North Spokane Corridor
Phase I  Spokane River to Francis/Freya Redesign
Washington State Department of Transportation, Eastern Region

NEPA Reevaluation

Of the 2000 Final Supplemental Environmental Impact Statement
FHWA-WA-EIS-95-4-DS
Introduction

The most recent environmental impact statement for the North Spokane Corridor (NSC) that included the segment from the Spokane River to Francis Avenue was approved September 18, 2000. Design modifications between the Spokane River and Francis Avenue are now being proposed. These changes are largely within the same footprint as was previously approved. The purpose of this document is to reevaluate the North Spokane Corridor Phase I, Final Supplemental Environmental Impact Statement (FSEIS) to determine if the Spokane River to Francis/Freya Redesign changes are still within the scope of the FSEIS.

1.1 North Spokane Corridor Project Summary

The project area is located in the northeast quadrant of the City of Spokane, and Spokane County (see Vicinity Map, Figure 1.1). The proposed action is to improve transportation safety and mobility through the City of Spokane and Spokane County between Interstate 90 (I-90), northeastern Washington, and Canada.

This action will ultimately provide a four- to eight-lane, fully controlled access highway between I-90 on the south terminus, and US 395 at Wandermere on the northern terminus. The length of the North Spokane Corridor (NSC) is approximately 10.4 miles, and includes up to seven interchanges. In addition, approximately 3.5 miles of I-90, centered on the NSC/I-90 interchange connection, will require new construction. The project will provide a transportation facility that will accommodate high volume traffic movements, including high capacity transportation systems, between I-90 and areas north. This will help reduce the congestion and related operational problems on city streets and county roads such as Division Street and Market Street, and will remove regional trips from local streets.

The Washington State Department of Transportation (WSDOT) has been constructing the NSC from Francis Avenue to Wandermere since breaking ground in 2001. A 5.5-mile segment is scheduled to be complete in 2012. To date, over $600 million has been invested for preliminary engineering, right of way acquisition and construction of the NSC.
NSC Segments

**Blue:** Phase I  
Francis Ave to Wandermere

**Red:** Phase I  
Spokane River to Francis Ave

**Green:** Phase II  
I-90 to Spokane River

Figure 1.1 North Spokane Corridor Vicinity Map
1.2 Redesign Rationale

The NSC design from the Spokane River to the Francis/Freya Interchange as shown in the 2000 FSEIS is being reconsidered. This will be referred to as the Redesign in this document, and is shown in Figures 1.2 and 1.3. The Redesign is necessary because:

1. **The Burlington Northern Santa Fe (BNSF) railroad bridge over the NSC near Illinois Avenue is not feasible to build.**
   
   This bridge is located where the BNSF is in a horizontal curve and crosses the NSC at a large skew angle which would require a 450 foot-long bridge. Since the FSEIS, BNSF has requested that any replacement structures at this site accommodate future expansion by providing capacity for two track lines. The NSC is committed to preserving the freeway median for future expansion, thus precluding placing a bridge pier in the median. Without a center pier, a double track structure at this span is not viable to construct. This requirement jeopardizes the FSEIS concept at this location.

2. **Retaining walls in depressed section are not feasible.**
   
   For approximately 2.3 miles, between Illinois and Francis Avenues, the NSC and BSNF are directly adjacent to one another. The NSC is below existing ground level for 1.7 miles, or roughly ¾ of this segment. It would reach a depth of 50 feet at the Wellesley interchange. Large retaining walls would be required to build this depressed section.

   Three types of wall were analyzed for the FSEIS design. Originally, all types were determined feasible to build, but each type came with known difficulties. For cantilever walls, this design is at the height limits of what can be constructed. They will also require large excavations for footings, which would cause long term interruptions of the adjacent homes, businesses and operating railroad. Soldier pile walls would not require the large excavations but do need tiebacks to anchor them in place. These tiebacks would extend under the adjacent properties, including the railroad, which would require underground easements. Easements were not acceptable to BNSF due to possible interruptions to rail service should the tiebacks fail. The secant pile walls would not require large excavations or tiebacks, but were the most expensive of the three options. With the added crash barriers discussed below all three walls became unviable to construct.

3. **Safety issues related to railroad have been identified.**
   
   Since the FSEIS design, BNSF has expressed safety concerns with their trains running parallel to and above the NSC. If a train derailed it could land on the NSC. For this reason BNSF required that a crash barrier be built on top of the retaining walls. The mass of the barrier required to deflect an errant train when integrated into the above described retaining walls effectively make any of the three retaining wall designs unfeasible.
4. **Hazardous materials presence poses a significant risk.**
   An additional large cost risk in the excavation required for this section is hazardous materials. Roughly 1.5 miles passes through property that was once a large complex of industrial buildings used by the railroad for locomotive and rail car manufacture and repair. It has proven difficult to determine the quantity and location of obstacles such as hazardous materials and buried building foundations and materials. These are risks to the true project costs, and are likely to be an expensive variable in determining the construction costs and schedule.

5. **The depressed section is exceedingly expensive.**
   The construction costs of this section have greatly increased since the concept was developed in 2000. WSDOT has performed the Cost Estimate Valuation Process (CEVP) analysis five times since 2002, the last being occurring 2010. These analyses have shown that the largest single cost increase has been in retaining walls. In 2002 wall costs were estimated at $110 per square foot and have since increased to $275 per square foot. The cost estimates for this entire section of the NSC more than doubled to over 700 million dollars. Though this alone does not make the project impossible, when combined with the inability to attain funding necessary to complete this in one phase as described below, it does make it unviable.

6. **FSEIS requires funding packages that have proven to be unattainable.**
   The FSEIS design incorporates a depressed section which requires full build-out with no staging. Therefore, the project has no option for incremental funding and would require upfront funding in its entirety. These types of funding packages have proven to be unattainable—thus stalling the project.

   A stalled project has a negative effect on the local community. In this case several neighborhoods have planning efforts underway. Their planning efforts are stifled if a major project impacting them does not continue to make progress.

   Smaller packages have been available at both the state and federal level. These packages have allowed the project to steadily progress. The new design takes advantage of this scenario by breaking up this segment into 6 stageable projects.

### 1.3 Redesign Description

The Redesign has several components which are described below. Figures 1.2 and 1.3 show the alignment and profile comparison of the Redesign and the FSEIS design. The surface street and rail modification work associated with the NSC in this segment is included. Following is a description of the design changes that have been developed to resolve the issues listed in the preceding section.

- **Maintaining the BNSF railroad on its existing alignment at the Illinois/Market Street intersection**
  This resolves Item 1 by keeping the NSC on the east side of the railroad alignment and alleviating the need for the new crossing over Market/Greene
North Spokane Corridor Redesign

Streets and the NSC. This also reduces impacts to the city street network and private parcels in the Illinois/Market Street intersection vicinity.

- **Raising the NSC profile from the Spokane River north past Wellesley Avenue**
  This resolves Items 2 and 3 above by removing the large excavation component, and eliminating the expensive and impossible retaining walls with tie-back anchors underneath the railroad.

- **Reconfiguring the Wellesley Interchange**
  By decreasing the interchange footprint size, and raising the NSC to pass over Wellesley Avenue instead of beneath it, the proposed design will reduce concerns in Items 2 and 3. The use of roundabouts beneath the NSC significantly reduces the overall footprint while still providing a full-movement interchange. This also helps avoid buried hazardous materials known to exist between Wellesley and Francis Avenues.

Additional modifications, which are necessary to accommodate the proposed Redesign, are listed below:

- **Removing the southbound NSC access ramp from eastbound Francis Avenue**
  In order to maintain a southbound onramp the NSC would need to shift east outside the original project footprint, thus requiring larger impacts to the adjacent businesses. Traffic modeling has shown that removing this single direction access point does not have a detrimental effect on local street or NSC traffic operations.

- **Changing Francis Avenue from overcrossing to undercrossing**
  The FSEIS design provided a grade-separated crossing of the BNSF mainline over a depressed Francis Avenue. The BNSF mainline was located to the east of the NSC alignment and crossed under the NSC north of Francis. The NSC alignment was elevated to cross over the at-grade BNSF mainline. The Redesign would construct the NSC and BNSF mainline and spur at grade, under Francis Avenue. This is accomplished by replacing the existing Francis Avenue structure with a new, larger span structure.

- **Revised crossing of Euclid Avenue**
  In the FSEIS alignment, the NSC crosses under Euclid Avenue. With the Resdesign, the elevation of the mainline results in the NSC crossing over Euclid Avenue.

- **Modified locations of rail crossing structures**
  The grade changes and rail location changes described above result in revisions to the location and configuration of some crossing structures as compared to the FSEIS. Overall the need for rail crossing structures is reduced.

- **Pedestrian/bicycle trail location modified in some locations**
  The design changes to the NSC result in some modifications to the pedestrian/bicycle trail. On the lower end of the project, between Carlisle Avenue...
and Euclid Avenue, the trail is shifted from the west side of the NSC to the east side of the NSC. Between Garland Avenue and Euclid Avenue, the trail remains on the west side of the NSC, but is shifted to run adjacent to Greene Street rather than adjacent to the NSC. Both of these modifications allow increased access to the trail.

This Reevaluation includes consideration of the associated local street the relocation of BNSF track, which are aspects of the project that would be included with either the FSEIS or the Redesign alignment. However, at the time of FSEIS, these needs had not yet been defined.

- **Local street and intersection improvements:**
  Realignment and reconfiguration at intersections to improve traffic capacity:
  - Francis Avenue/Freya Street
  - Francis Avenue/Market Street
  - Wellesley Avenue/Freya Street
  - Wellesley Avenue/Market Street
  Segments of Freya Street, Francis Avenue, and Market Street will be reconstructed or modified to connect with the intersection improvements.

- **BNSF Railroad modification:**
  With either alignment, existing BNSF main and storage track would be impacted between the Spokane River and Francis Avenue. Because of this, all storage track that is impacted would be relocated north of Francis Avenue. This would entail a minor amount of excavation of BNSF property to accommodate the track. The excavated material is planned to be used on the same property as fill for the grade of ramps for the Francis/Freya Interchange. This property would then be acquired from BNSF.
Figure 1.2  NSC Redesign and FSEIS Alignments Compared
Figure 1.3  NSC Redesign and FSEIS Profiles Compared
Affected Disciplines

This area is developed with residential, industrial, and commercial land uses. Therefore, the disciplines that have been analyzed as being potentially affected are mostly aspects of the human and built environment. The following disciplines were reevaluated to identify the impacts of the Redesign, and to determine if these would change the conclusions of the FSEIS. This reevaluation presents a summary of the findings, with the reports for each discipline attached as appendices.

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Change from FSEIS</th>
<th>Change Summary</th>
<th>Documentation Attached</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Quality</td>
<td>No</td>
<td>Does not amount to new impact.</td>
<td>Air Quality Conformity Report, MSAT and PM&lt;sub&gt;10&lt;/sub&gt; Technical Memorandum, Greenhouse Gas Emissions Report</td>
</tr>
<tr>
<td>Hazardous Materials</td>
<td>Yes – decreased impact</td>
<td>Remediation cost estimate reduced from $22.8 million to $8.3 million.</td>
<td>Revised Limited Initial Site Assessment of Known and Suspected Contaminated Sites on the North Spokane Corridor, Francis Ave to Spokane River</td>
</tr>
<tr>
<td>Noise</td>
<td>Yes</td>
<td>Traffic noise is about the same on the west side of NSC; higher on the east side. Mitigation with noise barriers can reduce the impacts on the east side to within 3 dBA of the FSEIS levels.</td>
<td>Noise Technical Report, and Comparison of Traffic Noise Impacts Technical Memorandum</td>
</tr>
<tr>
<td>Section 106 Section 4(f)</td>
<td>Yes – increased impact to historic resources. No change in cultural resources.</td>
<td>One additional NRHP-eligible building, mitigated with MOA.</td>
<td>Cultural Resources Survey Report, Letter of Concurrence from SHPO, Section 4(f) Evaluation, Signed MOA</td>
</tr>
<tr>
<td>Social, Economic and Environmental Justice</td>
<td>Yes- decreased impacts, different locations</td>
<td>Reduced relocations: 17 fewer residences and 6 fewer businesses. No disproportionate adverse impact to low-income populations or minority populations.</td>
<td>Discipline Report</td>
</tr>
<tr>
<td>Traffic/Travel Demand</td>
<td>No</td>
<td>Does not amount to new impact.</td>
<td>Travel Demand Forecast</td>
</tr>
<tr>
<td>Visual Quality</td>
<td>Yes – minor increase in impact</td>
<td>0.5 point difference</td>
<td>Visual Quality Assessment</td>
</tr>
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</table>
Air Quality
Since the FSEIS was approved, the Spokane metropolitan area achieved attainment status under the National Ambient Air Quality Standards (NAAQS) for carbon monoxide (CO). Transportation projects within the Spokane area are required to demonstrate that the project will not cause violations of this standard. WSDOT Eastern Region Planning Office completed the air quality conformity determination for the Redesign. The analysis concluded that the Redesign conforms to the State Implementation Plan for Air Quality. Therefore, there will be no change in the effect to Air Quality with the Redesign as compared to the FSEIS.

Mobile Source Air Toxics and Coarse Particulate Matter
A technical evaluation of the Mobile Source Air Toxics (MSAT) and coarse particulate matter (PM$_{10}$) air quality impact for the full NSC project was completed by FHWA, June 4, 2010. In general, the construction of the NSC is expected to shift vehicle traffic from lower-volume arterial streets to the freeway, and thereby reduce road dust emission rates. The annual emission rate for the priority MSAT is projected to substantially decrease, from 1999 to 2050, due to cleaner fuels and cleaner-running engines. The conclusion of the analysis was that the NSC would not be expected to cause a new violation of the air quality standards for coarse particulate matter (PM$_{10}$), and that reductions in MSAT emissions will occur in the project area regardless of whether the project is constructed or not. This finding does not differ with the FSEIS alignment or the Redesign alignment.

Greenhouse Gases
The Greenhouse Gas analysis was completed for the full NSC project in December 2010, for a study area bounded by Maple Street/Ash Street/Country Homes Boulevard/US 395 arterial corridor to the west, Argonne Road/Bruce Road corridor to the east, I-90 to the south, and Day-Mt. Spokane Road to the north. The findings indicated that the NSC would draw trips off many of the arterials, increasing the overall efficiency of the roadway network. However, the construction of the NSC is predicted to result in a 14% increase in vehicle miles traveled as compared to the no build condition. This is modeled to result in a 3% increase in greenhouse gas emissions within this study area. This finding does not differ with the FSEIS alignment or the Redesign alignment.

Hazardous Materials
The rail corridor is by far the most substantial factor in hazardous materials-related impacts. The FSEIS alignment was in a depressed section, up to 50 feet deep, through the rail corridor. This design would require almost 4 million cubic yards of excavation, with extensive potential for involving contaminated soils within the rail corridor. By bringing the NSC mainline up to or close to existing grade, the Redesign allows for avoidance of the majority of the suspected contaminated soils. The Redesign would also have reduced involvement with an aluminum dross landfill site and an asphalt storage and distribution business, as compared to the FSEIS. The Redesign would involve four additional existing and former automotive-related businesses, which have potential for low levels of soil contamination. The net change in regard to hazardous materials-related impacts is a substantial reduction. The remediation cost estimate for the Redesign is $8,295,000 as compared to the estimate for the FSEIS, which is $22,845,500.
Noise

The comparison of the alignments in terms of noise impacts is limited to the area between the Spokane River and Wellesley Avenue. North of Wellesley Avenue, land use is commercial and industrial, which has a higher threshold for noise abatement. There were no receivers meeting the Noise Abatement Criteria (NAC) in this segment with either alignment. Traffic noise impacts have been analyzed for the Redesign between the Spokane River and Wellesley Avenue, where the vertical and horizontal alignment changes are proposed. Since the traffic noise analysis for the FSEIS was completed in 2000, a new analysis has been also been completed for FSEIS alignment in that segment. These two studies therefore analyze the noise impacts for each alignment using the same model and methods, receptor locations, existing traffic and existing background noise levels. Proposed improvements to local streets adjacent to the NSC were also evaluated for noise impacts, which would be common to both alignments.

On the west side of the NSC, between Grace Avenue and Courtland Avenue (where land use changes from residential to commercial/industrial), with either alignment, the minimum wall meets the feasibility requirements but does not meet the reasonable expenditure criteria. Therefore, a wall is not recommended in this area. The resulting decibel level with the Redesign would be 64 dBA, while it would be 60 dBA with the FSEIS. In the area between Spokane River/Upriver Drive and Grace Avenue, all criteria are met and a noise wall is recommended with either alignment. The modeling proposed a 10-foot to 14-foot tall noise wall for the FSEIS alignment, and an 8-foot to 12-foot tall noise wall for the Redesign. With resulting noise level would be equivalent with these conditions for either alignment, at 60 dBA. (See Table 3.2 for full comparison by dBA.)

With the roadway shifted eastward and raised above grade, the noise impacts on the east side with the Redesign are higher than with the FSEIS, especially between Grace Avenue and Empire Avenue. The modeling proposed a 10-foot to 14-foot tall noise wall for the FSEIS alignment between the Spokane River and Grace Avenue. This mitigation would result in a noise level of 56 dBA. Near Grace Avenue, the FSEIS Alignment enters a cut section with retaining walls on either side. To the north of the start of the cut section, the receivers on the east side would not meet NAC.

The results of the modeling lead to a recommendation for a 6-foot to 8-foot tall noise wall for the east side of the Redesign, extending from the Spokane River north to the end of the residential area at Empire Avenue. While the east side noise wall for the Redesign achieved the mitigation in compliance with WSDOT traffic noise policy (2006), it was found to be not as effective when compared to the FSEIS, resulting in more noise impacts remaining after mitigation (63 dBA with the Redesign, 58 dBA with the FSEIS). With the elevated roadway, the noise wall would be on top of the retaining wall along the east side. The maximum wall height that is feasible to construct in this case is 14 feet (in compliance with design standards). Therefore, the noise model was run with a 14-foot tall wall on the east side for the full length. With this size of noise wall, the average noise impacts on the east side for the Redesign can be reduced, so that the resulting noise level would be 60 dBA. This is within 3 dBA of the FSEIS average noise level in this area, which is not a perceivable difference.

The ultimate height and length of noise abatement walls are determined with public involvement.
**Section 106 and Section 4(f)**
Cultural Resources Surveys for the FSEIS alignment determined that no sites eligible for listing in the National Register of Historic Places (NRHP) would be impacted with the proposed alignment between the Spokane River and Francis Avenue. Due to proposed design changes, the Area of Potential Effect was revised, and formal consultation was reinitiated with area tribes and the State Historic Preservation Officer (SHPO). A cultural resources survey was prepared in April 2010. This report was amended December 1, 2010, due to further design refinements. The amendment identified an adverse effect of the Redesign on two NRHP-eligible buildings. The Redesign would require demolition of an NRHP-eligible house, which would not be directly impacted with the FSEIS design. The Redesign would also require demolition of an industrial building which was found to be NRHP-eligible in the recent survey. This building would also be demolished with the FSEIS design, although the previous survey did not identify it as NRHP-eligible. Therefore, the Redesign would have a higher impact on historic resources, adversely impacting two historic buildings, while the FSEIS would adversely impact one historic building.

Due to the adverse impact on these historic resources, a Section 4(f) Evaluation has been completed, and signed. The Memorandum of Agreement specifies the creation of an archival record of these properties, as directed by the SHPO.

The railroad modification between Francis Avenue and Lincoln Road is within previously disturbed BNSF property. Approximately 80,000 cu yd of soil will be excavated in order to add a storage track next to existing tracks. The excavated material will be used within the same property to construct the grade for Francis/Freya Interchange ramps. A site inspection was completed by the Eastern Region Cultural Resources Specialist in August 2011. The conclusion was that the area to be excavated contains railroad-related archaeological material, but in disturbed context with no archaeological interpretation value (Dean Weaver, August 25, 2011 Memo, attached).

**Socioeconomic and Environmental Justice**
This analysis of social and economic is currently in review. The Redesign footprint would directly impact a part of a neighborhood that had not been affected by the FSEIS. Public outreach has been geared to assuring that potentially impacted residents and businesses are aware of the proposed changes, and of opportunities to be involved in the process. This analysis indicates that minority populations and low income populations will not experience the adverse effects more severely than other populations as a result of the proposed project. The Redesign alignment would have an overall reduction in the dislocation effects on the adjacent communities. The outreach for public involvement has been extensive, particularly in providing translated materials and using community-based outlets for invitations and newsletters.

**Traffic**
The FSEIS alignment and the proposed Redesign were both evaluated for 2030 PM peak hour traffic volumes using the current certified regional travel demand model developed by Spokane Regional Transportation Council. The change with the most traffic volume impact was the elimination of a southbound slip ramp at Francis Avenue. The travel demand model estimates that approximately 1,300 trips may use the Francis Avenue SB slip ramp with the FEIS alignment. With the ramp removed, the trips are redistributed to adjacent NSC access points –
35% using the Freya interchange, and 31% using the Wellesley Avenue interchange, with the remaining 34% redistributed throughout the model network on local arterials such as Crestline, Haven, and Freya. The NSC mainline traffic volumes will only be moderately impacted by the trip redistribution resulting from the slip ramp removal. The traffic on the southbound segment between the Freya interchange and Francis Avenue will increase by 22%. Between Francis Avenue and the Wellesley Avenue interchange, the southbound segment will decrease 9% in volume. Traffic volume effects are limited to the Freya-Wellesley segment, and are not carried through to other parts of the NSC. This is a localized change that will not alter the function of the NSC.

The local street network was also analyzed. Eastbound traffic volumes on Francis, just east of the NSC, will be reduced with no slip ramp in place, as would be expected. The Haven/Market couplet is impacted in the southbound direction (Haven) with volumes increasing 49.7% as trips that would have used Francis to access the NSC travel south to the Wellesley interchange, using Haven, to gain NSC access. All of the roadway volume-to-capacity ratios on the potentially affected surface streets are below 0.60. This implies that, even with additional trips attributable to elimination of the slip ramp, the impacts to surface streets will be modest.

**Visual Quality**
The elevation of the Redesign, at grade and on fill, would make the NSC a more prominent landscape feature than the FSEIS alignment, particularly in the Hillyard and Minnehaha neighborhoods. However, the Visual Quality Analysis for the Redesign concludes that the resulting difference would only be a slight decrease in overall visual quality (less than 0.50 point difference at common view points) with the Redesign as compared to the FSEIS.

The Redesign incorporates several visual quality and aesthetic enhancements, in concert with public involvement. Details are provided in the Socioeconomic and Environmental Justice Discipline Report.

**Public Involvement Since the FSEIS**
WSDOT has hosted 16 Open Houses regarding the NSC since 2000. At least twice a year, newsletters are sent to all residences within roughly ¾-mile of the proposed NSC centerline. The project website is updated regularly, and includes a link for questions and comments. Proposals for the Redesign were incorporated into the public outreach efforts by October 2008. By Spring 2009, regular meetings were established with stakeholders within the project area. As the proposed design changes include the shift into the residential area east of the FSEIS alignment, public outreach was focused in this area, including neighborhood canvassing. Contacts were developed and informational material was distributed through local businesses, churches, and social services. Outreach was designed to contact diverse populations within the Study Area, and to ensure that all people in the Study Area had the opportunity to access information and participate in the project development process. Detail on public involvement for the Redesign is included in the Socioeconomic and Environmental Justice Discipline Report.

**Prior Commitments**
This Reevaluation and the proposed Redesign do not preclude commitments outlined in the FSEIS.