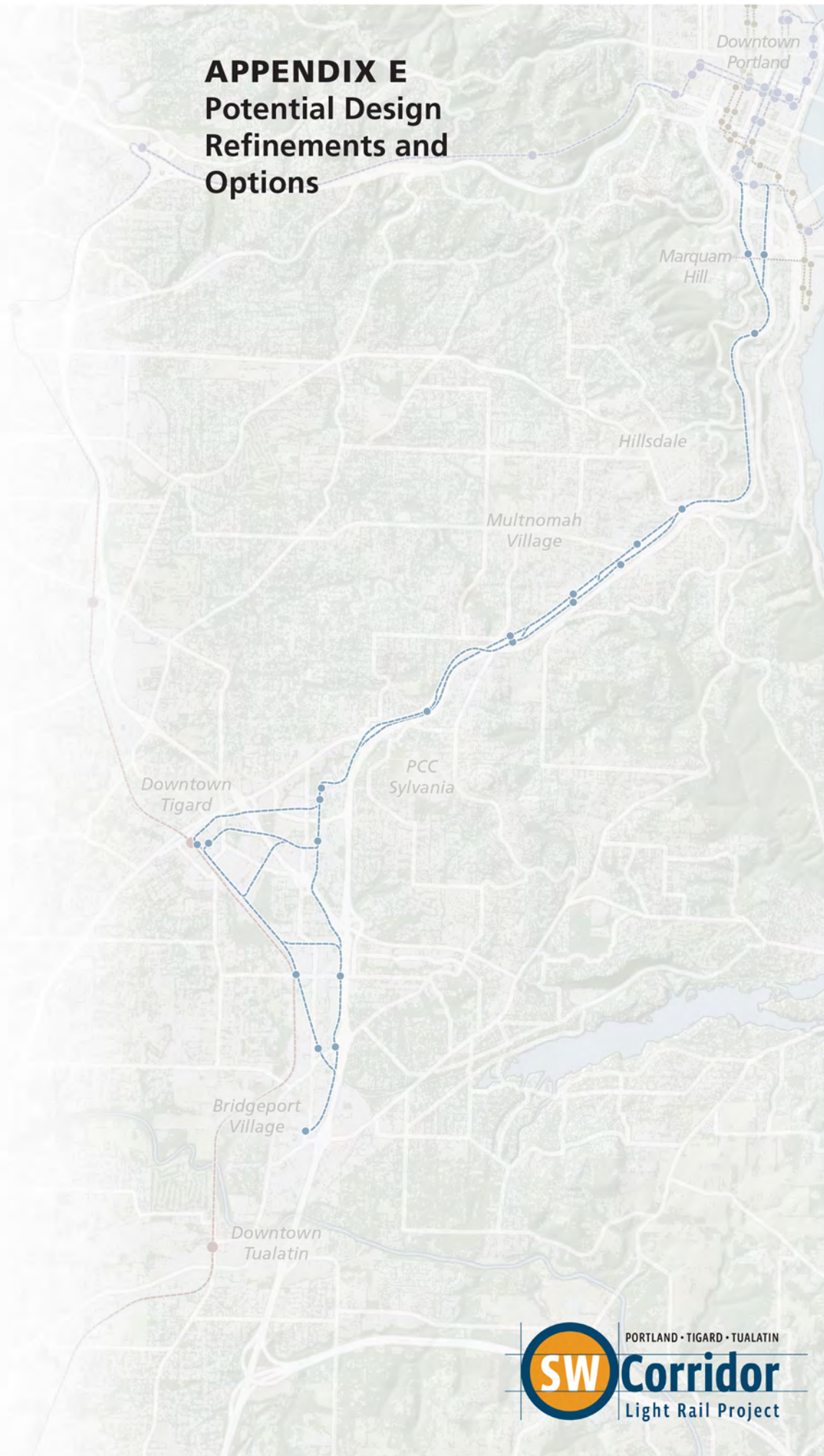


APPENDIX E Potential Design Refinements and Options



APPENDIX E – POTENTIAL DESIGN REFINEMENT CONCEPTS AND OPTIONS

This appendix provides information on potential design refinements that the Tri-County Metropolitan Transportation District of Oregon (TriMet), Metro and their partners have begun to develop based on the impacts analysis conducted for this Draft Environmental Impact Statement (EIS).

The following sections describe each potential design refinement, including a general discussion of how the concept could change the impacts of the alignment alternatives studied in this Draft EIS.

Some of these concepts would result in acquisition impacts that differ from what is shown in Appendix F, Properties Affected by Acquisitions. If these concepts are included in the Preferred Alternative, the associated property and other impacts will be analyzed in more detail in the Final EIS.

This appendix also describes the option for the Ross Island Bridgehead to be part of Alternative A1, and alternative station location options. The alternative station locations were considered during earlier project planning and could be mitigation measures if they reduce impacts compared to the stations within the alignment alternatives.

Figure E-1 shows the location of the six design refinement alignments and the three alternate station locations.

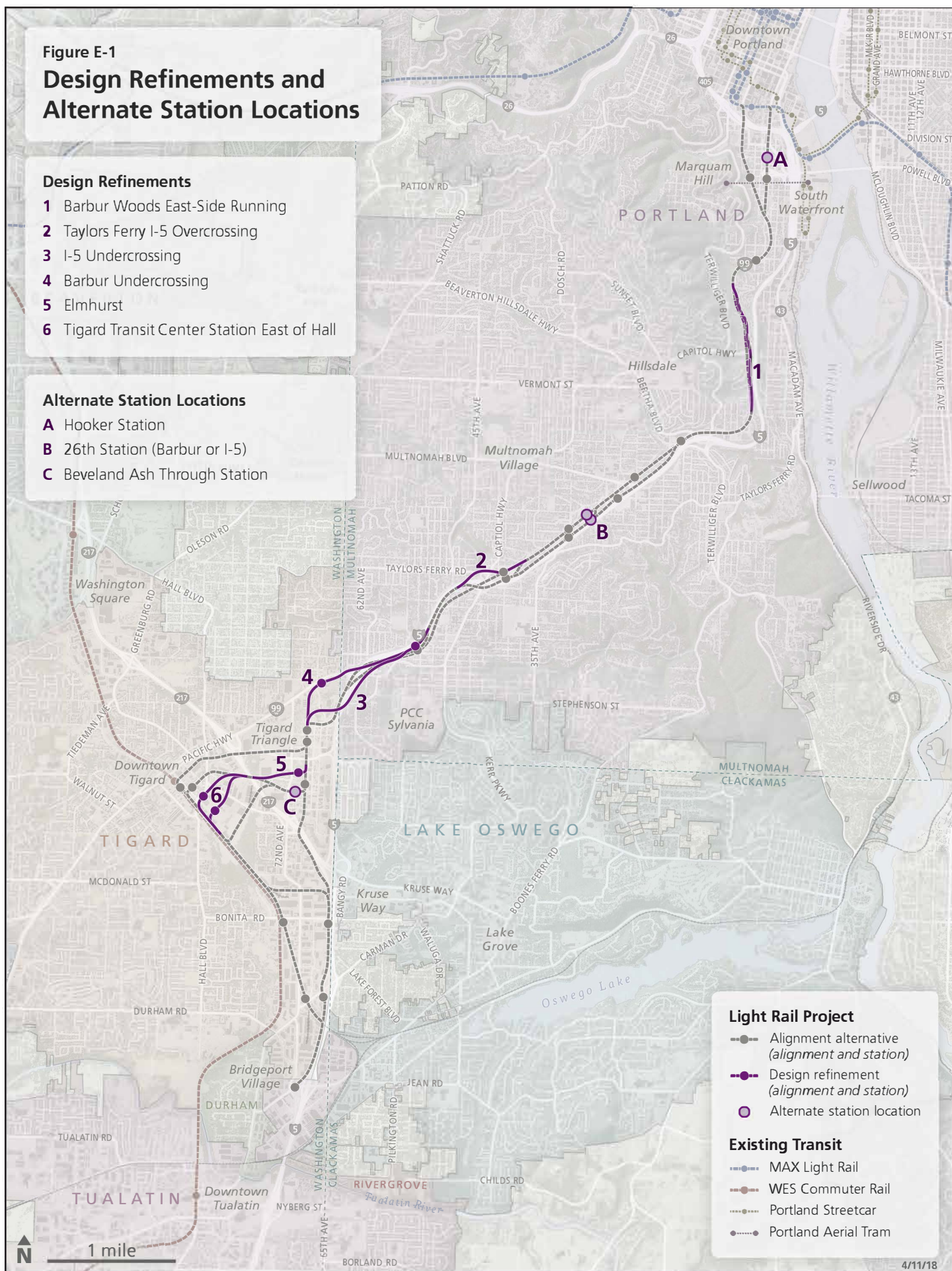
Figure E-1
Design Refinements and
Alternate Station Locations

Design Refinements

- 1** Barbur Woods East-Side Running
- 2** Taylors Ferry I-5 Overcrossing
- 3** I-5 Undercrossing
- 4** Barbur Undercrossing
- 5** Elmhurst
- 6** Tigard Transit Center Station East of Hall

Alternate Station Locations

- A** Hooker Station
- B** 26th Station (Barbur or I-5)
- C** Beveland Ash Through Station



4/11/18

Design Refinement 1: Barbur Woods East-Side Running

This design refinement was designed for Alternative A1 but could also be incorporated into Alternatives A2-BH and A2-LA. Figure E-2 illustrates how Refinement 1 would differ from Alternative A1.

Description

This design refinement would transition the light rail trackway from SW Barbur Boulevard onto a separate aerial guideway structure(s) to the east for approximately 1 mile. The alignment would be adjacent to SW Barbur Boulevard from approximately the entrance to Rasmussen Village (4950 SW Barbur Boulevard) to the north to SW Brier Place to the south, and primarily on an aerial structure(s) through this stretch.

Impacts Addressed

The shift in alignment to the east would be less disruptive to existing transportation facilities and operations and would avoid impacts to the existing Newbury and Vermont trestle bridges as well as to large earthen cut walls along the west side of SW Barbur Boulevard. This design refinement would avoid impacts to Section 4(f) resources, specifically the Newbury and Vermont trestle bridges, and move construction away from two parks (Terwilliger Parkway and George Himes Natural Area Park) and one historic residential property. Short-term traffic impacts would also be reduced in this area because this portion of SW Barbur Boulevard would not be reconstructed.

Key Assumptions

- The aerial guideway would be wide enough to accommodate double track light rail and potentially a multi-use path. Accommodation of bicycle and pedestrian improvements will be required within the corridor. This could include a multi-use path constructed as part of the aerial guideway or new or modified bicycle and pedestrian facilities on SW Barbur Boulevard.
- Widening the existing right of way of SW Barbur Boulevard would not be required to accommodate the bicycle and pedestrian improvements.
- Replacing or retrofitting the existing bridges on the portion of SW Barbur Boulevard would not be required.
- The light rail trackway would be paved as a shared transitway to allow bus access between north of SW Capitol Highway (near Rasmussen Village) and SW Caruthers Street.
- The Oregon Department of Transportation (ODOT) would accept this design provided that it would not negatively impact existing I-5 retaining walls or tie-backs.
- The side-running design would not make existing slopes unstable between I-5 and Barbur Boulevard.

Overall Changes in Impacts or Other Benefits

- Refinement 1 would have similar impacts to Rasmussen Village, which is an eligible historic property. These impacts would be confined to the southwestern corner of the property and would not impact any existing structures. Under this design refinement, no other historic properties would be affected in this stretch of SW Barbur Boulevard.

- Construction would not be required at the ramp from southbound SW Barbur Boulevard to SW Capital Highway and property impacts to a historic residential property on SW Ralston Road would be avoided.
- For nearly the entire length of the design refinement alignment, removal of vegetation and construction that would affect earthen cut walls would be avoided along the west side of SW Barbur Boulevard. This portion of SW Barbur Boulevard is adjacent to two Section 4(f) resources, Terwilliger Parkway and George Himes Natural Area Park.
- Property acquisition and vegetation removal would be required between SW Barbur Boulevard and I-5 but no existing structures would be removed. Refinement 1 would not affect any new properties with full or partial parcel acquisitions that would not be affected already under Alternative A1.
- This design refinement would avoid reconstruction or other impacts to the Newbury and Vermont trestle bridges, which are potentially eligible for listing in the National Register of Historic Places.
- Light rail trains would cross from the center of SW Barbur Boulevard to the east side of the roadway near Rasmussen Village and back to the center of SW Barbur Boulevard at approximately SW Brier Place. Both crossings are assumed to be at-grade and gated, but could potentially be grade-separated.

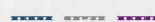
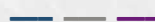
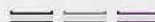


Figure E-2

Design Refinement 1: Barbur Woods East-Side Running

Components of Design Refinement 1

Compared to Alternative A1 (also compatible with Alternatives A2-BH and A2-LA)

Trackway


-  Center- or side-running in roadway
-  Separated from roadway
-  On new or reconstructed structure
-  Includes buses in shared transitway
-  In underpass

Stations




-  Station

At-Grade Intersections

-  Signalized
 -  Gated
 -  Signalized and gated
 -  Walk/bike crossing (not at stations)
-  Added with Design Refinement 1
 Removed
 Unchanged

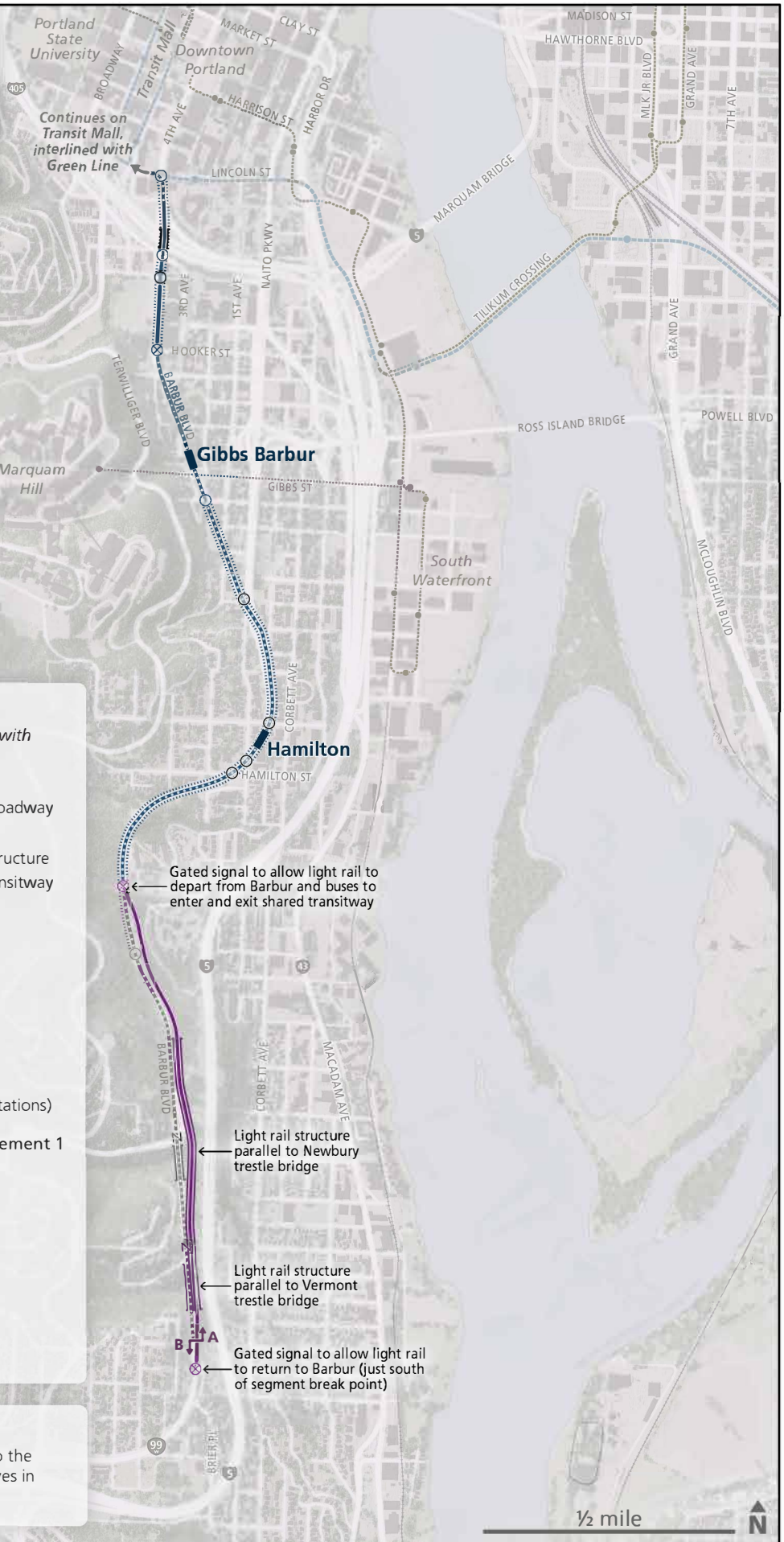
-  Segment break point

Existing Transit

-  MAX Light Rail
-  Portland Streetcar
-  Portland Aerial Tram

Note

Design refinements have not been designed to the same level of detail as the alignment alternatives in this Draft EIS. Designs are subject to change.



Design Refinement 2: Taylors Ferry I-5 Overcrossing

This design refinement was designed for Alternative B2 but could also be incorporated into Alternatives B1, B3 and B4. Figure E-3 illustrates how Refinement 2 would differ from Alternative B2.

Description

This design refinement would shift the light rail alignment north at the Barbur Transit Center to run along the north side of SW Taylors Ferry Road and cross SW Capitol Highway at grade before turning south to make a perpendicular crossing of I-5 on an aerial guideway structure. The aerial guideway structure would cross I-5 west of the existing elevated crossing of I-5 by SW Barbur Boulevard and SW Capitol Highway.

Impacts Addressed

This design refinement avoids major construction above or reconstruction of the I-5 and SW Barbur Boulevard/SW Capitol Highway interchange. Under Alternative B1, this interchange would need to be completely rebuilt to accommodate the center-running light rail trackway; under Alternatives B2, B3 and B4, an aerial light rail guideway would be constructed over the southern portion of the intersection. Therefore, this design refinement would avoid extensive traffic impacts associated with major construction at this intersection of three major roads and would reduce the need for longer-term, staged closures to I-5 needed to construct a long, curved guideway structure that would cross over the I-5 travel lanes at an oblique angle. It would also reduce the height of visual elements associated with Alternatives B2, B3 and B4, specifically the light rail overcrossing of I-5 and Barbur.

Key Assumptions

- No piers or light rail features are proposed that would be constructed within the planning envelope area for future widening of I-5.
- No bridge columns would be required for the light rail aerial guideway in the I-5 median.
- Additional storage lanes would be added on SW Taylors Ferry Road and SW Capitol Highway to mitigate traffic impacts from light rail operations (e.g., added wait time at rail crossing gates).
- TriMet would coordinate with ODOT and the City of Portland to minimize impacts to the planned signal at SW Capitol Highway and SW Taylors Ferry Road as required to restrict northbound left turn movements from SW Capitol Highway to the southbound I-5 entrance ramp.

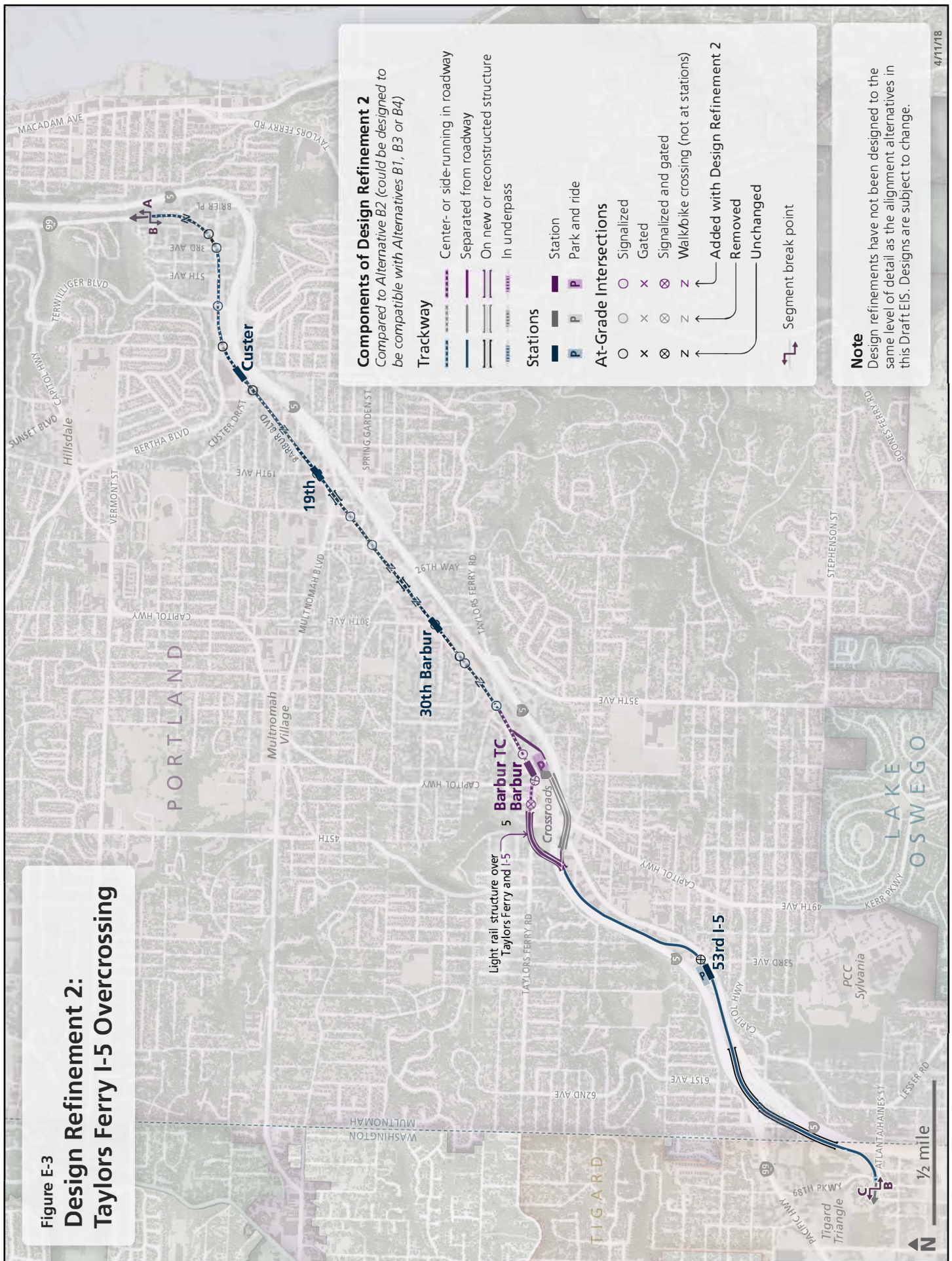
Overall Changes in Impacts or Other Benefits

- Compared to Alternative B1, this design refinement would not require reconstruction of the I-5 SW Barbur Boulevard/SW Capitol Highway interchange, which would greatly reduce short-term traffic impacts and the complexity of construction because it not would require temporary closures or rerouting of the three major roadways that cross at this intersection.
- Compared to Alternatives B2, B3 and B4, this design refinement would substantially reduce the height and visual impact of the light rail alignment crossing over I-5 because it would no longer cross over an elevated portion of the SW Barbur Boulevard overcrossing of I-5. This would also reduce the complexity of the construction because it would not be a third-tier overcrossing of both SW Barbur Boulevard and I-5.

- There would be more potentially-eligible historic properties that would need to be analyzed because they might be impacted under this design refinement. Specifically, there are two commercial properties along SW Taylors Ferry Road that are potentially eligible.
- There could be a potential permanent or temporary use of the southeast corner of a Section 4(f) property, the Woods Memorial Nature Park, though this portion of the park does not contain trails, programmed areas, or other public access.
- Compared to Alternatives B1, B2, B3 and B4, there would be a similar number of partial and full property acquisitions, though the specific properties to be acquired would be different.
- There could be new noise and vibration impacts along SW Taylors Ferry Road. Noise impacts would be likely along the west side of the elevated structure, with mitigation in the form of sound walls along the retained fill (abutment) and the elevated structure over I-5. Noise impacts and vibration impacts would be likely along the east side of SW Barbur Boulevard north and south of SW Luradel Street. Mitigation for additional noise and vibration impacts would include sound walls for noise where possible, ballast mats and resilient fasteners for vibration.

Figure E-3

Design Refinement 2: Taylors Ferry I-5 Overcrossing



Design Refinement 3: I-5 Undercrossing

This design refinement was designed for Alternative B2 but could also be incorporated into Alternatives B1, B3 and B4. Figure E-4 illustrates how Refinement 3 would differ from Alternative B2.

Description

At the western end of the park and ride at the 53rd Station, light rail would cross SW Barbur Boulevard at-grade at a new signalized intersection. This intersection would also provide access to the park and ride and to a new frontage road along the south side of the alignment connecting to SW 60th Avenue. The alignment would then continue along the east side of I-5 and would descend and turn west to cross under I-5 north of and parallel to SW Haines Street/SW Atlanta Street. The alignment would then cross SW 68th Parkway at grade before turning south and connecting to SW 70th Avenue and the Segment C alignment alternatives.

Impacts Addressed

This design refinement would reduce traffic impacts related to construction of a long aerial light rail guideway over I-5 and SW Barbur Boulevard and the need for staged lane closures on I-5 and ramp closures associated with the I-5 and 99W interchange. It would also reduce the height of visual elements, specifically the light rail overcrossing of I-5 and Barbur.

Key Assumptions

- The access from SW 60th Avenue to SW Barbur Boulevard would be removed and SW 60th Avenue would instead turn northeast and become a frontage road to preserve commercial and residential access, with access to SW Barbur Boulevard provided at the new signalized intersection/light rail at-grade crossing at SW 53rd Avenue.
- The alternative would be within the I-5 planning envelope on the east side of I-5 and may require modification of the I-5 off ramp.
- Approval by City of Portland, City of Tigard and ODOT would be required for any at-grade light rail crossings.

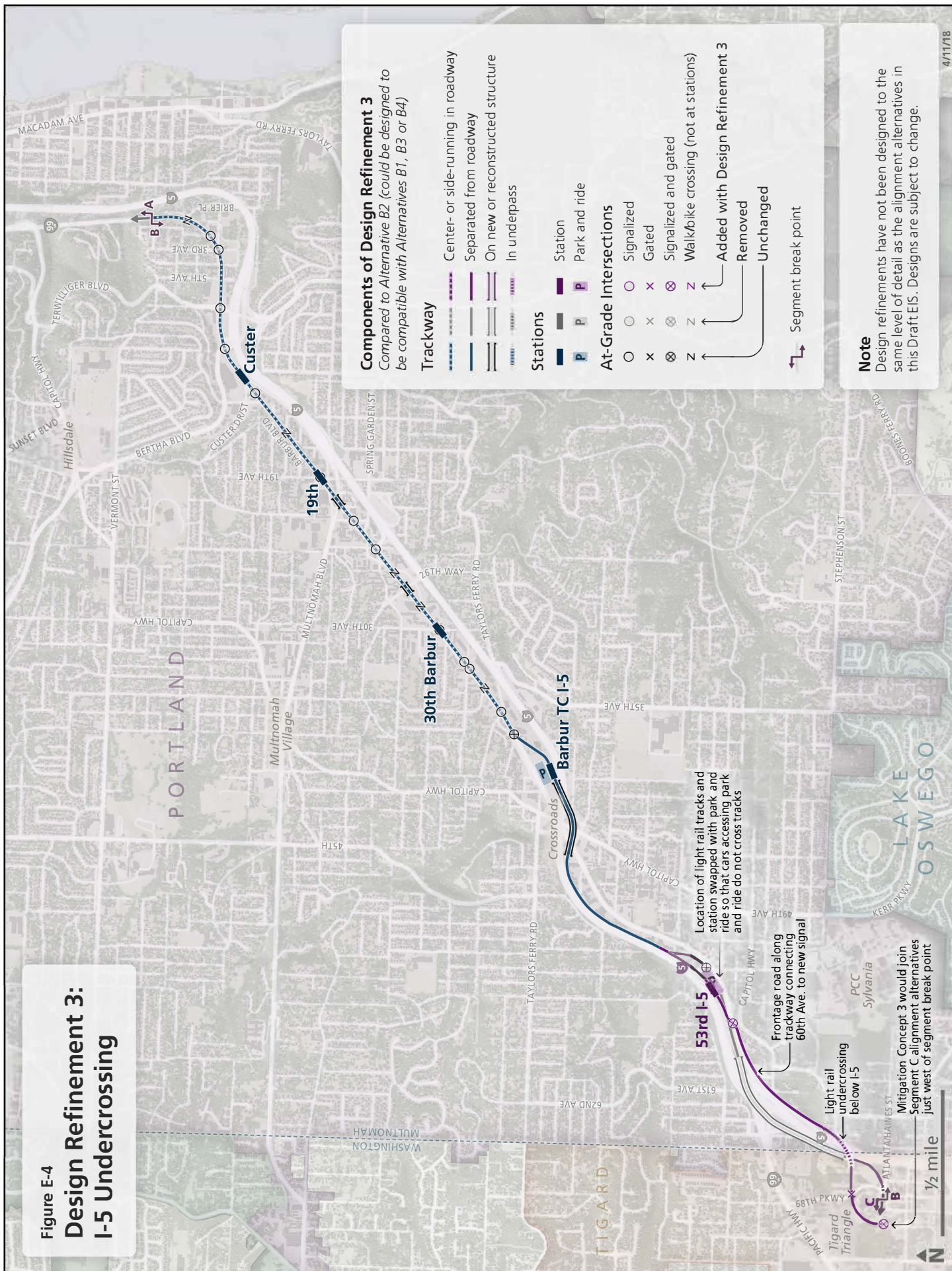
Overall Changes in Impacts or Other Benefits

- Traffic operations along SW Barbur Boulevard would be improved due to removal of the SW 60th Avenue access, thereby routing vehicular access to SW 53rd Avenue, further away from I-5 ramps.
- Compared to Alternative B1, this design refinement would construct light rail tracks closer to an apartment building, single family homes, and a hotel on the east side of I-5, along SW Capitol Highway north of SW 60th Avenue. This could result in noise and visual impacts to these land uses during construction and operations, but would not result in the removal of these structures.
- This design refinement would avoid the need to construct a long aerial light rail guideway that would be a prominent visual element to users of SW Barbur Boulevard and I-5, as well as to homes along the west side of I-5 in the Crestwood Neighborhood.
- At least two potential historic resources, both single family homes, would be acquired along SW Lesser Way to accommodate the light rail track undercrossing of I-5.

- This refinement would cross a similar area of City of Tigard Goal 5 Habitat classified as “Moderately Limit” but would also cross a designated Clean Water Services Vegetated Corridor as it travels south along SW 70th Avenue.
- On the west side of I-5, there would be partial property acquisitions at two campus offices and changes to the access, parking and landscaping of these properties.
- Anticipated changes in noise impacts include a potential reduction in noise impacts near the station, increased noise impacts north of the alignment near SW Palatine Street and new impacts at a hotel and residences near SW Atlanta Street. Mitigation would include sound walls for noise where possible, ballast mats and resilient fasteners for vibration.

Figure E-4

Design Refinement 3: I-5 Undercrossing



Design Refinement 4: Barbur Undercrossing

This design refinement was designed for Alternative B2 but could also be incorporated into Alternatives B1, B3 and B4. Figure E-5 illustrates how Refinement 4 would differ from Alternative B2.

Description

This design refinement avoids the need for a long curved aerial light rail guideway over I-5 and SW Barbur Boulevard by running along the side of SW Barbur Boulevard/Pacific Highway before turning south to connect with SW 70th Avenue. Starting from the 53rd Station this alignment would be constructed between SW Barbur Boulevard and I-5 and then would travel west across I-5 on a new aerial guideway structure that would then descend into the space between the I-5 off-ramp and southbound SW Barbur Boulevard. The alignment would then cross under SW Barbur Boulevard to transition to the southeast side the roadway just west of the SW 65th Avenue. The alignment would run along the southeast side of SW Barbur Boulevard/Pacific Highway (99W) before climbing again to cross on an aerial guideway over SW 68th Parkway and turning south. The alignment would then connect to SW 70th Avenue where it would tie in to the Segment C alignment alternatives.

This design refinement could shift the Baylor or Clinton station and park and ride (in Segment C) north to a station at SW 68th Parkway just south of Pacific Highway.

Impacts Addressed

This design refinement would reduce visual impacts related to the presence of long segments of aerial light rail guideway and traffic impacts from construction of the guideway associated with Alternative B2. The design refinement would also reduce construction traffic impacts associated with the cut-and-cover crossing proposed at SW 68th Parkway just north of SW Atlanta Street under Alternative B2.

Key Assumptions

- The light rail alignment would run along the southeast side of Pacific Highway in Tigard. A slight adjustment would be required to lanes on Pacific Highway but the roadway would retain the same configuration and right of way dimensions.
- Access to the existing Quality Inn hotel from Pacific Highway would remain in place.

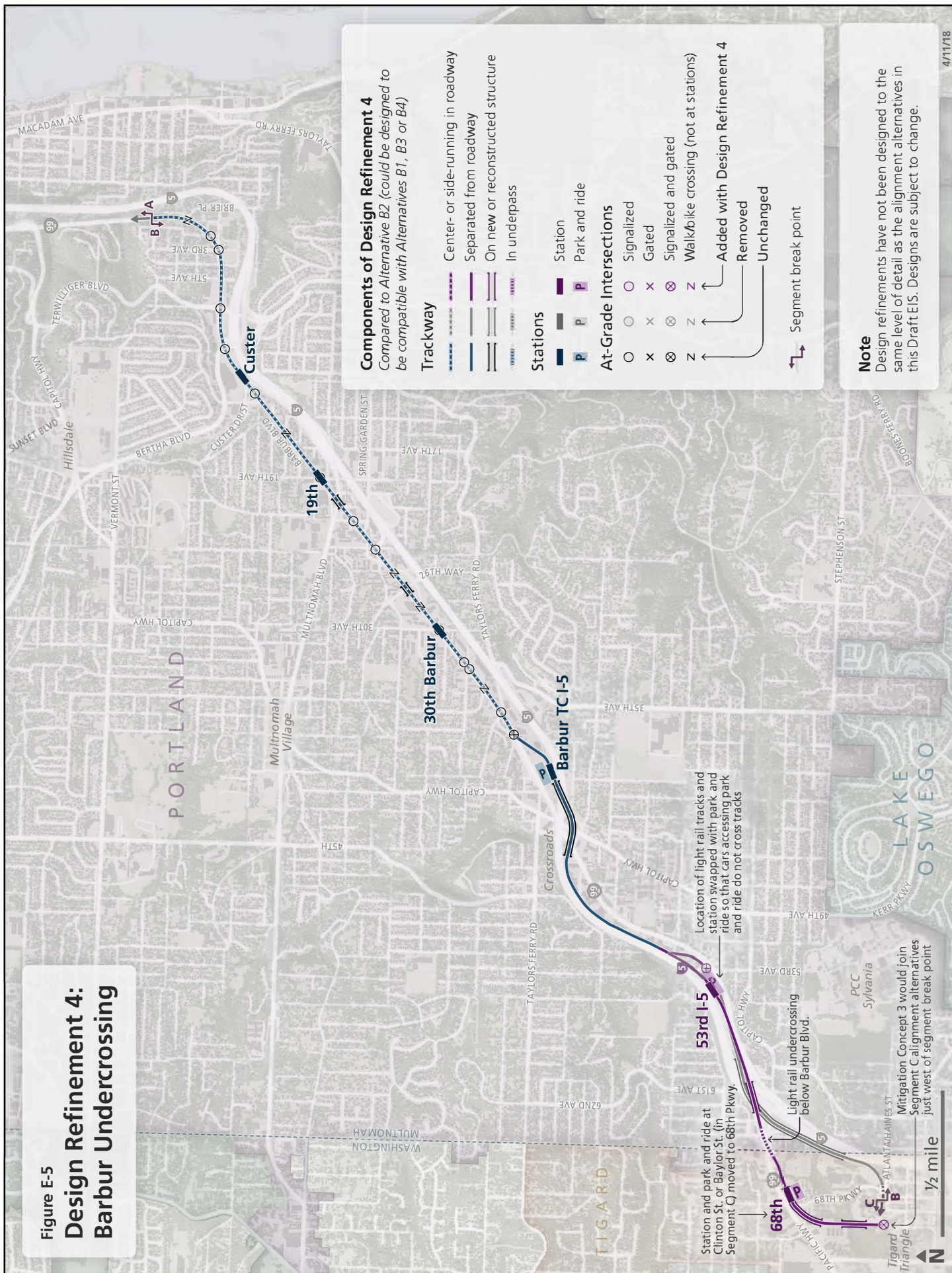
Overall Changes in Impacts or Other Benefits

- Compared to Alternative B2, this design refinement would straighten the curve of the light rail guideway and more efficiently cross the I-5/SW Barbur Boulevard interchange, and would improve transit travel time.
- This design refinement would reduce the length of aerial guideway that would need to be constructed over the existing I-5 travel lanes and ramps, thereby reducing traffic impacts and lane or ramp closures during construction. This would also reduce the visibility of light rail elements in the overall landscape.
- This design refinement replaces the cut and cover crossing of SW 68th Parkway with an aerial crossing, which would likely reduce the duration of traffic impacts during construction.

- Compared to Alternative B2, this design refinement would construct the light rail trackway closer to homes north of Pacific Highway/SW Barbur Boulevard in the Metzger and Crestwood Neighborhoods. Shifting the Baylor or Clinton Station north to Pacific Highway would improve transit access for these residents and increase ridership on the line.
- Compared to Alternative B2, this design refinement would result in additional full or partial property acquisitions, particularly commercial properties south of SW Barbur Boulevard/Pacific Highway and west of I-5. However, one large office campus adjacent to I-5 on the west side would be avoided.
- Compared to Alternative B2, this alternative would cross a similar area of City of Tigard Goal 5 Habitat classified as “Moderately Limit” but would also cross a designated Clean Water Services Vegetated Corridor as it travels south along SW 70th Avenue.

Figure E-5

Design Refinement 4: Barbur Undercrossing



Design Refinement 5: Elmhurst

This design refinement was designed for Alternative C1 but could also be incorporated into Alternatives C2, C5 or C6. Figure E-6 illustrates how Refinement 5 would differ from Alternative C1.

Description

This design refinement alignment would turn west from SW 70th Avenue at SW Elmhurst Street instead of turning west further south at SW Beveland Street to cross over Highway 217. This would shorten the curve and reduce the length of light rail guideway to be constructed.

Impacts Addressed

This design refinement would substantially reduce the number of partial property acquisitions between SW 70th Avenue and Highway 217. Noise impacts during construction and operations would also be reduced for homes in this area.

Key Assumptions

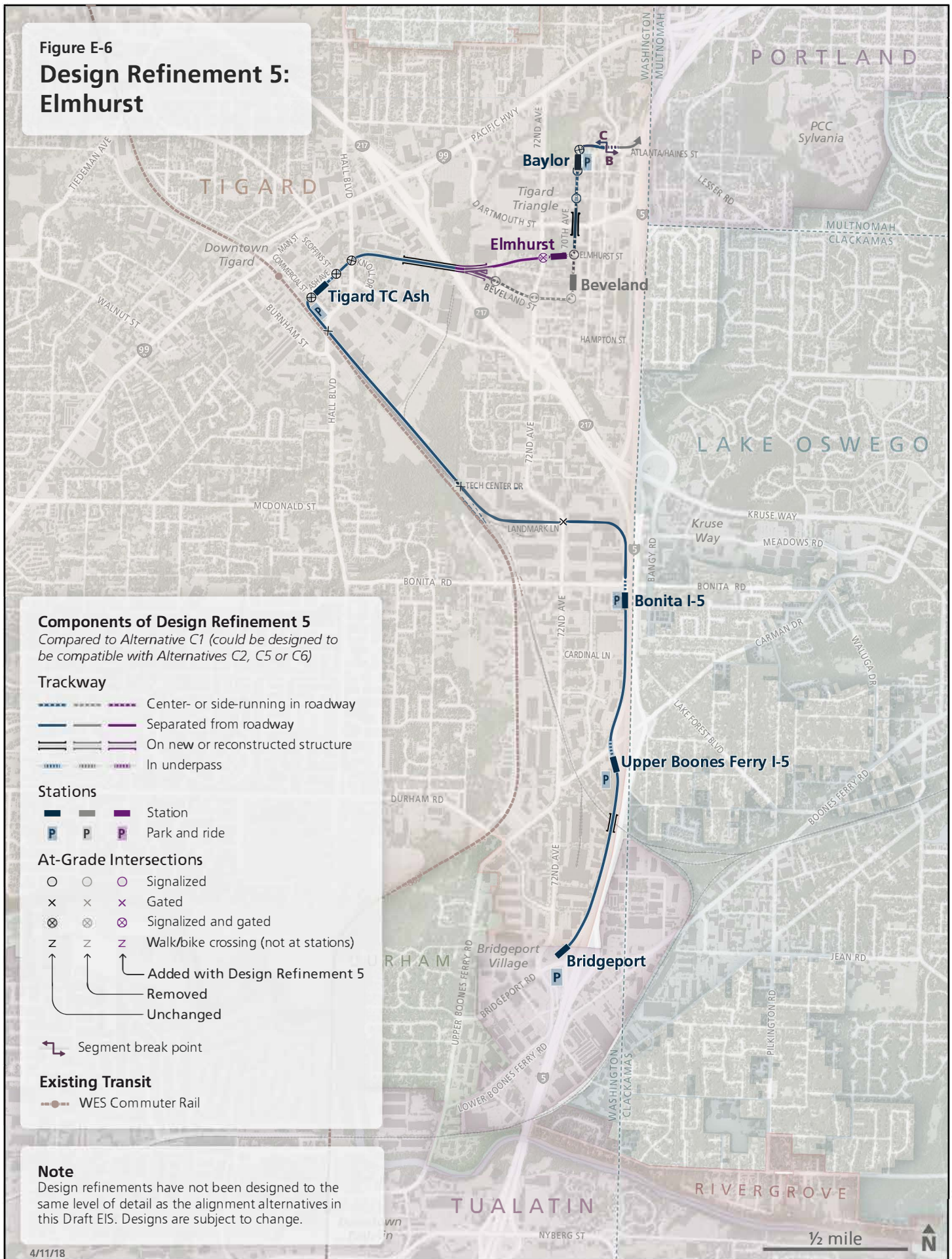
- The horizontal elevation of the guideway and approach to the crossing of Highway 217 would generally be the same as that proposed for Alternative C1.

Overall Changes in Impacts or Other Benefits

- This design refinement alignment would be faster and increase ridership compared to the alignment along SW Beveland Street of Alternative C1.
- Compared to Alternative C1, this design refinement would use less of the existing transportation right of way along SW 70th Avenue and SW Beveland Street, thereby reducing local traffic and access impacts during construction and operations. This would also reduce noise impacts during construction and operations to single family homes along these streets.
- This design refinement would result in a substantially smaller number of partial property acquisitions but a greater number of full acquisitions to homes along SW Elmhurst Street and SW Hermoso Way. There would also be a partial acquisition of a large commercial property (Walmart) under this design refinement.
- Both this design refinement and Alternative C1 would impact a similar area designated as Clean Water Services Vegetated Corridor and City of Tigard Goal 5 Habitat classified as “Strictly Limit.”
- Noise and vibration impacts would be reduced south of SW Elmhurst Street due to avoidance. New noise and vibration impacts would be expected at remaining residences along SW Elmhurst Street west of SW 70th Ave. Mitigation to address these added noise and vibration impacts could include sound walls for noise where possible, ballast mats and resilient fasteners for vibration

Figure E-6

Design Refinement 5: Elmhurst



Design Refinement 6: Tigard Transit Center Station East of Hall

This design refinement was designed for Alternative C1 but could also be incorporated into Alternatives C2, C5 or C6. Figure E-7 illustrates how Refinement 6 would differ from Alternative C1.

Description

This design refinement would shorten the length of the light rail alignment near downtown Tigard by not crossing SW Hall Boulevard. The exact location of the design refinement alignment in this area has not been defined, but would be somewhere between SW Hall Boulevard and the Hunziker operations and maintenance (O&M) facility site (Figure E-7 illustrates the outer bounds of the potential alignment). On the westernmost side, the alignment would turn south after crossing Highway 217 to cross SW Hunziker Street at SW Knoll Drive, then run along the southeast side of SW Hall Boulevard. At the Westside Express Service (WES) Commuter Rail and freight rail tracks, the alignment would turn south to rejoin Alternative C1. The easternmost location of the alignment would cross SW Hunziker Street farther east, then run along the west edge of the Hunziker O&M facility site before turning south to rejoin Alternative C1. This would result in a different configuration and site location (further southeast) for the O&M facility. Regardless of the exact alignment location, this design refinement would shift the light rail station, Tigard Transit Center and park and ride south of SW Hall Boulevard.

Impacts Addressed

This design refinement would reduce the potential for impacts to potentially-historic homes and would avoid direct effects to low-income housing that could be found to be Environmental Justice impacts. This design refinement would also remove multiple at-grade crossings when compared to Alternative C1, thereby reducing traffic and access impacts during construction and operations.

Key Assumptions

- The general configuration of the station platform, park and ride and transit center would be similar to those included in Alternative C1, but would be sited southeast of SW Hall Boulevard.
- The light rail crossing at SW Hunziker Street would be at-grade and would include crossing gates.

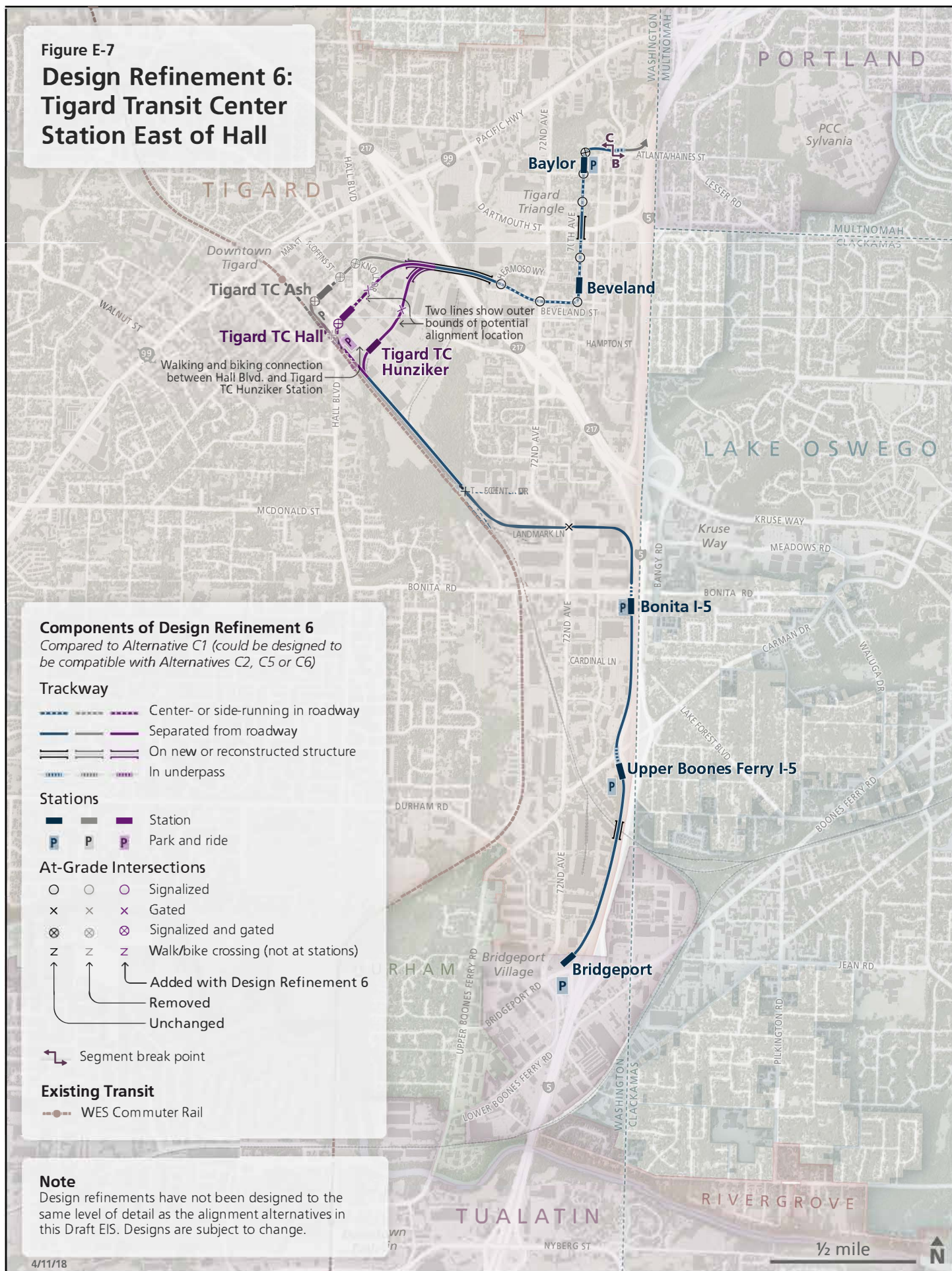
Overall Changes in Impacts or Other Benefits

- Under this design refinement, a similar area of Clean Water Services Vegetated Corridor would be impacted on the east side of Highway 217 but a larger area of Clean Water Services Vegetated Corridor would be impacted south of SW Hunziker Street, when compared to Alternative C1.
- Under both this design refinement and under Alternative C1, some areas of City of Tigard Goal 5 Habitat would be within the construction footprint. Larger areas of this habitat classified as “Strictly Limit” would likely be impacted by this design refinement.
- This design refinement would avoid the need to create new at-grade crossings of SW Commercial Street, SW Scoffins Street and SW Hall Boulevard. This would reduce many traffic impacts during construction and avoid many impacts to commercial and residential property access during operations associated with at-grade crossings and gates. One new at-grade crossing of SW Hunziker Street would be required.

- Depending on the location of the alignment, this design refinement could reduce or completely avoid impacts to potential historic resources (single-family homes) along SW Knoll Drive and SW Hunziker Street.
- Relocations associated with impacts to low-income residential apartments along SW Hall Boulevard and SW Ash Avenue would be avoided under this design refinement, thereby avoiding a potential finding of an Environmental Justice impact.
- Because this design refinement would connect farther south with the historic Southern Pacific Railroad right of way, there would be a shorter impacted length of this eligible historic property, though there would still likely be some use of this Section 4(f) resource.
- There would be fewer full and partial acquisitions of individual commercial properties but the parcels acquired for the O&M facility site and transit center would be larger parcels and would largely be full acquisitions.

Figure E-7

Design Refinement 6: Tigard Transit Center Station East of Hall



Ross Island Bridgehead Reconfiguration Option for Alternative A1

The Ross Island Bridgehead Reconfiguration is an element of Alternative A2-BH, and an option for Alternative A1 (see Figure E-8). This option is included in the City of Portland's Transportation System Plan.

Description

Alternative A1 could have a Ross Island Bridgehead Reconfiguration option that would modify streets connecting to and from the Ross Island Bridge, and would add new signalized intersections in several locations, reconnecting streets that were closed when limited access roadways were developed in the past in this area. It would add walking and biking facilities along SW Naito Parkway. The option would also modify SW Kelly Avenue, creating a two-way street with several new intersections.

Impacts Addressed

This option improves connections for pedestrians and bicyclists who would need to cross SW Naito Parkway to reach light rail at the Barbur Gibbs Station. This design also improves localized queuing that occurs on Southwest Barbur Boulevard Blvd and SW Naito Parkway.

Key Assumptions

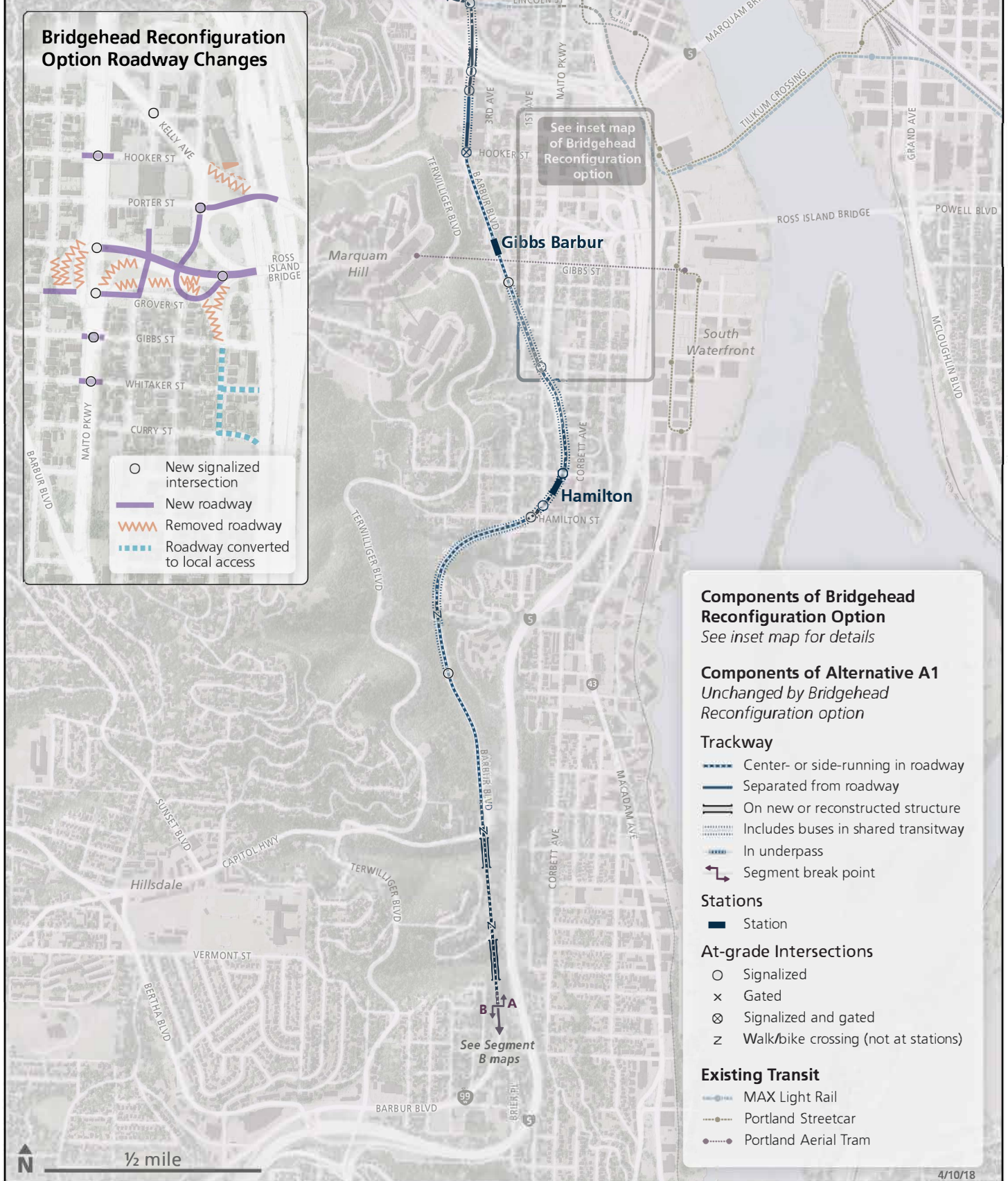
- Design would need to be developed from the current A2-BH alternative to account for light rail not being in SW Naito Parkway.

Overall Changes in Impacts or Other Benefits

Based on the bridgehead component of the current A2-BH design:

- This option would add five additional full and nine partial acquisitions to Alternative A1, including building acquisitions at the National University of Natural Medicine.
- Additional impacts would occur to properties that are potentially eligible for the National Historic Register beyond Alternative A1 alone.
- Quality of life in South Portland would improve overall by enhancing safety for all travel modes, increasing community cohesion with more and safer pedestrian crossings of SW Naito Parkway, and by removing regional traffic from local roadways.
- Pedestrian and bicycle access to the Barbur Gibbs Station would be improved for riders traveling to/from the existing and future development in the South Waterfront neighborhood, including the OHSU campus there.
- Land currently used for ramps would become available for future development.
- Several roads around the Ross Island Bridge would be modified, with some changes to road grades, but mostly within existing roadway areas.

Figure E-8
Bridgehead Reconfiguration
Option for Alternative A1



Alternate Station Locations

As illustrated in Figure E-1, the following alternate station locations could be considered to reduce impacts compared to the stations that are part of the alignment alternatives:

- **Hooker Station** would replace the Naito Gibbs Station for Alternatives A2-BH and A2-LA. The station would be located farther north, on SW Naito Parkway at SW Hooker Street.
- **26th Barbur Station** would replace the 30th Barbur Station for Alternatives B1 and B2. The station would be located farther north, on the SW Barbur Boulevard bridge over SW 26th Way.
- **26th I-5 Station** would replace the 30th I-5 Station for Alternatives B3 and B4. The station would be located farther north, on the light rail structure over SW 26th Way adjacent to I-5. A pedestrian bridge would connect the station to SW Barbur Boulevard.
- **Beveland Ash Through Station** would replace the Beveland Station for Alternatives C1 and C2. The station would be located around the corner from the original Beveland Station, on SW Beveland Street between SW 70th Avenue and SW 72nd Avenue.

In general, the alternate station locations would result in a smaller footprint of impacts in the area around the original station location and a larger footprint of impacts in the area around the alternate station location.

Summary of Initial Route Proposal Design Refinement Effect

Table E-1 provides a summary of how each of the design refinements may modify Alternatives A1, B2 and C2 of the initial route proposal.

Table E-1. Anticipated Effect of Design Refinements on Initial Route Proposal Alignment Alternatives

	Design Refinements: Anticipated Change from Initial Route Proposal Alignment Alternatives (A1, B2 and C2) ¹					
	Refinement 1: Barbur Woods East-Side Running	Refinement 2: Taylors Ferry I-5 Overcrossing	Refinement 3: I-5 Undercrossing	Refinement 4: Barbur Undercrossing	Refinement 5: Elmhurst	Refinement 6: Tigard Transit Center Station East of Hall
Transit travel time						
PSU - Tigard TC or Bridgeport	Likely similar – would depend on curves and crossings in designs	Likely similar – would depend on curves and crossings in designs	Would reduce travel time slightly as a result of wider curves in the track	Would reduce travel time slightly as a result of wider curves in the track	Would reduce travel time because it would shorten track distance	Would reduce travel time because it would shorten track distance
Ridership						
Line riders and new system transit trips	Likely similar	Likely similar	Likely similar	Would increase ridership – station accessible for areas north of Pacific Hwy.	Could increase ridership slightly because of the faster travel time	Unclear – faster travel time but station further from core of downtown Tigard
Acquisitions & Displacements						
Residential, business and employee displacements	Would avoid displacing up to two single-family homes	Would add impacts to businesses and homes along SW Taylors Ferry Rd. but avoid impacts on the south side of SW Barbur Blvd. at SW Capitol Hwy.	Would avoid displacing up to two single-family homes	Would add impacts to businesses south of Pacific Hwy. but avoid impacts to businesses and homes along west side of I-5	Would avoid impacts on SW Beveland St. (mostly businesses) but add impacts on SW Elmhurst St. (mostly residential)	Would avoid impacts to apartments and businesses on SW Hall Blvd. and SW Ash Ave., but would add impacts to businesses in the industrial area south of SW Hunziker St.
Cost						
Operating and maintenance	No change	No change	No change	No change	No change	No change
Capital	Would reduce cost	Would reduce cost	Would reduce cost	Would reduce cost	Would reduce cost	Would reduce cost
Other						
Additional trade-offs	Would reduce construction impacts on SW Barbur Blvd. Further discussion needed about walking and biking access on SW Barbur Blvd. in The Woods Would avoid impacts to Newbury and Vermont trestle bridges, which are both potentially historic ²	Station at Barbur TC would shift to be in SW Barbur Blvd. instead of adjacent to I-5	Would result in partial parcel acquisition of two single-family homes that are potentially historic ²	Station at SW 68th Pkwy. would improve access for neighborhood north of Pacific Hwy.		Would shift the Tigard TC further from core of downtown Tigard and the WES Commuter Rail station. Would avoid crossing SW Hall Blvd. twice

Note: TC = Transit Center.

¹ Numbers are approximate and subject to change because the design refinements have not been analyzed at the same level of detail as the alignment alternatives in the Draft EIS. Some of the design refinements would also be compatible with other alignment alternatives not included in the initial route proposal, but the change in impacts and benefits would differ.

² Eligible or potentially eligible for listing in the National Register of Historic Places

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