

Value Planning Study Results



- Study Area
- Participants
- Project Purpose
- Study Objective
- Study Process
- Alternatives



Study Area



- I-205 from Sandy to SR-14
- Airport Way



Participants



- | | |
|--|---|
| <ul style="list-style-type: none"> ■ Baker, Brian – HDR – Project Manager ■ Barber, Bill - SAC ■ Barsness, Jeff – WSDOT ■ Bosket, John – DKS ■ Buffington, Lori – HDR ■ Butzek, Anthony - Metro ■ Delahanty, Ray – ODOT ■ Egan, Christine – JLA ■ Emerson Peters, Marcy - SAC ■ Freitag, Kate – ODOT ■ Freitag, Matt – ODOT ■ Graham, Jeff – FHWA ■ Gray, John – City of Portland ■ Gregory, James – HDR ■ Hampson, Kirk – HDR ■ Hennelly, Barry – Metro | <ul style="list-style-type: none"> ■ Hendy, Alan - WSDOT ■ Johnson, Andy – ODOT ■ Johnson, Mark – ODOT ■ King, Scott – Port of Portland ■ Kuehn, Rick – CH2M-HILL ■ McCaffrey, Robin – Port of Portland ■ Miles, Raye - SAC ■ Miller, Arch – SAC ■ Moller, Jason – CH2MHILL ■ Moshofsky, Emily – ODOT ■ Scarbrough, Wade – Kittelson & Assoc. ■ Sieber, Steve - SAC ■ Siromaskul, Smith – HDR ■ Smith Ken L. — HDR – Facilitator ■ Thayer, Randall – SAC ■ Thomas, Stacy - ODOT |
|--|---|



Project Purpose



The DRAFT purpose of the proposed action is to improve transportation mobility for vehicles moving from Airport Way to I-205 northbound



Workshop Objective



- The objective of the study is to develop alternatives to be further evaluated throughout the project development process

Project Constraints



Study Process



The team:

- Brainstormed over 60 ideas and listed advantages and disadvantages
- Narrowed down the list by multi-voting
- Developed ideas into alternatives



Top Ranked Ideas (in order of cost)



Alternative	Original Idea	Description	Estimated Cost
1	10	Restricting I-205 NB lane changes near Airport Way NB entrance ramp	<\$50,000
2	34	Adaptive signal timing on Airport Way and Columbia	\$500,000
3	5	Restripe on NB I-205 at SR-14 for a dedicated drop lane and an option lane	\$1,200,000
4	7	Two-lane NB Airport Way entrance ramp	\$1,250,000
5	15	Physically separate Airport Way ramp traffic from mainline I-205	\$1,400,000
6	27	Widen Airport Way EB and WB to accommodate turn lanes or add capacity	\$2,700,000
7	8,11	Restripe for five lanes on I-205 NB by shifting I-205 NB to the west, making room for a 2-lane on-ramp	\$3,650,000
8	13	Offset left diverging diamond interchange	\$8,700,000
9	3,4,7,8	Free right-turn lane from WB Airport Way with 5-lane restriping on NB I-205 to accommodate 2-lane on-ramp	\$9,000,000
10	14	Continuous Flow Single Point Urban Interchange	\$13,000,000
11	1	Lower the hump on the on-ramp	\$23,900,000

Top Ranked Ideas (in order of cost)

Alternative	Original Idea	Description	Estimated Cost
12	63	Relocate Bike Path	\$117,000,000
13	N/A	Airport Way WB to NB Flyover	\$146,000,000
14	45	Eastbound to Northbound Loop Ramp	\$180,000,000
15	43	Flyover from EB Airport Way to NB I-205	\$200,000,000
16	46	Elongated Loop Ramp	\$250,000,000
17	56	Full Standard 5-lane I-205 NB (4 full plus aux lane from Airport Way to SR 14)	\$283,000,000
18	39	New Columbia River Crossing	\$1,318,000,000
19	62	Northbound Collector-Distributor between Airport Way and SR-14	\$1,382,000,000
20	36	Encourage carpooling, vanpooling, transportation management association (TMA)	Non-engineered solution
21	29	Improve transit service	Non-engineered solution
22	65	Land use management	Non-engineered solution

Idea Descriptions

Alternative 1: Restricting I-205 Lane Changes

- Restrict lane changes on I-205
- Immediately after the Airport Way NB entrance ramp
- Low Cost: <\$50,000 est.

Do not cross solid white stripe

Alternative 2: Adaptive Signal Timing



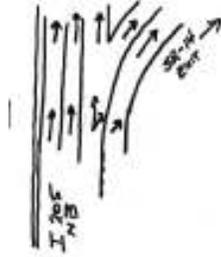
- Update signals on Airport Way and/or Columbia
- "Smart" signals that adapt to traffic demand
- Cost: \$500,000 est.



Alternative 3: Restripe SR-14 Off-Ramp



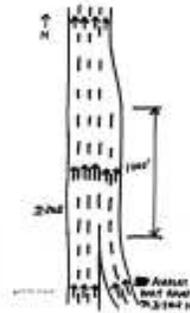
- Restripe SR-14 off-ramp
- Two lane off-ramp
- Requires signing/stripping modifications
- Cost: \$1.2M est.



Alternative 4: Two Lane Airport Way Entrance Ramp



- Construct I-205 NB two lane on-ramp
- Two lane parallel ramp on I-205
- Cost: \$1.25M est.



Alternative 5: Physically Separate Ramp and Mainline Traffic



- Place barrier between I-205 and ramp
- Prevents early weaving
- Cost: \$1.4M est.



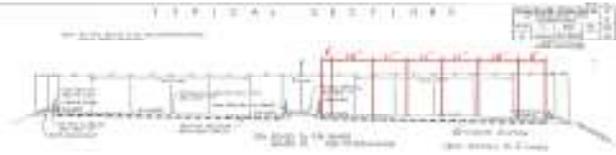
Alternative 6: Widen Airport Way EB and WB



- Airport Way Westbound:
 - Add right-turn lane east of intersection
 - Allows three through lanes
- Airport Way Eastbound:
 - Extend left turn bays 550'
- Reconstruct signals
- Replace pedestrian overcrossing
- Cost: \$2.7M est.



Alternative 7: Restripe I-205 to 5 lanes



- Restripe I-205 to 5 lanes from Airport Way to SR-14.
- Assume Airport Way NB on-ramp reconfigured to 2 lanes
- Outside lane dedicated exit to SR-14 WB, lane 4 option lane to SR-14
- Cost: \$2.8M est.



Alternative 8: Offset Left Diverging Diamond Interchange



- Improves signal operation (2 phase)
- Removes left turn conflicts
- Pedestrian friendly
- Increases storage
- Increases volume on SB ramp
- Cost: \$8.7M est.



Alternative 8: Offset Left Diverging Diamond Interchange (continued)



Alternative 9: Free Right-Turn Lane From WB Airport Way



- Free right-turn from WB Airport Way to NB I-205.
- Add third lane to on-ramp to receive right-turn vehicles
- Includes restriping of I-205 for 5 lanes
- Includes two lane on-ramp to NB I-205
- Replace pedestrian structures
- Cost: \$9M est.



interchange

10 minute break

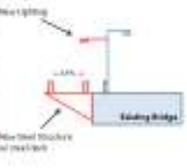
PORT OF PORTLAND
HDR

interchange

Alternative 12: Relocate Bike Path on I-205 Bridge

- Allows additional northbound lane on I-205
- Bikepath relocated to outside of I-205
- Cost: \$117M est.





PORT OF PORTLAND
HDR

Alternative 13: Airport Way WB to NB Flyover

- Braid WB to NB and EB to NB movements
- Requires new structure over the South Channel
- Additional lane for Airport Way EB
- Cost: \$146 M est.



PORT OF PORTLAND
HDR

Alternative 13: Airport Way WB to NB Flyover (cont.)



PORT OF PORTLAND
HDR

Alternative 14: Eastbound to Northbound Loop Ramp

- Removes the EB left turn conflict
- Extensive Right of Way impacts
- Would allow for metering
- Lane balance issue on Airport Way?
- Braided ramps with Columbia Blvd on-ramp
- Cost: \$180M est.



Alternative 14: Eastbound to Northbound Loop Ramp (continued)



Alternative 15: Flyover from EB Airport Way to NB I-205

- Braided ramps EB with Mt. Hood Interchange
- Require additional structure over the South Channel
- Cost: \$200M est.



Alternative 15: Flyover from EB Airport Way to NB I-205 (cont.)



Alternative 16: Elongated Loop Ramp



- Removes the EB left turn conflict
- Extensive Right of Way impacts
- Would allow for metering
- Lane balance issue on Airport Way?
- Braided ramps with Columbia Blvd on-ramp
- Cost: \$250M est.



Alternative 17: Full Standard 5-lane I-205 NB



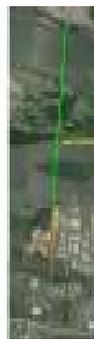
- Allows for two lane on-ramp
- Construct parallel structure (approx. 16' in width) across Columbia.
- Cost: \$283M est.



Alternative 18: New Columbia River Crossing



- New 6-lane structure over Columbia River from 181st in Oregon to 192nd in Washington.
- Includes bicycle/pedestrian facilities.
- Assumes interchange modifications to I-84/181st and SR-14/192nd.
- Cost: \$1.32B est.



Alternative 19: Collector-Distributor Airport Way to SR-14



- Three lane collector-distributor (C-D) facility adjacent to I-205 between Airport Way and SR-14 interchanges.
- Partially reconstruct SR-14/I-205 interchange.
- Columbia Blvd. Interchange impacted
- Cost: \$1.38B est.



Alternative 19: Collector-Distributor Airport Way to SR-14



Alternatives 20-22: Non-Engineering Solutions



- Alternative 20: Encourage carpooling, vanpooling, Transportation Management Association (TMA)
- Alternative 21: Improve Transit Service
- Alternative 22: Land Use Management



Next Steps



- Combine ideas into alternatives

Example

Alt 8: Offset Left Diverging Diamond Interchange - \$8.7M

Combine with:

- Alt 1: Restricting I-205 Lane Changes - \$500K
- Alt 2: Adaptive Signal Timing - \$500K
- Alt 3: Restripe SR-14 Off-Ramp - \$1.2M
- Alt 4: Two Lane Airport Way Entrance Ramp - \$1.3M
- Alt 5: Physically Separate Ramp and I-205 Traffic - \$1.4M
- Alt 6: Widen Airport Way EB and WB - \$2.7M
- Alt 7: Restripe I-205 to 5 Lanes - \$2.8M
- Alt 20: TMA
- Alt 21: Improve Transit Service
- Alt 22: Land Use Management

Total = \$18.7M

- Screening (Level 1 Qualitative)
 - Using Evaluation Criteria



Brainstorming Ideas



1. Lower hump on the on-ramp*
2. Moving merge on the ramp further out by restriping the on-ramp for two lanes
3. Shifting main line lanes NB I-205 to the west*
4. Increase to five lanes on northbound I-205 by restriping*
5. Make SR-14 off-ramp two lanes to reduce congestion on I-205*
6. Enhance signage on WB Airport Way
7. Two lane NB I-205 on-ramp*
8. Free right turn from WB Airport Way to NB I-205*
9. Signal timing modifications on Airport Way
10. Signage/striping on NB I-205 specifying "No Lane Changes" from left to right (through traffic keep left)*
11. Restripe Airport Way for a modified diverging diamond
12. Move sign bridge for SR-14 north to reduce weaving
13. Heavily modified diverging diamond offset left 1/4 mile upstream NB to SB *



Brainstorming Ideas – cont.



14. Continuous flow single point urban interchange at Airport Way and I-205*
15. Put physical barrier on I-205 to prevent early weave*
16. Having dedicated WB to NB right hand turn, moving merge left to right at Airport Way (channelized right-turn lane)
17. Roundabouts
18. Close the right turn at 82nd
19. NB on-ramp movements at Columbia Blvd. and I-205
20. Improve signal progression along Columbia Blvd.
21. Force all EB Airport Way to NB I-205 traffic to use Mt. Hood Interchange, then Marine Drive to 122nd, to Airport Way
22. Build a loop ramp at Marine Drive
23. Extend turning lanes at Alderwood and Cornfoot
24. Signalize and modify Alderwood and Columbia Blvd.
25. Widen Columbia Blvd.
26. Improve the interchanges with 82nd on Killingsworth and Columbia Blvd.
27. Widen Airport Way east and west of the interchange to accommodate turn lanes*



Brainstorming Ideas – cont.



28. Modify the Holman and Glenn Widing intersections – forcing right in-right out.
29. Improve transit service*
30. Add SB to EB left-turn lane on 105th at Sandy Blvd.
31. Signalize Alderwood and Holman at 105th
32. Construct or extend turn lanes at 82nd and Alderwood
33. Restrict truck access to Airport Way during peak hours
34. Install adaptive signal control system on Airport Way and Columbia Blvd*
35. Parallel 2-lane on-ramp
36. Encourage carpooling, vanpooling, transportation management association (TMA)*
37. Reversible lanes on existing I-205 for peak hours
38. Braid Airport Way and SR-14 traffic on separate structure across the river
39. Separate structure across the river at 192nd in Washington and 181st in Oregon*
40. Establish protocol with emergency response services for peak hours
41. New NB on-ramp off Sandy braided with the off-ramp to WB Columbia



Brainstorming Ideas – cont.



42. Replace Airport Way WB to NB ramp with a ramp from Marine Drive to NB I-205 across South Channel
43. Flyover from Airport Way East to I-205 north*
44. Bring WB traffic on Airport Way to Marine Drive then onto NB I-205 on separate structure
45. EB to NB loop ramp*
46. EB to NB elongated loop ramp that extends south and combines with NB Columbia Blvd*
47. Split diamond with Airport Way and Marine Drive
48. Split diamond with Airport Way and Columbia Blvd.
49. EB to NB flyover on Columbia Blvd.
50. Third bridge – Washougal to Troutdale
51. On-ramp onto I-84 off of 122nd
52. Tunnel EB Columbia Blvd. to NB I-205
53. Full access control grade separations on Airport Way between I-205 and 122nd
54. Elevated express lanes on I-205 for peak hour traffic



Brainstorming Ideas – cont.



55. Tolling single-occupied vehicles as an incentive to carpool
56. Full standard 5-lane NB I-205 (four through lanes plus an auxiliary lane between Airport Way and SR-14)*
57. Extend EB Airport Way structure under I-205 to the south to increase curve radius, then over Airport Way to I-205
58. At SR-14, a flyover of NB I-205 to WB SR-14
59. Separate 2-lane structure across south channel for ramps and high capacity transit
60. Add another lane to existing on-ramp from WB Sandy to NB I-205 (Columbia Blvd interchange)
61. River transit between the airport and Washington state
62. Collector-distributor system between Airport Way interchange and SR-14*
63. Relocate bike path to add lanes on I-205 at center*
64. Light rail into Vancouver
65. Land use management*

* To be carried forward into screening process





Questions?

