

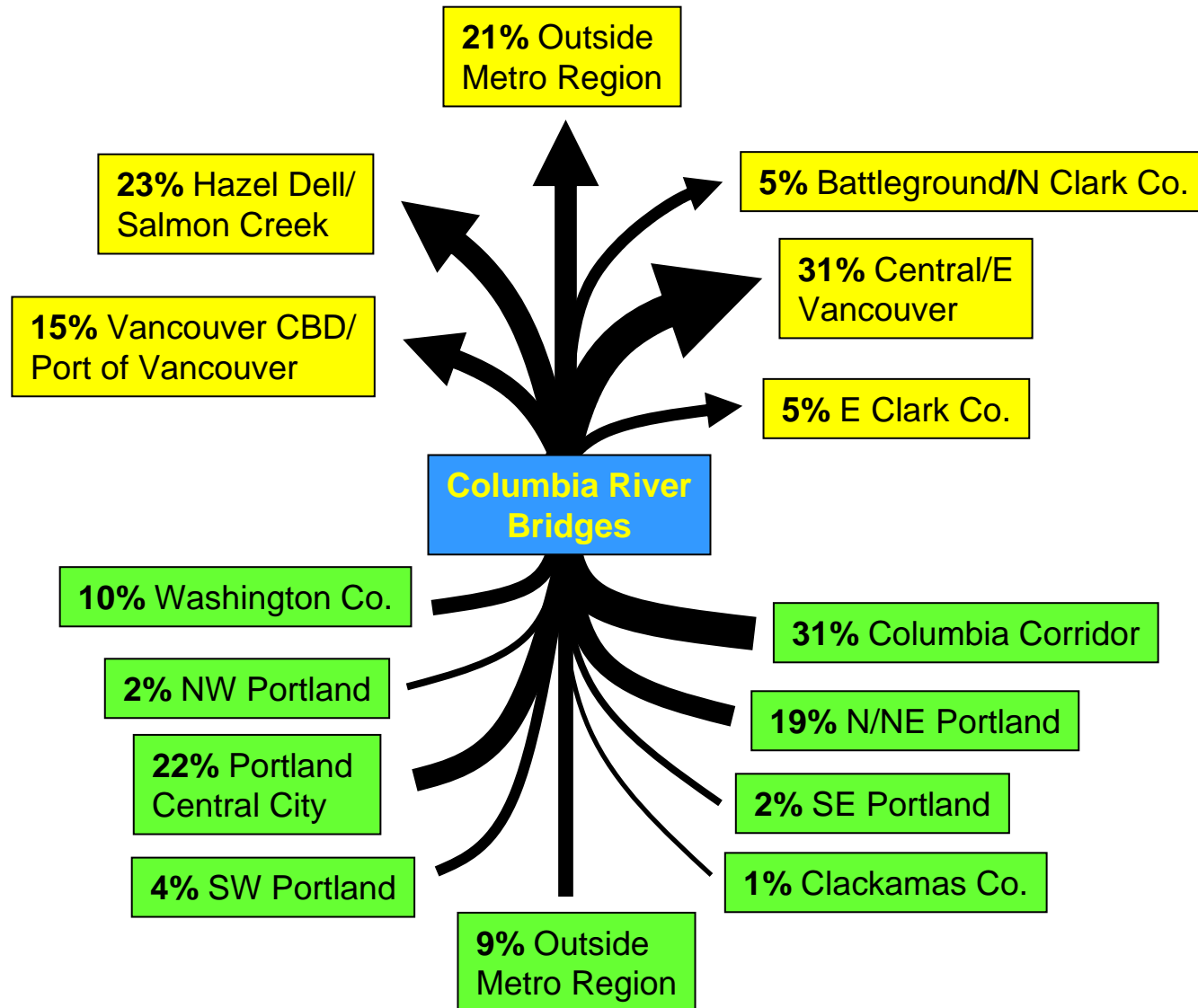
River Crossing



I-5 Bridge Problems

- I-5 river crossing is the most severe congestion point in the corridor.
- Close proximity of Hayden Island and SR 14 interchanges means that the bridges effectively provide 2 through lanes in each direction.
- Unless additional capacity is added at the river crossing, no additional vehicle trips will be made during the peak periods, and the duration of the peak periods will grow.

2020 PM Peak Northbound Traffic Patterns Across the Columbia River



Bridge Analysis

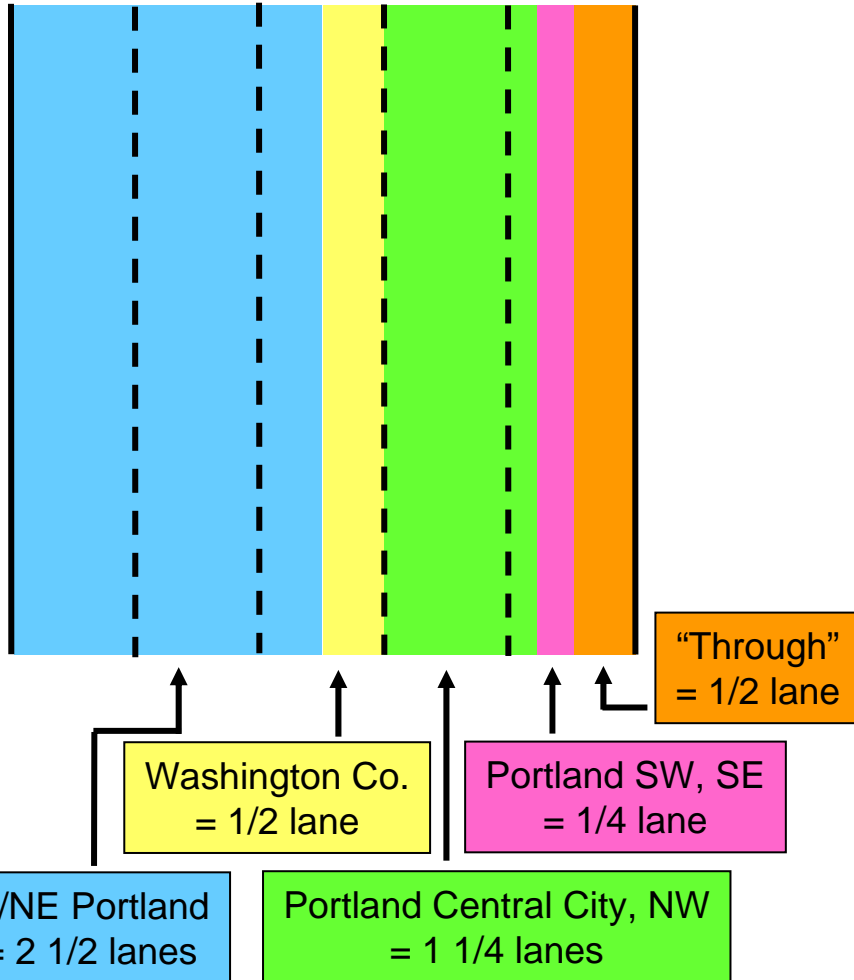
- Options evaluated (all include ten lanes across the river):
 - Four lane supplemental bridge
 - Six lane supplemental bridge
 - Four lane supplemental tunnel
 - Ten lane replacement bridge

Bridge Analysis Conclusions

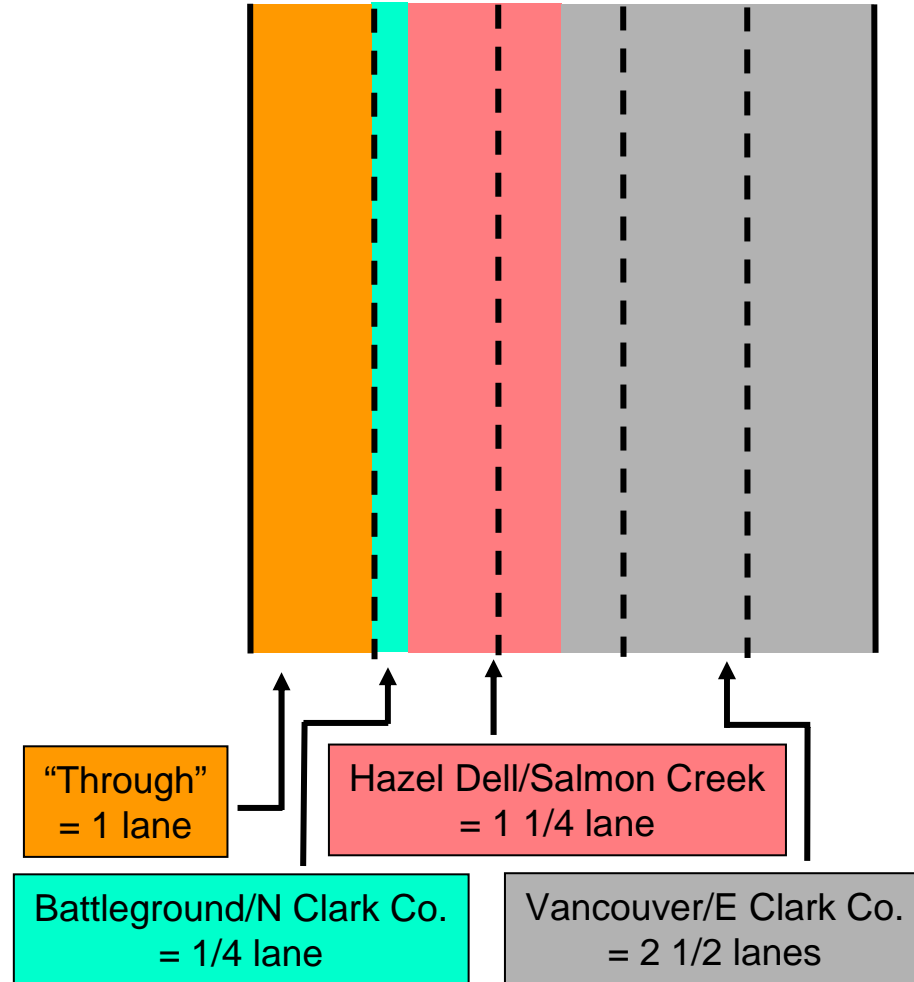
- 1 To balance upstream and downstream freeway capacity (assuming three through lanes), ten lanes are needed at the river crossing.

I-5 Columbia River Crossing Peak Period Lane Requirements

AM - Southbound*



PM - Northbound



* Travel Patterns based on PM Peak Period

Bridge Analysis (continued)

- 2 Most bridge capacity is used for trips getting on or off freeway between SR 500 and Columbia Blvd. Options that “bypass” interchanges don’t fully address the problem.
- 3 Further study is needed to determine best bridge configurations to balance access and through capacity.
- 4 Even with capacity improvements, peak hour will still be congested. Improvements will shorten the duration and intensity of the peak.

Bridge Analysis (continued)

- 5 Changes in river crossing capacity affect the design requirements for the freeway between Columbia Boulevard and SR 500. Bridge improvements should be considered in conjunction with interchange improvements throughout that segment.

Portland Interchanges

Potential improvements to I-5, Columbia Boulevard to Hayden Island:

- Delta-Lombard widening to three lanes southbound;
- Hayden Island, Marine Drive, and Delta Park interchange improvements as part of bridge project.
- Columbia Boulevard ramps to from the north.



Vancouver Interchanges (SR 14 to SR 500)

If no bridge improvements are made, congestion at the I-5 river crossing will continue to obscure potential problems through downtown Vancouver:

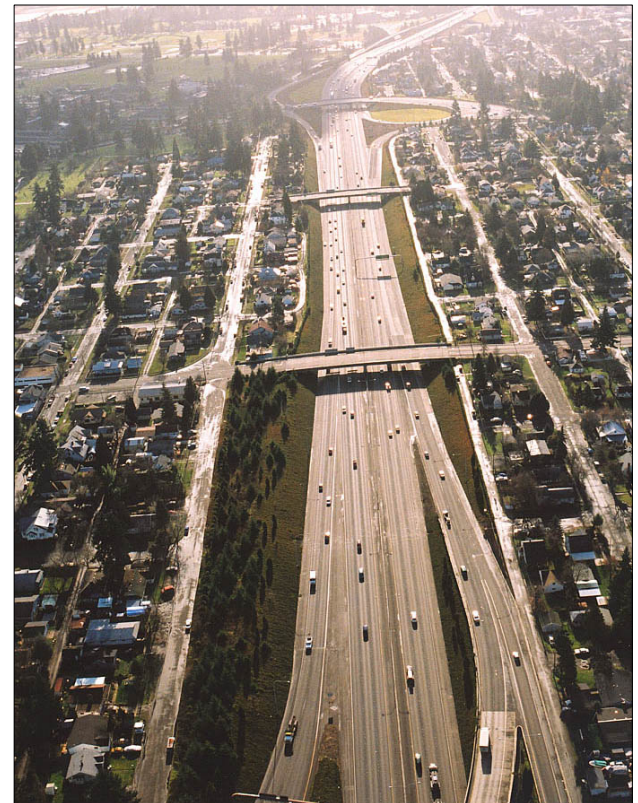
- Northbound bottleneck at bridge restricts traffic entering 4th Plain/SR 500 weave section.



- Southbound queuing backs up traffic beyond the SR 500 merge area.

Vancouver Ramps Analysis

- Improvements to Vancouver ramps should be completed in conjunction with river crossing improvements.
- Interchange improvements will:
 - address congestion caused by SR500 - 4th Plain weaving.
 - improve travel times for traffic using Mill Plain and 4th Plain interchanges.
 - improves safety and travel times for all vehicles
 - provide opportunity for new access to downtown Vancouver.

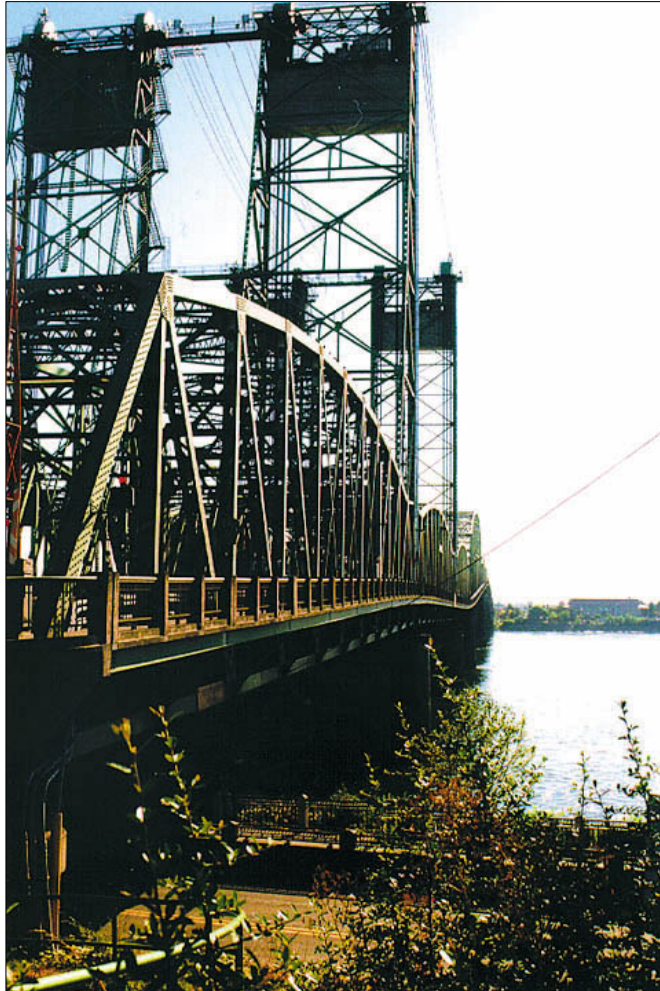


So, what about the existing bridges? Should they be kept in service?



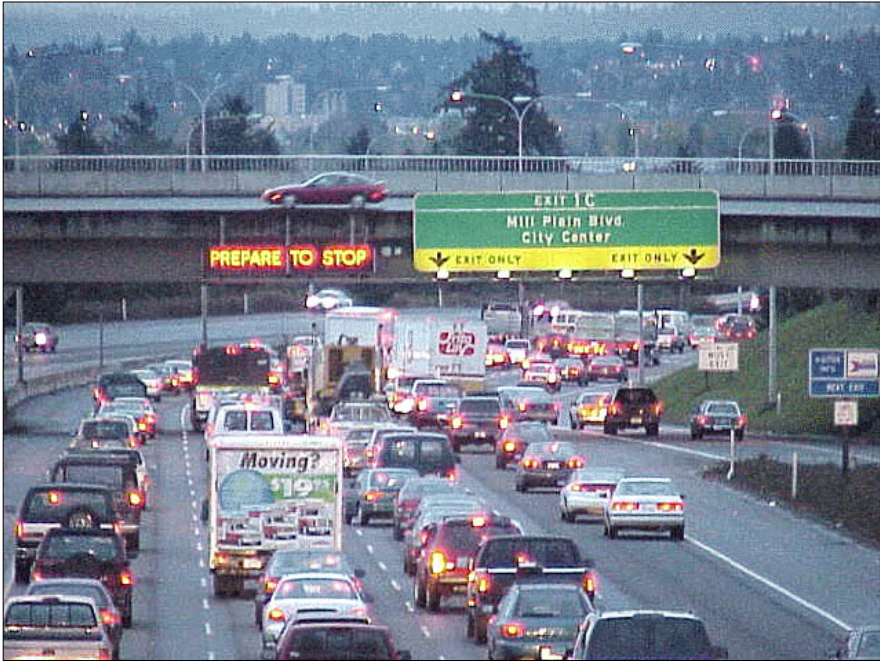
- Bridges are 84 and 43 years old. One is on the National Register of Historic Sites, and the other is eligible for the register.

So, what about the existing bridges? Should they be kept in service?



- Seismic upgrade of \$120 million, plus major scheduled maintenance (\$38 million), approach 60-80 percent of cost to replace them with new bridges.

So, what about the existing bridges? Should they be kept in service?



- Low-level lift spans open 20-30 times per month on average, causing delays and increasing business costs.

How about building LRT and highway improvements on a “joint-use” bridge?

Pluses:

- Potential cost savings, depending on location and type of bridge.
- Potential reduction in right-of-way and environmental impacts, compared to two separate new bridges
- Reduces potential navigation hazards

Minuses:

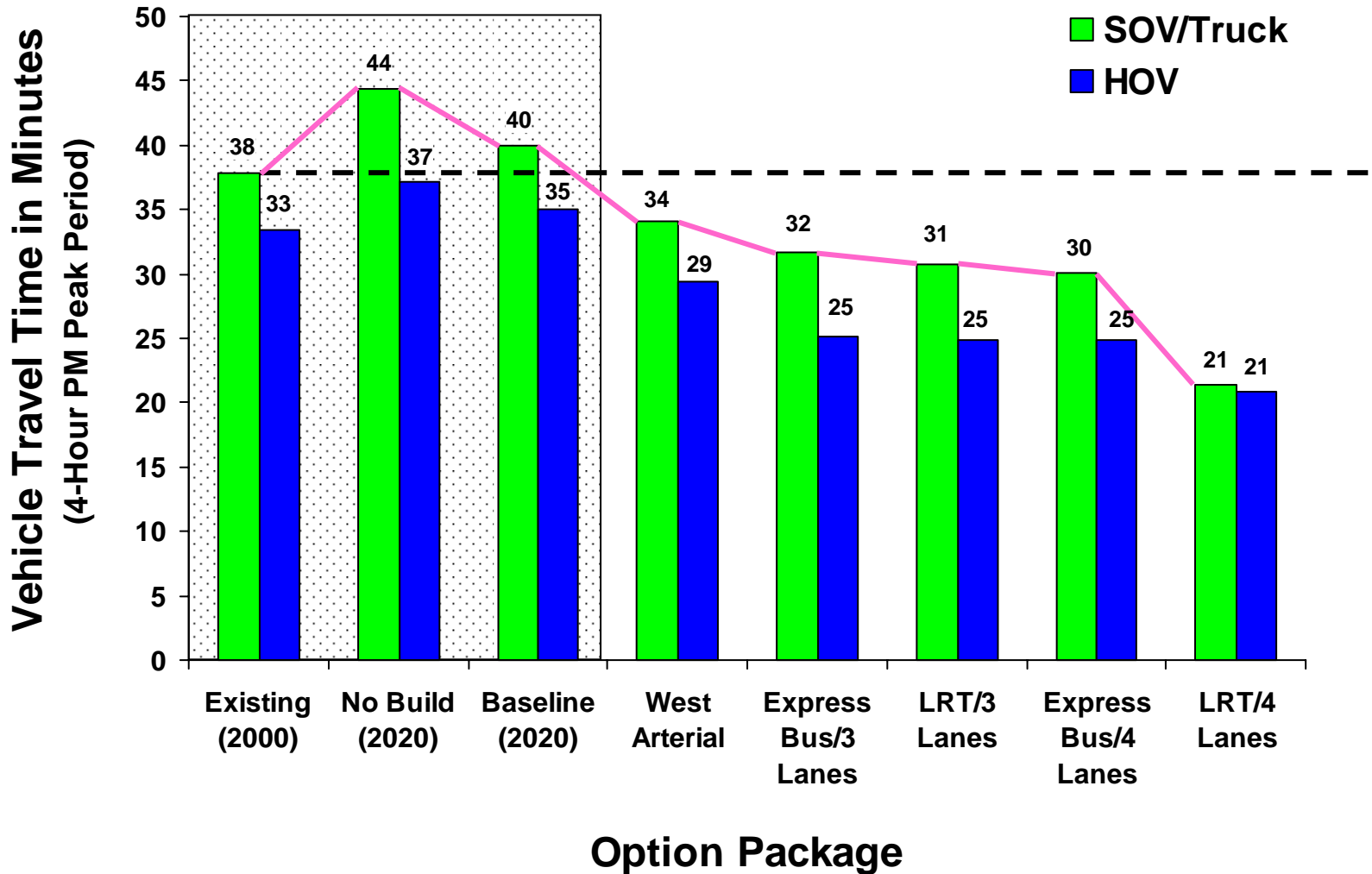
- Requires transit/highway improvements to move ahead concurrently
- May result in less-than-optimum LRT and/or highway alignment.



**Four
Through
Lanes?**

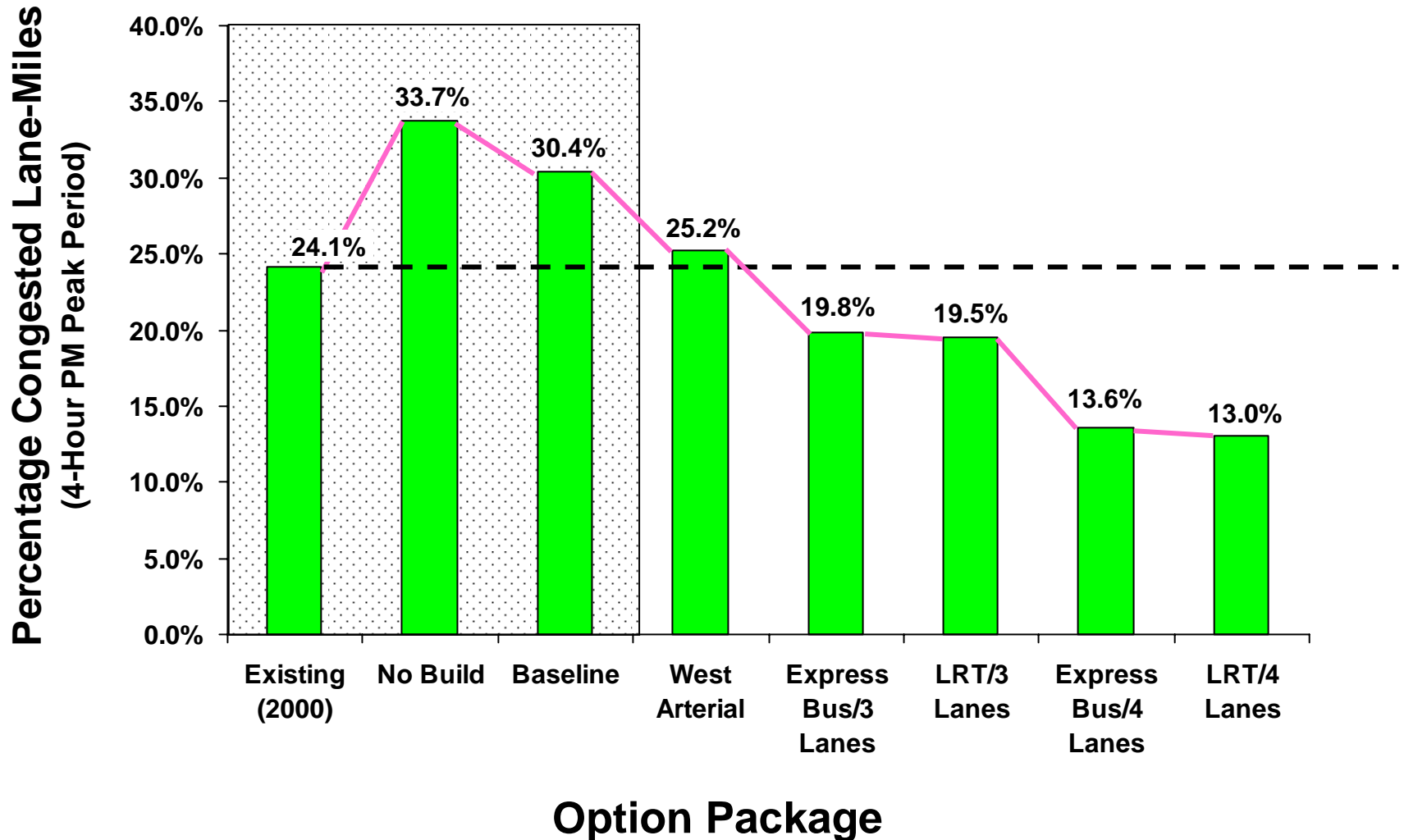
Vehicle Travel Times

Downtown Portland to Salmon Creek (PM Peak)



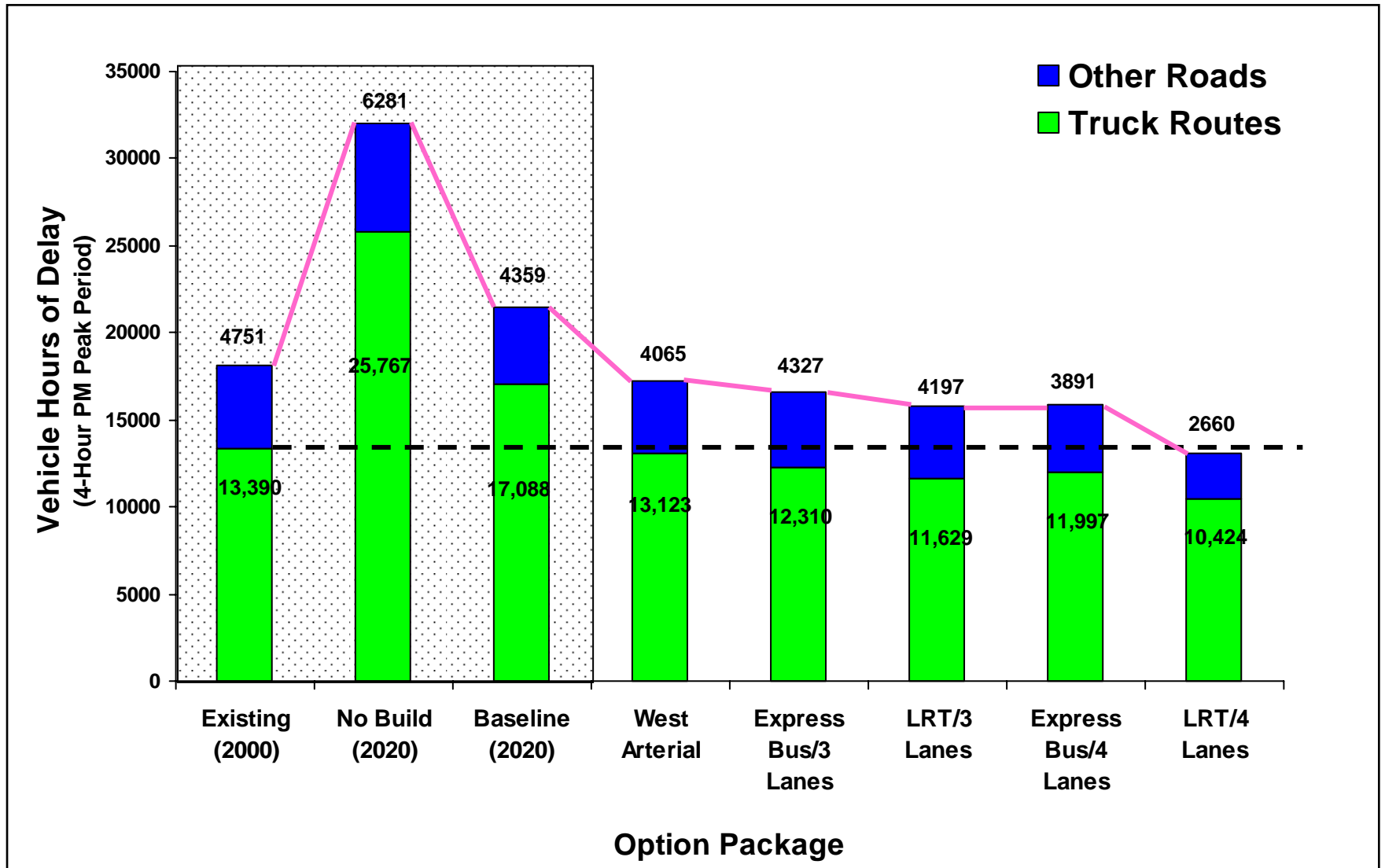
Congestion on I-5 and I-205

Congested Lane-Miles (PM Peak)



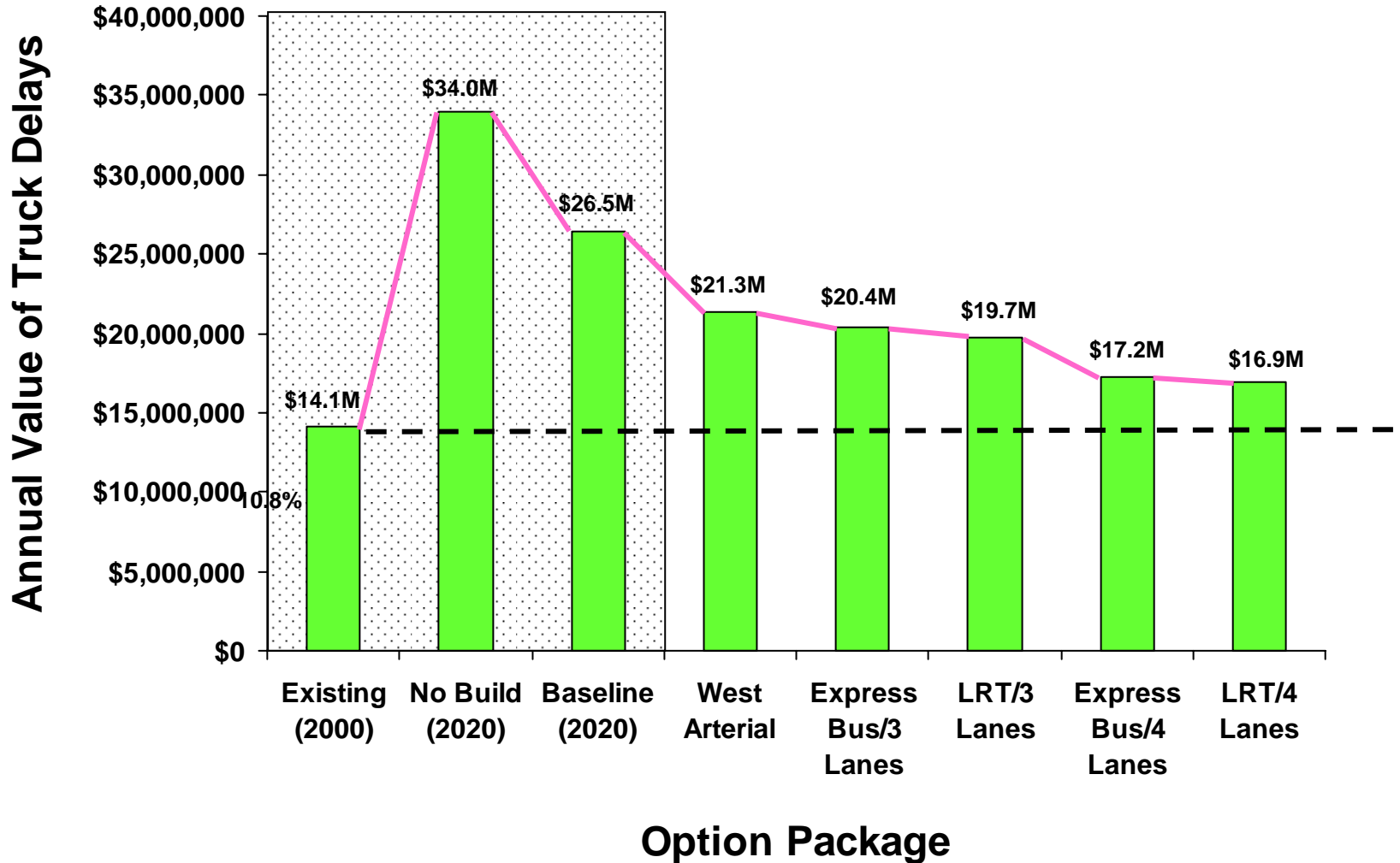
Vehicle Hours of Delay

In the Study Area (PM Peak)

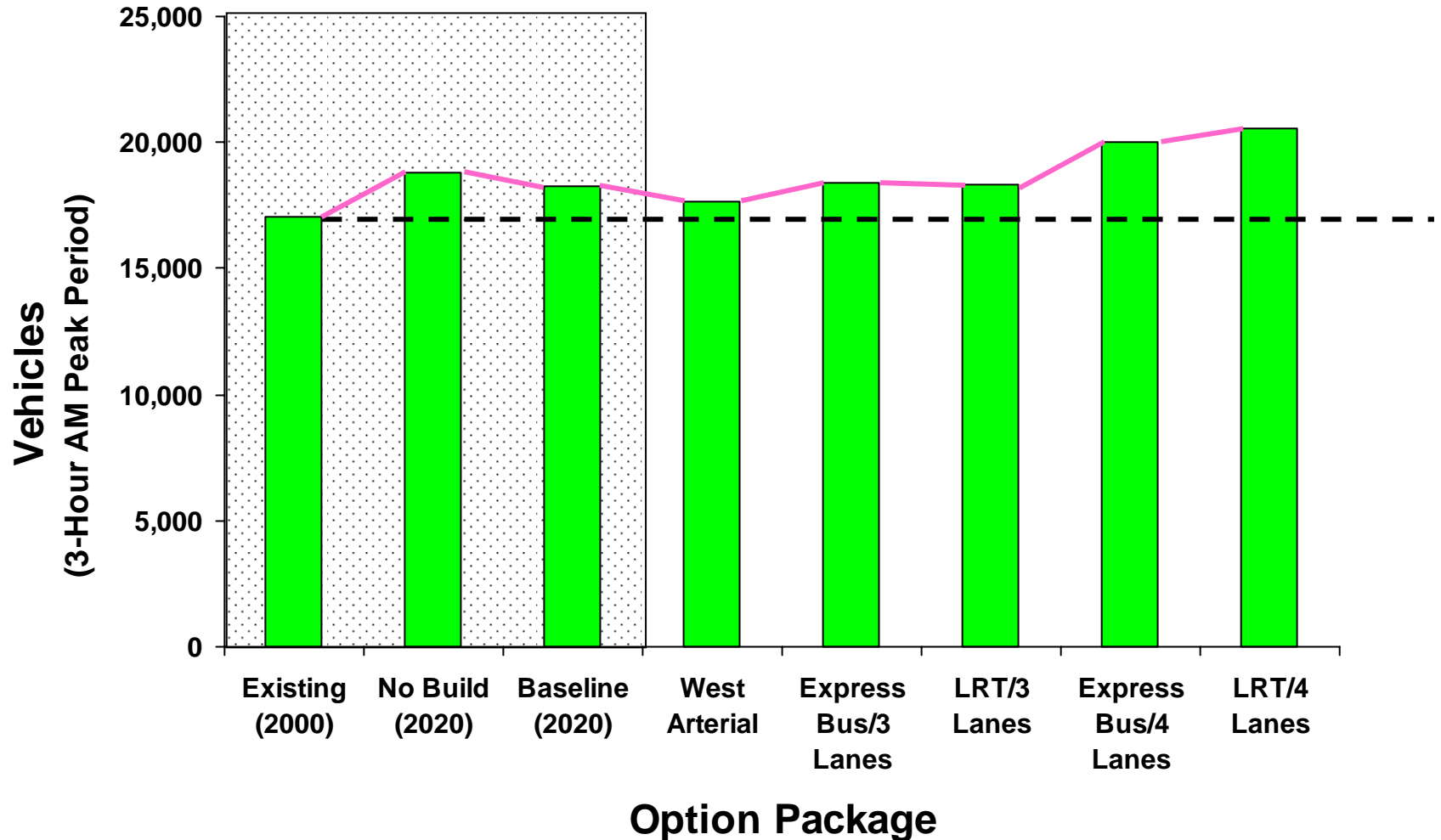


Value of Truck Delay

(In the Study Area)

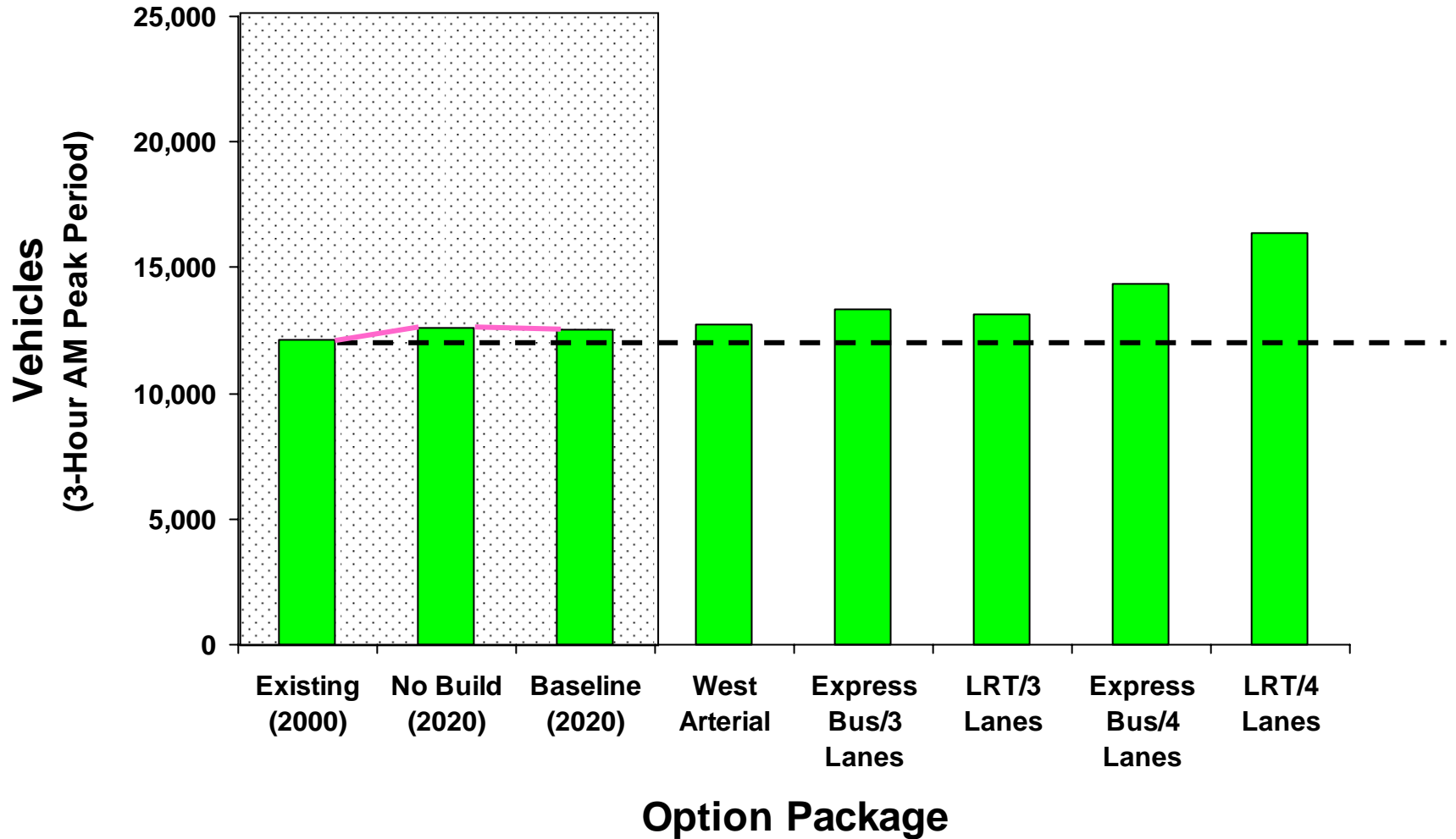


Southbound Vehicle Trips on the Fremont Bridge (I-405) (AM Peak)





Southbound Vehicle Trips on I-5 South of Fremont Bridge (AM Peak)

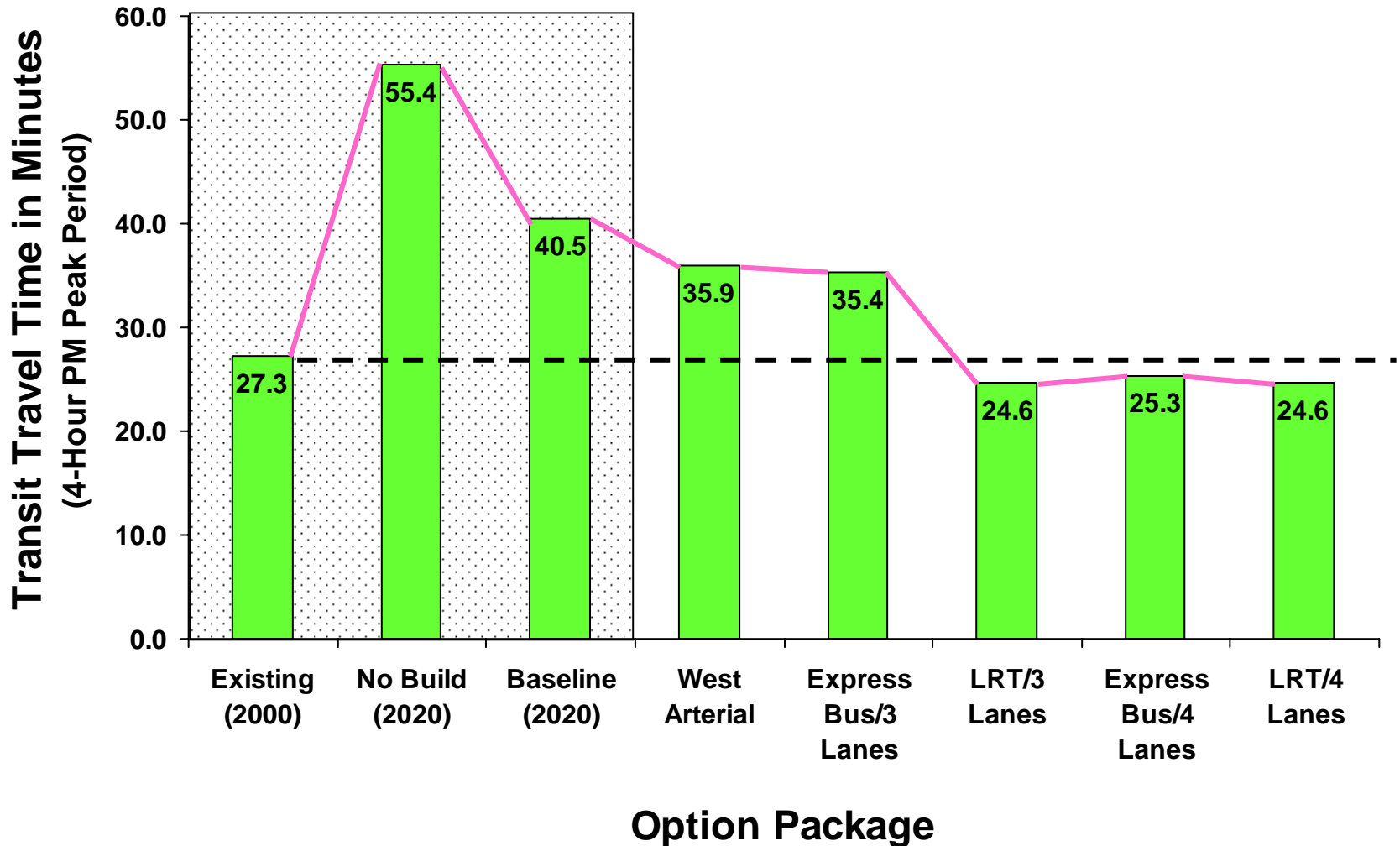




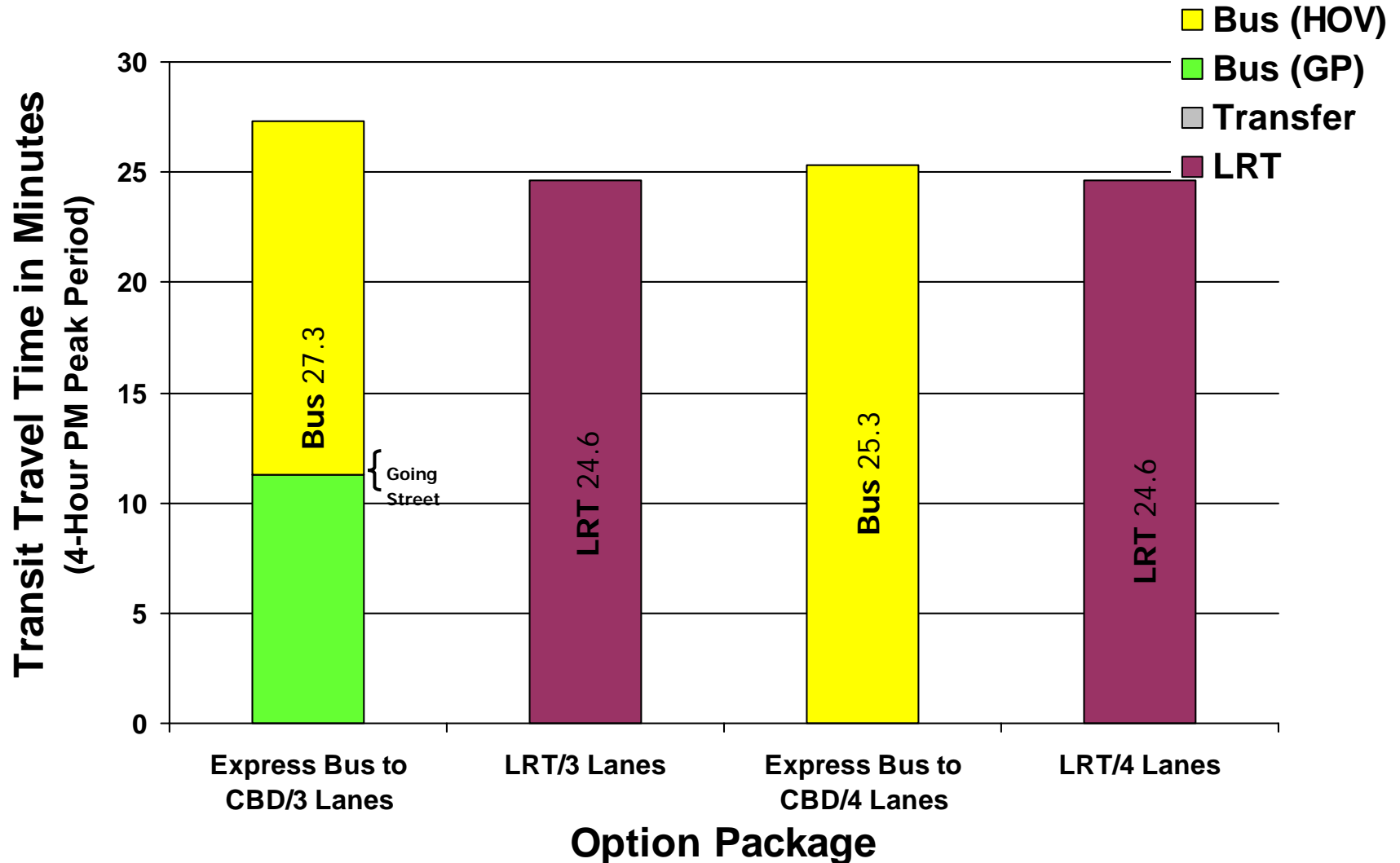
**Express
Bus –
Long?**

Transit Travel Time

Downtown Portland to Downtown Vancouver (PM Peak)

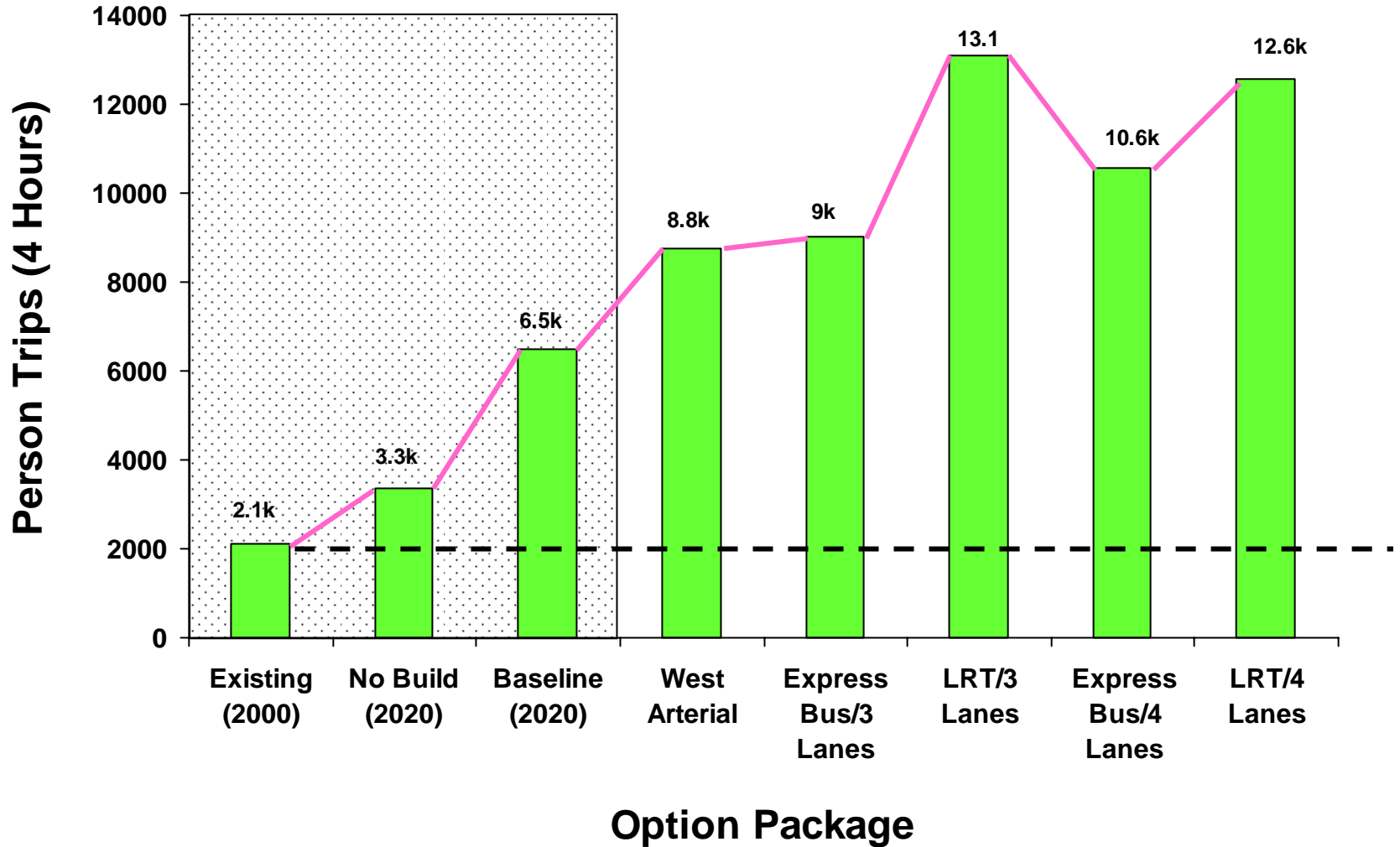


Transit Travel Time from Portland CBD to Vancouver CBD (PM Peak)



Transit Trips

Across the Columbia River (PM Peak)



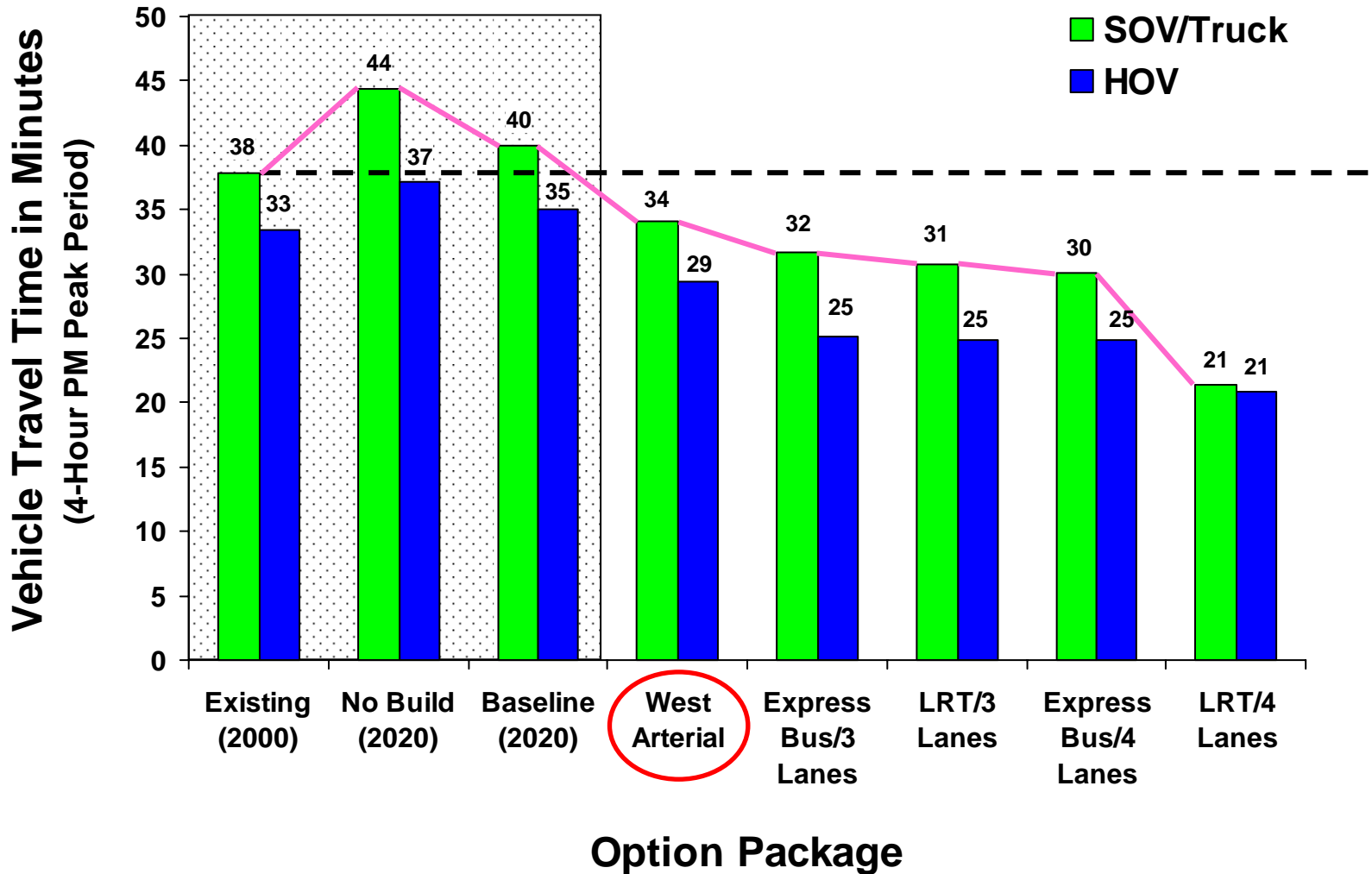


Rose Quarter

West Arterial in Combination

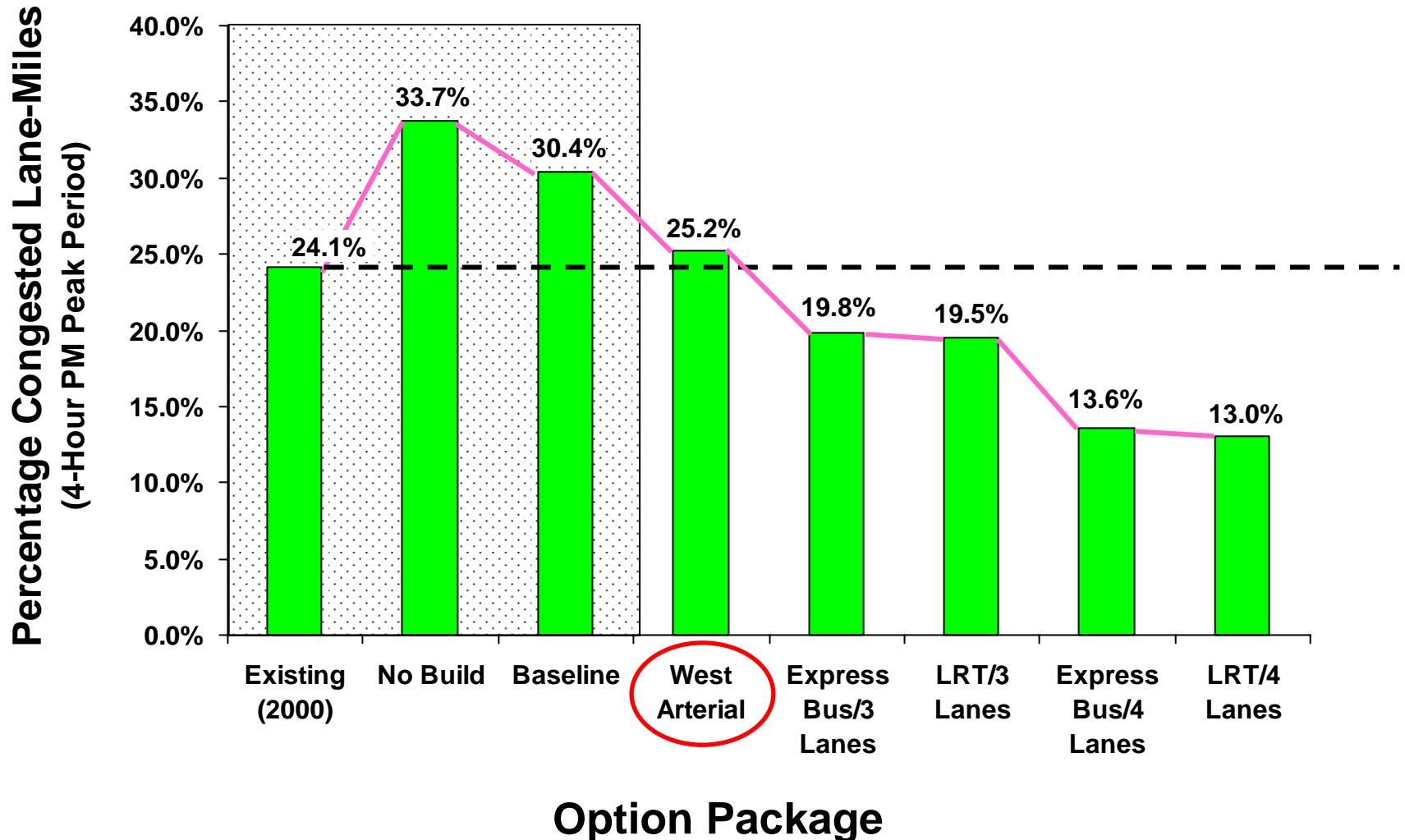
Vehicle Travel Times

Downtown Portland to Salmon Creek (PM Peak)



Congestion on I-5 and I-205

Congested Lane-Miles (PM Peak)



Vehicle Hours of Delay In the Study Area (PM Peak)

