







## **FACTORIA: I-405 / I-90 INTERCHANGE**

Direct HOV connections between I-405 and I-90 are recommended in the NE, NW, and SW, quadrants as shown in Figure 5-4.

### **Cost Estimate Summary**

- ◆ Total Estimated Cost NW Quadrant: \$43.07 M.
- ◆ Total Estimated Cost NE Quadrant: \$38.25 M.
- ◆ Total Estimated Cost SW Quadrant: \$56.57 M.

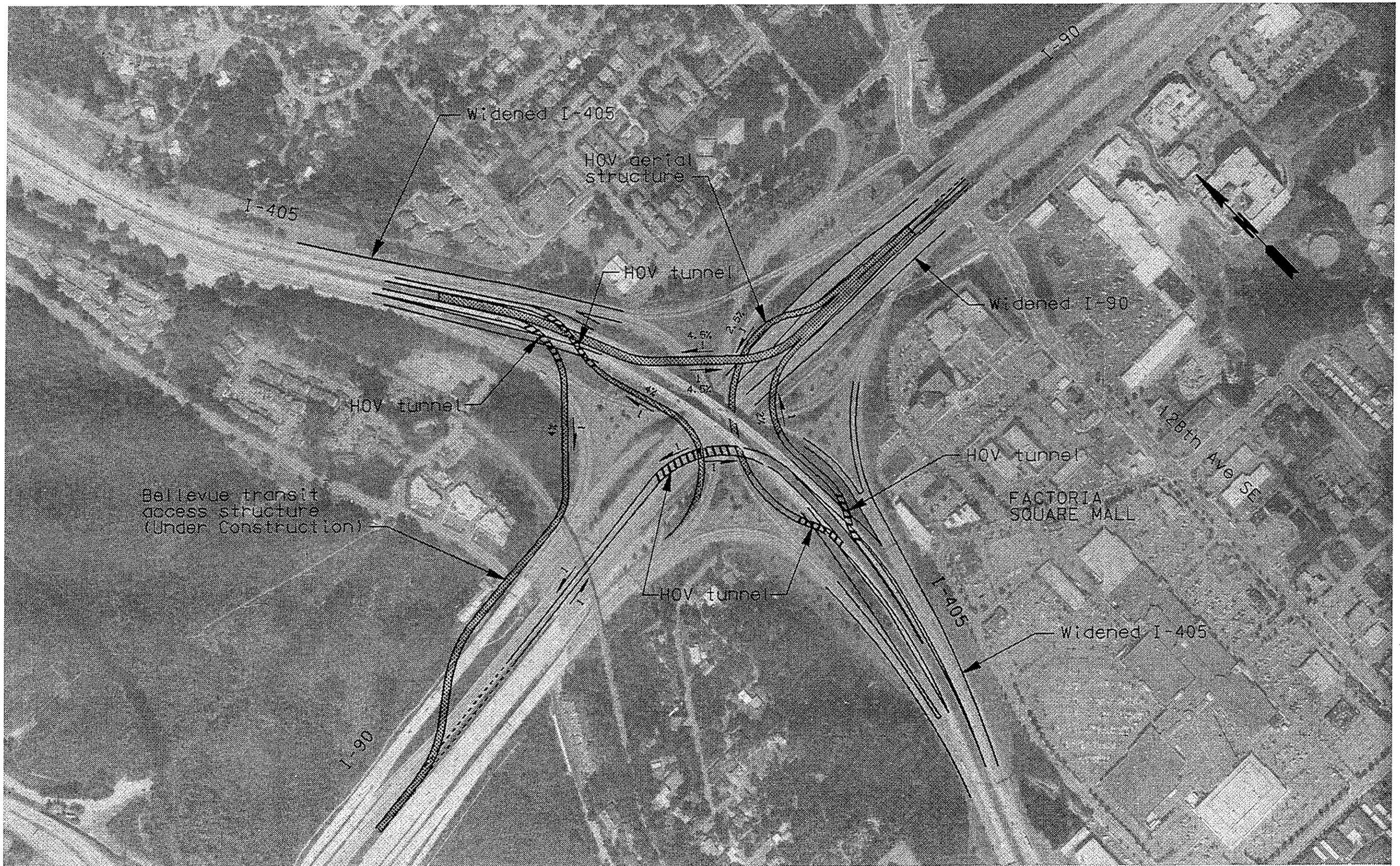
### **Significant Benefits**

Heading west on I-90, traffic backs up entering I-405 in the morning, both north and southbound. Freeway-to-Freeway HOV connections would allow buses and carpools to avoid those ramp delays, and some of the delays experienced by general purpose traffic using these ramps today would be alleviated as well. The NW quadrant rates high on transit travel time savings, cost effectiveness, and general system enhancement. It scores moderately high on carpool travel time savings, cost, and facilitating regional transit service. It is the highest rated of the three recommended quadrants, and would become even more critical if the NW quadrant of the SR 520/I-405 interchange were not constructed in the foreseeable future. The SW quadrant also scored high in transit travel time savings, while the NE quadrant rated high in general system enhancement and moderately high in cost and cost effectiveness.

### **Significant Impacts and Outstanding Issues**

The NW quadrant already has a freeway-to-freeway connection, including one ramp that was recently completed. This project would make use of this newly constructed ramp, but relocate the ramp connections from the outside lane on I-405 to the inside lane. It is noted that these estimated quadrant costs assume all three quadrants would be constructed at once. If each were constructed independently, then their individual cost estimates would likely increase.

The NW quadrant is essential for the success of direct access ramps to the north on I-405. If it is not constructed, buses will enter the freeway in the center HOV lane and begin to weave across traffic almost immediately to reach Seattle—defeating the purpose of the direct access improvement.







## ***BELLEVUE: I-405 / SR 520 INTERCHANGE***

For these improvements, the southbound to westbound and eastbound to northbound HOV ramps would be combined on a single roadway in the NW quadrant, as shown in Figure 5-5A; and the northbound to eastbound and westbound to southbound HOV ramps would be combined on a single roadway in the SE quadrant as shown in Figure 5-5B.

### ***Cost Estimate Summary***

Total Estimated Cost NW Quadrant: \$66.26 M.

Total Estimated Cost SE Quadrant: \$90.79 M.

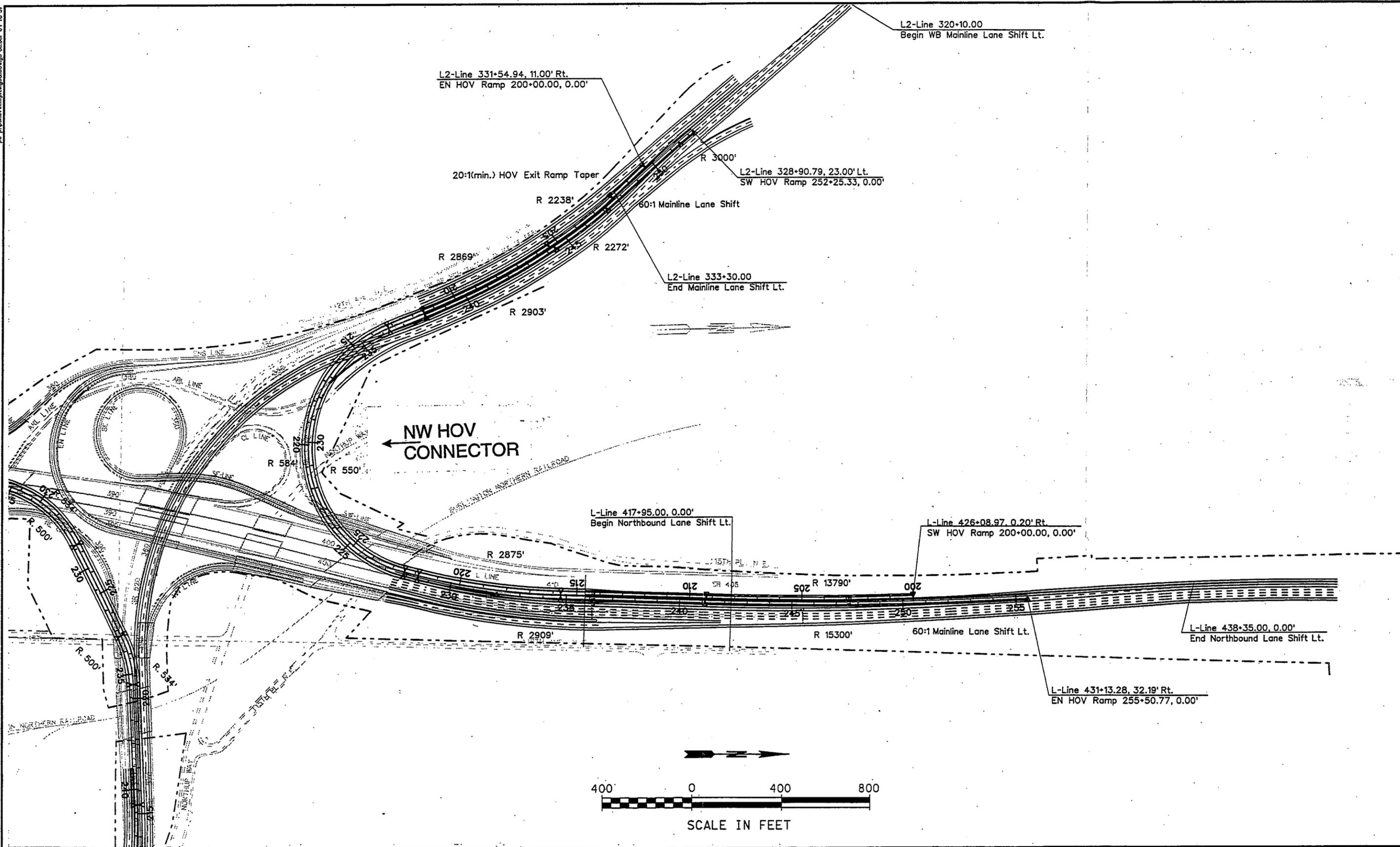
### ***Significant Benefits***

The technical evaluation of freeway-to-freeway connections between I-405 and SR 520 rates these ramps as a high priority. The NW quadrant, particularly, has very high volumes of bus passengers, and the amount of delay that would be reduced is substantial. The NW quadrant connection would also make direct access facilities to the future I-405 inside HOV lanes north of SR 520 much more effective. Both quadrants rate high in transit and carpool travel time savings, as well as cost effectiveness and general system enhancement.

### ***Significant Impacts and Outstanding Issues***

HOV lanes on SR 520 continue to be on the outside lane and are likely to remain so until HOV lanes can be constructed across the Evergreen Point floating bridge. Otherwise, HOVs on SR 520 would have to merge into traffic at the bridge from the left-hand lane, which is not as safe as merging from the right. For that reason, the SE quadrant is “conditionally” recommended, if the HOV lane on SR 520 can be moved to the left side in the future. In the NW quadrant, a freeway-to-freeway connection is recommended between the center HOV lane on I-405 and the outside HOV lane on SR 520, provided that it can be designed so as to be able to relocate the ramp to the inside lane of SR 520 in the future with minimal throwaway cost. A preliminary investigation into this possibility indicated that it may not be feasible to do with minimal “throwaway”. Therefore a decision will need to be made as to whether to connect to the inside or outside of SR 520. That decision will be contingent upon whether and when HOV lanes will be built across the Evergreen Point bridge.

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L2-Line 331+54.94, 11.00' Rt.  
EN HOV Ramp 200+00.00, 0.00'

20:1(min.) HOV Exit Ramp Taper

R 2238'

60:1 Mainline Lane Shift

L2-Line 328+90.79, 23.00' Lt.  
SW HOV Ramp 252+25.33, 0.00'

R 3000'

R 2869'

R 2272'

L2-Line 333+30.00  
End Mainline Lane Shift Lt.

R 2903'

NW HOV  
CONNECTOR

R 584'

R 550'

L-Line 417+95.00, 0.00'  
Begin Northbound Lane Shift Lt.

R 2875'

L-Line 426+08.97, 0.20' Rt.  
SW HOV Ramp 200+00.00, 0.00'

R 13790'

60:1 Mainline Lane Shift Lt.

L-Line 438+35.00, 0.00'  
End Northbound Lane Shift Lt.

L-Line 431+13.28, 32.19' Rt.  
EN HOV Ramp 255+50.77, 0.00'



SCALE IN FEET











## **SEATTLE: I-5 EXPRESS LANES / SR 520**

This ramp would connect to the west side of the express lanes roadway and would operate as a reversible ramp, providing a connection to peak-direction traffic (e.g., southbound in the AM peak period and northbound at other times), as shown in Figure 5-6. The primary cost components include: a new ramp bridge structure over the I-5 northbound mainline and express lane roadways; retaining wall modifications along the I-5 southbound mainline in the vicinity of the existing SR 520 ramp; and replacement of existing ACP shoulder paving on the I-5 express lanes roadway with full-depth PCC paving.

### **Cost Estimate Summary**

Total Estimated Cost: \$11.12 Million.

### **Significant Benefits**

The primary benefit of this alternative would be to peak-period, peak-direction transit routes that utilize the downtown Seattle transit tunnel. By providing a direct connection between SR 520 and the I-5 express lanes, these routes would incur travel time savings ranging between five minutes in the AM peak period and 15 minutes in the PM peak period. Other HOV traffic would be able to avoid the “Mercer weave” problems on the I-5 mainline roadways. In the study team evaluation workshop, this alternative was rated highest of all the freeway-to-freeway connection proposals, due to its large anticipated travel time savings impact, and its subsequent high cost-effectiveness rating.

### **Significant Impacts and Outstanding Issues**

A key outstanding issue related to this alternative is determination of the “best use” of the excess or unusable capacity that currently exists in the express lanes roadway. In addition to the HOV access alternative evaluated in this proposal, alternatives that could be evaluated to determine the optimal use of the express lanes include, but would not be limited to:

- ◆ Peak-direction general purpose ramp, perhaps in combination with a barrier separated lane south to Mercer Street to prevent southbound through traffic from adding to the capacity problems on the express lanes.
- ◆ Peak-direction general purpose ramp, in combination with congestion pricing on the ramp to limit the impact on the express lanes operation.

If this option were implemented in combination with the PM peak southbound contraflow lane proposal on the express lanes (see Section 3.3 of this report), the ramp would be restricted to one-direction use only (westbound SR 520 to southbound express lanes). The northbound shoulder I-5 HOV lane from Olive Way to SR 520 as discussed in Section 3.3 would be more important for providing the downtown Seattle to eastbound SR 520 HOV connection if the SR 520 ramp to the express lanes is not reversible.

Additionally, adjacent community groups have expressed concern over environmental impacts of the proposal, including air quality and noise impacts, aesthetics, and potential to induce more traffic in the area.