

Travel Demand Forecast

NORTH SPOKANE CORRIDOR SPOKANE RIVER TO FREYA STREET REDESIGN

Spokane County, WA

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2030 TRAVEL DEMAND FORECAST

A regional travel demand model was used to estimate how a proposed revision to the alignment of the North Spokane Corridor (NSC), and the elimination of an access location, may impact 2030 volumes on the NSC as well as surface streets located proximate to the new facility. The proposed design changes are in the vicinity of Francis Ave. The design change that could potentially have a significant impact on forecast traffic volumes is the proposed elimination of a ramp that would provide access from eastbound Francis Ave. to the southbound lanes of the NSC. The relatively minor change in alignment of the NSC, through the Hillyard neighborhood, would not affect trip assignment to the facility due to the negligible change in travel times. However, the elimination of the access point to the NSC, from a busy arterial, could potentially alter volumes on nearby facilities and the NSC.

Travel Demand Model

Spokane Regional Transportation Council's (SRTC) regional travel demand model was used to estimate the impact of the elimination of the Francis Ave. ramp on 2030 traffic volumes. The model is certified by the Federal Highway Administration and the Federal Transit Administration for transportation planning studies. For this analysis, a travel demand model network was created that includes the elimination of the slip ramp from Francis Ave. to southbound NSC. For this analysis, travel demand model assignment data from the "no-slip ramp" network was compared with model assignment data for the NSC, as it is currently designed and approved in the Final Environmental Impact Statement.

Travel demand assignment data was developed for both alternatives for the 2030 PM Peak hour. (SRTC's regional model is currently certified for only the PM peak hour time period.) Specifically, SRTC's 2030 Base forecast model was used as the "No-Build" model. This model, used as the basis for the development of the Metropolitan Transportation Plan, assumes the completion of the NSC, as well as other regional transportation facility improvements. By using the regional model, it is possible to evaluate the potential impact of the revised design on local streets as well as the NSC.

Findings

Generally, the elimination of the slip ramp that serves eastbound Francis Ave. to southbound NSC trips will result in the redistribution of approximately 1,300 trips that the model estimates will use that ramp. About 35% of the redistributed trips will use the Freya interchange, located north of Francis Ave., to access the NSC, and 31% will use the Wellesley Ave. interchange, located to the south of Francis Ave. Mainline southbound volumes on the NSC, between the Freya and Wellesley interchanges will also be reduced by the removal of the southbound slip ramp from the design. The vicinity map on the following page shows the relationship of the interchanges to Francis Ave. and the southbound slip ramp.



PM peak hour forecast volumes were compared between the two alternatives for the NSC mainline, NSC interchanges at Freya Ave., Wellesley Ave. and Trent Ave., and on arterials located in proximity to the NSC. This data is presented in two tables on the following pages. The first table is for NSC facilities and the second table is for local streets.

NSC Facilities

Ramp volumes at the Freya interchange will increase for all movements with the elimination of the Francis slip ramp. By far, the largest volume increase will be for the southbound NSC on-ramp. The travel demand model estimates its volume will double if the Francis southbound on-ramp is eliminated, as compared to the FEIS design. Similarly, southbound on-ramp volumes at the Wellesley interchange will be 32% higher in the event there is no slip ramp at Francis Ave. The Parksmith interchange, located to the north of Freya, may

also be impacted by the elimination of direct access to the NSC at Francis Ave., but those impacts are less significant than those at Freya and Wellesley interchanges.

The model predicts that southbound NSC mainline volumes, immediately south of the Freya interchange, will increase by 22% in the absence of the Francis slip ramp. This is due to the fact that many of the southbound trips that used the slip ramp to access the NSC will access the facility using the Freya interchange. However, the PM peak hour southbound volume on the NSC, at a location just north of the Wellesley interchange, will be about 9% lower in the no-slip ramp alternative. South of Wellesley interchange, there is virtually no difference in NSC mainline volumes between the two alternatives, suggesting that the impacts of the slip ramp removal from the design are largely confined to the Freya and Wellesley interchanges and the portion of the NSC located between them.

City of Spokane Arterials

Several arterials in the vicinity of the Wellesley/Freya section of the NSC were examined to determine if eliminating the Francis slip ramp would have any significant impacts to those facilities. Generally, the impacts of the ramp removal from the project are minimal. Eastbound traffic volumes on Francis, just east of the NSC, will be reduced with no slip ramp in place, as would be expected. Southbound volumes on Haven will increase significantly 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 .60. This implies that, even with additional trips attributable to elimination of the slip ramp, the impacts to surface streets will be modest.

**2030 PM PEAK HOUR TRAFFIC VOLUMES
NSC FEIS AND REVISED ALIGNMENT ALTERNATIVES
FOR NSC FACILITIES**

<u>LOCATION</u>	<u>PM PEAK HOUR MODEL VOLUME</u>		
	<u>FEIS DESIGN</u>	<u>REVISED DESIGN</u>	<u>PERCENT CHANGE</u>
NSC MAINLINE, SOUTH OF FREYA INTERCHANGE			
SOUTHBOUND	3,827	4,670	22.0%
NORTHBOUND	4,884	5,030	3.0%
NSC MAINLINE, NORTH OF WELLESLEY INTERCHANGE			
SOUTHBOUND	5,121	4,670	-8.8%
NORTHBOUND	4,884	5,033	3.1%
NSC MAINLINE, SOUTH OF WELLESLEY INTERCHANGE			
SOUTHBOUND	5,989	5,965	-0.4%
NORTHBOUND	6,093	6,137	0.7%
FREYA INTERCHANGE			
SOUTHBOUND OFF-RAMP	339	360	6.2%
SOUTHBOUND ON-RAMP	405	850	109.9%
NORTHBOUND OFF-RAMP	858	910	6.1%
NORTHBOUND ON-RAMP	205	220	7.3%
FRANCIS SOUTHBOUND ON-RAMP	1,295	Francis On-Ramp To SB NSC Eliminated	
WELLESLEY INTERCHANGE			
SOUTHBOUND OFF-RAMP	313	264	-15.7%
SOUTHBOUND ON-RAMP	1,181	1,560	32.1%
NORTHBOUND OFF-RAMP	1,521	1,430	-6.0%
NORTHBOUND ON-RAMP	312	324	3.8%
TRENT INTERCHANGE			
SOUTHBOUND OFF-RAMP	1,177	1,120	-4.8%
NORTHBOUND ON-RAMP	1,129	1,150	1.9%

**2030 PM PEAK HOUR TRAFFIC VOLUMES
NSC FEIS AND REVISED ALIGNMENT ALTERNATIVES
FOR SURFACE ARTERIALS**

<u>LOCATION</u>	<u>PM PEAK HOUR MODEL VOLUME</u>		
	<u>FEIS DESIGN</u>	<u>REVISED DESIGN</u>	<u>PERCENT CHANGE</u>
Screenline west of Market/Haven/Freya:			
Francis	2,622	2,329	-11.2%
Wellesley	1,556	1,612	3.6%
Garland	884	883	-0.1%
Euclid	967	968	0.1%
Mission	1,055	1,023	-3.0%
Trent	1,411	1,419	0.6%
Screenline north of Wellesley:			
Crestline	722	795	10.1%
Haven	483	723	49.7%
Market	656	633	-3.5%
Freya	462	505	9.3%