



Ankrom Moisan

Cascadia Tri-Corridor Plan Renderings

By: Ankrom Moisan Architects and Planners
in collaboration with Cascadia High Speed Rail, LLC

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The CHSR Miles from Portland, OR, to Seattle Central Station

- CHSR miles between Portland, Oregon Rose Quarter and Longview, WA on the ground is 9.66 miles, on flyovers is 20.69 miles, and in tunnels 12.81 miles, a total of 43.16 miles.
- CHS miles between Longview and Centralia, on the ground, is 11.82 miles, on flyovers are 17.62 miles, and in tunnels, it is 12.62 miles, a total of 42.06 miles.
- CHSR miles between Centralia and Tacoma, on the ground, is 17.36 miles, on flyovers are 7.73 miles, and in tunnels, it is 21.77 miles. A total of 46.86 miles.
- CHSR between Tacoma and Seattle Central station/hub, on the ground, is 4.06 miles; on flyovers, 17.81 miles, and in tunnels, 13.03 miles. A total of 34.90 miles. SEA/TAC link, on the flyover, is 3.74 miles, and in the tunnel is, 4.00 miles. A total of 7.74 miles. The total from Portland to Seattle direct is 161.29 miles; via SEA/TAC, it is 140.63 miles.
- Portland, Amtrak Station to Seattle King Amtrak Station is 187.00 miles long, the CHSR direct is ± 25.71 (22.34) miles shorter, and via SEA/TAC, it is 3.37.

The CHSR Miles from Portland Rose Quarter Station/Hub, OR, to Seattle Central Station

- CHSR miles between Portland, Oregon Rose Quarter, and Seattle Central station/hub on the ground is 42.90 miles, on flyovers is 58.16 miles, and in tunnels 60.23 miles, a total of 161.29 miles.
- CHSR via SEA/TAC; on the flyover, it is 3.74 miles, and in the tunnel, it is 4.00 or 169.03 miles.
- Portland Rose Quarter to Portland Airport (PDX) on the ground, it is 0.61 miles, on flyovers it is 7.46 miles, and in tunnel, it is 1.43 miles.
- Amtrak to King Station is 187 miles long, the CHSR direct is ± 25.71 miles shorter, and via SEA/TAC, it is 17.97 miles shorter.

Legend



CHSR Station in Tunnel



CHSR Station on Flyovers



CHSR Station on Ground

 On ground

 Cuts

 Fills

 Flyovers

 Tunnels

 Existing Freight Railroads, other than BNSF and UP RR

 Existing Freight Railroads

C-ICE: Cascadia Inter-City Express

CCE: Cascadia Commuter Express



General overview,
CHSR Portland, OR
to Seattle, WA
on Google



CHSR Corridor
between
Portland and
Seattle

BNSF freight
corridor is 150
years old and
has too many
tight curves,
grade crossings
and small towns
to develop HSR
technology.



Rose Quarter
Bullet Train
Station

Moda Center

N Interstate Ave

NE
Multnomah
St

Rendering by: Ankrom Moisan Architects and Planners

Rose Quarter
Bullet Train
Station, Former
Veterans
Memorial
Coliseum

This station will
serve Cascadia
Inter City Express
Trains (C-ICE) and
Cascadia
Commuter
Express Trains
(C-CE)

This station is
above ground to
eliminate all
roadway grade
crossings.

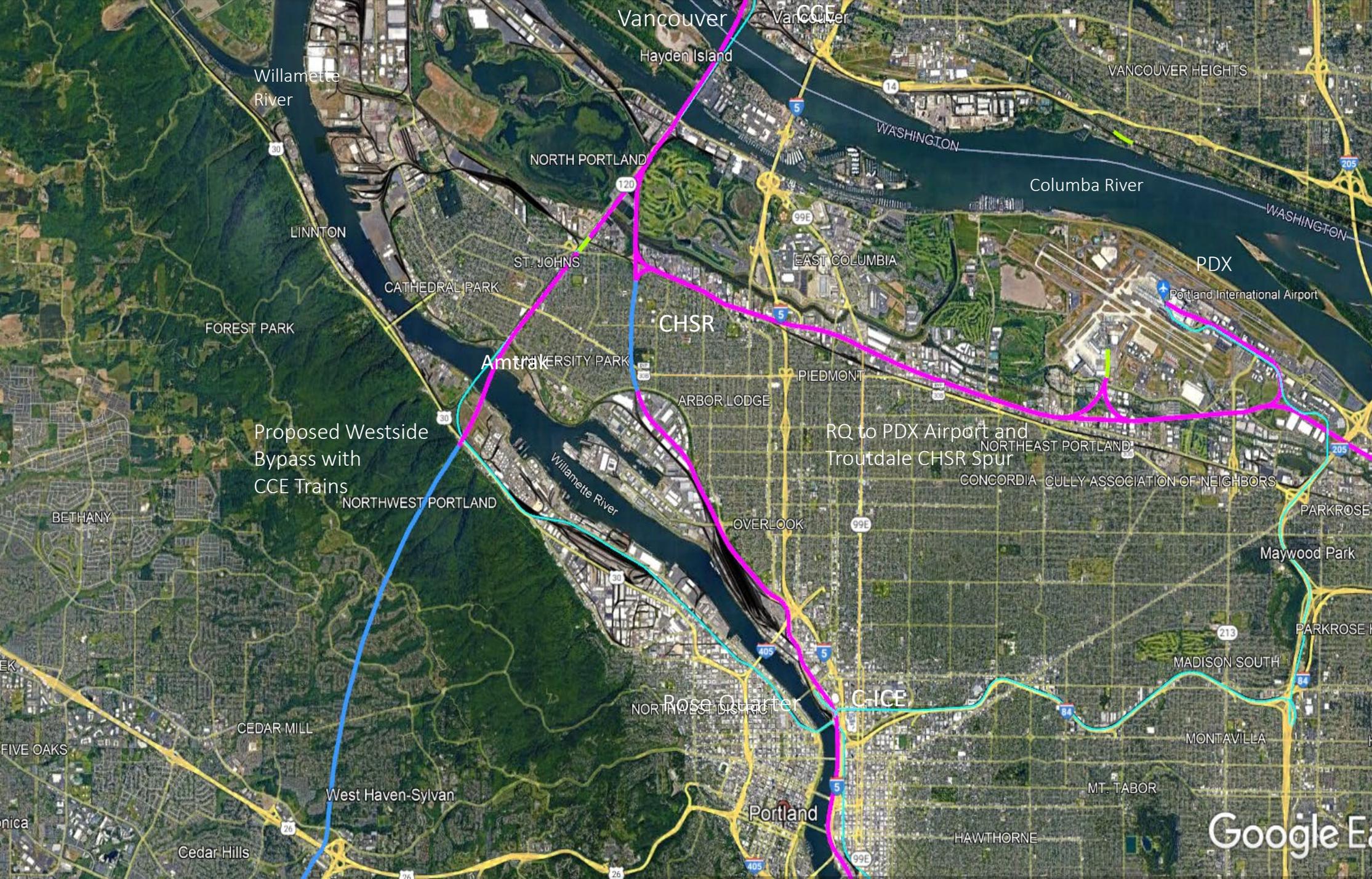


Rose Quarter Transportation Hub with CHSR Station

The CHSR Station has five rail tracks for Cascadia Inter-City Express (C-ICE) trains and Cascadia Commuter Express (C-CE) trains.

The station platform is 1300 feet long and 146 feet wide.

Here is an interchange with track # 2. Here, we can trans-load express freight between tracks # 1 and # 2. Number 1 will go to PDX and Troutdale.



CHSR
Corridor
between Rose
Quarter and
Vancouver,
WA and other
Possible
Corridors

Proposed Westside
Bypass with
CCE Trains

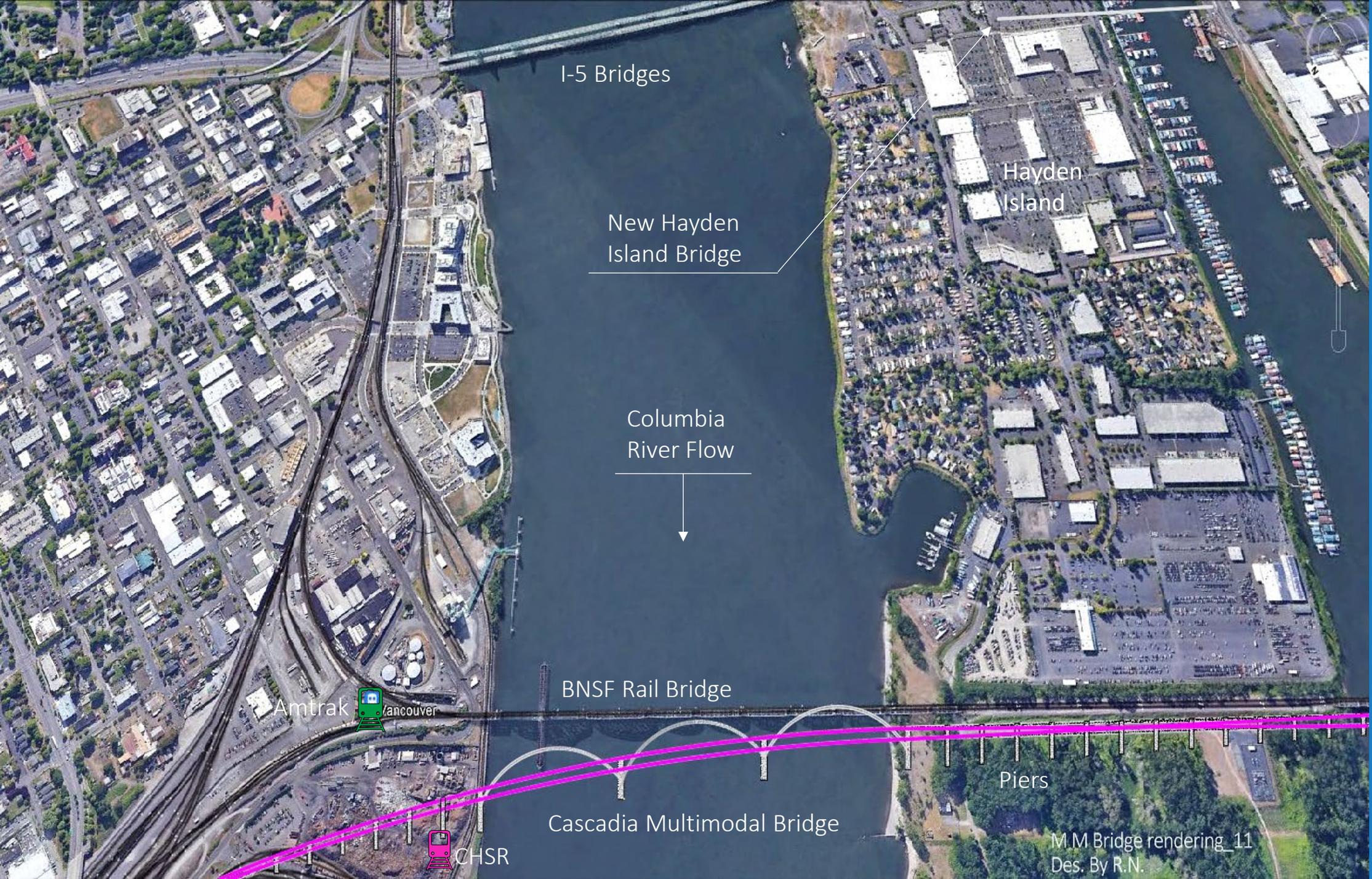
RQ to PDX Airport and
Troutdale CHSR Spur

CHSR

Amtrak

G-ICE

Google Earth



I-5 Bridges

New Hayden Island Bridge

Hayden Island

Columbia River Flow

BNSF Rail Bridge

Amtrak Vancouver

Cascadia Multimodal Bridge

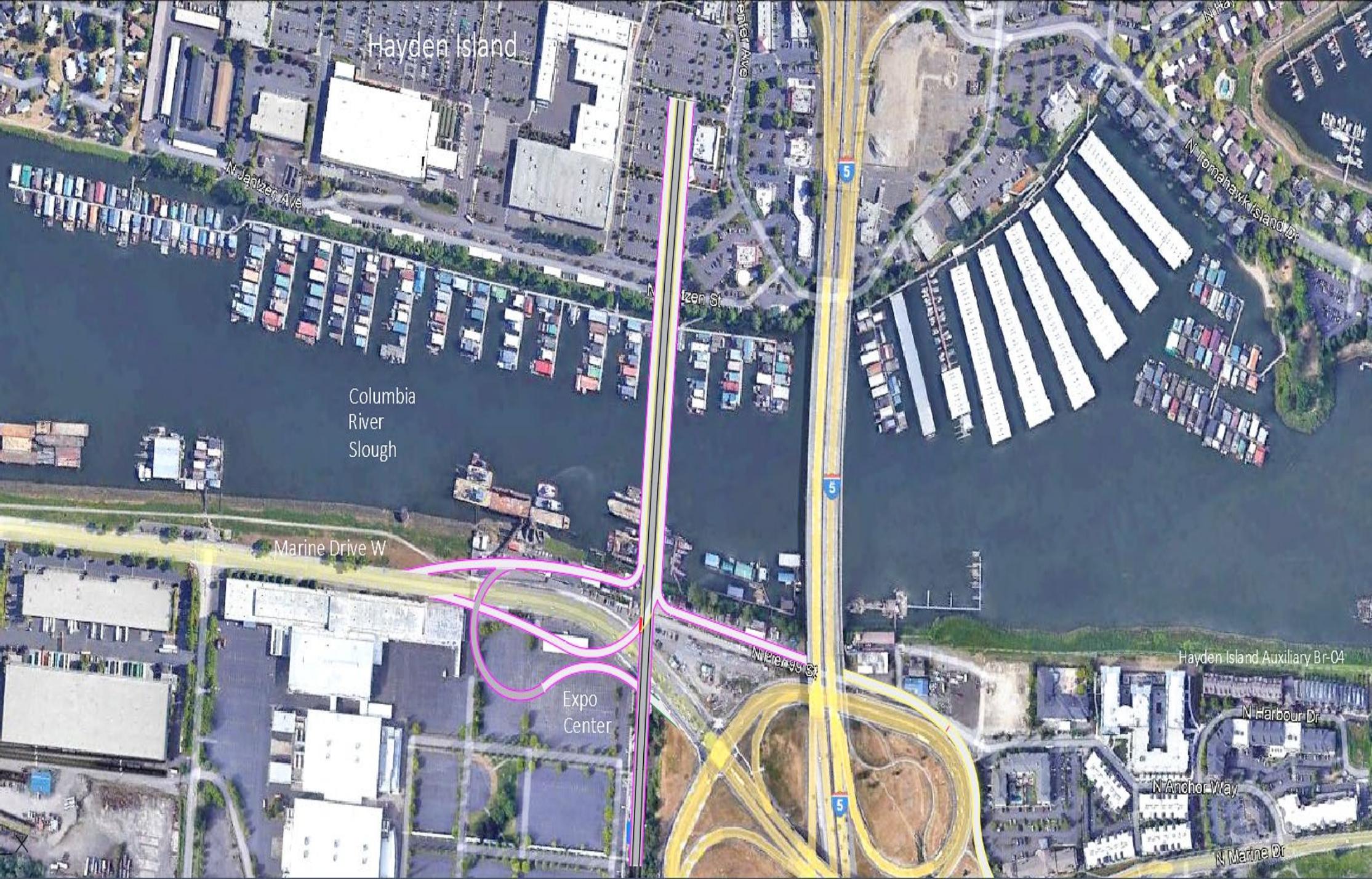
CHSR

Piers

M M Bridge rendering_11
Des. By R.N.

Proposed Cascadia Multimodal Bridge, Hayden Island Bridge, I-5 Bridge, and BNSF Railroad Bridge

The possible CCE Waterfront Station is on the west side of the existing BNSF tracks. The Amtrak Station is on the east side. A pedestrian bridge over the BNSF tracks will provide a connection to the Vancouver Waterfront.



Hayden Island

N Janzen Ave

Columbia River Slough

Marine Drive W

Expo Center

5

5

5

Janzen St

N Harbor Dr

Hayden Island Auxiliary Br-04

N Harbor Dr

N Anchor Way

N Marine Dr

N Tomahawk Island Dr

Proposed Hayden Island Auxiliary Bridge

The MAX corridor will be between the north and south traffic lanes on the new bridge over the Columbia River Slough at the same elevation as I-5.

N Columbia Blvd Interchanges and the Commuter Rail Corridor

NORTH Portland may have a commuter train station. The new two-lane motorway in the BNSF cut is over and under to save construction costs and minimize land use.

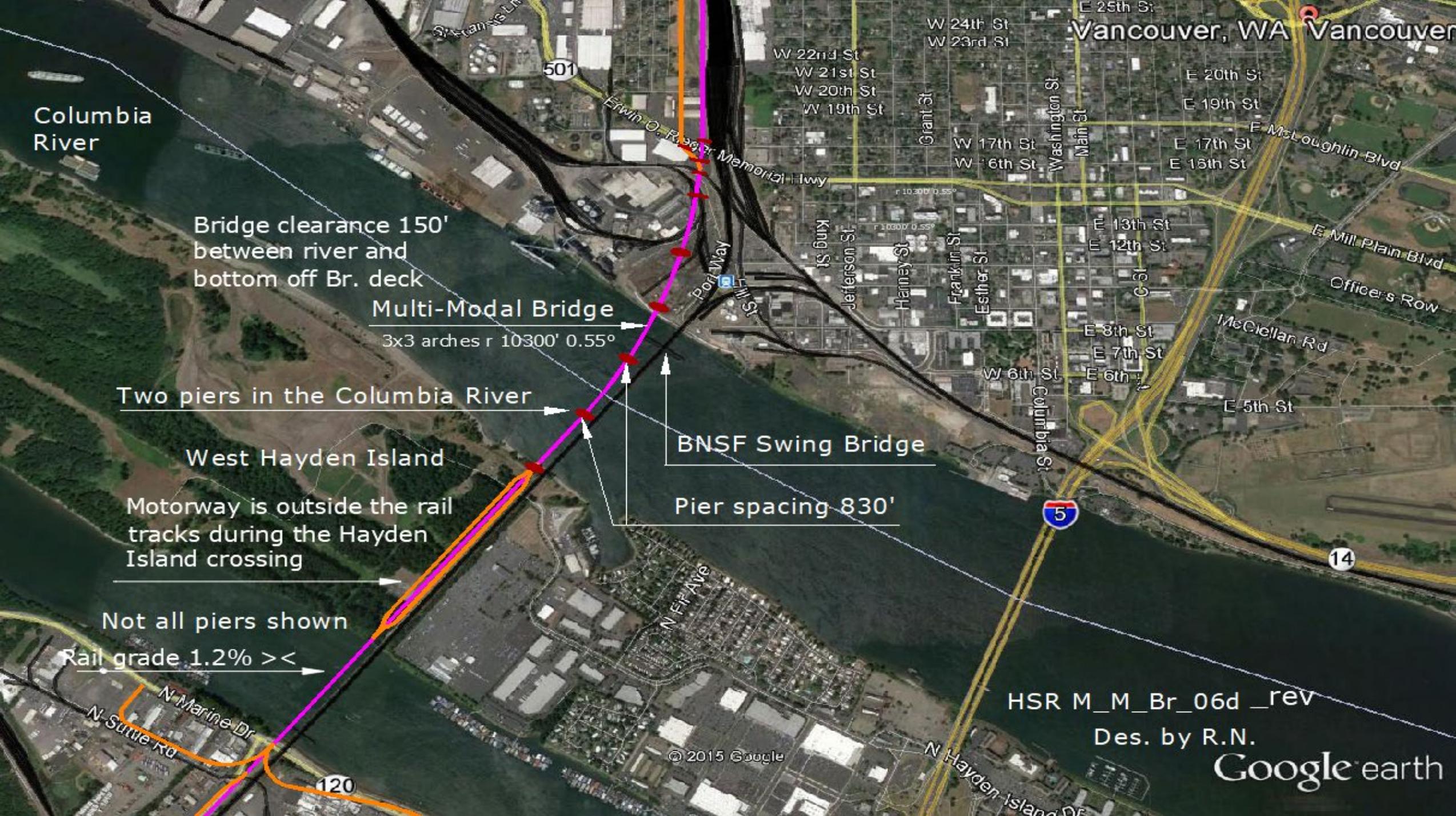
After the elevated roadway interchanges, the lanes will merge with the existing N Portland Rd and become a four-lane auxiliary road. The column depiction is illustrative, and the preferred column spacing is 100 ft. Not all columns are shown.





CHSR Multi-Modal Bridge, Revised version

The CHSR is above the BNSF/UPRR tracks.
The roadways go below the CHSR tracks to Hayden Island, where they will go above.
The N Portland Rd has single lanes on and off ramps.
N Marine Dr from the I-5 interchange has a single on-ramp to Vancouver.
The Vancouver to N Marine Dr has a single off-ramp.
This layout will reduce the I-5 bridge traffic by 30%.



Vancouver, WA Vancouver

Columbia River

Bridge clearance 150'
between river and
bottom off Br. deck

Multi-Modal Bridge

3x3 arches r 10300' 0.55°

Two piers in the Columbia River

West Hayden Island

Motorway is outside the rail
tracks during the Hayden
Island crossing

BNSF Swing Bridge

Pier spacing 830'

Not all piers shown

Rail grade 1.2% ><

HSR M_M_Br_06d_rev

Des. by R.N.

Google earth

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501

5

14

120

St Francis Ln

Erwin-O. Rogers Memorial Hwy

Port Way Hill St

W 22nd St
W 21st St
W 20th St
W 19th St

W 24th St
W 23rd St

Grant St

Washington St

Main St

W 17th St
W 6th St

E 20th St
E 19th St
E 17th St
E 16th St

E McLoughlin Blvd

King St

Jefferson St

Harney St

Franklin St

Esther St

E 13th St
E 12th St

E 8th St
E 7th St
E 6th St

Columbia St

McClellan Rd

E 5th St

E Mill Plain Blvd

Officers Row

N Fir Ave

N Hayden Island Dr

N Marine Dr
N Sunrise Rd



From Fruit Valley Rd
To Hwy 30
To Mill Plain Blvd

CHSR
BNSF/UPRR

New CCE
Station and
Parking

Four Lane
Vehicle
Expressway

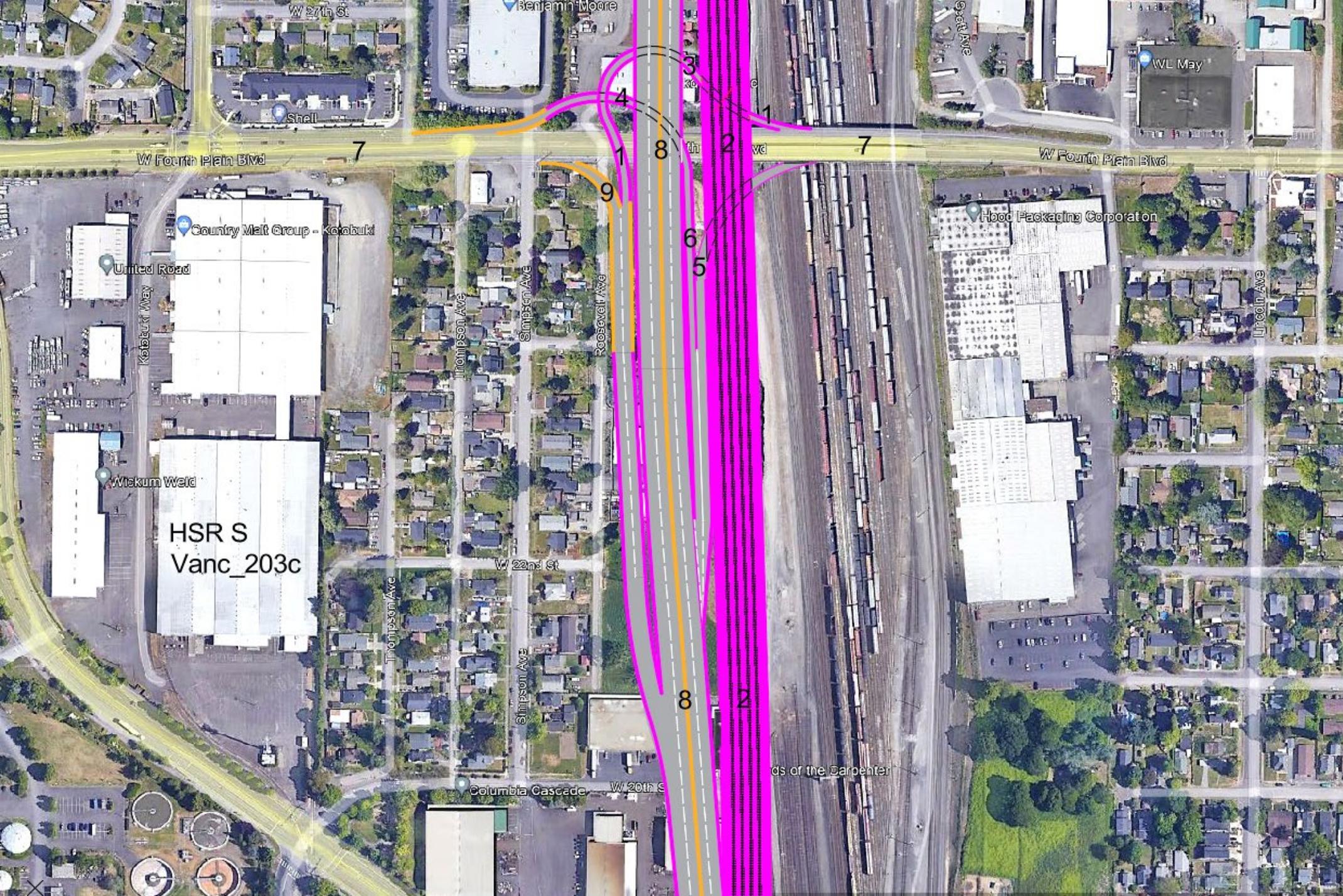
New Vancouver
Waterfront Area

Columbia River

Rendering by: Ankrom Moisan Architects and Planners

The Cascadia Multimodal Bridge Corridor Connections to Mill Plain Blvd in Vancouver, Washington

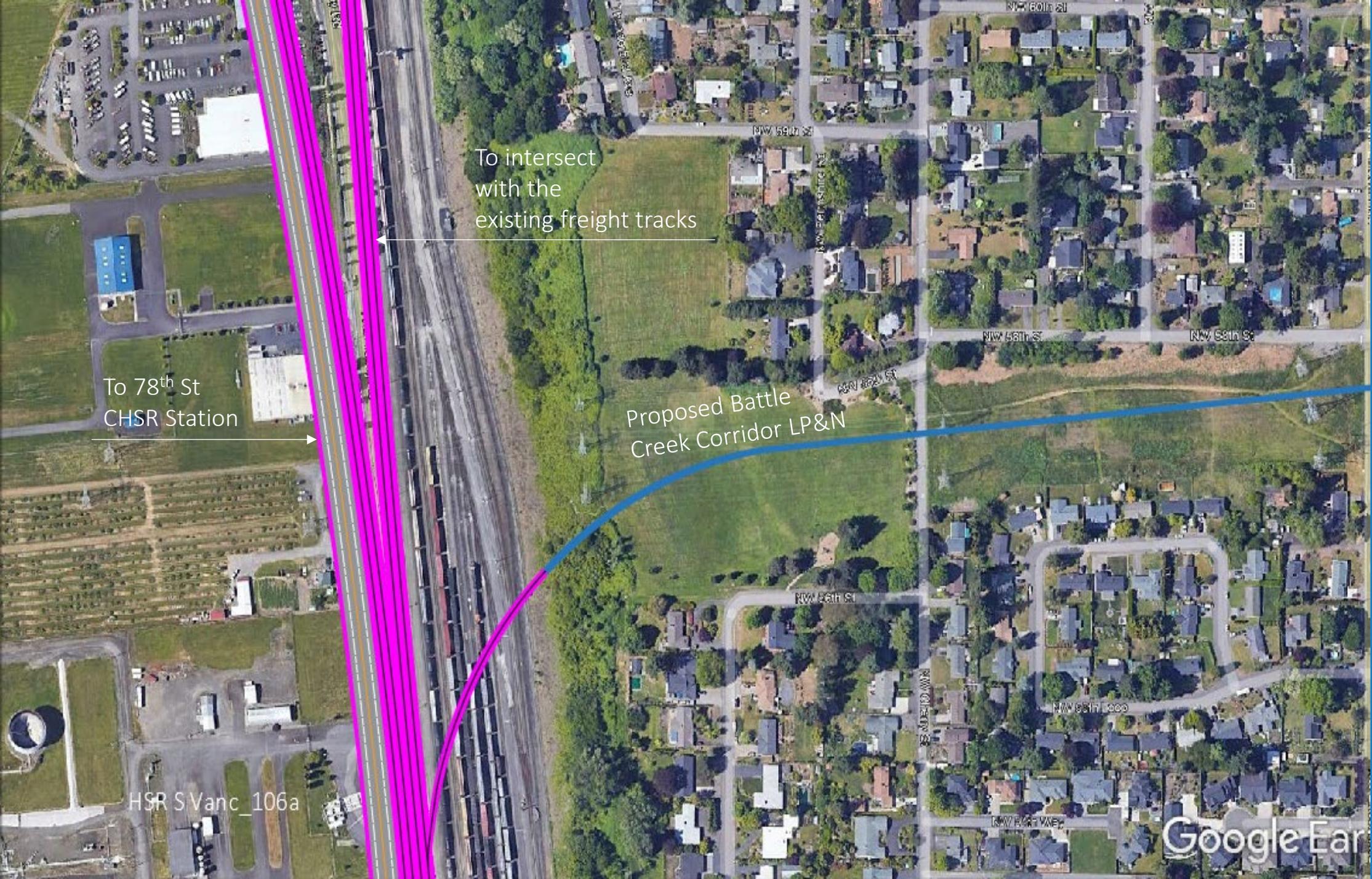
All three corridors are elevated above the existing freight rail yard and will not interfere with on-ground freight movements.



CHSR Corridor over Mill Plain and Fourth Plain Blvd

Future roadway intersections will allow a seamless automotive transition.

- 1 southbound ramp
- 2 CHSR BNSF line
- 3 roadway underpass
- 4 4th Plain underpass
- 5 4th Plain on-ramp
- 6 4th Plain off-ramp
- 7 W Fourth Plain Blvd
- 8 New Fruit Valley Rd bypass, connecting with NW 78 Street.
- 9 W Fourth Plain Blvd on ramp.



To intersect with the existing freight tracks

To 78th St CHSR Station

Proposed Battle Creek Corridor LP&N

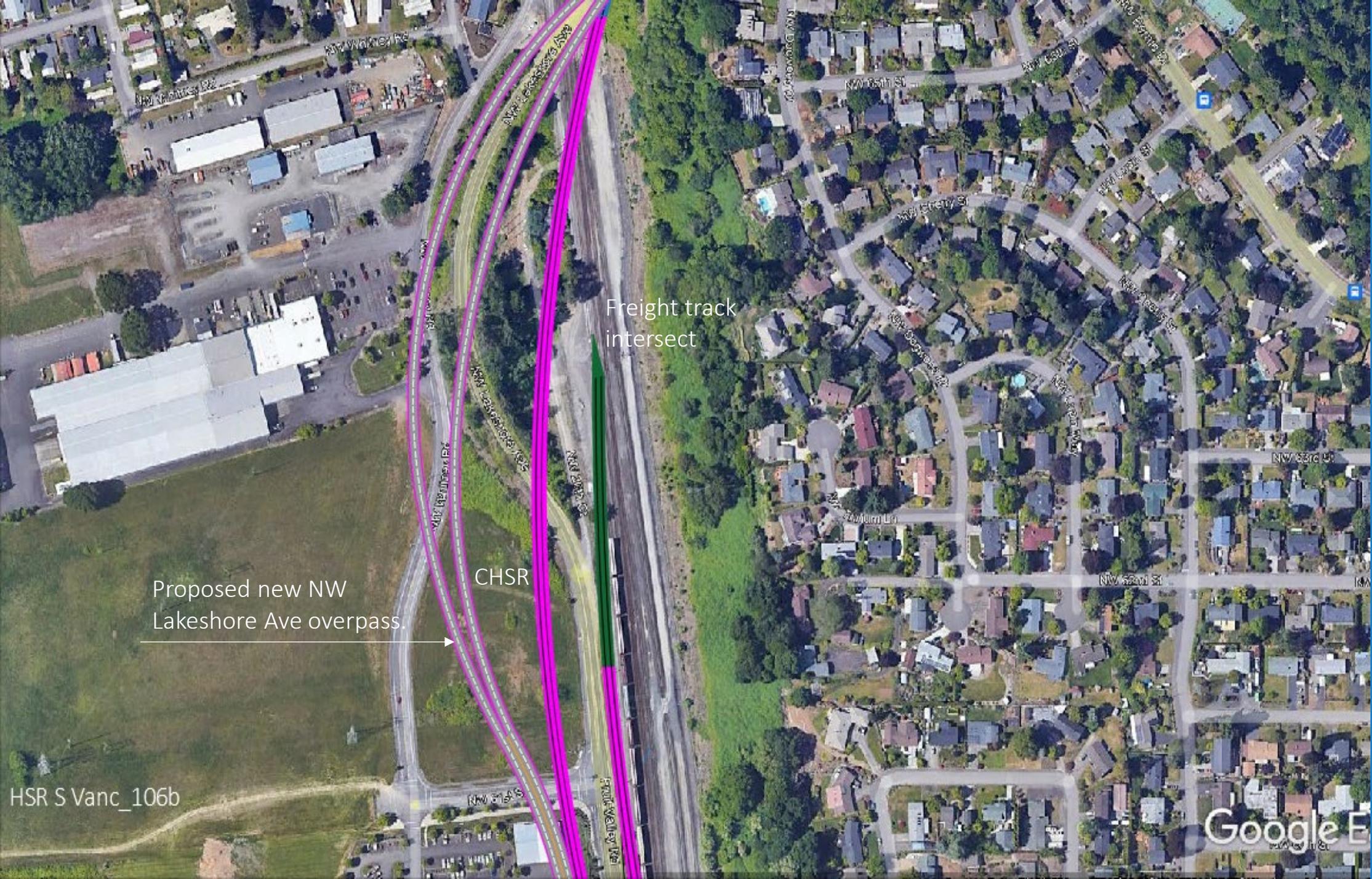
CHSR Corridor 1.6 Miles North of 4th Plain Blvd

At this point, the CHSR corridor will split. The freight line will re-connect with the existing freight tracks, and the CHSR will continue north.

The Battle Creek Corridor is a proposed line to serve commuters in northwest Vancouver.

HSR SVanc_106a

Google Earth



Freight Track Interchange and CHSR Corridor Flyover South of NW 78th Street

The proposed freight tracks over the CHSR Multi-Modal Bridge intersect at this point with the existing on-ground freight tracks.

Proposed new NW Lakeshore Ave overpass.

Freight track intersect

CHSR



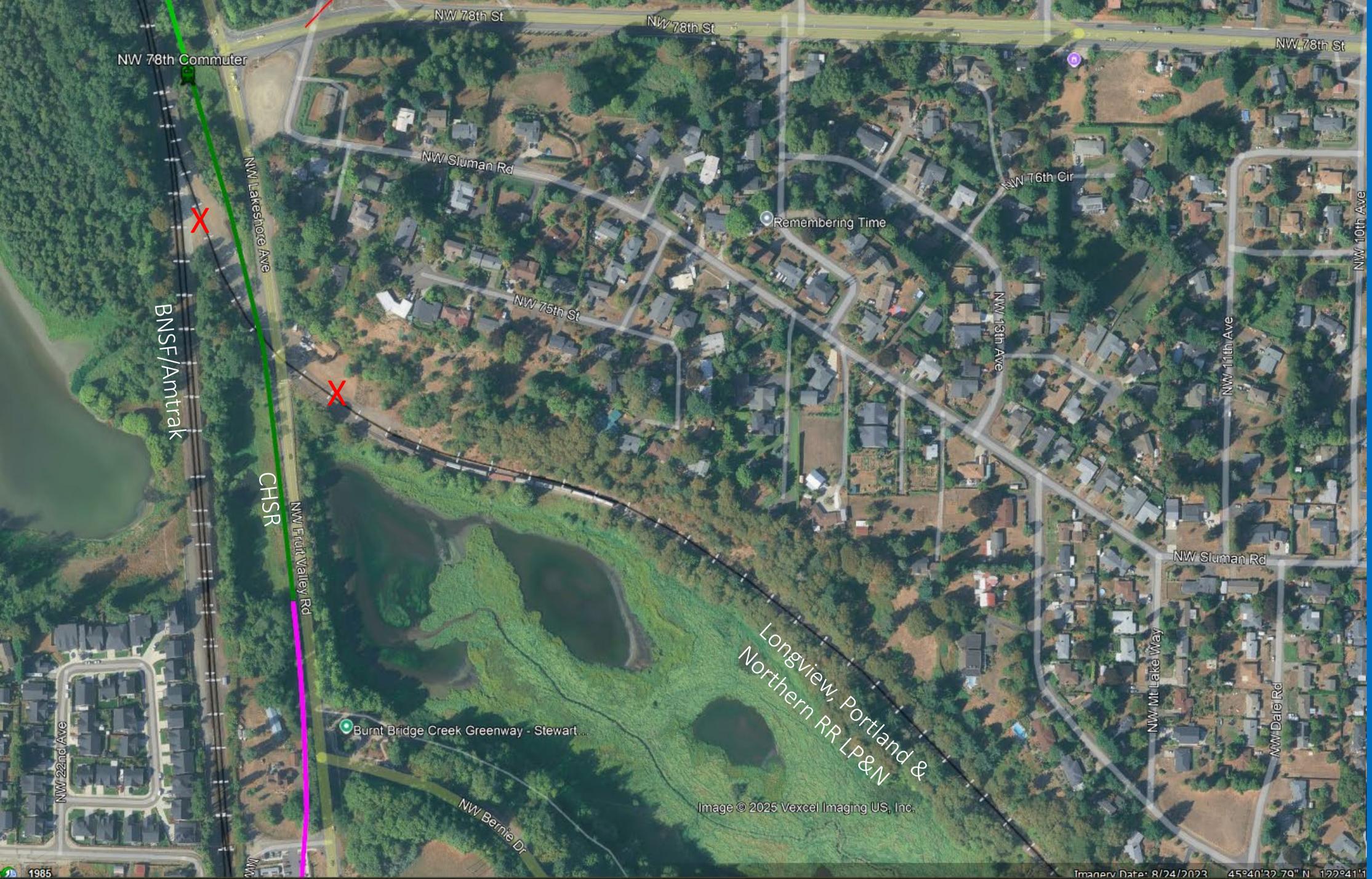
HSR S Vanc_107a

NW Lakeshore Overpass

CHSR Corridor at the Proposed Lakeshore Ave Overpass

The new NW Lakeshore Ave overpass will become a four-lane corridor.

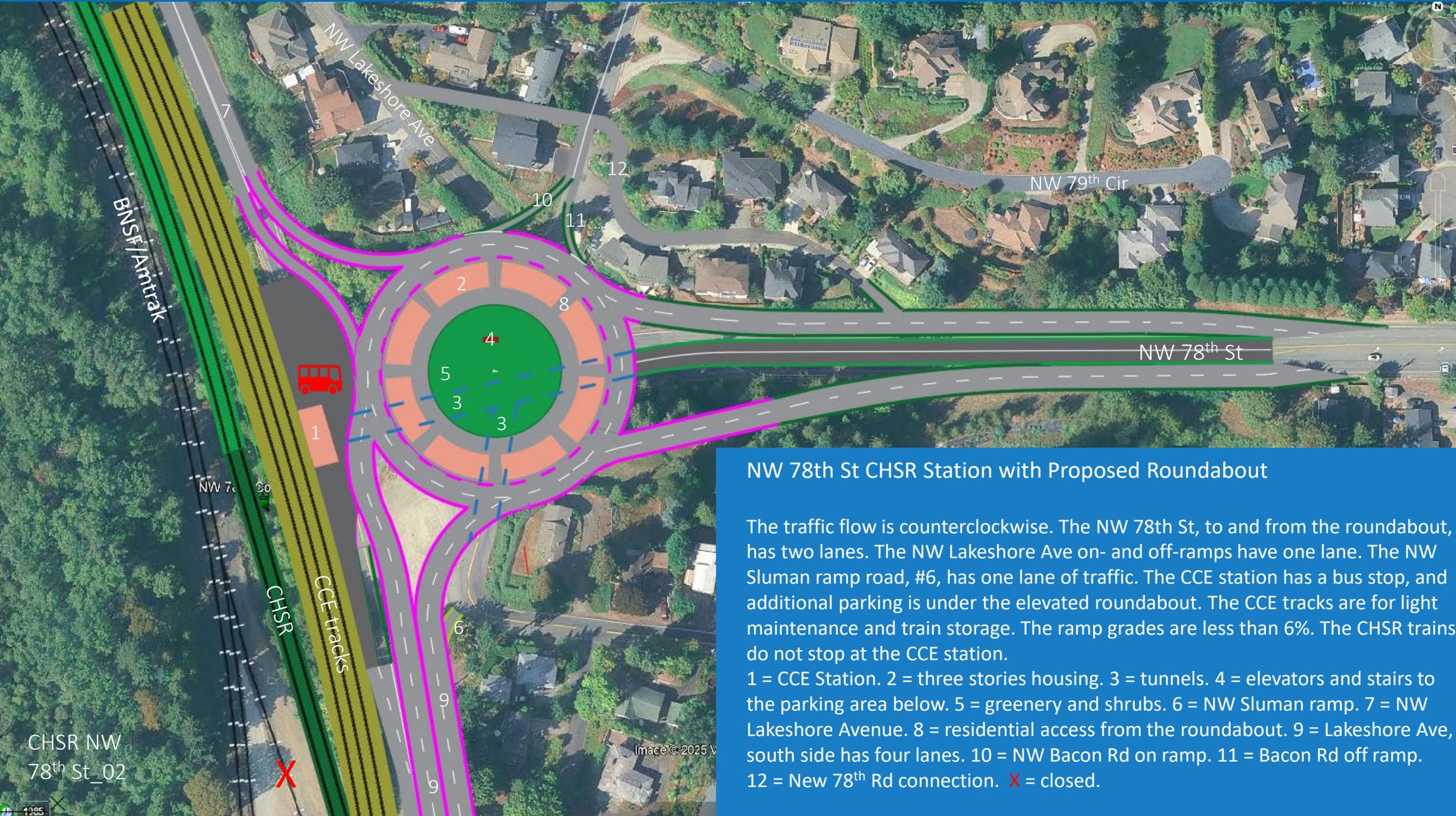
The CHSR is in a short tunnel below the new NW Lakeshore Ave bridge.



CHSR South of NW 78th St CCE Station

The existing LP&N freight RR corridor will be closed **X** and rerouted 1.26 miles to the south, just north of NW 56th St, and in a tunnel below the HV power lines.

The existing LP&N RR corridor can then be developed for housing.



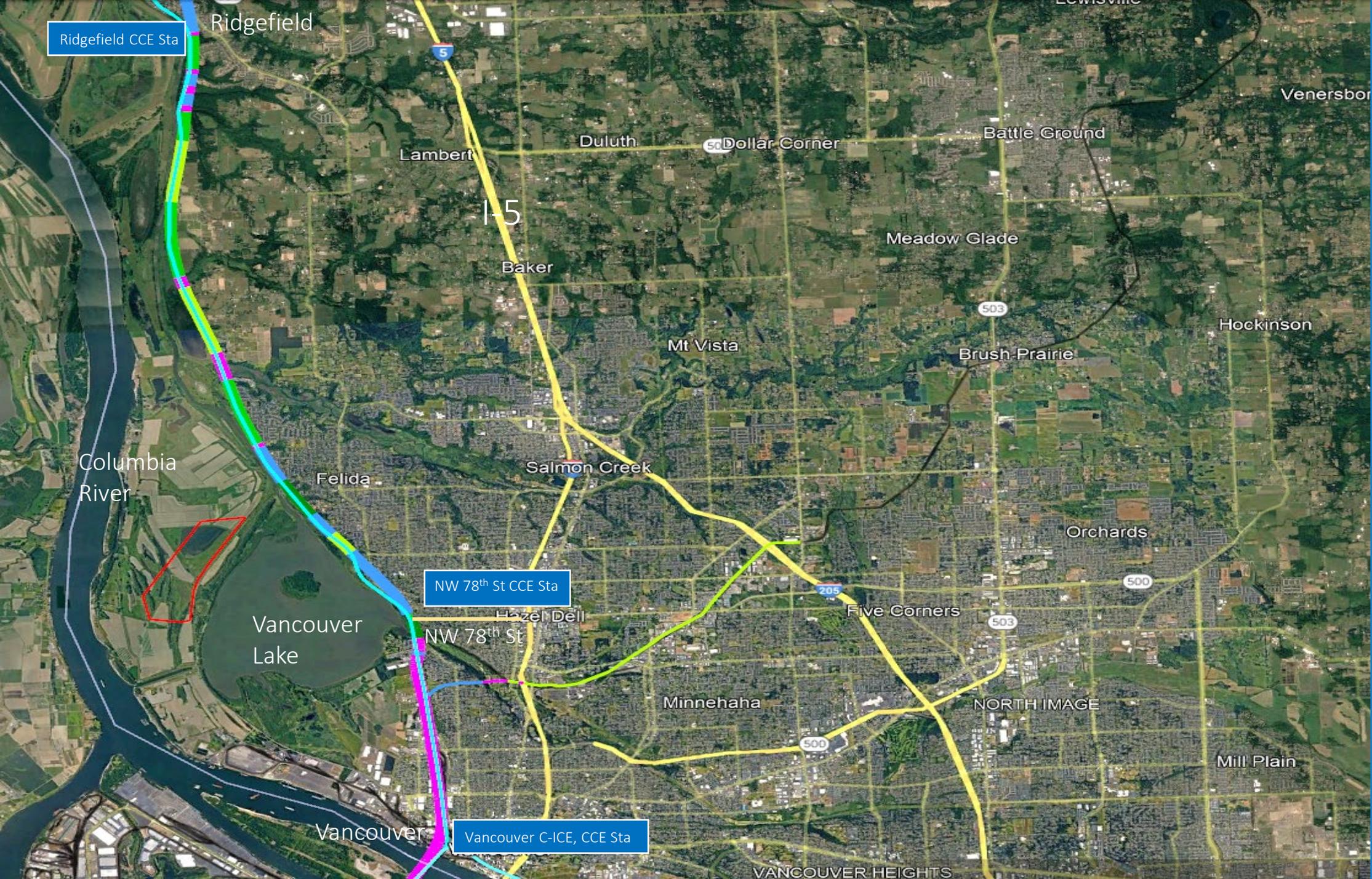
NW 78th St CHSR Station with Proposed Roundabout

The traffic flow is counterclockwise. The NW 78th St, to and from the roundabout, has two lanes. The NW Lakeshore Ave on- and off-ramps have one lane. The NW Sluman ramp road, #6, has one lane of traffic. The CCE station has a bus stop, and additional parking is under the elevated roundabout. The CCE tracks are for light maintenance and train storage. The ramp grades are less than 6%. The CHSR trains do not stop at the CCE station.

1 = CCE Station. 2 = three stories housing. 3 = tunnels. 4 = elevators and stairs to the parking area below. 5 = greenery and shrubs. 6 = NW Sluman ramp. 7 = NW Lakeshore Avenue. 8 = residential access from the roundabout. 9 = Lakeshore Ave, south side has four lanes. 10 = NW Bacon Rd on ramp. 11 = Bacon Rd off ramp. 12 = New 78th Rd connection. X = closed.

CHSR NW
78th St_02

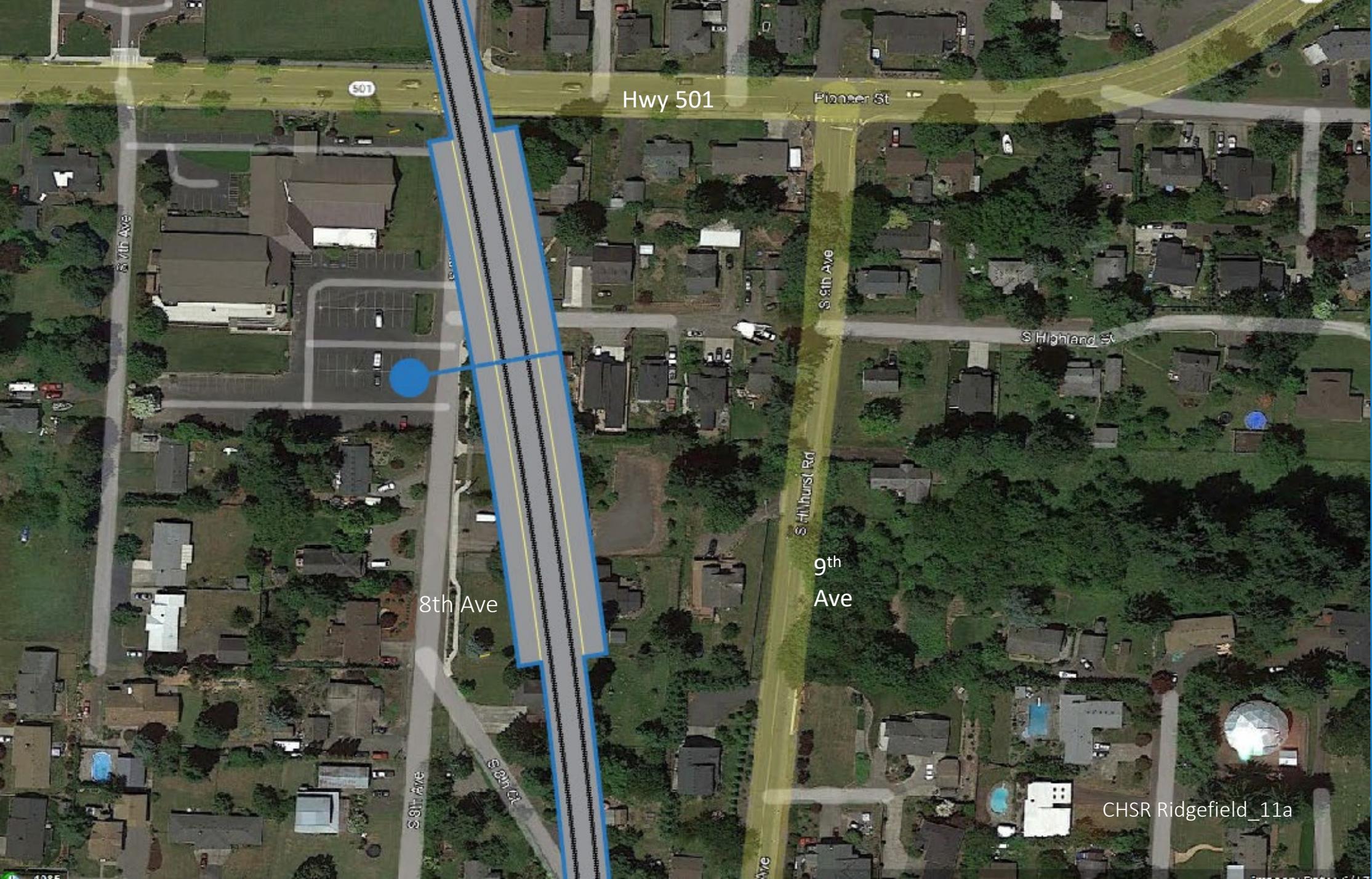
Image © 2025 V



CHSR between
NW 78th St in
Vancouver and
Ridgefield

Several miles are
along a hillside
with a 9% slope.

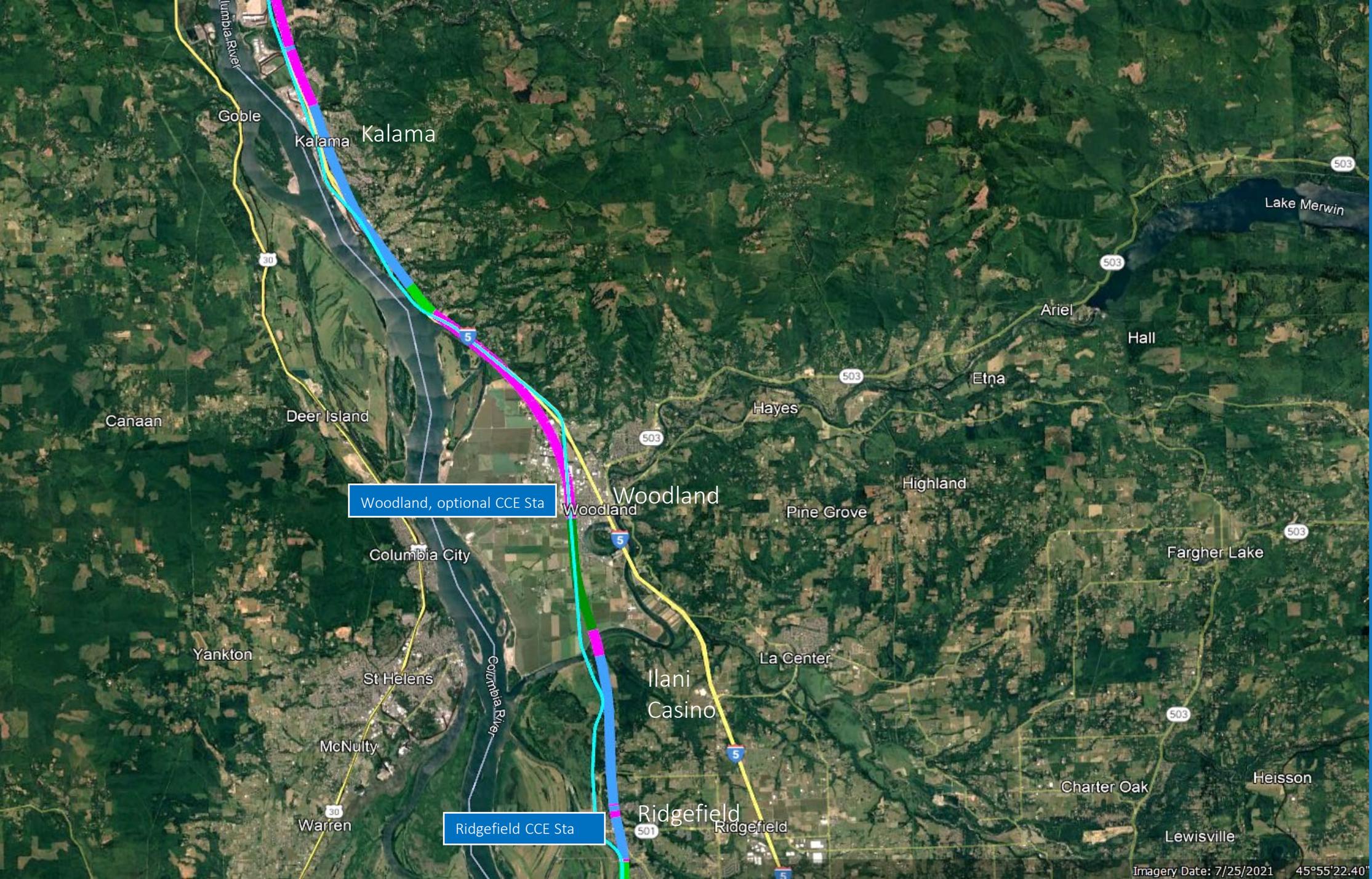
See Stabilization
Plan Addendum.



CHSR Ridgefield CCE Underground Station

The overall station width is 76 ft, and the length is 750 feet.

Commuter trains are shorter than C-ICE trains.



CHSR Corridor between Ridgefield and North Kalama



CHSR Longview Yard

This is a new CHSR full-service yard. The original plan location can no longer be used; that is a reason for the long-term. Planning is essential.

This yard will provide most of the needed maintenance and can store CHSR trains..

Express freight transit exchange can be done at this yard.

A new access road will be required.



CHSR Corridor Longview Station and Yard

The Longview yard is a full-service facility to maintain the CHSR train fleet, including heavy services, such as wheel re-profiling, traction motor exchange, pantograph repair, car repairs, car wash general cleaning, and restocking.

The yard is on ± 35 ft infill; the approach tracks are on flyovers to provide roadway clearance.



CHSR Corridor Original CHSR Station Location

The original station plan can no longer be used because of a lack of consideration for the previously proposed corridor planning.

This is why long-term HSR planning is crucial for achieving the preferred results.



Longview CHSR Station

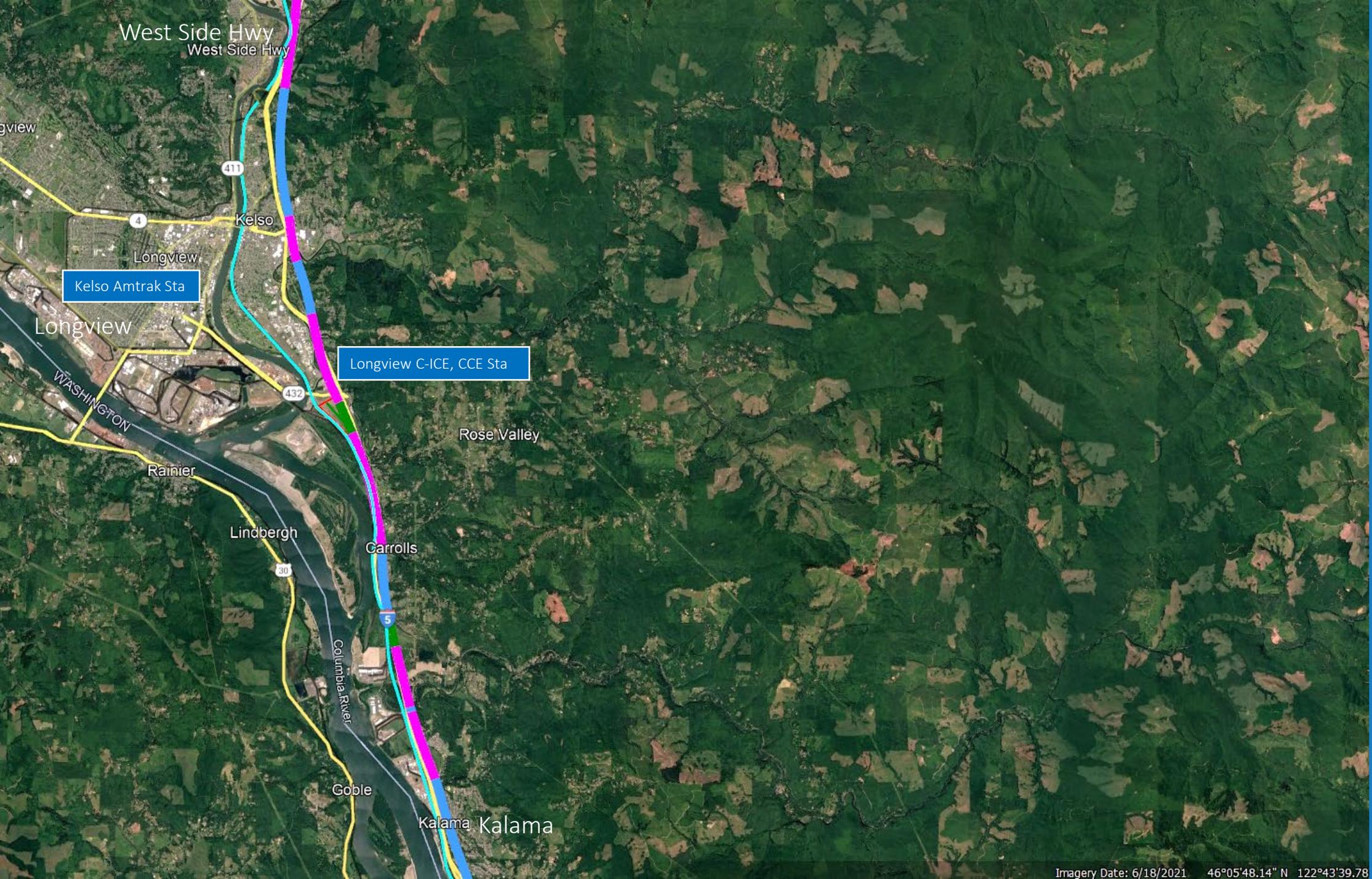
This is the new station location for the CHSR.

Parking may require a parking building.

The platform is 40 feet above ground. The station tracks are 1300 feet long.

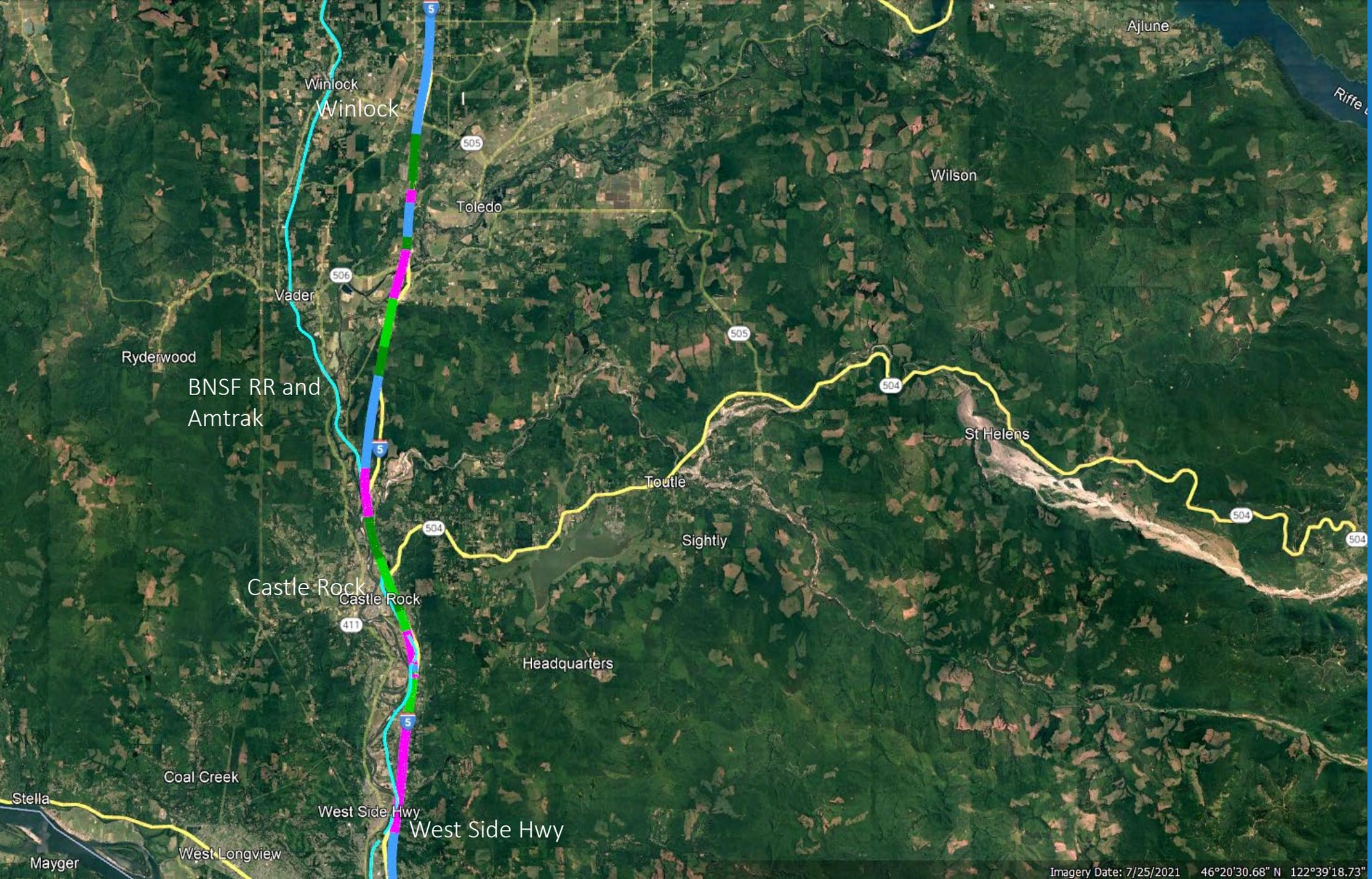
This station has four tracks at the platform. There are two 20-foot-wide platforms. One is between tracks #1 and 2, the other is between tracks #3 and 4.

Access is available via elevators, escalators, and stairs.

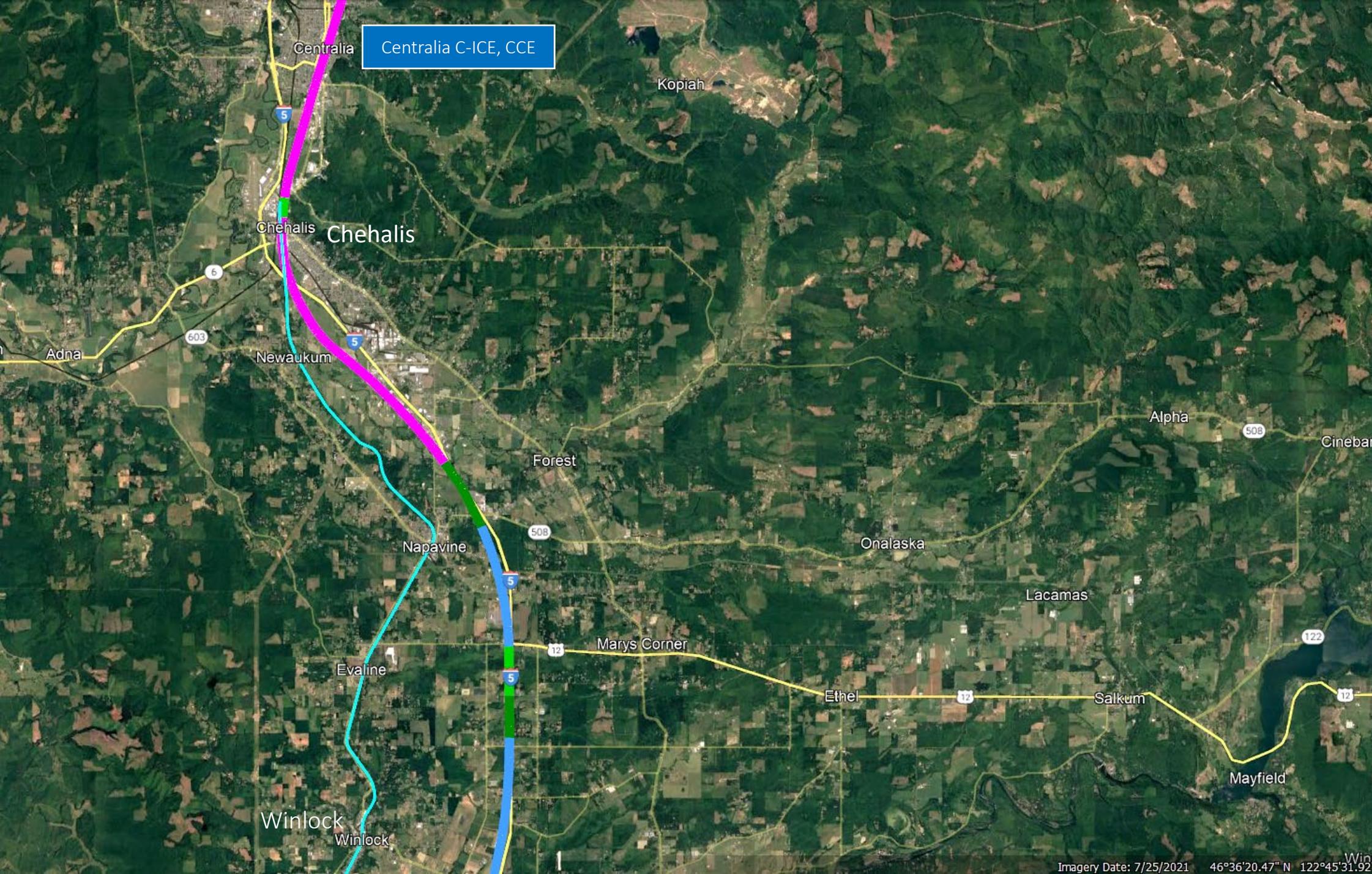


CHSR Corridor
between
Kalama and
Longview
CHSR Station

This corridor
section has
flyovers, fills,
tunnels, and a
full-service
CHSR yard.

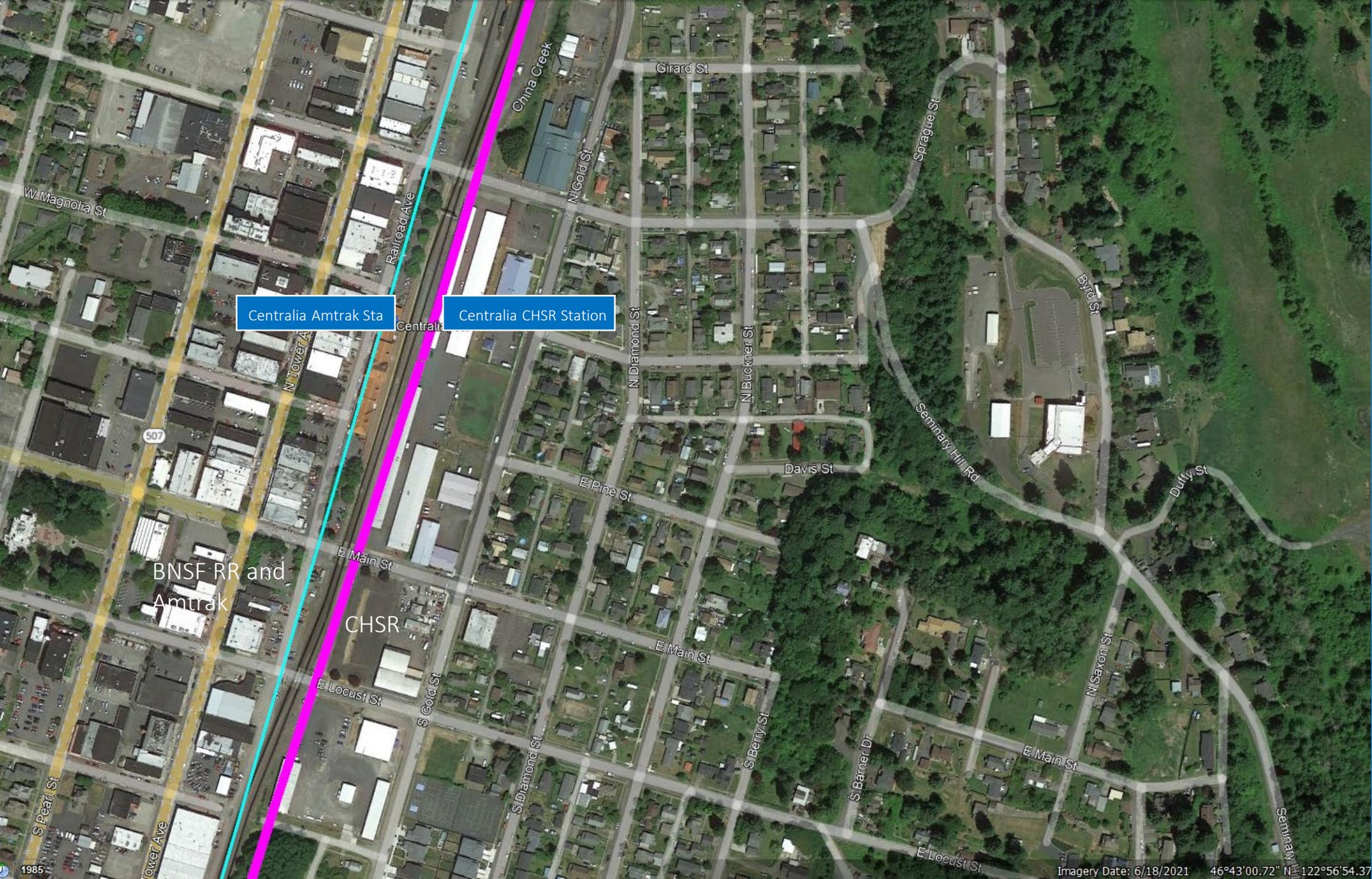


CHSR Corridor between West Side Hwy and East of Winlock



Centralia C-ICE, CCE

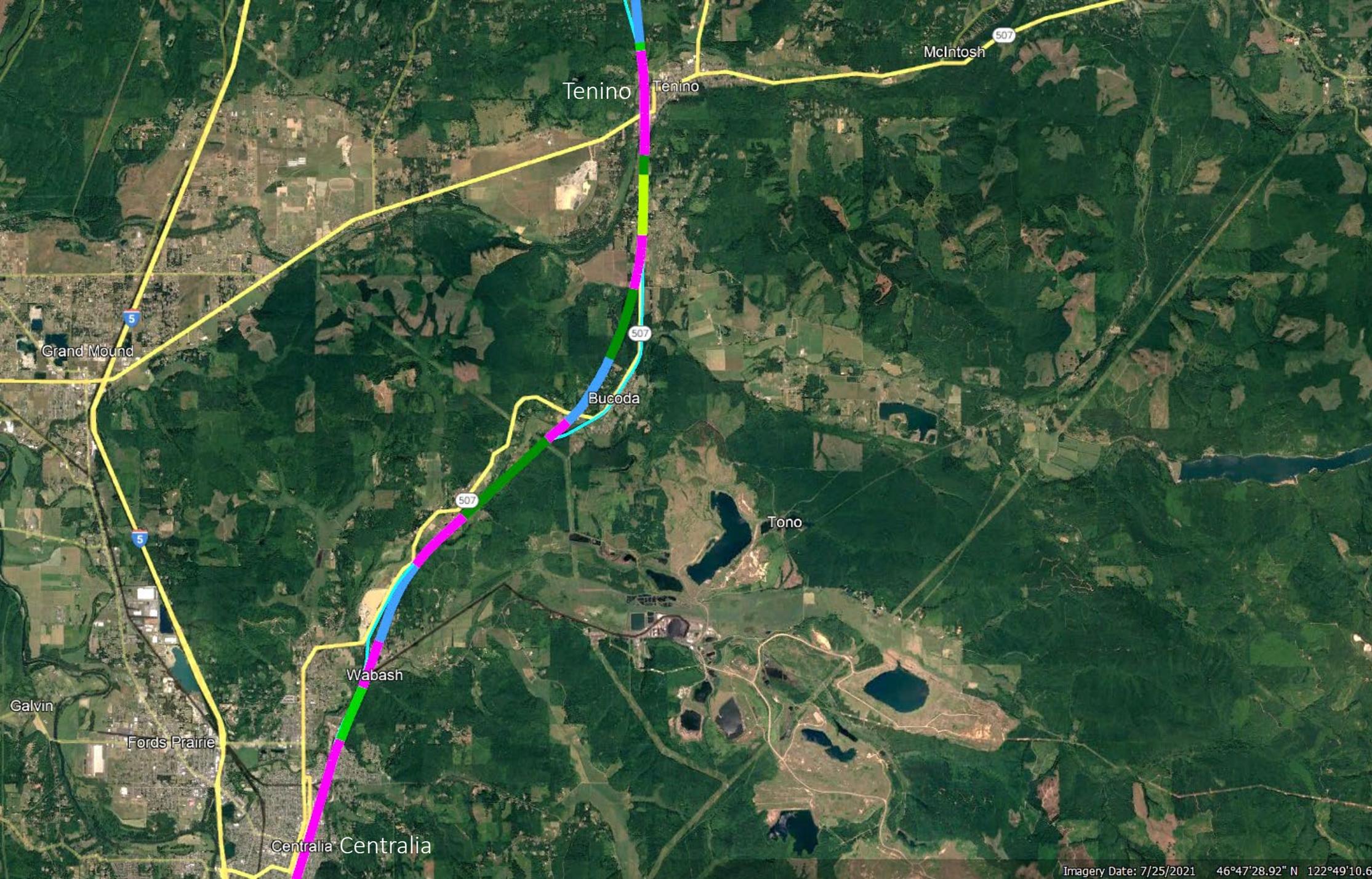
CHSR
Corridor
between East
of Winlock
and Centralia



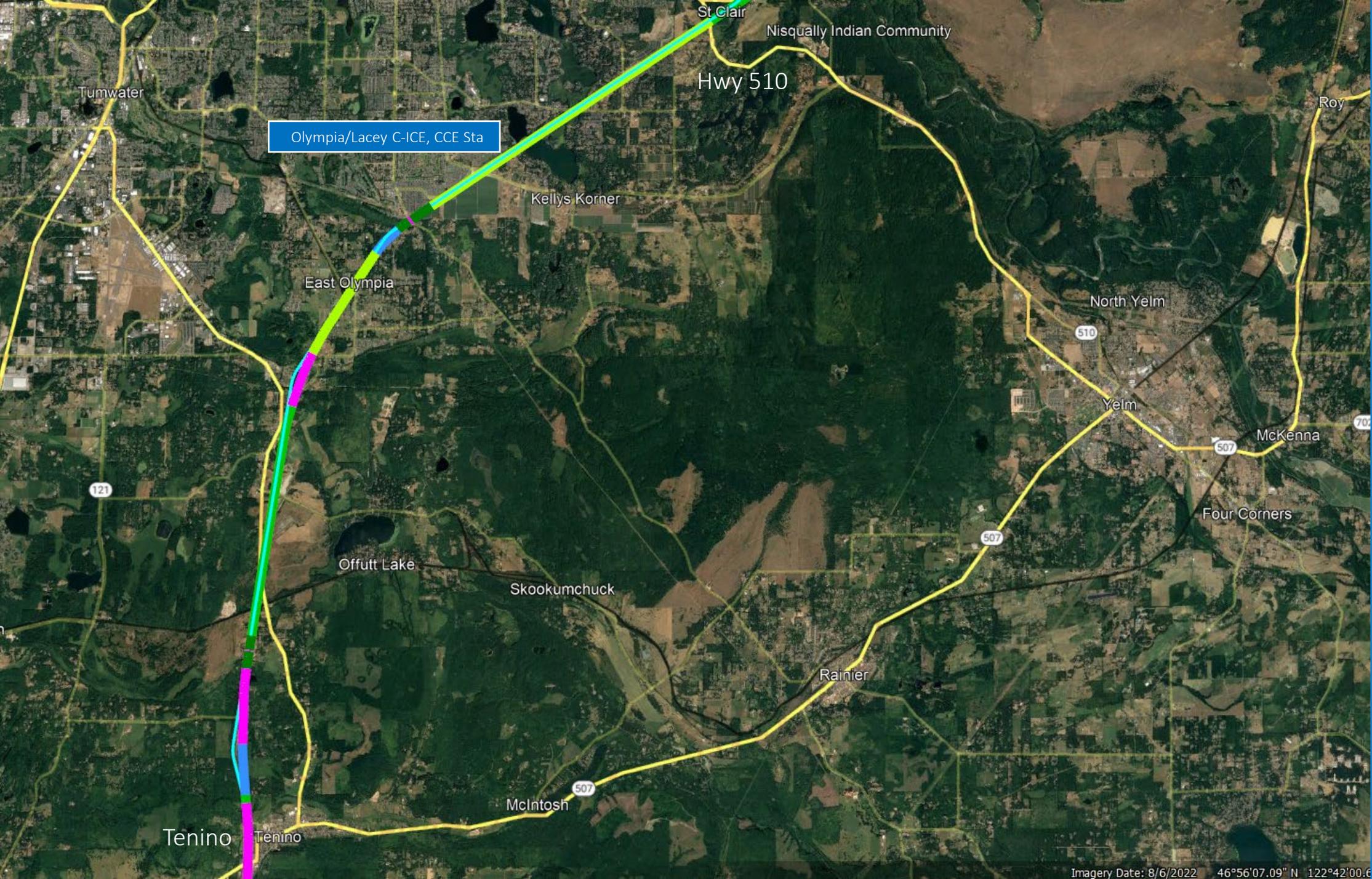
Centralia Amtrak Sta

Centralia CHSR Station

Cascadia High Speed Rail and Amtrak Station in Centralia



CHSR Corridor
between
Centralia and
Tenino



Olympia/Lacey C-ICE, CCE Sta

CHSR Corridor
between
Tenino and
Hwy 510



Olympia/Lacey Amtrak Station

Olympia/Lacey C-ICE, CCE CHSR Station

Yelm Hwy SE to Olympia

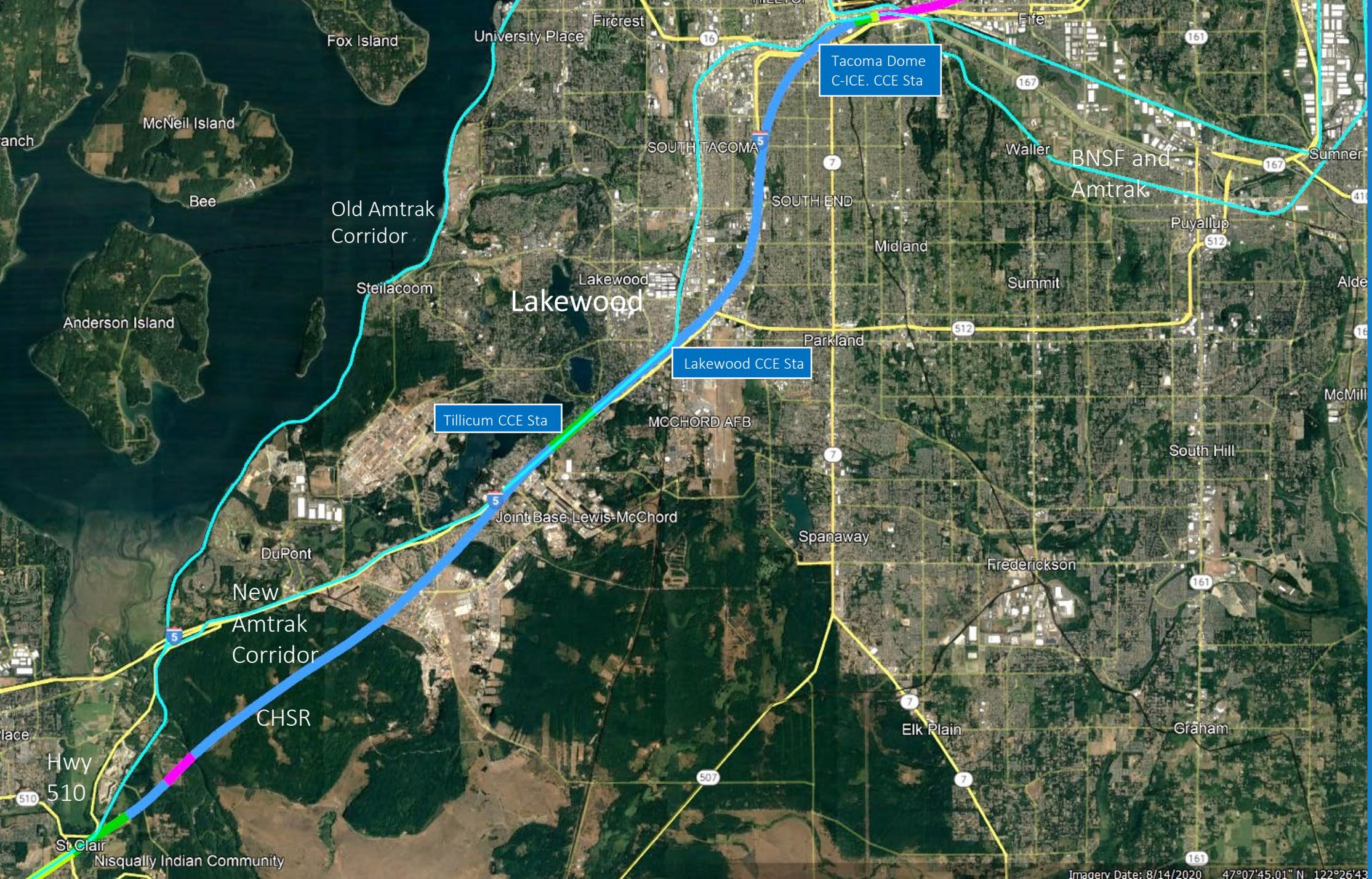
Possible new
Town Center

CHSR train service and express freight transfer

Lacey/Olympia
Proposed
CHSR and
Existing
Amtrak
Stations

The CHSR
corridor is in a
widened cut
under Yelm
Hwy SE and at
the same level
as BNSF/Amtrak
tracks.

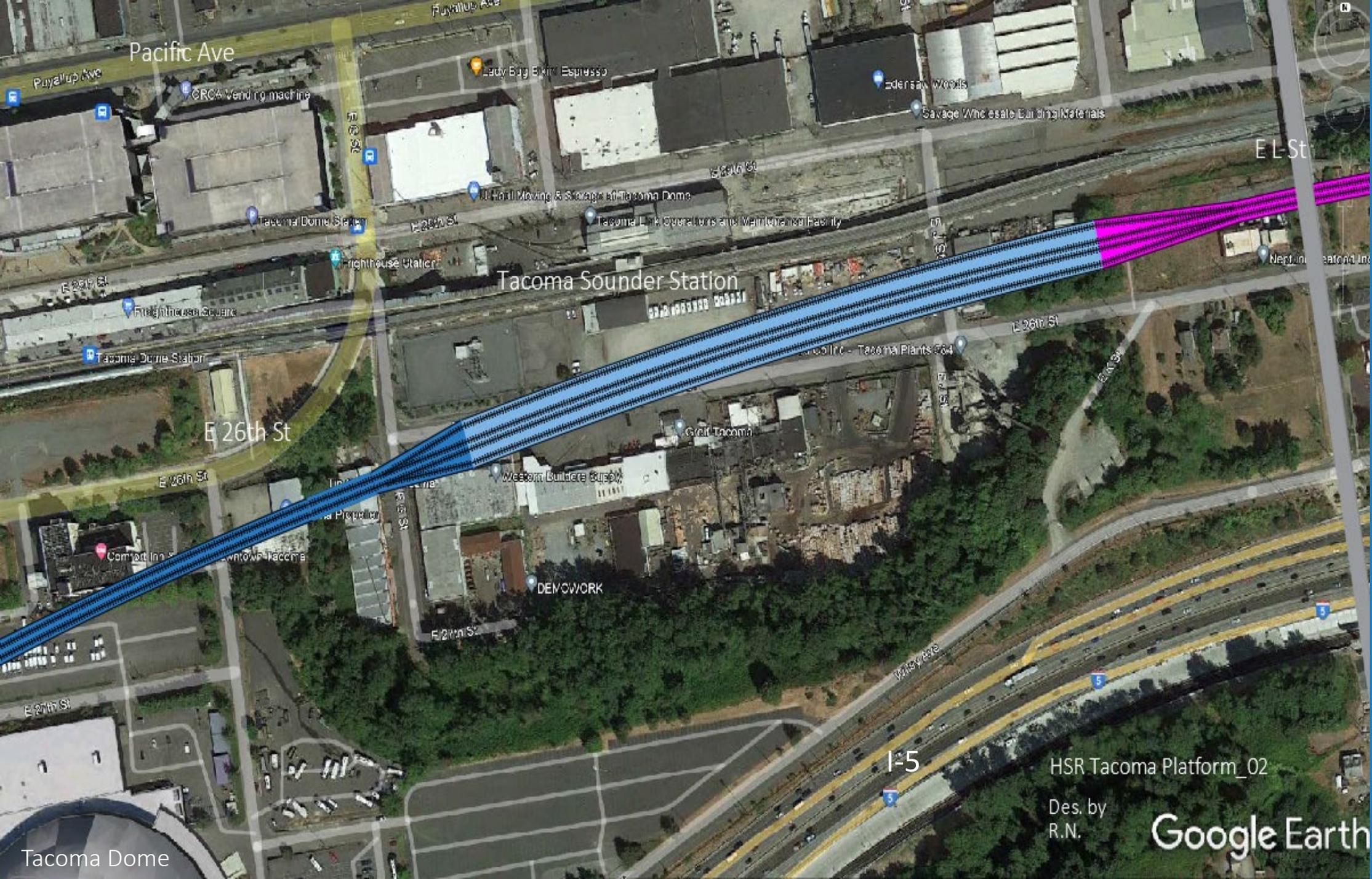
Farmland to the
east is a good
location to
rezone for a new
town center.



CHSR Corridor between Hwy 510 and Tacoma

The existing BNSF freight rail corridor has many tight curves, which are not suitable for CHSR trains.

The Tillicum station is in the cut and cover. The Lakewood and Tacoma stations are in the underground tunnels.



CHSR at the Tacoma Dome Station

The CHSR C-ICE, CCE corridor is part tunnel and part cut and cover.

The station is below the city streets to the west and a flyover to the east. The CHSR will underpass E L Street.

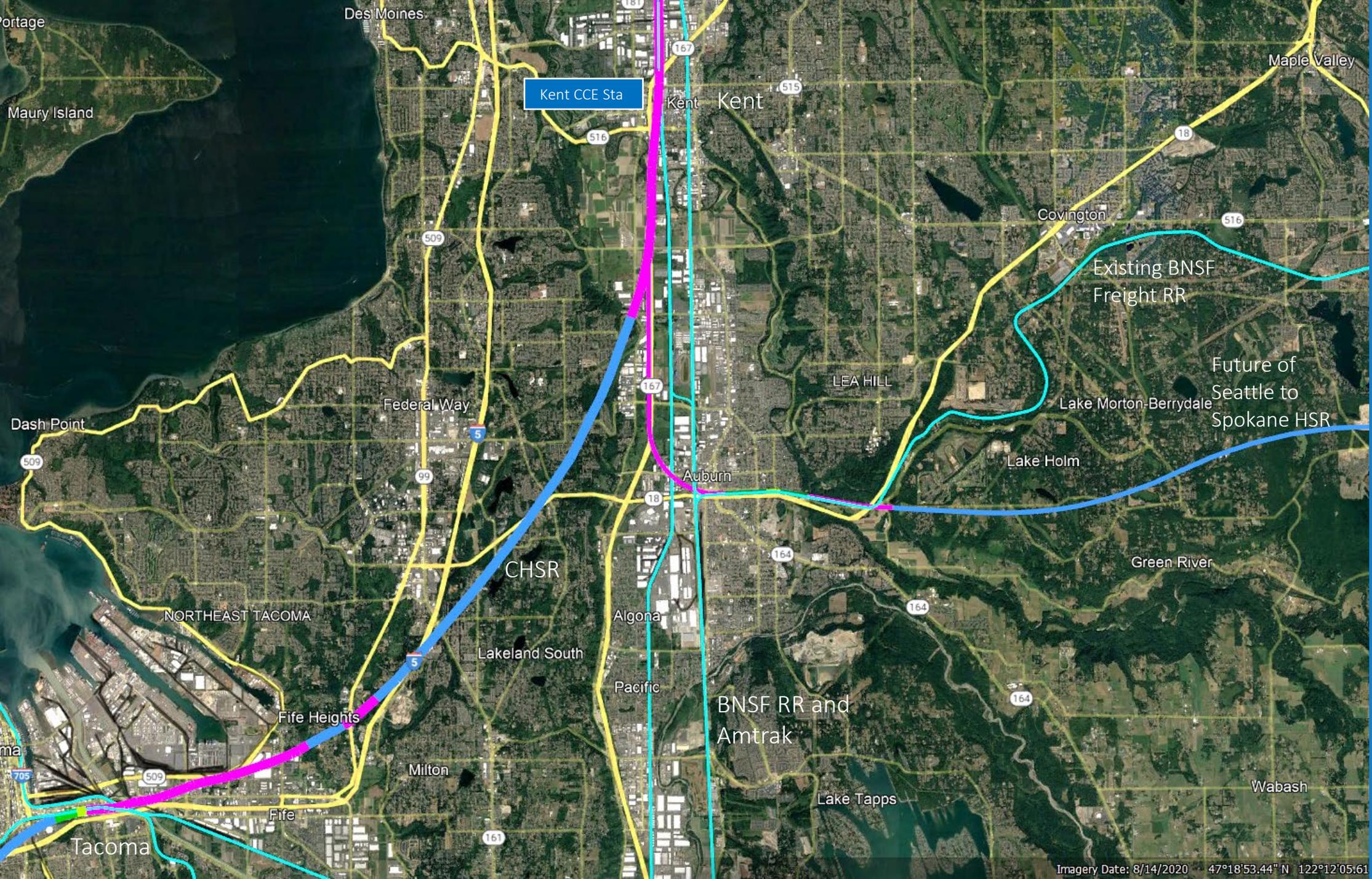
Land surrounding the new C-ICE, CCE Station is a good town center site. (see next page)

HSR Tacoma Platform_02

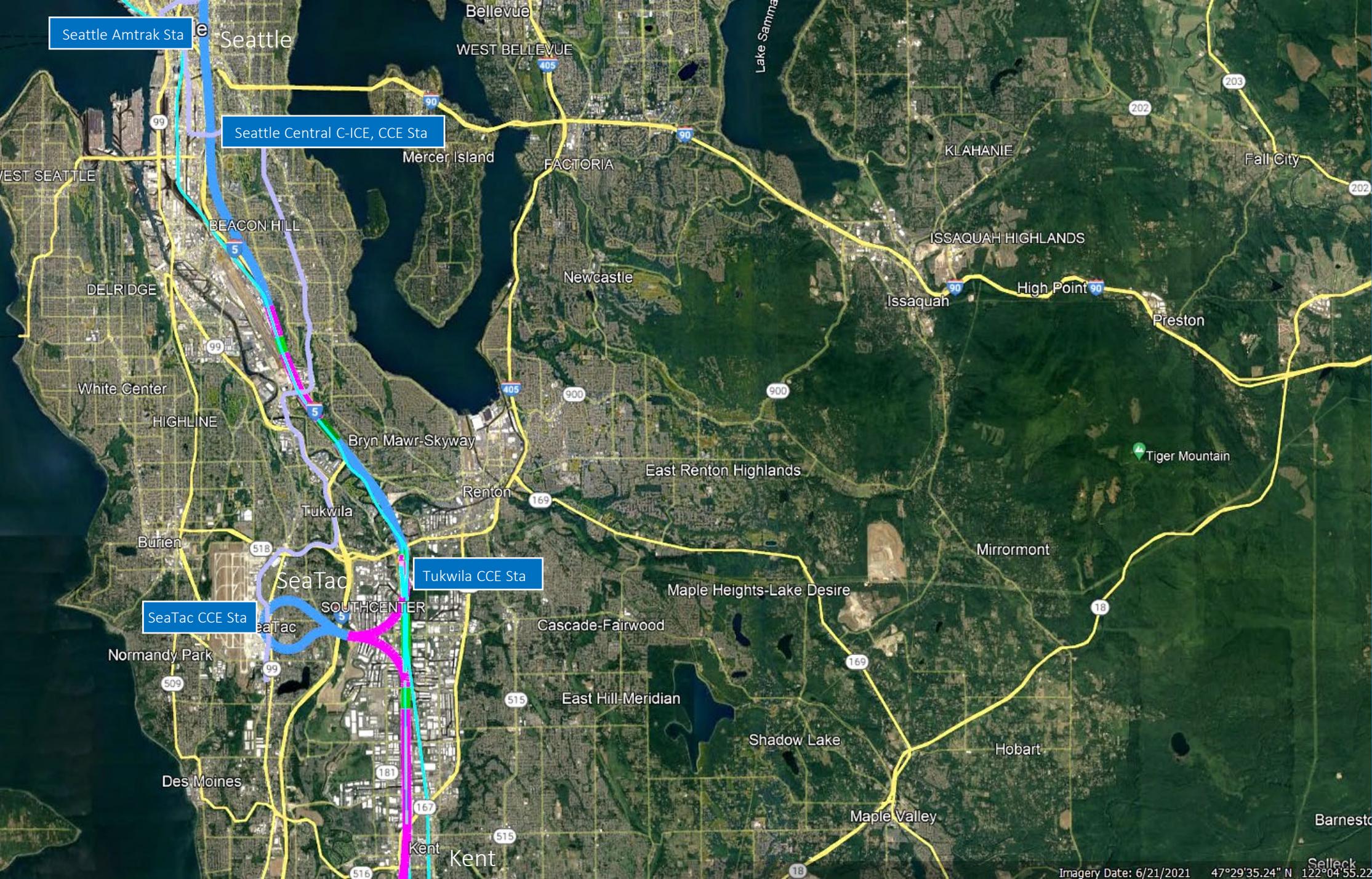
Des. by
R.N.

Google Earth

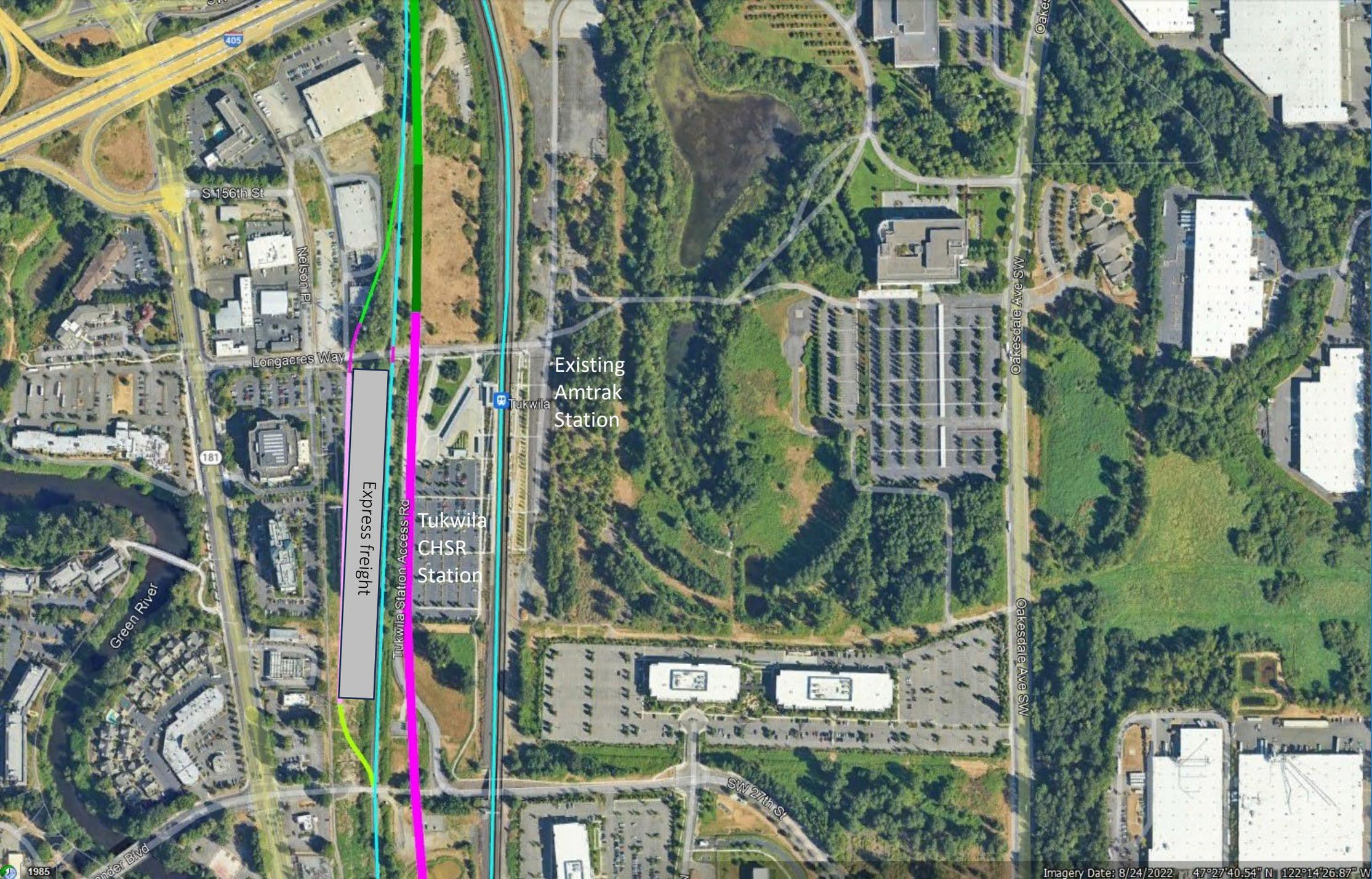
Tacoma Dome



CHSR Corridor between Tacoma and Kent



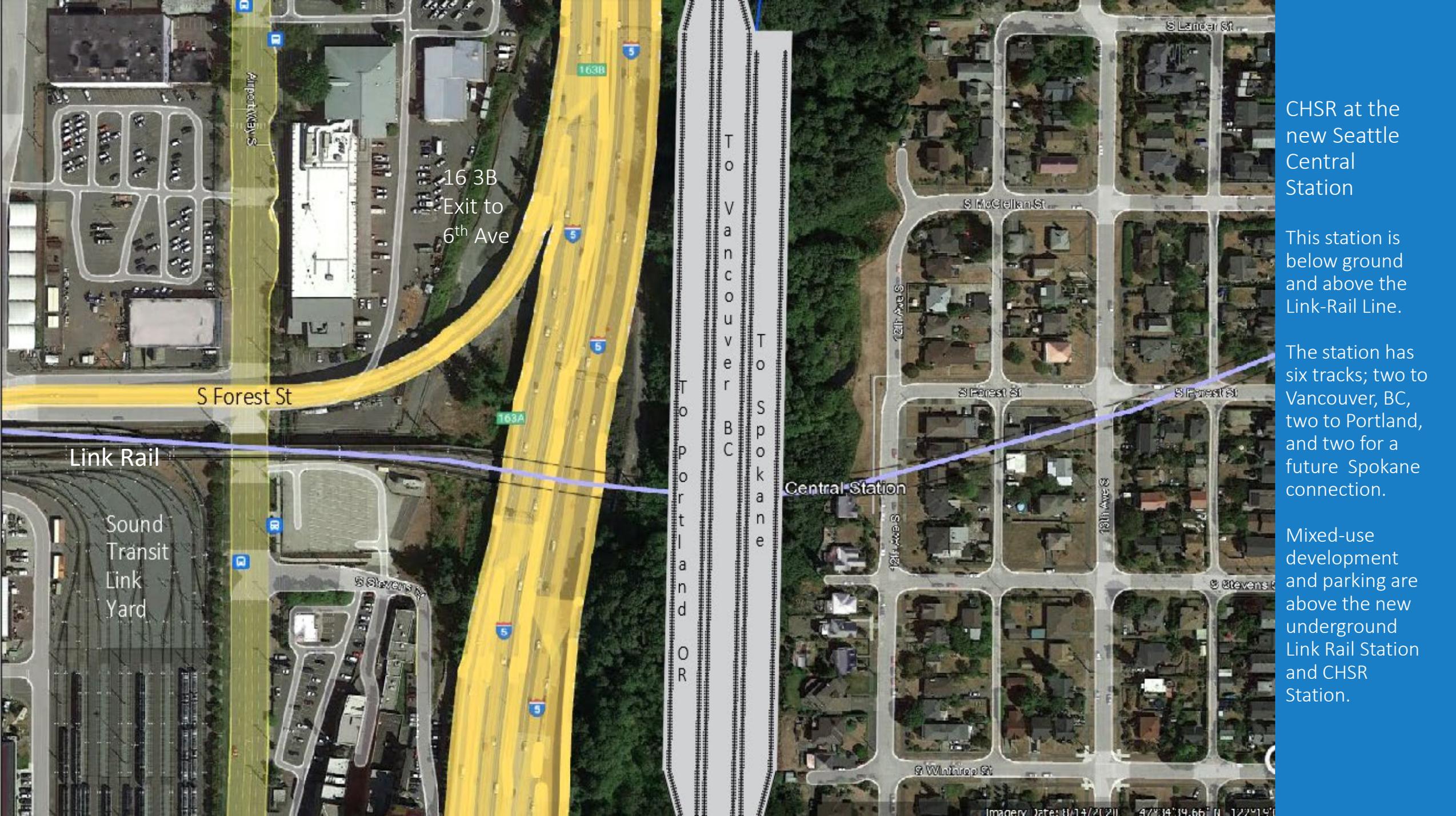
CHSR
between Kent
and Seattle



HSR at Tukwila

Here we have an express freight. Station to load/unload containers.

Not all trains will stop at Tukwila.



CHSR at the new Seattle Central Station

This station is below ground and above the Link-Rail Line.

The station has six tracks; two to Vancouver, BC, two to Portland, and two for a future Spokane connection.

Mixed-use development and parking are above the new underground Link Rail Station and CHSR Station.



RAIL TRANSFER
CHSR TO LIGHT RAIL
RAIL TRANSFER

STATION ENTRANCE

STATION SQUARE

LIGHT RAIL TRANSIT YARD

VARIETY OF HOUSING OPTIONS

DEVELOPMENT BOUNDARY

15,300,000 SF

(2:1 FAR) = 10,200,000 SF

(1:1) = 5.1 mil. SF

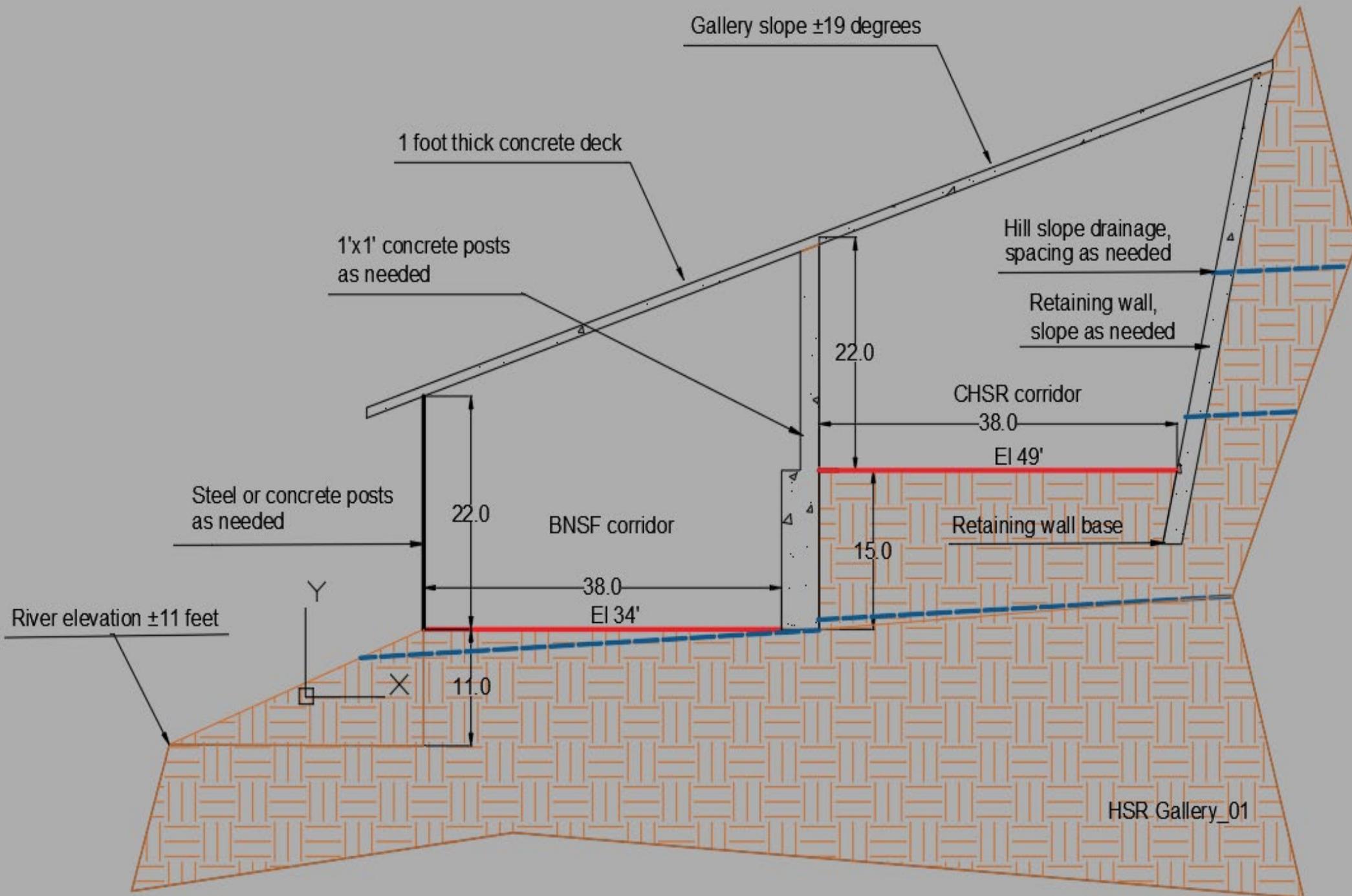
Portland CHSR Station to Olympia/Lacey CHSR Station Mileage and Times

Number One = Priority, Number two = Secondary Stops

Station to Station	CHR Corridor Milage	Estimated Travel Times
Portland-Vancouver, OR # 1	7.38 miles	7 minutes
Vancouver-NW 78 th St # 2	3.98 miles	5 minutes
78 th – Ridgefield # 2	10.28 miles	8 minutes
Ridgefield-Woodland # 2	5.84 miles	6 minutes
Woodland-Long View # 2	15.66 miles	10 minutes
Portland-Long view Direct # 1	43.14 miles	19 minutes
Long View-Centralia # 1	44.61 miles	18 minutes
Centralia-Olympia/Lacey # 1	24.26 miles	12 minutes
Via C-ICE with three stops	Portland-Olympia/Lacey	49 minutes
Via C-ICE with one-stop	Portland-Tacoma-Seattle Central	58 minutes

Olympia/Lacey CHSR Station to Seattle Central CHSR Station Mileage and Times

Station to Station	CHSR Corridor Milage	Estimated Travel Times
Olympia/Lacey-Tillicum	15.22 Miles	10 minutes
Tillicum-Lakewood	2.66 Miles	4 minutes
Lakewood-Tacoma Dome Sta	7.60 Miles	7 minutes
Tacoma Dome Sta-Kent	13.85 Miles	9 minutes
Kent-Tukwila	5.81 Miles	7 minutes
Tukwila-Seattle Central	8.81 Miles	7 minutes
Transportation Mode Comparison	Stop to Stop	Estimated Travel Time
Portland-Seattle King Station	187 miles (Amtrak)	3hr 45 minutes
Portland-Seattle	173.7 miles (Automobile)	2hr 56 minutes
Portland-Seattle Central Station	167 miles (CHSR)	58 minutes



Stabilization Plan, Ridgefield Section Plan, and Sounder Corridor between Seattle and Everett

The slope-drainage pipes prevent landslides.

Falling trees and debris will slide over the gallery roof without damaging the rail tracks.



CHSR Wildlife Under Crossing as Needed

This is an example of providing wildlife under passing. The underpass has open access with trees, shrubs, and greenery to copy the approach sides.

Freight Rail

CHSR

HSR wildlife underpass



CHSR Wildlife Crossing as Needed

This is an example to provide wildlife overpassing. The overpass is fenced with trees, shrubs, and greenery to copy the approach sides.

CHSR Miles between Portland and Centralia, WA

On Ground	Cut/Fill	Flyover or Bridges	Tunnels or Underpass
0.23 Mi Po_013 BNSF *	0.27 Mi Po_010 new	0.70 Mi Po_001 new	1.10 Mi Po_003 new
1.16 Mi Po_020 BNSF	0.12 Mi Po_011 new	3.00 Mi Po_002 new	0.10 Mi Po_008 new
		3.82 Mi Po_004 UPRR/BNSF	
	0.10 Mi Po_015 BNSF	1.32 Mi Po_006 BNSF	1.11 Mi Po_012 new
	0.57 Mi Po_016 BNSF	0.79 Mi Po_007 BNSF *	0.51 Mi Po_014 new
	1.00 Mi Po_018 BNSF	0.20 Mi Po_009 new	0.56 Mi Po_017 new
	2.10 Mi Po_021 BNSF *	0.39 Mi Po_019 BNSF	0.79 Mi Po_025 new
	0.44 Mi Po_022 new	0.17 Mi Po_020a BNSF	0.10 Mi Po_027 new
	0.16 Mi Po_022b new	0.10 Mi Po_022a new	2.82 Mi Po_029 new
	0.19 Mi Po_022d new	0.12 Mi Po_022c new	4.43 Mi Po_034 new
	0.45 Mi Po_023 BNSF	0.10 Mi Po_022e new	0.10 Mi Po_036 I-5
	2.18 Mi Po_031 BNSF *	0.13 Mi Po_024 new	1.00 Mi Po_039 new
	0.39 Mi Po_033 new	0.12 Mi Po_026 new	0.84 Mi Po_043 new
	1.14 Mi Po_035a new	0.10 Mi Po_028 new	2.00 Mi Po_045 new
	0.56 Mi Po_038 I-5	0.51 Mi Po_030 new	0.20 Mi Po_050 new
	0.53 Mi Po_041 new	4.51 Mi Po_032 new	2.70 Mi Po_058 new
	1.17 Mi Po_047 I-5	0.99 Mi Po_037 I-5	0.98 Mi Po_063 I-5
	0.10 Mi Po_049 new	1.92 Mi Po_040 I-5 *	3.47 Mi Po_068 new
	0.60 Mi Po_052 new	1.48 Mi Po_042 new *	2.42 Mi Po_071 new
	0.39 Mi Po_053 I-5	0.76 Mi Po_044 new *	
	1.25 Mi Po_054 I-5	3.35 Mi Po_046 I-5 *	
	0.71 Mi Po_055 I-5	0.13 Mi Po_048 new	
	0.55 Mi Po_056 I-5	1.00 Mi Po_051 new	
	0.87 Mi Po_059 I-5	1.41 Mi Po_057 new *	
	1.42 Mi Po_060 I-5 *	1.47 Mi Po_061 new	
	0.38 Mi Po_062 I-5	0.39 Mi Po_064 I-5	
	0.26 Mi Po_065 I-5	6.00 Mi Po_073 new	
	0.80 Mi Po_066 new	3.13 Mi Po_075 BNSF	
	0.64 Mi Po_067 new		
	0.83 Mi Po_069 I-5		
	0.97 Mi Po_070 I-5		
	1.45 Mi Po_072 I-5		
	0.39 Mi Po_074 new		
1.39 Miles 1.58 %	22.98 Miles 26.20 %	38.11 Miles 43.45 %	25.23 Miles 28.76 %
			87.71 Miles Total HSR
			93 Miles Total Amtrak

New and existing Right of Way (RoW)

49.47 miles in a new corridor	38.24 miles in an existing right of way, BNSF, or Hwy
56.40 % of this CHSR RoW must be acquired	43.60% may be shared
Tunnel miles may be excluded from the RoW purchase.	

* = Some deviations, as some miles are aside from the named corridor segment.

CHSR Miles between Centralia, WA, and Seattle Central Station

On Ground	Cut/Fill	Flyover or Bridges	Tunnels or Underpass
0.77 Mi Po_086 Hwy 507	0.74 Mi Po_077 new	1.34 Mi Po_076 BNSF	1.14 Mi Po_079 new
1.56 Mi Po_097 BNSF	1.45 Mi Po_081 BNSF	0.62 Mi Po_078 new	0.96 Mi Po_083 new
2.42 Mi Po_102 BNSF	0.94 Mi Po_084 new	0.82 Mi Po_080 BNSF *	0.68 Mi Po_090 new
0.22 Mi Po_102b BNSF	0.26 Mi Po_087 Hwy 507	0.35 Mi Po_082 new	0.55 Mi Po_098 new
0.43 Mi Po_102d BNSF	0.11 Mi Po_089 new	0.72 Mi Po_085 new	0.91 Mi Po_104 new
	0.24 Mi Po_092 BNSF	1.33 Mi Po_088 BNSF *	8.59 Mi Po_106 new
	0.20 Mi Po_094 BNSF	1.00 Mi Po_091 new	1.66 Mi Po_108 Pac Hwy
	3.22 Mi Po_095 BNSF	0.05 Mi Po_093 BNSF	3.67 Mi Po_109 PC/I-5
	0.21 Mi Po_099 new	0.79 Mi Po_096 new	3.58 Mi Po_110 new *
	0.34 Mi Po_101 BNSF	0.05 Mi Po_100 BNSF	0.57 Mi Po_114 new
	1.74 Mi Po_103 BNSF *	0.10 Mi Po_102a BNSF	6.53 Mi Po_116 new
	1.00 Mi Po_107 I-5	1.13 Mi Po_102c BNSF	2.42 Mi Po_122 new
	0.32 Mi Po_111 new	0.71 Mi Po_105 new	3.51 Mi Po_127 new *
	1.48 Mi Po_118 SP&S	0.77 Mi Po_112 new	
	1.10 Mi Po_119 SP%S	2.64 Mi Po_113 new	
	0.10 Mi Po_120 new	0.59 Mi Po_115 new	
		6.10 Mi Po_117 new, Hwy 167 and former SP&S	
	0.12 Mi Po_121 new	1.42 MI Po_124 I-5, BNSF	
	0.53 Mi Po_123 I-5, BNSF	0.59 Mi Po_126 I-5, BNSF	
	0.33 Mi Po_125 I-5, BNSF		
5.40 Miles 7.13 %	14.43 Miles 19.06 %	21.12 Miles 27.89 %	34.77 Miles 45.93 %
			75.72 Miles Total CHSR
			(79.72 via SeaTac) CHSR
		SeaTac Corridor	
		1.64 Mi Po_127a3 new	
			4.00 Mi Po_127a2 new
		2.11 Mi Po_127a1 new	
		3.75 Miles SeaTac CHSR	4 Miles
			7.75 Miles Total
			94 Miles Amtrak

New and existing Right of Way (RoW) declaration.

39.84 miles in a new corridor	39.88 miles in an existing right of way, BNSF, or Hwy
49.98 % of this CHSR RoW must be acquired.	50.03 % may be shared
Tunnel miles may be excluded from RoW purchase.	

* = Some deviation, as some miles are aside from the named corridor segment.

Please see below the educational videos of tunnel-boring machines for different geology. (Skip advertising)

(25) TBM Variable (25) TBM Variable Density[®] EN - YouTube[®] EN - YouTube

Tunnel Boring Machine (TBM)
animation. - YouTube