



Interstate 35W Bridge Collapse

Project Streamlining
Lessons Learned

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ST. ANTHONY FALLS
BRIDGE REPLACEMENT

History

- Construction started in 1964
- Opened to traffic in 1967
- 64 feet high, 1,907 feet long, 14 spans
- Four lanes of traffic in each direction
- Carried 140,000 vehicles daily, (5,700 commercial)
- Concrete & joint repair, lighting and guardrail installation were in progress



**I35W Bridge - Looking North
July, 1967**





I-35W Bridge



Downtown
Minneapolis

University
of
Minnesota

<http://maps.google.com/>





Railroad Tracks

Lock and Dam
Security Camera

Long Term
Command Site







Imagine that you are one of these drivers...





Looking North from Southwest
corner of bridge



Corps of Engineers Video



The Collapse



**Collapse occurs at
6:05 p.m. Wednesday,
August 1, 2007**



**Over 100 vehicles on
the bridge at that time
13 fatalities
140 injuries**





















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ST. ANTONIO
BRIDGE





An Unprecedented Event



Leads to Unprecedented Cooperation and Response





I-35W Bridge Collapse ENVIRONMENTAL RESPONSE

- Recovery and Demolition Operation
- Traffic Management Projects
- St. Anthony Bridge Replacement Project
- Lessons Learned





Bridge Demolition and Removal

- Aug. 6 – demolition begins to aid recovery, Carl Bolander & Sons Co., awarded demolition contract
- Aug. 20 – recovery completed, site turned over to Mn/DOT
- Sept. 6 - Navigation channel opened to commercial traffic







floating silt curtain for directed debris and chemical management and recovery.

endum 2. In-river management. September 3, 2007





I-35W Detour Map





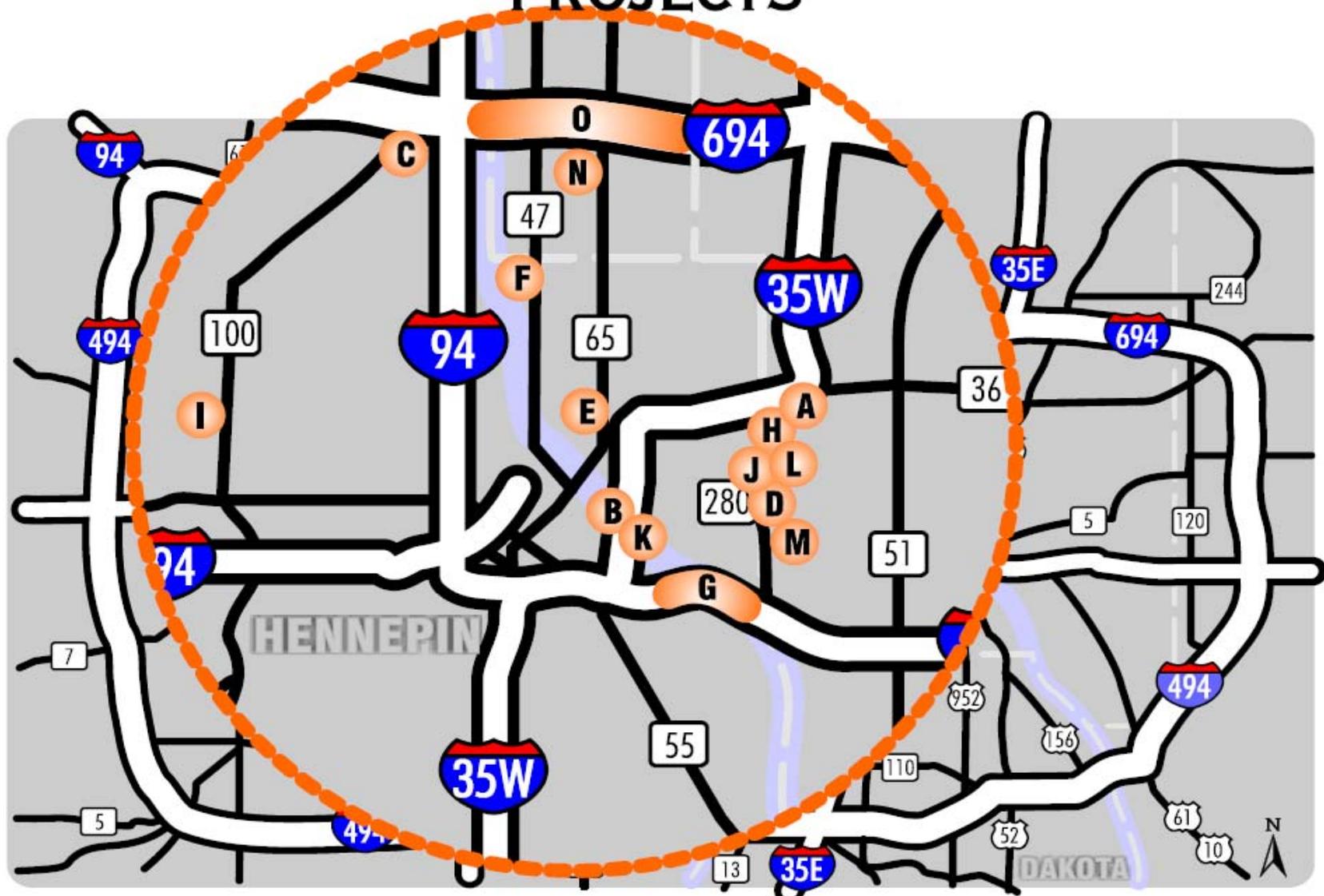
Traffic Restoration Project Guidelines

- **Must increase capacity, improve safety, or manage traffic (ITS)**
- **Must build in a weekend or on weeknights**
 - No traffic impact for peak periods allowed
- **Must be within “circle of impact”**
- **Must be let before end of September**
 - Most must be done by end of August
- **Designers have one week from concept to construction**
- **Final cost – less than \$7 million**



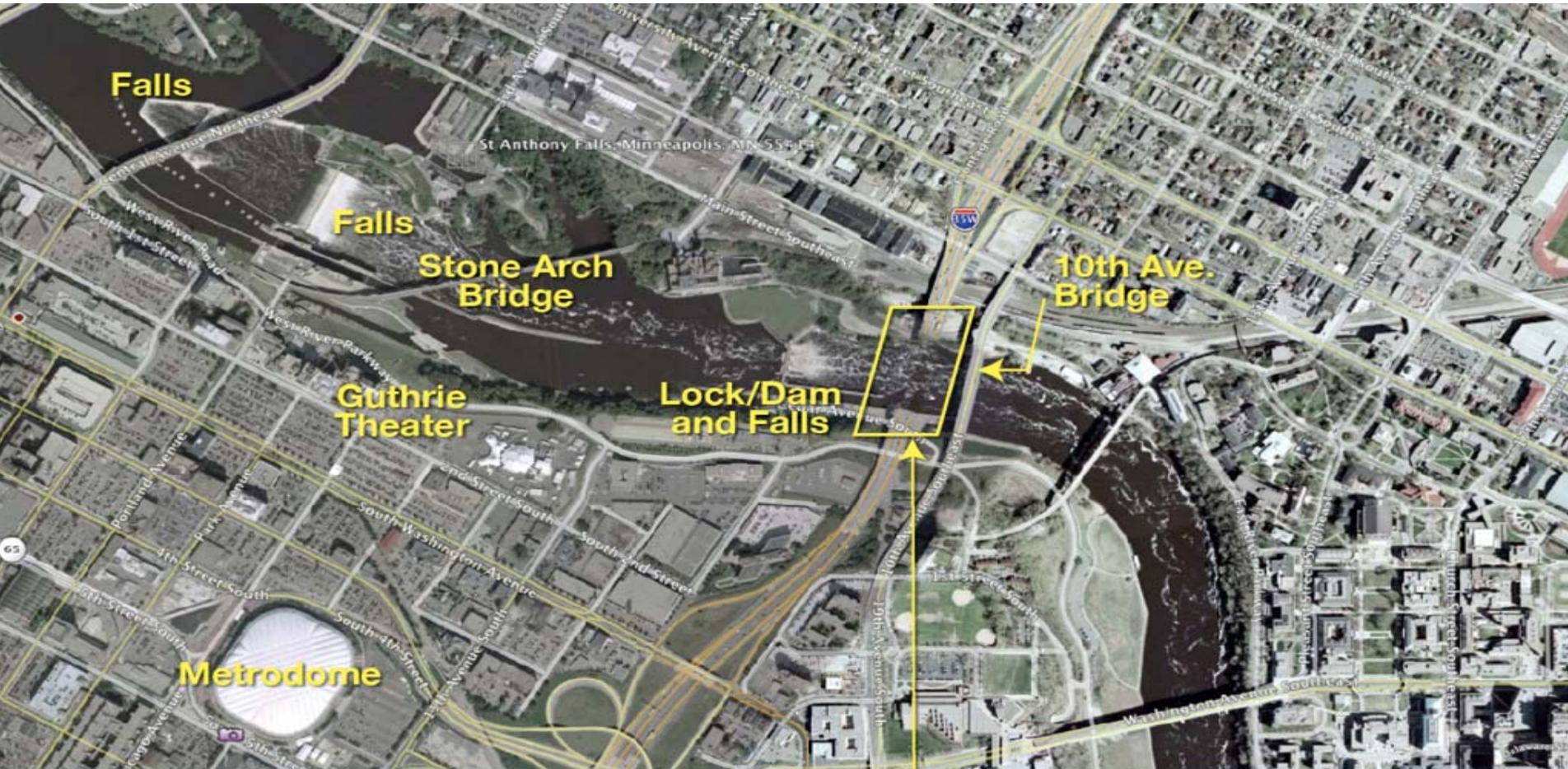


I-35W TRAFFIC RESTORATION PROJECTS





St. Anthony Falls Bridge



St. Anthony Falls (35W) Bridge Replacement

**Project Characteristics
and Features**

Project Location

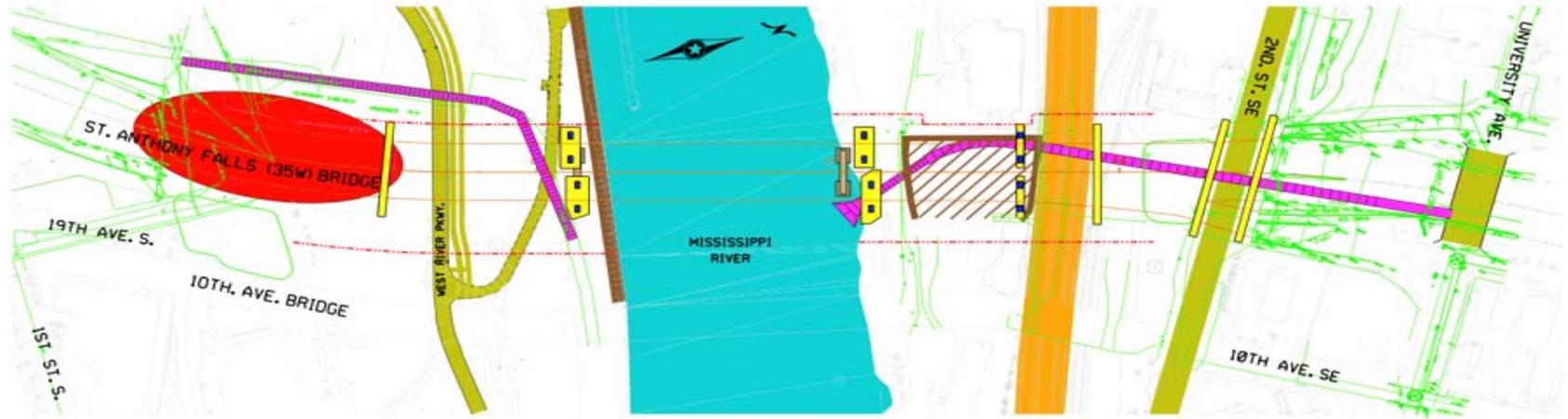


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BRIDGE REPLACEMENT

Replacement Bridge Setting

- Urban – City of Minneapolis
- Mississippi National River and Recreation Area –NPS
- Minneapolis Park and Recreation
Downtown Riverfront Byway District –
Grand Rounds National Scenic Byway
- East Side Milling Railroad Corridor
- St. Anthony Falls Lock and Dam





PLAN



ELEVATION

LEGEND

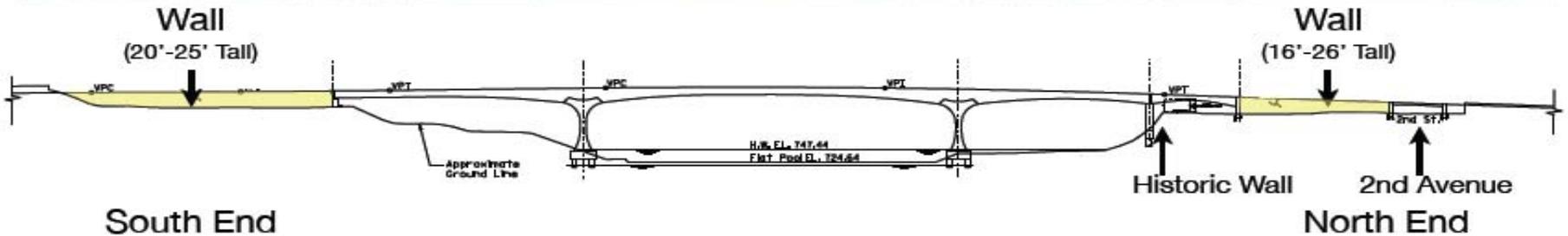
- | | | |
|--|--------------------------------|-------------------------|
| EXISTING FOUNDATIONS | DRAINAGE TUNNELS | EXISTING WALLS |
| MISSISSIPPI RIVER | ROADS / TRAILS | MISCELLANEOUS UTILITIES |
| R.R. TRACKS & 80' CLEAR SPAN FOR FUTURE ROADWAY AND PED. / BIKEWAY | CAPPED HAZARDOUS MATERIAL SITE | NEW BRIDGE FOUNDATIONS |

Project Characteristics and Features

Site Constraints



St. Anthony Falls I35W Bridge





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Project Documentation

- Scope of Project - Categorical Exclusion
- Programmatic Section 4(f)
- Section 106 Adverse Effect
- Section 4(f) Evaluation
- Permits





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BRIDGE REPLACEMENT

Environmental Issues

- Threatened and Endangered Species
- Visual Quality
- Floodplain
- Air Quality
- Contaminated Properties
- Regulated Materials
- Right of Way and Relocations
- Transit





Environmental Issues (cont.)

- Historic Properties – East Side Milling Railroad Corridor Historic District
- Section 4(f)
 - Programmatic – Downtown Riverfront Byway District
 - Section 4(f) Evaluation – After Categorical Exclusion approved



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Permits/Approvals

- U.S. Coast Guard
- U.S. Army Corps of Engineers
- Minnesota Department of Natural Resources
- Minnesota Pollution Control Agency
- City of Minneapolis





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Agency Coordination

- U.S. Fish & Wildlife Service
- National Park Service – MNRRA
- MN State Historic Preservation Officer
- Metropolitan Council (MPO)
- Minneapolis Park and Recreation Board
- Mississippi River Watershed Management Organization





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- Six open houses
- Community group Meetings
- Presentations/listening sessions
- Meetings with local, state, federal officials
- E-mail alerts/ notifications
- Web site, online comment form
- Handouts at park-and-ride lots

Bridge Rebuild- Stakeholder Involvement





Responding to What We Heard

- Build bridge to accommodate future LRT
- Build a quality, attractive bridge we can be proud of
- Mitigate construction impacts
- Maintain key road and bike accesses
- Keep us involved!

FIGG BRIDGE DESIGN CHARETTES™

INVOLVE THE COMMUNITY IN SELECTING AESTHETIC FEATURES



**2005 ARTBA Pride Award
for Outstanding Community
Involvement**



ST. ANTHONY FALLS
BRIDGE REPLACEMENT

Finished Product



View from north shore near St. Anthony Falls



View from the Cantilever at the Guthrie



NEPA Timeline

- Bridge Collapse – August 1
- COE & DNR Permits – August 7
- Categorical Exclusion ready on August 9
- Categorical Exclusion approved August 23
- Notification of Adverse Effect – Sept. 12
- Draft Section 4(f) Evaluation – Sept. 13
- Section 106 MOA – September 24
- Final Section 4(f) Evaluation – October 1





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BRIDGE REPLACEMENT

Project Timeline

- August 1 – Bridge Collapses
- August 4 – Issue Request for Qualifications
- August 8 – Short Listed Teams
- August 23 – Request For Proposals Released
- September 14
 - Technical Proposals Received
 - Technical Evaluation Begins
- September 18 – Financial Proposals Received
- September 19 – Project Letting
- September 20 – City of Minneapolis Grants Municipal Consent
- October 1 – Final Section 4(f) Approved (final NEPA approval)
- October 8 - Project Award to Flatiron/Manson

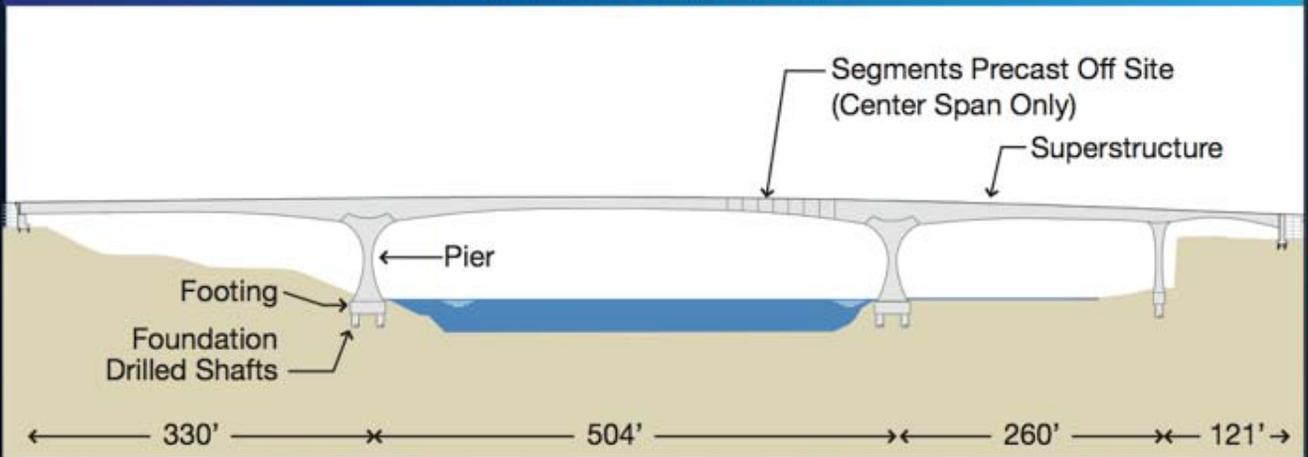


PROJECT MILESTONES / TIMELINE

	2007			2008												
	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	
GROUNDBREAKING	★	10/15/07														
DESIGN CHARETTE		●	Week of 10/22/07													
DESIGN/SITE PREPARATION	█															
FOUNDATION CONSTRUCTION			█	█	█	█	█									
PIER CONSTRUCTION					█	█	█	█								
SEGMENT CASTING					█	█	█	█	█	█	█	█				
SUPERSTRUCTURE CONSTRUCTION						█	█	█	█	█	█					
SEGMENT ERECTION (CENTER SPAN)											█	█	█			
FINISHING WORK													█	█	█	█
RIBBON CUTTING/ OPEN TO TRAFFIC																★

By 12/24/08 ★

BRIDGE DIAGRAM





Lessons Learned and Affirmed

- Every Relationship Developed and Every Streamlining Measure Implemented To Date Will Pay Dividends Now
- Good People Know Their Job and Will Do It without Being Told
- Our Role is to be the Communications Nexus on Environmental Issues





Lessons Learned

- Decisions That Normally Take Months & Years Must be Made in Hours and Days
- Control Scope of Project
- Bundle Multiple Projects
- Use Good Will & Sense of Mission of Permit Agencies But Do Not Exploit
- Make & Keep Reasonable Commitments





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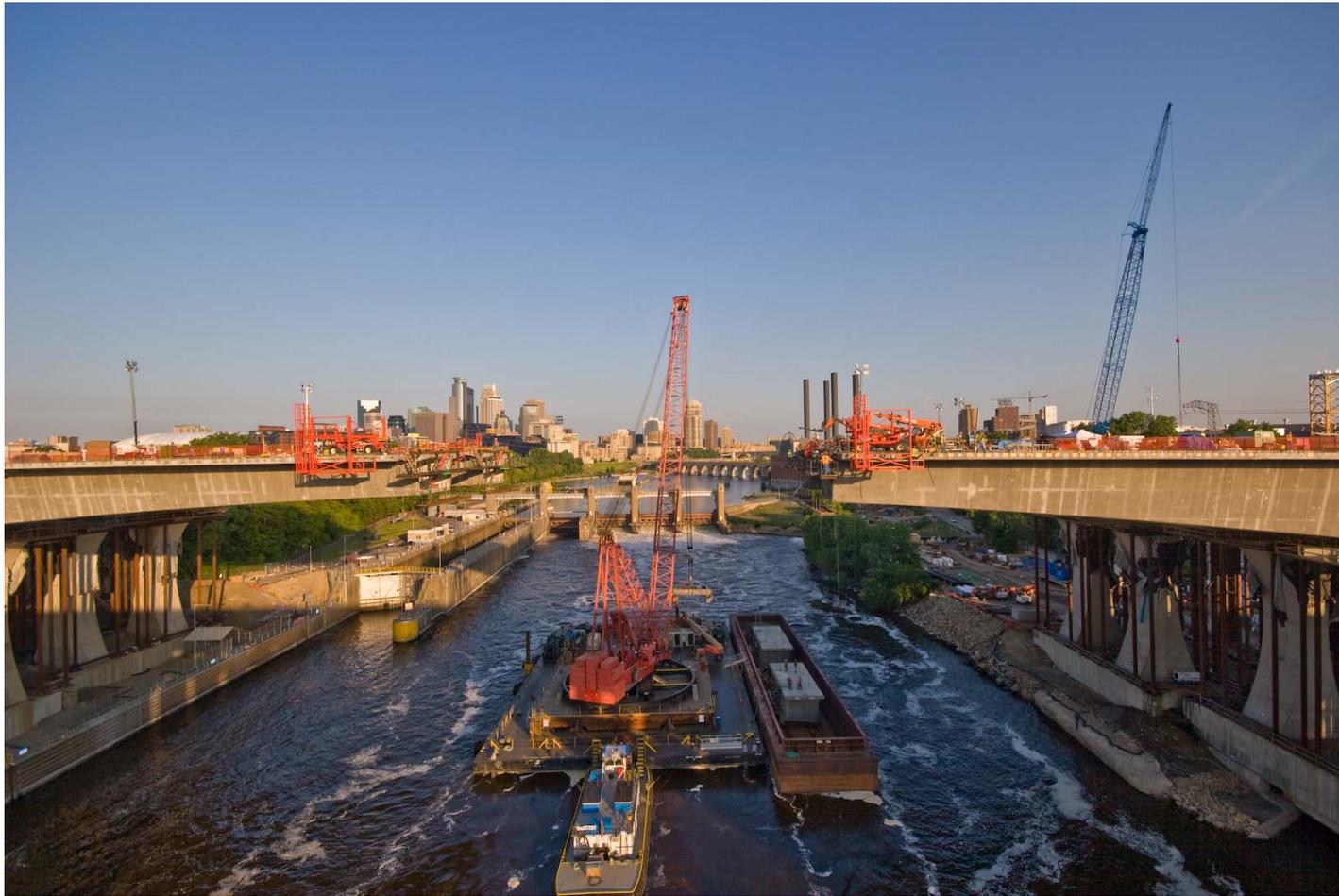
As of May 5, 2008





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As of June 30, 2008





Questions?

frank.pafko@dot.state.mn.us

<http://projects.dot.state.mn.us/35wbridge/webcam.html>



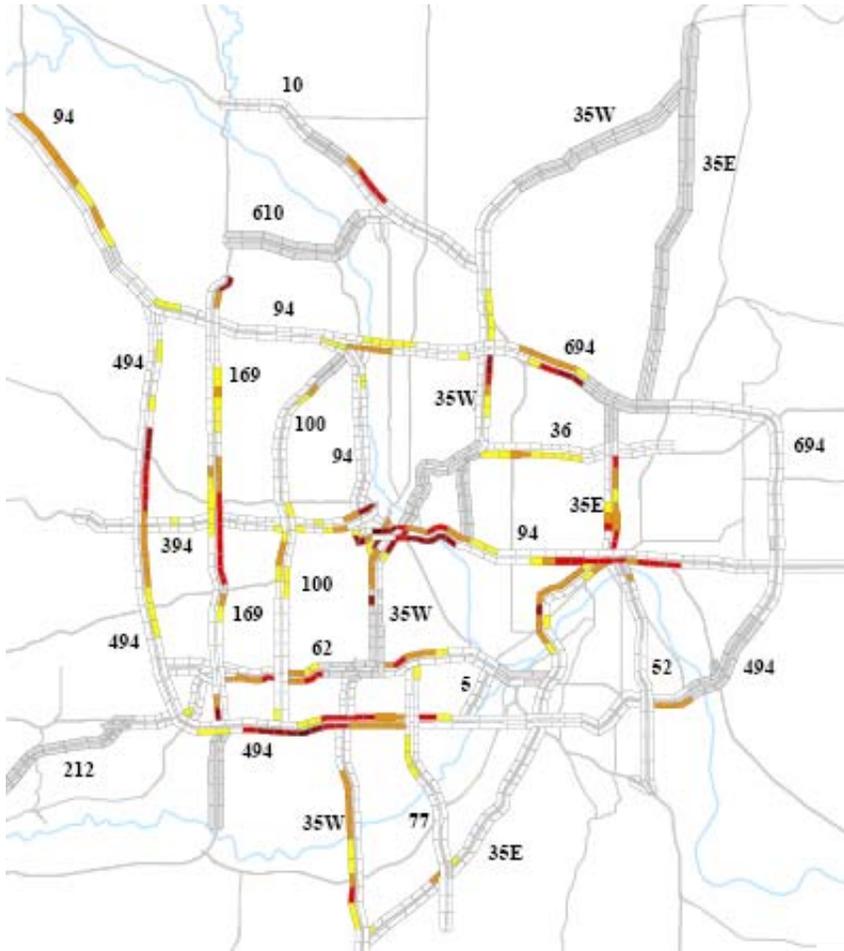
Thank you for your attention and your interest.



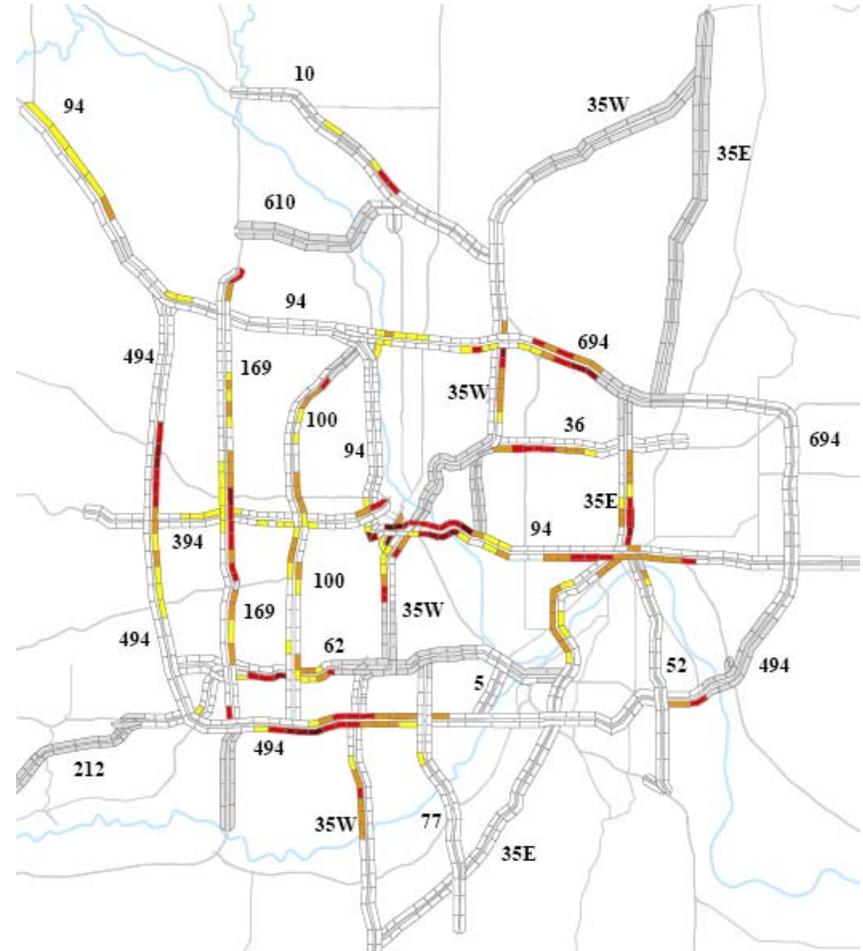


Evening Congestion Impacts

2:00 to 7:00 p.m. – Relatively Unchanged



Week of July 23, 2007



Week of Sept. 10, 2007

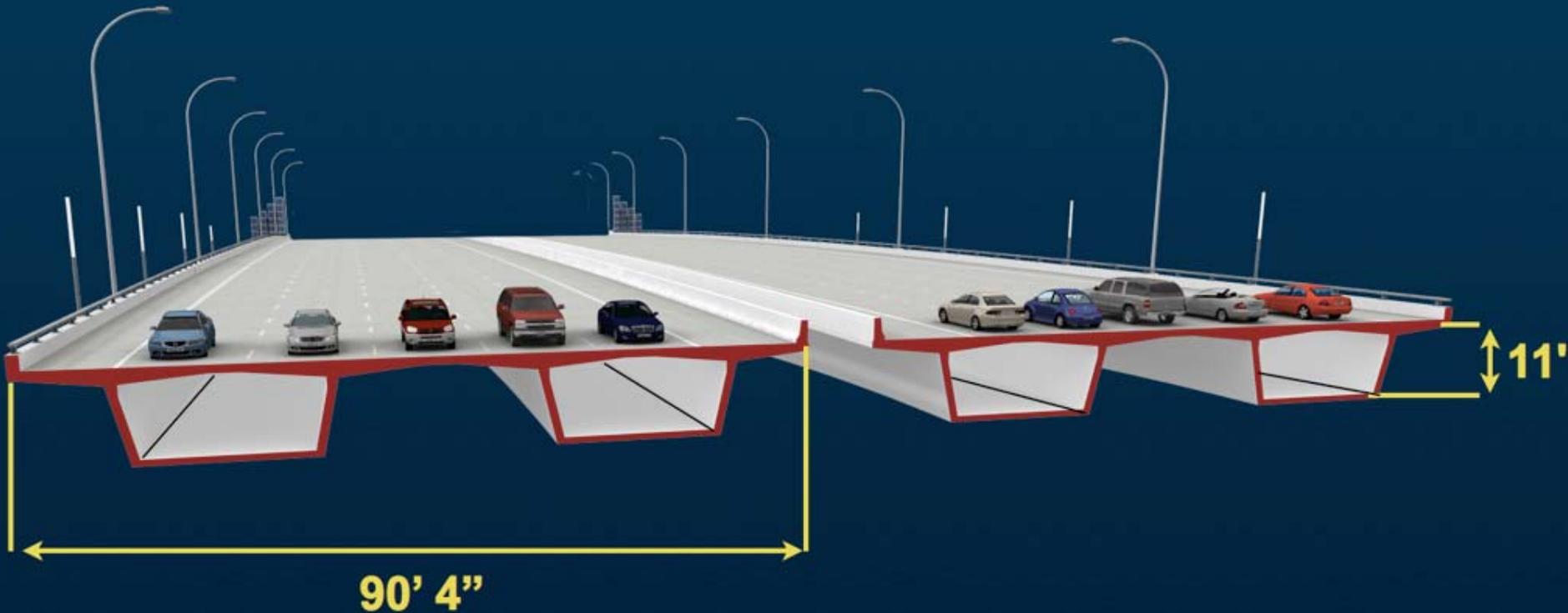


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FHWA NEPA Action

- Aug. 2 - \$5 million ER funding announced by Mary Peters
- Aug. 4 - President Bush pledges to cut red tape that could delay recovery
- Aug. 6 - \$250 million ER passed by Congress and signed by President Bush
- Interstate system





BRIDGE DECK DESIGN LAYOUT:

- 10 LANES OF TRAFFIC WITH WIDE SAFETY SHOULDERS**
- 8 LANES OF TRAFFIC WITH WIDE SAFETY SHOULDERS AND 2 RAPID BUS TRANSIT LANES (BRT)**
- 8 LANES OF TRAFFIC WITH WIDE SAFETY SHOULDERS AND 2 LIGHT RAIL TRANSIT LANES (LRT)**

ACTUAL DESIGN ACCOUNTS FOR EXTRA CAPACITY:

14 LANES OF LOADING

A SCULPTURAL BRIDGE: WHITE - MODERN, WINTER BLENDING





St. Anthony Falls Bridge



- 189' wide
- 10 lanes of traffic
- 5 in each direction
- Designed to be LRT ready
- Largest anti-icing system in North America





ST. ANTHONY FALLS
BRIDGE REPLACEMENT

Bridge Description

- **Bridge will reflect a series of modern arch forms**
- **Four-span bridge, approximately 1,223 feet long**
- **504 foot main span over Mississippi River**

