

Hear Every Voice

Case Study: St. Croix River Crossing Visualization



Visualization efforts conducted in association with planning and environmental impact assessment related to the proposed St. Croix River Crossing from Stillwater, MN, to Wisconsin

Stillwater, Minnesota

Minnesota Department of Transportation

Project Details

Location

Organizations

Visualization

Context: This case study focuses on visualization efforts conducted in support of public outreach and analysis for planning and environmental impact assessment of the proposed river crossing from Stillwater, MN, to Wisconsin. The proposed bridge is intended to replace the historic Stillwater Lift Bridge and mitigate traffic congestion in Downtown Stillwater and elsewhere in the vicinity. The bridge has been highly controversial and the subject of legal challenges associated with the St. Croix River's designation by the National Park Service as a Wild and Scenic River. Concerns have been raised related to the aesthetic impacts of bridge in the river corridor, as well as other issues. Public and stakeholder meetings in association with the project have been extensive and have occurred over the past decade and beyond. To address the aesthetic impacts, the Minnesota Department of Transportation (MnDOT) invested substantial time and resources into developing a set of visualizations—animated versions of the roadway, bridge, and surroundings—for use in meetings and to be posted online.

Visualization: MnDOT produced three key visualization products. First is a series of dynamic visualizations developed in 2007 in association with the environmental impact assessment process. The visualizations are available on the MnDOT website and function as fly-through videos, wherein viewers move along the roadway corridor, across the bridge, up the St. Croix River, and along planned bicycle trails. One video animates a driver's view of traveling east between Oak Park Heights, MN, and St. Joseph, WI, and includes narration describing the project and highlighting the participation process used. Following a driver's view of the corridor, the video then switches to an aerial or overhead view that gives a clear sense of intersection design, roadway markings, and relationships to adjacent land uses. Narration describes the design approach.

Case Summary



The images above represent screen shots from the visualizations, the first showing a driver's view of the roadway corridor and the second illustrating an aerial view.

Source: MnDOT 2007

Another animation provides a 360-degree aerial view of the Highway 36 and Highway 95 intersection on the west side of the St. Croix River. This view illustrates the relationship of the roadways and bridge to the river and provides a broader spatial scale that highlights more nearby land uses and landscape features. A broader view is also provided by an animation that shows a view of the bridge and river corridor from the point of view of a boat moving north along the St. Croix River. The animation depicts movement toward the bridge, the view from underneath, and a view looking back from upriver. The bluffs are also visible on the side of the river corridor.



The image is a screen shot from the animation showing a river-level view moving upstream on the St. Croix river.

Source: MnDOT 2007

Another visualization prepared in 2009 provides a view of planned bicycle and pedestrian facilities on the historic Stillwater Lift Bridge over the St. Croix River in downtown Stillwater. The bridge is planned for safety upgrades and will be used solely for non-motorized traffic. The animation shows an access plaza in downtown Stillwater and moves the viewer across the bridge, showing multiple users and views on the bridge and toward the bridge from various directions.



The images are screen shots from an animation showing the design and use of planned trails on the Stillwater Lift Bridge. The second image features closed caption text that can be turned on or off by the viewer.

Source: MnDOT 2009

In general, the animations feature not just the roadway, but also external context including nearby landscape features, buildings, and signage. The colors of the visualization are vivid, with a blue sky and bright white clouds, and rich green summer vegetation. Shadows and diverse vehicle types are used to provide a more realistic scene. Most of the videos are less than five minutes long, though others depicting the entire corridor are longer. Background instrumental music is provided, with different music for each video. Closed captioning is available as an option on-screen for those animations that feature narration. The videos are posted on the Stillwater Bridge project website. Users can view both small and large size versions of the videos, with the smaller versions showing up in a smaller box on the computer screen.

Minnesota Department of Transportation. 2007, 2009. Preferred Alternative Animations. Retrieved from: <http://www.dot.state.mn.us/metro/projects/stcroix/visualanim.html> (5 August 2011).

References

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