

## PUBLIC COMMENTS FOR IBR PROGRAM EXECUTIVE STEERING GROUP

*Received between December 14, 2021 – January 18, 2022*

Brad Perkins

12/14/21

IBR Program Team,

I hope all is well with you. With the new year brings Cascadia High Speed Rail Company's "build forward better," progressive and green multi-modal bridge and other alternative plans to the IBR Program committees. Please send these attachments to all IBR members of the Executive Steering Committee, Equity Advisory Group and Community Advisory Group. I also wish to speak at each of the upcoming meetings this month.

Thank you,  
Brad Perkins, Pres./CEO  
Cascadia High Speed Rail Co.

*\* ADA compliant versions of the attachments can be made available upon request*

Bob Ortblad

1/17/22

ESG Public Comment

*Don't put a concrete lid on Vancouver's River-Walk.*

*Visual, air, and noise pollution!*

*\* ADA compliant versions of the attachments can be made available upon request*

Bob Ortblad

1/17/22

ESG Public Comment

*See attachment*

*\* ADA compliant versions of the attachments can be made available upon request*

Bob Ortblad

1/17/22

ESG Public Comment

*See attachment*

*\* ADA compliant versions of the attachments can be made available upon request*

Bob Ortblad

1/17/22

ESG Public Comment

The IBR's bridge options use the same 1915 truss technology as the original bridge. Buoyancy is free and makes an immersed tunnel almost immune to earthquakes.

*See attachment*

*\* ADA compliant versions of the attachments can be made available upon request*

# CASCADIA HIGH SPEED RAIL

## TIER 1 EIS STUDY: EXECUTIVE SUMMARY

**ULTRA HIGH  
SPEED RAIL  
250 MPH+**



### KEY HIGHLIGHTS

- The Portland and Seattle Cascadia High Speed Rail Corridor should be developed effectively for \$22.3 billion by largely paralleling the existing I-5 highway in Oregon and in Washington.
- Using a Public/Private Partnership (P3) financing structure, the private sector can pay up to 50 to 70 percent of the project capital costs and all its operating costs.
- The project would generate significant economic development in each of the cities and towns along the corridor creating over 400,000 person years of work, and \$15 billion in increased income in the CHSR corridor area by 2050.
- The CHSR's electrified power source will significantly reduce air pollution levels, help reduce climate change disasters and help meet local carbon reducing goals.

### COMPANY OVERVIEW

Cascadia High Speed Rail, LLC (CHSR) has developed a plan that is an advanced example of how ultra high-speed rail corridors can be designed. (See [cascadiahighspeedrail.com](http://cascadiahighspeedrail.com)) Our strategy for the Pacific Northwest is to resource funds for completing a Tier 2 EIS study, securing the corridor right-of-way and developing the corridor using the most advanced technologies and experts to bring bullet trains into the US.

### FINANCIAL AND ECONOMIC OVERVIEW

The financial and economic returns show:

- The system will have a very positive operating ratio of 3.86 and will need no financial subsidy after project completion.
- The project generates economic benefits of over twice its costs with a strong cost benefit ratio of 2.10.
- Station areas will be a catalyst for mixed use and affordable housing development. Will increase property, sales and income tax revenue.

### PRESENTED BY:



### FOR MORE INFORMATION PLEASE CONTACT:

Cascadia High Speed Rail, LLC  
Mr. Brad Perkins, CEO/President • 503-317-6455  
[perkins@cascadiahighspeedrail.com](mailto:perkins@cascadiahighspeedrail.com)

## THE CHSR CENTRAL CORRIDOR

- The Pacific Northwest CHSR corridor offers a prime opportunity for implementing a world class luxury Ultra High-Speed Rail System that will carry 30-40 percent of the growth in regional transportation demand.



- The CHSR Corridor between Seattle and Portland, can be extended north to Vancouver, BC, and south to Eugene. All three segments have independent utility and are economically feasible in their own right.
- The corridor is designated by the USDOT Federal Railroad Administration (FRA) as one of the top HSR rail corridors in America and is rated as the fourth most important corridor for funding by USHSR.

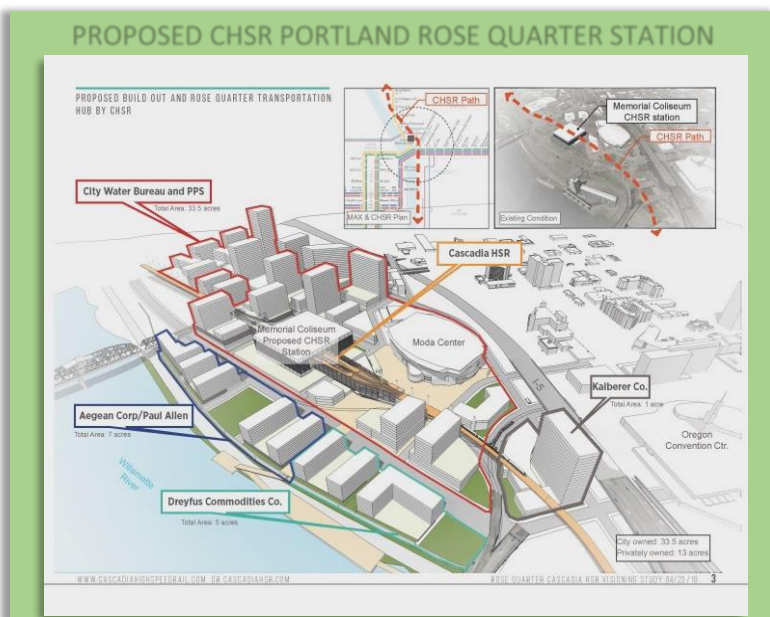
## THE CHSR SYSTEM

The CHSR Tier 1 EIS Study shows that:

- The proposed Alternative 3 option would meet the USDOT FRA public/private partnership financial and economic benefit requirements making the system:
  - Eligible for Federal Funds.
  - Provides the ultimate 250-mph HSR service between Portland and Seattle with travel times under one hour servicing 22 trains per day.
  - A strong candidate for a public/private partnership (P3) that would allow the private sector to participate in the development and operation of the system.
  - A potential candidate for TIFIA Assistance through the Transportation Infrastructure Assistance Finance and Innovation Act (TIFIA) program.
  - Developable using largely new “greenfield” and “tunnel” routes between the major cities of Portland and Seattle. The system would provide a significant efficiency improvement for commuters, intercity passengers, and intercity express parcel service.
- CHSR would comfortably carry over 8 million passengers per year by 2030, or 30-40 percent of the growth in the regions intercity traffic. In addition, this will reduce highway congestion due to reduced auto and truck traffic.

## COMMUNITY BENEFITS

- The system would provide a strong boost to the economies of the towns and cities along the CHSR corridor and throughout the Northwest. In the first 25-years of the project the economy of the corridor could be increased by:
  - Over 400,000 person years of work in productivity along the corridor.
  - \$15.12 billion increase in household incomes.
  - Transit oriented development of \$11.3 billion around station sites along the corridor.
  - Federal income tax base increase of \$1.8 billion.
  - Property tax increase of \$2.8 billion.
- Ultra high-speed rail is a green technology using electric power from renewable localized sources, such as solar, wind and hydro power and not fossil fuel.





December 7, 2021

Chris Regan, IBR Program Environmental Manager  
Emma Johnson, IBR Program Environmental Coordinator  
Angela Findley, IBR Program Environmental Lead

Re: Evaluating Cascadia High Speed Rail (CHSR)

Thank you for getting back to us on the June 17, 2021 submission of CHSR, LLC's Four Part Bridge Plan, as an alternative to the Interstate Bridge Replacement Program. (See Addendum 4 Alternatives)

We can all agree that only one bridge will be built in the I-5 impact area in the next 30 to 40 years because of its great expense and difficult planning process. I believe we can also agree that environmental concerns and traffic congestion are greater today than ever before. CHSR, LLC's Four Part Bridge Plan is a viable alternative for a new Columbia River crossing that proposes other cost cutting and congestion relieving projects compared to the IBR Program. Therefore, by excluding this alternative, by using an outdated 2006 evaluation of high-speed rail, to be the reason to not conduct further study under the IBR program, violates NEPA's requirements for studying viable alternatives. It is standard policy that evaluations done more than seven years ago are too old to use.

CHSR, LLC has spent millions of dollars' worth of time and resources conducting studies that include corridor alignment, station development plans, economic feasibility analysis and Tier 1 Environmental Impact Statement. These studies and independent surveys prove that the economic return on investment is tremendous and people in the Northwest want high-speed rail now. Building a new Cascadia Multi-Modal Bridge that meets all Purpose and Need concerns plus having great economic return on investment is a win/win for people in the NW. We understand that there are other conditions that should occur as part of the bridge development, so we have proposed a highly detailed Four Part Bridge Plan that does an excellent job in addressing the IBR Program's Purpose and Need as described:

- 1.) Increasing vehicle capacity can occur by having a total of 10 to 14 traffic lanes plus 2 shoulder lanes by seismically upgrading the I-5 Bridge's 6 lanes of traffic with an added 4 lanes on Cascadia Multi-Modal Bridge and corridor, 1.3 miles to the west of I-5. (See Addendum Alternative A: Option 1 & 2). This CM-M Bridge will be an attractive time saver for people from West Vancouver, North Portland, NW Portland and eventually Washington County. In Vancouver it will connect via a new expressway next to the BNSF tracks to NW 78<sup>th</sup> Avenue then to the I-5 Interchange. In Portland it will connect to Marine Drive, Columbia Blvd. and west through the BNSF Cut, then tunnel under Forrest Park to Washington County.

The Cascadia High Speed Rail corridor will serve three uses: commuters, long-distance travelers, and parcel express freight. From the Rose Quarter Transportation Hub to the stop at Vancouver's Waterfront it will take 6 minutes and from the RQ to NW 78<sup>th</sup> Ave. it will take 8 minutes. Both the new vehicle and CHSR corridors will remove traffic on I-5 by 30%.

- 2.) The new, exclusive, double-track, electrified Cascadia Commuter Express corridor can move 32,000 commuters per hour in 4-minute intervals. As an exclusive corridor for CHSR, it will not be encumbered by weather or traffic accidents, so time schedules can be guaranteed. A MAX and vehicle bridge should be built to Hayden Island to decrease I-5 Bridge traffic to a greater degree.
- 3.) Freight mobility will greatly increase with a new 4-lane expressway across a new Cascadia Multi-Modal Bridge which will efficiently connect both Portland and Vancouver's ports. With a new center lift span added to the existing BNSF Railroad Bridge, taller boat traffic will be able to line up with the center span of the I-5 Bridge which is 80 feet taller than the existing lift near the north bank of the Columbia River. This change will lessen the number of bridge lifts by 90% to 95% and, thus, lessen freight truck delays. Seismically upgrading the existing I-5 Bridge will still allow passage of the tallest of ships and boats, whereas a new I-5 CRC Bridge will limit ships moving freight at heights no greater than 116 feet.
- 4.) It is rather obvious that, if you reduce I-5 Bridge traffic by 30% with two new corridor options on a new Cascadia Multi-Modal Bridge, the decrease in traffic congestion will guarantee the reduction of traffic accidents.
- 5.) A new low-level bridge to Hayden Island will greatly increase bicycle and pedestrian safety. Cantilevering and widening existing bicycle and pedestrian corridors in each direction of the I-5 Bridge will also improve safety and mobility to a large extent. Biking up a new 130 ft. tall I-5 CRC Bridge will decrease mobility compared to a relatively flat existing I-5 Bridge.
- 6.) Pile driving concrete pilings into the river bottom connected to new beam supports under the existing I-5 Bridge will essentially create new foundations that can resist a 9 Richter scale earthquake. The steel on the upper portion of the I-5 Bridges is in excellent shape. Properly repainted and maintained, they can last at least another 100 years.

In your Conclusion you state that, "At its core, high speed rail is designed for long distance travel." This is true, but CHSR, LLC plans to use the high capacity CHSR corridor for commuters and parcel express freight movement as well. Centrally located through tracks will be installed at station stops so that long-distance passenger and parcel express freight trains can overtake commuter trains. These plans will take further explanation, and we will be glad to share details.

CHSR, LLC's seismic upgrades is estimated to cost from \$350M to \$450 million, which is 10% of the cost for the new IBR. We believe that getting other cost estimates from contractors, of our proposed seismic upgrade, will help to prove that the work is reasonable in cost.

As presented above the new Cascadia Multi-Modal Bridge meets the Purpose and Need statement and is a viable alternative for the IBR program. Both bridges are 1.3 miles apart, within the same impact area and serve the same mobile population so they cannot be considered independent projects that are separate from the IBR Program.

The Columbia River Crossing failed for many reasons. The son of the CRC, IBR, still fails as a vehicle corridor and bridge alternative because of its low 116 ft. clearance height, bottleneck at the proposed improvement to I-5 at the RQ, over stressed capacity, environmental pollution, stimulus to fossil fuel use and major setback for building a new environmentally progressive Cascadia Multi-Modal Bridge.

CHSR, LLC's Four Part Bridge Plan will be a catalyst for building a \$23 billion Cascadia High Speed Rail corridor from Portland to Seattle. Once the CHSR corridor is used by commuters, long distance travelers and parcel express freight transport it can help stimulate a part of the \$355 billion in economic growth as reported by WSP's 2019 Business Case Analysis between Portland and Vancouver, BC.

ODOT has listened to the community in North and NE Portland by slowing down the I-5/RQ Improvement Project process and deciding to change the freeway cover design to support 4 to 6 story buildings and thus truly connect the community. Another important part of the plan, besides building a new bridge for CHSR is to locate a bullet train station at the RQ Transportation Hub, which would be the economic stimulant to help raise property values and make the I-5/RQ freeway cover project more economically feasible.

This new CRC process should not be done in a silo, but instead it is very important to realize that the new transit corridor will stimulate green economic growth at every CHSR stop from Eugene to Vancouver, BC. ODOT needs to allow alternatives to be studied for climate justice and equity as you did for racial justice in North/NE Portland's Black community.

As environmental and congestion concerns increase in the Northwest it is critical to not just build a new CRC for mostly cars and trucks but provide a catalyst for transformational change as to how we travel, live, work, shop and are entertained. Living close to transportation hubs with multiple choices as to how we get around is the most environmentally progressive and equitable way to live for the benefit of future generations.

Studies have shown that people in the Northwest are ready for high-speed rail. ODOT will gain massive kudos if it decides that the IBR program won't work because of cost, height restrictions, congestion, pollution and unpopularity. Times are more pressing as to how we live and use our money on freeway projects when climate disasters will get worse around us. We can instead be a progressive example of needed change in America with a lifestyle and economy not based on burning fossil fuel.

Federal money for a \$4.5 billion CRC Project can out compete other national infrastructure projects if it partners with the private sector on multi-modal projects. The new federal infrastructure bill requires that, "any city or state seeking federal funding for transport projects costing more than \$750 million will be required to evaluate whether partnering with private sector investors would deliver better results." Adhering to this federal requirement and the National Environmental Protection Agency's requirement to study viable alternatives are probably the most important reasons to work with CHSR, LLC, which is years ahead in providing a corridor for 250 mph bullet trains on a regional inter-connected transportation system. We are currently talking to members of the Congressional delegation to secure \$7.5 million for the next Tier 2 EIS study. We are also contacting representatives of major companies that are most likely to have an economic and transport investment interest in CHSR, LLC and the CHSR corridor project that has citizen, environmentalist and government support.

The Future is NOW,

Brad Perkins, Pres./CEO  
CHSR, LLC; 503 317 6455  
[cascadiahighspeedrail.com](http://cascadiahighspeedrail.com)

Dr. Alexander Metcalf, President  
Transportation Economics & Management Systems

# CASCADIA HIGH SPEED RAIL COMPANY'S FOUR PART BRIDGE PLAN ADDENDUM

## As an Alternative Program for the Interstate Bridge Replacement Program

- Alternative A: THE NEW MULTI-MODAL BRIDGE AND VEHICLE INTERCHANGES
- Alternative B: THE HAYDEN ISLAND AUXILIARY BRIDGE
- Alternative C: I-5 BRIDGE SEISMIC UPGRADE AND POSSIBLE ADDITIONAL TRAFFIC LANES
- Alternative D: NEW CENTER LIFT FOR EXISTING BNSF FREIGHT RAIL BRIDGE



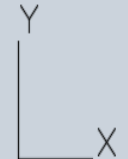
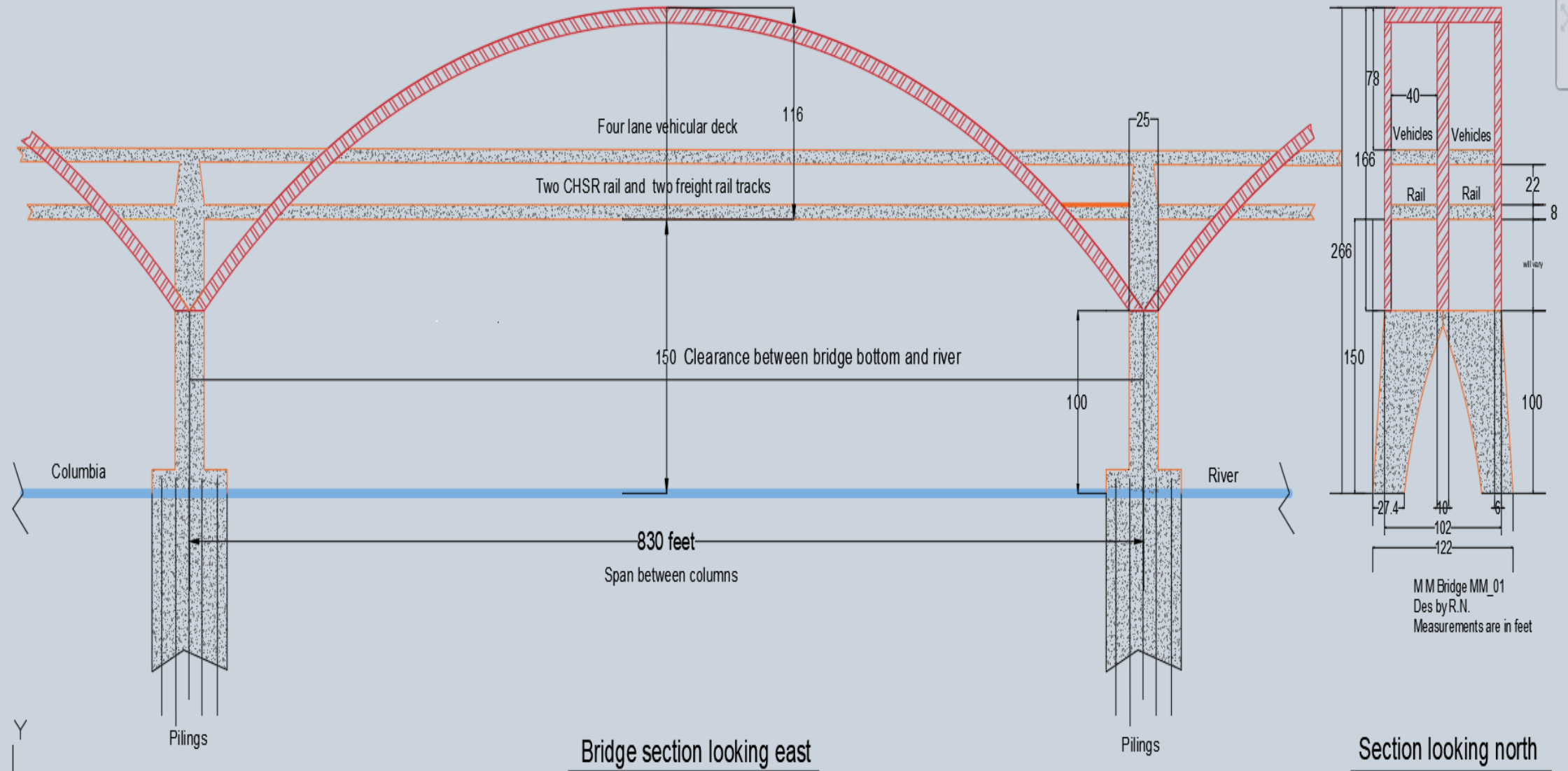
## Alternative A: THE NEW MULTI-MODAL BRIDGE AND VEHICLE INTERCHANGES

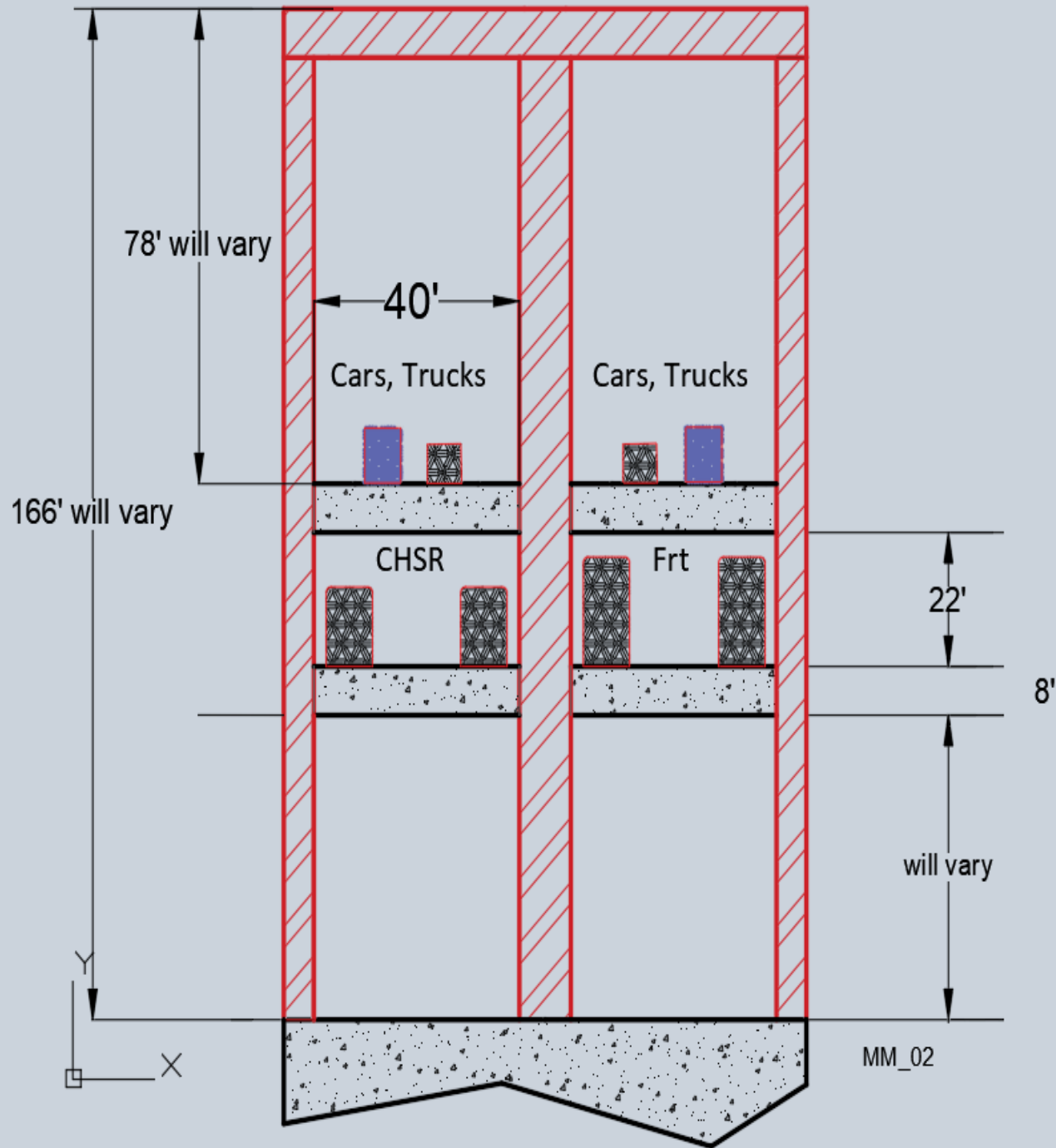
- The new Multi-Modal Bridge will support a new Cascadia High Speed Rail corridor between Portland Rose Quarter Transportation Hub and Vancouver WA. The M-M Bridge will also support four new traffic lanes between Portland's Columbia Blvd. and NW 78<sup>th</sup> St/I-5 interchange in Vancouver WA. The third corridor will create two new tracks for BNSF and UP Freight Railroad Companies.
- In the future a new Cascadia Commuter Express (C-CE) corridor can connect Bridgeport, in Tigard, to Vancouver that will be adjacent to Hwy 217, under Forest Park, over the Willamette River, through the BNSF Railroad cut, over the M-M Bridge, through West Vancouver, to the NW 78<sup>th</sup> St./ I-5 interchange.
- The goal for this new Multi-Modal Bridge and new transportation corridors is to divert 30% of the traffic off of I-5 and I-405.
- The proposed Bridgeport to Vancouver C-CE and traffic corridors will reduce traffic congestion by taking traffic off of Hwy 26, Vista Ridge Tunnels and I-405.
- This regional plan will help solve major congestion and pollution problems with increased population in Washington, Multnomah and Clark County areas.

# Arched Multi-Modal Bridge

There are four large arches between Portland and Vancouver, three are above the river and one is on the Vancouver side. There are two piers in the Columbia River.

The M-M bridge will not interfere with airport traffic.



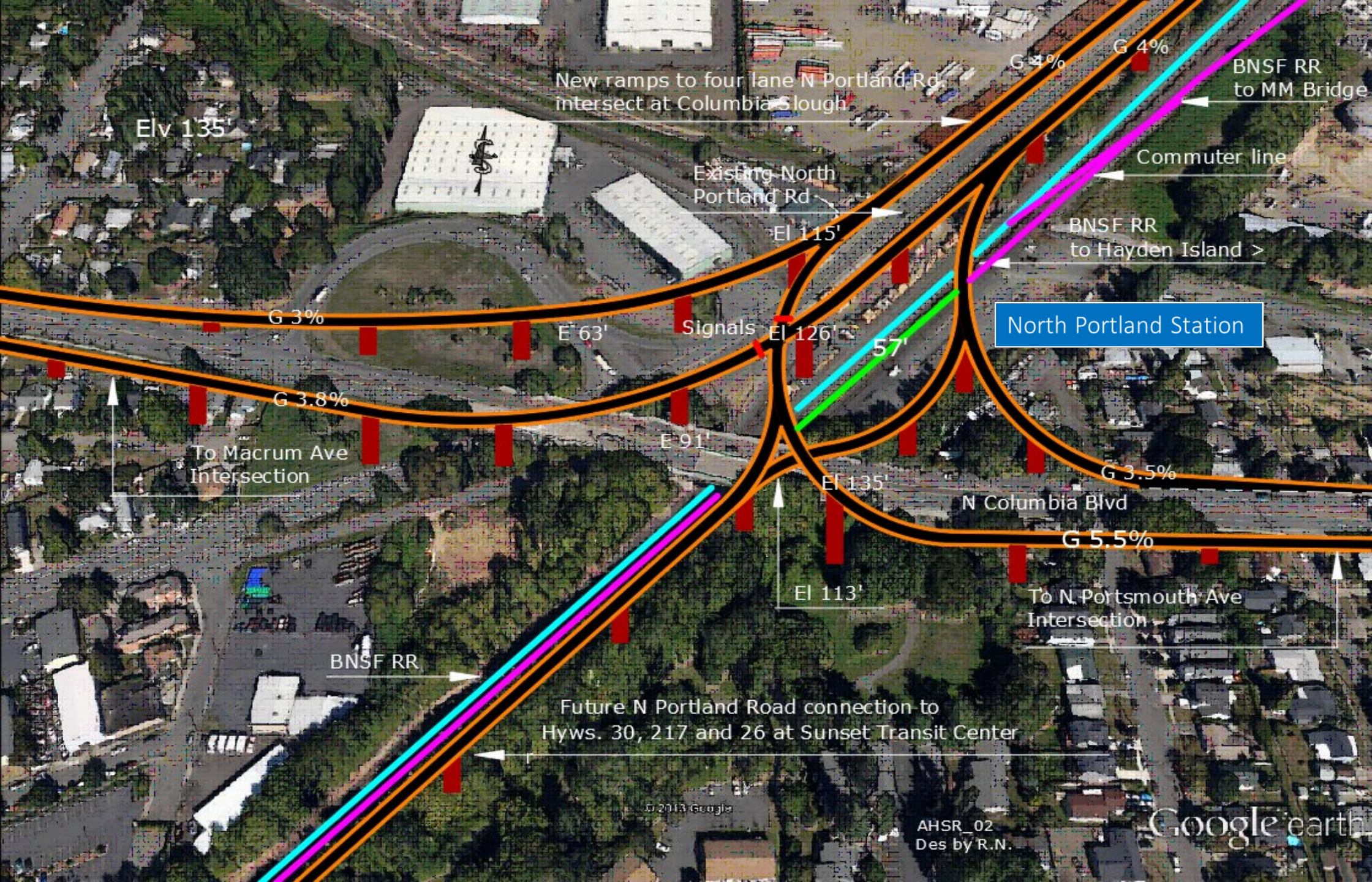


## M-M Bridge Section View

Note, the elevations will vary due to the crowning of the M-M bridge.

This depiction section is above the Columbia River with the automotive traffic on the top deck.

The CHSR and freight trains have two tracks each. The automotive lanes have two lanes north bound, and two lanes south bound.



## N Columbia Blvd Crossing and Interchanges

There is a possibility for a commuter station on the east side of the BNSF rail location.

New roadway interchanges showing possible future commuter rail service between MAX Sunset TC, Hwys. 217/26 and Battle Ground.



# N Marine Dr Interchange with M-M Bridge

CHSR and BNSF/UPRR freight tracks on flyovers.

Proposed roadway intersections to and from the new multi-modal bridge.

N Shuttle Rd will intersect to N Marine Dr ± 0.4 miles to the west for good ramp grades.

To Marine Dr. Interchange

Marine Dr.

New CHSR & BNSF/UP RR on upper deck

N Portland Road

Existing BNSF/UP RR

To new four lane motorway on lower deck

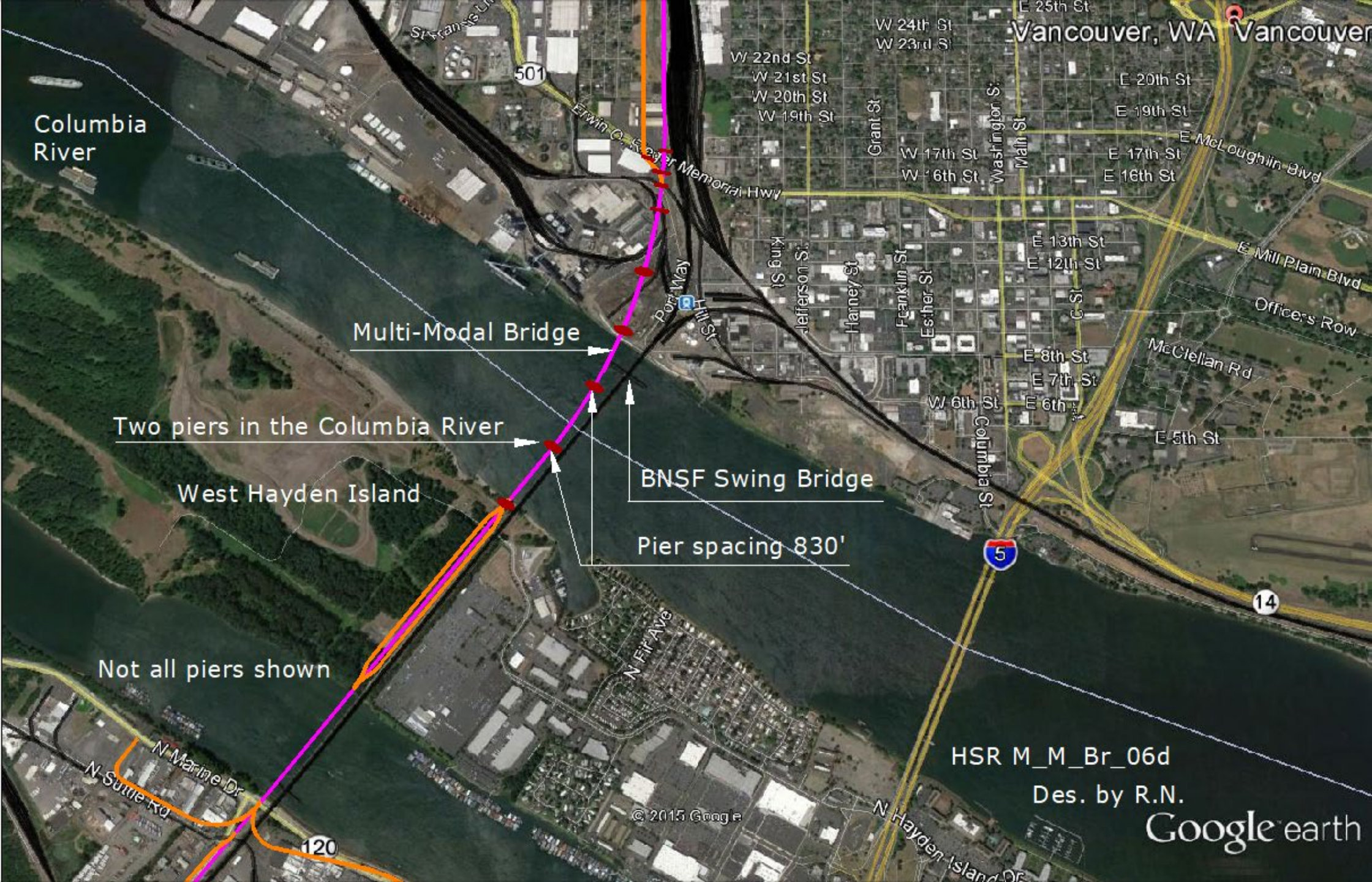
From N Force Ave. and Marine Dr. Interchange

Eye 930

HSR Hayden Is\_07  
Des by R.N.

© 2013 Google

Google earth



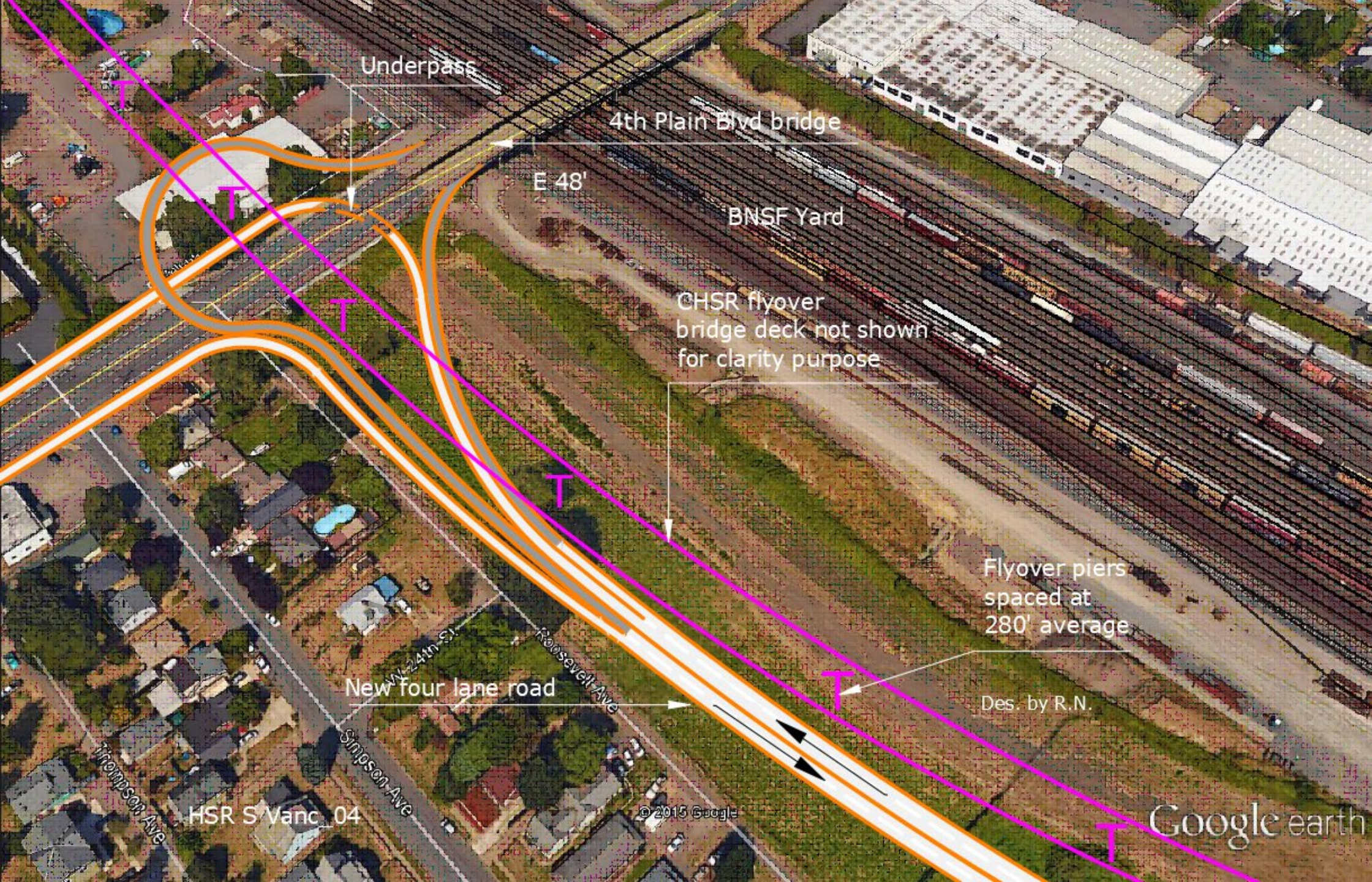
## Multi-Modal Bridge Crossing

The multi-modal bridge between North Portland and W Vancouver.

The automotive traffic south of Hayden Island is on the lower deck. On Hayden Island, the automotive lanes will swerve to the east and west to go to the upper deck.

HSR M\_M\_Br\_06d  
Des. by R.N.

Google earth



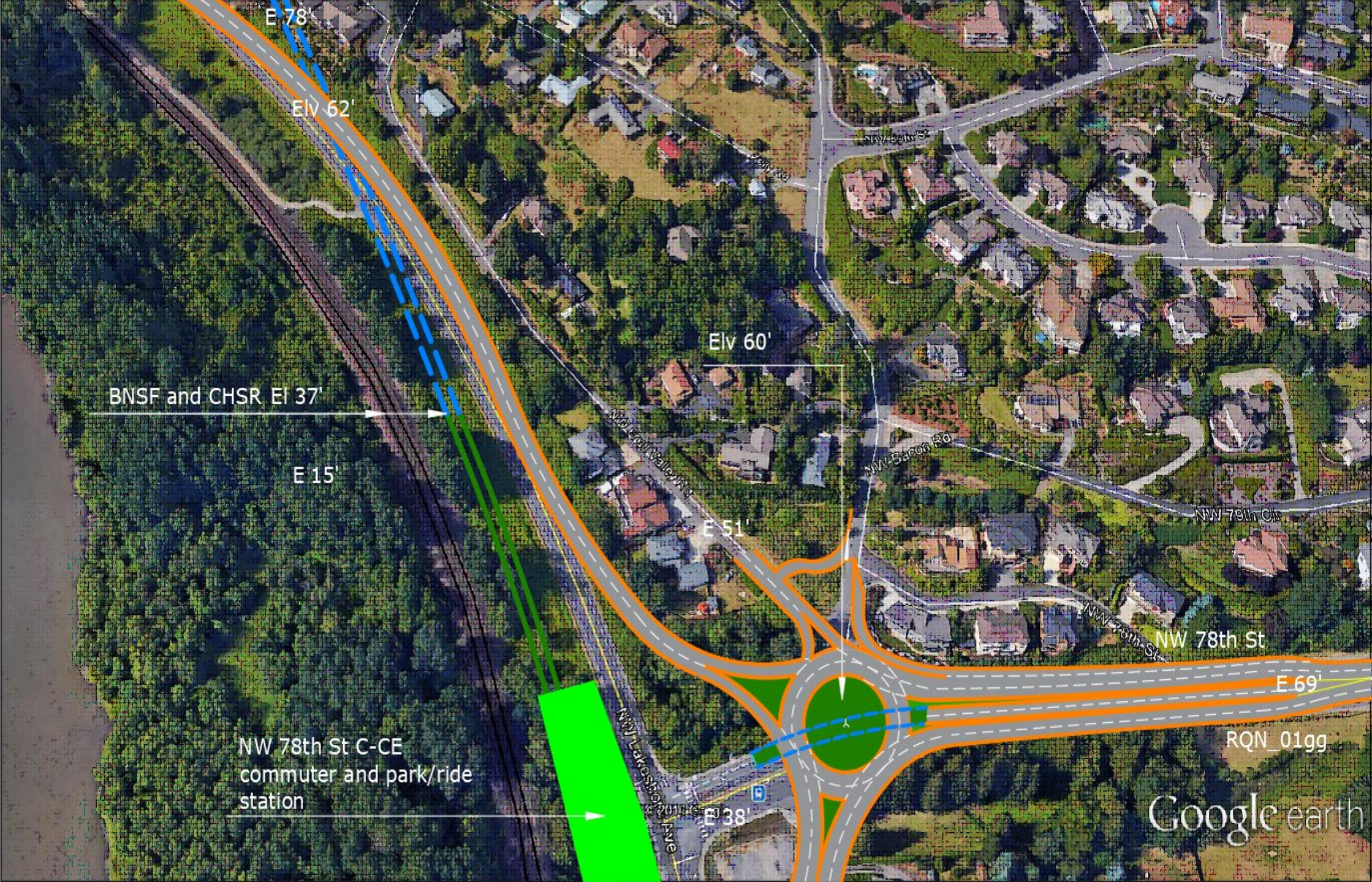
## Fourth Plain Blvd Interchange with New Expressway

The CHSR tracks are above the automotive interchanges. There is full access for Fourth Plain Blvd, Fruit Valley Rd, Hwy 501 and the Multi-Modal Bridge for vehicles.

The four traffic lanes north of Fourth Plain Blvd. is yet to be planned.

Google earth

© 2015 Google



NW 78<sup>th</sup> St  
and  
N Lakeshore  
Ave  
Commuter  
Express  
Station

Access to CHSR  
Station from  
NW 78<sup>th</sup> St and  
travels under  
the proposed  
roundabout.

NW 78th St C-CE  
commuter and park/ride  
station

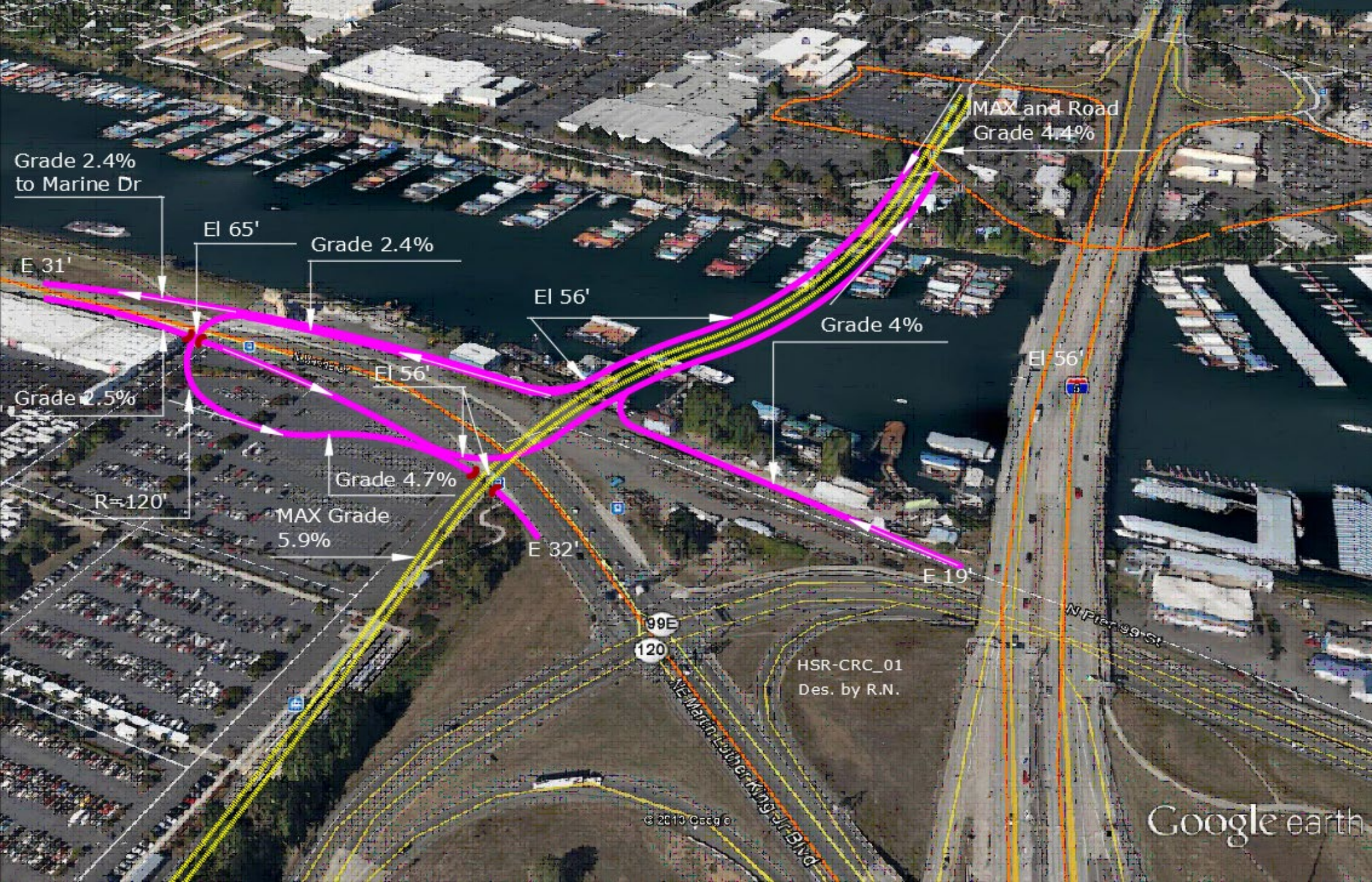
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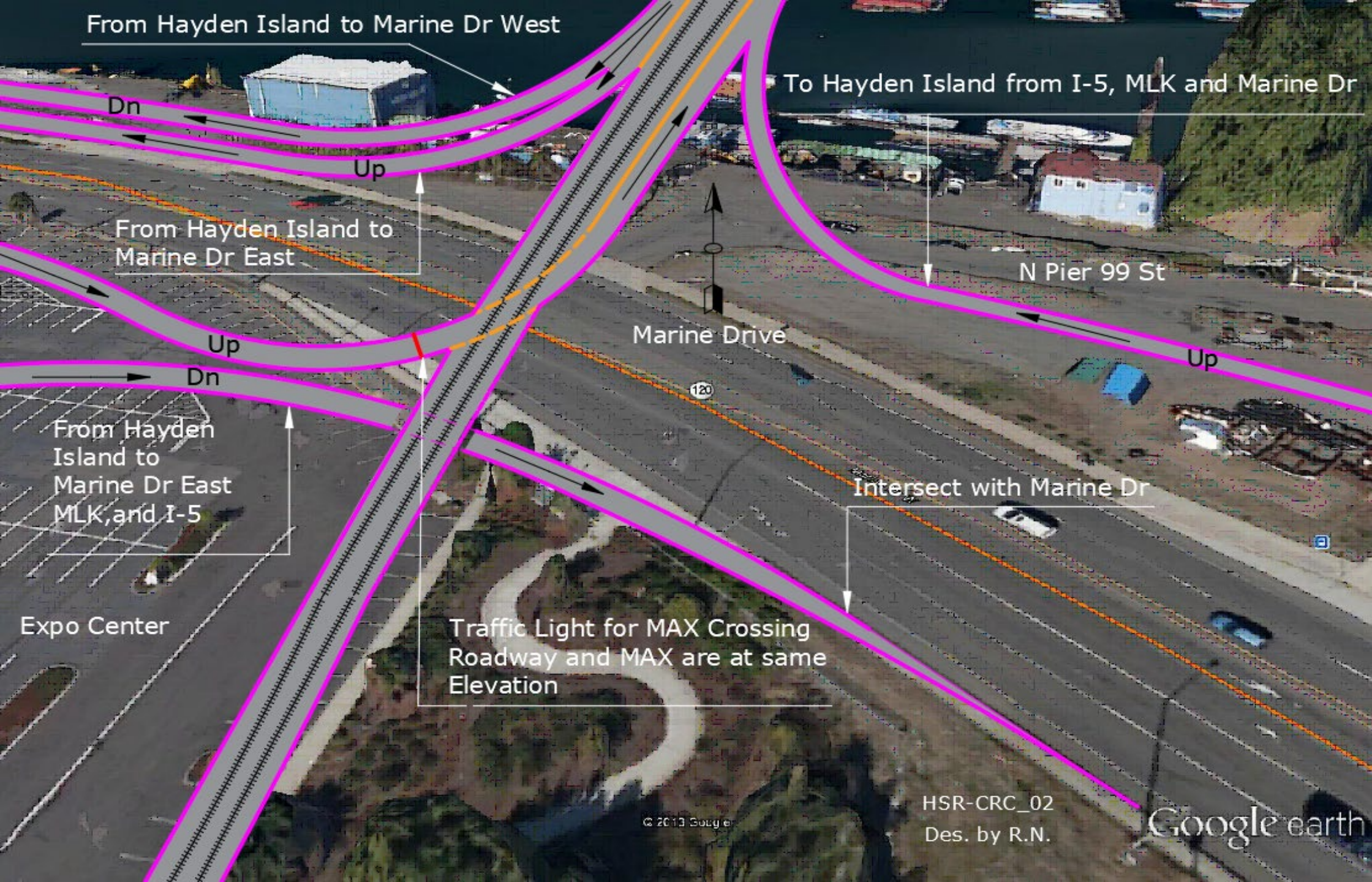
## Alternative B: The HAYDEN ISLAND AUXILIARY BRIDGE

- The Auxiliary Bridge will provide access to Hayden Island via N Marine Drive, I-5, N Vancouver Way and Martin Luther King Jr. Boulevard.
- The Auxiliary Bridge will also extend the MAX Yellow Line to Hayden Island.
- This Auxiliary Bridge will reduce the severe I-5 bottleneck between the existing Expo Center and Hayden Island on and off ramps.



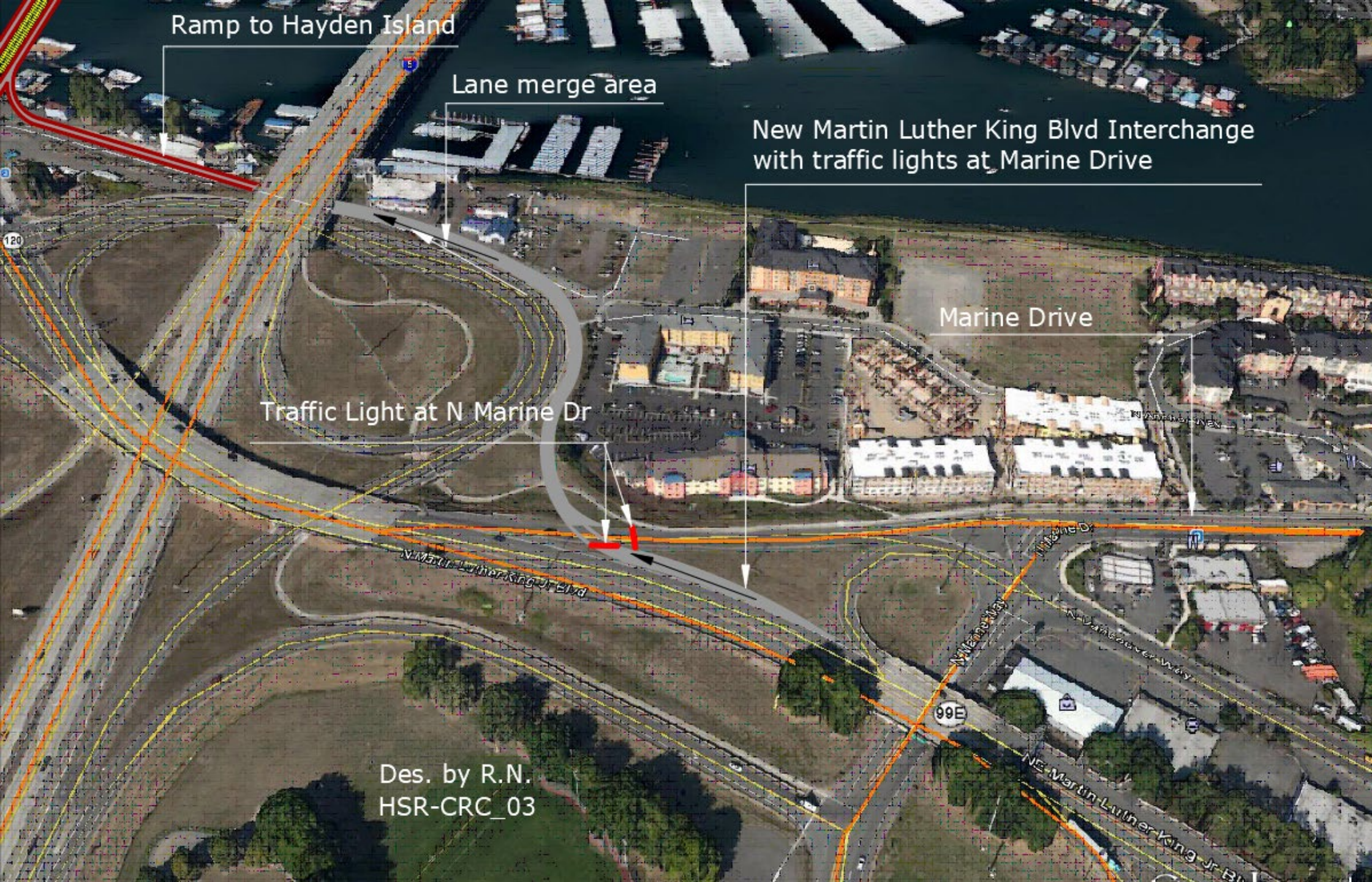
## Hayden Island Auxiliary Bridge and I-5 Hwy

Interchanges with N Marine Drive, MAX and new flyovers. The auxiliary bridge will reduce congestion on the I-5 bridge and connects with the North Center Ave on Hayden Island.



# Hayden Island Auxiliary Bridge Flyover

Interchange shows the MAX Yellow Line located in the center of the bridge and above Marine Drive.



Ramp to Hayden Island

Lane merge area

New Martin Luther King Blvd Interchange with traffic lights at Marine Drive

Marine Drive

Traffic Light at N Marine Dr

Des. by R.N.  
HSR-CRC\_03

Martin Luther King Jr. Blvd and I-5 Hwy

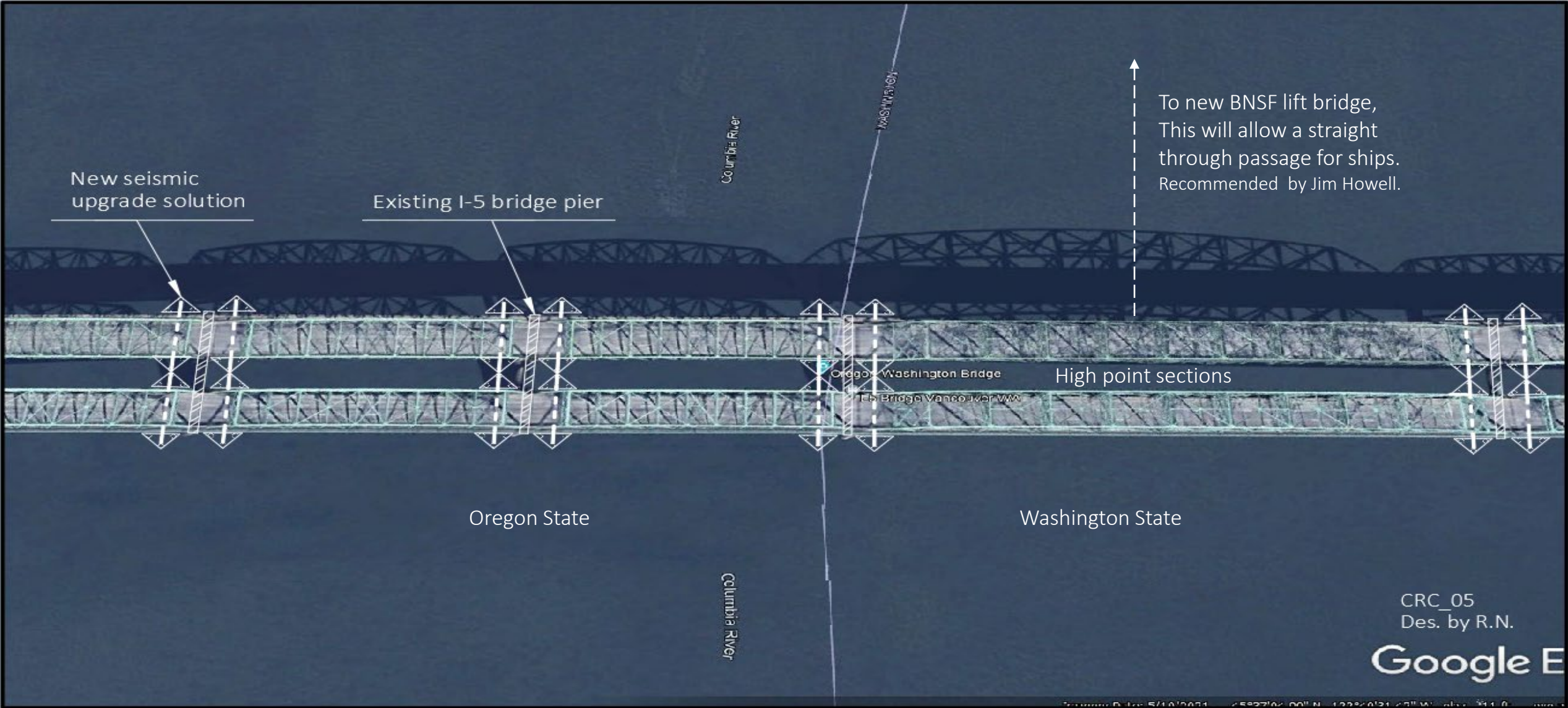
Interchanges at I-5, N Marine Drive, NE Martin Luther King and N Vancouver Way allows speedy and direct access to Hayden Island via the auxiliary bridge reduces traffic on the I-5 Bridge.

## Alternative C: I-5 BRIDGE SEISMIC UPGRADE AND POSSIBLE ADDITIONAL TRAFFIC LANES

- I-5 lane closures are not required during seismic upgrade work.
- Major components will be pre-fabricated to speed-up construction and allow quality control.
- Construction will be done with barges equipped with the needed heavy machinery.
- The existing steel is still in excellent shape and can last another 100 years if properly maintained.

# COLUMBIA RIVER CROSSING BETWEEN OREGON AND WASHINGTON

## Seismic I-5 Bridge Upgrade Solution and Aerial View of Bridge Sections

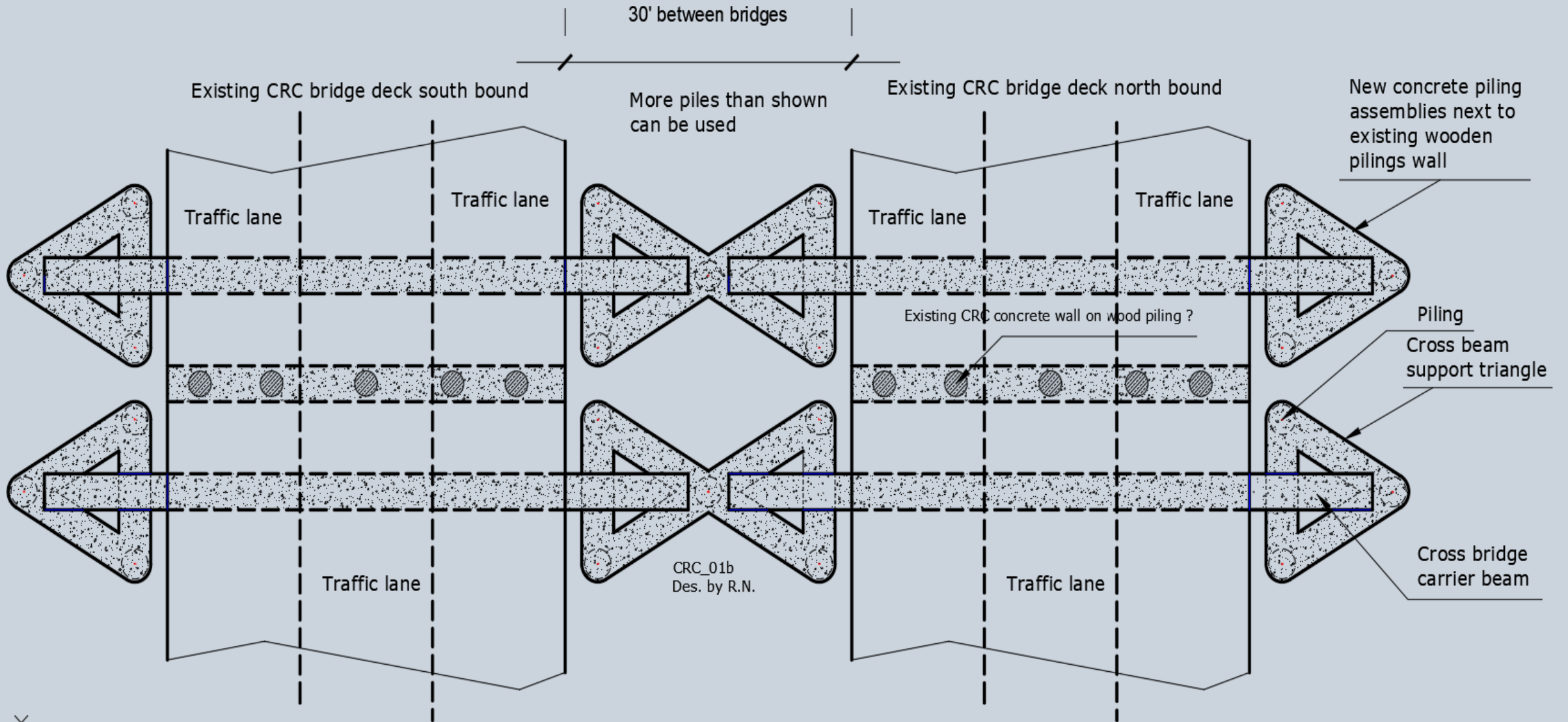


CRC\_05  
Des. by R.N.

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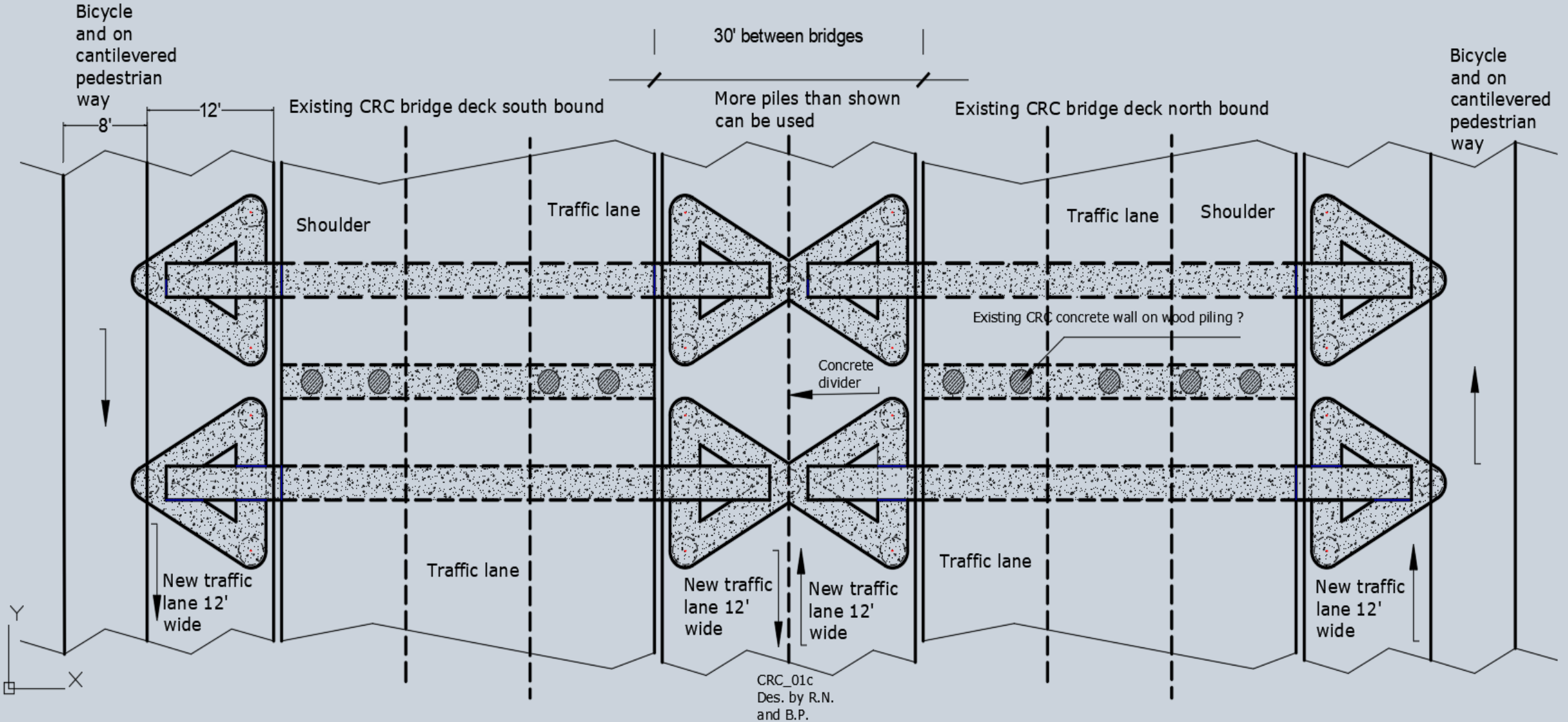
# OPTION 1: NEW SEISMIC UPGRADE SOLUTION

## Existing Condition



# OPTION:2 NEW SEISMIC UPGRADE SOLUTION WITH ADDITIONAL TRAFFIC LANES

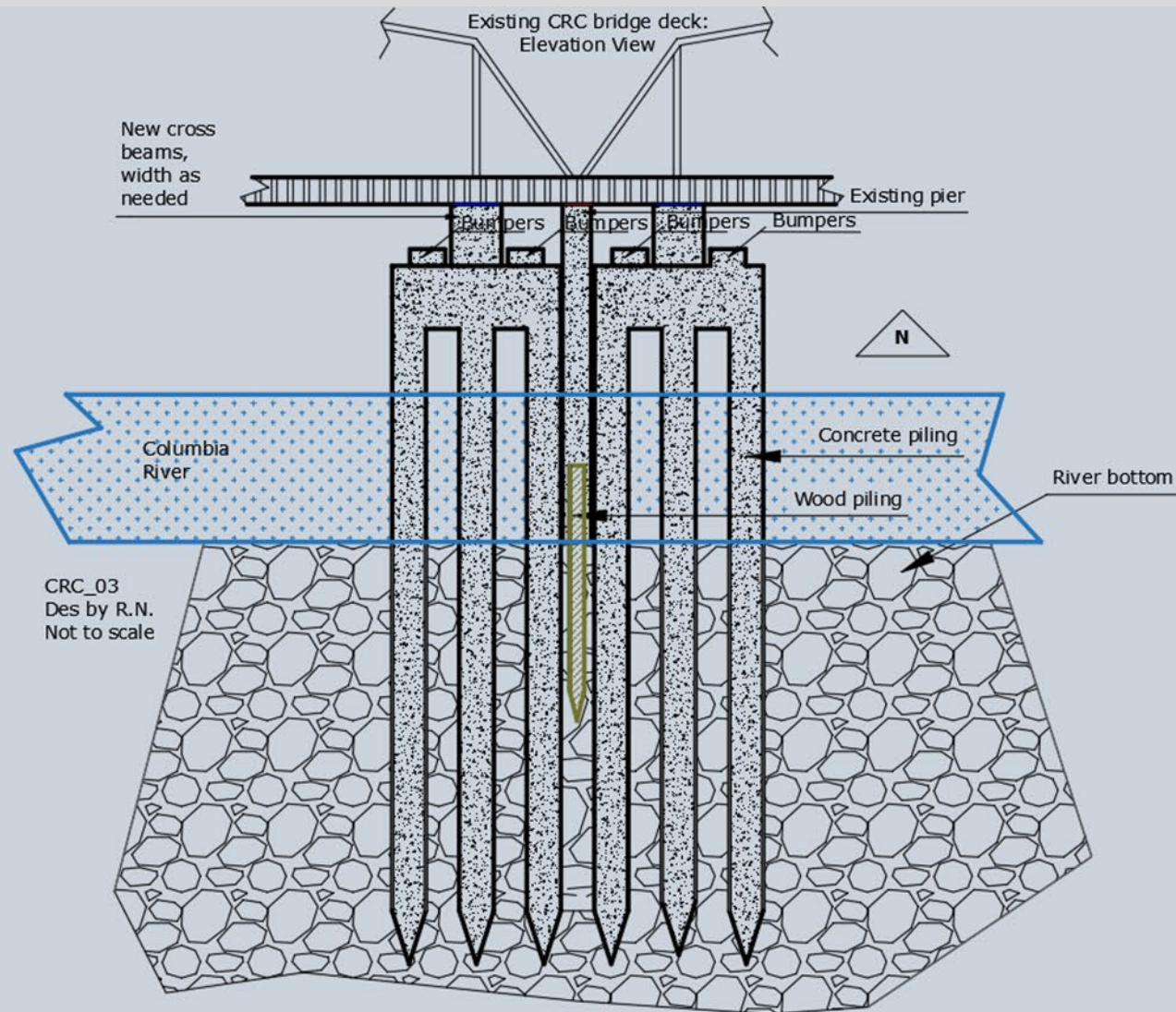
## Four Added Lanes and Shoulders with Bicycle and Pedestrian Ways on the New Pilings





# CROSS SECTION VIEW

## Existing Center Pile is Wood



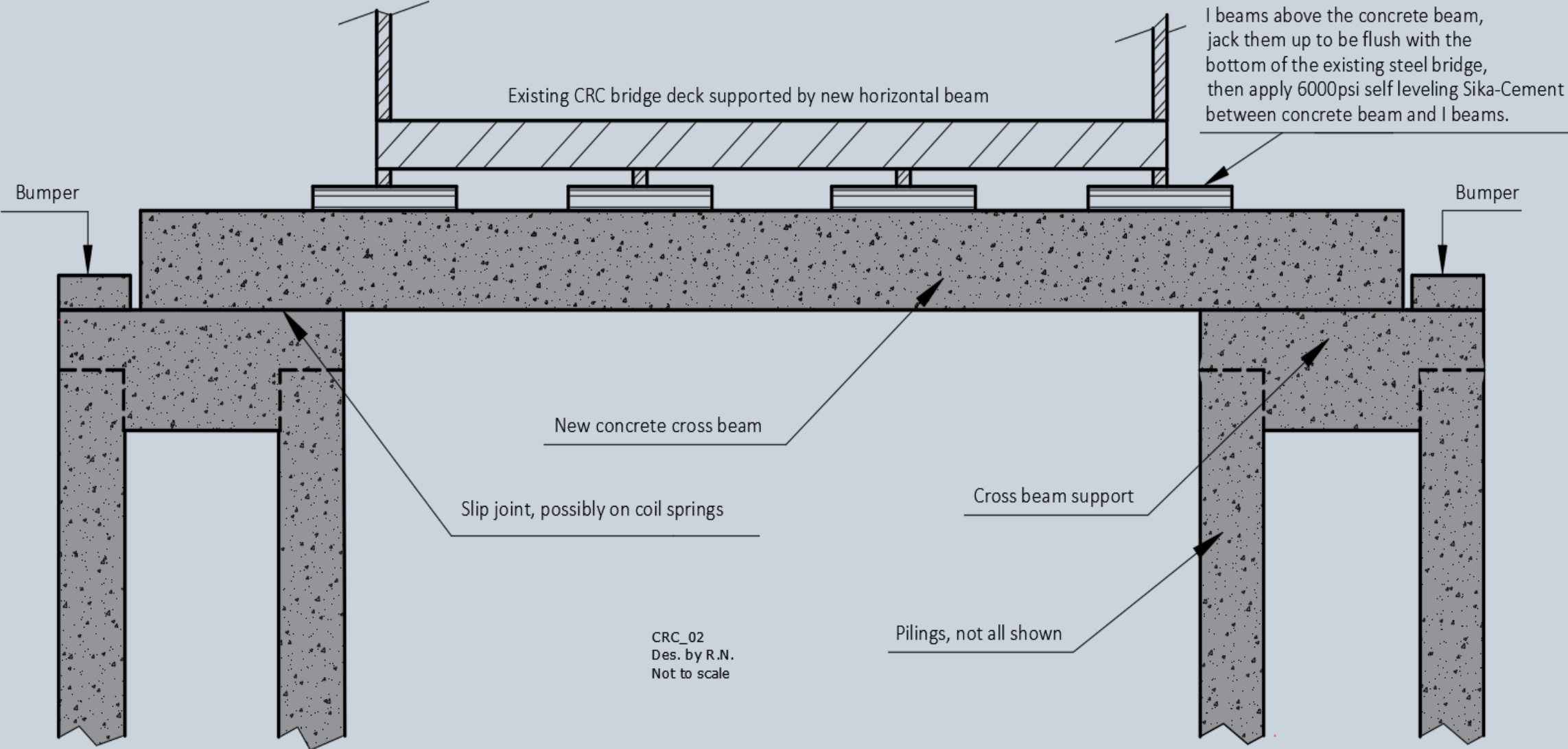


High point section

I-5 bridge undercarriage  
with locations for  
concrete cross beams

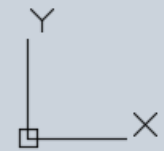
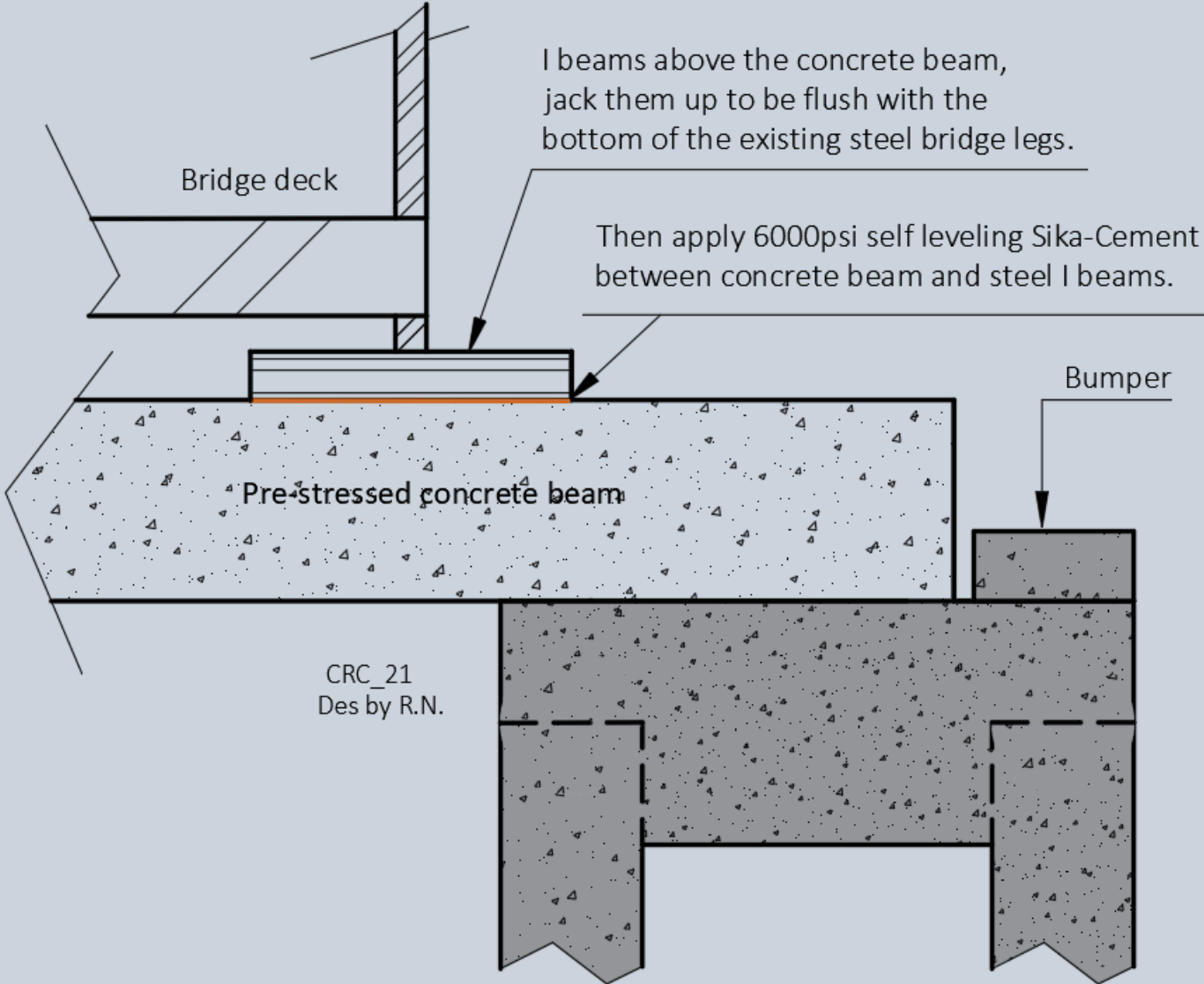
# I-5 BRIDGE OVER COLUMBIA RIVER

## Seismic Upgrade Solution in Elevation View



# I-5 BRIDGE OVER COLUMBIA RIVER

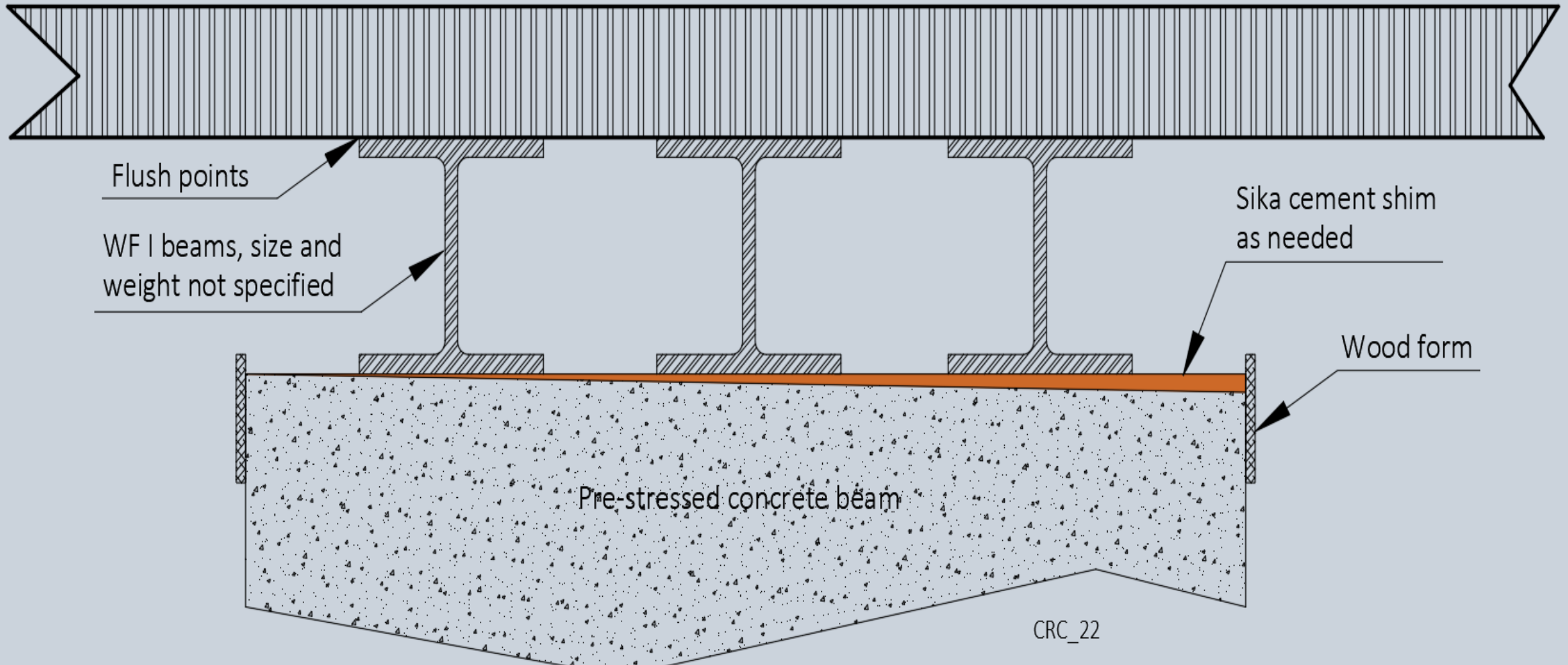
## Shoe Above I-Beam Assembly



# I-5 BRIDGE NEW SHOE DETAIL

Keep I-Beams Flush with Bridge Undercarriage. Apply Sika Cement Shim to Fill Voids.

Steel bridge undercarriage



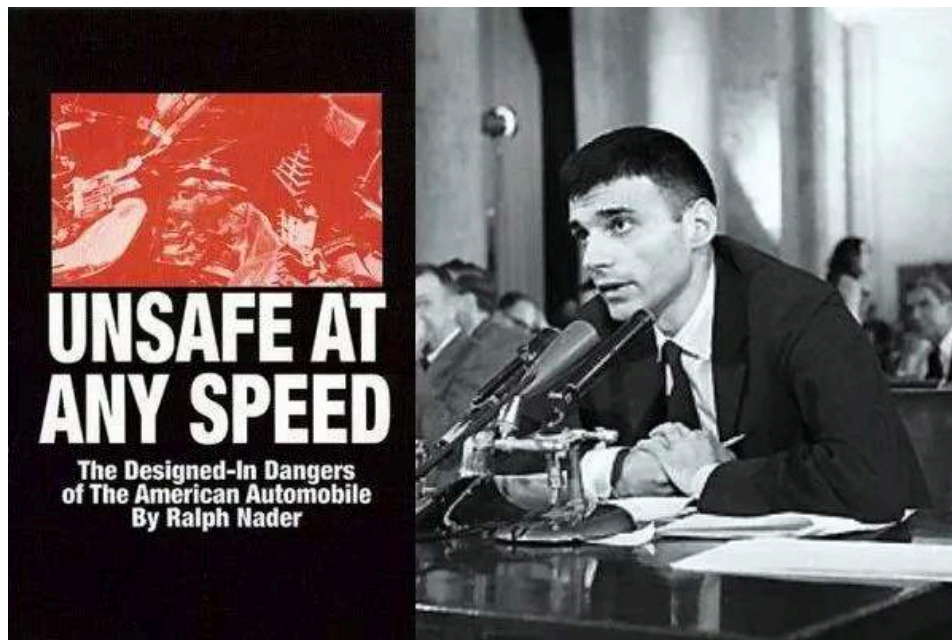
## Alternative D: NEW CENTER LIFT SPAN FOR EXISTING BNSF FREIGHT RAIL BRIDGE

- New center lift span on the BNSF Bridge eliminates the need for existing swing span.
- New center lift span on the BNSF Bridge avoids “S” curve to center of I-5 Bridge.
- Center of the I-5 Bridge is 80 feet taller than existing lift near north bank of Columbia River.
- With new center lift span on existing BNSF Bridge, most river traffic will have a straight channel to traverse under the I-5 and BNSF Bridges.
- This new straight channel for ships and boats will reduce 90% to 95% of I-5 Bridge lifts.

# Vancouver river-walk ranks in top 15 in nation



Like the Corvair, the IBR's bridge options have a designed-in danger.



The IBR plans to build the steepest and most dangerous interstate bridge in the country.



Six months each year the bridge will have possible black ice.



The world's most beautiful cities protect their waterfronts by building immersed tunnels.



**Hong Kong**  
Six Immersed  
Tunnels  
Five with transit



**Gothenberg**  
World's most sustainable city

Tingstad Tunnel 1968  
Marieholm Tunnel 2020



**Sydney**

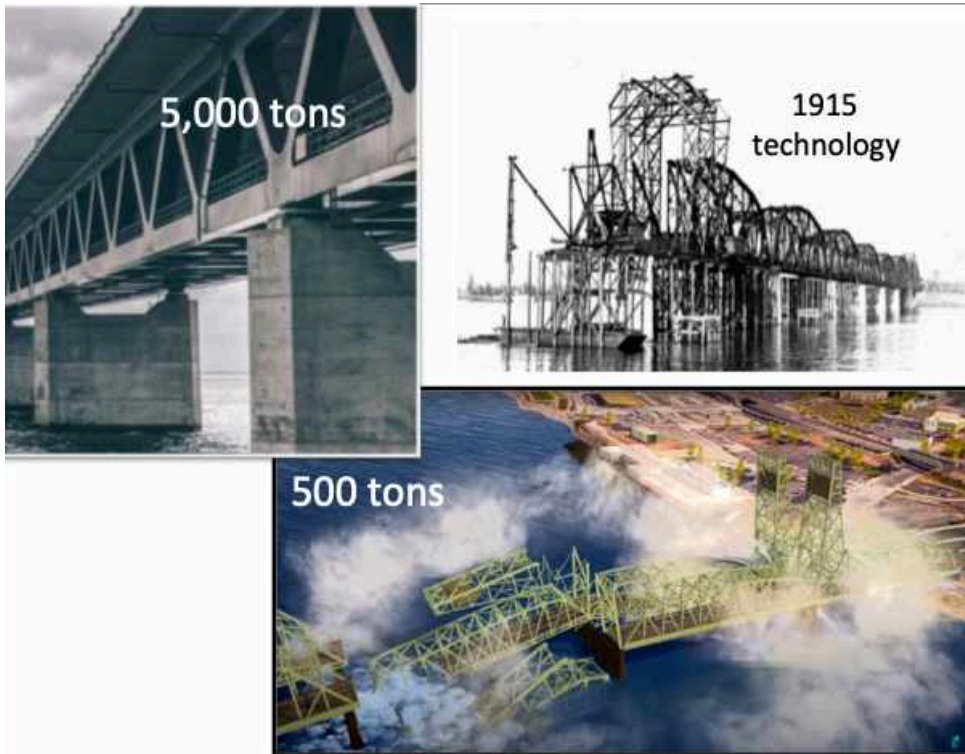
Sydney Harbor Bridge 1932  
Immersed Tunnel 1992  
2<sup>nd</sup> Immersed Tunnel 2022

The IBR's bridge designs will dump acres of concrete on Vancouver's waterfront.



The IBR bridge options with trusses ten-time heavier and piers 100-foot higher may be more dangerous in a 9.2 earthquake.

<https://www.columbian.com/news/2021/nov/09/video-shows-what-earthquake-would-do-to-interstate-5-bridge/>



Buoyancy makes an immersed tunnel almost immune to earthquakes.

<https://www.youtube.com/watch?v=h19TQzw8H1w>

