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From:

Date: July 25, 2007

Subject: ODOT Contract No. 16902 – I-5 Trade Corridor Study Phase II
Technical Memorandum, Option Package 8

OPTION PACKAGE 8: NEW WESTERN ARTERIAL CORRIDOR

Road Network Description

This Option Package builds upon the Option Package 1d (Priority Baseline) and involves construction of a new arterial connecting US 30 near the Linnton neighborhood and St. John's Bridge in Portland to Vancouver at Mill Plain Blvd. In concept, the arterial would be four lanes (two in each direction) with bicycle lanes and sidewalks. Access to/from the arterial and adjacent street system would be limited to Mill Plain Blvd., Hayden Island, Marine Drive, Columbia Blvd., Lombard Street, and US 30.

The arterial would follow an alignment from Vancouver near Mill Plain Blvd. across the Columbia River along North Portland Road. Just north of Columbia Blvd., the arterial would transition to a grade-separated structure above the existing BNSF rail lines to a point just north of the Willamette River. From there, the arterial would cross the Willamette River on a new bridge to US 30. Opportunities to design joint use auto/rail bridges will be considered for the Columbia River and Columbia Slough crossings.

The arterial is intended to draw "local" freight and general-purpose traffic between North Portland and Vancouver from I-5 and major east-west arterials including Columbia Blvd. and Lombard Street.

An overall corridor schematic of a new western arterial corridor is shown in **Figure 8-1**. Text call-out boxes direct attention to specific projects or operational features within the corridor.

The 4-lane arterial would cross the Columbia River, Columbia Slough, and Willamette River in addition to following an alignment on structure through the BNSF rail corridor. Bridges over the Columbia River and Slough could be joint use arterial and Amtrak passenger rail. The bridge over the Willamette would likely not be joint use auto/rail.



No change in existing I-5 interchange configuration/operation is assumed under this option package.

OPTION DESCRIPTION

This option will provide an arterial connection between US hwy 30 in Oregon and Mill Plain Blvd in Washington. This new arterial will be an alternate route for freight traffic between industrial Portland, Port of Portland and the Port of Vancouver. It would also function as an overflow for commuter traffic from I5. The arterial is designed with two lanes of traffic in each direction, bike lanes and sidewalks with added turn lanes at intersections. The design speed of the new facility is 50 mph.

Beginning on the south end of the alignment on Hwy 30, a new structure will be required to cross over the top of Hwy 30, which will include ramps to and from Hwy 30 and the new arterial. The alignment will remain elevated and cross the Willamette River just East of the existing Burlington Northern Rail Bridge. The new high span structure crossing the Willamette River will provide 160 feet of vertical clearance above the river.

The alignment will then shift to a viaduct over the top of the existing rail line through the “cut” in North Portland. The viaduct will be approximately 4300 feet in length and due to the span length of the crossbeams, two rail track lines will be relocated to the west. A retaining wall will be built to accommodate the new track alignment. A proposed signalized intersection at Lombard Avenue will provide access for local traffic. The existing Willamette Blvd and Lombard Ave overpasses will need to be replaced. The arterial has vertical clearance below the structures, but the superstructures are in conflict.

The alignment will shift off of the rail alignment at Fessenden where the “cut” begins to shallow and vertical clearance over the railroad is lost. A new structure will be added just west of the existing Fessenden railroad overpass structure. In addition the Columbia Blvd overpass will be rebuilt. This alternative will provide for a signalized intersection at Columbia Blvd, which will be a main truck route access point to the arterial. The alignment will then follow the North Portland Road alignment to 1500 feet south of Marine drive. On this portion of the alignment two existing structures will be reconstructed (Railroad overpass and Columbia Slough overpass) to accommodate the widened road, however the existing railroad overpasses will remain.



The alignment will shift to the west to allow for a connection to Marine Drive and to start the vertical climb over the North Portland harbor. The Marine drive connection will be another signalized intersection and provide another main truck access point to the arterial. The arterial will cross the North Portland Harbor and provide a connection onto Hayden Island. The proposed structure over North Portland Harbor will have 83 feet of vertical clearance above the water. This new signalized intersection to Hayden Island will provide another access for freight traffic to the Port of Portland and other facilities.

The arterial will then cross the Columbia River with a low/mid level lift-span structure. Once across the river the arterial will remain elevated on a viaduct over top of the existing railroads spur lines and the local roads. The arterial will terminate at Mill Plain Blvd just west of the new Mill Plain structure. This will create a signalized “T” intersection with Mill Plain Blvd.

Typical Sections

See attached figure.

DESIGN EXCEPTIONS

The new facility uses a 50-mph design speed. The horizontal and crest and sag vertical curves meet the design standards for a 50-mph design facility, except for the north end of the arterial. The last 1500 feet of the alignment design speed has been reduced to 30 mph both due to the vertical and horizontal alignments. A lowered design speed is typically allowed at intersections.

Another deviation from standard will be the flat grade of the existing North Portland Road. The minimum grade typically allowed is 0.5%, however the existing grade is as flat as 0.07%. This portion of roadway will need further refinement if this alternative is carried forward.

ROW IMPACTS

This alternative will require 57 acres of new Right of Way. This includes approximately 12 acres of Right of way on existing Railroad property. In addition 34 commercial buildings will be demolished on 26 different parcels. The new facility will only displace one residential property.

In addition, seven water quality treatment facility sites will need to be located near or adjacent to the new roadway. Approximately at total area of 6.2 acres is need, and for costs it will be assumed that these will be commercial property.



COSTS

In process of working on qty's

FIGURE 1 – OPTION SCHEMATIC (PROVIDED BY PB)