

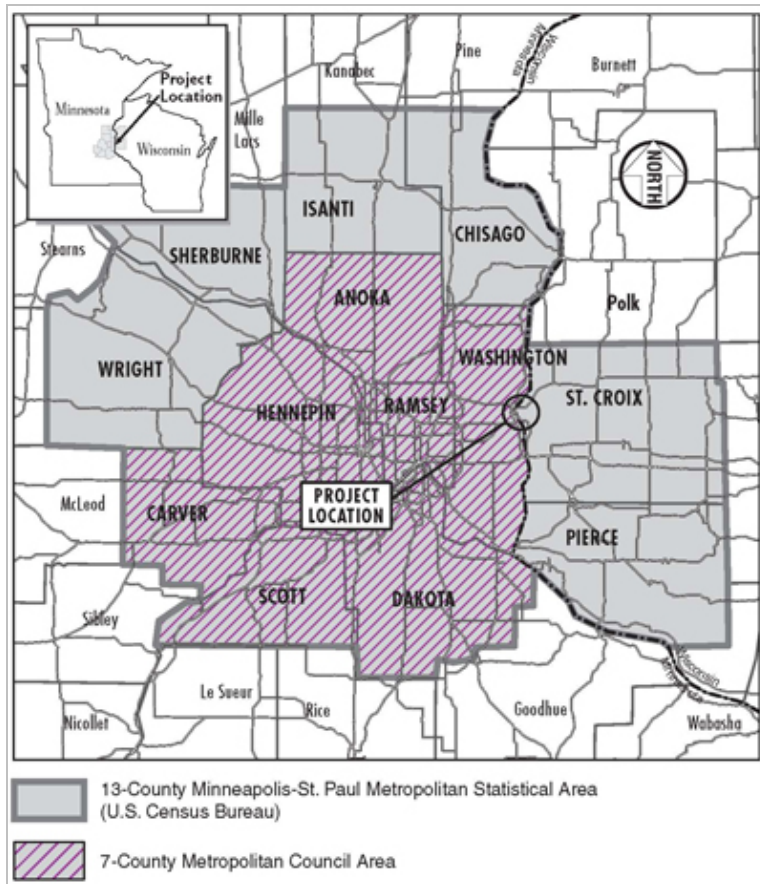
# ST. CROIX RIVER CROSSING PROJECT, MINNESOTA AND WISCONSIN

## Case Study Introduction

### Project Overview

The St. Croix River crossing at Stillwater, Minnesota, is a highway bridge connecting downtown Stillwater to the Town of St. Joseph in St. Croix County, Wisconsin. The crossing consists of a 1,050-foot-long, 10-span, 2-lane bridge and a 750-foot earthen causeway extending from the Wisconsin shoreline. It is known as “the Lift Bridge,” because one of the spans is a distinctive vertical lift span. The bridge, which opened in 1931, was listed on the National Register of Historic Places in 1989. Frequent raising of the bridge to allow boats to travel the St. Croix River causes traffic congestion in Stillwater and Houlton, Wisconsin, as traffic backs up to wait for the bridge to lower and resume vehicular traffic.

Figure 1: Map showing location of St. Croix River Crossing



The Lift Bridge links Minnesota Trunk Highway (TH) 36 to Wisconsin State Trunk Highway (STH) 64. TH 36 is a four-lane divided highway through Oak Park Heights, Minnesota, that merges with TH 95 near the St. Croix River, a National Wild and Scenic River. TH 36/TH 95 is a two-lane highway connecting Oak Park Heights to downtown Stillwater, where TH 36 continues east to the Lift Bridge. STH 64 is a three-lane rural highway up the Wisconsin bluff into Houlton in the Town of St. Joseph. STH 64 merges with STH 35 in

Houlton and continues as a two-lane rural highway northeast through St. Joseph, expanding to a four-lane highway at 150th Avenue.

The 80-year-old bridge requires substantial investments to keep it operating and to maintain navigation on the St. Croix River. Traffic often is disrupted because of bridge deck lifts, flooding, and maintenance. The narrow widths and functional deficiencies of the approach roadways cause safety and congestion issues, because the roadways are at or above traffic capacity.

## **Planning History**

Consideration of a replacement bridge over the St. Croix River near Stillwater began in the early 1970s. Formal assessment of alternatives began with the preparation of the St. Croix River Crossing Draft Study Outline and Scoping Document (1985). Alternatives assessed with the 1985 document eventually led to the analysis of three river crossing corridor alternatives and two tunnel alternatives with the 1990 Draft Environmental Impact Statement (EIS). In 1995, the Final EIS identified a preferred alternative, and a Record of Decision was issued on July 10, 1995.

Final design, right-of-way acquisition, and site preparation began but were halted following the 1996 finding of the NPS Section 7(a) Evaluation that the project would have a direct and adverse effect on the values for which the Lower St. Croix River was included in the National Wild and Scenic River System. New alternatives were identified in 1998. Work on a Supplemental Draft EIS was halted in January 2001 because of inability to reach a consensus on the future of the Lift Bridge.

In 2002, FHWA, Mn/DOT, and WisDOT reinitiated the St. Croix River Crossing Project EIS process, including a mediation and dispute resolution process that centered on a stakeholder group made up of representatives of the diverse interests in the project area. The 2004 scoping document identified four build alternatives for study in the Supplemental Draft EIS (2004).

The 2006 St. Croix River Crossing Supplemental Final EIS identifies the preferred alternative and documents the social, economic, and environmental impacts associated with it. The preferred alternative was identified from the alternatives evaluated in the 2004 Supplemental Draft EIS. The Supplemental Final EIS documents the river crossing location, approach roadway design, bridge type, and mitigation package to be included with the preferred alternative.

Following public review of the Supplemental Final EIS, FHWA signed a Record of Decision in November 2006. Final design is under way, although a lawsuit against the project is pending. Mn/DOT plans a pile load test in 2010.

## **Purpose and Need**

The purpose of the project is to improve Minnesota TH 36 and Wisconsin STH 64 through Oak Park Heights and Stillwater into the Town of St. Joseph, and to provide a safe, reliable, and efficient transportation corridor by reducing congestion, improving roadway safety, and providing an adequate level of service for traffic volumes forecast for 2030. Transportation needs for this project fall into two primary categories:

- Transportation mobility on a safe and efficient facility
- A reliable crossing of the St. Croix River

As part of its work on the project, the stakeholder group developed a project purpose and need statement. The goal of the project is to manage congestion and improve mobility in a reliable, safe, and cost-efficient manner as part of a broader program of regional transportation improvements while avoiding (and when unavoidable, minimizing and mitigating for) impacts to the area's social, economic, cultural, and environmental needs and objectives.

The deficiencies of the existing and future no-build transportation systems are:

- Poor traffic operations on TH 36 and in downtown Stillwater

- Diversion of traffic volumes to other St. Croix River crossings
- High crash rates
- Delayed emergency response
- Impeded access
- Interrupted, unreliable river crossing
- Lack of bicycle/pedestrian facilities.
- Inability of transportation system management /travel demand management methods to address transportation needs in the project area (*Note: A possible transit market has been identified.*)

## **Travel Forecasting Summary**

The regional travel demand model developed by the Met Council, the MPO for the Twin Cities, includes the Minnesota side of the study area. The study team added the Wisconsin portion of the study area into the Met Council model. The study team used the project-specific model to document purpose and need and to assess alternatives. A peer review panel assessed the study team’s methodology for developing the model, including underlying land use assumptions, and made suggestions to enhance the modeling.

## **Case Study Illustration of the Guidance**

The St. Croix River Crossing Study provides a good illustration of three of the key consideration contained in FHWA’s Guidance on the Application of Travel and Land Use Forecasting in NEPA. With a study area that contained a natural barrier to travel – the St. Croix River – and a travel model that originally did not include the portion of the study area in Wisconsin, much effort was directed toward early efforts to coordinate with stakeholders and determine the modeling requirements. This case study emphasizes the following considerations from the guidance: 1. Project Conditions and the Forecasting Needs of the Study; 2. Suitability of Modeling Methods, Tools, and Underlying Data; and 3. Scoping and Collaboration on Methodologies.

### **Key Consideration 1 of the Guidance: The Project Conditions and Forecasting Needs of the Study**

The St. Croix River crossing remains one of the most controversial highway improvements in the country. Areas of controversy include historic preservation, natural environment impacts, and indirect effects related to future development. The proposed location for a new bridge, at the far east end of the Twin Cities metropolitan area connecting to a rapidly developing area of western Wisconsin, puts the project in the middle of a debate on the role of transportation: accommodating planned development, or promoting development?

The large St. Croix is an excellent barrier to sprawl. Critics of building a new, wider bridge are concerned that the bridge would reduce that barrier and facilitate low-density development far from the center of the Twin Cities. Proponents argue that the 2-lane bridge, in addition to being functionally obsolete, is inadequate to accommodate the growth that had already occurred.

In 2002, years after the Record of Decision had been set aside because of a lawsuit, Mn/DOT, WisDOT, and FHWA, in consultation with other federal agencies, decided to prepare a supplemental EIS. Mn/DOT’s preparation of the supplemental EIS included a formal scoping process.

The final scoping document (amended March 2004) did not mention travel demand forecasting as a key issue, but the transportation–land use relationship had been the subject of considerable discussion dating back to the original EIS process. The travel demand forecast memorandum (June 2004) discusses at length the methodology and findings, including the use of a peer review panel.

The study area is considerably larger than the immediate 6.5-mile corridor. The Lift Bridge is one of four river crossings between the Twin Cities and less-developed western Wisconsin. Adding capacity to the Stillwater crossing would lower traffic volumes at the other three crossings, just as the travel demand model indicates that the existing bridge results in diversion to the other three crossings today. Seventy percent of weekday trips on the bridge begin or end in the six Minnesota and Wisconsin communities adjacent to it. However, on weekends 45 percent of trips begin and end outside the local area (St. Croix River Crossing Supplemental Final EIS, pp. 4-3 and 4-4).

On the Wisconsin side of the St. Croix River the population of the St. Croix County area increased from 78,000 to 96,000 between 1990 and 2000, or 2.1 percent annually. St. Croix County itself had the second highest rate of growth of any county in Wisconsin during the 1990s (see travel demand technical memorandum, p. 2).

Average annual daily traffic volumes on the Lift Bridge has remained essentially unchanged since 1990, at 15,000 to 16,000 vehicles per day. The lack of growth in traffic is due to the lack of excess capacity on the bridge. During the same period, traffic on adjacent bridges has grown at an annual rate of 3.5 to 3.8 percent (travel demand memorandum, p. 2).

Stable traffic volumes on the Stillwater Bridge, in the face of strong population increase in the surrounding area on both sides of the crossing, clearly indicates that the bridge capacity is constrained. Therefore, the travel demand forecast methodology examined the unconstrained traffic volumes at this and the adjacent crossings.

## **Key Consideration 2 of the Guidance: The Suitability of Modeling Methods, Tools, and Underlying Data**

### ***Peer Review Panel***

In 2004 the study team selected and convened a peer review panel made up of four travel demand modeling experts from around the country. The panel consisted of two consultants and two academics. Two panelists were travel demand modelers, the other two land use experts. None was from the Twin Cities area. The panelists were selected based on discussions between the MPO, MnDOT and their consultant, and the Sierra Club. MnDOT concurred with the suggested panelists. The panelists were paid by MnDOT and WisDOT through their consultant's contract.

The purpose of the panel was to conduct an independent assessment of the methodologies the study team had used in developing the travel demand forecast. The panel focused on the process of forecasting methodologies; it did not check the travel demand model for accuracy. The peer review committee concluded its analysis of the model before the alternatives were developed.

The peer review resulted in a number of recommendations. The following recommendations were implemented:

- The initial proposal included recommendations for commuter rail lines and longer-distance water taxis. These options were eliminated from Alternative A based on discussion of preliminary results by the peer review panel
- The calculation of value of time was made at the recommendation of the peer review panel for travel forecasts. It differs from the value of time estimates used by Mn/DOT's Office of Investment Management.
- One change from the standard Twin Cities Regional modeling process made at the suggestion of the peer review panel was to increase the number of iterations in the gravity model to improve model closure—the equalization of modeled attractions to input trip attractions.
- Other key recommendations were to incorporate more iterations of the highway assignment model, to specifically assess the stability of the Lift Bridge volumes across iterations, and to increase the

number of full model iterations (or feedback loops). The object of these improvements was to increase the stability of the model.

### ***Consideration of Tools Required to Forecast Needs***

The study area is at the edge of the Twin Cities MPO's regional travel demand model. As a result the study team used the MPO model as a base and then added in the roadway network on the Wisconsin side of the study area to develop a project-specific model. The MPO's 7-county model was modified to add areas north and west of the MPO boundaries. Additional highway network and traffic analysis zones, as well as modified external links, gravity model, and highway assignments, were included the model to make it usable for the St. Croix River crossing study. Once the model was developed and validated, the level of forecasting did not vary as the number of alternatives decreased.

In relation to land use forecasts, the study team noted that the St. Croix County Development and Management Plan (2002) and the MPO travel demand model assumed a new bridge. This was the subject of considerable discussion during and before the 2004 scoping process on the relationship of transportation and land use. There was little question among project stakeholders that the travel demand model was technically sound, but there were many questions from stakeholders on the land use assumptions used to develop the travel demand model. The key question in the debate was whether the new bridge would accommodate planned development or promote new development.

The MPO's travel demand model, which formed the basis of the project team's travel demand model, was based on one fixed set of land use assumptions. Because dynamic land use modeling was not available at the time, the study team addressed the issue of whether the need for the project would remain valid under different land use assumptions.

Working with the peer review panel, the study team developed an "accessibility-based growth redistribution model" that the peer review panel deemed a good surrogate for a dynamic land use model. Under this model, a series of assumptions on commercial/industrial development, reasonable travel time, retail employment, households, and population were developed for a scenario with no new bridge.

The reduced growth methodology relied on the travel forecasting model, in tandem with findings on correlation coefficients between transportation facilities and development in the Twin Cities metropolitan area. The results suggested that under the No-Build Alternative population growth in western Wisconsin portion of the study area would be 36 percent lower than under the Build Alternatives. The travel demand forecasting memo notes that the results likely overstate the reduction in growth because the analysis assumed full elasticity between development location and access to jobs; in reality many other factors are at play.

Despite the relatively large reduction in growth that the analysis suggests, when translating the reduced growth to trips and specifically St. Croix River crossings, the projected demand for crossings in the Stillwater-area still exceeded the capacity of the existing Lift Bridge. This allowed the study team to illustrate that if less growth occurred, there still would be a need for improvements to the river crossing.

### **Key Consideration 3 of the Guidance: Scoping and Collaboration on Methodologies**

The study predated the SAFETEA-LU Section 6002 provisions, but the study team developed and used a broad and thorough agency coordination process. The origin of the Supplemental EIS study was discussions among Mn/DOT, WisDOT, FHWA, and other state and federal agencies that recognized the need to address the project issues by starting a new study (the project was suspended in 2001). According to Section 15 of the 2004 Supplemental Draft EIS:

In September 2002, the facilitation firm RESOLVE was selected by a multi-agency and stakeholder panel to facilitate a project decision through mediation. RESOLVE developed a dispute resolution process that centered on a "Stakeholders Group," composed of representatives of the diverse interests in the project

area (see table). This process, known as the “Stakeholder Resolution Process,” responded to the need for a new start to the project, and a new approach to address the environmental, historical and transportation concerns surrounding the project.

**Local, State, and Federal Agencies, and Nongovernmental Groups Involved in Stakeholder Group Discussions**

Advisory Council on Historic Preservation.....	Washington, D.C.
City of Oak Park Heights.....	Oak Park Heights, MN
City of Stillwater.....	Stillwater, MN
Federal Highway Administration.....	St. Paul, MN
Friends of the St. Croix.....	Marine on St. Croix, MN
Minnesota Center for Environmental Advocacy.....	St. Paul, MN
Minnesota Department of Natural Resources.....	St. Paul, MN
Minnesota Department of Transportation.....	St. Paul, MN
Minnesota State Historic Preservation Office.....	St. Paul, MN
National Park Service.....	St. Croix Falls, WI
New St. Croix Bridge.....	Stillwater, MN
Preservation Alliance of Minnesota.....	Minneapolis, MN
Sierra Club.....	Minneapolis, MN
St. Croix Alliance for an Interstate Bridge.....	New Richmond, WI
St. Croix County Transportation Committee.....	Hammond, WI
St. Croix River Association.....	Stillwater, MN
Stillwater Area Chamber of Commerce.....	Stillwater, MN
Stillwater Heritage Preservation Commission.....	Stillwater, MN
Stillwater Lift Bridge Association, Inc.....	Stillwater, MN
Town of St. Joseph.....	Town of St. Joseph, WI
U.S. Army Corps of Engineers.....	St. Paul, MN
U.S. Coast Guard.....	St. Louis, MO
U.S. Environmental Protection Agency.....	Chicago, IL
U.S. Fish and Wildlife Service.....	Bloomington, MN
Western Wisconsin Realtors Association.....	River Falls, WI
Wisconsin Department of Natural Resources.....	La Crosse, WI
Wisconsin Department of Transportation.....	Eau Claire, WI
Wisconsin State Historic Preservation Office.....	Madison, WI

The purpose of the Stakeholder Resolution Process was established in an Operating Agreement developed by RESOLVE. The purpose of the Stakeholder Resolution Process as agreed by the stakeholder group was:

- To facilitate a common understanding of the transportation, environmental and historic reservation issues among the government and non-government stakeholders;
- To define the various solutions (including transportation alternatives) to these issues by exploring the advantages and disadvantages of each solution;
- To arrive, if possible, at a consensus; and
- To reach agreement among permitting/cooperating/core agencies on the components of the Supplemental Draft EIS for the long-term bridge project and on the related regulatory conclusions, among them: Section 7 of the Wild and Scenic River Act, Section 106 of the Historic Preservation Act, Section 4(f) of the U.S. Department of Transportation Act, and local concurrence.

The Operating Agreement for the St. Croix River Crossing Stakeholder Resolution Process was formally accepted by the stakeholder group in June 2003.

The stakeholder group was involved in all aspects of the project, not just travel demand forecasting. But the work of the peer review panel helped to address such issues as land use assumptions and indirect effects,

which were a key topic of debate among the stakeholders group. The peer review panel gave the study team's travel demand model credibility among the stakeholders. Specifically, the stakeholder group accepted the peer review panel's validation of the accessibility-based growth redistribution scenarios—how future land use would be if there were no new bridge—as a surrogate in the absence of dynamic land use planning. When the accessibility-based growth redistribution scenarios showed a need for the project, even under a reduced land use development scenario, discussion of whether additional river crossing capacity was needed was put to rest. This allowed the NEPA process to proceed with developing and assessing alternatives.

## **Additional Background and Sources**

### **FEIS and ROD**

Supplemental Draft and Final EISs were prepared for the St. Croix River Crossing project and were sources of information for this case study. The St. Croix River Crossing Supplemental Draft EIS was signed in August 2004. The Supplemental Final EIS was approved in June 2006. A Record of Decision was issued by FHWA in November 2006.

Documents available at: <http://www.dot.state.mn.us/metro/projects/stcroix/documents.html>

### **Technical Reports**

Travel Demand Forecast Technical Memorandum, June 2004. (Available at the same website as the EIS.)

### **New Reports and Addendum to the Existing Technical Documents**

Amended Final Scoping Document, 2004.

### **Contacts**

Todd Clarkowski  
Minnesota Department of Transportation  
1500 W Co Road B2  
050  
Roseville, MN 55113

(651) 234-7714