



CHAPTER 1: PROJECT HISTORY AND ALTERNATIVES

1.1 Project Background and History

The Burke-Gilman Trail (BGT) is a regional trail that runs east from Golden Gardens Park in Seattle and connects to the Sammamish River Trail in Bothell, except for a missing segment through the Ballard neighborhood. Currently, the regional trail ends at 30th Ave NW by the Hiram M. Chittenden (Ballard) Locks on the west, and begins again at the intersection of 11th Ave NW and NW 45th St on the east. The Seattle Department of Transportation (SDOT) proposes to connect these two segments of the BGT with a marked, dedicated route that would serve all users of the multi-trail. The proposed project to complete the regional facility is referred to as the Missing Link.

Completing this section of the BGT has been discussed and analyzed since the late 1980s. In the early 1990s, the City of Seattle (City) included the extension of the BGT in their comprehensive plan. By the late 1990s, the Seattle City Council passed a resolution outlining the guiding principles for extending the trail and developed an operating agreement between the Ballard Terminal Railroad (BTR) and the City to preserve the rail line in City ownership while continuing rail service to area businesses. The City Council adopted an ordinance, the Ballard Terminal Railroad Franchise Agreement, which granted BTR the right, privilege, and authority to construct and operate the railway in the railroad right-of-way. In the early 2000s, the City evaluated alternative routes for the trail. In 2003, the Seattle City Council adopted a resolution identifying Shilshole Ave NW as the preferred alignment for the Missing Link, with interim portions of the route to be located along Ballard Ave NW and NW Market St. In 2007, the City adopted the Bicycle Master Plan, which called for completing the trail. Environmental documentation was prepared for the Missing Link beginning in 2008 and was challenged multiple times. In 2012, after the third appeal to the City's Hearing Examiner over the project's environmental determination, the Hearing Examiner required SDOT to develop an environmental impact statement (EIS) related to traffic hazards on the Shilshole segment of the project. As a result of the ruling, SDOT decided to prepare an EIS for the entire project and to include an evaluation of alternative routes. SDOT began preparation of an EIS in 2013. Figure 1-1 provides a general timeline of the Missing Link project history.

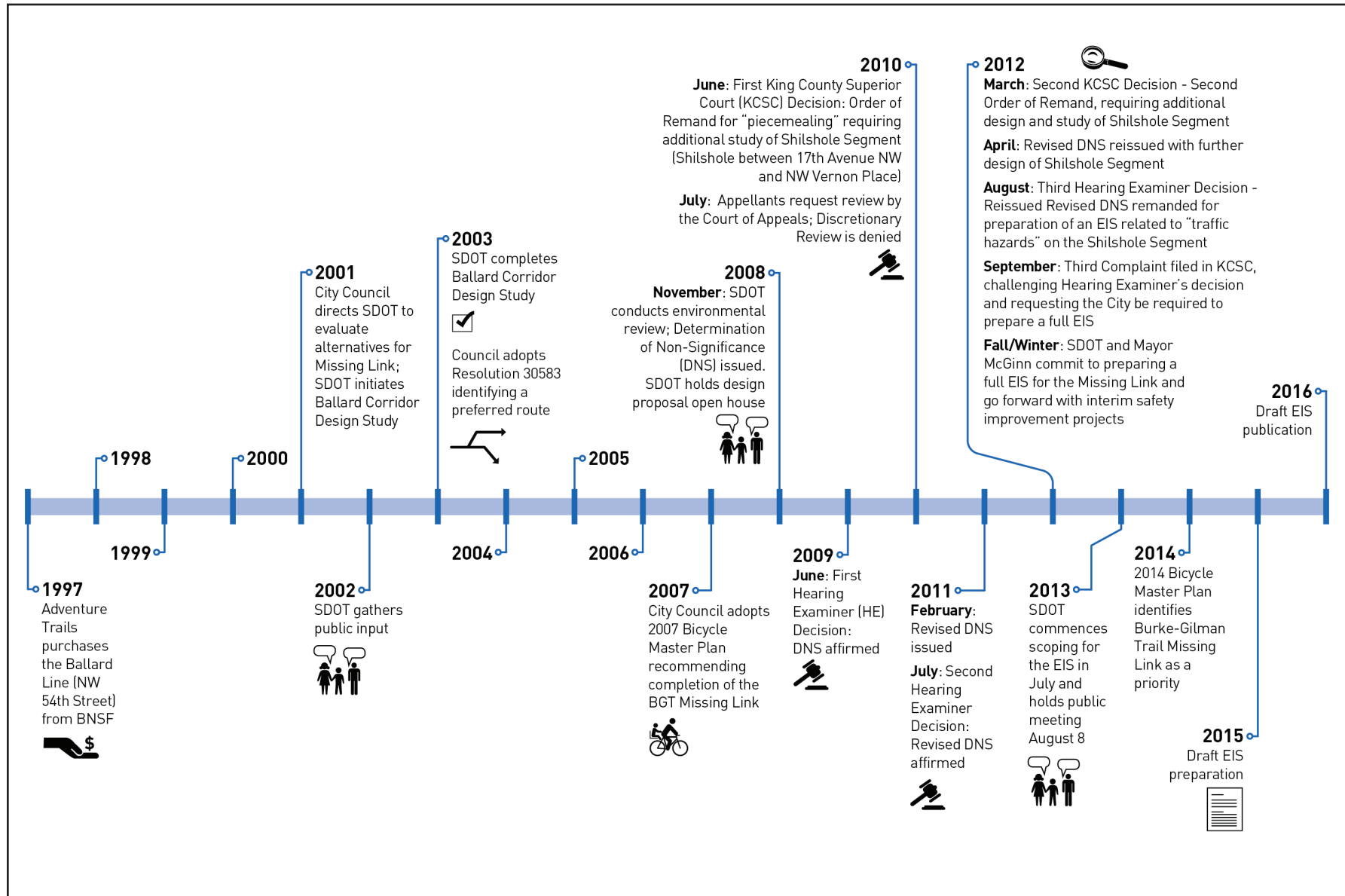


Figure 1-1. Missing Link Project History Timeline

1.2 Objective

The BGT currently serves a large portion of Seattle and the region as a highly used nonmotorized transportation and recreational facility. The City has identified a need for recreational and commuter users of the Burke-Gilman Trail to have a safe, direct, and defined way to traverse through the Ballard neighborhood from either end of the existing trail (SDOT, 2007, 2009, 2015). There are a number of barriers between the existing trail ends for people walking and biking. Some streets lack sidewalks or other demarcated areas for pedestrians, and intersection and railroad crossings are substandard for bicycles. Many people have commented during public meetings and open houses that they do not feel comfortable riding bicycles or walking in the roadway, and some activities such as skateboarding are not allowed on city streets. Traffic surveys have shown that the lack of a direct and defined route between trail ends results in people dispersing along various streets through Ballard, which in turn increases the opportunity for conflicts between vehicles and nonmotorized activities (SDOT, 2014, 2015). SDOT has determined that a multi-use trail is needed to accommodate the expected range of users in a safe manner. A multi-use trail allows for two-way, off-street pedestrian and bicycle use, as well as for wheelchairs, joggers, skaters and other nonmotorized users.

The primary objective of the proposed project is to connect the roughly 1.2-mile gap between the existing segments of the BGT through the Ballard neighborhood. The project is intended to create a safe, direct, and defined multi-use trail for persons of all abilities, for a variety of transportation and recreational activities, and to improve predictability for motorized and nonmotorized users along the project alignment. Another objective of the project is to provide connections to the proposed nonmotorized networks shown in the Pedestrian Master Plan (SDOT, 2009) and Seattle Bicycle Master Plan (SDOT, 2014), while maintaining truck and freight facilities and access that support industrial and water-dependent land uses within the shoreline and the Ballard-Interbay Northend Manufacturing and Industrial Center (BINMIC).

1.3 SEPA Process

This Draft EIS (DEIS) has been prepared consistent with the State Environmental Policy Act (SEPA) (Washington Administrative Code [WAC] 197-11) and Seattle Municipal Code (SMC) 25.05. It is an analysis designed to help elected officials, community leaders, and the public understand the full range of environmental impacts that could result from the proposal. The City, as the SEPA lead agency, is responsible for fulfilling SEPA's procedural requirements. The DEIS describes potential adverse impacts of each alternative and describes proposed mitigation measures to reduce potential adverse impacts. The public is encouraged to comment on the DEIS; those comments will be responded to in the Final EIS (FEIS). The City will identify a preferred alternative in the FEIS that best meets the project's objective. Ultimately, City officials will weigh the information presented in the EIS along with other factors before deciding upon the preferred alternative.

The intent and purpose of this DEIS is to satisfy the procedural requirements of SEPA (Revised Code of Washington [RCW] 43.21c) and City Ordinance 114057. This is a project-level EIS that encompasses all of the regulatory, transactional, and other actions necessary to complete the Missing Link. This document is not an authorization for an action, nor does it constitute a decision or a recommendation for an action.

1.3.1 Scoping

Scoping is the process of determining the elements of the environment and alternatives to be evaluated in the EIS. SDOT received public comments between July 17 and August 16, 2013, including an open house

held on August 8, 2013 at Ballard High School. The focus of the open house was to receive comments related to trail location.

A total of 1,138 comment letters (including oral comments) were received during the scoping period. Two themes were dominant in the comment letters: trail location and safety. Shilshole Ave NW was the location most often indicated as preferred for the trail. When reasons were given for this preference, the most common reason was that it is the most direct route between the two ends of the existing BGT. However, many comment letters were opposed to Shilshole Ave NW as a route because it is an industrial corridor. These responses indicated the need to consider alternative routes to Shilshole Ave NW in order to examine the relative merits of routes that avoid or reduce impacts to the industrial area.

Both advocates and opponents of the trail expressed concern regarding the safety of bicyclists, but stated different opinions about the likelihood that safety concerns could be addressed adequately. Safety is not itself an element of the environment to be reviewed under SEPA. In addition, the analysis in an EIS is conducted at an early stage of project development, such that it is not possible to examine all safety issues that could be resolved through detailed design. However, the high level of concern about safety expressed in the public comments indicated that the EIS needed to include an analysis of safety considerations, such as industrial driveway crossings and traffic hazards.

Other frequently expressed concerns included the effect the trail would have on industrial land uses, particularly along Shilshole Ave NW, and the loss of parking. City and State land use policies strongly support maintaining industrial uses along the Ballard waterfront; thus, comments noted that the EIS should consider alternatives that are not immediately adjacent to industrial land uses, where feasible.

A variety of other comments were received regarding design suggestions, the environment, and other topics. Scoping is described in more detail in the *Burke-Gilman Trail Missing Link Environmental Impact Statement Public Scoping Meeting Comments Summary* available on the City website (SDOT, 2015).

All of the trail location information obtained as part of the scoping process was incorporated into the alternative development and screening process, as described in Section 1.4.1 of this document.

1.4 Alternative Development

1.4.1 Screening

SDOT received a number of suggestions during scoping in 2013 for potential routes to complete the Missing Link. SDOT mapped all possible route segments identified in the public scoping period, along with several additional segments suggested by SDOT staff and consultants. Overall routes through the project area were broken into smaller segments for review, and included a street block or number of blocks that would likely remain intact as part of a larger route. Segments were added in addition to those suggested by the public, including street blocks that could be used to connect streets in a reasonable way.

Engineers and planners from SDOT, in conjunction with their consultants (engineers, transportation planners, environmental planners, trail designers, and scientists), evaluated 55 route segments using the screening criteria listed below in a charrette-style workshop held in March 2015.

Screening criteria were developed by SDOT and their consulting team to narrow down the possible alternative segments and remove unworkable or infeasible segments from further consideration. The criteria included factors critical to the development of a safe, multi-use trail that would be similar in design and feel to the remainder of the BGT system. The screening criteria included the following factors:

- Directness of route,
- Number and types of trail crossings (driveways and intersections),
- Street and arterial classification,
- Adjacent land uses, and
- Right-of-way width.

At the workshop, each route segment was evaluated to create reasonable alignments that best meet the project objective. Using the screening criteria, the number of route segments was reduced to 31 segments. Segments that were eliminated either did not meet the criteria or did not provide a reasonable connection where another segment better met the criteria and/or provided a more direct or safe connection. The remaining segments were combined by the team to create a range of trail alignments through the project area that incorporated a broad range of options. The route segments were connected into three feasible alternative routes and seven route segments that would allow potential links to “mix and match” route segments.

Once the general alignments were determined, the route was further refined. To reduce the number of intersection crossings, the trail was located on the side of the street that resulted in fewer intersection crossings. In general, this meant that the trail would be located on the south side of east-west trending streets and on the west side of north-south trending streets.

Several team workshops were held over the next 3 months as the routes were being developed to refine the trail details and crossings. The trail alignments were named for the general east-west trending street on which they are located: the Shilshole South Alternative, the Ballard Avenue Alternative, and the Leary Alternative.

Following review of the three alternatives in June 2015, SDOT decided to include a fourth alternative, along the north side of Shilshole Ave NW, called the Shilshole North Alternative, because this alignment meets the screening criteria and does not result in more intersection crossings than the Ballard Avenue or Leary Alternatives.

This document evaluates the four Build Alternatives described above, along with the No Build Alternative. Refer to Section 1.6 and Figures 1-2 through 1-6 for descriptions and depictions of the alternative alignments and connector segments.

1.5 No Build Alternative

Under the No Build Alternative, no new multi-use trail would be constructed to connect the existing segments of the regional Burke-Gilman Trail. Trail users would continue to use the existing surface streets and sidewalks to travel between the existing trail segments, a distance of approximately 1.2 miles. Currently, trail users tend to use the most direct route, which is along Shilshole Ave NW. Pedestrians may opt for a street with sidewalks such as Ballard Ave NW or NW Leary Way. The No Build Alternative serves as the baseline condition, against which the Build Alternatives are compared over time to their 2040 design year. Over that time period, population and employment growth is expected to continue in the Ballard neighborhood, leading to an increase in traffic congestion, parking demand, and the number of people walking and biking.

1.6 Build Alternatives

1.6.1 Shilshole South Alternative

Under the Shilshole South Alternative, the multi-use trail would be primarily routed along the south side of Shilshole Ave NW (Figure 1-3). There would be changes to parking, lanes, and intersection configurations on both sides of the street along this alternative alignment. The trail would accommodate users on a newly paved surface for most of its length.

Beginning at the existing western trail end at the Ballard Locks, the trail would continue east along the north side of the unimproved NW 54th St right-of-way until the intersection with Shilshole Ave NW, just east of 24th Ave NW. The trail would then proceed along the south side of Shilshole Ave NW, continuing onto the south side of NW 45th St to the eastern project end at 11th Ave NW. From the existing western trail end at the Ballard Locks, the trail would be north of the BTR tracks until just before 17th Ave NW, at which point the trail would cross to the south of the tracks. A signal would be installed at the intersection of Shilshole Ave NW and 17th Ave NW for trail users crossing Shilshole Ave NW to access 17th Ave NW.

The trail width would vary somewhat throughout the corridor due to existing conditions and constraints, but would generally be between 8 and 12 feet wide. Based on the design concepts, the typical right-of-way on Shilshole Ave NW for this alternative would include a barrier or buffer zone adjacent to the railroad tracks and vehicle travel lanes, a multi-use trail, two vehicle travel lanes, and preservation of parking areas where feasible (Figure 1-3). See Chapter 7, Transportation, for additional detail on this and for all other Build Alternatives.

1.6.2 Shilshole North Alternative

Under the Shilshole North Alternative, the multi-use trail would be primarily routed along the north side of Shilshole Ave NW (Figure 1-4). Beginning at the existing western trail end at the Ballard Locks, the trail would continue east along the south side of NW 54th St until it turns into NW Market St. The trail would continue along the south side of NW Market St, until it crosses 24th Ave NW and turns south on the east side of 24th Ave NW. The trail would then proceed east along the north side of Shilshole Ave NW to the intersection with NW 46th St. A signal would be installed at the intersection of Shilshole Ave NW and 17th Ave NW for trail users crossing 17th Ave NW. It would continue along the north side of NW 46th St underneath the Ballard Bridge to 11th Ave NW. At this point the trail would turn south along the east side of 11th Ave NW until it connects to the eastern end of the existing trail at NW 45th St.

There would be changes to parking, vehicle travel lanes, and intersection configurations on both sides of the streets in this alternative. The typical right-of-way on NW Market St would include sidewalks on both sides of the street, the multi-use trail, a buffer zone, parallel parking or bus zone on both sides of the street, two vehicle travel lanes, and center turn lane (Figure 1-4). The typical right-of-way on Shilshole Ave NW for this alternative would include a barrier or buffer zone and informal parking adjacent to the railroad tracks, two vehicle travel lanes, parallel parking area, buffer area, multi-use trail, and sidewalk. The existing gravel shoulder on the south side of Shilshole Ave NW would be maintained (Figure 1-4). These elements would vary along the trail due to the existing road configuration and structures. See Chapter 7, Transportation, for additional detail on this and for all other Build Alternatives.

1.6.3 Ballard Avenue Alternative

Under the Ballard Avenue Alternative, the multi-use trail would be primarily routed along the south side of Ballard Ave NW (Figure 1-5). Beginning at the existing western trail end at the Ballard Locks, the trail

would continue east along the north side of the unimproved NW 54th St right-of-way until 28th Ave NW. At this point the trail would turn north along the east side of 28th Ave NW until it reaches NW 56th St. The trail would then turn east along the south side of NW 56th St to the intersection with 22nd Ave NW. At 24th Ave NW and NW 56th St, a new pedestrian-activated signal would be installed to facilitate the trail crossing of 24th Ave NW. The trail would turn south along the west side of 22nd Ave NW, cross NW Market St, and proceed south to Ballard Ave NW. At this point the trail would turn southeast along the south side of Ballard Ave NW and continue east on the south side of NW Ballard Way to the intersection with 15th Ave NW. The trail would then turn south onto the one-way road on the west side of 15th Ave NW, which could potentially be converted to trail only use (no vehicles). The trail would cross to the south side of NW 46th St at a newly signalized intersection and proceed east across 11th Ave NW. It would then turn south along the east side of 11th Ave NW to the eastern trail end at NW 45th St.

There would be changes to parking and vehicle travel lane configurations on all streets traversed by this alternative (Figure 1-5). The typical right-of-way on Ballard Avenue would include pedestrian sidewalks on both sides of the street, buffer zone, two vehicle travel lanes, and parallel parking area on the north side of the street. These elements would vary along the trail due to the existing road configurations and structures. See Chapter 7, Transportation, for additional detail on this and for all other Build Alternatives.

1.6.4 Leary Alternative

Under the Leary Alternative, the multi-use trail would be primarily routed along the south side of Leary Ave NW (Figure 1-6). Beginning at the existing western trail end at the Ballard Locks, the trail would continue east along the south side of NW 54th St until it turns into NW Market St. The trail would continue east along the south side of NW Market St, crossing 22nd Ave NW. At 22nd Ave NW, the trail would turn southeast on the south side of Leary Ave NW. The trail would continue east along the south side of Leary Ave NW, which becomes NW Leary Way, to 11th Ave NW. At this point, the trail would turn south along the east side of 11th Ave NW to the current trail end at NW 45th St.

There would be changes to parking, vehicle travel lanes, and intersection configurations on both sides of the street along this alternative. The typical right-of-way on Leary Ave NW would include buffer zones on both sides of the street, a multi-use trail, parking areas on both sides of the street, sidewalks on both sides of the street, two vehicle travel lanes, and one two-way center left turn lane (Figure 1-6). The typical right-of-way on NW Market St would include a sidewalk, the multi-use trail, a buffer zone, two vehicle travel lanes, center turn lane, and parking areas on both sides of the street (Figure 1-6). These elements would vary along the trail length due to the existing road configuration and structures. See Chapter 7, Transportation, for additional detail on this and for all other Build Alternatives.

1.6.5 Connector Segments

The alternatives above are conceptual routes designed to provide distinct alternatives for the DEIS. The route that is selected as the preferred alternative could be any one of these or a combination of portions of any of them, using connector streets to provide one continuous trail. There are a number of possibilities to connect segments of the routes, and six segments have been identified as the most likely connectors (Figure 1-2). These segments may be used as connections between portions of the previously identified alternative routes and could be on either side of the road.

- Ballard Avenue NW;
- NW Vernon Place;
- 20th Avenue NW;

- 17th Avenue NW;
- 15th Avenue NW; and
- 14th Avenue NW.

If NW Vernon Pl is used as a connector segment, then a signal at NW Vernon Pl and Shilshole Ave NW may also be warranted, depending on whether the trail would continue on the north or south side of Shilshole Ave NW.



Figure 1-2. Proposed Alternatives

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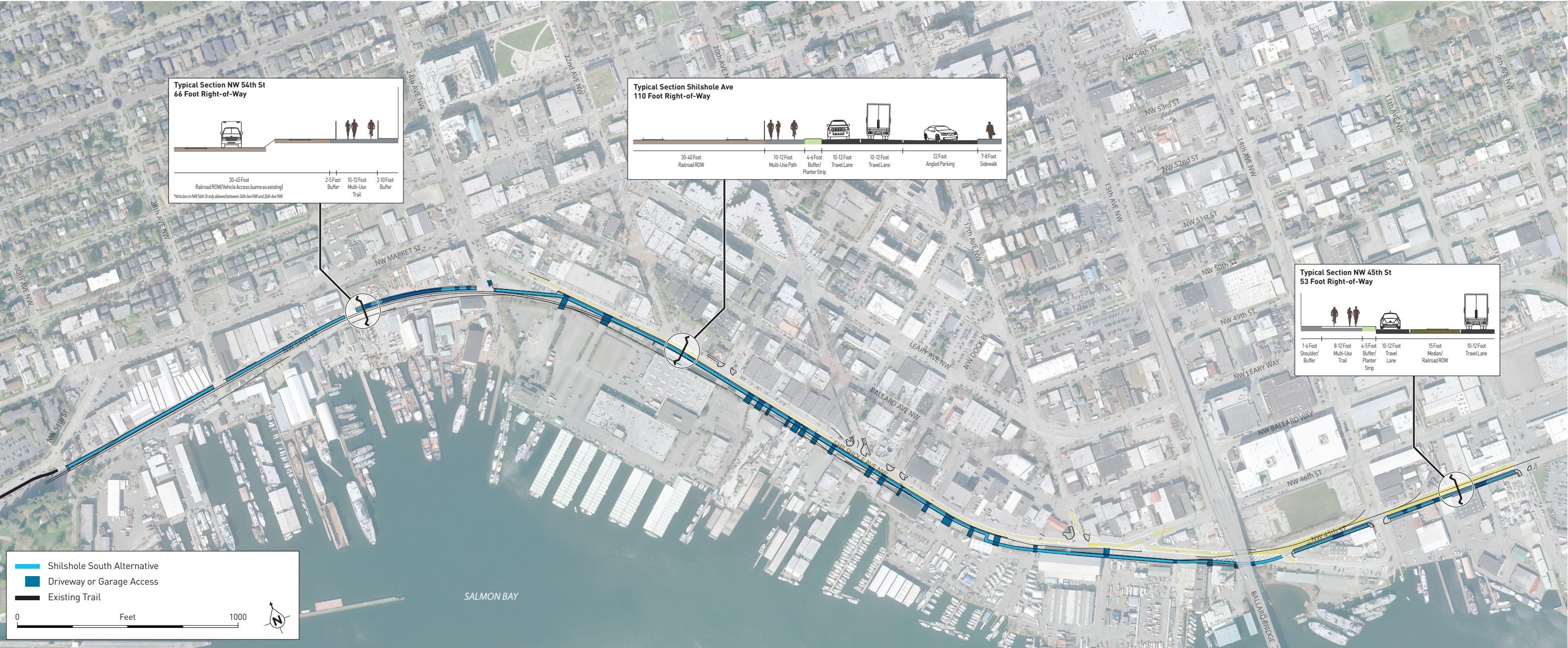


Figure 1-3. Shilshole South Alternative

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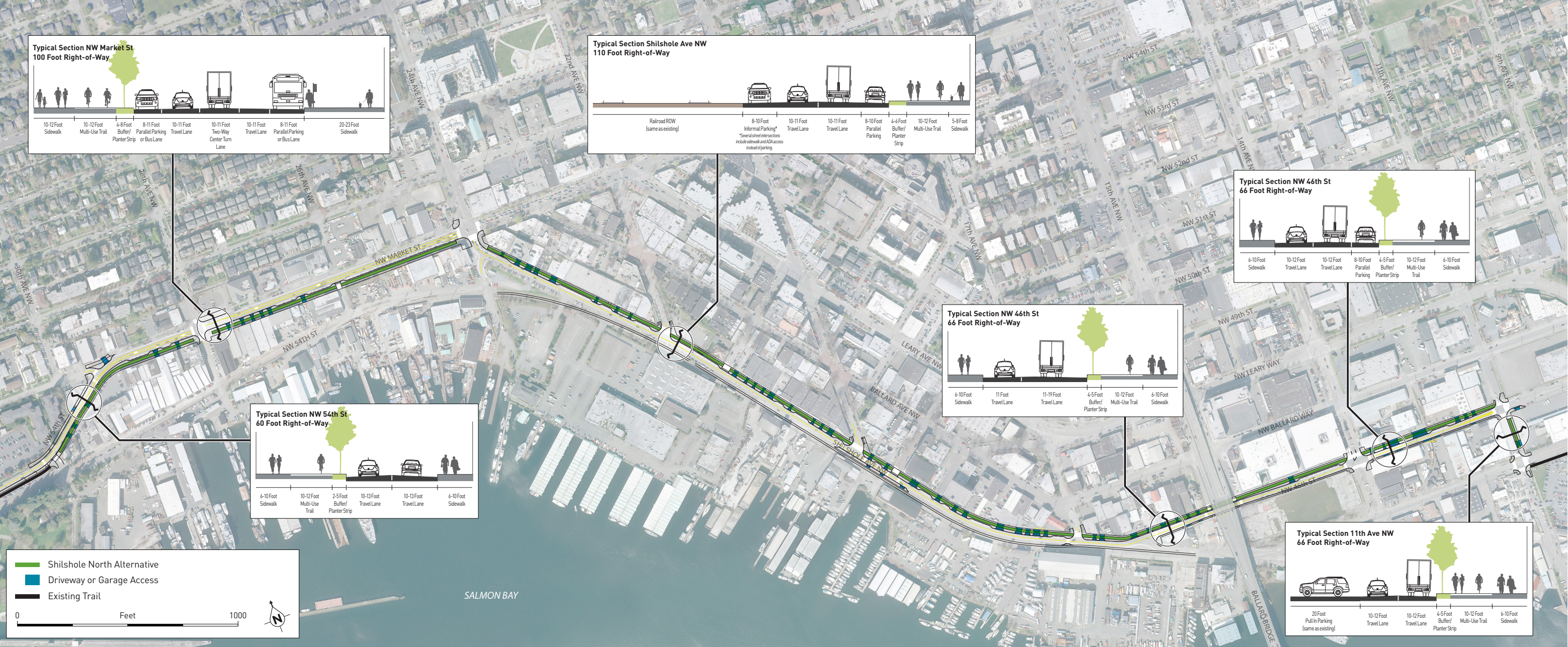


Figure 1-4. Shilshole North Alternative

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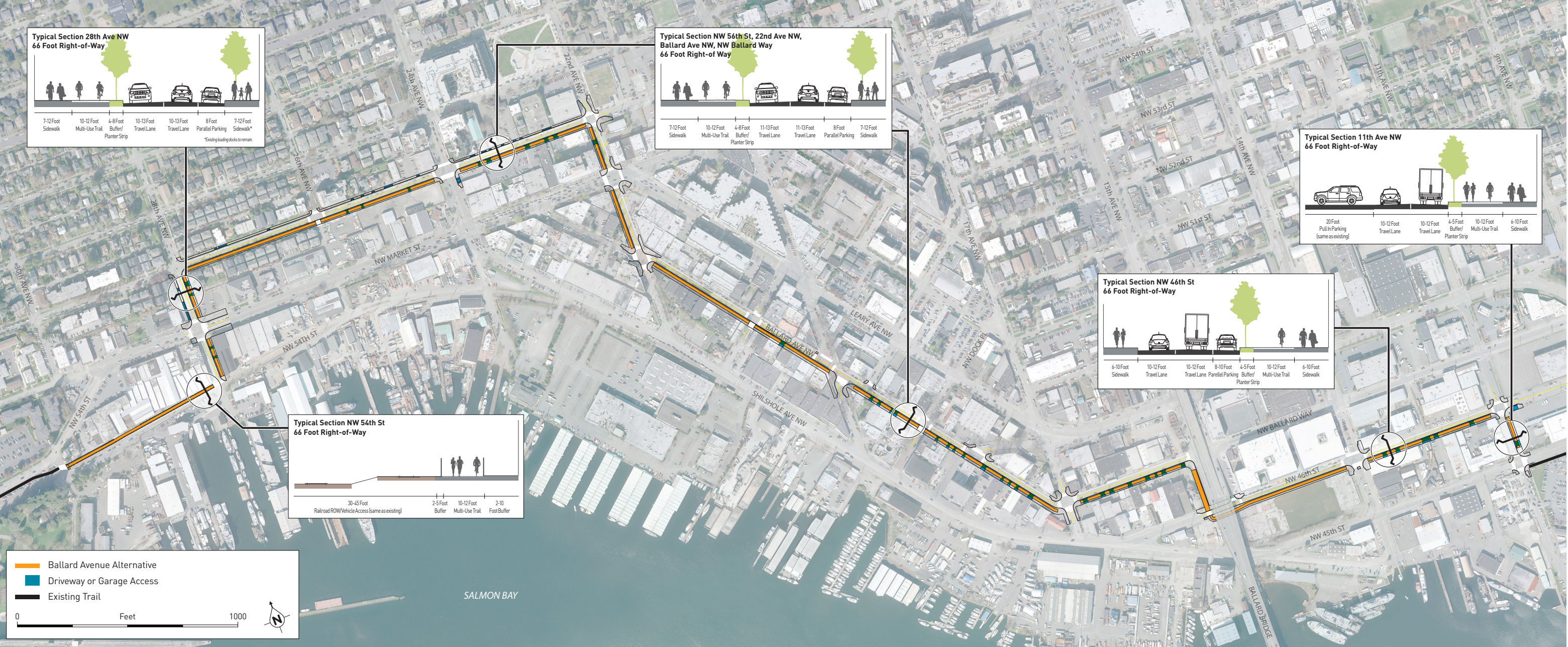


Figure 1-5. Ballard Avenue Alternative

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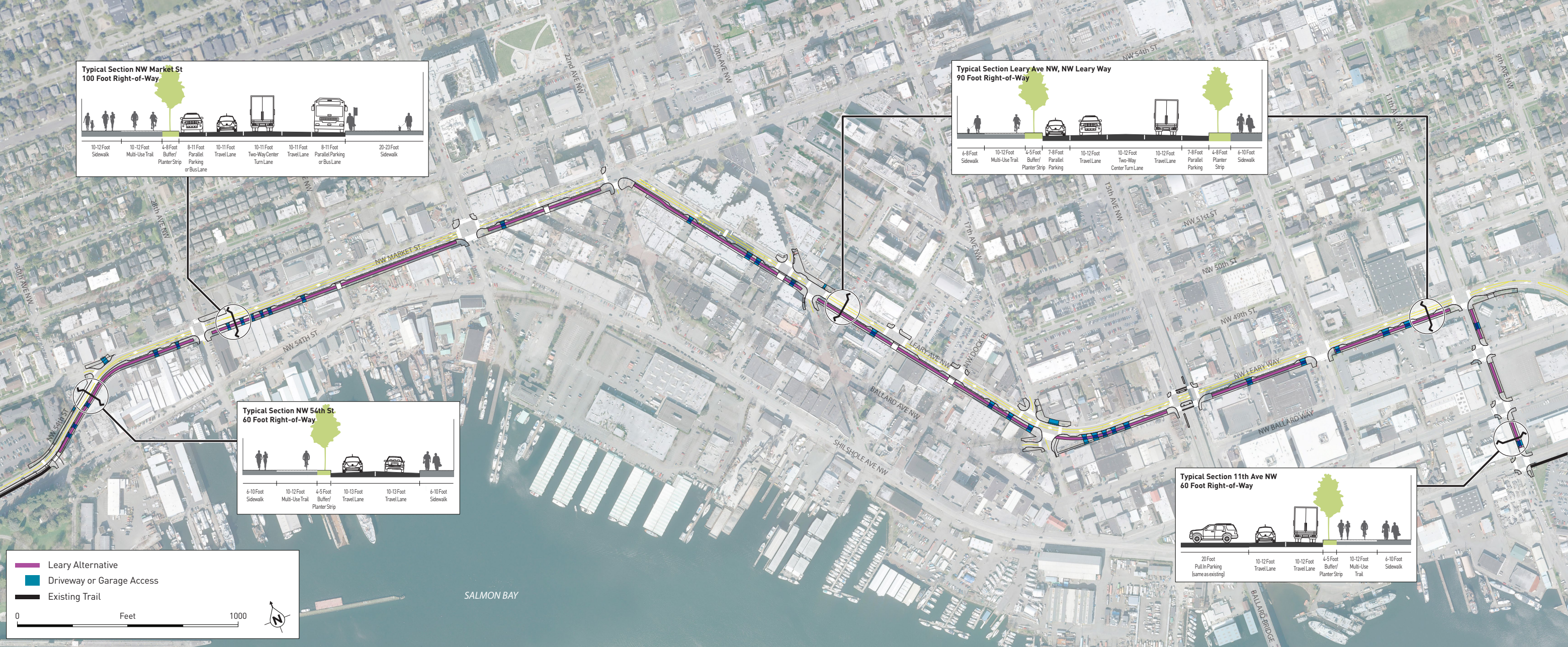


Figure 1-6. Leary Alternative

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1.7 Features Common to All Build Alternatives

1.7.1 Roadway Design Considerations

Roadway designs would vary for each alternative based on factors such as intersection geometry, vehicle volumes, nonmotorized users, and types of vehicles. This section describes roadway modifications, intersection treatments, driveway design, and parking lot changes that could be incorporated during the final design phase of the project to address safety, access, nonmotorized users, and vehicle types. Similar concepts can be found throughout the city and in design documents such as the Urban Bikeway Design Guide (National Association of City Transportation Officials [NACTO], 2015) and Guide for Development of Bicycle Facilities (American Association of State Highway and Transportation Officials [AASHTO], 2012). These features are common to all Build Alternatives, but the location and other specifics would vary by alternative. Chapter 7, Transportation, provides additional detail related to these design considerations.

Roadway Design

Adding a trail to the street system would require roadway modifications for vehicles to co-exist with nonmotorized users. These changes could include geometric changes to create perpendicular intersections, changes to roadway lane configurations, alterations of curb radii, and design details that provide sight lines between vehicles and nonmotorized users:

- Perpendicular Intersections—Modification of diagonal streets to create perpendicular intersections may be included in the designs. Several streets along the alternative alignments intersect at diagonals rather than at a preferred perpendicular angle. Adjusting the geometry of the intersections would allow crosswalks to be shorter and provide more consistent sight distance for all users. Figure 1-7 depicts a perpendicular intersection configuration.
- Lane Configurations—Lane configurations could be modified to create additional space within the roadway for the multi-use trail. These changes could include the removal of parking or vehicle lanes as well as the removal or addition of intersection or center turn lanes.
- Curb Radii—Curb radii may be modified to accommodate the turning requirements for different vehicles. Different intersections may have different types of vehicles that typically use the street, including passenger vehicles, single unit trucks (delivery-style trucks), buses, emergency vehicles, or semi-trucks. Appropriate curb radii would be chosen to accommodate the differing vehicles and roadway geometry at each location. Figure 1-8 illustrates a modification of curb radii.
- Sight Lines—Sight lines are important for safety and would be considered throughout the corridor. Trees, vegetation, and other obstructions would be cleared from intersections and from the back of sidewalks to avoid obstructing sight lines. Parking would also be restricted near driveways and intersections to preserve sight lines. Because of the developed nature of the project area, sight lines may not meet industry standards in all locations.

Intersection Design

Intersections would be designed to more clearly identify crossings of the multi-use trail. These improvements could include the following:

- Curb Extensions or Curb Bulbs—Curb extensions or curb bulbs may be used at intersections where parallel parking and bus stops are located along the street. In these cases, the sidewalk is extended into the parking lane such that the curb is adjacent to the lane of travel. This design

shortens the crossing length for pedestrians and provides additional space for curb ramps. Figure 1-9 provides an example of curb extensions.

- Pavement Markings—Pavement markings distinguish space for nonmotorized users. Pavement markings could include colored pavement such as white markings for crosswalks and bike symbols or green for bicycle lanes, similar to other locations in Seattle. These treatments could be used to demark where the BGT crosses streets or driveways, for “bike boxes” at intersections to provide safe zones for bicycles crossing paths with turning vehicles, and for other signed bicycle routes or greenways as they intersect the BGT. Figures 1-7 and 1-8 illustrate varied pavement markings.
- Raised Crosswalks—Raised crosswalks could be used as a traffic calming measure to slow vehicles down in the vicinity of the crossing. The roadway pavement is raised 3 to 6 inches within the crosswalk and would be coupled with a stop sign or signal-controlled intersection. The roadway is typically enhanced with additional markings and signage for the raised crosswalk and could include alternative pavement treatments for the crossing. Figure 1-10 illustrates a raised crosswalk.
- Driveway-Style Entrances—Intersections could be converted to driveway-style entrances. This design concept was recently completed on Bell St in downtown Seattle. This design feature would make the trail continuous across an intersection. Curbs and gutters would also be modified to be continuous across the intersection, with the curb lowered to create a driveway-style approach to enter the street. Figure 1-11 illustrates a driveway-style intersection.
- Signalized Intersections—Signalized intersections may be used to clearly direct both nonmotorized trail users and vehicles. Existing signalized intersections in the corridor would be maintained but improved to meet current design guidelines. Furthermore, additional signals could be added to congested intersections to address safety concerns and improve traffic flow. All signalized intersections would include pedestrian-activated signals. These signals could include leading-pedestrian walk or all-way walk phases where pedestrians could cross diagonally through intersections. They could also include bicycle signals that would allow bicycle movement through an intersection separate from motor vehicle travel. Signalized intersections in the corridor may include No-Right-On-Red restrictions to eliminate right turn conflicts with nonmotorized users.
- Rapid Flashing Beacons—Road crossings of the trail could include rapid flashing beacons or flashing amber lights at mid-block trail crossings.
- Medians—Medians could be used either to improve the street crossing for pedestrians or to restrict left turns across the trail.
- Barriers, Fences, and Buffers—In some locations, barriers, fences, or buffers could be used to separate nonmotorized trail users from moving vehicular traffic or the railroad. Figures 1-7 through 1-11 illustrate various buffer possibilities, such as vegetation buffers.
- Alternative Pavement—Alternative pavement types could be used to warn pedestrians and bicyclists of upcoming driveways and intersections. An example of alternative pavement treatments is inserting concrete strips within the asphalt trail. The strips could be colored concrete or could have texture added to increase awareness. It could also include using concrete for crosswalks in addition to pavement striping.

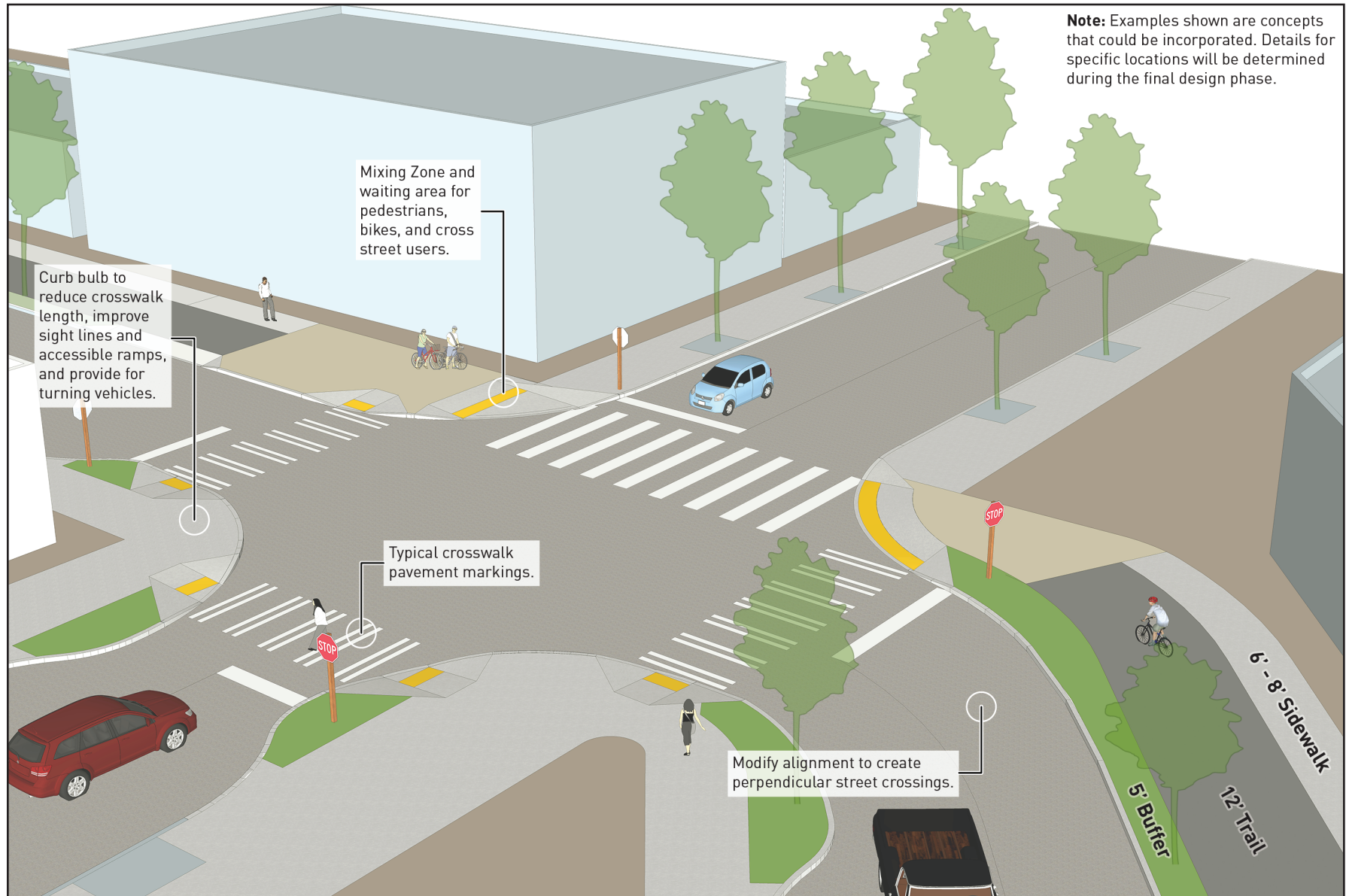


Figure 1-7. Intersection Design Options: Perpendicular Intersection

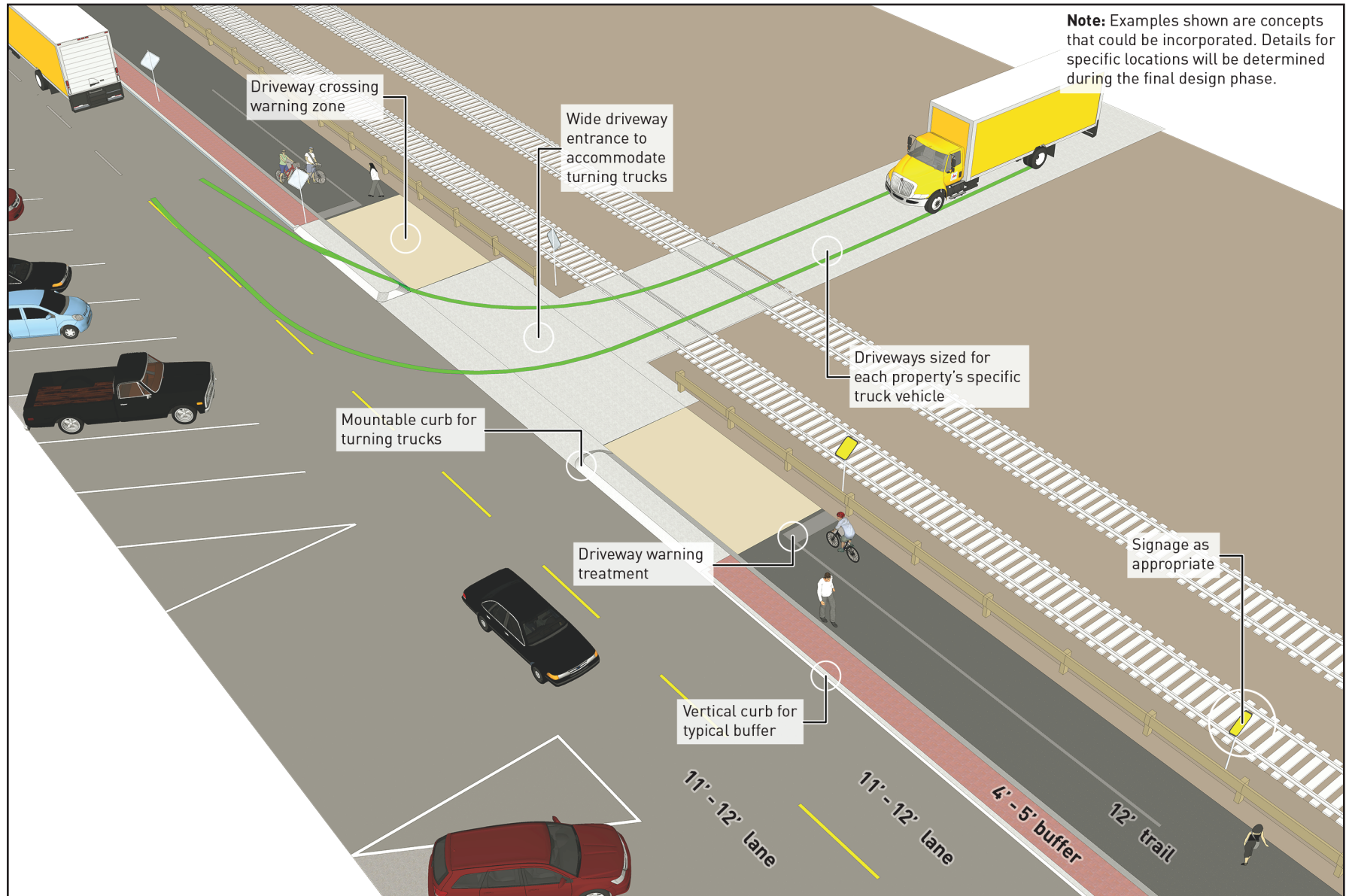


Figure 1-8. Intersection Design Options: Curb Radii Modification

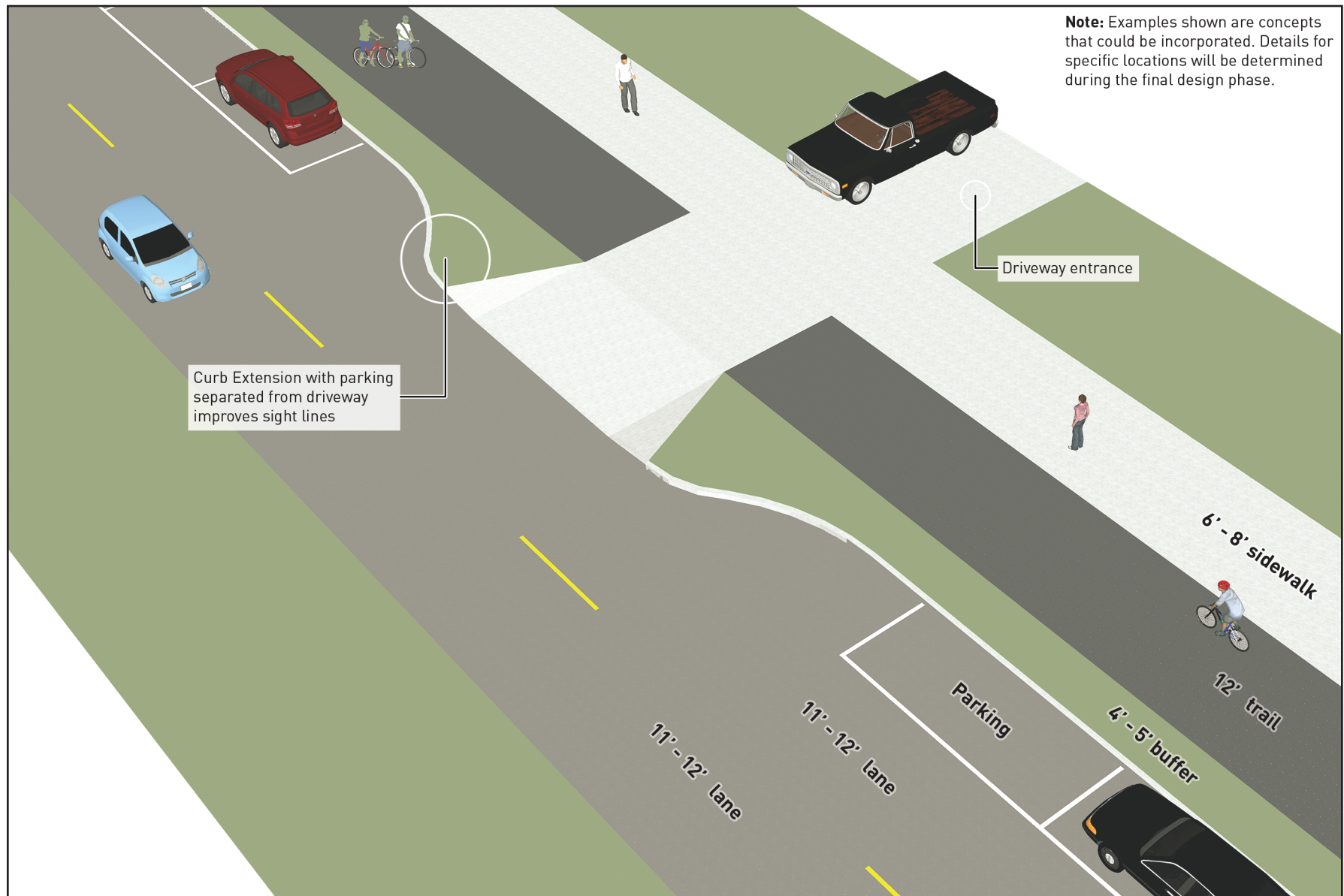


Figure 1-9. Intersection Design Options: Curb Extension

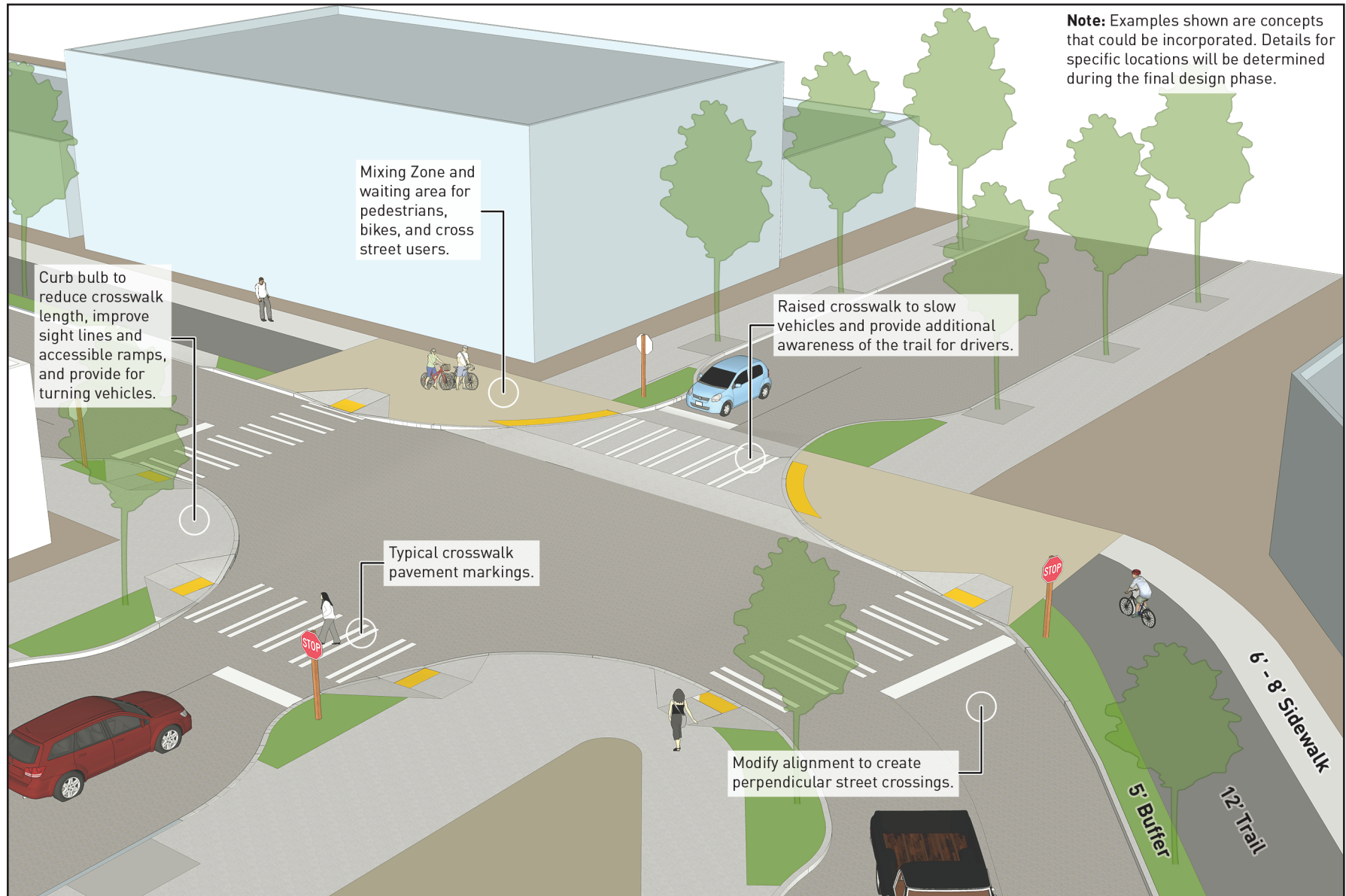


Figure 1-10. Intersection Design Options: Raised Crosswalk

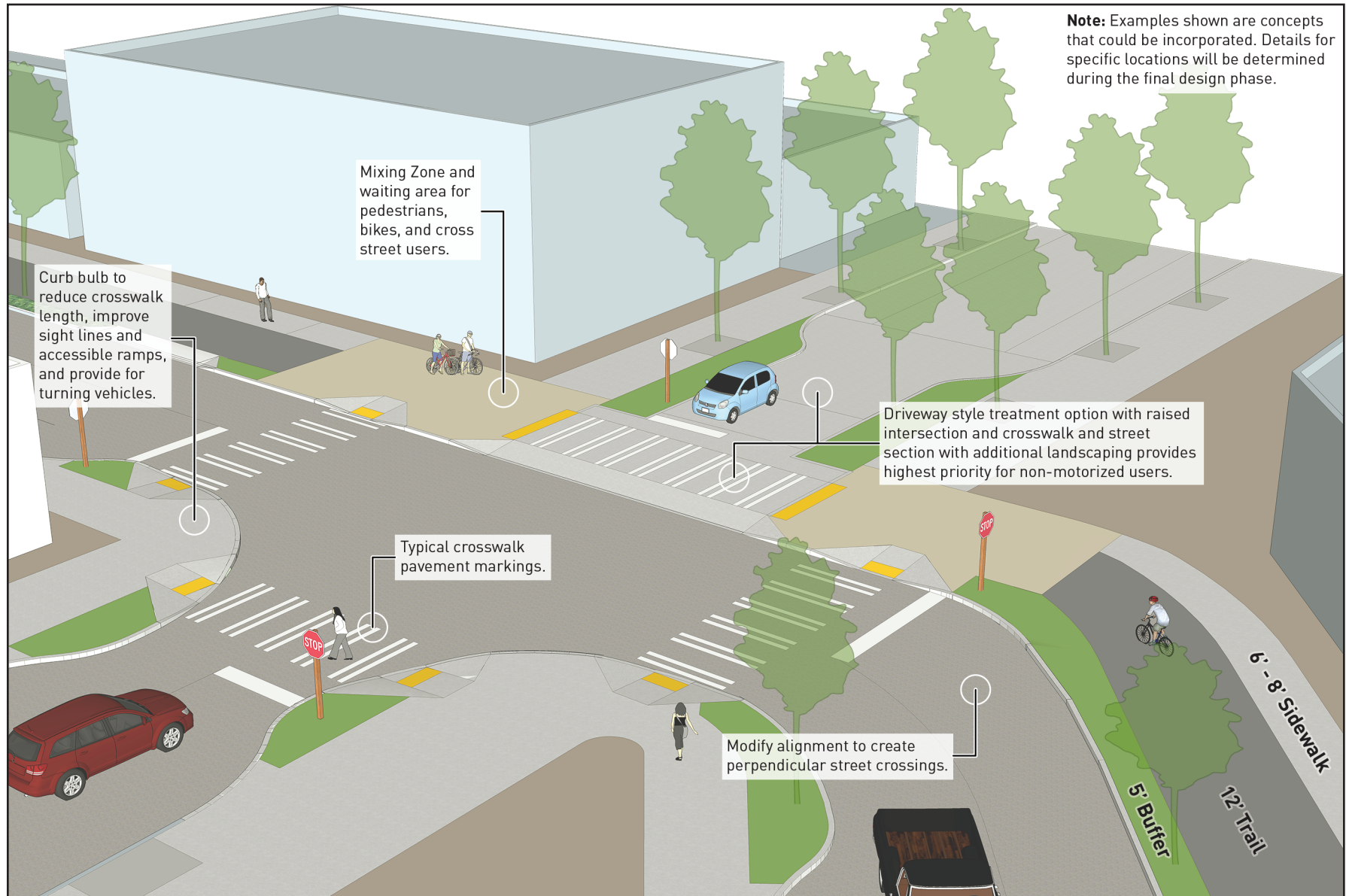


Figure 1-11. Intersection Design Options: Driveway Style Intersection

Driveway Design

Driveways that cross or intersect with the multi-use trail would also be evaluated for possible design changes following selection of a preferred alternative. Design changes could include many of the intersection elements described above, including curb bulbs, pavement markings, and restricted parking. Driveways and loading docks could be reconfigured so that parked vehicles would not block the trail. Some driveways may be eliminated, relocated, or consolidated in the case of multiple driveways at a single property. Additional detail is provided in Chapter 7, Transportation, by Build Alternative related to possible driveway design changes.

Access Modifications

Parking in some private lots may be affected due to changes to property access from the multi-use trail. For example, striping in parking lots may need to be modified to prevent vehicles from blocking the trail when parked, which may reduce the number of parking spaces in some lots.

1.7.2 Stormwater Management

Stormwater management would conform with the City of Seattle Stormwater Manual (City of Seattle, 2016) and Seattle Municipal Code (SMC 22.800). Stormwater management varies widely by alternative alignment and would be designed after the preferred alternative is chosen. Additional description is provided in Chapter 6, Utilities.

1.7.3 Construction Methods

This section describes the construction methods that the City currently anticipates using for the Build Alternatives. Because of the dynamic nature of construction, the sequencing, extent, and timing of construction activities would vary to some degree from what are described here. However, this description represents a reasonable scenario that allows an understanding of the range of potential methods that could be used as the project is built.

Overall construction of any of the Build Alternatives would last 12 to 18 months. The duration would vary depending on the extent of utility relocations, storm drainage improvements, and existing roadway reconfigurations including bus stop relocations. Construction would likely occur in segments, and one segment would be completed before moving on to the next segment to minimize the construction duration at any given location.

Construction Activities and Durations

Construction of any of the Build Alternatives would consist of the following general activities:

- Demolition, including removal of pavement, curbs, sidewalks, driveways, trees, signs, bus shelters, fencing, or other features located in the new trail area.
- Construction of new roadway elements including pavement, curbs and gutters, sidewalks, driveways, trees, bus shelters, fencing, signs, and buffer elements. Buffer elements include such things as paving, landscaping, barriers, fencing, and signage.
- Utility relocations, ranging from moving fire hydrants, stormwater catch basins, and overhead utility and power poles to the installation of new drainage facilities.

Construction Staging

Construction staging and scheduling are typically determined by the contractor; however, the City would specify some restrictions that the contractor must adhere to. Demolition would likely be limited to a certain length of the trail; as such, the contractor would not be allowed to demolish the work space along the entire length of the trail. Rather, the project would be constructed in multiple smaller segments.

The project would generally use areas within or near the project footprint for construction staging and storing materials and equipment, including vacant lots, parking lots, and unused rights-of-way. Temporary construction offices (such as trailers) could also use these areas. Alternatively, construction offices may be located in a rented office space. All staging areas would be restored to their pre-construction condition or better.

Construction Timing and Road Closures

As noted above, depending on the alternative and specific design features selected, construction would likely occur over a 12- to 18-month duration. Construction work would primarily occur during typical daylight weekday work hours. However, night and/or weekend work could be scheduled for construction at high-volume intersections and driveways and would comply with all applicable permit conditions for work during non-weekday timeframes.

Throughout construction, the City would maintain access to private property to the maximum extent feasible, and would notify property owners in advance of activities that might temporarily limit access. If properties have multiple access points, one driveway could be closed while the other remains open. Pedestrian access would also be maintained, such that commercial businesses remain open and residential and industrial properties are accessible. Temporary pedestrian access would be Americans with Disabilities Act (ADA) compliant. Options include temporary asphalt paths, steel plates, fabricated timber walkway with handrails, or a cordoned section of the roadway. Specific methods would be determined by the contractor, subject to review and approval by SDOT.

Construction activities could result in the temporary removal of on-street parking and restrictions in travel lanes, such as full lane closures or flagger-controlled travel through the construction zone. Clearly signed detour routes would be provided around construction areas.

Construction Sequencing

The sequence of construction activities is typically determined by the contractor in consultation with, and concurrence from, the City.

Worker Access and Parking

The contractor would establish a job site office, which could be located in existing office space within the project vicinity or elsewhere along the preferred alternative route in a trailer. While a limited number of construction workers would park at the job site, other construction workers may be required to park away from the construction site to preserve parking for local businesses and customers to the greatest extent feasible.

Construction Traffic and Haul Routes

Construction would generate traffic to transport materials and equipment to the work site and to remove demolition debris and excess soil. The contractor would require access to the site for heavy vehicles (such as dump trucks and concrete trucks), light vehicles (such as pickup trucks), and heavy equipment (such as excavators and compactors). Construction materials would be transported by truck. The contractor would determine the best construction methods as permitted by the City and in conformance with the project

construction plans and specifications. The exact number of truck trips per day during construction cannot yet be determined because project design is not complete. However, preliminary estimates indicate that the highest number would be approximately 20 round-trip truck trips per work day during a paving operation, spread uniformly throughout the day. City streets that could be used as haul routes include Shilshole Ave NW, NW 46th St, NW Leary Way/Leary Ave NW, and 15th Ave NW.

1.8 Alternatives Considered but Not Included

1.8.1 Facility Types

The project would create a safe, direct, and defined multi-use trail for persons of all abilities, and improve predictability for both motorized and nonmotorized users along the project alignment. A number of different facility types were initially considered by SDOT, but were removed from further consideration because they did not fully meet the project objective. The facility types described below would not maintain the same look and feel as the remainder of the BGT, nor would they provide an adequate level of comfort for users of varying abilities and activities. The facilities considered, along with the reasons for no further consideration, are described below. These alternatives did not meet the project objective of a multi-use trail through the project area.

Protected Bicycle Lanes

A protected bicycle lane may have different forms, but they are designed exclusively to keep bicycles separated from motor vehicle travel lanes, parking lanes, and sidewalks. A protected bicycle lane does not provide safe accommodations for pedestrians or other nonmotorized users.

Elevated Trail

During public scoping, it was suggested that the trail be elevated such that vehicles can pass underneath, thereby reducing any potential conflict with industrial uses and truck traffic (particularly along Shilshole Ave NW). This alternative was eliminated from further consideration as there is insufficient space to construct a facility that would meet fire code and ADA requirements due to existing development. Furthermore, the cost estimate to construct an elevated structure of sufficient length to avoid potential conflicts along Shilshole Ave NW or other segments would be 400 to 500% higher than an at-grade structure. Additionally the ramps (at a 5% maximum grade) needed to access an elevated trail would be a minimum of 75 feet long and would require additional right-of-way, greatly reducing the advantages of elevating the trail in proportion to making it accessible to users.

Sharrows

Shared lane markings or “sharrows” guide bicyclists to the safest place on the street to ride and help motorists expect to see and share the lane with bicyclists. Sharrows do not fulfill the objective of the project to develop a multi-use trail for persons of all abilities. Similar to protected bicycle lanes, it meets the needs of some people bicycling, but does not provide safe accommodations for people walking or jogging, or people not comfortable riding in streets, unprotected from adjacent motor vehicle traffic.

Woonerf

A woonerf is a street where pedestrians and bicyclists have priority over motorists. Originally a Dutch concept, woonerfs are gaining popularity in the United States. Traffic volumes and speeds are low, approximately 5 mph, a minimal amount of public right-of-way is dedicated to vehicles, and curbs may

be eliminated. Traffic volumes and speeds within the project area are too high for this type of facility to be appropriate within the Missing Link corridor.

1.9 Next Steps

Following issuance of the DEIS, there will be a 45-day comment period when comments on the document can be submitted to SDOT.

1.9.1 Comments

Comments will be accepted via email at: BGT_MissingLink_Info@seattle.gov

Written comments can be mailed to:

Scott Kubly, Director
Seattle Department of Transportation
c/o Mark Mazzola, Environmental Manager
P.O. Box 34996
Seattle, WA, 98124-4996

Public Meetings

In addition, two public meetings will be held to provide a project status update presentation and to collect oral comments. The meetings will be held at the Leif Erikson Hall, located at 2245 NW 57th Street in Ballard. A court reporter will be available to collect oral testimony on the DEIS.

Meeting 1: Thursday July 14, 2016

6:00 PM to 9:00 PM

Meeting 2: Saturday July 16, 2016

10:00 AM to 1:00 PM

At the conclusion of the DEIS comment period, SDOT will review and respond to all oral and written comments received on the DEIS. The Final EIS (FEIS) will be prepared that responds to all comments, as well as identifies a preferred alternative. It is anticipated that the FEIS will be published in early 2017. Following publication of the FEIS, SDOT will make a final decision regarding the alternative to be constructed, mitigation measures to be incorporated into the project, and identify funding sources.