



Washington State
Department of Transportation

North Spokane Corridor - Spokane

Background

The North Spokane Corridor is an ongoing major project that will build a freeway between Interstate 90 on the south end, and US 395 at Wandermere on the northern end. The length of the North Spokane Corridor (NSC) is approximately 10.5 miles and includes seven interchanges. Approximately 3.5 miles of I-90 will also be affected by constructing an interchange connecting the NSC at I-90. The northern half of the project is complete and operational. As the north-half design work was being completed, the design team began to focus on the south half of the project, where the NSC connects to I-90. WSDOT's vision was to reduce cost, maintain mobility and to provide interim drivable links as portions are completed.

Original plan

The project between I-90 and Freya (the terminus of the completed section) was originally designed to provide an eight-lane freeway. It was designed to be able to add a median HOV lane in the future.

From the Spokane River to Freya, several opportunities for cost savings emerged. The original plan included a lowered section that required a significant amount of retaining walls; some as deep as 50 feet. The lowered section was in an area where hazardous materials presented some construction risk. As designed, the NSC crossed under Burlington Northern Santa Fe (BNSF) railway and maintained



Old cross-section.



New cross-section.



New Wellesley interchange.

the BNSF on the east side of the NSC. This created significant impacts including the need for large bridge crossings, walls and additional right of way.

From I-90 to the Spokane River, other challenges existed with the current design. This section was also designed with eight lanes and provided for future expansion. The design required collector-distributor lanes to be built on both sides of I-90 and required a shift in the alignment and elevation of I-90. The interchange at I-90 included two-lane ramps from the NSC to both directions of I-90 and the collector-distributor lanes.

The total estimated cost of completing the I-90 to Freya section as envisioned in the final environmental impact statement (FEIS) was \$1.6 billion.

Practical design solution

Spokane River to Freya section: The design team collaboratively worked with BNSF to develop a new design that reduces cost and improves constructability. As a result, the elevation of the NSC has been raised, reducing the need for deep retaining walls. Sections of BNSF track alignments have also been redesigned and provide significant reduction in bridge and retaining wall needs. Additionally, we reduced the footprint at the Wellesley Interchange by using roundabouts for traffic management.

The next phase of practical design work focused on the entire unfinished portion of the NSC, including the Spokane River to Freya section, which had already been significantly reduced. The 50-foot wide median of the NSC has been reduced to a barrier-divided highway. This decision also resulted in a reduction in retaining wall needs and bridge footprints through much of the corridor.

While this redesign effort was underway, the regional transportation-demand model was also being updated and currently indicates less growth than previous models predicted. This allows the number of through lanes on this section of the NSC to be reduced from eight to six. It also allows for a reduced footprint at the I-90 interchange. Analysis is underway to re-examine the need for the FEIS envisioned collector-distributor system along I-90. As a result of these redesign efforts, the current design of the I-90 interchange with the NSC provides single-lane ramps accessing I-90 with no collector-distributor.

WSDOT continues to investigate other opportunities to reduce the cost and footprint of the NSC as design of the unconstructed portion continues.

Results

Safety: These practical design efforts and resultant design changes have retained the safety benefits of the NSC as envisioned in the FEIS.

Health/environment: A parallel bike/pedestrian trail (the Children of the Sun Trail) and the related health benefits as envisioned in the FEIS are still intact with the practical design effort.

Community coordination: WSDOT included the public throughout the entire process. The project office meets frequently with neighborhood groups and receives valuable input. A Value Engineering (VE) study was held to examine the I-90 to Spokane River section. VE team membership included the president of a neighborhood council and staff members from the cities of Spokane and of Spokane Valley. Coordination is ongoing with public and private stakeholders including the City of Spokane, Spokane Community College, Spokane Transit Authority, BNSF and neighborhood organizations.

Cost: The practical design work for the unconstructed portion of the NSC has resulted in modification to the NSC's elevation, alignment and width along with changes to the alignment of the relocated BNSF corridor and changes to the NSC / I-90 connection. With these combined changes, the project is estimated to cost \$750 million as compared to the \$1.6 billion cost of the original design – a savings of \$850 million.