



UNIVERSITY OF WASHINGTON
BURKE GILMAN TRAIL DESIGN CONCEPT PLAN

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client: University of Washington

prepared by: PLACE Studio | Alta Planning + Design

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BURKE GILMAN TRAIL VISIONING STUDY

A photograph of a paved path lined with lush green trees. In the foreground, a person is riding a bicycle away from the camera, wearing a blue backpack and a helmet. Further down the path, several other people are walking and cycling. The scene is bright and sunny, with dappled light on the path.

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1.1 EXECUTIVE SUMMARY

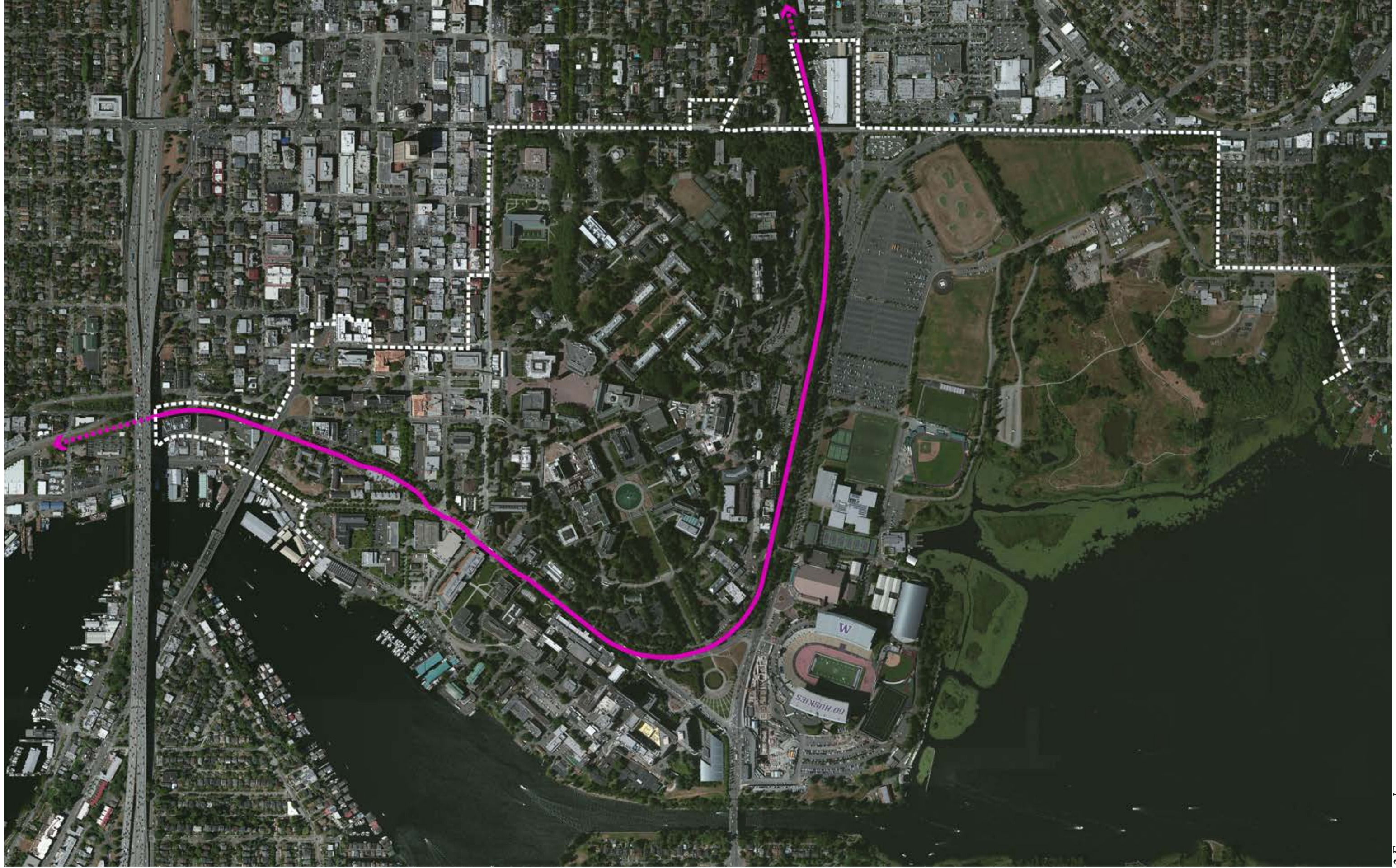
The *University of Washington Burke Gilman Trail Design Concept Plan* builds upon and expands previous University of Washington (UW) planning efforts, layering contextual thinking, placemaking, campus identity and trail-specific character onto what has been, to date, a primarily technical planning exercise focused on safely accommodating increased numbers of trail users. Whereas the Burke Gilman Trail (BGT) is a regional amenity, the UW-owned BGT is also an integral component of the campus’s open space structure and circulation network. The BGT is the university’s front door, its public face. As such, the portion of the BGT that wends its way through the south and east edges of campus should present a composed and intentional public landscape, working in concert with campus systems while still serving the needs of regional, multi-use trail users.

To expand the focus of UW’s BGT planning efforts, the *Trail Design Concept Plan* explored the range of its analysis to encompass character, context, and system. This effort included not only objective analyses of factors such as trail adjacent topography, intersection controls, and traffic volumes, but analyses that were intended to reveal more subjective traits: trail tempo, perception of adjacent conditions and context, isolation/separation resulting from topographical constraints, character of existing vegetation, and so on. The synthesis of these various analyses suggested the university-owned BGT can be understood as a series of reaches, each with its own characteristics and distinct identity.

Armed with this broader understanding of the university-owned BGT corridor, a ‘mixing zone’ strategy for handling trail intersections was developed, thus cementing a rigorous and consistent approach to the attenuation of trail traffic conflicts. The number and locations of existing intersections were reduced and consolidated and a hierarchy of node types (intersections and overlooks) was overlaid upon this simplified network of trail and trail connections. Finally, on top of this clarified and simplified trail alignment, placemaking strategies completed the transformation of throughway to networked campus open space by developing refined, habitable campus spaces at regular intervals along the trail.

TRAIL STATISTICS

trail namesakes	Thomas Burke and Daniel Gilman	
original rail line	Seattle, Lakeshore and Eastern Railway	
founded	1885	
ownership transfer	to Northern Pacific (1913) to Burlington Northern Railroad (via merger, 1970) to King County / City of Seattle / University of Washington (1970)	
length of UW-owned segment	approx. 9300 lf (centerline of Pasadena Place NE to centerline of NE 47th Street)	
trail elevation (NAVD 88)	lowpoint: elev 51 (NE 47th Street) highpoint: elev 79 (Rainier Vista)	
average width (existing)	Pasadena Place NE to 15th Avenue NE:	12 ft
	15th Avenue NE to T-Wing Overpass:	14 ft
	T-Wing Overpass to Hec Edmundson Pedestrian Bridge:	13 ft
	14’ Hec Edmundson Pedestrian Bridge to Pend Oreille Road:	14 ft



1.2 GOALS AND OBJECTIVES

The goals of the *Trail Design Concept Plan* reflect the project's two parallel priorities: safety and placemaking. First and foremost, the campus-owned BGT is a multi-use trail, one which serves regional recreation, Seattle commuters, campus visitors, student traffic, and campus staff. As a trafficked corridor, the BGT must be designed to safely accommodate thru traffic volumes and cross traffic while minimizing conflicts between trail users and automobiles.

Importantly, the BGT is also a campus open space, a place, a destination in-and-of itself; attending only to transportation would neglect the trail corridor's full potential and dual nature. As a landscape, the BGT must engage the public with a consistent and refined character, it must provide places of refuge, orient trail users, connect to larger contextual landscapes, and address adjacent campus conditions.

This coupled set of needs has been distilled to a basic set of principles which have guided the *Trail Design Concept Plan's* design and decision making processes.

- create a **safe** trail alignment that **minimizes conflict** between pedestrians, cyclists, and vehicles
- **clarify** and **organize** trail connections
- develop a consistent trail **rhythm** and **character**
- create a **front door / public face** for the university
- **reconcile** regional use with campus landscape
- make the BGT a **place**, not just a conduit
- develop a **comprehensive** trail design which can be built out in **phases**

2 BACKGROUND + RESEARCH

2.1 CORRIDOR HISTORY

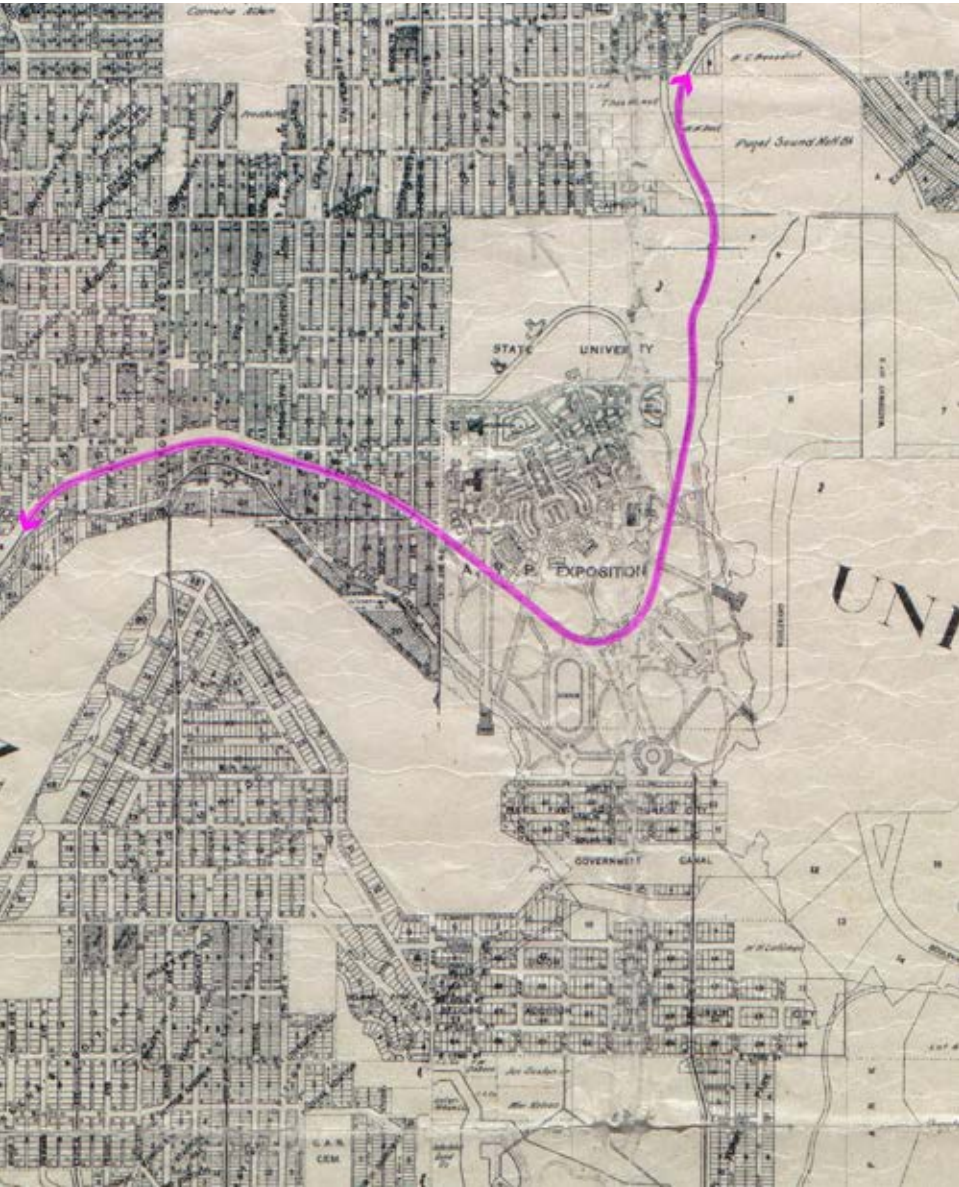
The BGT can trace its origins to the founding of Thomas Burke and Daniel Gilman's Seattle, Lakeshore and Eastern Railway (1885). Later acquired by Northern Pacific in 1913, the spur line continued to operate until the early 1970s when it was abandoned by Burlington Northern in 1971. Seattle residents quickly realized the potential for the abandoned rail right-of-way as a multi-use trail. Through their efforts, and through cooperative efforts between the University of Washington and King County, 12 miles of the trail were dedicated in 1978.

Like most rail lines, the Seattle, Lakeshore and Eastern Railway navigated steep or undulating terrain by following a contour and tracing a path of more-or-less even elevation across the landscape. Where the railroad encountered the west slope of today's University Heights neighborhood and the University of Washington Campus, it turned south then west, creating a shelf whose longitudinal slope was generally very flat (1% or less along its original alignment). This resulting seam created an interstitial ribbon of continuous landscape which paralleled the future campus above (Steven Way) and city streets below (Montlake Boulevard NE and NE Pacific Street) while remaining very disconnected from both.

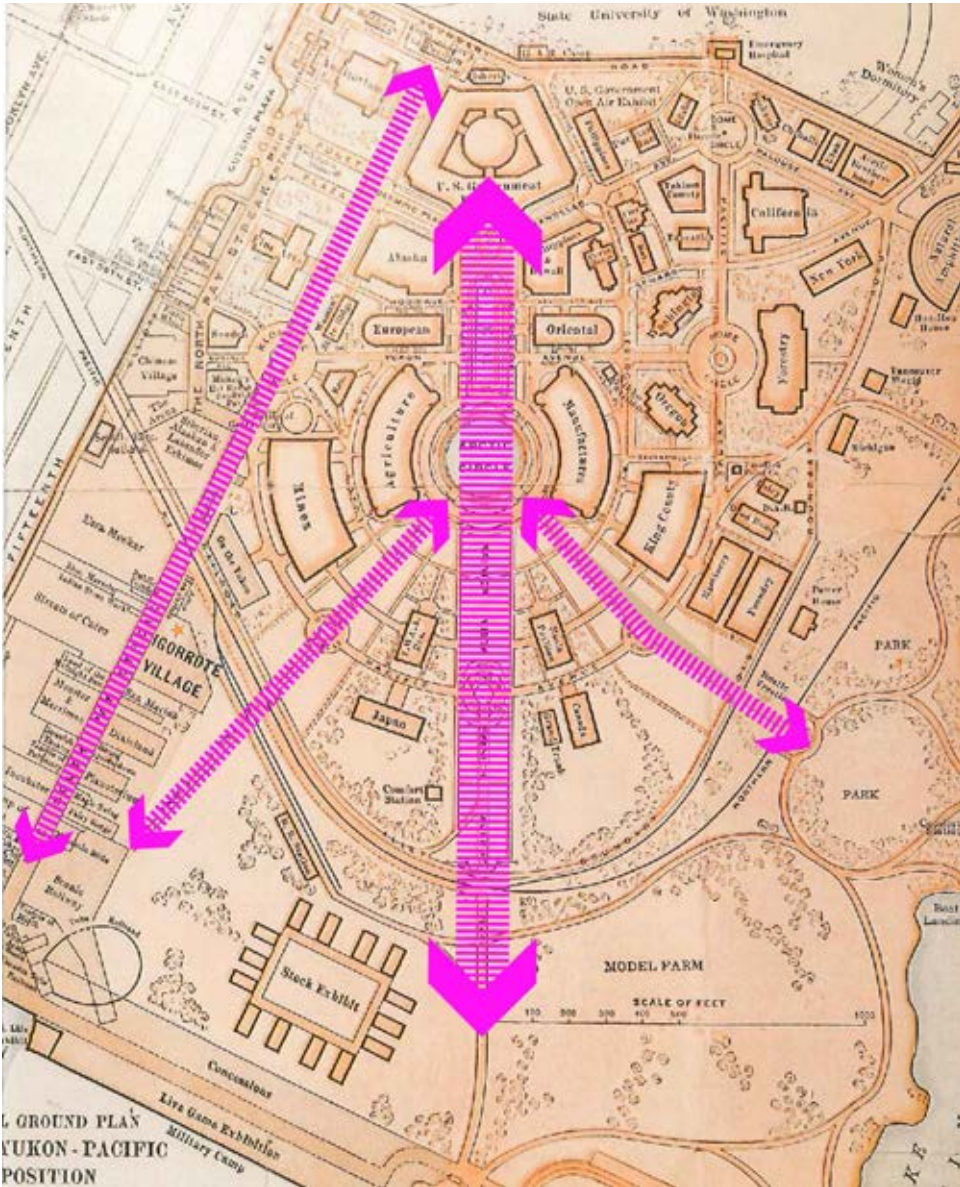
While the BGT has grown over the years, extending west and northeast from its original endpoints, the relationship between the university-owned trail and the campus proper was established in 1909, when the Olmsted Brothers created a plan for the Alaska-Yukon-Pacific Exposition. The Exposition grounds (later the University of Washington campus) were established on axis with Mount Rainier and, in typical Beaux Arts / Neoclassical fashion, radiated outward in highly geometrical boulevards whose grand scale persists today in many of the campus's quads, roads, and view corridors - the underlying campus skeleton.

Importantly, the Alaska-Yukon-Pacific (A-Y-P) plan, while it accessed the young Seattle, Lakeshore and Eastern Railway via two short spur lines (which terminated at the A-Y-P's Stock and Machinery / Foundry exhibits, respectively), largely turned its back on the rail corridor, aligning only its alleyways and boundaries with the tracks. The remaining exposition grounds either crossed over or dove below the rail corridor.

When Burlington Northern took control of the rail line in 1913, the disconnect between campus and rail corridor was systematically reinforced through the planning and eventual construction of several rail viaducts (undercrossings) and multiple pedestrian bridges (overcrossings). These viaducts allowed the young campus's radial roadways to slide below the active Burlington Northern line at the "Old Paystreak" (present day Hitchcock Bridge alignment), "Dalton Trail" (present day Snohomish Lane / Hec Edmundson Brige alignment), and an unnamed trail at present day Wahkiakum Lane.



1909 map of Seattle, Anderson Map Company

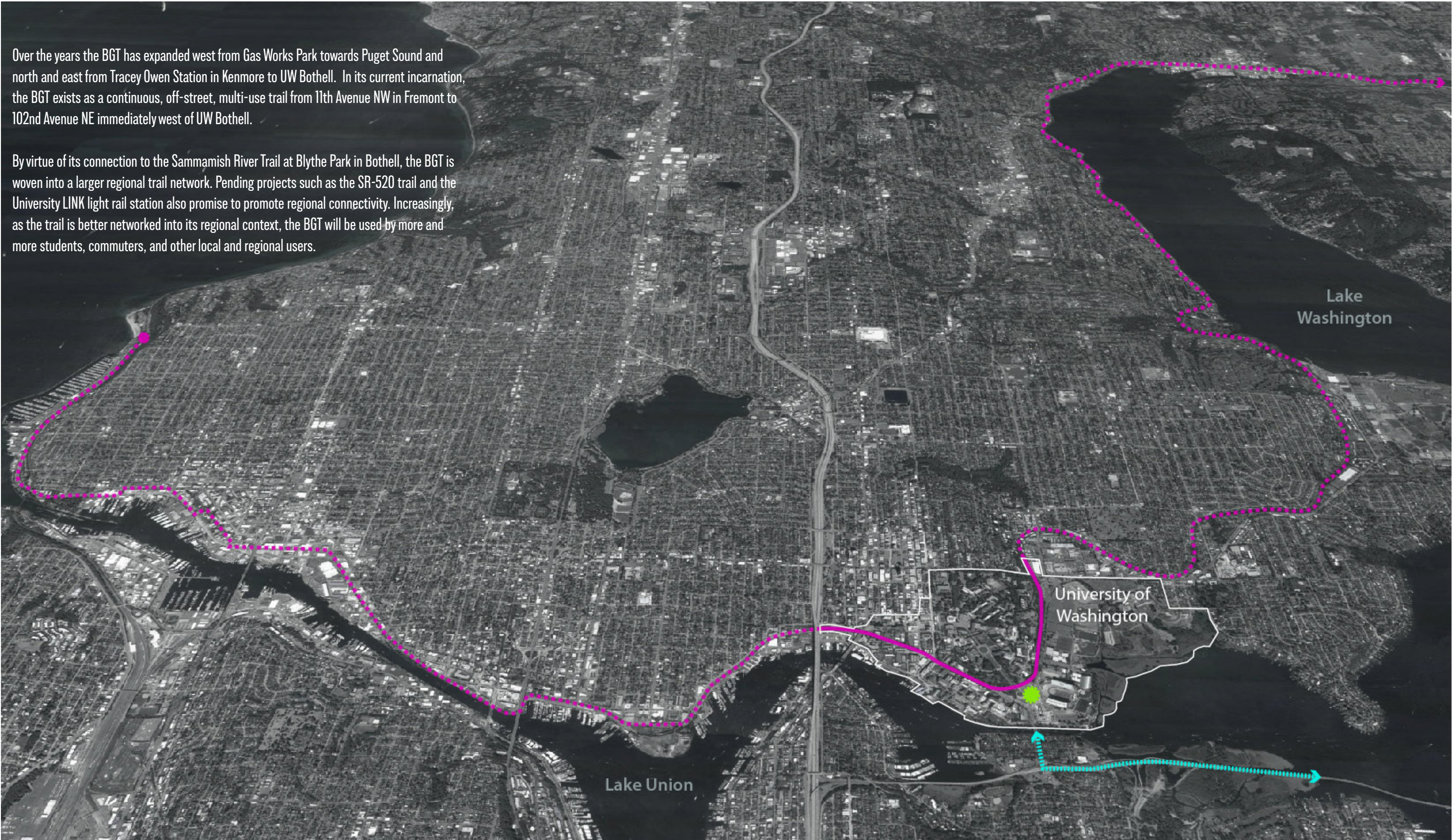


1909 Olmsted Brothers Plan for the Alaska-Yukon-Pacific Exposition

2.2 REGIONAL OVERVIEW

Over the years the BGT has expanded west from Gas Works Park towards Puget Sound and north and east from Tracey Owen Station in Kenmore to UW Bothell. In its current incarnation, the BGT exists as a continuous, off-street, multi-use trail from 11th Avenue NW in Fremont to 102nd Avenue NE immediately west of UW Bothell.

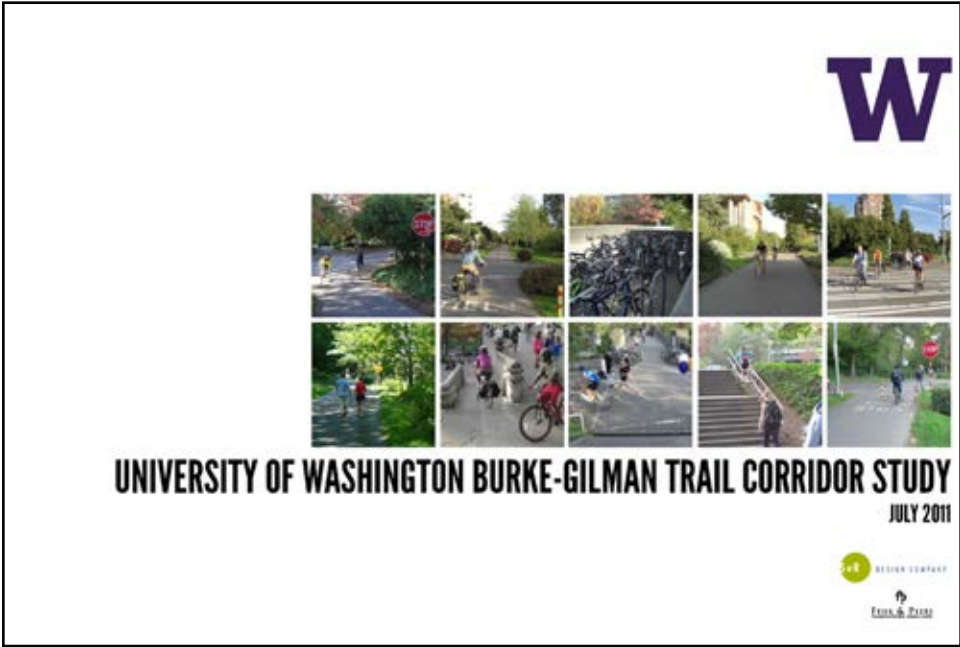
By virtue of its connection to the Sammamish River Trail at Blythe Park in Bothell, the BGT is woven into a larger regional trail network. Pending projects such as the SR-520 trail and the University LINK light rail station also promise to promote regional connectivity. Increasingly, as the trail is better networked into its regional context, the BGT will be used by more and more students, commuters, and other local and regional users.



A bird's-eye-view showing the university-owned BGT in context; the future Sound Transit University of Washington Station is identified by the green asterisk, the future multiuse trail associated with the SR 520 Bridge Replacement is identified by the turquoise arrow.

2.3 PREVIOUS STUDIES + CONCURRENT PROJECTS

In July 2011, the University of Washington published the *University of Washington Burke-Gilman Trail Corridor Study*. This document used trail counts, traffic forecasts, level of service evaluations, and other technical approaches to trail design to best evaluate an appropriate, expanded trail section, identify points of conflict, and make recommendations for many aspects of the trail design. Rooted in a transportation planning approach, the *Corridor Study* suggests a means of safely accommodating forecasted increases in trail use and suggests how to meet best practices and design guidelines for multimodal trail design.



In addition to attending to the *Corridor Study*, several trail-adjacent projects were in various stages of planning, design, and construction throughout the duration of the *Trail Design Concept Plan* process. While the *Trail Design Concept Plan* responded to these projects, future trail build-out should carefully consider any revisions these projects may have undergone in the interim.

Campus and design and construction projects underway or recently completed:

- Mercer Court Apartments*
- Montlake Triangle and Lower Rainier Vista Improvements* (attendant to the University LINK light rail station as Husky Stadium)
- Husky Stadium Expansion
- Pend Oreille Entry Improvements Study*
- SR-520 Bridge Replacement

Relevant campus planning projects:

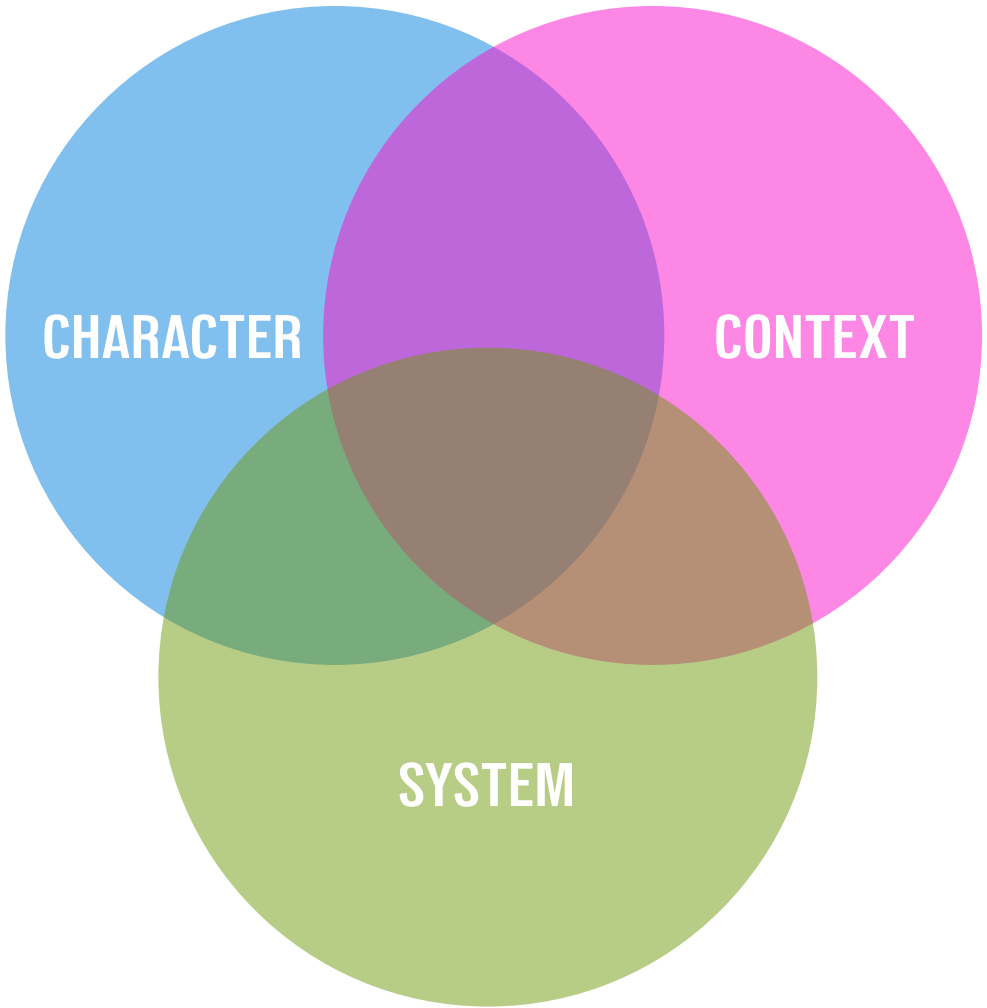
- ICA Master Plan*
- Bicycle Shelters and Enclosures Plan*
- University of Washington Master Plan*
- University of Washington Master Plan Transportation Technical Report*
- University of Washington Burke-Gilman Trail Corridor Study*

*The Mercer Court Apartments, Montlake Triangle and Lower Rainier Vista Improvements, and Pend Oreille Entry Improvements Study all proposed designs for their respective portions of the BGT. For the most part, the documented designs of each of these three projects were treated more or less as an existing condition. Where proposed modifications to these projects are proposed, these proposals are described in the **Reach-specific Recommendations** and/or **Appendix PA5, Sticky Notes**.

2.5 ANALYSIS

The primary objective of the *Trail Design Concept Plan* was to build upon the technical trail planning work that the university undertook in collaboration with SVR and Fehr & Peers (*University of Washington Burke–Gilman Trail Corridor Study*, 2011). To layer additional analytical thinking upon the work that was developed during that effort, the Trail Design Concept Plan expanded its focus to examine trail character, trail context, and systems into which the trail is networked.

The focus of the various analytical investigations undertaken during this project cannot be neatly divided into one or another category, though. Context sometimes informs character, character is often defined by the components of one or another system, system sometimes adds up to context, and so on. While there is significant overlap between the foci of these various analytical investigations, collectively they add up to a picture of the trail as a place unto itself, a place that is part of a larger place (campus), a constituent part of a campus’s open space and circulation networks, and a corridor with a distinct ‘feel’ that varies over its length. Ultimately, these investigations allow us to understand the nature of the BGT as a place, as a landscape; they inform a picture of the corridor that is not only a regional thoroughway but a campus amenity, a campus landscape, a campus system, and a public face for the university.





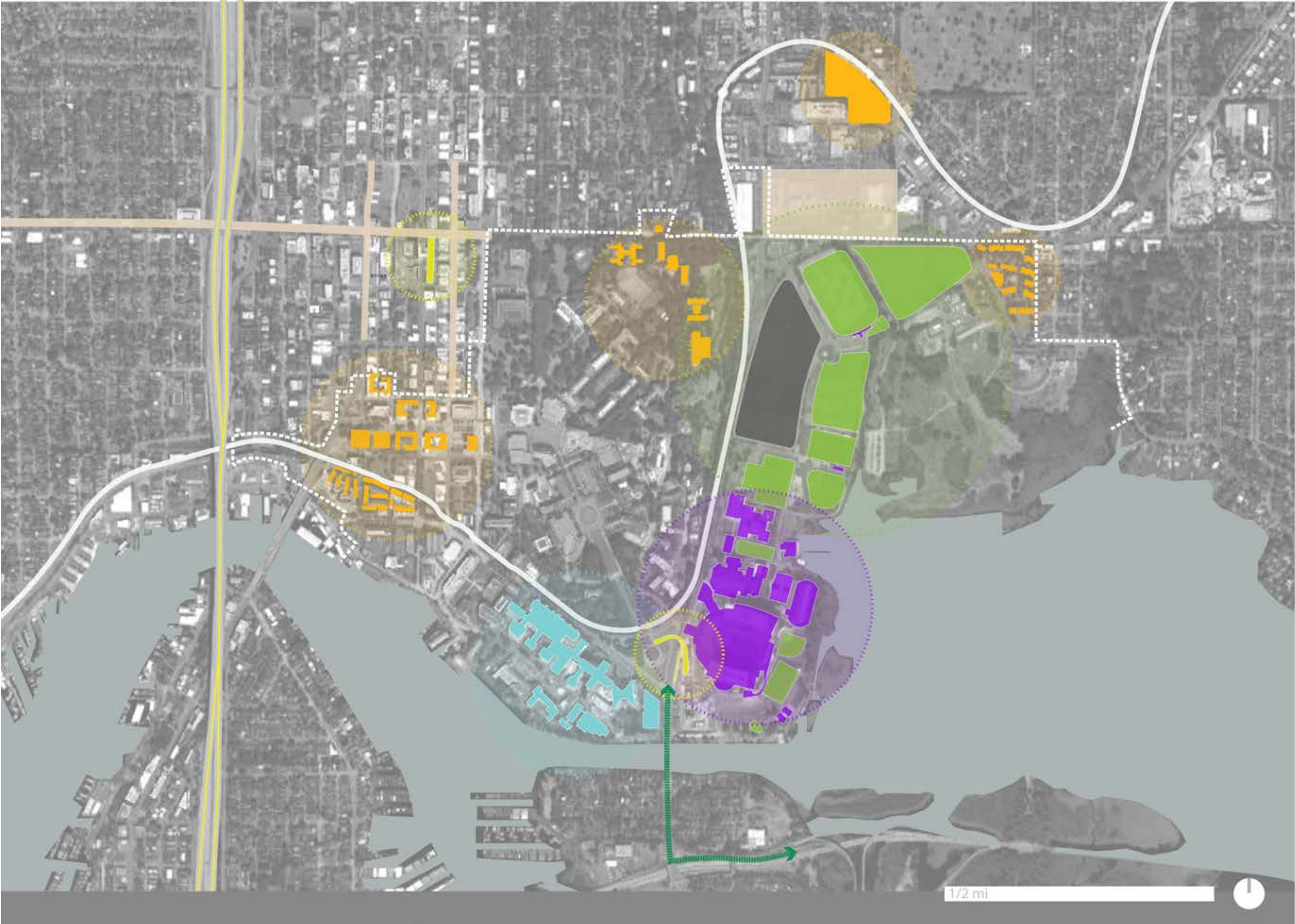
TEMPO OF THE BGT

- UW Boundary
- Burke Gilman Trail

TRAIL TEMPO

- |||| slow
- ||||| moderate
- ||||| fast
- ||||| very fast

The perceived pace or tempo of the BGT is a function of the location and number of intersections, the length of uninterrupted trail segments, and traffic volume. This diagram illustrates a subjective assessment of the corridor's pace of movement and, in so doing, also illustrates an inherent rhythm which varies over the length of the trail. This heterogeneous rhythm begins to suggest how interventions that either expedite or mediate the pace of trail traffic might result in a more regular - and safer - experience for trail users.



**LAND USE
CONTEXT**

- UW Boundary
- Burke Gilman Trail

LAND USE DESIGNATIONS

- student housing
- medical facilities
- commercial
- athletic fields
- athletic buildings
- parking lot E1
- future transit stations
- future 520 trail
- I-5 corridor

A contextual analysis reveals the coarse grain pull of significant land uses. Comparing the location of these land use clusters, it becomes clear how the BGT serves to connect bundles student housing with athletics, intramural, and recreational buildings and fields of the East Campus; it functions as an access loop for commuting students and staff destined for the Central Campus and the South Campus’s medical superstructures; and, it provides a throughway that allows regional trail users to transect the campus without directly engaging these collections of university-specific land uses.



By roughly segregating the trail corridor's existing tree canopy into a few distinct types, it becomes clear how the feel of the corridor changes over its length due, in large part, to variations in tree species and percent canopy cover. The westernmost length of trail is dominated by feral specimens of apple, cottonwood, and multi-trunked bigleaf maple. This self-seeded forest yields to a mix of allée and dense coastal garden between University Bridge and 15th Avenue NE, returning to a mostly feral mix as the BGT parallels NE Pacific Street. Beginning at the west edge Montlake Triangle, the tree planting becomes formal, with allées of western red cedar and cedar of Lebanon creating distinct edges along the corridor. From the east edge of Montlake Triangle north, the trail traverses a tunnel-like stretch of primarily bigleaf maple forest.



ADJACENT TRAIL USES

- UW Boundary
- Burke Gilman Trail

BUILDING FEATURES

- building entrance
- service entrance
- trail-facing address
- back of house

LAND USES

- housing
- open space
- parking area
- service road
- pedestrian bridge
- ▽ bus stop

An analysis of adjacent trail conditions highlights the relationship between the campus and trail corridor. Namely, the bulk of the BGT is paralleled by service lanes, fronted by back-of-house functions, and only rarely addressed by campus buildings. This relationship has its origins in the corridor's history as an active freight line, when it was in the best interest of the campus to turn its back on the BGT. It also suggests that networking the BGT into existing campus systems and leveraging it as a public face for the university will necessitate an intentional campus presence and the creation of campus places along the future BGT.



**INTERSECTION
CONTROLS
ON THE BGT**

- UW Boundary
- Burke Gilman Trail

- CONTROLS**
- 🚦 signal
 - stop sign (at road)
 - ▼ yield (at road)
 - ▼ yield (at ped xing)
 - uncontrolled

In its current incarnation, the university-owned BGT has no posted speed limit and no surface demarcations suggesting a separation of traffic types or traffic directions. However, there are traffic controls at major trail intersections and at roadways. These controls vary by location, but very generally, trail traffic is expected to yield where major campus pathways cross the BGT and it is expected to stop where the BGT intersects roadways. More importantly, the majority of trail connections and crossings are unmarked and uncontrolled. The number of uncontrolled intersections and the inconsistency in the application of intersection controls confuses trail user expectations.



PARALLEL NETWORKS AT THE BGT

- UW Boundary
- Burke Gilman Trail

PARALLELS

- public street
- campus drive
- campus service drive
- pathway / sidewalk

Because it wraps the periphery of the core campus, and due to its alignment along a longitudinally level shelf in an otherwise steep landscape, the BGT is frequently paralleled by stretches of service lane, sidewalk, and street - segments of distinct campus and city networks. These lengths of network parallels suggest systems to connect to or connect across and, in some cases, they identify redundancies. This analysis also suggests that character of the corridor is largely informed by these stretches of adjacent networks, which sometimes dominate the BGT with their traffic or back-of-house feel and function.





CONNECTIONS AND CROSSINGS AT THE BGT

- UW Boundary
- Burke Gilman Trail

CONNECTIONS + CROSSINGS

- ▨ street crossing
- at-grade connection
- bridge connection
- sloping connection (inaccessible)
- accessible ramp connection
- stair connection

A coarse study of existing BGT connections and crossings highlights the infrequency of accessible, at-grade connections to the BGT. The number of ramping, stair, and bridge connections also underscores the difficulty of connecting up and down slope to adjacent campus spaces.



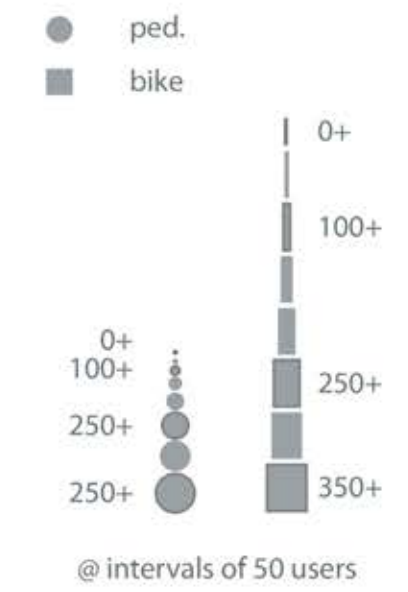
In an effort to create an intuitive graphic tool for understanding current and projected trail traffic flows, trail count figures were excerpted from the *Corridor Study* and represented as thick solid and dotted lines corresponding to bicycle and pedestrian traffic, respectively. The graphic at left depicts 2010 morning traffic counts.



PM COUNTS USE IN 2010

- UW Boundary
- Count Station

TRAFFIC COUNTS



PEDESTRIAN TRAFFIC

- to University Bridge
- to 45th St. NE

BIKE TRAFFIC

- to University Bridge
- to University Bridge

Evening traffic counts are elevated relative to the morning numbers for both pedestrians and bicycles (left). The worst case scenario - the evening commute - is projected for 2030 on the next page (traffic numbers were pulled from the *Corridor Study*). The substantially increased traffic volumes are clearly illustrated and the need for a much wider, modally separated trail becomes clear.





2.6 TRAIL REACHES

Over its 1.8 mile length the character of the university-owned BGT varies from section to section. Within the context of this study, these unique sections are referred to as reaches.

Starting at Pasadena Place NE and moving east then north along the BGT, the *Trail Design Concept Plan* recognizes five distinct reaches: **Northlake**, **Neighborhood**, **Garden**, **Campus**, and **Forest**. Each of these reaches varies with respect to its dominant vegetation type, its topographical relationship with the upper and lower campus, the predominant type of university building, its connection to the larger landscape, the number and spacing of trail connections and street crossings, and its actual or perceived connection to the greater campus.

In the following pages each of the five unique trail reaches is briefly summarized, a typical section is offered to help illustrate the reach’s relationship to campus and context, and photos of remarkable or typical conditions are offered.



**REACHES
OF THE BGT**

----- UW Boundary

TRAIL REACHES

- Northlake Reach
- Neighborhood Reach
- Garden Reach
- Campus Reach
- Forest Reach

NORTHLAKE

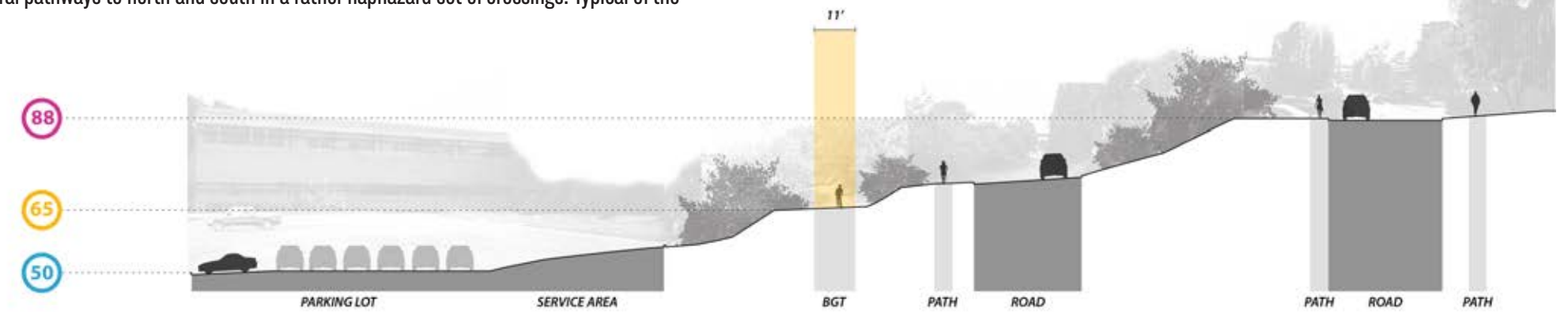


Keyplan: Northlake Reach

The west end of the Northlake Reach opens up as one travels westward towards Lake Union and contracts to a vegetated tunnel as one moves eastward. This open to enclosed transition is reinforced by the I-5 Bridge at the west, which serves as an impressively oversized gateway, and the University Bridge Underpass to the east, which creates a more pedestrian scale portal.

The Northlake Reach is bordered by utilitarian buildings to the south and overgrown with feral vegetation east of 7th Avenue NE. At its intersection with 7th Avenue NE, the trail intersects several pathways to north and south in a rather haphazard set of crossings. Typical of the

majority of the university-owned trail corridor, the Northlake Reach east of 7th Avenue NE runs along a narrow shelf carved into an otherwise steep slope and is paralleled by NE 40th Street above and a service corridor below. Views to University Bridge and Portage Bay can be glimpsed through trailside vegetation.



NEIGHBORHOOD

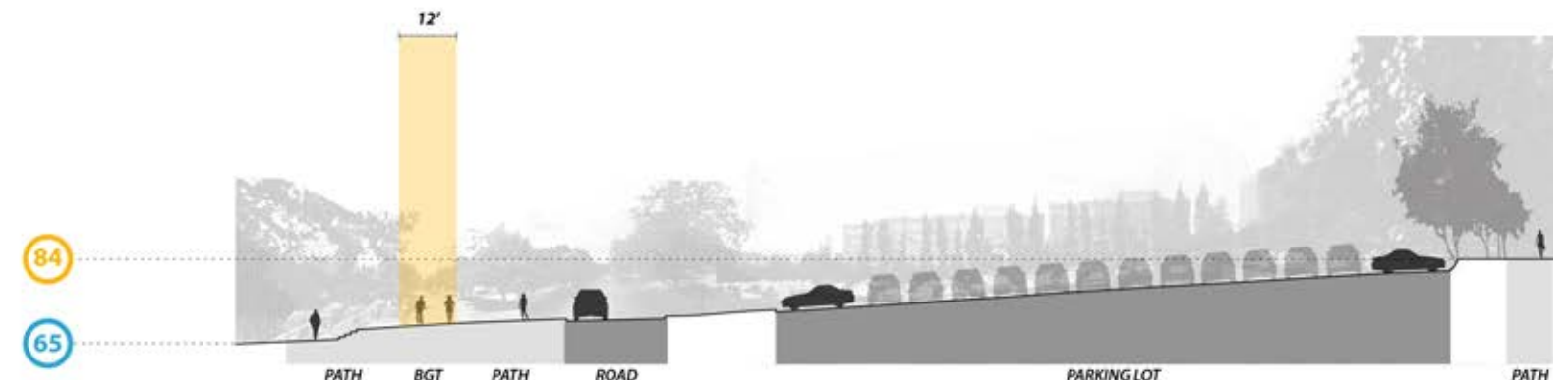


The Neighborhood Reach begins at the University Bridge Underpass and extends east to Brooklyn Avenue NE. The Neighborhood Reach is so named because of its relationship to Stevens Court and Mercer Court (under construction) immediately to the south and its close ties to the residence halls (Alder, Elm, Terry, and Lander) to the north.

For a short stretch between the University Bridge and Adams Lane, this reach is nearly level with Cowlitz Road above, though this relationship is increasingly disconnected as one moves westward and the BGT drops down as it approaches Brooklyn Avenue. The change in grade

along this length of trail is an oddity among the trail reaches; in conjunction with a sharp jog in the trail alignment at the Cowlitz Road elbow, it suggests that this section of trail was realigned and significantly regraded as some point in the past.

The Neighborhood Reach is bordered by a simple allée of malus to the north and enters a dense tangle of vegetation at its east end. Where it runs parallel with the north side of Stevens Court, several inaccessible stepped or steeply sloping connections stitch to and cross the BGT from minor Stevens Court pathway below.



GARDEN

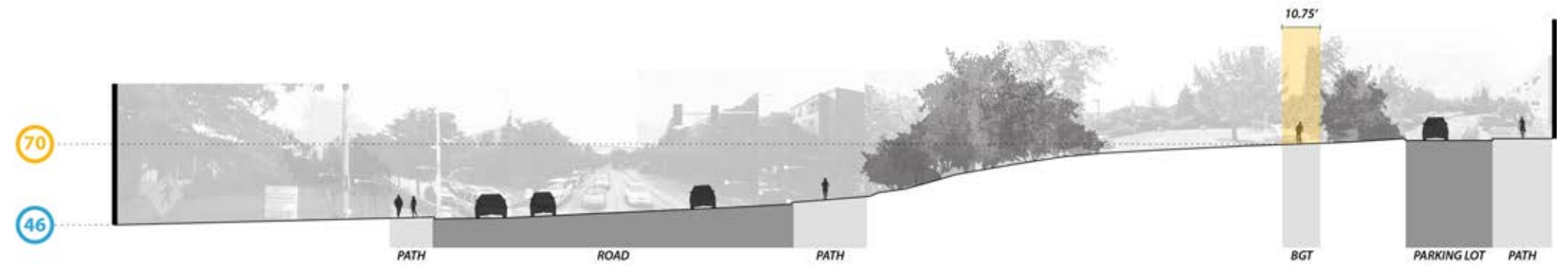


The Garden Reach is the shortest BGT reach, spanning only two city blocks between Brooklyn Avenue NE and 15th Avenue NE. The Garden Reach is planted with large cedar and bound by a thicket of dense, coastal-inspired planting. This reach is one of the few locations along the university-owned BGT that has considerable trail adjacent real estate suitable for non-trail uses.

The north edge of the Garden Reach is bordered by parking, back-of-house functions and a

Seattle City Light substation; the south edges up to NE Pacific Street. From a vantage point clearly within either half of the Garden Reach one would scarcely recognize either of these adjacent conditions; such is the nature of the opaque planted edges of these garden rooms.

The Garden Reach is relatively well connected at-grade to its surroundings, though Pacific Street falls away quickly as it turns southward, leaving the southwest corner of the Garden Reach sitting rather high relative to the street below.



CAMPUS

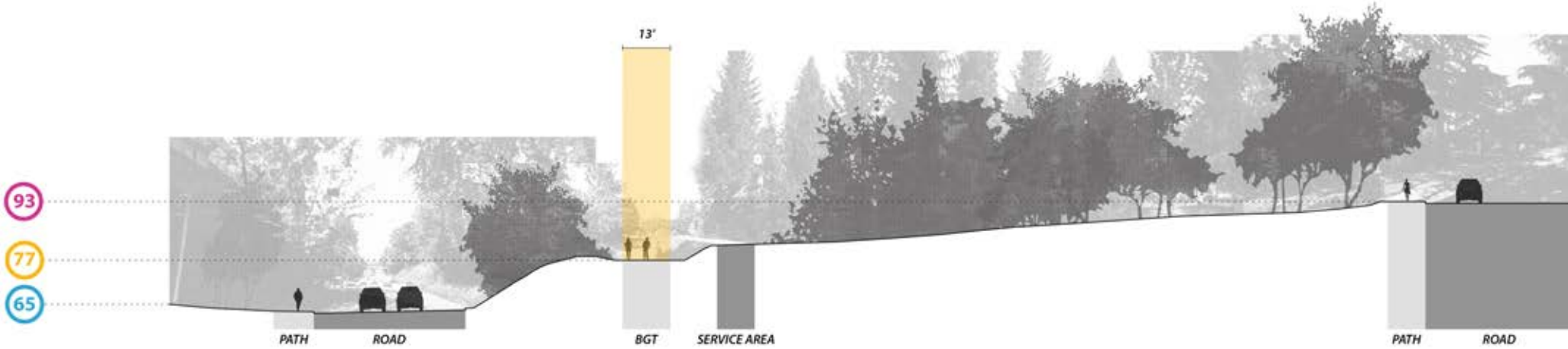


The most direct access between the campus core and the BGT can be found along the Campus Reach. Like the Northlake Reach, the Campus Reach BGT corridor is characterized by feral vegetation. That said, both ends of this reach - 15th Avenue NE at the west and Rainier Vista to the east - are rooted in formal campus landscapes. Additionally, the open spaces immediately uphill of this reach are typical of the somewhat dense yet pastoral landscapes that characterize much of the core campus.

The Campus Reach of the BGT encounters the business ends of several academic buildings and is paralleled by a service drive and the C10 parking lot to the north and NE Pacific Street

to the south. It is the only location along the trail where extant, free standing rail trestles are still actively used as an integral component of the BGT alignment. The Hitchcock Pedestrian Bridge connects the Campus Reach to the Portage Bay Vista and the T-Wing Overpass plugs trail traffic directly into the UW Medical Center.

In addition to being the most collegial of the reaches (or, at least, the reach with the most direct access to a collegial landscape), the Campus Reach is also the most public - it directly addresses one of the university's most iconic features, Rainier Vista.



FOREST

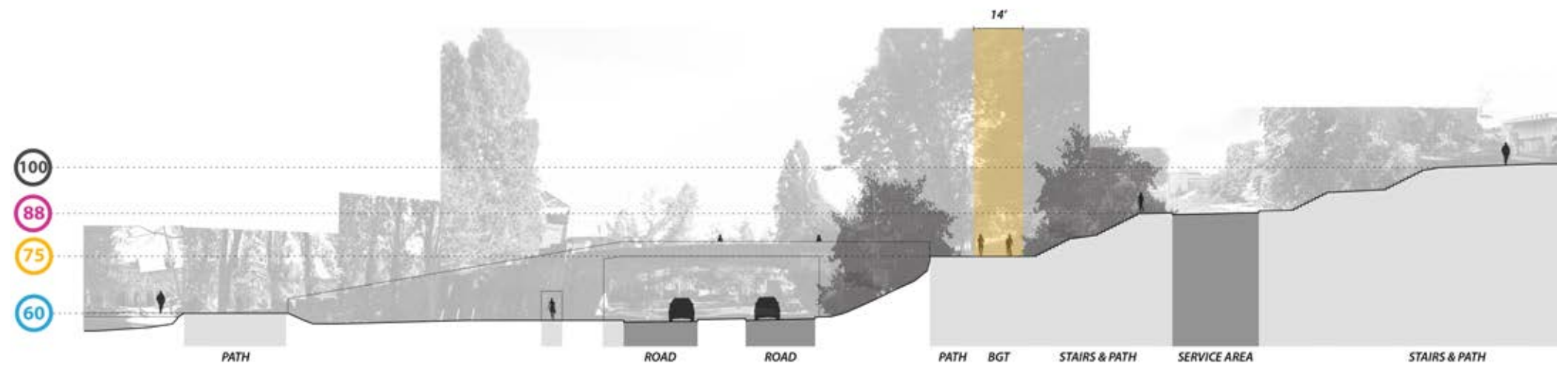


Paralleling Montlake Boulevard along the west edge of the core campus, the Forest Reach traverses a tunnel-like forest on a shelf between Mason Road above and Montlake below. The south half of the Forest Reach is dominated by the service and facilities functions associated with the Power Plant. Its northernmost extent is also very utilitarian, overwhelmed as it is by the Plant Services Building and the Fleet Services parking.

Between these two ends, though, the Forest Reach is a remarkably consistent stretch of primarily native, primarily deciduous forest. With few interruptions, this BGT reach feels fast

and pedestrians tend to look over their shoulder.

The Forest Reach, situated as it is on a literal middle ground between the campus core above and the East Campus below, must connect across Montlake; it does so by virtue of three pedestrian bridges: Hec Edmundson, Wahkiakum, and Whatcom. Where these bridges land at the BGT, long flights of stair reach to the campus core far above.



3 CONCEPT FRAMEWORK

OVERVIEW

The concept design for the Burke Gilman Trail, while partially rooted in a subjective understanding of trail character, stemmed directly from the *Corridor Study's* technical analyses and proceeded in a rational manner as a series of parts and pieces grown and grafted to a skeleton framework. The backbone of this framework is the trail corridor alignment. The proposed trail alignment is comprised of multiple trail cross sections, each of which share common characteristics – separation by mode, consistent path surfaces – but vary in their width according to the opportunities afforded and constraints imposed by each reach.

In order to reconcile connecting and crossing pathways with the proposed corridor backbone, mixing zones are proposed wherever pedestrian or bicycle routes access the BGT. These mixing zones expand the trail footprint, creating wide, open zones of pavement that include places of refuge, clear sight lines for both through traffic and cross traffic. As slightly tabled, generously scaled intersections defined by a change in pavement type, the mixing zones allow traffic to slow, blend and yield in a fluid manner rather than relying upon signage or other control devices.

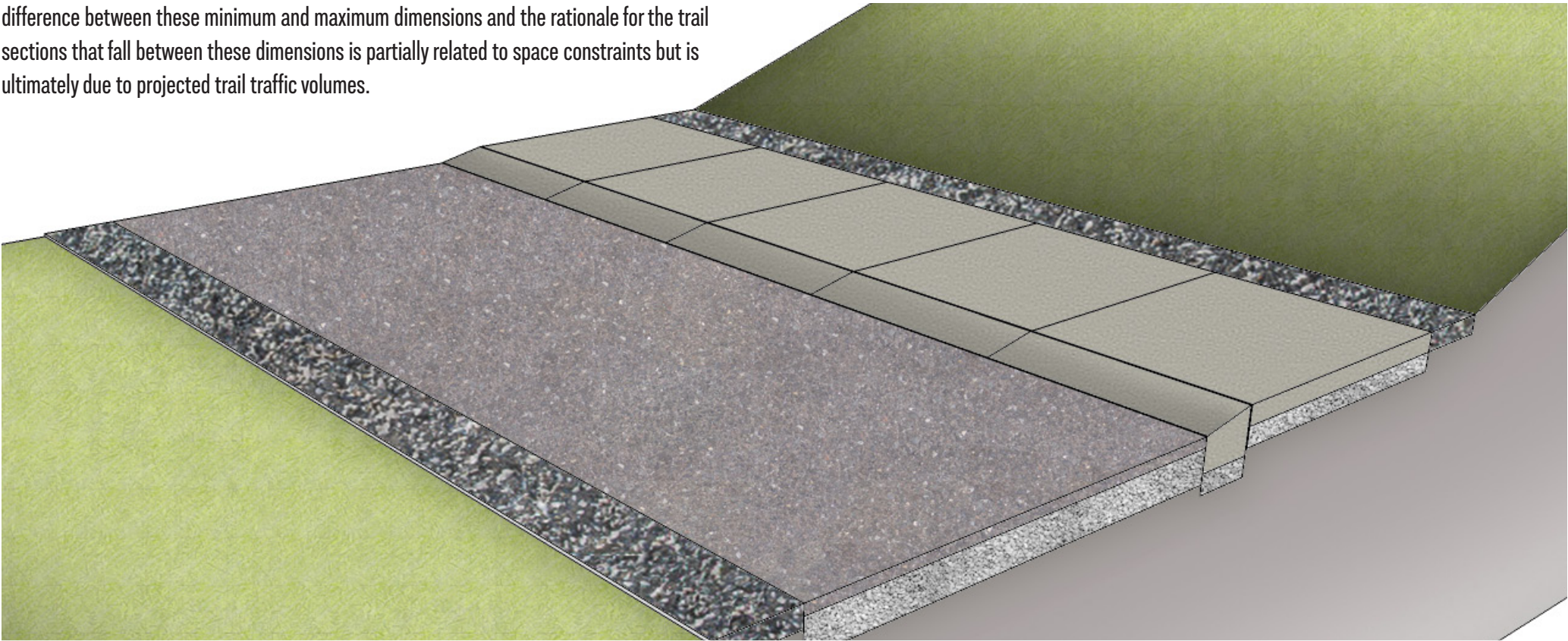
The mixing zones are only as successful as their implementation is rigorous. With the BGT backbone established and mixing zone concept developed, all of the existing and proposed intersections and connections were scrutinized to determine which are necessary and which are nonessential, which are efficient or inefficient, accessible or inaccessible. One by one these connections and intersections were either enhanced or deleted to minimize redundancy and clarify the network of trail connections.

With the number of trail connections consolidated and the points of connection minimized, the next step in the BGT framework was the development of a consistent rhythm between points of connection the creation of a nodal hierarchy.

3.1 PROPOSED ALIGNMENT

The proposed BGT alignment represents a refinement of the recommendations established in the Corridor Study. That study examined five potential trail sections and recommended that traffic be separated by mode and that that separation be made vertically in high traffic areas and horizontally in space-constrained low traffic areas. Based on the desired level of service (refer to *Part IV, Level of Service Evaluation, University of Washington Burke-Gilman Trail Corridor Study*) for the trail and the need to minimize conflicts between pedestrians and cyclists, this study proposes to consistently separate pedestrian and bicycle traffic with a wide sloped curb. The dimensions of this curb - 18 inches wide x 4 inches high - inhibit path crossing by cyclists without creating a trip hazard for pedestrians or a fall hazard for bicycles.

The width of the proposed trail section is roughly consistent over the length of each reach but there is some variation in trail width between trail segments within the same reach. The narrowest proposed trail section totals 22 feet (including a 2 foot gravel shoulder on both sides of the trail), the widest is 28 (again, including the width of the gravel shoulders). The difference between these minimum and maximum dimensions and the rationale for the trail sections that fall between these dimensions is partially related to space constraints but is ultimately due to projected trail traffic volumes.



The typical trail profile varies per trail segment and is roughly consistent within each reach. While the overall trail width varies, the relationship between the trail section components - gravel shoulders, concrete pedestrian path, rolled curb, and asphalt bicycle path - are consistent throughout. Refer to the table and diagrams at right for the five proposed trail sections; refer to minimum and maximum trail sections and plans for scale.

NORTHLAKE
NEIGHBORHOOD

GARDEN
CAMPUS

FOREST

trail segment	pedestrian path width	bicycle path width
west transition	n/a	n/a
1	8	10
2	8	10
3	8	10
4	10	10
5	10	10
6	10	12
7	10	12
8	10	12
9	12	12
10	12	12
11	12	12
12 (see note 1)	6	10
13	8	12
14	8	12
15	8	12
16	8	12
17	8	12
18	8	12
19	8	12
20	8	12
21	8	12
22 (see note 2)	6	10
north transition	n/a	n/a


- notes:
- 1. trail dimensions established by Montlake Triangle and Lower Rainier Vista Improvements
 - 2. trail dimensions established by Pend Oreille Entry Improvements Study





TRAIL DESIGN PROPOSED CROSS SECTIONS


- UW boundary
- gateway


SECTIONS

- 

 total width: 22 ft
 8 ft pedestrian / 10 ft bicycle
- 

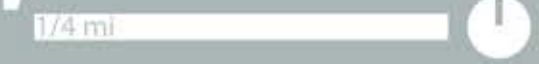
 total width: 24 ft
 10 ft pedestrian / 10 ft bicycle
- 

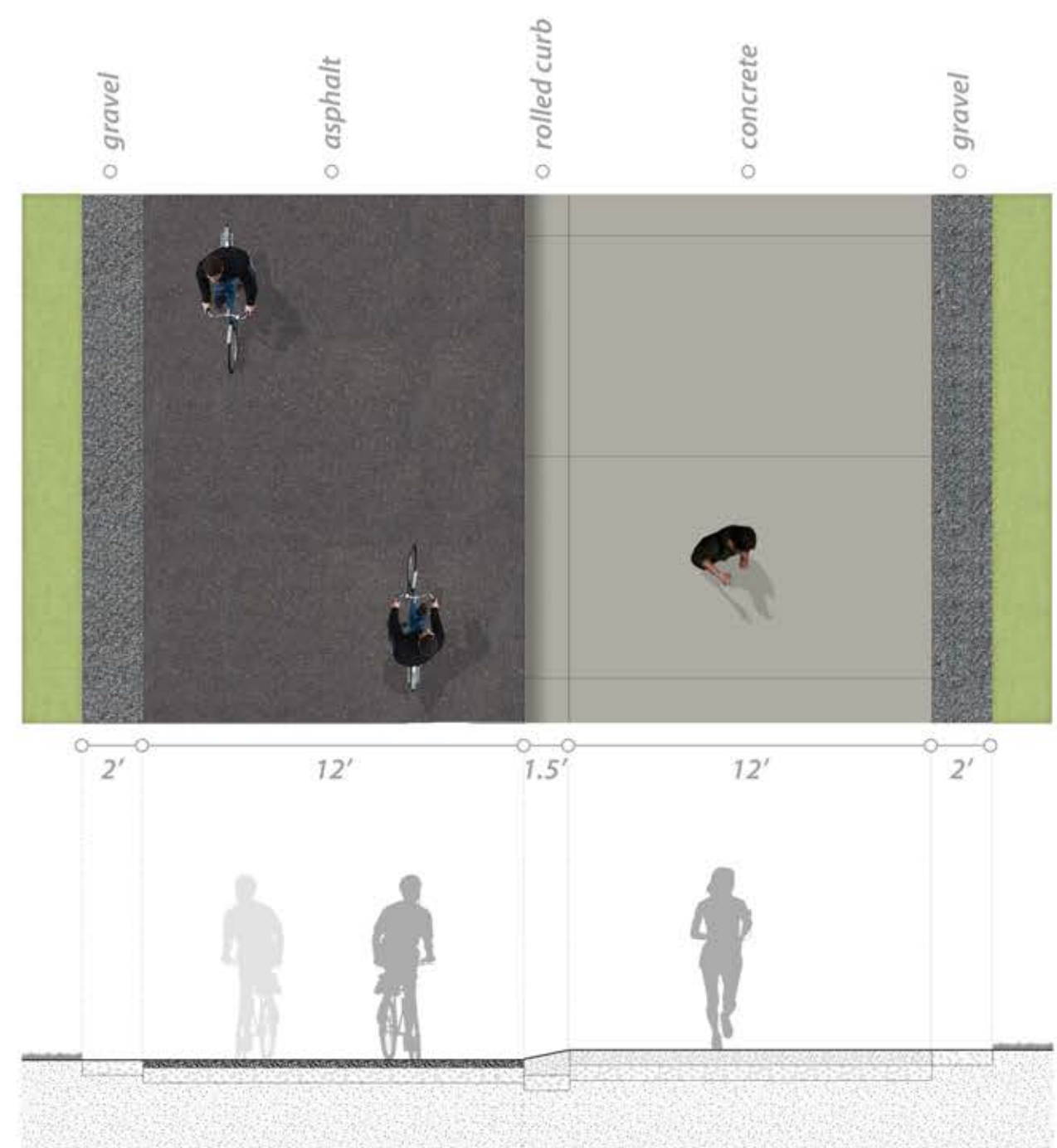
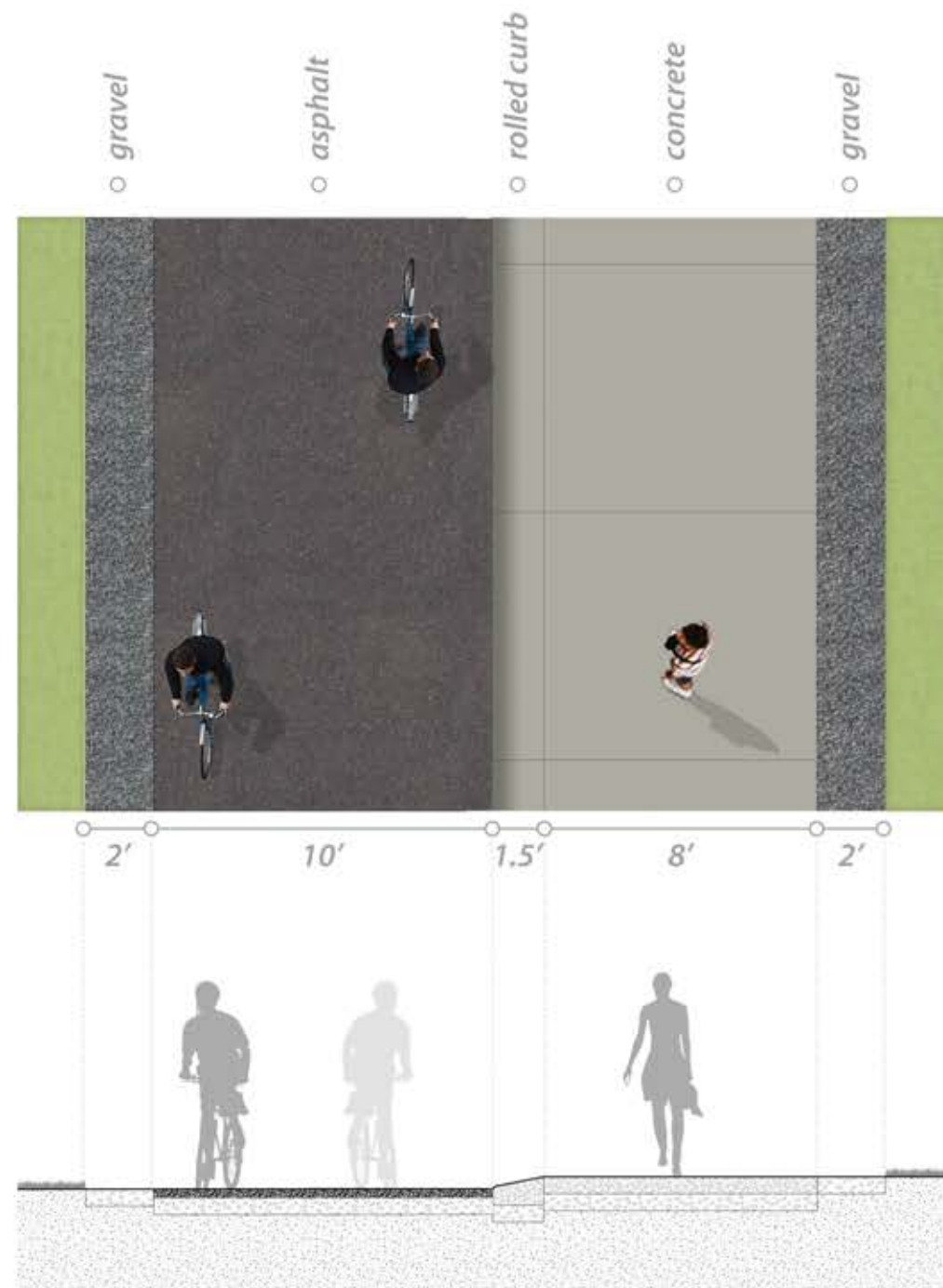
 total width: 26 ft
 10 ft pedestrian / 12 ft bicycle
- 

 total width: 28 ft
 12 ft pedestrian / 12 ft bicycle
- 

 total width: varies

note: total trail width includes 2 ft gravel shoulder at both sides of trail





The trail sections and plans above are representative of the minimum and maximum proposed trail widths. Trail sections falling between these two bookend sections are indicated in the table and diagram on pages 32 and 33, respectively.

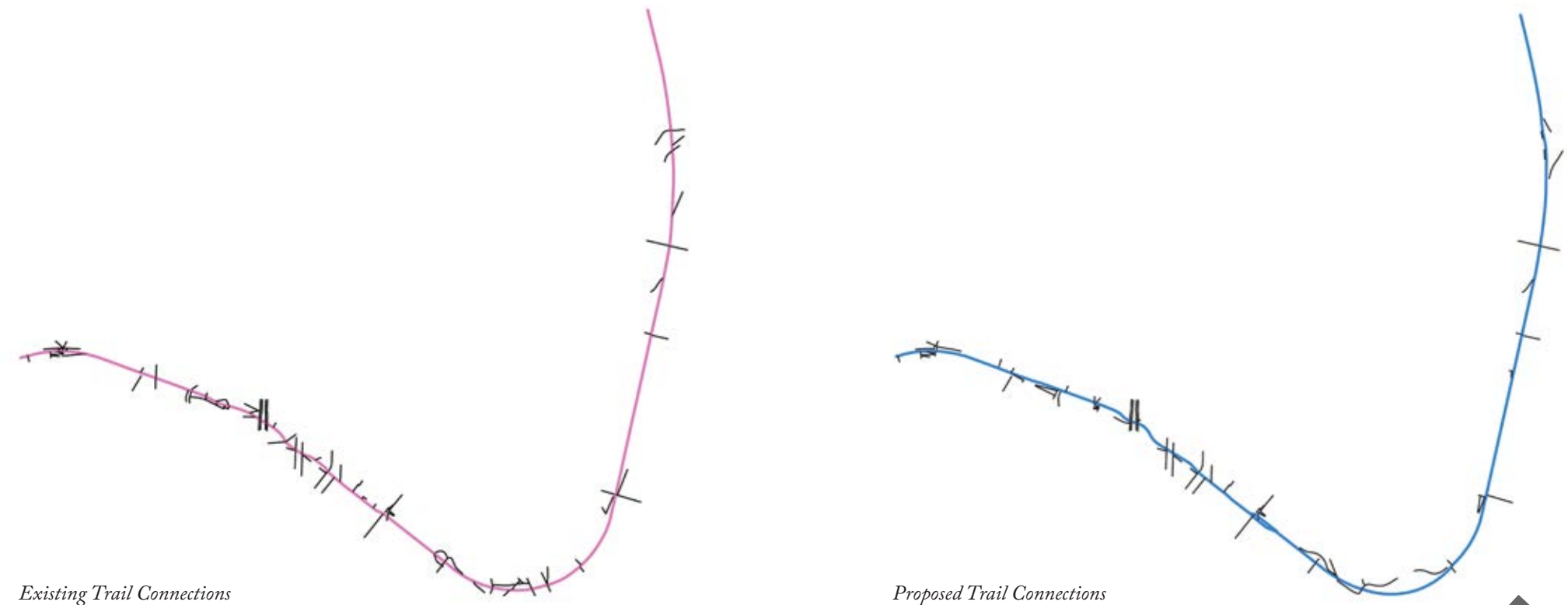
3.2 CONNECTIONS

To implement the proposed trail alignment concept, each trail connection has to be evaluated and reconciled with the proposed mixing zone locations. For the language of trail section to transition zone to mixing zone to be successfully implemented, it has to be recognizable and consistent; to develop series of mixing zones and still allow for trail connections outside these mixing zones would confuse expectations and muddle an otherwise consistent alignment. For that reason, during the development of the proposed alignment, every trail connection was evaluated and either removed, reconfigured, or improved. Some new connections were made but, generally, informal or unnecessary trail connections were deleted or consolidated. Because the proposed alignment allows for connections at mixing zones only, every connection - even those whose alignment and point of connection remained the same - was considered 'improved' by virtue of connecting to a mixing zone rather than to a modally separated trail segment.

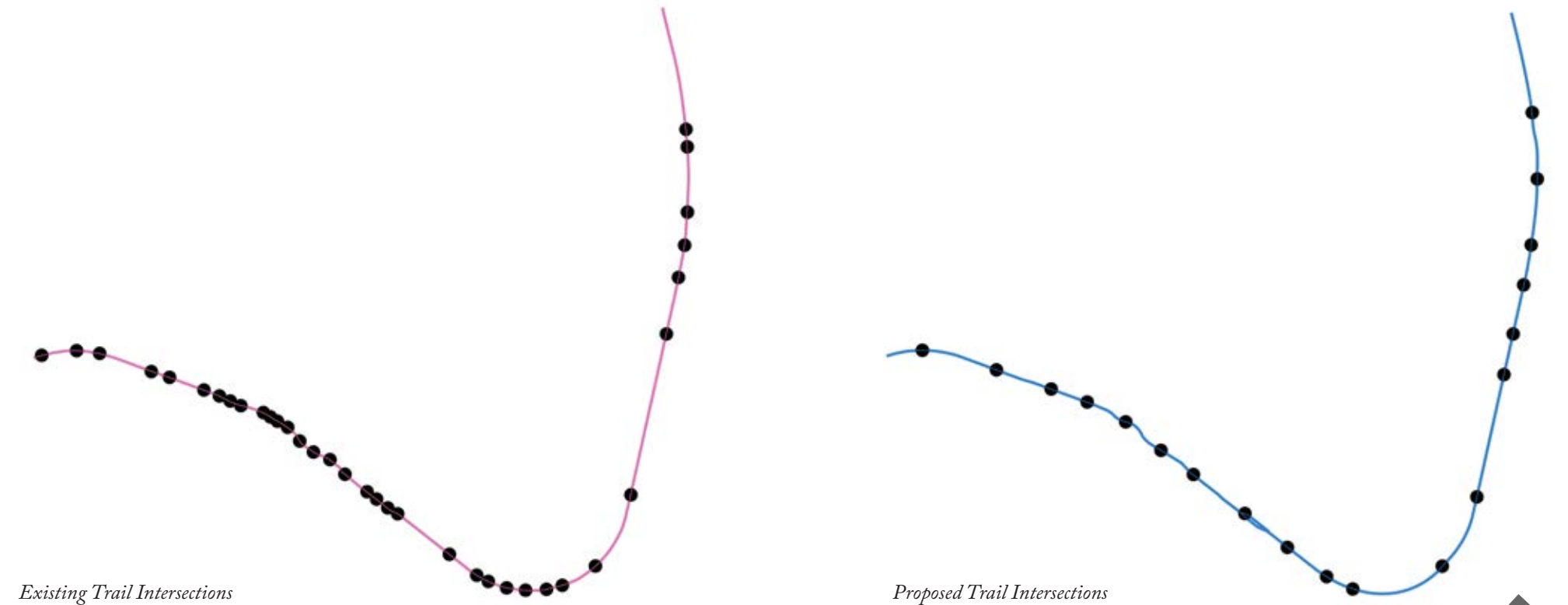
In its current incarnation, the campus circulation network and city sidewalks account for 79 connections; these 79 connections occur at 37 points of connection. The proposed alignment removes 29 connections and 20 points of connection; it significantly reconfigures 10 connections, and it improves the remaining 40 connections. The significance of these proposed improvements lies primarily in the reduction in the points of connection. By limiting the number of places that paths, stairs, bridges, ramps, and other connectors access the BGT, trail users encounter fewer crossings and less merging traffic and they encounter this type of traffic at regular intervals and only at designated mixing zones.

Because the development of the alignment and mixing zones attended to trail adjacent projects in their planning and design stages as well campus level planning documents, the mixing zone locations are coordinated with the greater campus open space and circulation systems. As trail adjacent campus spaces are developed in the future, the proposed mixing zone locations will allow for additional trail connections and future design and construction projects should strive to maintain the proposed BGT alignment concept and not dilute the spacing and clarity of the proposed mixing zones.

Note: When discussing connections, intersections and points of connection, it is important to define the relevant terminology. Connections are just that: trails, stairs, sidewalks, and ramps that connect to the Burke Gilman. Points of connections are the points at which connections connect to the trail; if two trails connect to the BGT at the same location, they share a point of connection. A point of connection is an intersection, but not all intersections are points of connection. For example, where a street crosses the BGT, the street and trail are said to intersect, but the street is not a point of connection as automobiles are not regularly accessing the trail.



redundant, informal, and unnecessary trail connections are consolidated or eliminated



intersections are consolidated and bundled into the proposed mixing zones



EXISTING CONNECTIONS TO THE BGT

- UW Boundary
- Burke Gilman Trail
- existing connection

TRAIL CONNECTIONS

84

POINTS OF CONNECTION

37

Existing trail connections are relatively sporadic and somewhat opportunistic and comprised of informal pathways, campus walks, service drives and city sidewalks. While a number of these connections are deliberate, their spacing is inconsistent and they are only infrequently grouped together into clusters. This lack of focused, bundled connection points demands that trail users constantly reassess their path of travel as paths, stairs, sidewalks, and ramps connect trail users to the corridor with little regard for the frequency of intersecting traffic.



**ALTERED
CONNECTIONS
ON THE BGT**

- UW Boundary
- Burke Gilman Trail
- no change
- deleted connection
- improved connection
- reconfigured connection
- new connection

Very few extant connections are unaltered in the *Trail Design Concept Plan*. In this diagram, many existing connections are deleted, some new connections are proposed, some are reconfigured (substantially realigned and/or made accessible). The majority of those remaining are considered improved by virtue of being bundled together and connected to the trail at focused mixing zones rather than plugging in at an irregular interval.



PROPOSED CONNECTIONS TO THE BGT

- UW Boundary
- Burke Gilman Trail
- trail connection

TRAIL CONNECTIONS

68 

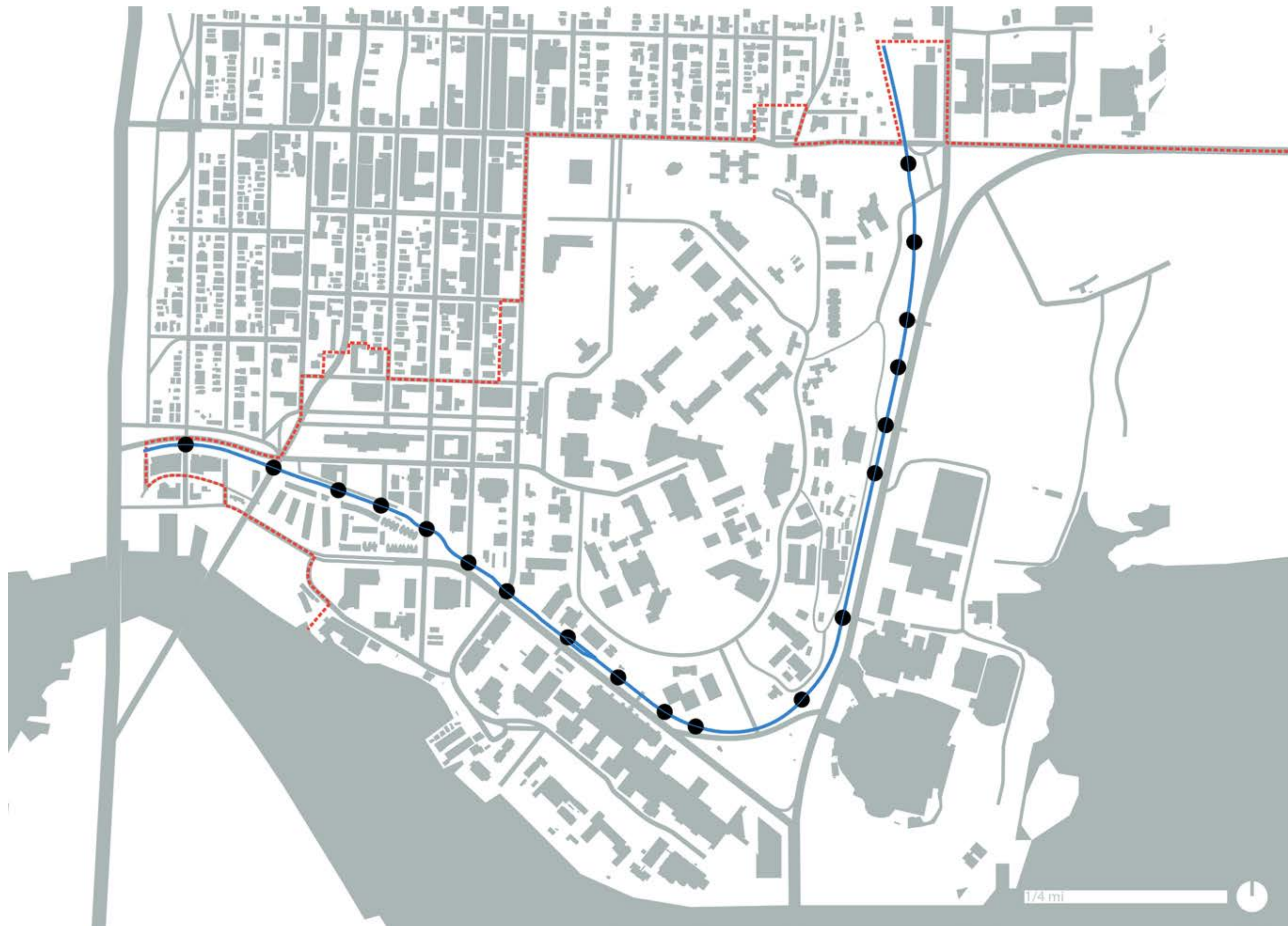
POINTS OF CONNECTION

23 

While the *Trail Design Concept Plan* proposes to entirely remove 16 trail connections, the import of the drawing at left is the significant reduction in the number of points of connection, or intersections, which were reduced from 37 to 14. This change in the reduction in the number of intersections reduces conflicts between trail traffic and cross-trail traffic and helps to establish a more regular rhythm along the corridor.



Currently, there are a great many intersections along the university-owned BGT. The frequency of these intersections is largely a function of the gradual, unplanned accumulation of trail connections that has occurred as the university has slowly stitched itself to the corridor over the past 40 years.



PROPOSED INTERSECTIONS ON THE BGT

- UW Boundary
- Burke Gilman Trail

NODES

- intersection

The proposed intersection spacing is substantially clarified due to the proposed revisions to existing trail connections. By eliminating redundancy, consolidating proximate connections, and developing a regular rhythm of connection points, the experience of trail users is normalized and the number of conflict points is kept to a minimum.



3.3 NODES

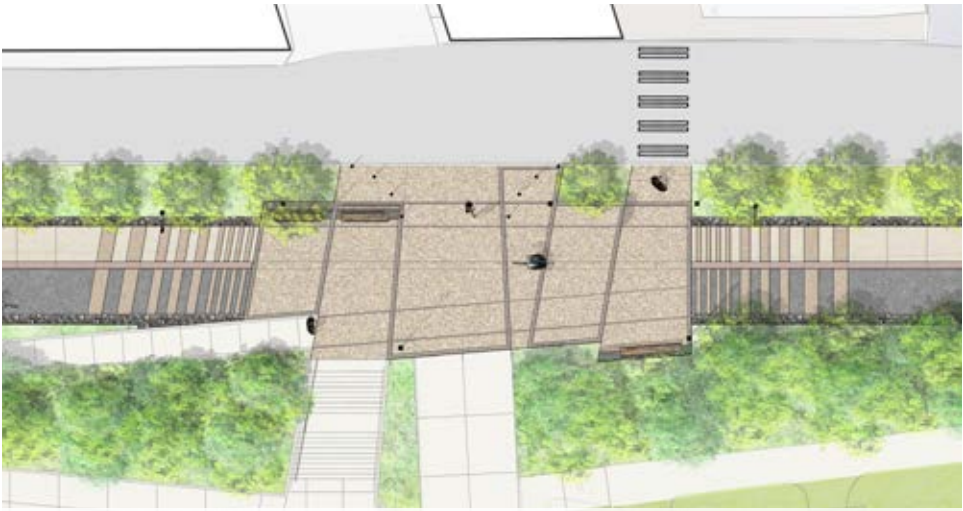
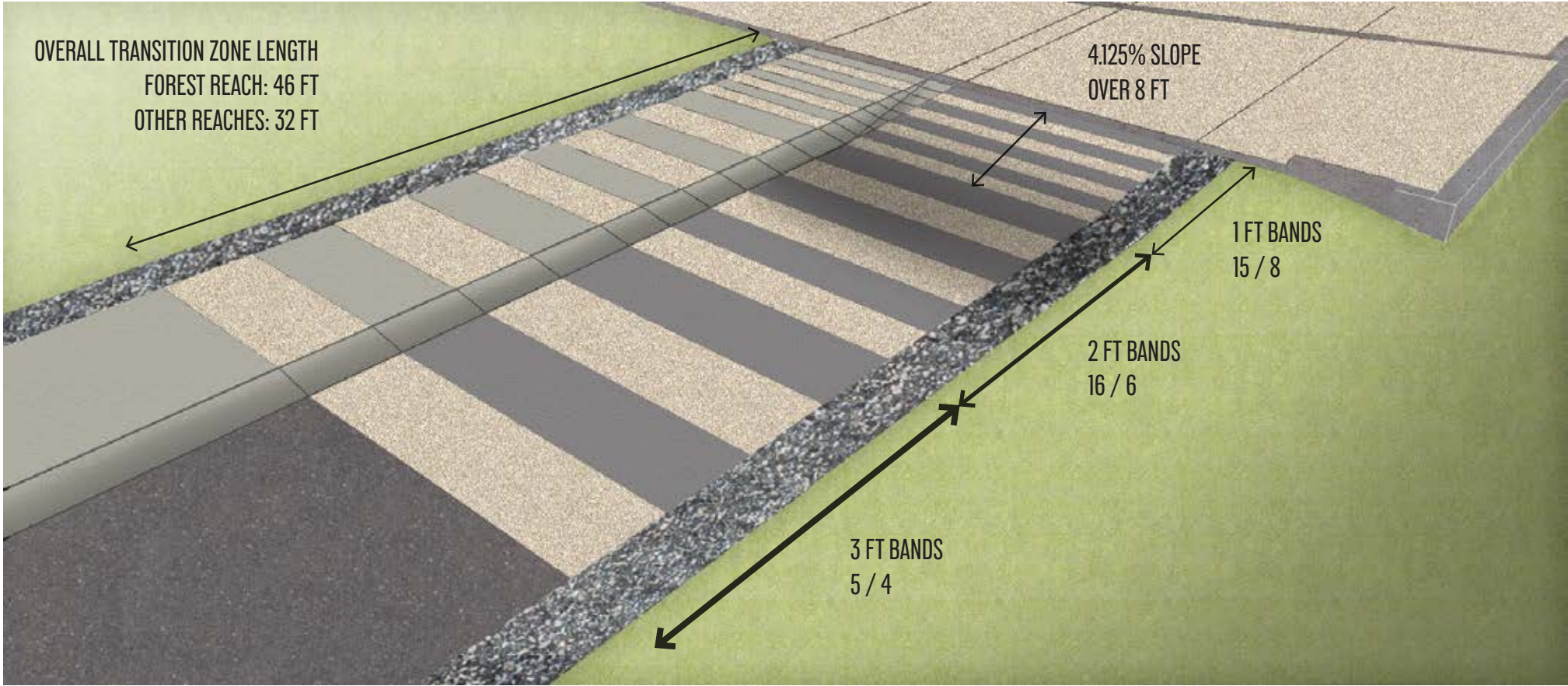
Proposed nodes are divided into three categories: major mixing zone, minor mixing zone, and overlook. Each type of node has unique characteristics specific to its place in the node hierarchy, but all share common features that serve to define and distinguish them from the trail proper.

The nodes are wider than the trail itself, creating places of refuge for connecting trail users and carving out niches for seating, bicycle parking, and wayfinding devices. The paved surface of each mixing zone and overlook is defined by a fine exposed aggregate concrete surface crisscrossed by both wide bands of coarser exposed aggregate concrete and sawcut score joints. These bands and joints are pulled through the nodes as extensions of connecting pathways, the resulting weave of lines emphasizing the various vectors crossing and connecting to the BGT.

The edges of each node dissolve into the trail by way of transition zones. These transitions zones are comprised of repeated bands of mixing zone or overlook pavement, alternated with bands of trail pavements, whose width and spacing varies with their distance from the edge of the node edge. These barred transition zones serve to alert trail users - and in particular, cyclists - to mixing zone cross traffic and connecting traffic. They also allow for the grade-

separated trail section to ramp up to the tabled mixing zones.

The transition zones are consistent from reach to reach, excepting the Forest Reach. Here, due to the long, straight runs of trail and the likelihood that cyclists will be traveling at higher speeds, the transition zones are longer than elsewhere. Forest Reach transition zones are 46 feet long and composed of 15 one foot bands, 16 two foot bands, and 5 three foot bands; the remaining transition zones are 32 feet long and composed of 8 one foot bands, 6 two foot bands, and 4 three foot bands. In both instances, the bicycle trail ramps up to the mixing zone over the length of the 8 one foot bands closest to the mixing zone, negotiating the 4 inch curb height at a 4.125% slope. This ramping condition effectively tables the mixing zone relative to the bicycle path, alerting and slowing cyclists.



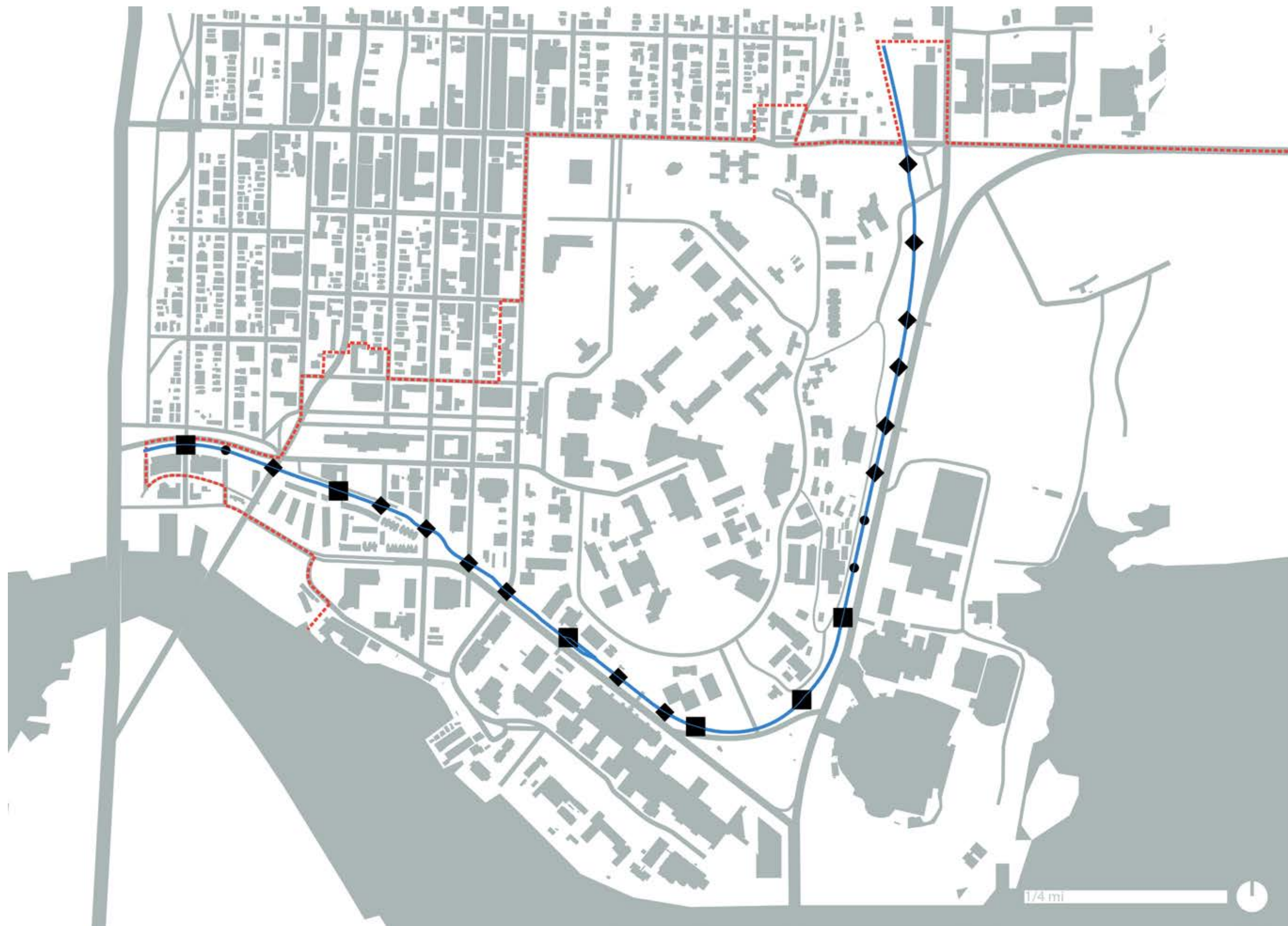
major mixing zone



minor mixing zone



overlook



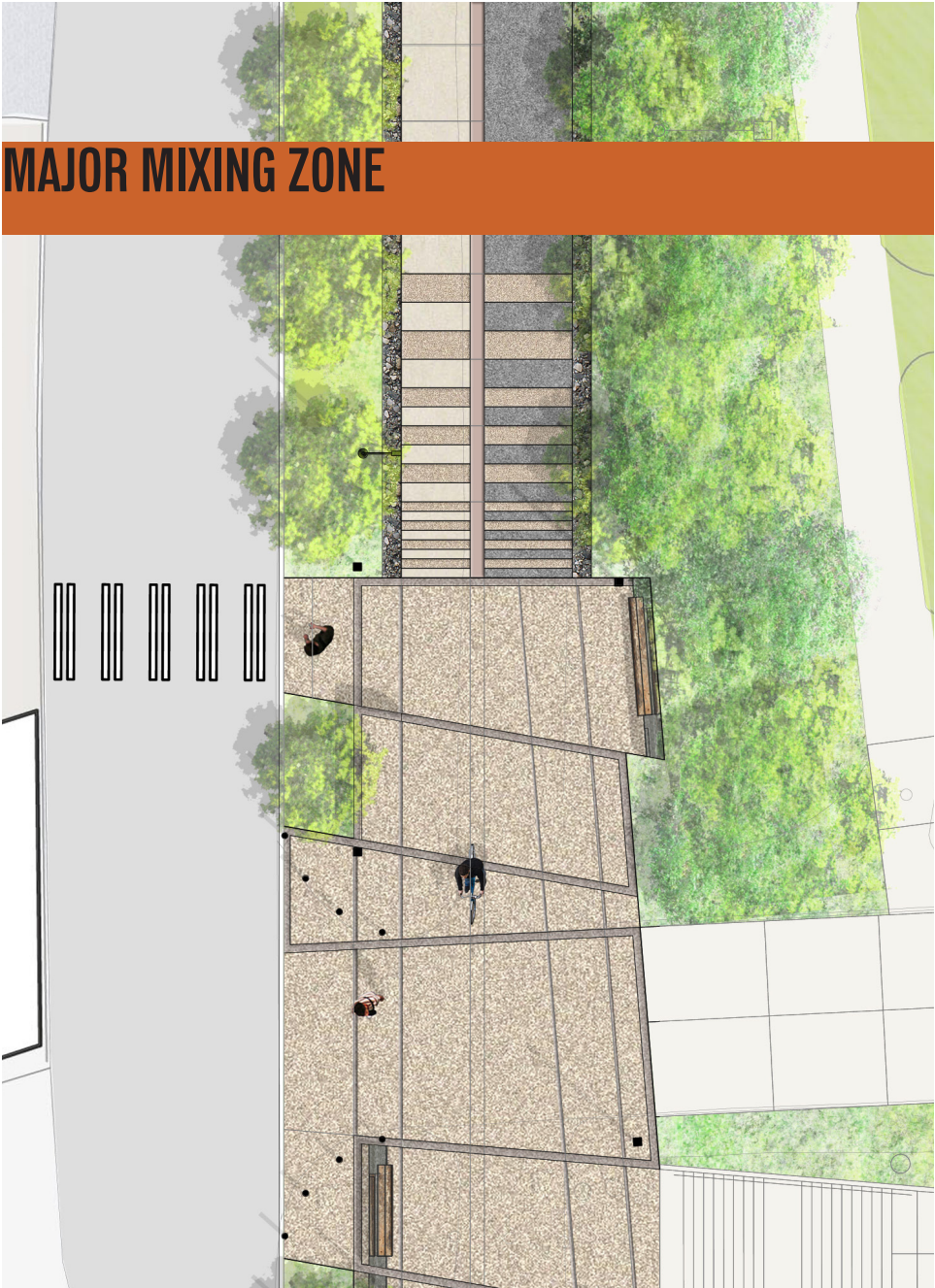
PROPOSED NODES OF THE BGT

- UW Boundary
- Burke Gilman Trail

NODES

- major mixing zone
- ◆ minor mixing zone
- overlook

The overlay of a nodal hierarchy onto the proposed trail alignment responds to the larger campus context, creating major mixing zones where many pathways - or a few significant pathways - connect to the BGT, and developing minor mixing zones where only one or two connections are made. In some instances, overlooks are positioned between mixing zones in order to reinforce the desired trail rhythm. Importantly, the hierarchy established by virtue of this overlay also suggests locations for campus gateways, campus markers, wayfinding totems, and interpretive elements, each of which has an inherent hierarchy which can reinforce and be reinforced by the hierarchy of corridor nodes.



MAJOR MIXING ZONE

Major mixing zones reconcile multiple, major campus pathways, connecting them to or across the BGT. Major mixing zones take up significant real estate, offer multiple seating options, and serve campus scale wayfinding and branding fuctions. Major mixing zones may contain

- multiple seating options
- substantial, campus-scale gateway and branding elements
- pedestrian scale lighting (pole mounted, bollard, or integral with walls)
- accent lighting (in-grade, integral with furnishings)
- interpretive messaging
- bicycle racks
- wayfinding devices
- traffic control devices
- bicycle runnels at stairs



MINOR MIXING ZONE

Minor mixing zones are scaled down versions of minor mixing zones. Generally, minor mixing zones reconcile only one or two trail connections, though they may still serve to orient trail users with wayfinding devices if those connections significant or the their endpoints unclear. Minor mixing zones have many of the trappings of major mixing zones, but the minor mixing zone versions of those improvements scaled down in keeping with the more modest scale of these mid-sized nodes. Minor mixing zones may contain:

- seating
- campus scale wayfind placards
- pedestrian scale lighting (pole mounted, bollard, or integral with walls)
- accent lighting (in-grade, integral with furnishings)
- interpretive messaging
- bicycle racks
- bicycle runnels at stairs



OVERLOOK

Overlooks typically do not serve connecting pathways. Instead, overlooks reinforce the reach-specific rhythm of mixing zones and, by virtue of their visual connection to the larger landscape, serve to orient trail users with respect to the greater campus context. Overlooks are resting points, pauses. They need not serve wayfinding purposes as they do not facilitate trail connections. Overlooks may contain the following:

- seating
- pedestrian scale lighting (pole mounted, bollard, or integral with walls)
- accent lighting (in-grade, integral with furnishings)
- interpretive messaging

3.4 REACH-SPECIFIC RECOMMENDATIONS

The following pages describe the *Trail Design Concept Plan* proposal reach by reach. These reach-specific recommendations constitute the design concept narrative and clearly identify the trail segments and nodes that form the concept framework. Revisions to existing sitework is described throughout, as is the understood scope of the project - a issue which is sometime muddled by the need to think through and anticipate future campus development. The trail is described from west to east, then south to north. Following this trajectory for almost two miles, the project begins at Pasadena Place NE and terminates at NE 47th Street. Between these two points, the proposed alignment proposes a substantially wider trail section in order to meet desired levels of service (see the *University of Washington Burke Gilman Trail Corridor Study* for a detailed discussion of level of service evaluations). The *Trail Design Concept Plan* also proposes changes to some city street edges and street crossings, revisions to designed projects currently or soon to be in construction, improvements around existing public art, changes near to or engaging existing bridges and their foundations, and so on. While the project costs took into account some of the detailed considerations associated with these recommendations, it should be understood that the plan that follows constitutes a concept design, a vision for the corridor. When one or another portion of this concept design is carried through detailed design, the issues described above will necessarily be coordinated between university departments and with outside agencies. A future design team will test this vision against the on-the-ground realities of tree and utility locations versus retaining structure heights and associated costs in order to navigate the dialog associated with the next, more detailed stage of design.

1

STICKY NOTES

While reviewing the final trail alignment with the UW Core Team, several recommendations were made regarding future coordination items. These recommendations have been collected into **Appendix PA4: Sticky Notes**. Much like a marked up draft document, these notes are affixed to the design concept plan throughout the following pages. They serves as the project's to-do list - a set of outstanding items that are outside of the scope of the *Trail Design Concept Plan* but none-the-less merit inclusion as a task list for future designers.

NORTHLAKE

For trail users travelling west-to-east, the Northlake Reach serves as a campus gateway; for trail users travelling east-to-west, this reach opens to Portage Bay and the larger Lake Union landscape. This transition into or out of the university-owned BGT is marked by a perceived compression or expansion, respectively. As one moves into the Northlake Reach the trail becomes hemmed in by feral landscape, steep slopes on either side of the trail, and large, industrial-feeling campus buildings; as one leaves Northlake travelling west, the trail opens to a much larger landscape and the steep topography falls away from the trail edges.

This perceptible change in the 'feel' of the trail does not translate into a sense that one has arrived on campus, though. The campus buildings at the westernmost corner of the university are non-descript and, with the exception of the Benjamin Hall Interdisciplinary Research Building, none address the trail corridor. The point at which the university-owned trail begins (Pasadena Place NE) is topographically constrained, bracketed by severe slopes at the north and south. Because of these limitations, the Trail Design Concept Plan proposes a simple,



Steep side slopes and a vastly overscaled bridge 'gateway' mark the west end of the university-owned BGT. Because of the difficulty of establishing a campus gateway at this location, the *Trail Design Concept Plan* proposes the university's BGT gateway be located at the 7th Avenue Mixing Zone.

slightly widened (12 foot), directionally-separated asphalt trail between the west end of the trail and 7th Avenue NE. This transition segment will include a striped centerline; 2 foot gravel shoulders will be provided on both sides of the trail to maximize the effective trail width through this zone. A low wall north of the trail may be necessary to accommodate the slightly wider trail section and the inclusion of the gravel shoulders.

The proposed major mixing zone at 7th Avenue NE affords an opportunity to create a campus gateway. This mixing zone is large enough to reconcile the various connecting pathways, and marks the beginning of a consistent, mode-separated trail section that is carried east and north over the length of the university-owned corridor. Modifications to the sidewalks at the southeast corner of the intersection of NE 40th Street and 7th Avenue NE eliminate the small, piecemeal paths and planting areas that currently exist and clarify both the BGT's through movement and the sidewalks connecting to the trail. A new stair complements the existing ramping connection at Benjamin Hall, stitching upper 7th Avenue NE to the cul-de-sac

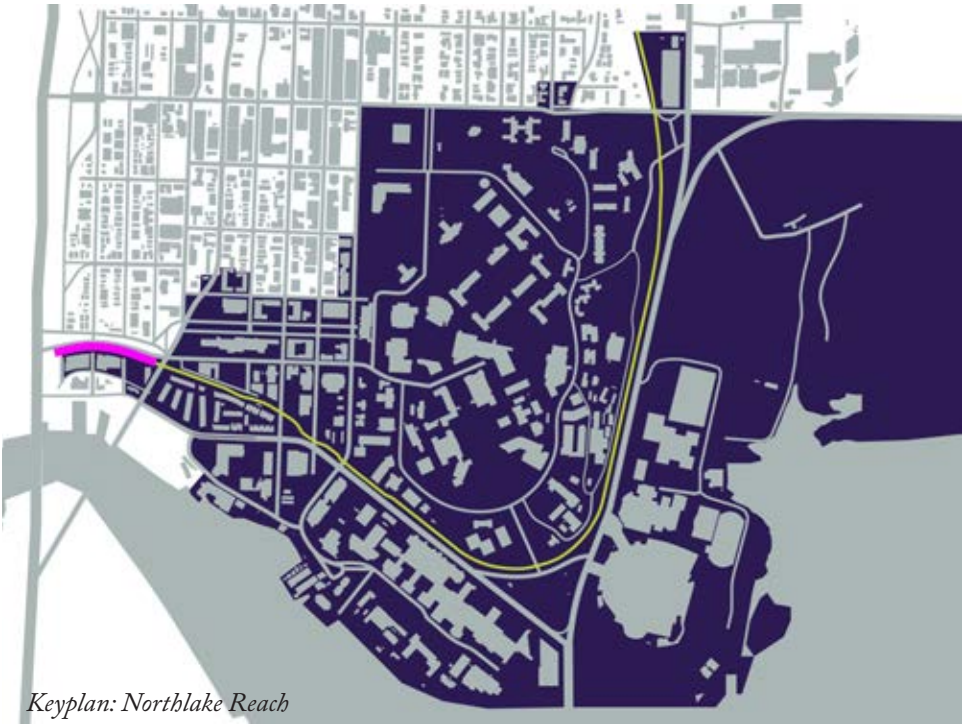


While the invasive species mixed into the feral Northlake landscape should be purged, the quality and character of some the pioneer species compliment the industrial character of this reach. A future Northlake replanting and planting design should consider ways to supplement and build from this existing planting palette.

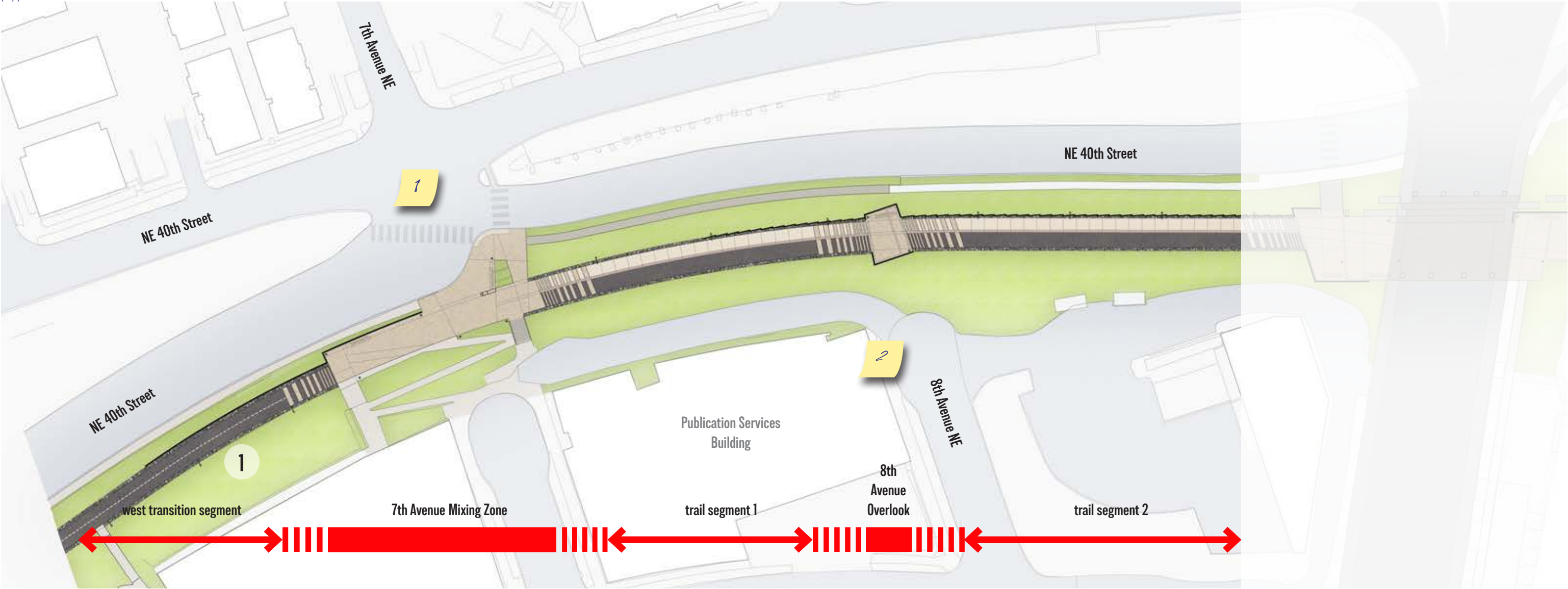
below. The informal, ramping asphalt path that connects the 7th Avenue cul-de-sac to the BGT behind Publication Services is eliminated in order to minimize redundancy and focus trail connections at the mixing zone. And the inclusion of seating, lighting, and a campus gateway marker clearly identifies the 7th Avenue Mixing Zone as a campus entry and a campus place.

Between the 7th Avenue Mixing Zone and the University Bridge over-crossing, a widened trail section introduces what will be a pervasive component of the future BGT – retaining structures. At trail segments 1 and 2, these retaining structures occur in a cut condition on the uphill side of the trail. Typical of this type of condition, the proposed walls are modular, precast concrete units set lapped and angled relative to the trail edge, defining a repeating chevron pattern along the gravel shoulder.

Roughly midway between the 7th Avenue Mixing Zone and the Neighborhood Reach’s University Bridge Underpass Mixing Zone, the 8th Avenue Overlook mediates the otherwise long stretch of Northlake Reach trail. This overlook is strategically located to take advantage of the 8th Avenue sight lines and views to University Bridge and Portage Bay. As such, the 8th Avenue Overlook is the first of many proposed nodes that intentionally engage the larger contextual landscape by virtue of focused visual connections. This visual connection could be bolstered by a wayfinding / interpretive overlay which describes the trail history and connects the trail corridor to the Portage Bay corridor.



Keyplan: Northlake Reach



NEIGHBORHOOD

The Neighborhood Reach is so named because of the West Campus transformation currently underway. Bound by the University Bridge over-crossing at the west and Brooklyn Avenue NE at the east, the Neighborhood Reach will soon be defined by a continuous band of student apartments to the south (Mercer Court, Stevens Court) and several new residence halls just blocks away to the north (Alder, Elm, Terry, and Lander Halls). Whereas the bulk of the BGT is distinctly one-sided throughout the campus, the Neighborhood Reach, due to the flow of students from the residence halls and apartments north and south of the trail, is decidedly two-sided.

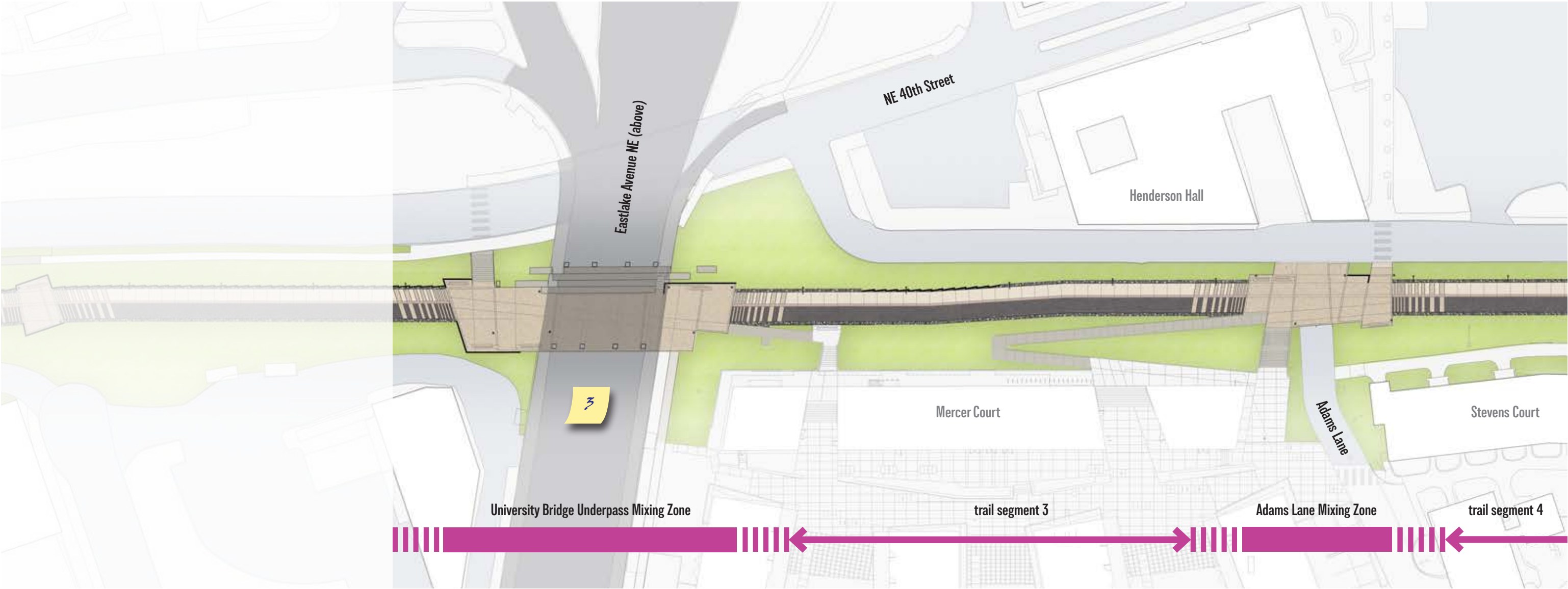
The Neighborhood Reach includes an important set of vertical connections which tie the BGT to the University Bridge (Eastlake Avenue) bicycle lanes and sidewalks and, by virtue of these connections, the Eastlake neighborhood to the south. Both of these vertical connections

occur at the University Bridge Underpass Mixing Zone. At the west end of the mixing zone, a proposed stair connects upslope to an existing crosswalk at NE 40th Street, which in turn connects to the southbound University Bridge sidewalk and bicycle lane, the Metro Transit bus stop at NE 40th and Eastlake, and Peace Park via two separate sets of concrete stairs at the north end of the crosswalk. At the east end of the University Bridge Underpass Mixing Zone, an existing stair runs up to a 40th Street level landing above, then continues up to Eastlake Avenue’s northbound sidewalk by way of a structured concrete stair integrated into the bridge itself. Between these two vertical connections, what is now the Wall of Death and a concrete embankment is reimaged as a stadium-stepped, well-lit undercrossing that serves as a gateway between the Northlake and Neighborhood Reaches.

East of the University Bridge Underpass, trail segment 3 runs parallel to the new Mercer Court

student housing development. Due to the constraints imposed by the steep slopes to the south and by the relocation of several specimen trees both north and south of the trail, trail segment 3 is significantly constrained in its alignment. At 22 foot wide (including a 2 foot gravel shoulder on each side of the trail), this portion of the trail jogs slightly north from its alignment under University Bridge in order to minimize over-steepened slopes downhill and allow adequate room for the Mercer Hall landscape improvements.

Between trail segments 3 and 4, the Adams Lane Mixing Zone resolves several major trail connections. Pulling in Mercer Court traffic via a ramp and stair, connecting southbound residence hall traffic along from diagonal pathway east of Henderson, and accommodating northbound Southwest Campus traffic along Adams Lane, this major mixing zone serves as the confluence of several significant traffic flows. Due to its location at a flat bench at the top



of Adams Lane, this mixing zone has excellent sight lines and substantial level area could be dedicated for mixing zone uses. Given its location adjacent to Cowlitz Road and proximate to the Mercer Court and Stevens Court Apartments, the Adams Lane Mixing Zone also serves as a secondary drop-off point for apartment residents.

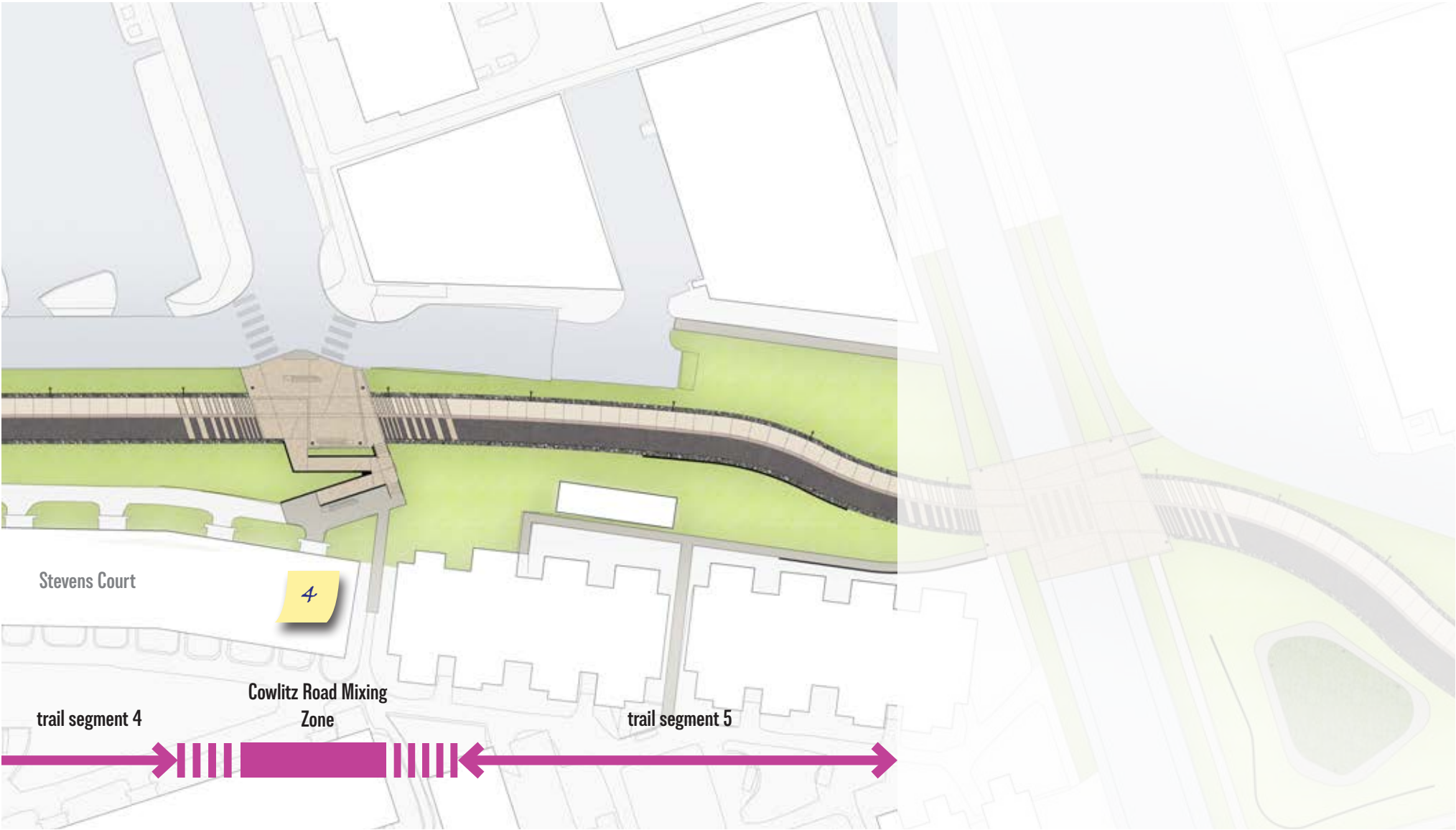
East of Adams Lane, trail segment 4 runs parallel to Cowlitz Road above and a Stevens Court pathway to the south. In pursuit of the mixing zone concept, several connections between the Stevens Court pathway and the BGT have been removed, their traffic funneled west and east to the Adams Lane and Cowlitz Road Mixing Zones, respectively. The trail alignment itself has been straightened and substantially raised, made near to level with Cowlitz Road above. This horizontal and vertical straightening of the corridor alignment greatly improves sight lines and minimizes conflicts between through and cross-trail traffic; with fewer and less improvised

BGT connections, connecting traffic merges only at proposed mixing zones and cross traffic spans the corridor only at those locations where crosswalks can connect traffic to pathways and sidewalks to the north and south. Also, by uncoupling the BGT and the Stevens Court pathway and lifting the BGT to roughly level with Cowlitz Road, public uses and through-corridor movements are grouped together and removed from the private uses associated with the apartments below.

At the east end of trail segment 4, the Cowlitz Road Mixing Zone (now level with Cowlitz Road) negotiates a 7 ft drop in grade between Cowlitz Road to the north and the north-south pedestrian connection that extends the Cowlitz Road sidewalks down through the Stevens Court building cluster. At the top of the mixing zone, a rebuilt curb bump-out at the Cowlitz elbow accommodates the existing double crosswalk with a more generous trail-adjacent

landing. At the south side of the mixing zone, a series of low walls, a switchback ramp, and two short flights of stairs connect downhill to the Steven Court pathway system. A large planter between the top of ramp and top of stair, and the pulled apart scissor of the ramp itself allow the dense, garden-like Stevens Court landscape to soften the very built lower half of this minor mixing zone.

The last leg of the Neighborhood Reach is trail segment 5. Similar to trail segment 4, segment 5 is substantially realigned, its west half bent into a smooth arc and raised to remove the low dip in the trail at the Cowlitz Road elbow. An angled pathway that slices through the yard south of the Brooklyn Trail Building has been removed and a ramping pathway connecting a Stevens Court bicycle shelter to Brooklyn Avenue has been realigned to merge into the Brooklyn Avenue Mixing Zone. The east end of trail segment 5 is realigned with an S curve to intersect Brooklyn Avenue NE at a near to perpendicular angle and slow bicycle traffic.



Keyplan: Neighborhood Reach



GARDEN

The Garden Reach is one of the few locations where eddies of open space can be found immediately adjacent to the trail. Bracketed by Brooklyn Avenue NE and 15th Avenue NE, and bisected by University Way NE, all three of the at-grade street crossings that intersect the BGT occur within or at the edges of the Garden Reach. Because the trail segments between these three intersections are relatively short, the pace of trail traffic through this reach is slow. Combined with the densely landscape eddies bracketing the trail, this unhurried tempo lends a garden-like feel to the short stretch of trail corridor.

Capitalizing on this available trail-adjacent open space, the proposed Garden Reach trail alignment develops considerable off-trail landscape in the form of lawns and gardens. It proposes to maintain significant trees while thinning and/or removing the dense understory and perimeter plantings to improve sight lines where the BGT intersects city streets and to improve visual connectivity to the surrounding context (Portage Bay and the Southwest Campus).

Because it’s plainly visible from several busy streets, the Garden Reach is very much a public face for the university. In conjunction with the generously landscaped southwest corner of the physics and astronomy complex, this segment of the BGT offers an opportunity to showcase the campus, much of which is out-of-sight to through traffic moving along Pacific Street and Montlake Boulevard. By curling the linear forms of the BGT corridor out to wrap the perimeter of the Garden Reach with curvilinear bands of pavement, seatwalls, and planting, the Garden



Munich Crosswalk
A shared crosswalk with separate demarcations for bicycles and pedestrians will help keep crossing traffic sorted by mode at the BGT intersection with Brooklyn Avenue, University Way, and 15th Avenue.

Reach embraces its eddies of open land and offers a lush public garden to trail users. Along Pacific Street, curvilinear and angular retaining walls hold the garden reach above the street and create an opportunity to present a refined, terraced garden to the passing public.

Two of the three at-grade street crossings in the Garden Reach occur at signal-controlled intersections, the exception being the westernmost crossing at Brooklyn Avenue NE. The proposed Brooklyn Avenue Mixing Zone includes several improvements intended to facilitate safer street crossings for trail traffic. The introduction of wide mixing zone areas at either side of the crossing improves visibility and allows adequate queuing space for trail traffic. An existing curb taper, which currently funnels on-street bicycle lane traffic onto a curb tight bicycle path, is relocated to the south, allowing bicycle traffic to merge from the off-street Brooklyn Avenue bicycle paths directly onto the BGT and vice versa. The relocation of this on-street / off-street bicycle lane transition helps alleviate conflict between crossing bicycle traffic (which transitions from on-street to off-street at directly at the BGT) and trail traffic by removing this transition point to the mixing zone areas north and south of the crosswalk. Also, by sliding the curb taper to the south, the width of the crosswalk is reduced by the width of the two existing bicycle lanes. The crosswalk itself is tabled in order to prioritize trail traffic and better alert vehicular traffic to the trail crossing.

Trail segment 6 begins at the east end of the Brooklyn Avenue Mixing Zone; it is realigned

Keyplan: Garden Reach

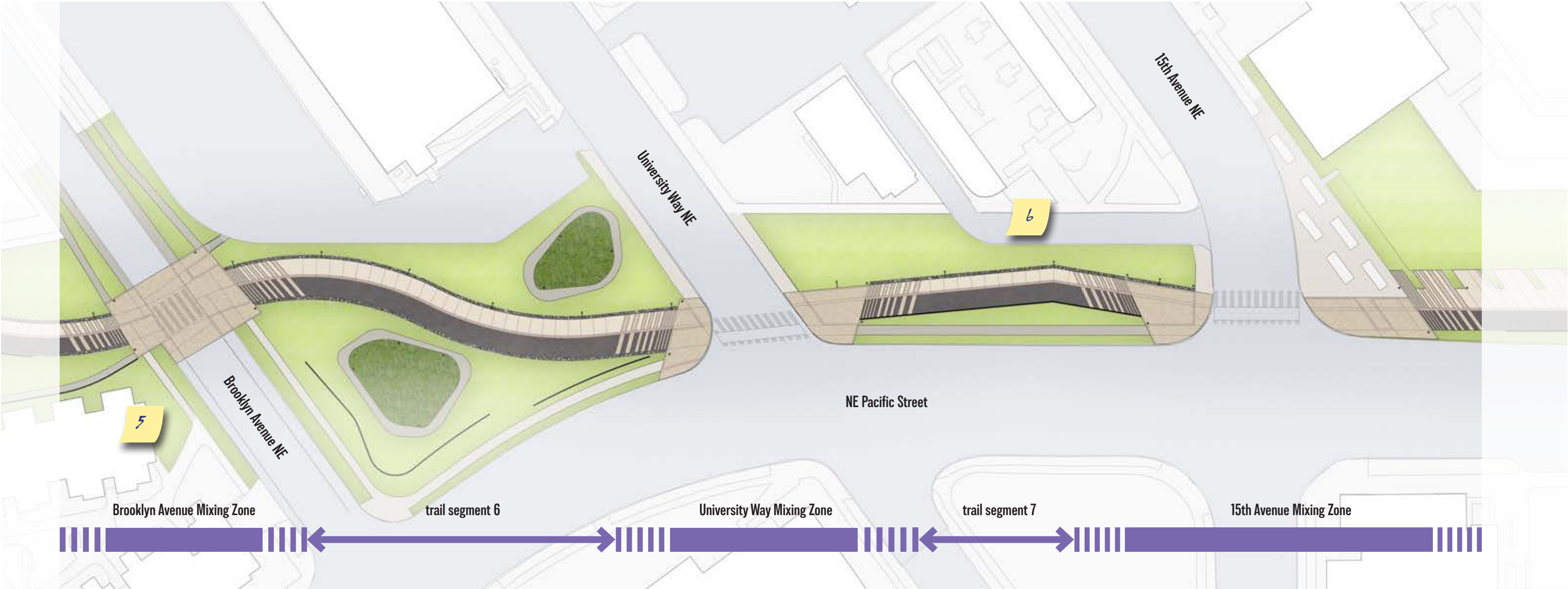


An eddy of open space at the west half of the Garden Reach, looking southeast.

with a more pronounced S curve in order to create a near-to-perpendicular intersection at Brooklyn. Curving between to avoid patches of open lawn bracketed by seatwall, trail segment 6 bisects two patches of open space, each of which may be leveled and made more functional with retaining structures.

The trail crossings at University and 15th will remain in their current location and trail traffic will continue to yield to the signals controlling each respective crosswalk. As with the trail crossing at Brooklyn, the crosswalks at University and 15th will be modified to include a bicycle-only demarcation, allowing the mode separated trail sections to effectively continue through the public right-of-way. The additional queuing area provided by both the University and 15th Avenue Mixing Zones will allow adequate room for crossing traffic to back up and prevent the public sidewalks from being blocked at each of the four corners in question.

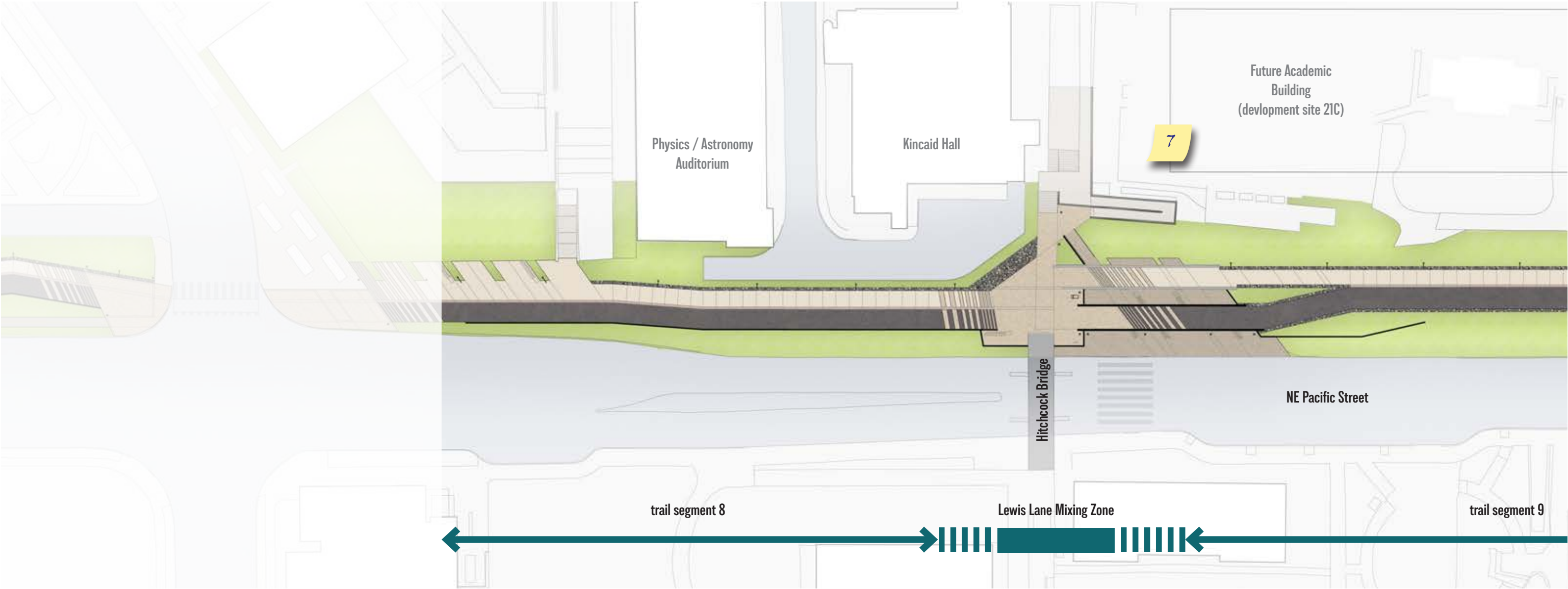
All diagonal through paths and pathway stubs have been removed from the Garden Reach trail segments 6 and 7. The deletion of these connections removes intermediate intersections from an already much bisected reach of the BGT. It also allows additional room for garden landscape and helps separate the BGT from the parking lots north of trail segment 6 and the Seattle City Light substation north of trail segment 7.



CAMPUS at Pacific

More than any other reach, the Campus Reach offers the most direct access to the campus core from the BGT. Along the Campus Reach stretch parallel to NE Pacific Street (illustrated below), large academic buildings back up to the north side of the trail corridor; their service drives, loading docks, parking lots and other back-of-house functions punctuate the trail edge. To the south, long stretches of retaining wall, NE Pacific Street and the Magnuson Health Sciences and University of Washington Medical Centers create a relatively consistent datum of steep grade / busy street / mega-building.

Squeezed between these two contrasting conditions is the widest section of trail proposed in the Trail Design Concept Plan. This 28 foot wide trail section is required in order to accommodate projected traffic loads, which are expected to be very high throughout the Campus Reach due to the future Husky Stadium LINK Light Rail Station, the improvements at Mont-



lake Triangle and Lower Rainier Vista, and the Campus Reach's proximity to the campus core. But, the need to substantially widen the trail over the length of the Campus Reach bumps up against several constraints. Because the trail-adjacent existing condition is hemmed in by buildings to the north and is characterized by over-steepened slopes and/or retaining structures to the south, any widening of the trail throughout the Campus Reach will require additional and substantial retaining walls between 15th Avenue NE and east landing of the extant rail viaduct at the Lewis Lane Mixing Zone.

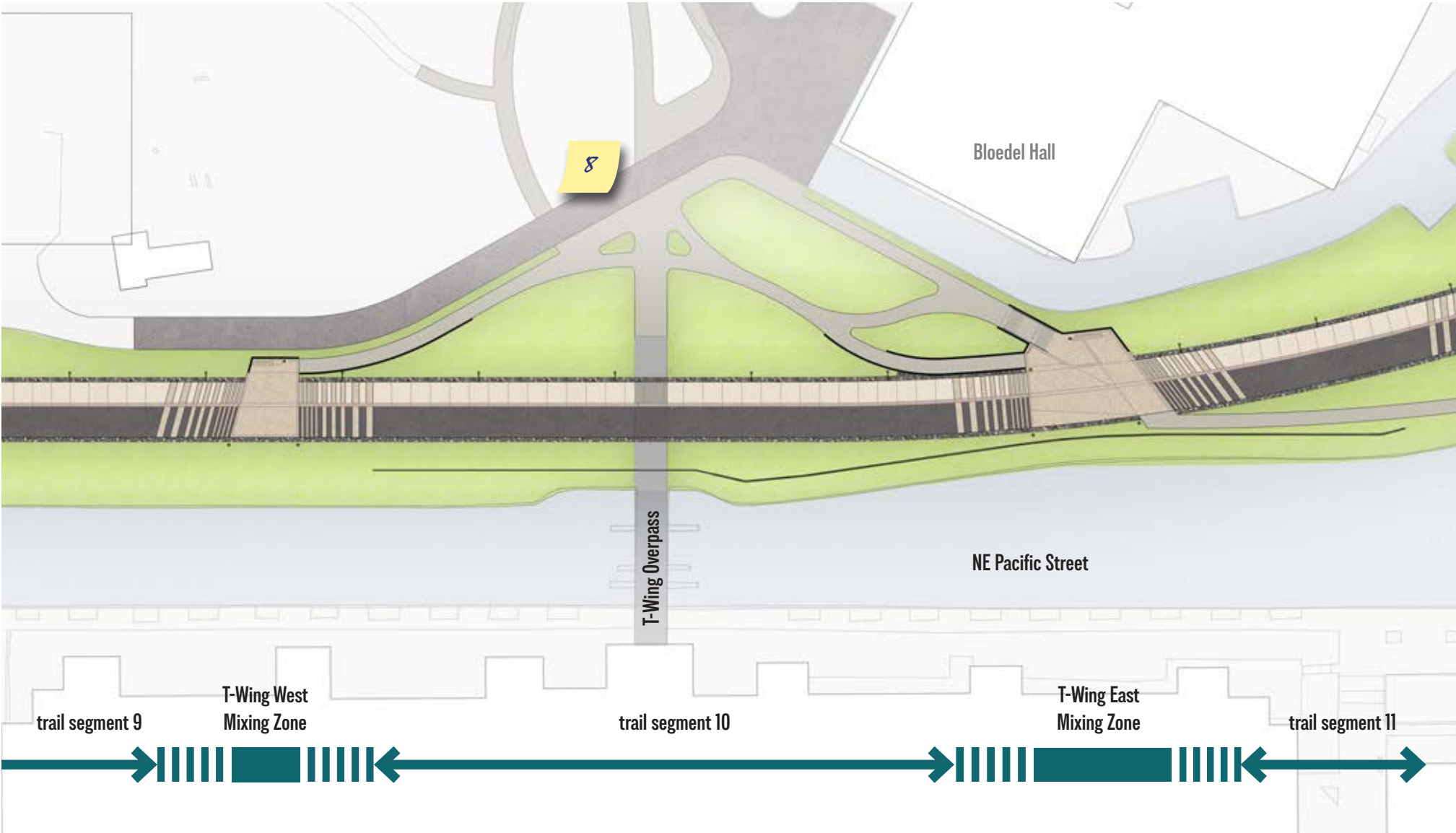
Beginning at 15th Avenue NE, the alignment of trail segment 8 bends southward as it moves from west to east, responding to a jog at the edge of the Pacific Street right-of-way, where a right turn lane chews into the landscape buffer between the trail and the street. The east end of trail segment 8 engages the Lewis Lane Mixing Zone. Previously a densely planted knot

of intersecting pathways, the proposed Lewis Lane Mixing Zone realizes the corridor's full potential as a catalyzing force for campus placemaking. By removing dense vegetation from between the Hitchcock Bridge and Kinkaid steps and establishing a large, open mixing zone area, bicycles and pedestrians are able to survey traffic and safely cross and turn. Where there is currently a bottleneck at the historic steel and concrete trestle immediately east of Hitchcock Bridge, a new bicycle-only bridge allows for the proposed mode-separated trail profile continue uninterrupted. And, by leveraging future building site 21C, which straddles what is now greenhouses and the Plant Laboratory, the Trail Design Concept Plan envisions a well-connected street-level plaza below these bridges. An inviting and civic campus entry-way, this split-level mixing zone engages future building site 52C across Pacific, creates a safer pedestrian crossing at NE Pacific Street, develops pockets of space for students and faculty waiting for the shuttle or city bus, and, by way of the future development at 21C, helps

to create an accessible vertical connection between Pacific Street and Stevens Way.

East of the Lewis Lane Mixing Zone the bicycle and pedestrian pathways quickly merge back to a single trail in order to minimize the amount of retaining structure required along the trail's south edge. This trail section continues eastward as trail segment 9 until it arrives at the T-Wing West Mixing Zone, a minor mixing zone which serves to connect eastbound trail traffic to the north end of the T-Wing Overpass above via an accessible (<5%) sloping pathway. A twin T-Wing East Mixing Zone functions at the mirror image of T-Wing West, funneling westbound trail traffic and Montlake Triangle cross traffic to the T-Wing landing above. This T-Wing East Mixing Zone also responds to the strong desire line worn into the slope south of Bloedel Hall, creating a stair connection that parallels the T-Wing East sloping pathway and delivers pedestrians to the bridge level landing above.

North of the T-Wing landing a reconfigured C10 parking lot, realigned service drive, and adjusted pathway alignments serve to clarify traffic flows between T-Wing and the campus core, effectively extending the Garfield Lane / Garfield Place axis to the BGT. While improvements north of the T-Wing landing are beyond the scope of this project, the design of the T-Wing West and East Mixing Zone pathways must necessarily consider how the C10 parking lot and the Garfield corridor might be reimagined when development site 21C is build out and the recommendations of the Bicycle Shelters and Enclosures Plan are implemented.



Keyplan: Campus Reach at Pacific



CAMPUS at Montlake Triangle + Lower Rainier Vista

Beneath the T-Wing Overpass, trail segment 10 squeezes between the bridge abutments. An existing, sloping pathway between the BGT and a small pull-off lane at Pacific is eliminated. The existing concrete wall between Pacific and the BGT is extended westward in order to hold up the widened trail section.

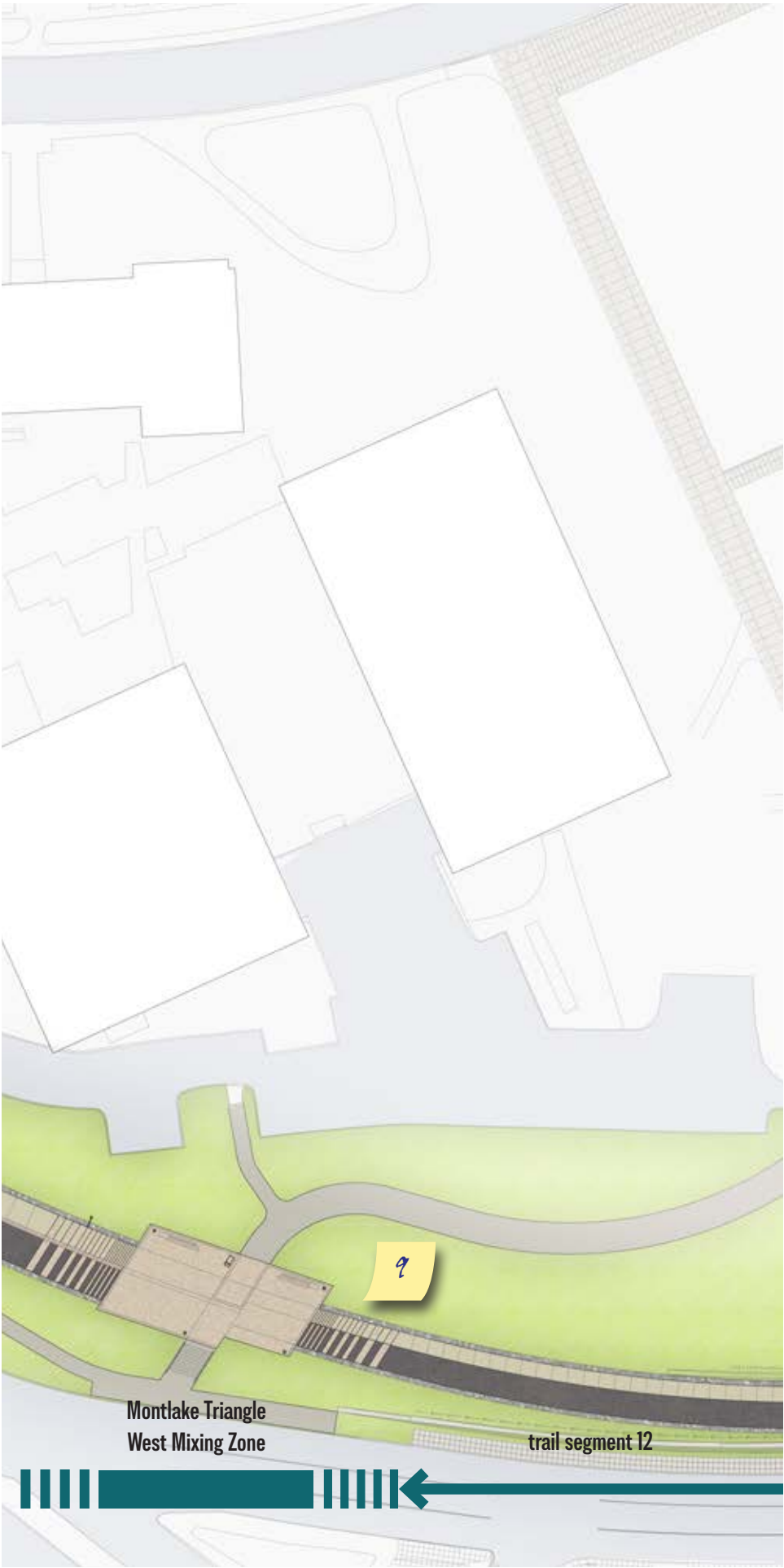
Nearly adjacent to the T-Wing East Mixing Zone, a major mixing zone marks the west edge of the Montlake Triangle and Lower Rainier Vista landscape improvements. Connecting pathways at this mixing zone accommodate transit traffic arriving and departing at NE Pacific Place below and pedestrians coming from or going to the soon to be revamped Lower Rainier Vista. Where it exits the Montlake Triangle West Mixing Zone, the BGT remains separated by mode, but this separation is implied through path-specific pavements rather than enforced by a

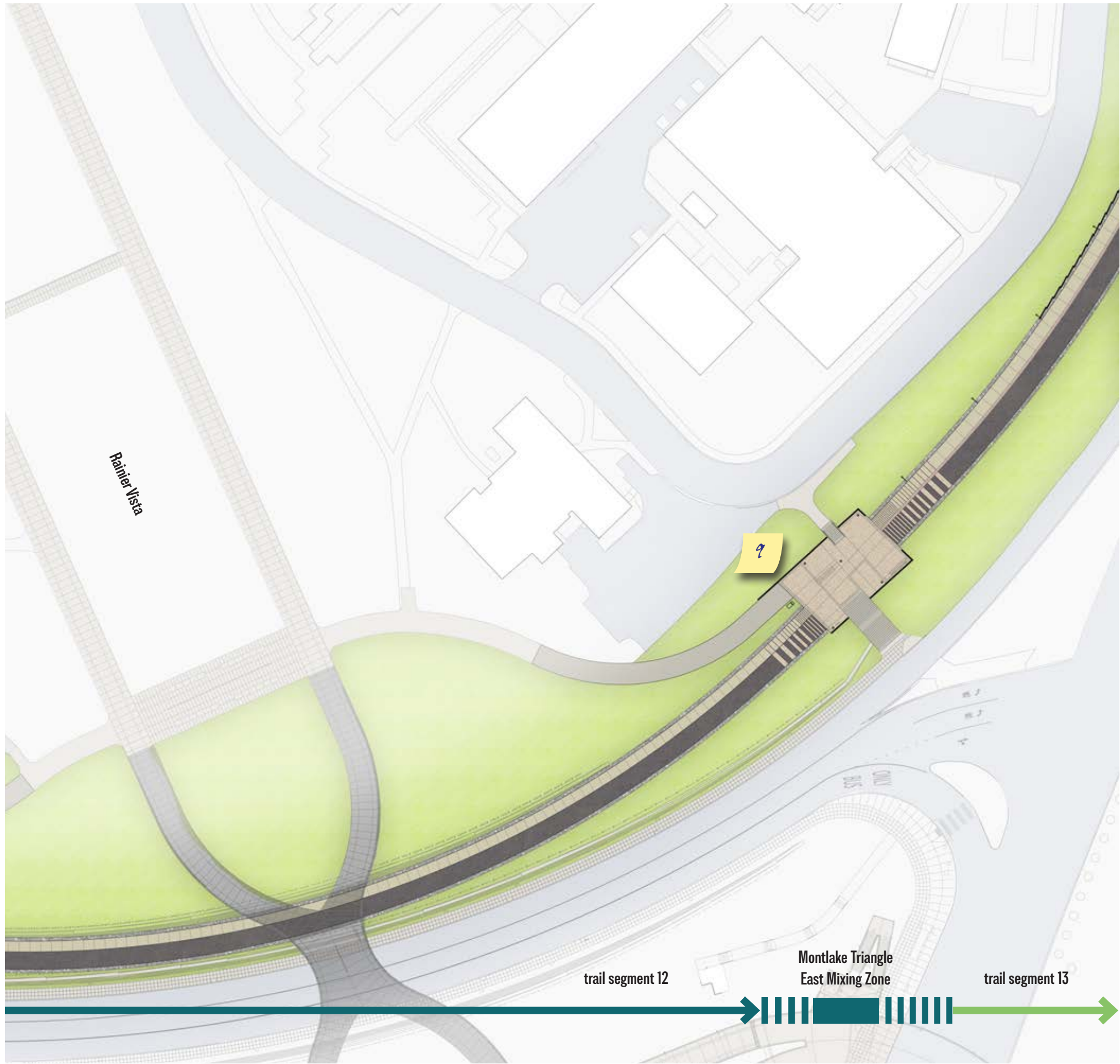
vertical change in grade. The alignment and relatively narrow width Trail segment 12 was developed concurrent with the other major renovations to Montlake Triangle and Lower Rainier Vista. This depressed trail segment dives below the new Lower Rainier Vista pedestrian bridge and is expected to see primarily through traffic composed of cyclists and joggers; campus-going traffic is expected to opt for the Lower Rainier Vista connections above.

Similar to the bracketing of the T-Wing Overpass with minor mixing zones, the compliment to the Montlake Triangle West Mixing Zone is found at the east end of trail segment 12. The Montlake Triangle East Mixing Zone is a major mixing zone which accommodates a major Lower Rainier Vista connection, a stair connection up to Mason Road and a large stair connection down to NE Pacific Place below. The Montlake Triangle East Mixing Zone marks the transition from Campus Reach to Forest Reach.

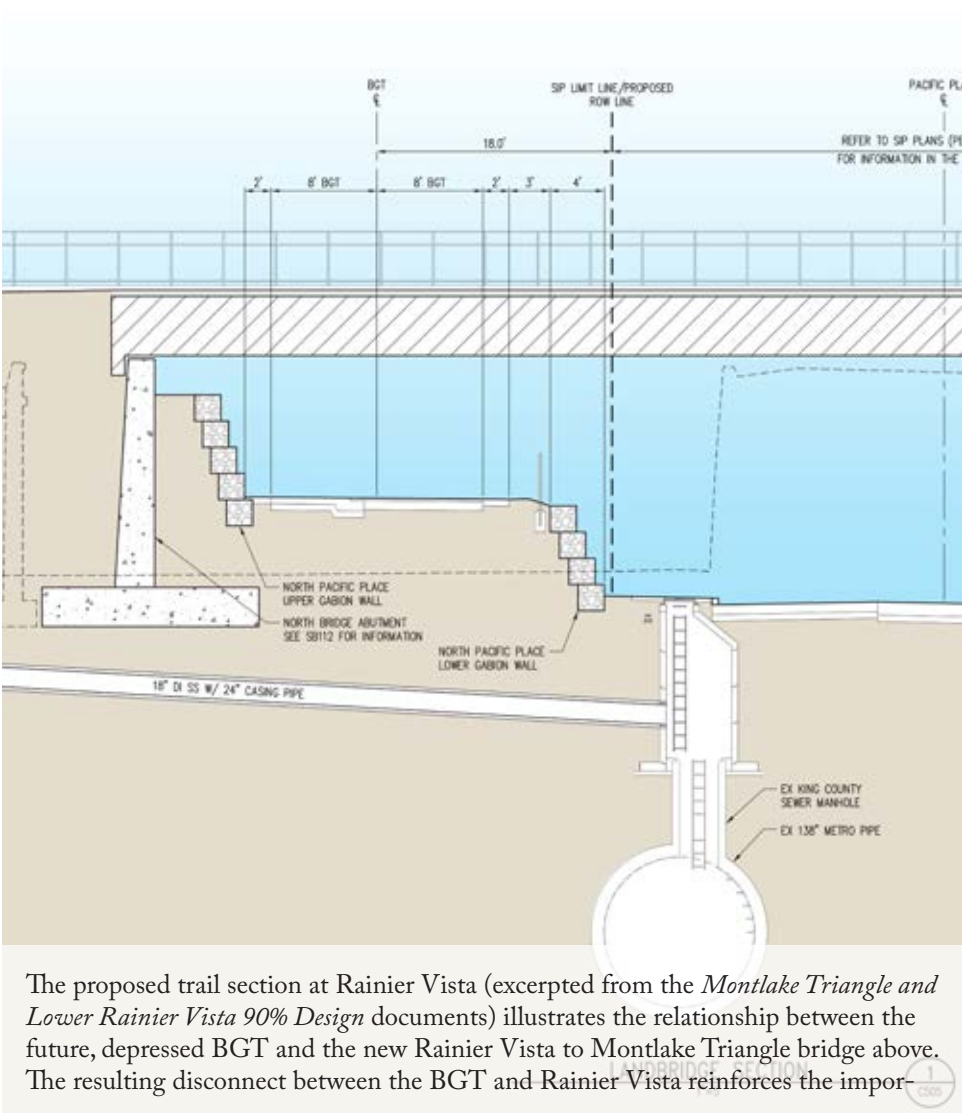


The existing BGT alignment at Rainier Vista crosses a former parking structure entry utilizing an extant concrete rail trestle.





Keyplan: Campus Reach at Montlake Triangle + Lower Rainier Vista



The proposed trail section at Rainier Vista (excerpted from the *Montlake Triangle and Lower Rainier Vista 90% Design* documents) illustrates the relationship between the future, depressed BGT and the new Rainier Vista to Montlake Triangle bridge above. The resulting disconnect between the BGT and Rainier Vista reinforces the impor-

FOREST at Hec Ed

The Forest Reach is the longest of the five trail reaches. It begins at the East Montlake Triangle Mixing Zone and extends north to NE 47th Street. The Forest Reach is characterized by a tunnel-like enclosure of tree canopy and an increasing disconnected relationship with the upper campus (campus core) as one moves from south to north. The Forest reach exists as roughly level terrace paralleled by Mason and Pend Oreille Roads above and Montlake Boulevard NE below. Views across Montlake to the university’s athletics and intramural facilities can be glimpsed through openings in the primarily native tree canopy. These views are more pronounced in winter, when the largely deciduous forest becomes semi-transparent and the Forest Reach is visually connected to the larger Lake Washington and Cascade landscapes to the east.

The Forest Reach is connected across Montlake Boulevard to the athletics and intramural

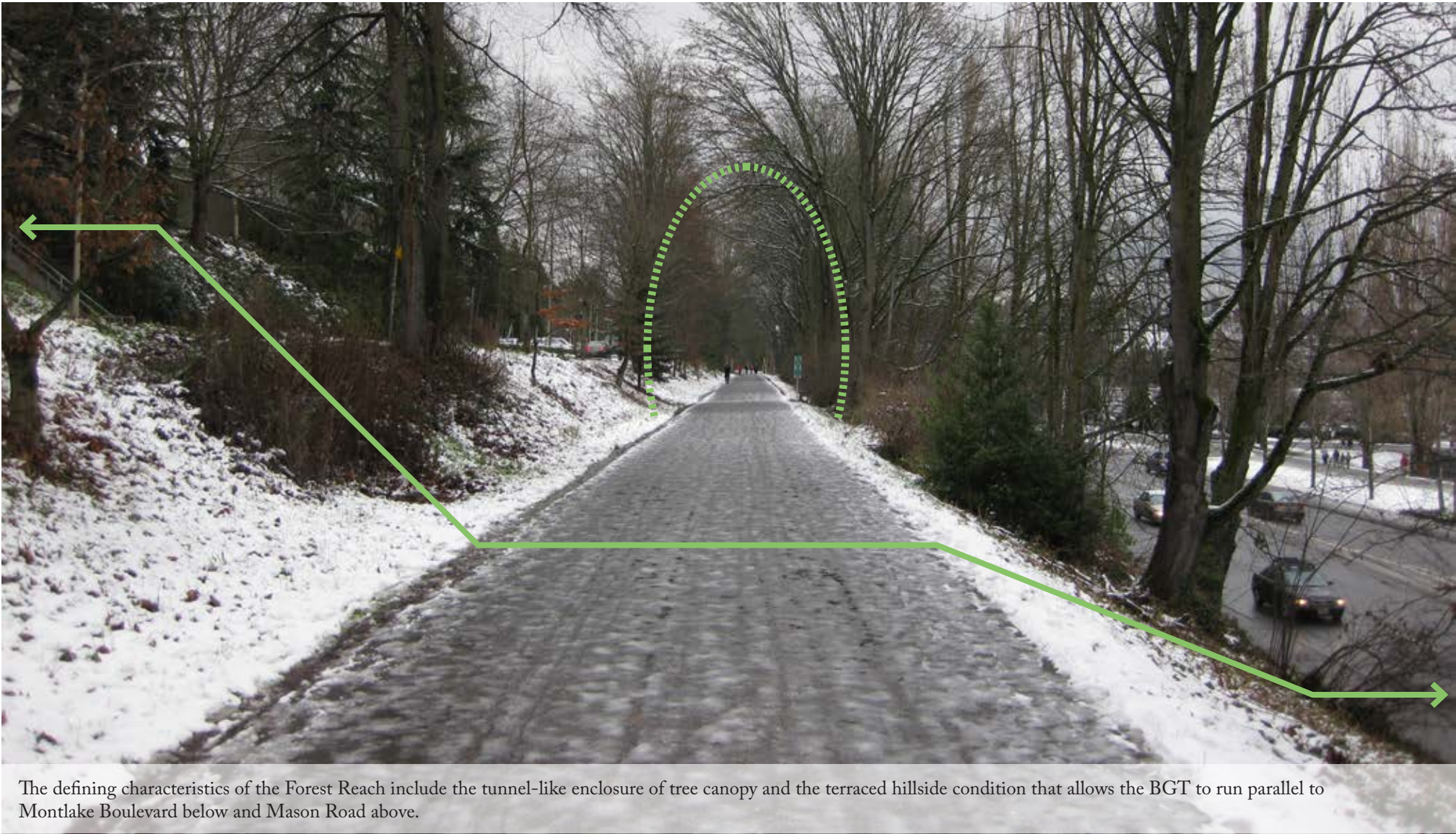
buildings and fields and the expansive parking lots of the lower east campus by three pedestrian bridges – Hec Edmundson (Hec Ed), Wahkiakum, and Whatcom. Where these bridges land at the BGT, long flights of stairs reach upslope to the campus above. These landing points are often congested – especially as students cross Hec Ed to reach UW’s recreational facilities and during peak commute times, as students funnel from the lower parking lots and East Campus up the hill to class. Currently, this congestion is made all the more dangerous by the seasonally dense vegetation around the bridge landing points, the lack of refuge area at the stair and bridge landings, and the fact that the long, straight, uninterrupted stretches of Forest Reach trail encourage high speeds among cyclists.

The primary objective of the proposed Forest Reach design is twofold. First, it should preserve and engage the unique forested character typical of the campus’s west slope. Second, it

should reconcile the conflicts that arise from the confluence of uninterrupted, very long trail segments and BGT level bridge landings. The former is accomplished by virtue of a complementary planting palette and minimal impacts to large existing trees. The latter is realized by establishing shorter, more regular intervals between BGT nodes and providing ample mixing zone space where bridges connect to and cross the trail corridor.

The Forest Reach begins at the south with trail segment 13, a stretch for trail rooted in the formal Rainier Vista landscape but characterized by an increasingly back-of-house feel as one moves north and encounters Mason Road and the Power Plant and its attendant buildings. The north end of trail segment 13 connects to the Hec Ed Mixing Zone, a major mixing zone at the west landing of the Hec Ed Pedestrian Bridge. Due to the proposed widened trail section, this mixing zone incorporates a realigned lower stair at the bottom of the Snohomish Lane steps. This southward shift in the stair alignment allows additional room for queuing and movement at the top of the stair, where Snohomish Lane crosses Mason Road, and at the bottom of the stair, where Snohomish Lane currently spills directly onto the BGT. By way of a reconstructed switchback ramp, bicycle traffic and wheelchair-bound trail users can negotiate the steep hillside between Mason Road and the BGT. A steep, obsolete connection to on-street parking at Montlake Boulevard has been deleted. An extant concrete rail trestle, now largely buried, is resurrected to define a bicycle parking area at the southeast corner of the mixing zone while the realigned stair is leveraged to create a seating pocket at the mixing zone’s northwest corner.

Keyplan: Forest Reach at Hec Ed

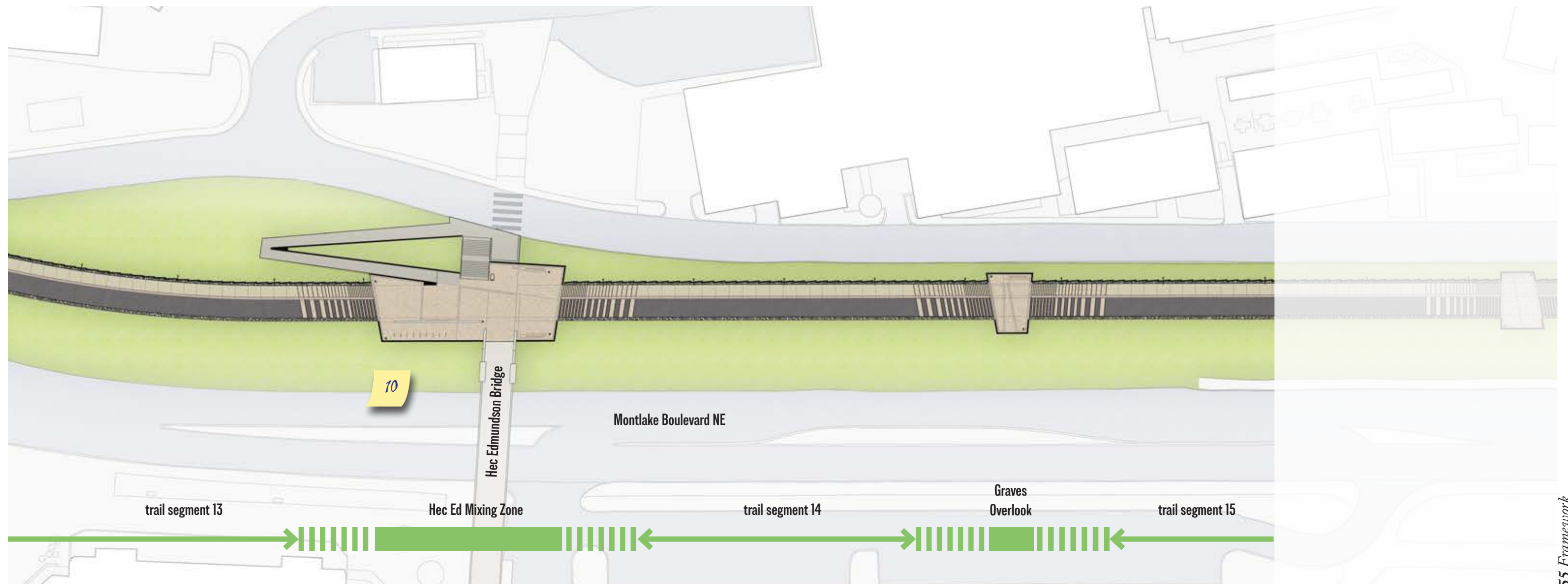


The defining characteristics of the Forest Reach include the tunnel-like enclosure of tree canopy and the terraced hillside condition that allows the BGT to run parallel to Montlake Boulevard below and Mason Road above.



Hec Ed Bridge

The 75 year old Hec Ed Pedestrian Bridge spans Montlake Boulevard NE, connecting the East Campus to the BGT and the upper Snohomish Lane corridor. While it incorporated the existing upper bridge landing, the Hec Ed Mixing Zone is also understood as accommodating the Hec Ed Bridge replacement in the near future. Refer to Appendix PA3 for additional information.



FOREST at Mason Road

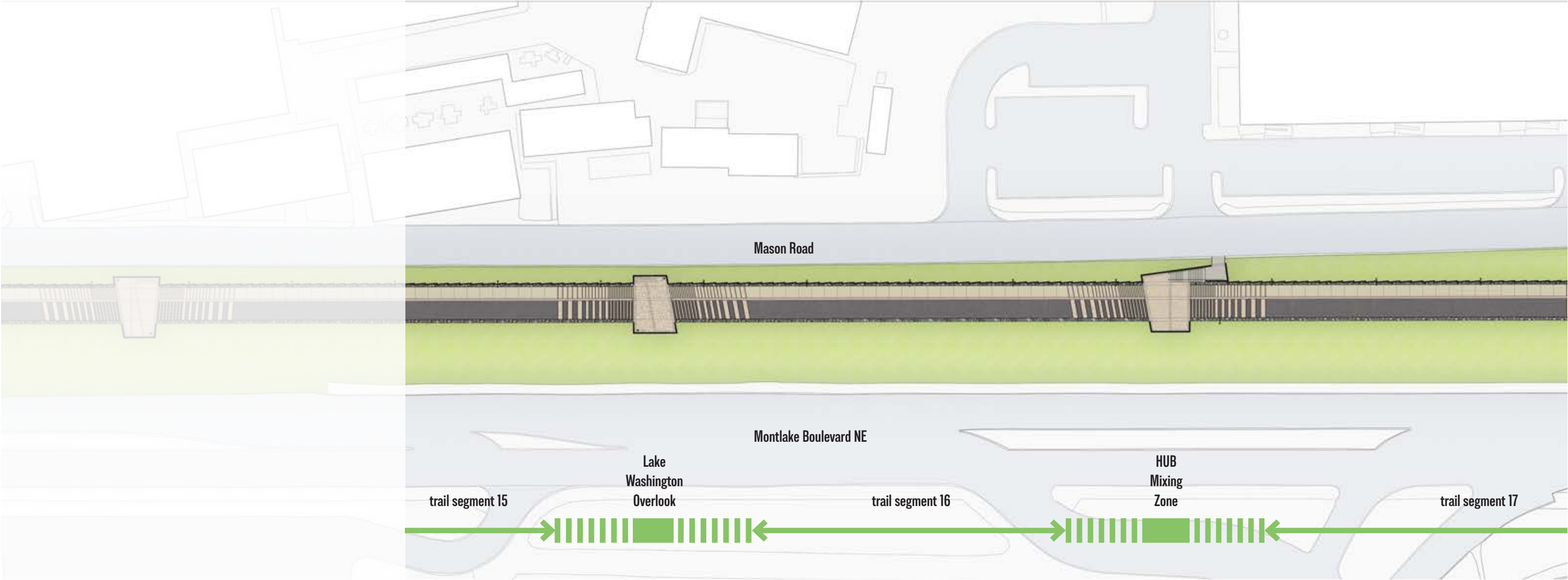
Beginning at the north end of the Hec Ed Mixing Zone, trail segments 14, 15, 16, and 17 stretch out in straight, long runs. Typical of the Forest Reach trail segments south of Wahkiakum, these lengths of trail are defined on their uphill (west) side by the precast, stacked concrete plank walls introduced in the Northlake Reach. Two small overlooks - Graves and Lake Washington - punctuate the trail segments between the Hec Ed and HUB Mixing Zones, helping to mitigate what would otherwise be long, straight, fast stretches of trail. The Lake Washington Overlook, in particular, also engages the larger landscape, orienting northbound trail users to the Lake Washington and Cascades landscapes to the east (both of which appear as views eastward open north of the Intramural Activities Building). The HUB Mixing Zone itself is a very minor mixing zone; it incorporates a simple stair connection to Mason Road but, in so doing, it effectively stitches the HUB area stair to the BGT. North of the HUB Mixing Zone and the four stretches of trail incised into the hillside, the

Wahkiakum Mixing Zone opens up what is currently a very dense and overgrown intersection and leverages an existing, largely buried concrete rail trestle to separate bicycle traffic and pedestrian traffic at its north end. Farther north, leaving Wahkiakum behind, small areas of flat trail-adjacent space appear and the chevron retaining walls typical of the south half of the Forest Reach are no longer necessary.

There is little noteworthy about trail segments 18 and 19, excepting their increasingly disconnected relationship with Mason Road, which begins to climb the hillside to its intersection with Pend Oreille. Between trail segments 18 and 19, the Forest Mixing Zone stitches a single, steeply sloping pathway to the BGT. Though this mixing zone reconciles only a single trail connection, it provides two very important functions. First, by connecting the BGT to Mason Road via a sloping pathway, the Forest Mixing Zone provides a bicycle by-pass for cyclists

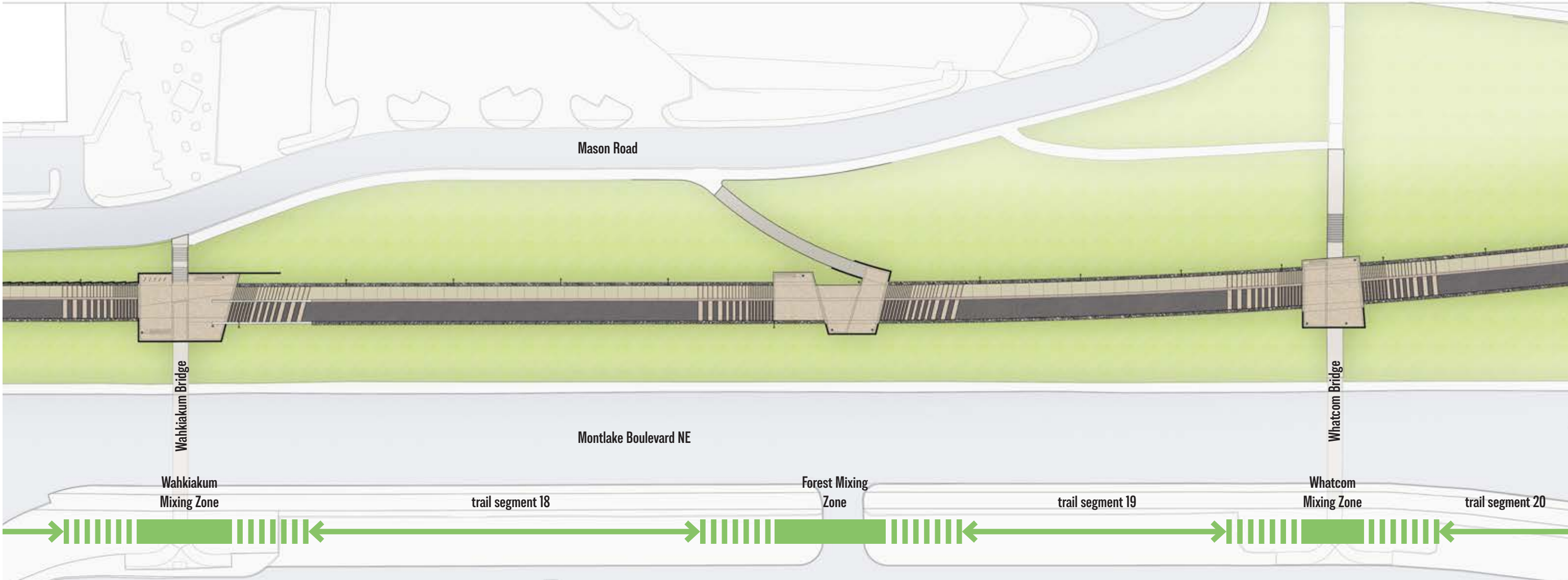
who'd rather not negotiate the steep Mason Road / Pend Oreille hill climb in order to connect back-and-forth between Mason Road and the BGT. Also, in conjunction with the ramping connection at the Hec Ed Mixing Zone, the Forest Mixing Zone allows trail traffic to be easily rerouted to Mason Road. This reroute, in turn, allows a large portion of the Forest Reach to close for utility maintenance without interrupting BGT traffic.

North of the Forest Mixing Zone, the Whatcom Mixing Zone reconciles the intersection of the second of the El parking lot pedestrian bridges with the BGT. Similar to the Wahkiakum Mixing Zone to the south, the simple cruciform arrangement of bridge, stair, and trail is straightforward and ample refuge area is established at the bottom of the stair and bridge landings to allow for safe trail crossings.





Wahkiakum and Whatcom
 The west Wahkiakum and Whatcom Bridge landings are currently obscured with vegetation and offer little refuge for cross-trail traffic. The proposal below improves sight lines, provides areas of refuge, and creates space for wayfinding elements, seating, and pedestrian scale trail lighting.



FOREST at Pend Oreille

Trail segment 20 begins the long arc that bends the trail alignment westward and points it toward Ravenna Park far to the north. This trail segment is brackets by small, relatively flat eddies of land that may be leveraged as off-trail forest seating. Trail segment 20 connects to the Pend Oreille Mixing Zone to the north, the first of the two mixing zones that bracket the proposed sitework envisioned in the Pend Oreille Entry Improvements Study.

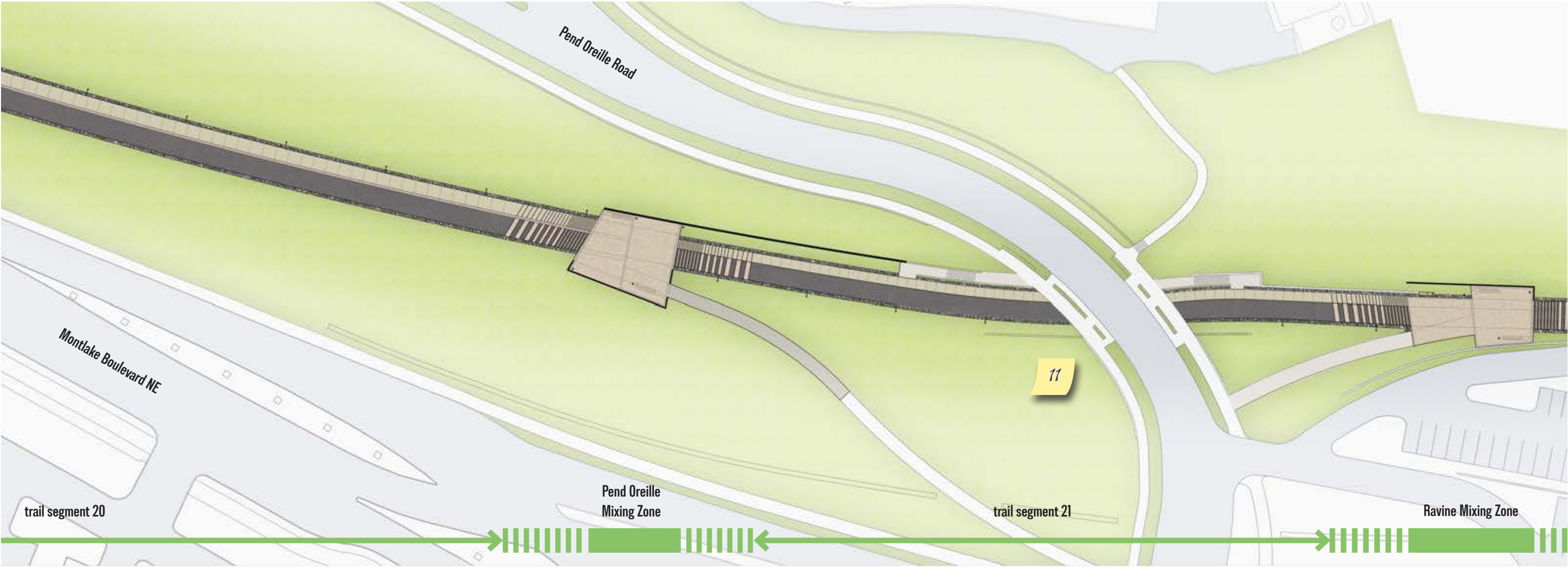
The Pend Oreille Mixing Zone is located at the top of the ramping segment of trail that descends to the Pend Oreille Underpass. This mixing zone is somewhat inscribed in the hillside and it extends the language of the Pend Oreille retaining walls south in order to be so situated. This mixing zone also reconciles the connection between the BGT and a sloping pathway extending north and east to the intersection of Pend Oreille Road and 25th Avenue NE.

The last of the mode separated trail segments, trail segment 21, slides below Pend Oreille Road as a narrow, curbless trail section (20 feet with gravel shoulders included). After climbing out of the underpass to the north, this stretch of trail connects to the final mixing zone - The Ravine Mixing Zone.

Like the Pend Oreille Mixing Zone to the south, the Ravine Mixing Zone is located at the top of the ramping trail segment that descends below Pend Oreille. This mixing zone is dominated by the forested ravine to the west, but the character of the trail quickly yields to uninterrupted, behind-the-scenes views of the Plant Services and Motor Pool buildings and parking lots as one exits this node moving north. For this reason, the Ravine Mixing Zone is proposed as the northern, campus scale gateway for the BGT. Campus scale wayfinding and gateway elements are located here, where the forested corridor breaks and transitions to a more back-of-house

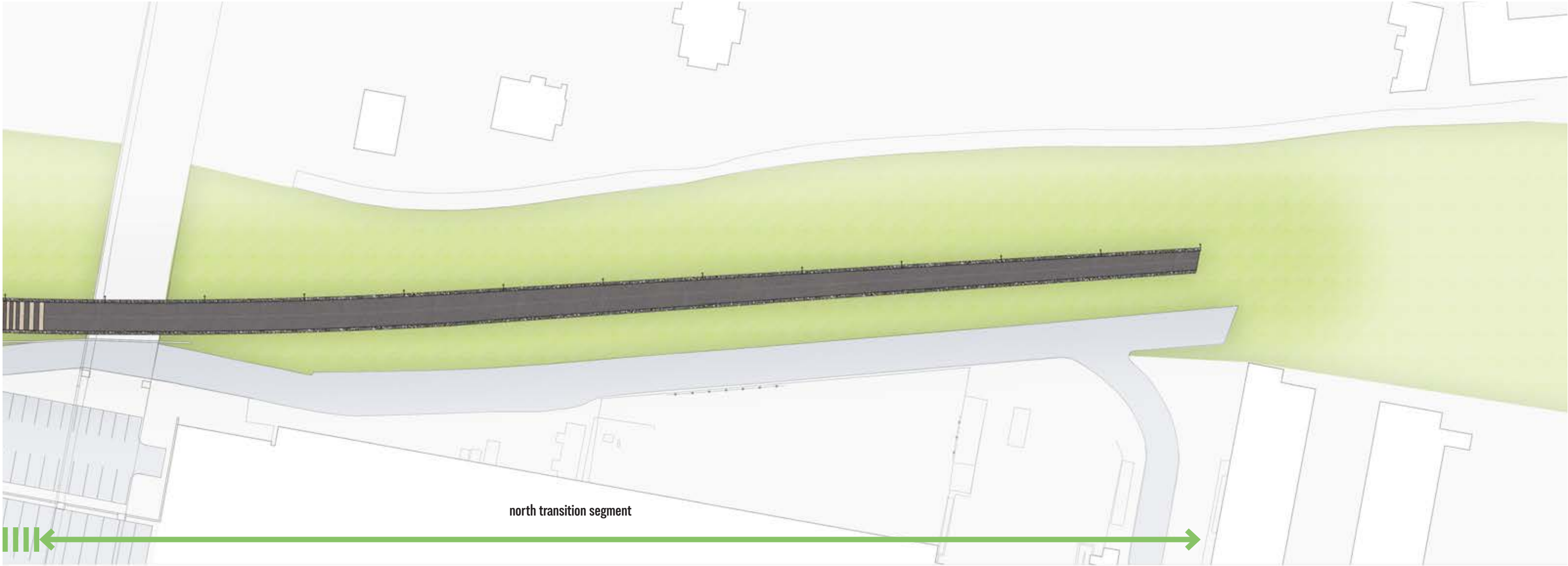
trail segment that offers little opportunity to brand and introduce the campus in a positive manner.

Beyond the Ravine Mixing Zone to the north, the final trail segment transitions from the university's typical mode separated trail section to the existing, directionally separated trail section. The proposed trail segment 22 is surfaced in asphalt and edged with gravel shoulders. It is widened from 11 to 17 feet at the Ravine Mixing Zone and striped with a centerline and slowly tapers back to the existing trail width at the edge of campus.





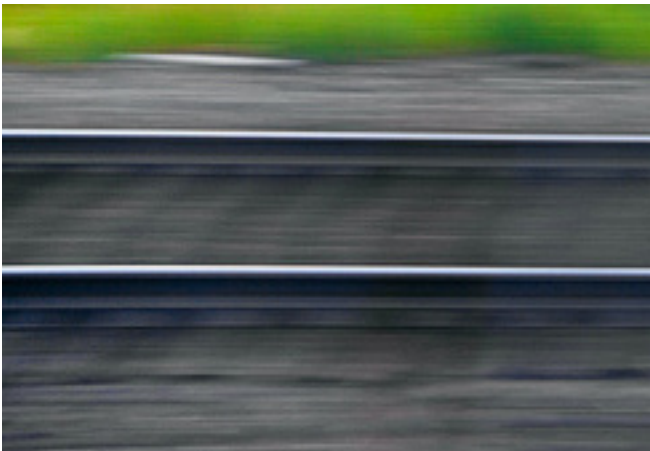
Pend Oreille Undercrossing
 Excerpted from the *Pend Oreille Entry Improvements Study*, this rendering illustrates the proposed BGT undercrossing at a re-aligned lower Pend Oreille Road. The Pend Oreille and Ravine Mixing Zones proposed in the *Trail Design Concept Plan* are coordinated with the upper ends of the ramping trail segments described in the *Pend Oreille Entry Improvements Study*.



north transition segment

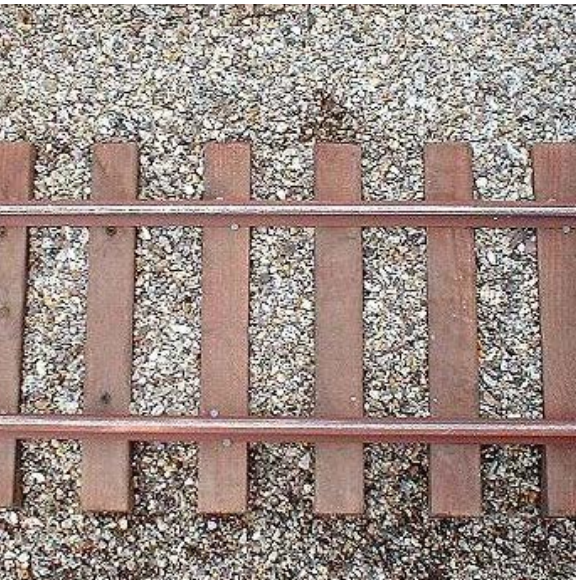
4.1 CONCEPT + INSPIRATION

BLUR / BANDING / LINE / REPETITION



A rail corridor is about linear movement and the staccato pulse of repeating elements - ties, boxcars, utility poles, signals. This steady beat of the rail line's catalog of parts inspired the graphic bars of the transition zones that ripple the mixing zone and overlook edges. The drawn out, banded, blurred sensation of movement suggested the linear joints and pavement bands characteristic of the nodes.

MATERIALS



Trail surfaces, walls, furnishings, and other corridor elements are inspired by the scale and material quality of freight rail corridors - linear rails, timber ties, and angular, crushed basalt track ballast. These materials are expressed as long, linear elements or repeated units, evoking the uninterrupted line of the rail and the repetition of ties, spikes, and signals. Importantly, the finished character of proposed finishes and site elements should be refined and contemporary. Whereas the raw materials of the railway inspired the BGT material palette, the expression of those materials should dovetail with the refined aesthetic of the larger campus. Heavy timber mixing zone benches, for example, take their cues from the oversized dimensions of the railroad ties, but by hiding the mechanical fasteners and using finished lumber

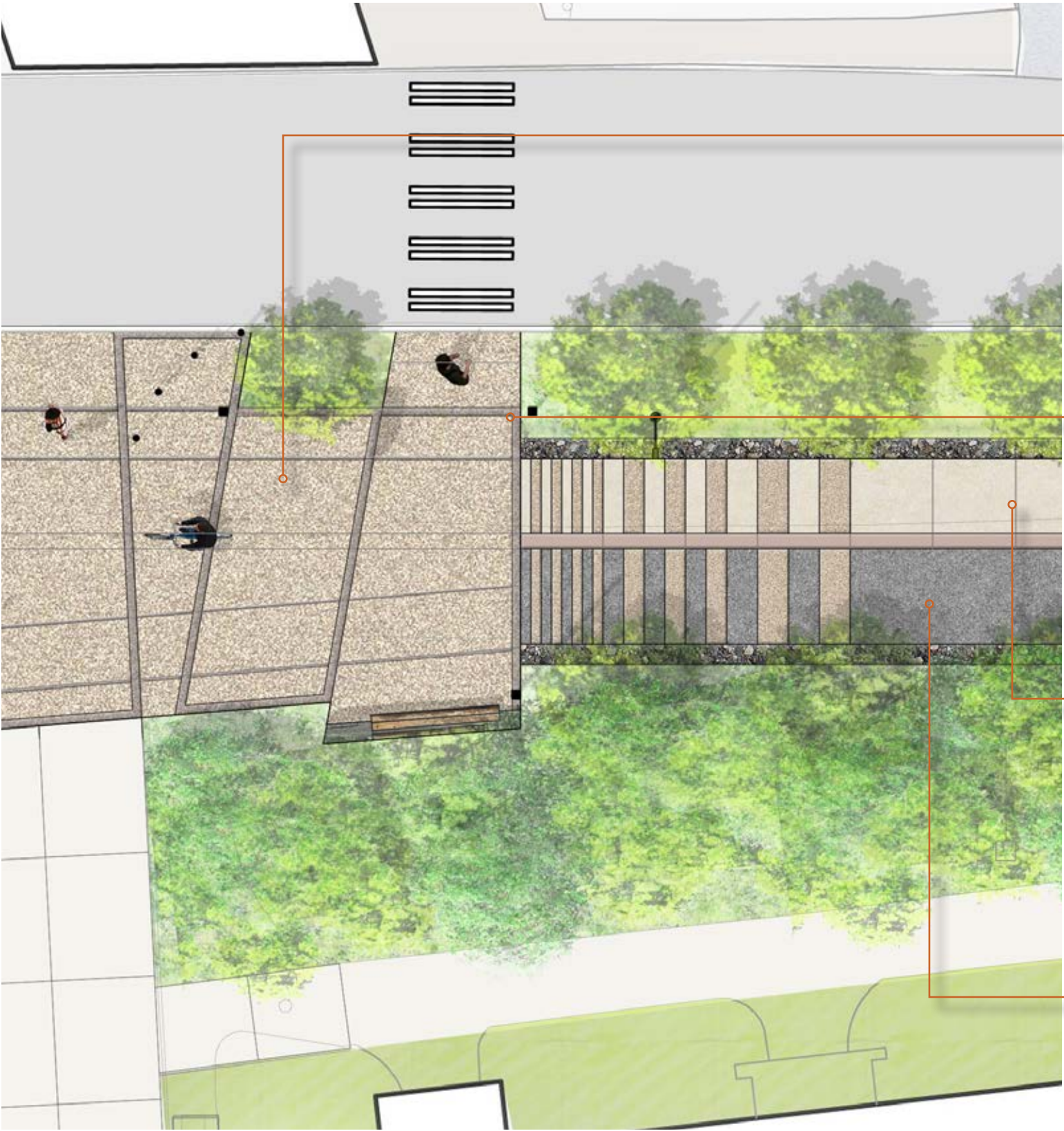
rather in lieu of creosote sleepers, the quality of the finished product is elevated beyond the simple industrial elements of the railroad.

Like the components of a rail line - true to material, expressive of function, repeated ad infinitum - the walls, materials, and furnishing proposed in the Trail Design Concept Plan leverage the length of the corridor to translate repeated details and elements into continuous experience. Sense of place is derived not only from the tactile nature of wood and well-formed concrete, but it is built up from the perception of a continuously reasserted detail cadence.

4.2 SURFACES AND FINISHES

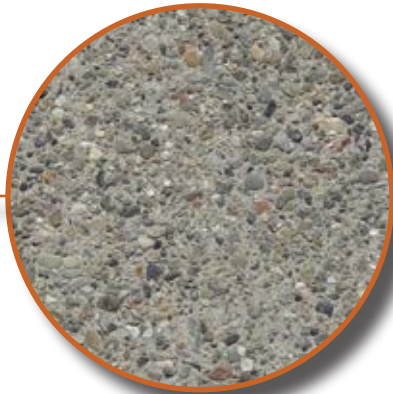
The BGT is not only a multimodal corridor, it is also a primary utility corridor over a good portion of its length. For this reason, trail and node pavements should be durable and rated for vehicular traffic.

Because the corridor carries heavy bicycle traffic, transition zone bands, score joints and control joints, and the texture of exposed aggregate paving should be carefully detailed to avoid overly rough or bumpy surfaces.



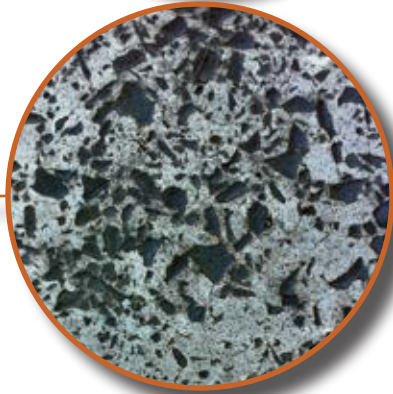
MIXING ZONE

Proposed mixing zones are constructed of vehicle-rated exposed aggregate concrete with integral integral color. Long transverse control joints are saw cut to align with connecting pathways, trail edges, and trail curbing.



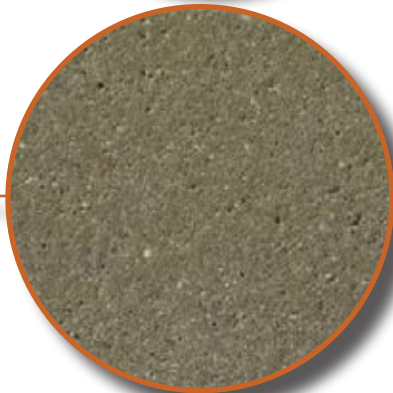
ACCENT BANDS

The accend bands wend their way through the nodes as continuous ribbons. These bands are composed of a contrasting exposed aggregate concrete utilizing a coarse, crushed basalt aggregate reminiscent of railbed ballast.



PEDESTRIAN PATH

The pedestrian path is constructed of vehicle-rated with a light broom finish. In order to create a visual contrast with the rolled concrete curb, integral color should be a consideration. Joints should align with modular wall systems to reinforce the corridors repetition and rhythm.



BICYCLE PATH

The bicycle path is constructed of vehicle-rated asphalt pavement. The aggregate mix of the specified asphalt should be of a fine quality suitable for bicycle and multiuse traffic.



4.3 FURNISHINGS, WALLS + LIGHTING

FURNISHINGS

The BGT should have a consistent, corridor-specific set of furnishings which serves to unify the corridor as a single continuous campus landscape. The furnishings proposed in the Trail Design Concept Plan are simple and unadorned with superfluous detail. They are inspired by rail corridor materials, though they represent a refined and contemporary interpretation of those materials, not an industrial aesthetic.

The BGT furnishings must necessary stand together in order to unify and define the corridor, but as elements that span a whole and varied campus, they must also be understated and avoid competing with the variety of architectural styles along the corridor and the disparate character of each of the five reaches. In this way the language of the BGT furnishings and materials must stand on their own while simultaneously creating a datum against which trail user experience can be measured and discordant styles reconciled.

The sketch below describes the following furnishings and materials, all of which are characterized by their use of honest materials, and simple, utilitarian forms:

- precast concrete plank retaining wall
- wood slab bench with site-site cast concrete plinth
- pole top luminaire
- pole lamp
- bollard lamp
- integral luminaire at wall
- simple U or staple bicycle rack
- steel post ‘fence’
- steel and cable fence



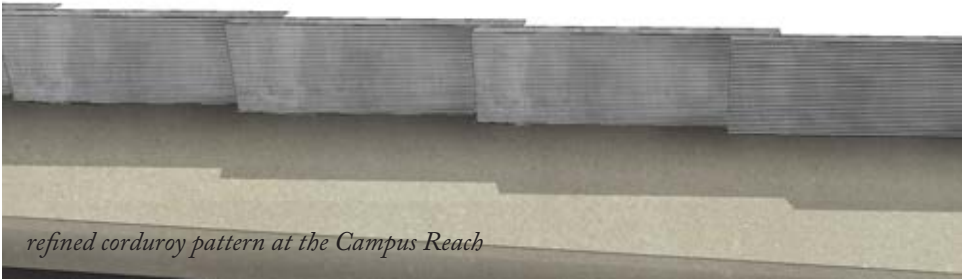
WALLS

Described elsewhere in this document as regular, modular, precast panels tilted up into an overlapping chevron pattern, the retaining wall illustrated below and at right is intended to reinforce a sense of repeated interval, to bolster the staccato rhythm derived from the experience of the rail corridor and translated into BGT features. Whether that rhythm and repetition is created by virtue of a modular system similar to the rendered wall or by some other means (consistent and frequent reglets, inlaid wall features, repeated, integrated lighting), the import is that a consistent trail cadence is established by virtue of the node spacing and reinforced at the level of continuous experience by trail pavements and repeated trail elements.

Given the need to expand the trail section into already steep slopes, retaining structures will undoubtedly be a ubiquitous component of the future trail corridor. Pending geotechnical considerations, a consistent application of retaining strategy may be desirable for reasons of constructability and legibility, but subtle variations in the detailed nuance of the walls will help identify the trail reaches in which the lengths of wall are constructed. At right, variations in the precast panel patterning suggest how a single wall unit might be adapted to specific reaches, reinforcing the distinct qualities of each.



boardform concrete panels at the industrial Northlake Reach

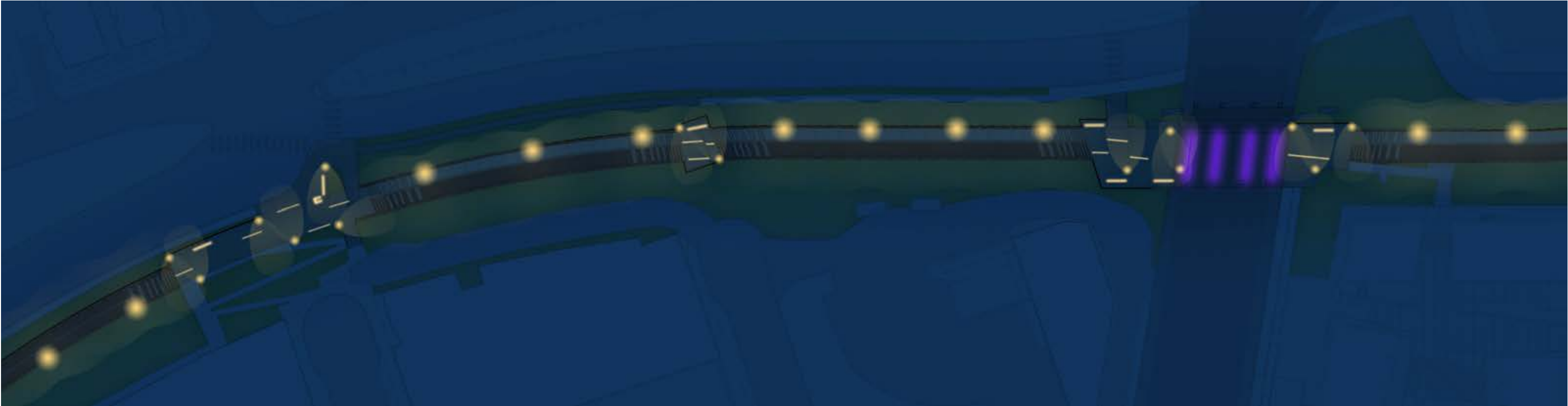


refined corduroy pattern at the Campus Reach



wabi-sabi banding at the Forest Reach

LIGHTING



The purpose of trail lighting is twofold. First, it must fully and consistently illuminate the trail corridor’s trail segments to provide for traffic safety and personal safety. Second, it must create a unique sense of place, a trail-specific atmosphere experienced at the pedestrian level. This dual goal is accomplished by way of a lighting hierarchy.

As illustrated above, trail segments are illuminated with tall pole mounted lamps (shown at left). While the pole height and spacing of these lights will ultimately derive from a detailed photometric study, one which accounts for adjacent street lighting and the light-blocking effects of trees along the corridor, their height will be near-to-street-lamp scale (in keeping with the widths and lengths of a substantial trail corridor) but their quality and character should be in keeping with a bicycle and pedestrian experience. Where substantial tree canopy inhibits consistent and even light distribution, integrates wall lights may assist with illumination and reinforce the rhythm of repeated trailside elements.

At the mixing zones and overlooks, pole lamps will bring trail lighting down to the pedestrian level, providing additional illumination at those places where trail users linger and cross traffic encounters trail traffic.

Accent lighting provides the third and final tier in the lighting hierarchy. Accent lighting may be integrated into site furnishings (handrails, guardrails, benches), it may occur as in-grade

LED, and it should be incorporated into wayfinding elements, campus markers, and campus gateways. Integral accent lighting at furnishings and pavements should reinforce the linear qualities of the corridor, emphasizing the vectors of connecting pathways and the through movement of the trail. At special locations, accent lighting can also be used reinforce the university brand and develop a unique atmosphere. Bridge undercrossings in particular provide an opportunity for uplighting and the development of luminescent campus gateways.



North Wharf, Auckland, Australia
Flush, in-grade bands of light accent abandoned whaft rail lines. A similar application at the proposed mixing zones would reinforce the directional quality of the corridor and the vectors associated with connecting pathways.

4.4 PLANTING CONCEPT

Whereas a detailed planting design is beyond the scope of this project, there are several concept-level planting strategies which merit inclusion in this document. First and foremost, the plantings associated with the redeveloped and expanded BGT corridor should do no harm. That is, the primary purpose of the BGT corridor redevelopment is safety and traffic conflict mediation. As such, the BGT corridor plantings should be designed to accommodate view triangles and open up sight lines at mixing zones. The *University of Washington Master Plan* also provides practical guidelines concerning safety, form, and the functional aspects of landscape structure in its **General Open Space and Landscape Policies**.

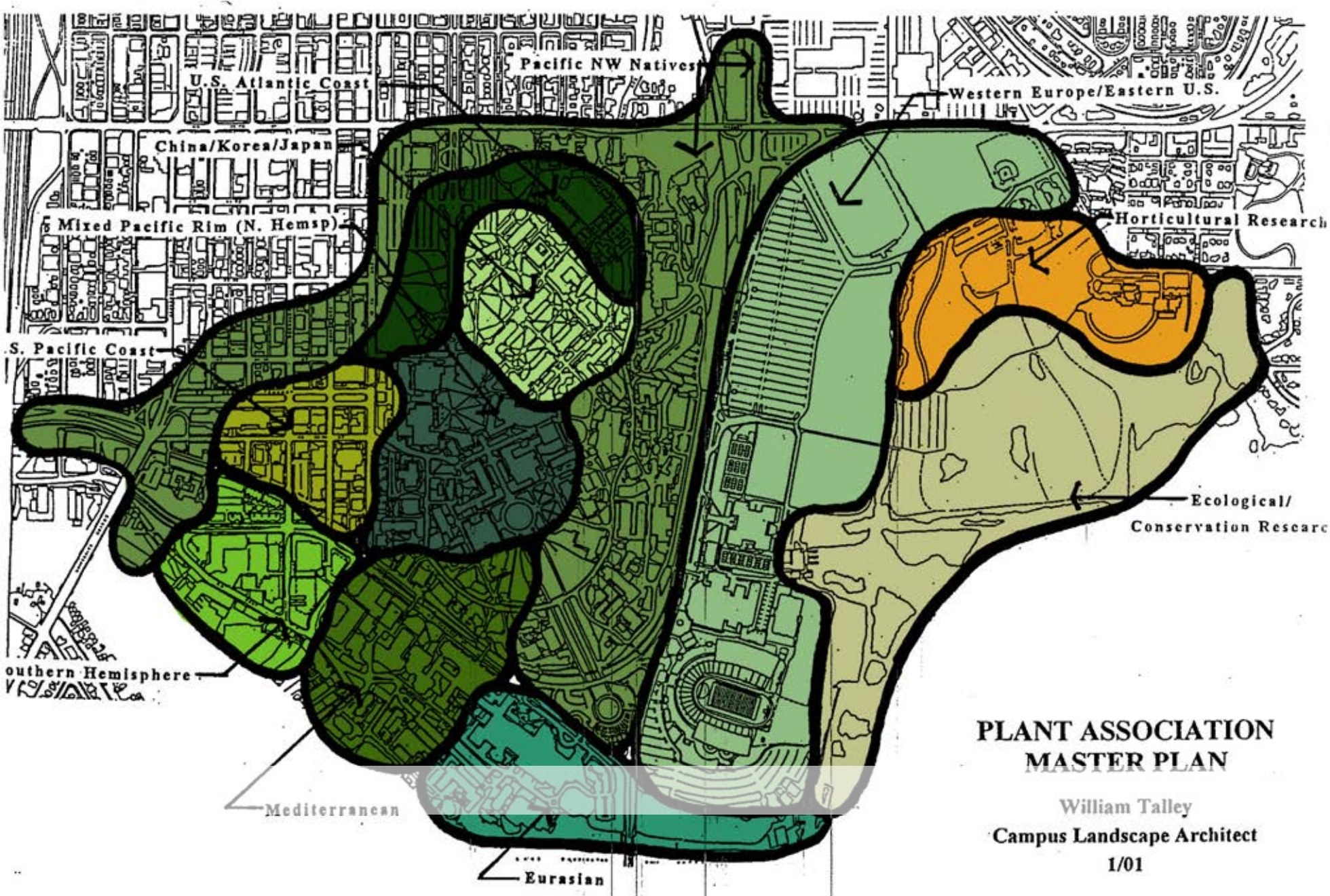
Moving beyond the practical, inherent in the existing BGT corridor’s vegetation structure is the germ of a future planting strategy. As described earlier, the five individual trail reaches



Care should be taken to avoid over-planting critical intersections.



Mature trees and specimen trees should be preserved whenever possible.



are each characterized by a unique planting palette and that planting palette, while rooted in the particulars of each reach, also (not coincidentally) align with the university’s Plant Association Master Plan. While this document is somewhat dated, its coarse grain nature is useful in lens for examining the whole of the corridor and the breaks between reaches very nearly align with the breaks between plant associations. It suggests that a reach-specific planting structure is desirable not only because it reinforces the unique character of distinct stretches of trail, but also because it helps to associate those distinct reaches with the larger puzzle pieces of the surrounding campus.

A third, very important component of the corridor planting strategy pertains to heritage and specimen trees. The proposed BGT redevelopment hinges on a much wider trail sec-

tion - often twice as wide as the existing trail. As the detailed design process hones in on the particulars during the next phase of work, great care should be taken to accommodate significant trees. The mature canopy of a campus forest does the heavy lifting with respect to identity, placemaking and quality of open space. The proposed alignment should carefully consider pinch points, slight jogs in trail alignment, structured soil, and retaining structures as necessary and where practical to protect the campus forest.

Finally, the corridor planting design should be rooted in the particulars of the Pacific Northwest landscape. It should be place specific, regionally appropriate, climate adaptive, and require minimal maintenance.

4.5 CAMPUS PLACES

Whereas much has been said of the collective power of repeated elements adding up to a perception of a unique trail corridor character, it is important to note that the mixing zones and overlooks proposed in the Trail Design Concept Plan are also understood as distinct, focused landscape spaces. As such, the proposed materials, finishes, and furnishings described in this document were selected not only in pursuit of a coherent linear landscape, but for their ability to create polished, memorable campus places wherever nodes are situated along the trail. The graphics at right - perspective views of the Wahkiakum Mixing Zone and Lewis Lane Mixing Zone - begin to suggest how the hierarchy of BGT nodes creates a hierarchy of campus spaces. They also illustrate how the catalog of site improvements described in the preceding pages work in concert to elevate what might have been simple signal controlled intersections to usable, habitable plazas.



The proposed Wahkiakum Mixing Zone.



A long-range vision for the Lewis Lane Mixing Zone illustrating the proposed, multi-level mixing zone, new bicycle bridge, and the future development of site 21C.

PHYSICAL APPENDICES

PA1: 30 SCALE TRAIL PLANS / PA2: 30 SCALE TRAIL PLANS

PA1 and PA2 are comprised of a 30 scale version of the rendered trail plans found earlier in this document and a 30 scale plan diagram (which clarifies trail connections and project scope), respectively. Print versions of this document are unlikely to include these full-size drawings (which measure 30x42 and 30x84 inches depending upon the reach in question). Please inquire with university staff for digital copies of these plans if they are not appended to this book.

PA3: OPINION OF PROBABLE CONSTRUCTION COSTS

The estimate summary included below accounts for direct construction costs for work associated with the construction of the trail as shown, at a conceptual level. This includes general utility costs for stormwater and electrical work associated with the trail improvements. Other utility work serving areas outside the trail itself is not included. General conditions, including mobilization and traffic control, are not included.

Costs by Reach:

Northlake		
Estimate:		\$700,400
20% Contingency		140,080
Total		840,480
Neighborhood		
Estimate:		860,300
20% Contingency		172,060
Total		1,032,360
Garden		
Estimate:		790,000
20% Contingency		158,000
Total		948,000
Campus		
Estimate:		2,732,400
20% Contingency		546,480
Total		3,278,880
Forest		
Estimate:		3,168,150
20% Contingency		633,630
Total		3,801,780
TOTAL	\$9,901,500	\$9,901,500



PA4: HEC EDMUNDSON BRIDGE REPLACEMENT BASIS OF DESIGN

A sub-component of the *Trail Design Concept Plan* is the Hec Edmundson Bridge Replacement Basis of Design study. This study was undertaken as a means of identifying the key issues attendant to the future replacement of the Hec Ed Pedestrian Bridge. This information was collected partly via research and partly by way of conceptual design investigations (see sketches below). It is offered here as a means of structuring the conversation around this future issue.

BACKGROUND:

year designed:	1938
year built:	?

DESIGN CONSTRAINTS:

Topography

elevation at Montlake Boulevard NE	
high point:	+58
low point:	+57

required clearance at Montlake

per *WSDOT Design Manual*, p. 720-4, section 720.05 (5) (b) 3.:

3. Pedestrian Bridge Over a Roadway

The minimum vertical clearance for a pedestrian bridge over a roadway is 17.5 feet.

assumed depth of bridge:	3 ft
resulting bridge deck elevation:	+78.5 (proposed)
elevation at BGT bridge landing:	+75 (existing)
elevation at Mason Road above BGT bridge landing:	+87.5 (existing)
elevation at Hec Edmundson Pavilion	
upper level:	+60 (existing)
lower level:	+57 (existing)
elevation differential at east bridge landing:	18.5 (min) / 21.5 (max)

Bridge Components

length of 5% ramp at east landing:	370 LF (min) / 430 LF (max)
length of 8% ramp at east landing:	290 LF (min) / 335 LF (max)
number of 6” risers at east landing:	37 (min) / 43 (max)

RELEVANT PLANNING DOCUMENTS:

University of Washington Master Plan – Seattle Campus (2003)

import: Hec Edmundson Bridge is identified as component of both a “desired [connection] beyond Central Campus” (12) and a “desired [connection] beyond East Campus” (16); Hec Edmundson Bridge is identified as an opportunity for an “Enhanced Pedestrian Connection” (63); Hec Edmundson Bridge is identified as the only bicycle route crossing at Montlake Boulevard (65); identifies improvements at Snohomish Lane west and east of Hec Edmundson Bridge (105, 116)

ICA Master Plan

import: defines vision for Snohomish Lane N; defines options for East Campus build-out

University of Washington Burke–Gilman Trail Corridor Study (2011)

import: identifies the west landing of the existing Hec Edmundson Bridge as, “one of the most heavily used [Burke Gilman] Trail crossings on campus.”

University of Washington Master Plan Transportation Technical Report (2001)

import: identifies Hec Edmundson Bridge and Snohomish Lane as a component of both the Pedestrian Improvement Plan, Bicycle Improvement Plan, and Bicycle Action Plan (1-9, 1-11, 5-18)

RELEVANT ON-GOING PROJECTS:

- *University of Washington Burke Gilman Trail Design Concept Plan*
- ICA construction projects / feasibility studies
- Montlake Triangle + Lower Rainier Vista Improvements
- Sound Transit University Link Station

PROJECT GOALS:

- provide a safe, accessible, pedestrian and bicycle connection between the Central Campus and East Campus
- create a campus gateway / marker / public address
- develop a form and aesthetic for the bridge appropriate to its function as a public face for the University
- anticipate master plan level improvements to Snohomish Lane
- meet clearance requirements at Montlake Boulevard
- improve both day-to-day flows of student traffic and arena- or stadium-bound event traffic



PA5: STICKY NOTES

The Sticky Notes appendix functions much like endnotes, offering additional information on the plans seen earlier in this document. The purpose of this appendix is to identify those issues which, while germane to the Trail Design Concept Plan, are beyond the scope of this particular phase of the BGT’s redevelopment. As the proposed plan is built out in the future, these issues should be attended to during the detailed design process. This is the future designer’s to-do list.

- 1
- 1a. The existing stairs and ramp at the north side of the Benjamin Hall Interdisciplinary Research Building should be evaluated for utility. Possible reconfigurations of these site elements should be considered in the pursuit of a more abbreviated 7th Avenue NE Mixing Zone.
- 1b. Bicycle access between the 7th Avenue Mixing Zone and the city’s bicycle facilities on NE 40th Street is important; the detailed design of the 7th Avenue Mixing Zone should consider how to strengthen this connection.
- 1c. The detailed design of the 7th Avenue NE Mixing Zone should be coordinated with the City of Seattle and should respond to COS plans for the realignment and redesign of the intersection between 7th Avenue NE and NE 40th Street.
- 2
2. Consideration should be given to potential future connections to the south at the 8th Avenue Overlook. The viability of a ramping connection for bicycles and/or a stair connection between the overlook and 8th Avenue NE below should be evaluated during the design phase.
- 3
3. The existing “Wall of Death” art installation must be protected and coordinated with under-bridge improvements at the University Bridge Underpass Mixing Zone. All under-bridge improvements must be coordinated with the City of Seattle.
- 4
4. The detailed design of the Cowlitz Road Mixing Zone must carefully attend to the topographical issues that characterize this north-south connection. A ramping connection at this location should be designed to accommodate the oversized kid-movers used by the Child Care Center. The south slope created by the proposed raised BGT alignment must be thoughtfully designed to avoid creating a steep, inhospitable wall facing Stevens Court.

- 5
5. The intersection of the BGT and Brooklyn Avenue NE proposes several substantial changes to the curb lines, on-street bicycle lanes, off-street bicycle paths, and crosswalk at the public right-of-way. These suggested improvements should be coordinated with the City of Seattle in the detailed design phase.
- 6
6. Access to the Seattle City Light substation at the east half of the Garden Reach must be maintained. The Garden and Neighborhood Reach alignments should be coordinated with SCL’s ongoing power and telecom reroute project, which is currently in-design and will be located at or adjacent to the trail segments between the University Bridge Underpass Mixing Zone and 15th Avenue NE.
- 7
7. The Lewis Lane Mixing Zone should be designed so as to anticipate, accommodate, and catalyze the future development of development sites 21C and 52S. The development of site 21C should be leveraged to create an accessible connection between NE Pacific Street and Stevens Way. The lower level of the Lewis Lane Mixing Zone must anticipate these developments while better accommodating existing bus and shuttle stops. This lower mixing zone level should strive to stitch sites 21C and 52S together, creating a substantial, safe, at-grade campus crossing at Pacific. The alignment of the pedestrian and bicycle pathways and the exact location of the future bicycle-only bridge should be studied in detail to determine how to best anticipate these future improvements and minimize the extent and height of required retaining structures along the south side of the trail.
- 8
- 8 The suggested realignment of Garfield Lane and Garfield Place, the reconfiguration of parking lot C10, and the changes to the garden pathways between the T-Wing Overpass and the bus shelters at Stevens Way should be understood as a conceptual investigation. Only those ramping connections spanning the change in grade between T-Wing above and the T-Wing West and T-Wing East Mixing Zones below are within the scope of the Trail Design Concept Plan. The alignment of these connections must take into account the locations of nearby trees which were outside the bounds of the project survey. The realignment of these pathways must also anticipate potential Garfield corridor improvements, changes to the C10 parking lot, and the Bicycle Shelters and Enclosures Study.
- 9
9. Whereas the Trail Design Concept Plan does not propose substantial revisions to the trail design codified in the Montlake Triangle and Lower Rainier Vista Improvements project, both the Montlake Triangle West and East Mixing Zones suggest slight modifications to the west and east ends of those improve-

ments. Potential revisions to proposed Montlake Triangle and Lower Rainier Vista improvements should be coordinated as soon as possible to avoid constructing pavements which will be removed at a near future date.

- 10
10. The design of the Hec Ed Mixing Zone must anticipate the replacement of the Hec Edmundson Pedestrian Bridge. This Mixing Zone design should be coordinated with East Campus master plan concepts embedded in the ICA Master Plan and planning and programming efforts currently underway for ICA Basketball Operations.
- 11
11. While the Trail Design Concept Plan largely treated the recommendations of the Pend Oreille Entry Improvements Study as a future built condition (i.e., suggested only minor revisions to the proposal), discussions between the UW Core Team and Design Team teased out several issues that a future design team should attend to in the detailed design phase. First, more direct, accessible connections should be made between the Pend Oreille and Ravine Mixing Zones and the street level crossing above the trail. The alignment of the sloping pathway connecting the Pend Oreille Mixing Zone to the intersection of Pend Oreille Road and 25th Avenue NE should be made so as to not preclude future uses and development of the existing parking lot. Utility access for heavy vehicles must be provided at both sides of the underpass.

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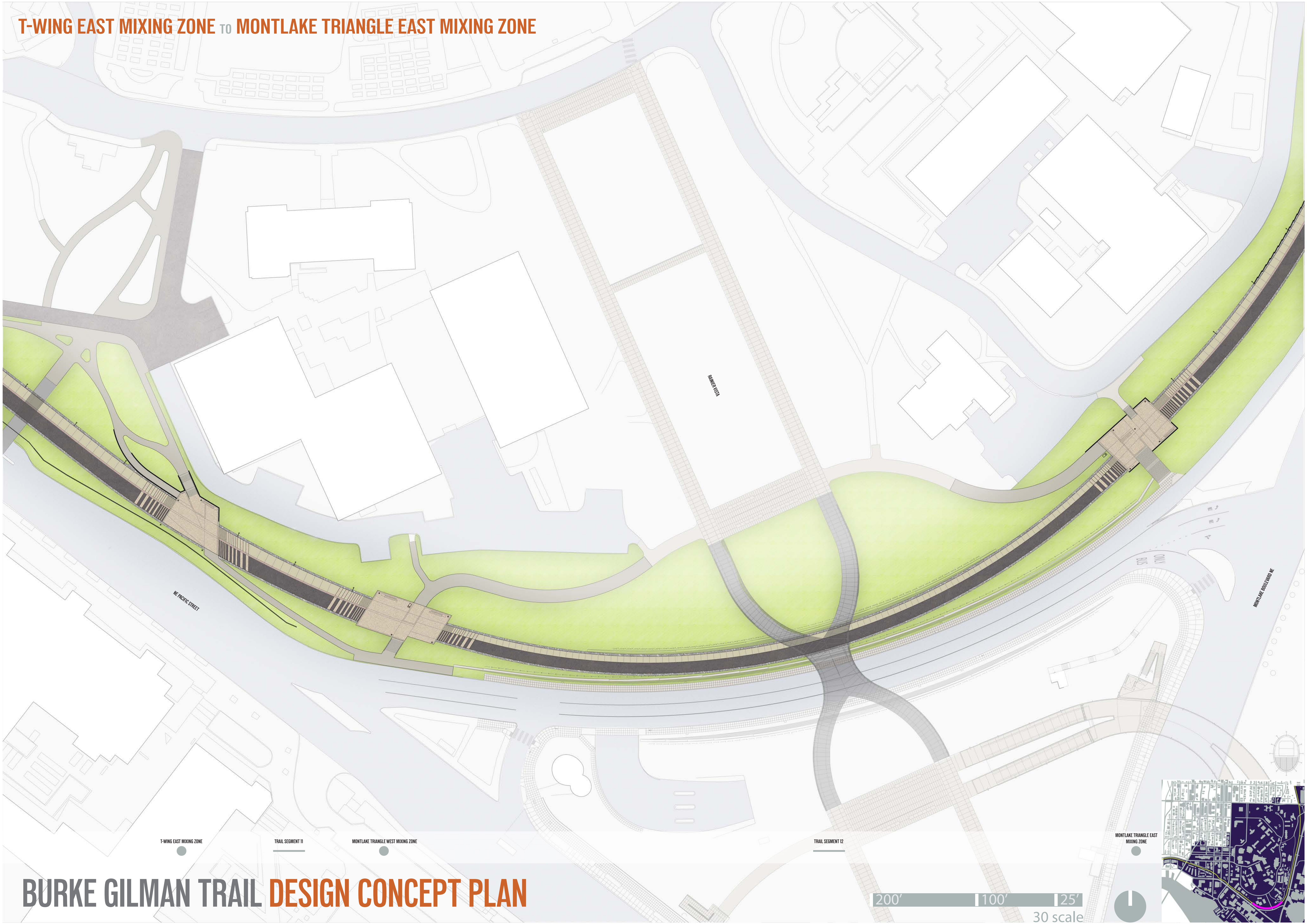
BROOKLYN AVE TO T-WING EAST MIXING ZONE

BURKE GILMAN TRAIL DESIGN CONCEPT PLAN

Map details include:

- Trail Segments:** TRAIL SEGMENT 6, TRAIL SEGMENT 7, TRAIL SEGMENT 8, TRAIL SEGMENT 9, TRAIL SEGMENT 10, TRAIL SEGMENT 11.
- Mixing Zones:** BROOKLYN AVENUE MIXING ZONE, UNIVERSITY WAY MIXING ZONE, 15TH AVENUE MIXING ZONE, LEWIS LANE MIXING ZONE, T-WING WEST MIXING ZONE, T-WING EAST MIXING ZONE, HORTLAND TRIANGLE WEST MIXING ZONE.
- Streets:** NE PACIFIC STREET, 15TH AVENUE, LEWIS LANE, T-WING AVENUE.
- Scale:** 200', 100', 25', 30 scale.
- Inset Map:** A small map in the bottom right corner shows the project location within a larger urban context.

T-WING EAST MIXING ZONE TO MONTLAKE TRIANGLE EAST MIXING ZONE



T-WING EAST MIXING ZONE

TRAIL SEGMENT 11

MONTLAKE TRIANGLE WEST MIXING ZONE

TRAIL SEGMENT 12

MONTLAKE TRIANGLE EAST MIXING ZONE

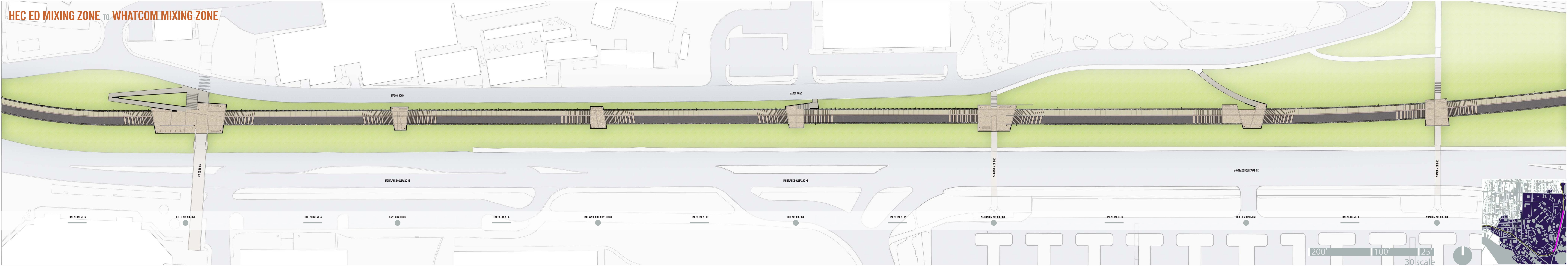
BURKE GILMAN TRAIL DESIGN CONCEPT PLAN

200' 100' 25'

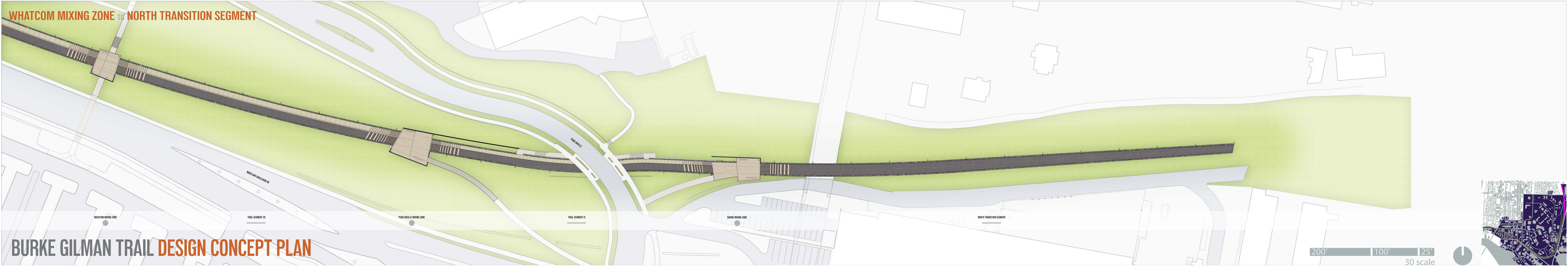
30 scale



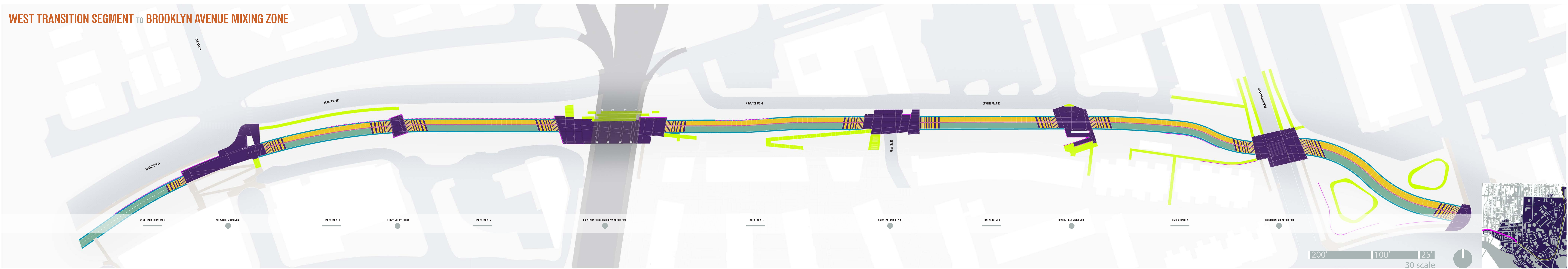
HEC ED MIXING ZONE TO WHATCOM MIXING ZONE



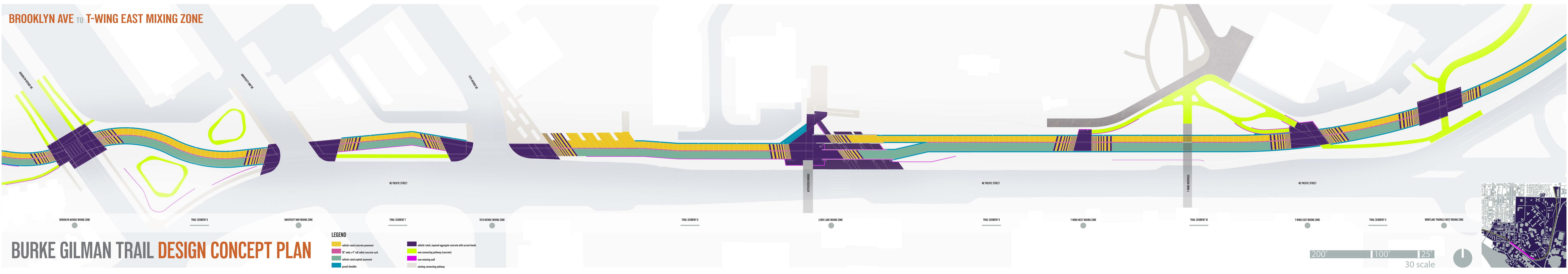
WHATCOM MIXING ZONE TO NORTH TRANSITION SEGMENT



WEST TRANSITION SEGMENT TO BROOKLYN AVENUE MIXING ZONE

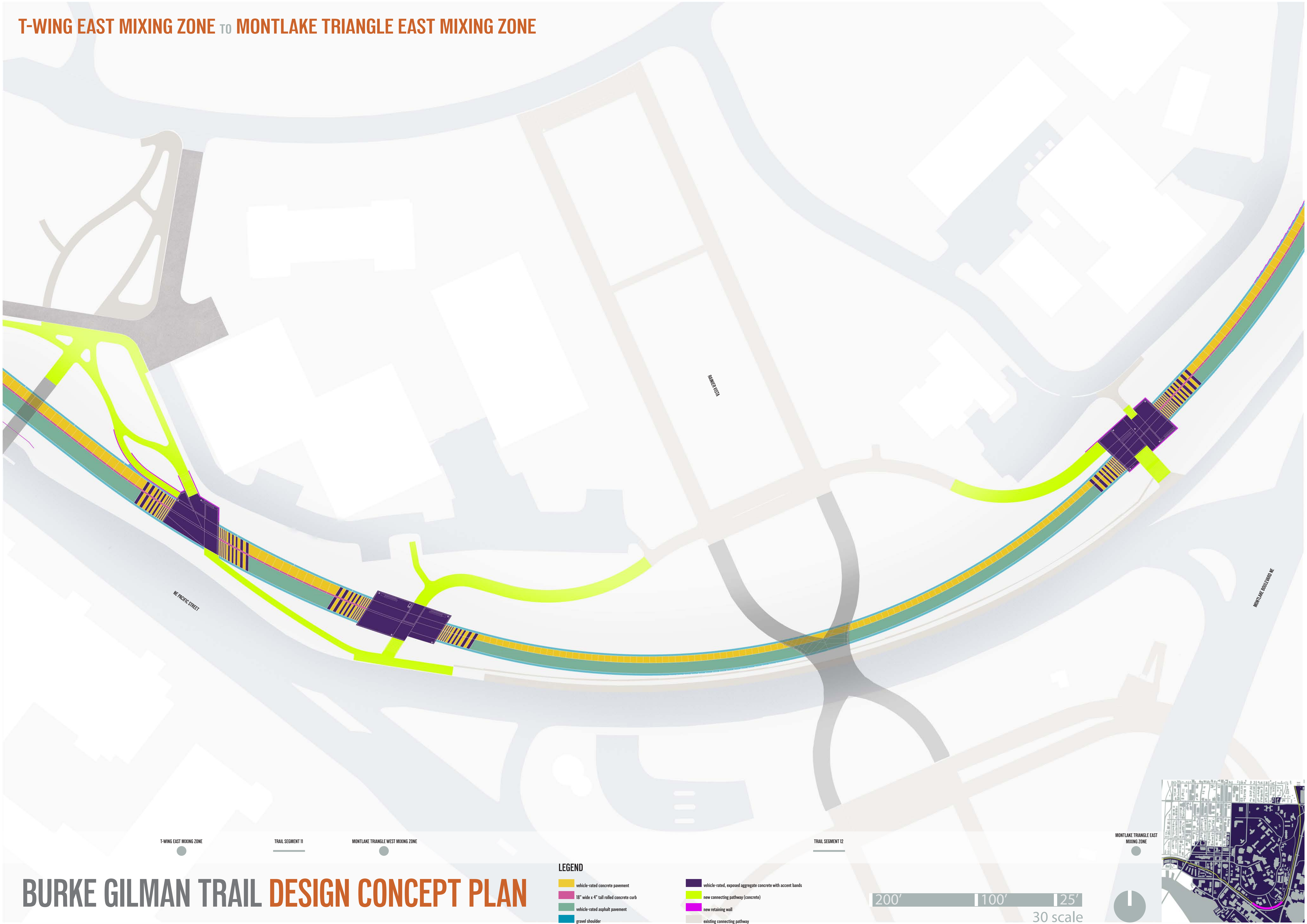


BROOKLYN AVE TO T-WING EAST MIXING ZONE



BURKE GILMAN TRAIL DESIGN CONCEPT PLAN

T-WING EAST MIXING ZONE TO MONTLAKE TRIANGLE EAST MIXING ZONE



BURKE GILMAN TRAIL DESIGN CONCEPT PLAN

LEGEND

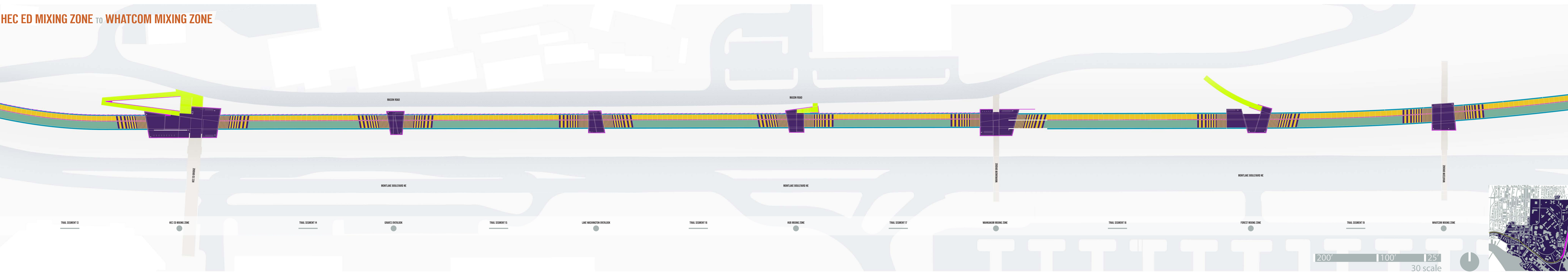
- vehicle-rated concrete pavement
- 18" wide x 4" tall rolled concrete curb
- vehicle-rated asphalt pavement
- gravel shoulder
- vehicle-rated, exposed aggregate concrete with accent bands
- new connecting pathway (concrete)
- new retaining wall
- existing connecting pathway

200' 100' 25'

30 scale



HEC ED MIXING ZONE TO WHATCOM MIXING ZONE



WHATCOM MIXING ZONE TO NORTH TRANSITION SEGMENT



BURKE GILMAN TRAIL DESIGN CONCEPT PLAN

- LEGEND
- vehicle-rated concrete pavement
 - 12" wide x 4" tall rolled concrete curb
 - vehicle-rated asphalt pavement
 - gravel shoulder
 - vehicle-rated, exposed aggregate concrete with accent bands
 - new connecting pathway (concrete)
 - new retaining wall
 - existing connecting pathway