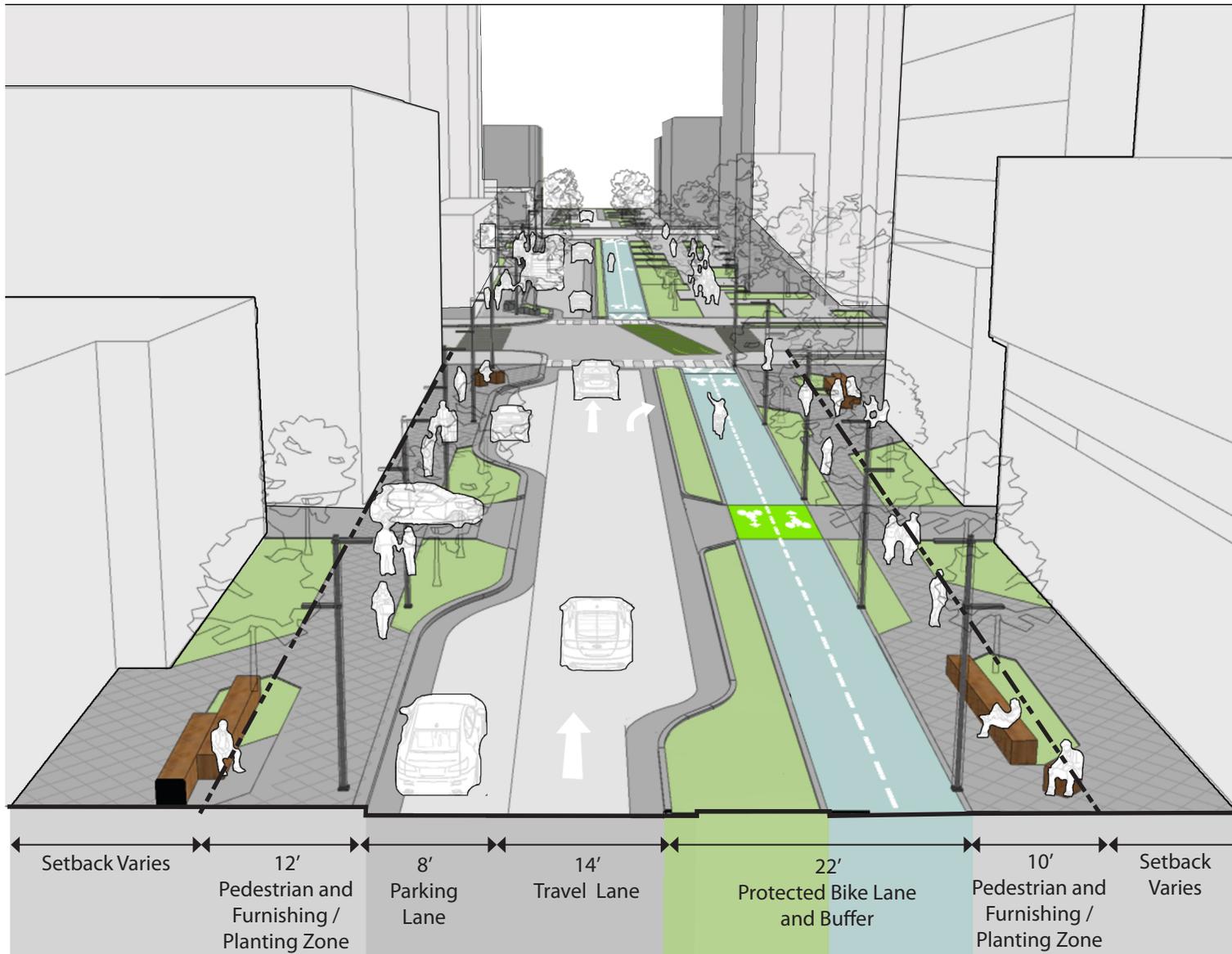
3 : CONCEPT PLANS

6th Ave to 7th Ave - One Lane Option

- One lane option for vehicles between 6th Ave and 7th Ave
- Segment establishes opportunity to apply street concept plan vision to both sides of street
- Continue rotated geometry of Bell Street Park in pedestrian paving and orientation of amenities
- Vehicular paving is oriented orthogonally to visually reinforce that Green Street is not a shared-use street
- Pedestrian paving palette includes cast-in-place concrete with accent paving at furnishing zones and alley/driveway crossings
- On-street parallel parking in pairs along South side of street oriented to support street-level retail
- Protected bike lane connections between Denny Way/9th Avenue and 5th Avenue; Long-term two-way bike lane along north side of street; Short-term in-street protected two-way cycle track
- Metro bus stop removed as transit routes moved to parallel corridor(s)
- Generous building setbacks provide opportunities to expand pedestrian open space via consistent paving, furnishings, outdoor seating, and canopies
- Reference Section 4 for detailed Design Elements such as paving, furnishings, lighting, and planting

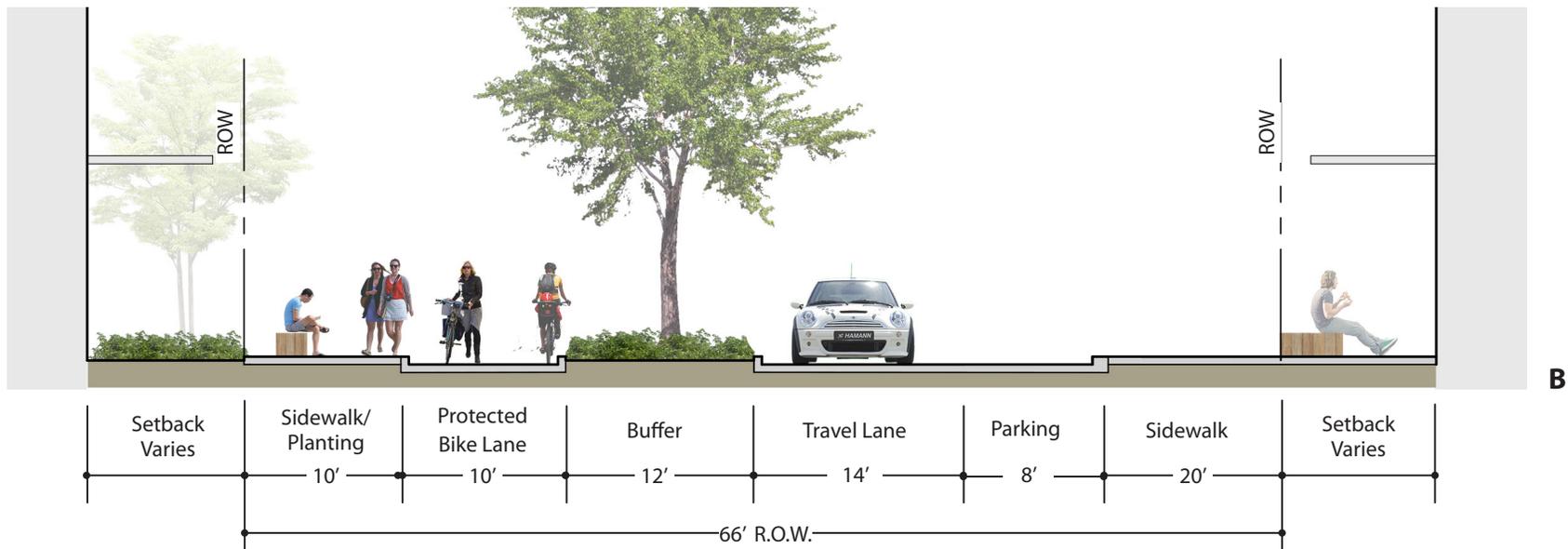
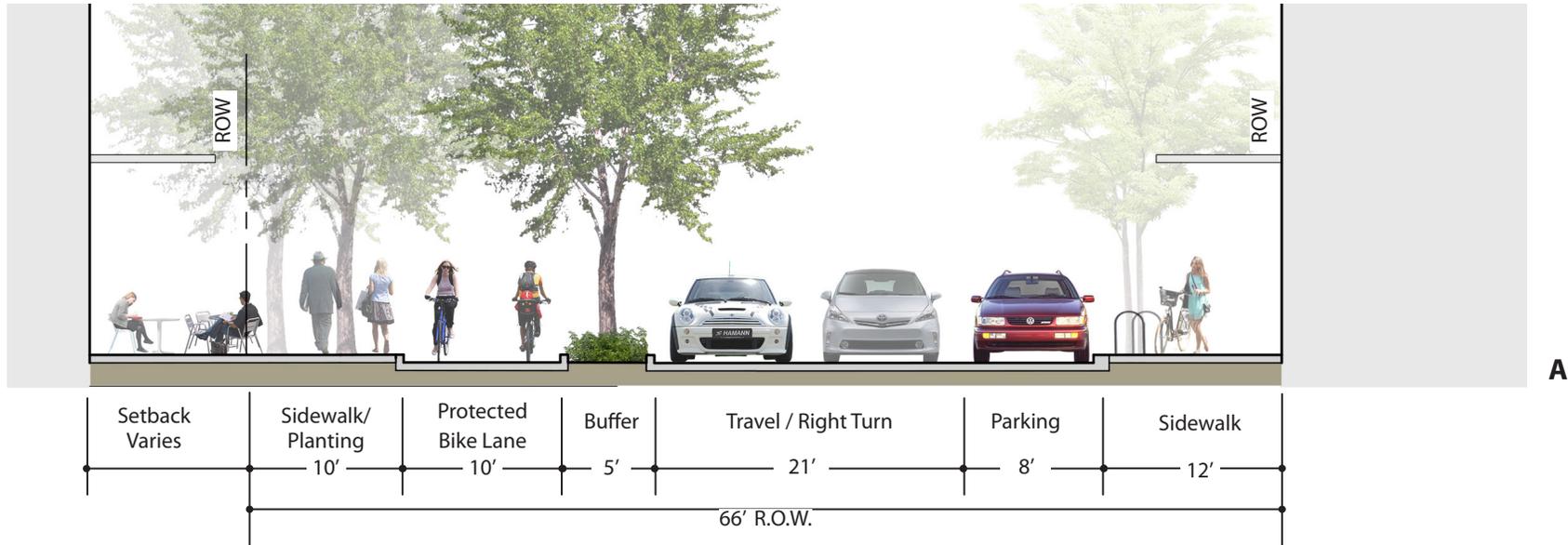


3 : CONCEPT PLANS
6th Ave to 7th Ave - One Lane Option



3 : CONCEPT PLANS

6th Ave to 7th Ave - One Lane Option

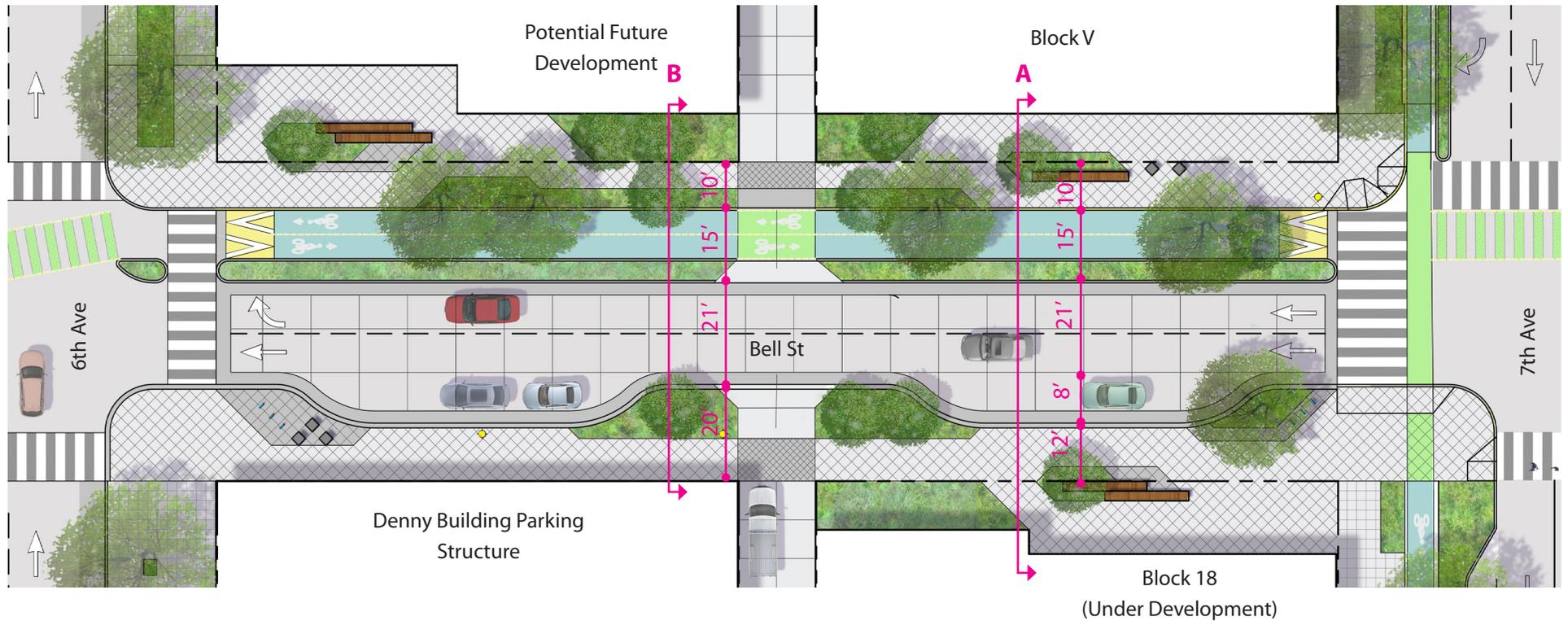


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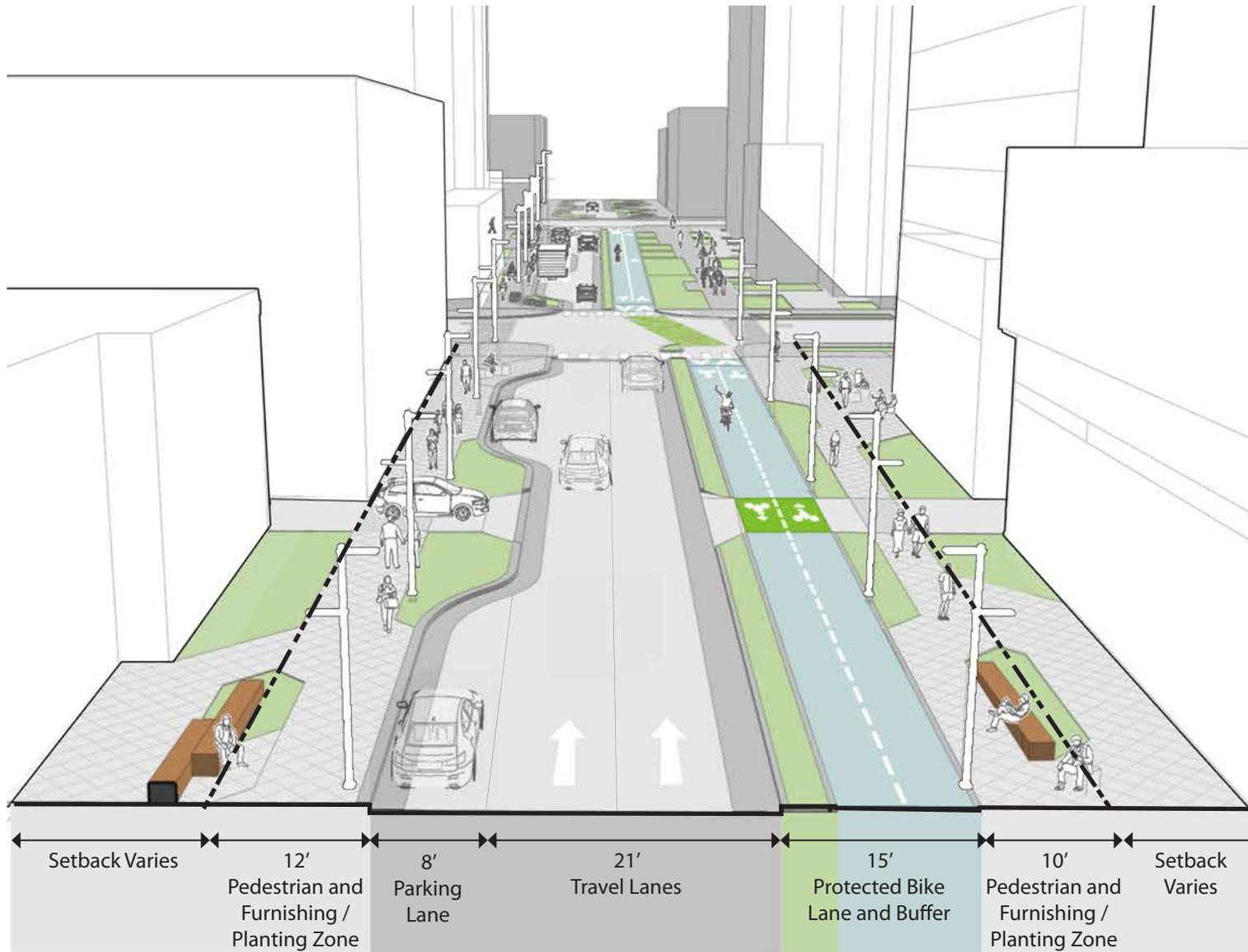
3 : CONCEPT PLANS

6th Ave to 7th Ave - Two Lane Option

- Two lane option for vehicles between 6th Ave and 7th Ave
- The two lane option allows for two general purpose lanes and reduces the width of the protected bike lane buffer
- All other elements are the same as the one lane option

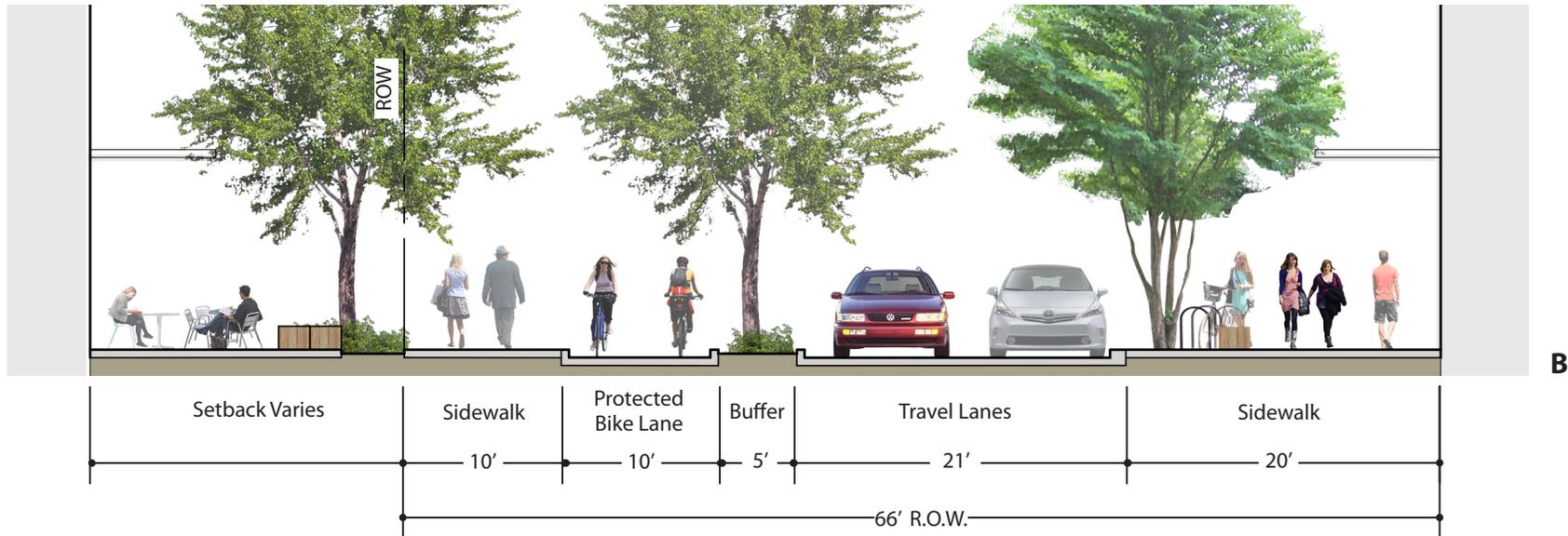
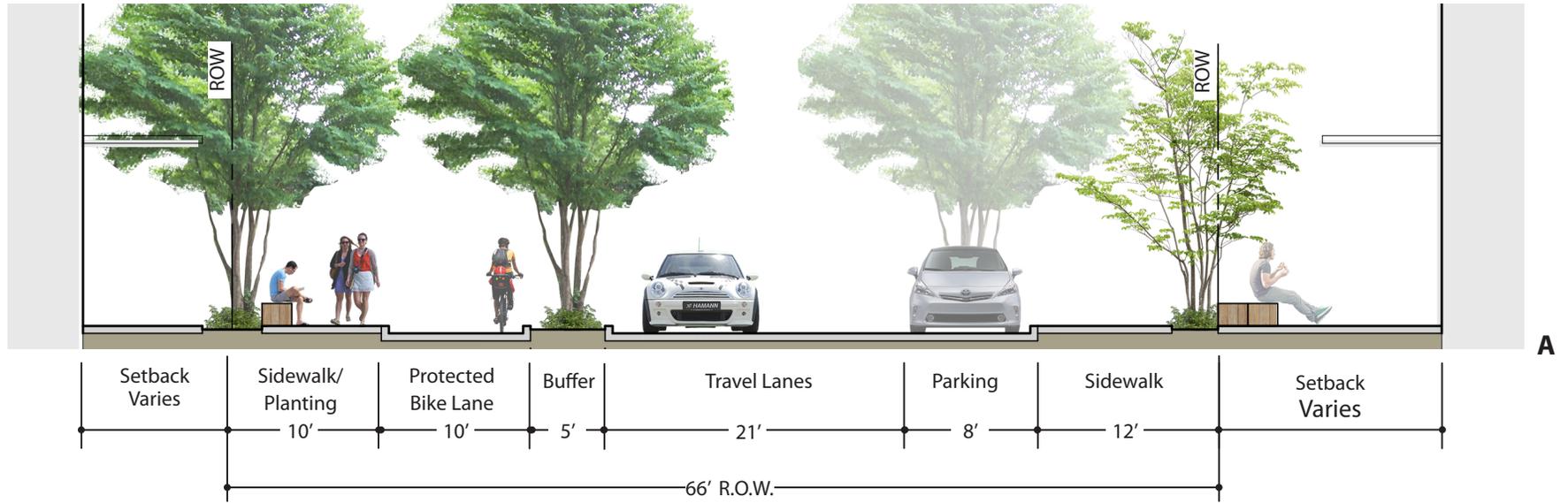


3 : CONCEPT PLANS
6th Ave to 7th Ave - Two Lane Option



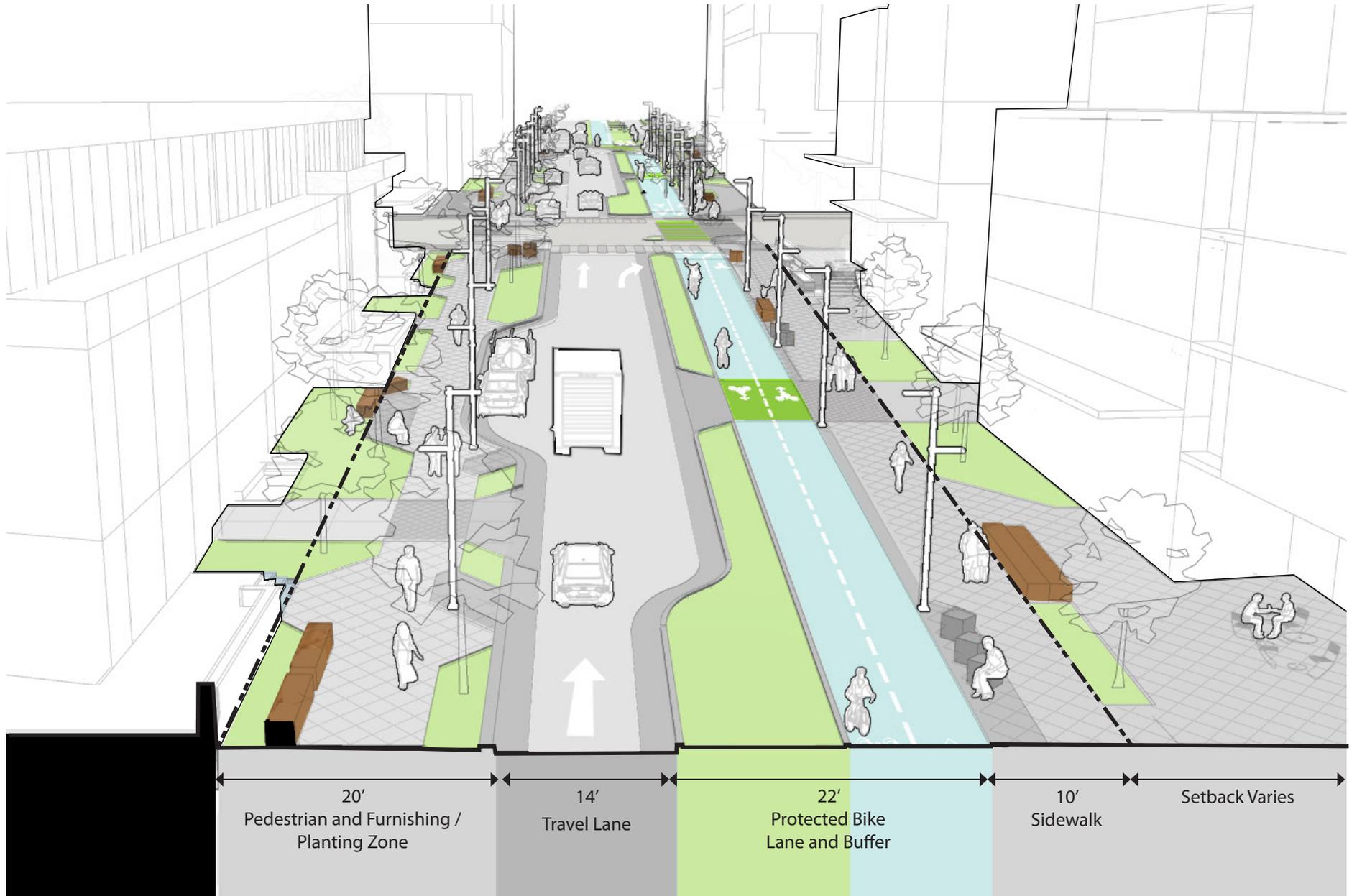
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6th Ave to 7th Ave - Two Lane Option



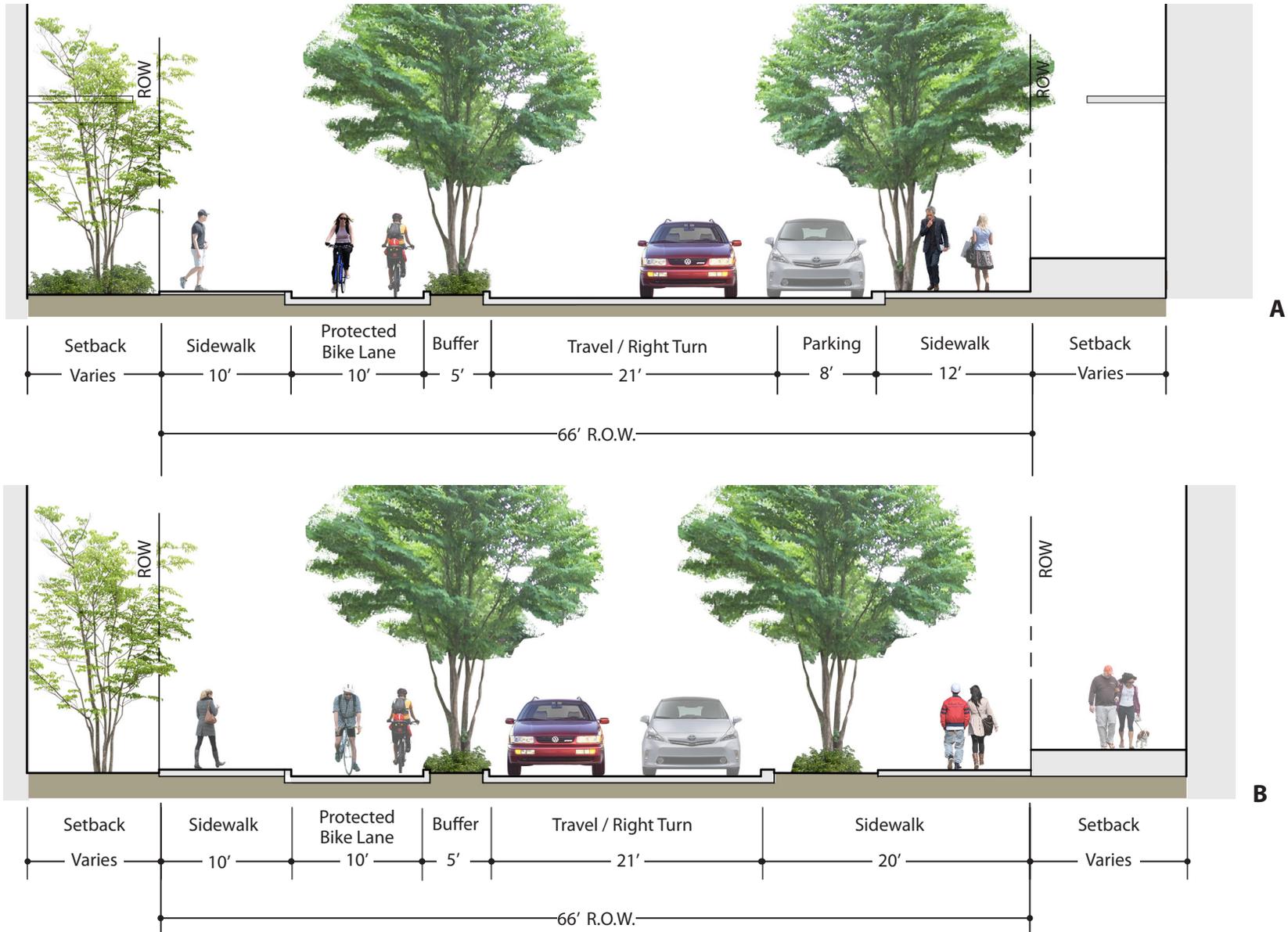
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3 : CONCEPT PLANS
7th Ave to 8th Ave - One Lane Option



3 : CONCEPT PLANS

7th Ave to 8th Ave - One Lane Option

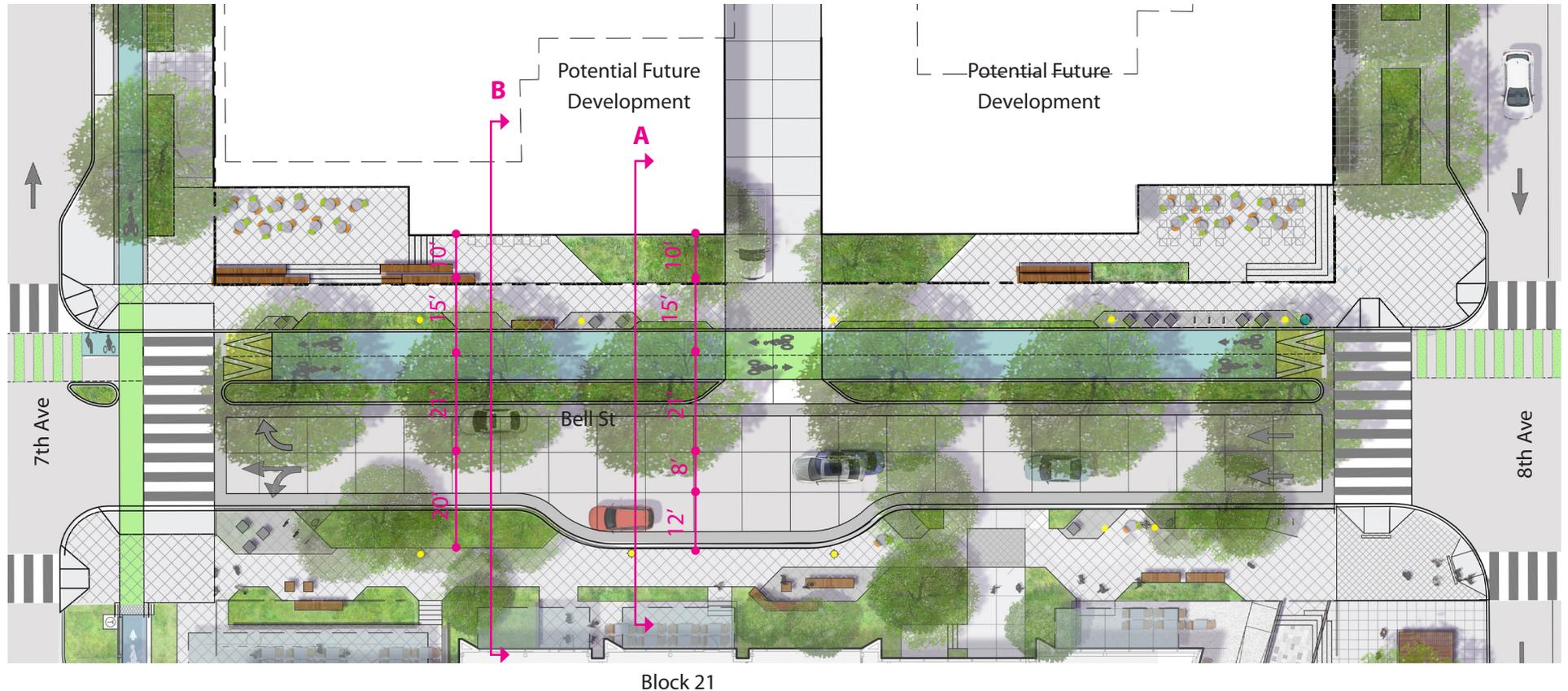


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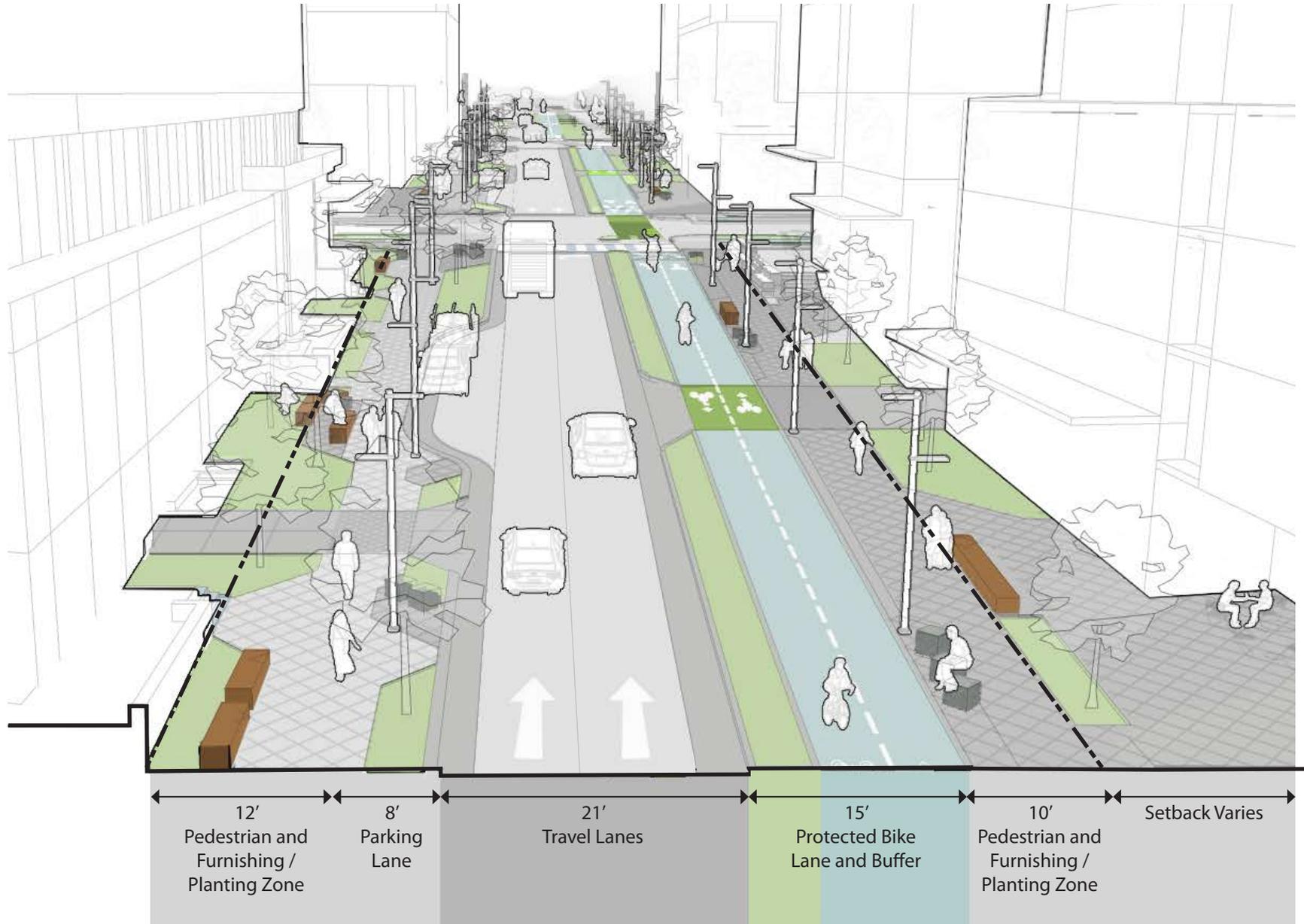
7th Ave to 8th Ave - Two Lane Option

- Two lane option for vehicles between 7th Ave and 8th Ave
- The two lane option allows for two general purpose lanes and reduces the width of the protected bike lane buffer
- All other elements are the same as the one lane option



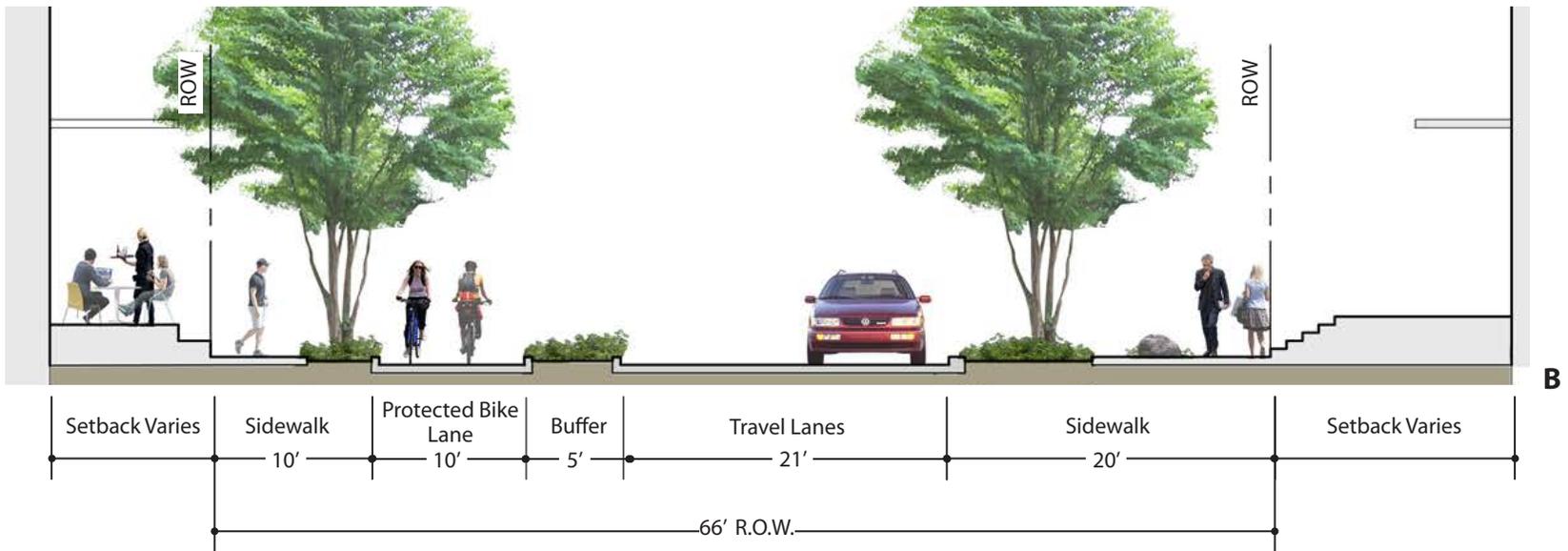
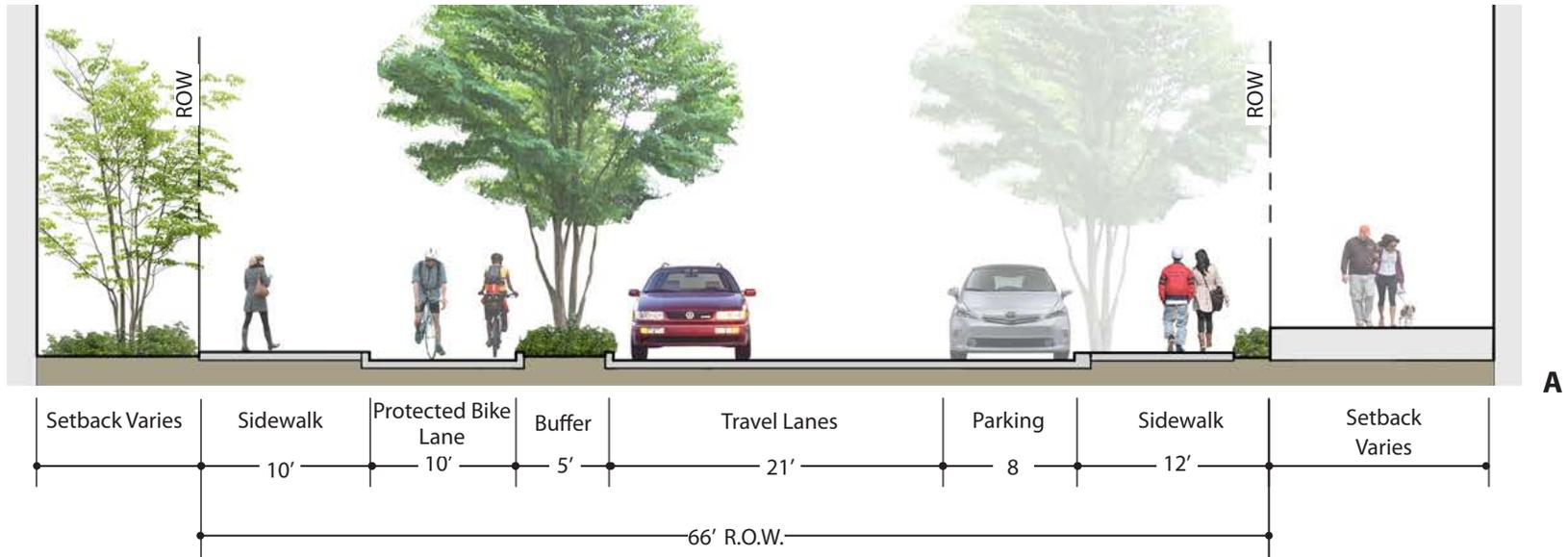
3 : CONCEPT PLANS

7th Ave to 8th Ave - Two Lane Option



3 : CONCEPT PLANS

7th Ave to 8th Ave - Two Lane Option

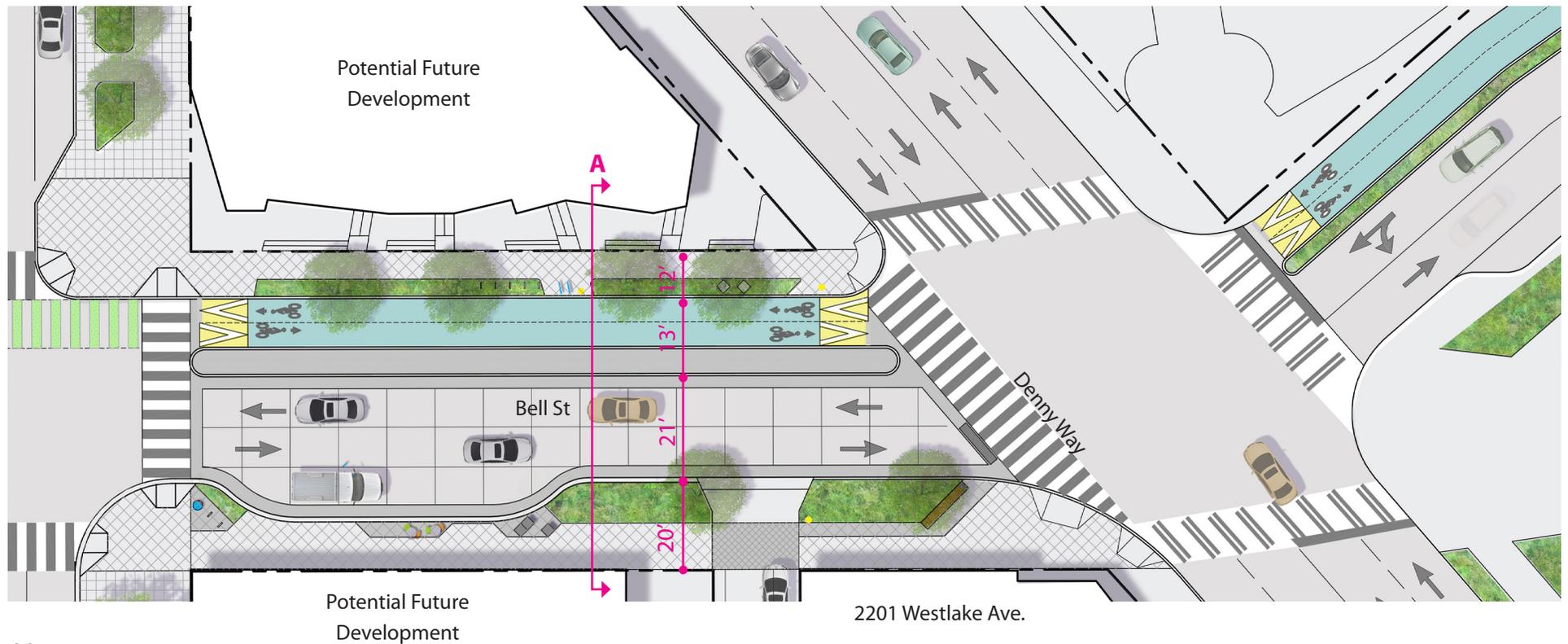


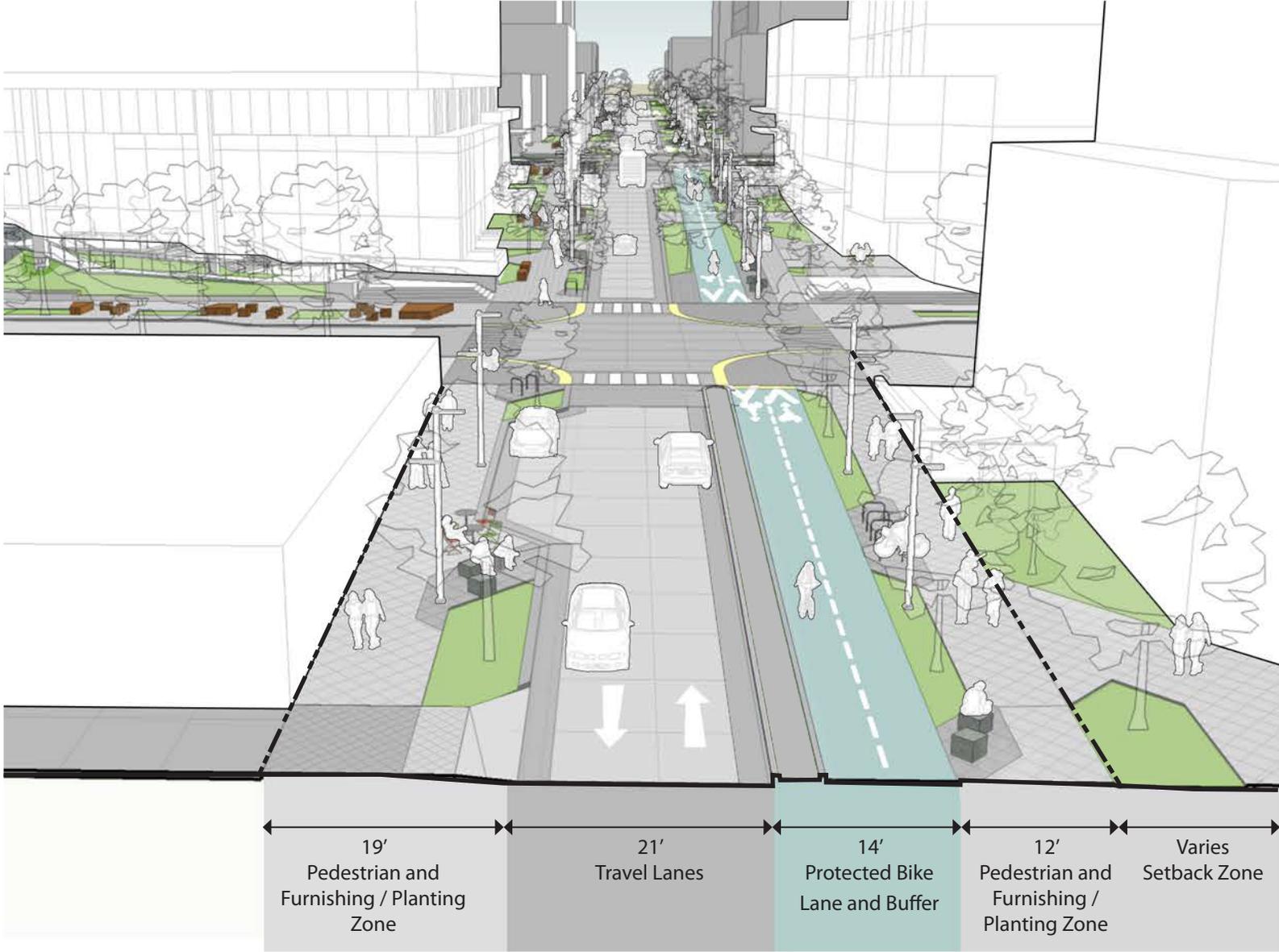
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3 : CONCEPT PLANS

8th Ave to Denny Way

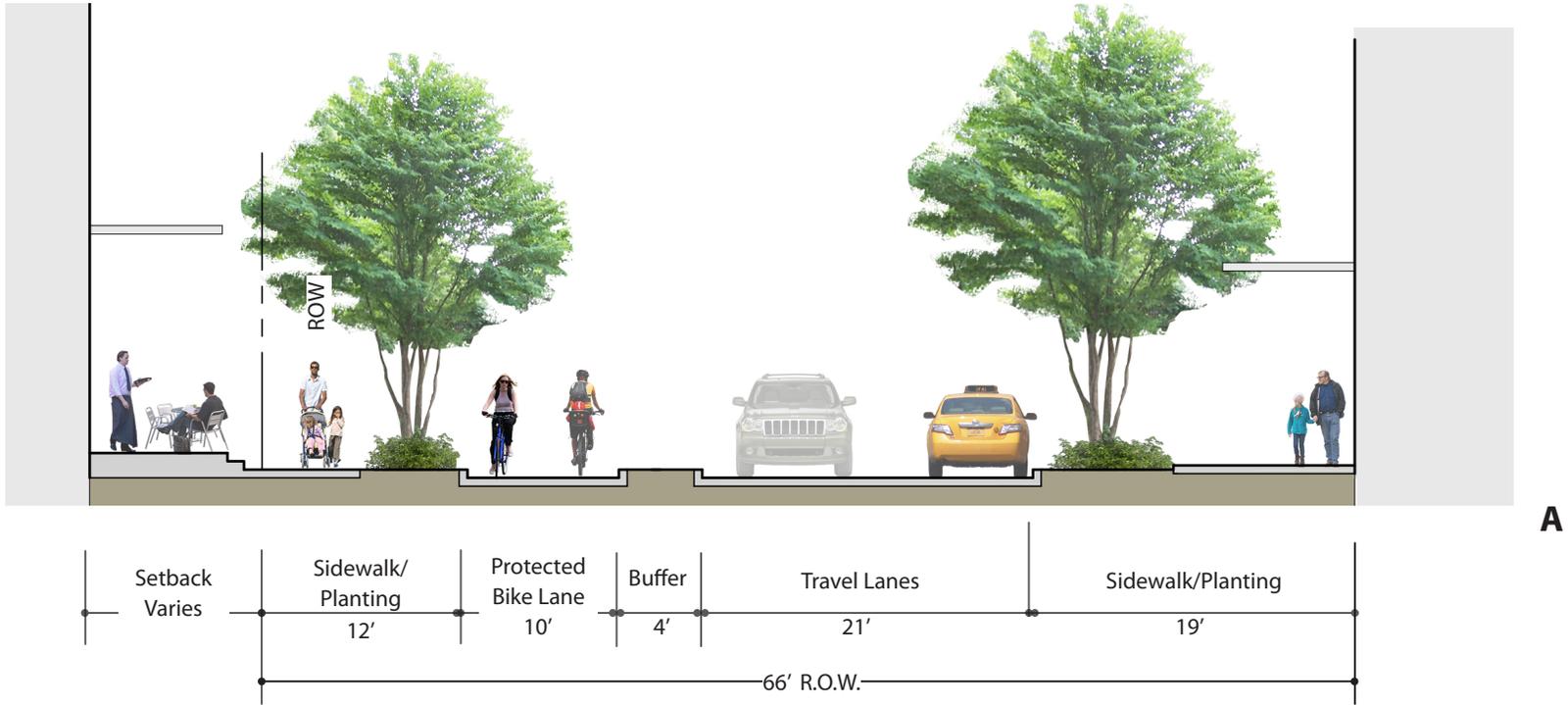
- Transition between Bell Street Green Street and South Lake Union
- Continue rotated geometry of Bell Street Park in pedestrian paving and orientation of amenities
- Pedestrian paving palette includes cast-in-place concrete with accent paving at furnishing zones and alley/driveway crossings
- Protected bike lane connections between Denny Way/9th Avenue and 5th Avenue; Long-term two-way bike lane along north side of street; Short-term in-street protected two-way cycle track
- Generous building setbacks provide opportunities to expand pedestrian open space via consistent paving, furnishings, outdoor seating, and canopies
- Reference Section 4 for detailed Design Elements such as paving, furnishings, lighting, and planting





3 : CONCEPT PLANS

8th Ave to Denny Way



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4: DESIGN ELEMENTS

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4 : DESIGN ELEMENTS

Paving

Type 1 1

Function:
Primary sidewalk paving

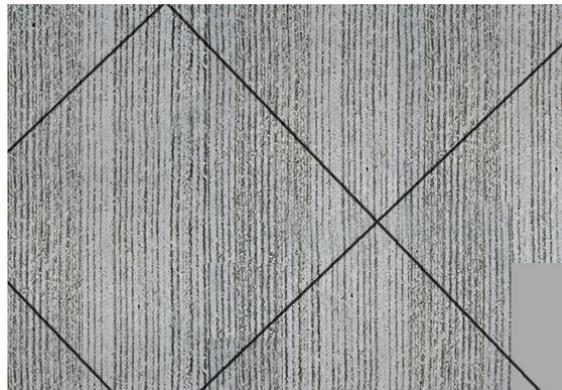
Material/Finish:
Cast-in-place concrete w/ Integral color
Saw cut scoring pattern (2' x 2' or 3' x 3')
Light/Medium broom finish



Type 2 2

Function:
Accent sidewalk paving

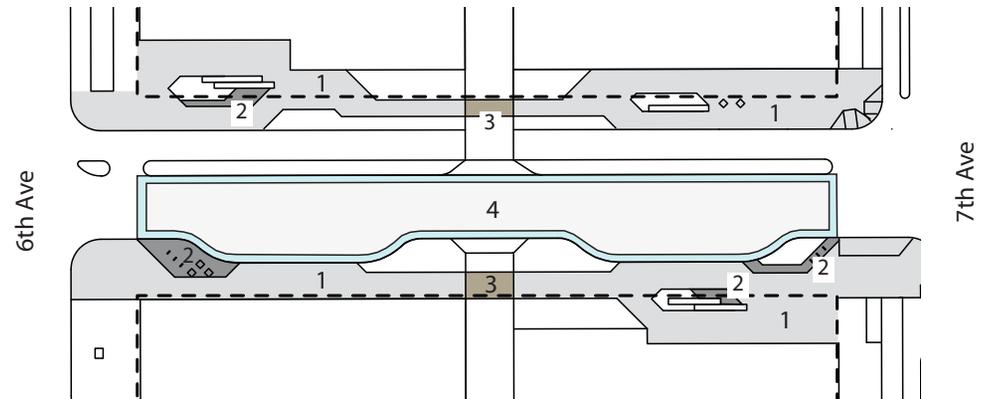
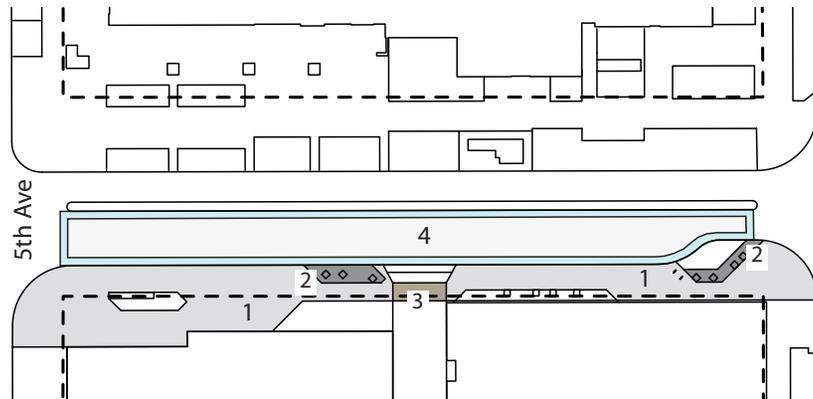
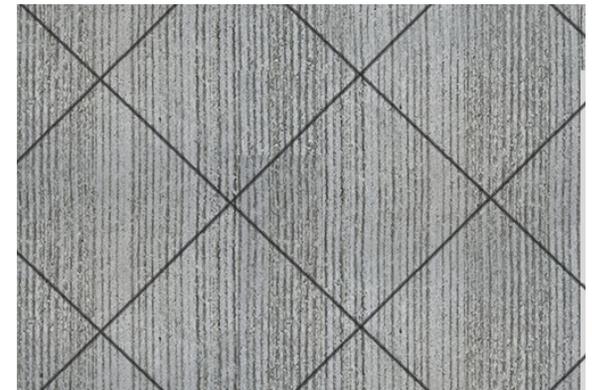
Material/Finish:
Cast-in-place concrete w/ Integral color
Saw cut scoring pattern (2' x 2' or 3' x 3')
Raked finish



Type 3 3

Function:
Sidewalk paving at Driveways/Mixing Zones

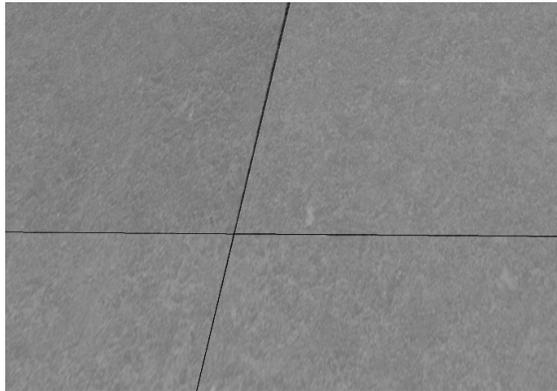
Material/Finish:
Cast-in-place concrete w/ Integral color
Saw cut scoring pattern (1' x 1')
Raked finish



Type 4 4

Function:
Primary roadway paving

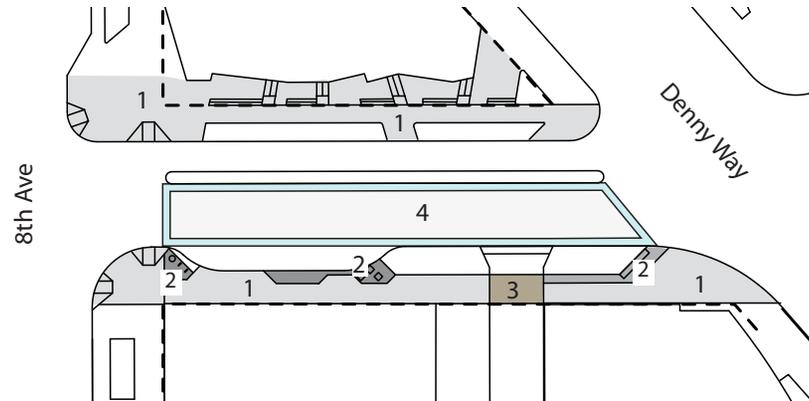
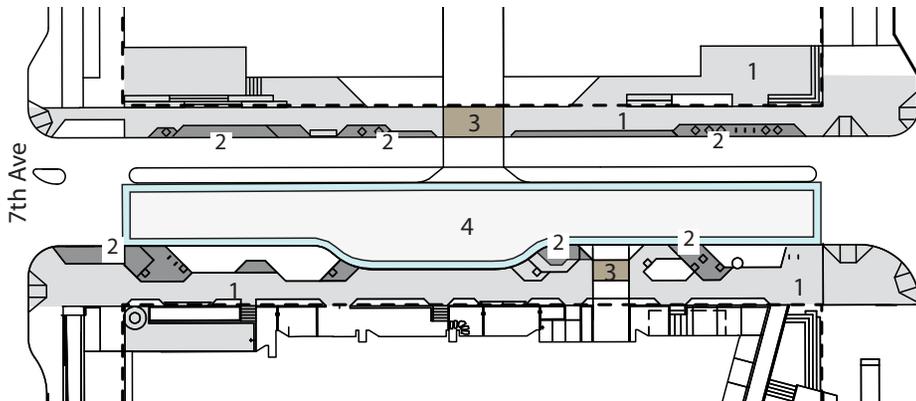
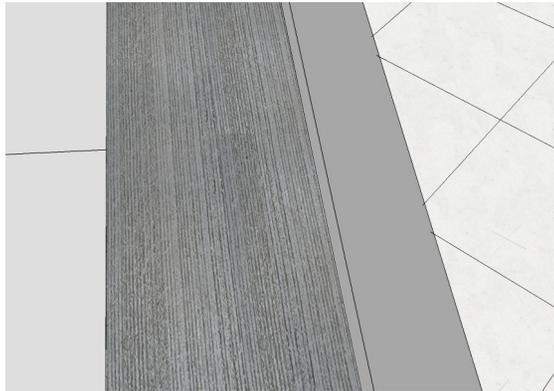
Material/Finish:
Cast-in-place concrete w/ Integral color
Panels (10' x 10' typ)
Medium broom finish



Type 5

Function:
Accent roadway paving

Material/Finish:
Cast-in-place concrete w/ Integral color
Saw cut scoring pattern (2' x 2' or 3' x 3')
Raked finish



4 : DESIGN ELEMENTS

Furnishings

Bike Rack

Function:
Inverted-U racks

Material/Finish/Manufacturer:
Surface-mounted
Sportworks 'Tofino No-Scratch'



Waste Receptacle

Function:
Trash and recycling

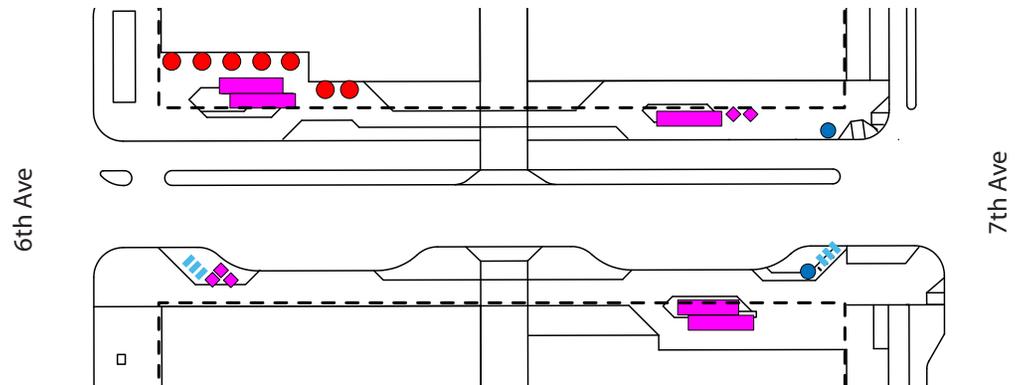
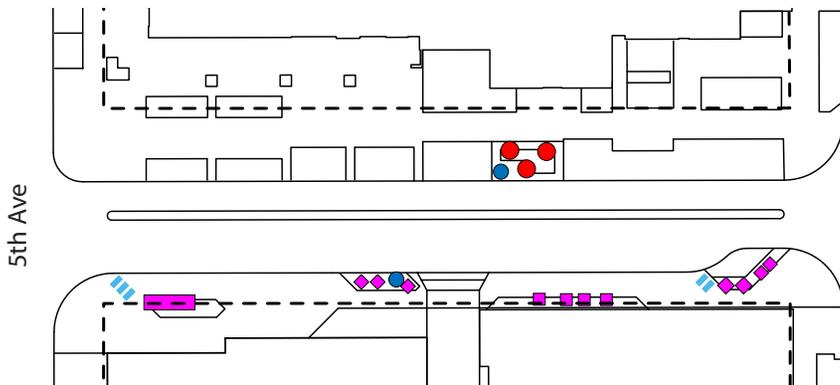
Material/Finish/Manufacturer:
Surface-mounted
Landscape Forms 'Chase Park'; Color 'Silver'



Non-Fixed Furnishings

Function:
Movable tables/chairs

Material/Finish/Manufacturer:
Landscape Forms 'Parc Centre'
Table Color: 'Silver'
Chair Colors: 'Flambe' and 'Parrot Green'



Seat Cubes ■

Function:
Seating elements

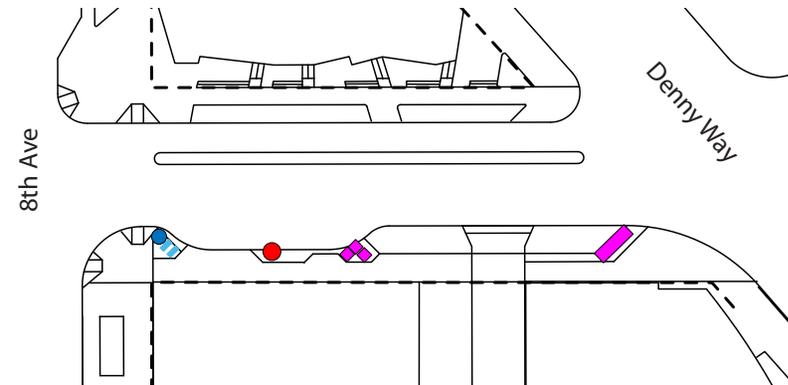
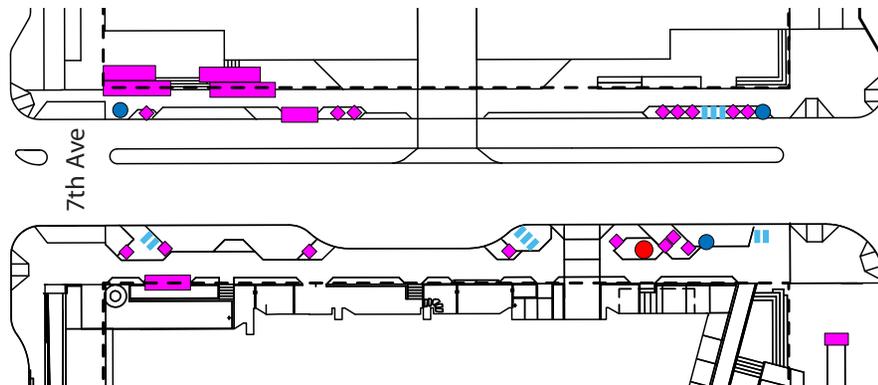
Material Options/Finish:
Granite
Wood



Benches ■

Function:
Seating elements

Material Options/Finish:
Wood
Concrete



4 : DESIGN ELEMENTS

Lighting

Street Light & Pedestrian Light ▲

Function:
Lighting

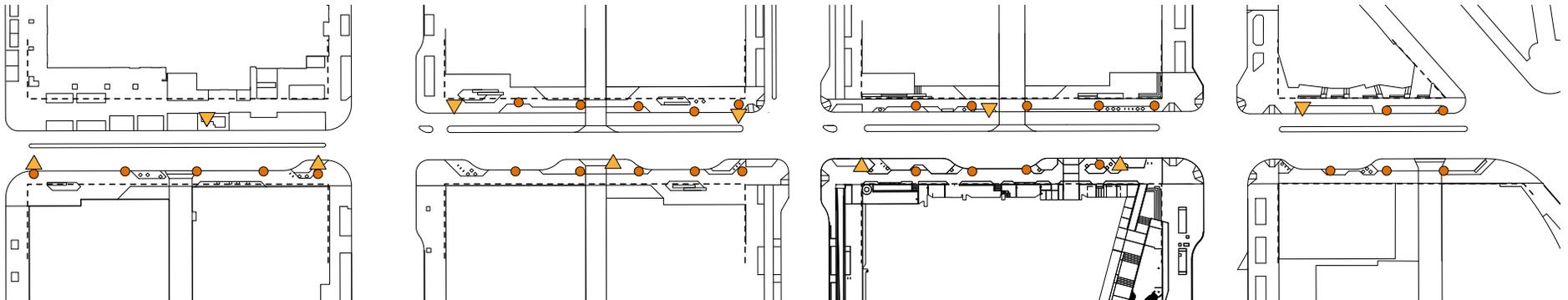
Material/Finish/Manufacturer:
26'-3" aluminum pole
Landscape Forms 'Rama' light fixtures
LED luminaires



Pedestrian Light ●

Function:
Lighting

Material/Finish/Manufacturer:
14'-9" aluminum pole
Landscape Forms 'Rama' light fixture
LED luminaires



4 : DESIGN ELEMENTS

Bicycle Facilities



Amenities

Function:
Enhance the experience for bicyclists

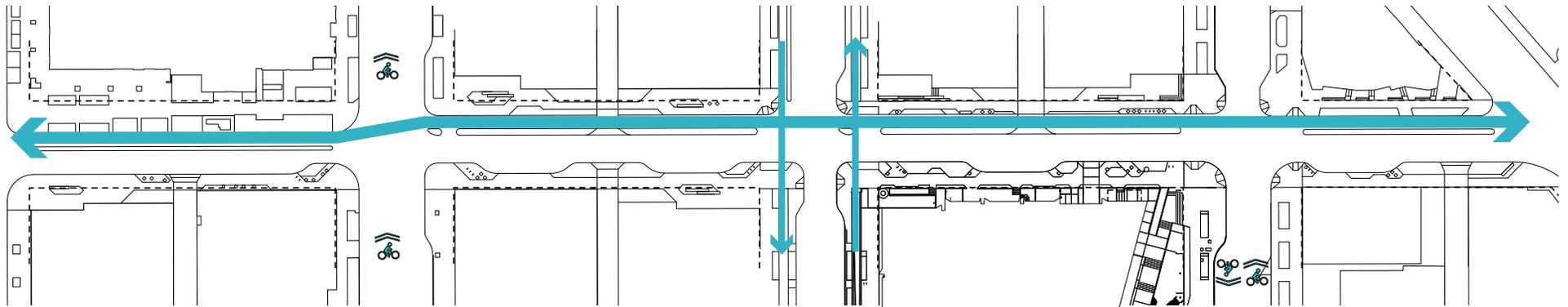
- Items:**
Lean rails
Bicycle Signals
Trash Receptacles
Signage



Cycle Track →

Function:
Enhance mobility and safety for bicyclists

- Material/Finish:**
10' wide cycle track @ sidewalk grade
4" thick asphalt paving
Flush C.I.P. concrete bands



4 : DESIGN ELEMENTS

Planting | Trees

Black Tupelo

Nyssa sylvatica 'Tupelo Tower'

Function:

Provide shade and create a sense of scale



Tulip Tree

Liriodendron tulipifera 'Fastigiata'

Function:

Provide shade and create a sense of scale



Allegheny Serviceberry

Amelanchier laevis

Function:

Frame seating and gathering spaces

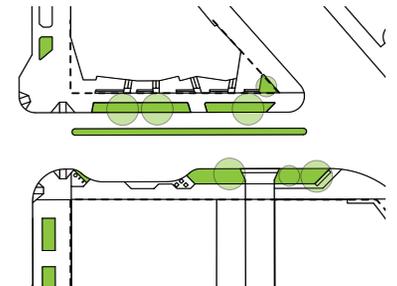
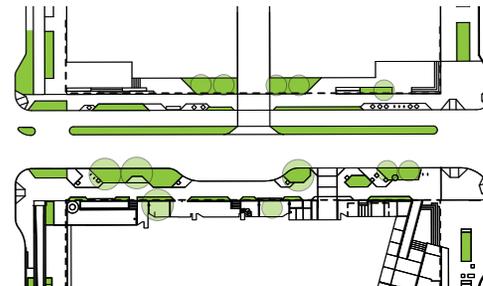
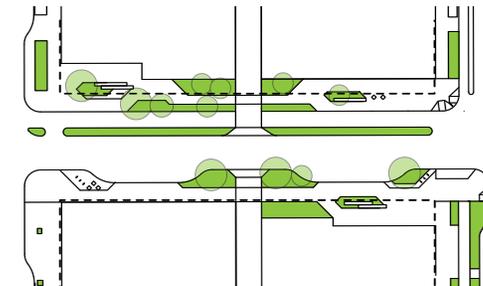
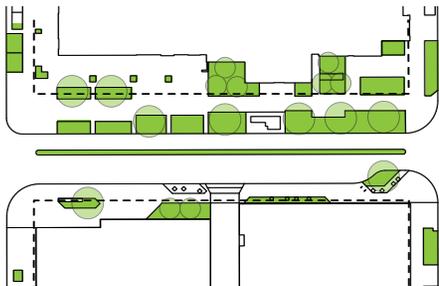


Vine Maple

Acer circinatum

Function:

Frame seating and gathering spaces



Planting | Understory



Calluna vulgaris 'Robert Chapman'



Abelia x grandiflora 'Prostrata'



Geranium macrorrhizum 'Bevens Variety'



Festuca mairei



Berberis buxifolia 'Nana'



Polystichum neolobatum



Carex testacea 'Prairie Fire'



Berberis gladwynsis 'William Penn'



Lonicera Pileata 'Moss Green'

4 : DESIGN ELEMENTS

Green Stormwater Infrastructure

The City of Seattle has mandated that “all projects implement Green Stormwater Infrastructure (GSI) to the maximum extent feasible for flow control”. The street concept plan recommends the installation of GSI measures, where feasible. Determining specific locations and applications is dependent upon detailed engineering studies of local soil conditions and hydrology. Additionally, the longitudinal slope of Bell Street presents both constraints and unique opportunities for creating functional and highly visible solutions including interpretive or art elements. Potential GSI treatments for Bell Street include:

- **Vegetated Swales:** Slow storm water flows and filter out pollutants via movement of water through plants and soil
- **Bioretention Cells and Rain Gardens:** Slow storm water flows via detention, filter out pollutants via plants and soil, and then infiltrate (where possible given soil conditions)
- **Suspended Paving Systems:** Systems such as Deeproot Silva Cells provide uncompacted soil volume necessary to support healthy trees while also supporting pavements and creating additional storage capacity for storm water
- **Permeable Paving:** Consider using pervious concrete or permeable pavers in areas designated as accent paving in street concept plan
- **Tree and Planting Pits:** Directing flows into adjacent planters and providing proper soil mix to support filtering and infiltration



Existing planter in Bell Street Park



Infiltration planter w/ permeable pavers



Permeable pavers



Filtration planter

4 : DESIGN ELEMENTS

Art



Existing art in Bell Street Park



Art in the streetscape



Art embedded into the sidewalk



Art incorporated into utility access

Art is a critical design element for the Bell Street corridor as it can help define neighborhood character and values, tell stories of the past, aid in wayfinding, and create additional delineation of space within the larger corridor.

Potential art elements include commissioned public or private works, artist-made building parts, and temporary elements/programs. Artist-made building parts may include paving, infrastructure elements, and furnishings.

Where possible, projects are encourage to include artists as essential planning and design team members.

4 : DESIGN ELEMENTS

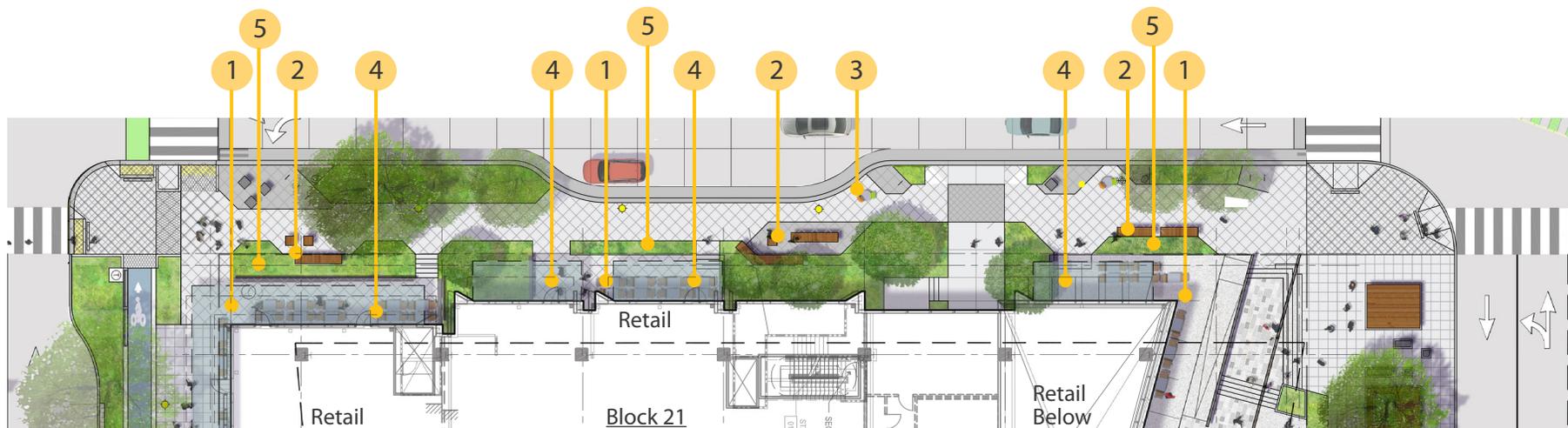
Active Frontage - Retail

It is recommended that, where feasible, structures along active retail frontages be set back ~5-15' (minimum 10' preferred) to allow for planting, building entries, outdoor seating for retail patrons and public seating/gathering space. In areas where street grades preclude at-grade seating areas, such as the frontage between 7th and 8th Avenues, elevated or depressed seating terraces are encouraged to further activate the street front. These terraces should be setback from the property line to permit planting between structure and property line. Public seating should be clearly legible and distinct from retail seating, and can take the form of either integrated site features or movable furniture.

- 1 Retail Seating
- 2 Built-In Seating
- 3 Movable Tables & Chairs
- 4 Retail Entrance
- 5 Landscape Buffer
- 6 Residential Entrance



Proposed Block 21, Bell Street & 7th Ave looking SE



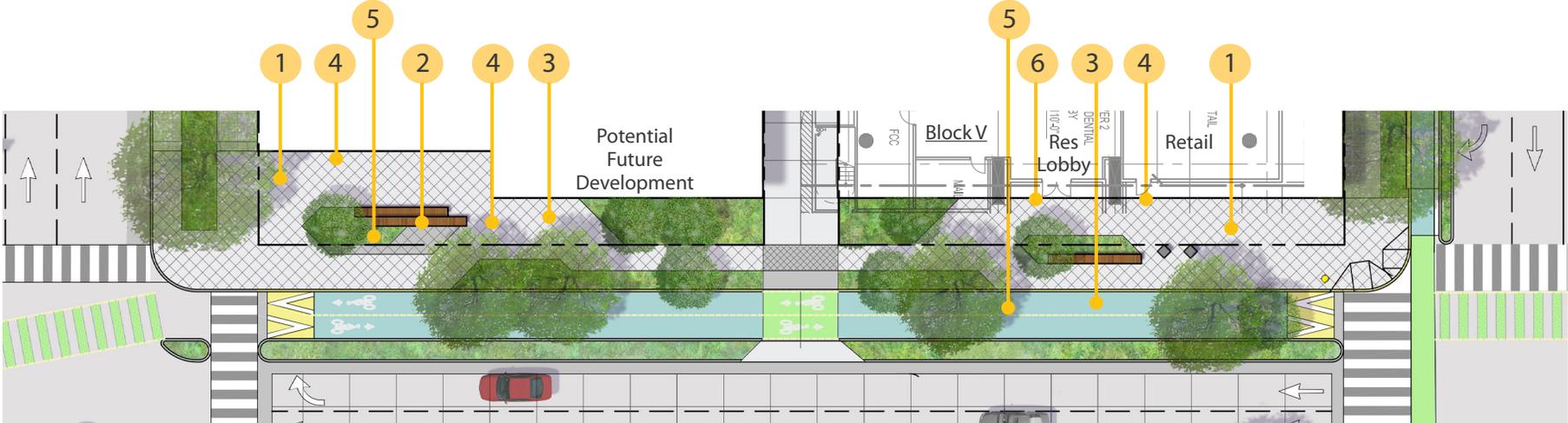
4 : DESIGN ELEMENTS

Active Frontage - Residential



Residential frontages should take advantage of street-level building setbacks to clearly delineate residential functions such as lobby entries and other common areas from adjacent uses. Prominent architectural cues such as changes in building massing, material and canopy type and elevation are encouraged. As at the proposed Block V project at the corner of 7th and Bell, retail spaces are suggested to be located at project intersections where a greater probability of foot traffic and street use is anticipated, while residential entries may be located at mid-block. Inactive residential uses such as loading, support, administrative or mechanical spaces are discouraged along Bell Street, or should be buffered from the sidewalk by landscaping or architectural features.

Proposed Block V, Bell Street & 7th Ave looking NW



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5: APPENDIX

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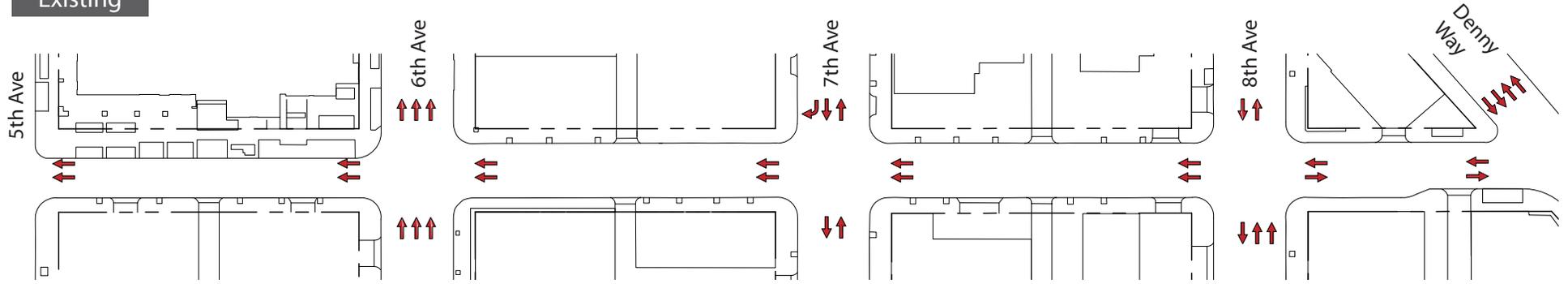
5 : APPENDIX

Traffic Lanes

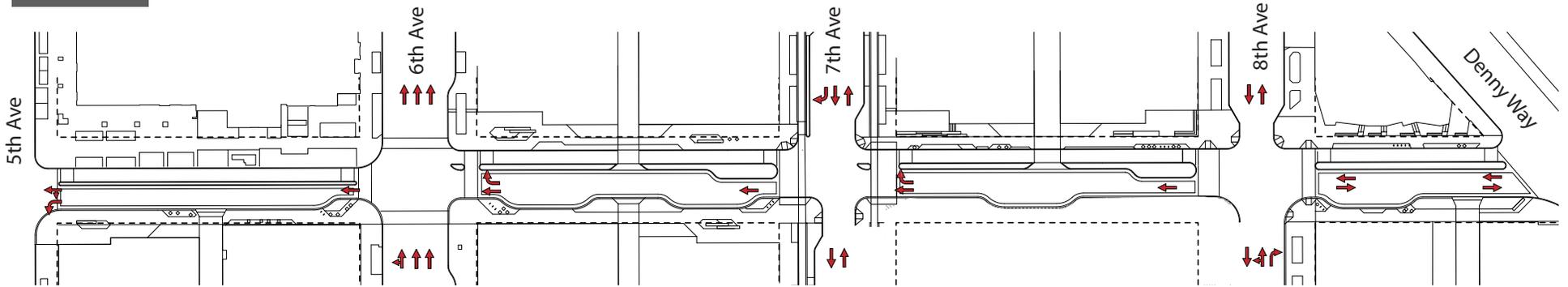
Legend

← Traffic lane / direction

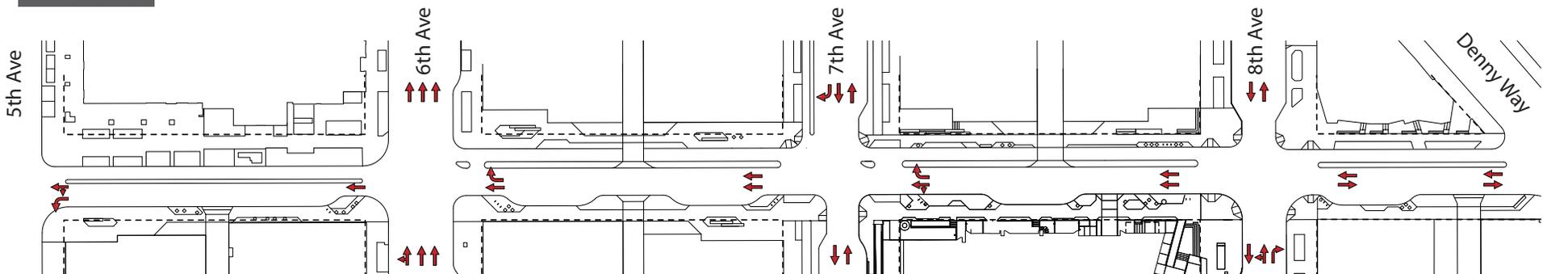
Existing



One Lane

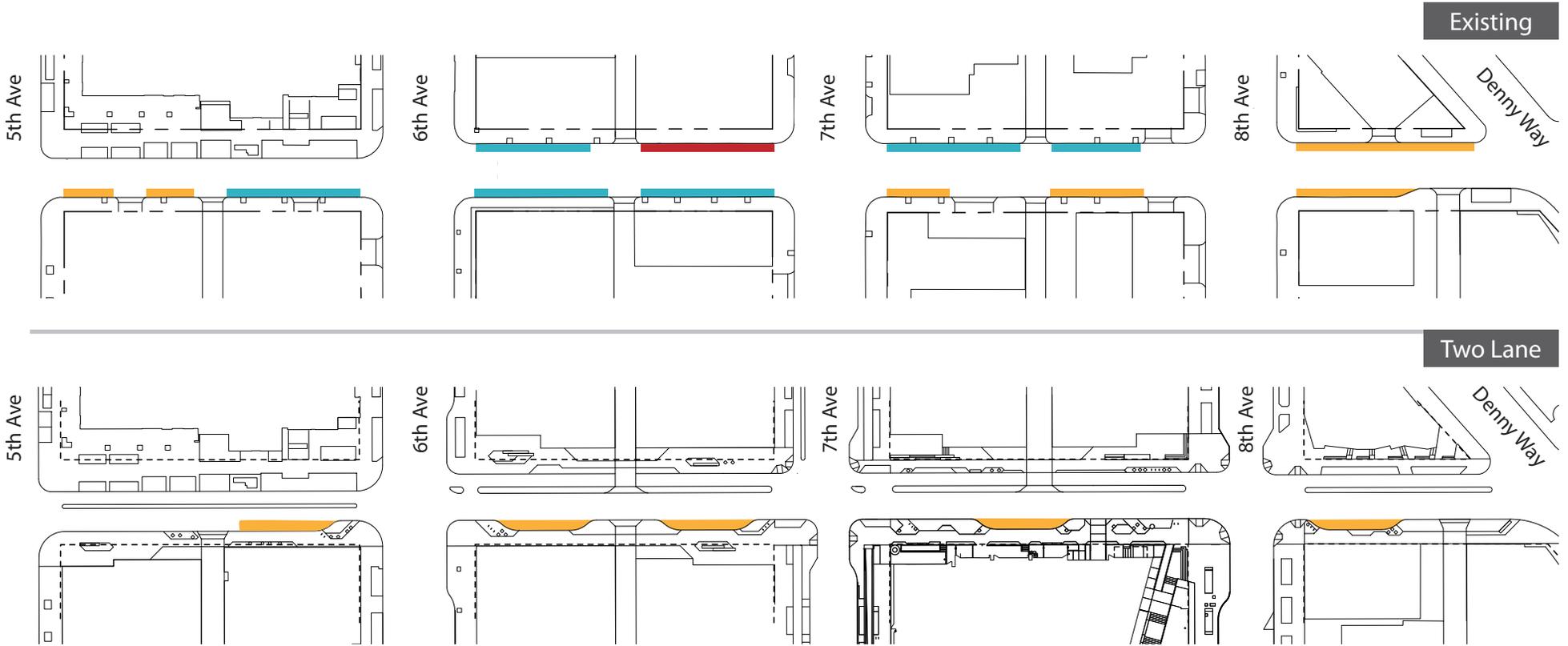


Two Lane



Legend

- Bus stop
- Parking
- Parking / bus layover



TECHNICAL MEMORANDUM

Project: Bell Street Concept Plan
Subject: Traffic Analysis
Date: September 18, 2015
Author: Marni C. Heffron, P.E., P.T.O.E.

This memorandum presents traffic analysis supporting the proposed lane configuration in the Bell Street Concept Plan. Extensive streetscape improvements are proposed along this designated Green Street between Denny Way and 5th Avenue. West of 5th Avenue, the street has already been substantially enhanced as part of the Bell Street Park. The current concept being evaluated would reduce portions of the existing travel way for vehicles in order to accommodate pedestrian, bicycle, and landscape features. On-street parking would be reduced and accommodated in pull out areas between landscape features on the south side of the street. The analysis presented in this memorandum evaluates how lane changes could affect vehicular travel.

1. Proposed Changes in Lane Configuration

Bell Street is oriented in a northeast-to-southwest alignment. However, for the purpose of this analysis it will be described as an east-west street, and Avenues will be described as having a north-south orientation. Bell Street is a one-way westbound street between 8th Avenue and 5th Avenue that generally has two lanes available for vehicular travel. The eastern segment of the street, between 8th Avenue and Denny Way, is a two-way street that has one lane in each direction. This segment provides for local circulation.

The proposed concept would reduce the width of Bell Street to one lane just west of 8th Avenue, and then widen to provide a short right turn pocket at 7th Avenue. This narrower section would allow a two-way cycle track to be created between Denny Way and 7th Avenue—connecting the cycle track proposed for 9th Avenue to those proposed on 7th Avenue. West of 7th, two westbound lanes for vehicles would be retained. The existing and proposed configurations are shown on Figure 1 (attached). It is noted that changes shown in the street configuration along 7th and 8th Avenues are proposed as frontage improvements for adjacent developments.

2. Traffic Volumes

New traffic counts were performed at four intersections along Bell Street between Denny Way and 6th Avenue in 2014 and 2015. These volumes were then used to develop forecasts for year 2030 conditions in order to account for the new SR 99 Tunnel project and North Portal improvements, as well as the many new development projects that are planned. The 2030 traffic forecasts for the neighborhood were developed using a combination of existing traffic volumes for major intersections, pipeline traffic associated with 48 development projects, and results from WSDOT's *Dynamic Traffic Assignment modeling tool (DTA Model)*, which was developed to assess traffic diversions associated with alternative tolling scenarios. It is noted that potential changes associated with transit-only lanes on Westlake Avenue N have not been estimated since analysis results for that project were not available at the time of this analysis. The 2030 traffic volumes are shown on Figures 2 and 3 (attached) for the AM and PM peak hours, respectively.

3. Traffic Operations

The traffic operational effects of the proposed concept plan were evaluated using level-of-service analysis. Level of service (LOS) is a qualitative measure used to characterize traffic operating conditions of roadways and intersections. Six letter designations, "A" through "F," are used to define level of service. LOS A is the best and represents good traffic operations with little or no delay to motorists. LOS F is the worst and indicates poor traffic operations with long delays. The City does not have adopted intersection level of service standards; however, the City prefers signalized intersections operate at LOS D or better.

Levels of service for the study area intersections were determined using the *Synchro 8.0* traffic operations analysis software, which is based on the methodology in the *Highway Capacity Manual 2010 (HCM)*.¹ Level of service calculations for signalized intersections were performed using the *Synchro 8.0* reporting module, which refines the *Highway Capacity Manual* methods to account for more detailed driving behavior, queuing conditions, and signal operations. Calculations for the all-way-stop intersection were performed using the HCM 2010 reporting module. Table 1 summarizes the year 2030 levels of service with the proposed lane configuration on Bell Street during AM and PM peak hour periods. The results show that the intersections along the corridor would operate at LOS C or better, which is an acceptable level of service. It is noted that for most of the intersections, the current lane capacity of two lanes would be retained, so intersection operations would not be affected by the concept plan. The reduction to one lane just west of the 8th Avenue intersection would not change the intersection capacity since each of the approaches that can feed this segment already only has one lane.

Table 1. Level of Service Summary – 2030-With-Project Conditions

Intersection Name / Control Type	AM Peak Hour		PM Peak Hour	
	LOS ^a	Delay ^b	LOS	Delay
6 th Avenue / Bell Street (signalized)	A	9.5	B	10.9
7 th Avenue / Bell Street (signalized)	C	26.8	C	34.7
8 th Avenue / Bell Street (all-way-stop)	B	12.2	C	19.4
Denny Way / 9 th Avenue N / Bell Street (signalized)	B	14.2	B	12.1

Source: Heffron Transportation, September 2015.

Note: All level of service calculations were performed using the Synchro 8.0 traffic operations analysis software. Signalized intersection results reported using the Synchro module; unsignalized intersection results reported using the HCM 2010 module.

a. Level of service.

b. Average seconds of delay per vehicle.

4. Effect on Transit

A substantial number of buses now use Bell Street as part of in-service routes or to access/return from layover areas in the Denny Triangle neighborhood. By March 2016, King County Metro Transit's Route 40 southbound service will be relocated from 9th Avenue N to Westlake Avenue N through the heart of South Lake Union. It will then connect to 3rd Avenue using Lenora Street instead of Bell Street. Layover activity will still occur, and there are no plans yet to eliminate the existing bus stop on Bell Street just west of 7th Avenue, which is the first stop in the neighborhood for buses that come out of layover on Routes 116, 118, 119, 121, 122, 131, and 132.

The proposed Bell Street Concept Plan could accommodate buses if they remain on Bell Street in the future. Buses could negotiate the left or right turn movements onto Bell Street at 7th Avenue and 8th Avenue. The proposed two-lane configuration from just east of 7th Avenue to 5th Avenue would allow general-purpose traffic to bypass a stopped bus.

5. Cycle Track Crossing of 8th Avenue

All except one of the intersections affected by the Bell Street Concept Plan are signalized; the Bell Street / 8th Avenue intersection is controlled by an all-way-stop. The Concept Plan proposes to create a two-way cycle track on the north side of Bell Street. This feature may complicate the all-way-stop protocols by adding two-way bicycles on just one side of the intersection. It would be an unusual traffic condition that does not currently exist elsewhere in the City. Vehicles may fail to yield to bicycles or vice versa as each user's turn comes up in progression. If needed in the future, the intersection could be signalized to clarify the traffic control. It would operate at LOS C or better as a signalized intersection.

6. Summary

The proposed lane configuration would accommodate long-term growth along the corridor without creating substantial congestion for vehicles or buses. The intersection at Bell Street/8th Avenue could be signalized in the future if the all-way-stop creates unnecessary delay or confusion for users.

