The Fall and Rise of the I-35W Mississippi River Bridge

David Levinson
Acknowledgments

Sponsors: NSF, Oregon Transportation Research and Education Consortium, MnDOT, University of Minnesota Metropolitan Consortium

BRIDGE: Behavioral Response to the I-35W Disruption: Gauging Equilibration (National Science Foundation) (Liu, Levinson, Harder)

Traffic Flow and Road User Impacts of the Collapse of the I-35W Bridge over the Mississippi River (MnDOT) (Levinson, Liu, Harder)

Value of Reliability (Oregon Transportation Research and Education Consortium) (Levinson, Harder)

Colleagues: Shanjiang Zhu, Henry Liu, Kathleen Harder, Shu Hong, Carlos Carrion, Xiaozheng He, Saif Jabari
Outline

Context
Structure
Finance
Politics
Traffic
Policy Implications
Context
Minneapolis, Hennepin County, Minnesota

Downtown Minneapolis and Bridge Site

Source: Google Maps, Wikipedia
Structure
Bridge 9340, the I-35W Mississippi River Bridge, built in 1964.

August 1, 2007 6:05 pm

Source: US Army Corps of Engineers
initially NB left, south of bridge
August 1, 2007

Cause of collapse

Undersized Gusset Plate - bridge structurally deficient and fracture critical (failure of this one piece would bring whole bridge down)

Source: NTSB
Other factors contributed

- Thicker than usual pavement (as resurfacing added weight)
- Loading of construction equipment
- Loading of construction materials (gravel)
Traffic: Immediate
August 1:

Volume Difference for every 15 Minutes

Traffic Counts:
Aug 1 - Jul 25 [Wed]
- 0 - 5
- 5 - 10
- 10 - 15
- 15 - 20
- 20 - 25
- 25 - 30
- 30 - 35
- 35 - 40
- 40 - 45
- 45 - 50
- 50 - 55
- 55 - 60
- 60 - 65
- 65 - 70
- 70 - 75
- 75 - 80
- 80 - 85
- 85 - 90
- 90 - 95
- 95 - 100

Source: Levinson, Zhu
August (Daily)

Source: Levinson, Zhu
Forecast
At the request of Mn/DOT, shortly after the collapse, we estimated the Twin Cities 7 county region daily vehicle hours of travel with and without the bridge under two assumptions.

The first kept the trip table fixed. This means that people did not change the number of trips, or destinations, in response to the bridge failure. This should give an upper bound to the effects of the bridge failure.

The second allowed trip destinations to vary (though keeping the number of trips fixed). This provides more of a lower bound of the effects. Clearly some people can switch destinations, or avoid trips altogether, if the cost of their previous destination are now too high. On the other hand, not everyone can do so. The exact number of people who change destinations is not something we can easily know.

Note, these are direct model outputs, so while the precision is high, the accuracy is not nearly as high as implied by the precision.

We monetize these numbers using OIM values of time from [http://www.oim.dot.state.mn.us/EASS/](http://www.oim.dot.state.mn.us/EASS/)

Auto $12.63/hour Truck $20.41

and we assume 80% auto 20% truck giving a composite value of time of $14.19

I believe the OIM Value of Time for Trucks is very low, our estimates put the number at closer to $50 per hour. If we used that, we would get a composite value of time of $20.14.

<table>
<thead>
<tr>
<th></th>
<th>VHT</th>
<th>Fixed Trip Table</th>
<th>Variable Trip Table</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>with</strong></td>
<td></td>
<td></td>
<td>1,122,342</td>
</tr>
<tr>
<td><strong>without</strong></td>
<td></td>
<td>1,134,355</td>
<td>1,131,322</td>
</tr>
<tr>
<td><strong>loss</strong></td>
<td></td>
<td>12,013</td>
<td>8,980</td>
</tr>
<tr>
<td><strong>Value $/day</strong></td>
<td></td>
<td>$170,425</td>
<td>$127,390</td>
</tr>
</tbody>
</table>

MnDOT Response
I-35W TRAFFIC RESTORATION PROJECTS

TH 280 $372,000 COMPLETED JUL 13
Add second lane to northbound on ramp to I-35W/TH 36

TH 280 $112,000 COMPLETED JUL 30
Convert to a two lane exit/entrance

TH 100 $592,000 COMPLETED JUL 10
Second lane northbound to eastbound I-694

TH 280 $550,000 UNDER CONSTRUCTION
Add cameras, traffic detection sensors and dynamic message signs

TH 65 $70,000 UNDER CONSTRUCTION
Add cameras and traffic detection sensors

TH 47 $70,000 UNDER CONSTRUCTION
Add cameras and traffic detection sensors

I-94 $1,162,000 COMPLETED JUL 20
Fourth lane eastbound and westbound
TH 280 to I-35W

TH 280 $300,000 COMPLETED JUL 22
Construct southbound one way frontage road at Broadway Avenue

TH 100 southbound $30,000 BEING STUDIED
Add auxiliary lane (U-turn to TH 55)

TH 280 $640,000 COMPLETED JUL 20
Convert to diamond interchange with two temporary signals at ramps to Hennepin/Larpenteur

Washington Ave $75,000 COMPLETED SEPT
Improvements to Washington Ave and ramps to I-35W

TH 280 $200,000 COMPLETED JUL 19
Add continuous lighting

TH 280 $170,000 COMPLETED JUL 2
Convert 280 to a freeway

I-694 $168,000 COMPLETED SEPT
Construct 4th lane on eastbound I-694 at Hwy 47

I-694 $10,000 COMPLETED JUL 5
Convert Shoulder to bus only lanes

I-35W $1,500,000 BEING STUDIED
Add half diamond interchange to and from the north at Hennepin Ave

Metro wide - Install & maintain traffic control devices
STARTED JUL 2007 COMPLETED DEC 08

Source: Mn/DOT
Finance
Some will say it isn’t about money. Throwing money at the bridge wouldn’t have kept it from falling.
Others note money could have bought:

more inspections,
a structural (e.g. finite-element) model of bridge,
better, faster repairs,
the ability to replace the bridge sooner.

Money could have been spent more wisely.
Money is always a constraint on decision-making at MnDOT.

Phone call put brakes on bridge repair

Plans to reinforce the bridge were well underway when the project came to a screeching halt in January amid concerns about safety and cost.

By Tony Kennedy and Paul McEnroe, Star Tribune staff writers

Last update: August 18, 2007 – 4:36 PM

STAR TRIBUNE: Pawlenty vetoes gas tax, income tax bills

By Patricia Lopez, Star Tribune

Gov. Tim Pawlenty struck swiftly and with strong language Tuesday to veto a gasoline tax increase and an income-tax-for-property-tax swap that were at the heart of the DFL's agenda for the session.

DFLers accused him of protecting the state's richest 1 percent -- those who would have borne most of the income tax increase, which would pay for the proposed property tax relief -- at the expense of everyone else. But they conceded that some of their top objectives are fast sliding out of reach.
Gas Taxes in US and MN are Dedicated (hypothecated, ring-fenced, earmarked) to transportation (and in some cases just to roads)
State Road Revenues: $1.12 billion

Local Road Revenues: $1.73 billion

State road taxes: $1.32 billion

Federal grants: $375 million

Local effort: $1.15 billion

Local Road Revenues: $1.73 billion

State Road Revenues: $1.12 billion

Federal grants: $375 million

Local effort: $1.15 billion

State road taxes: $1.32 billion

2003

Source: Ryan 2005
Minnesota motor fuels excise tax - 1925 to 2004

4-cent tax rate in 1939 equals 53-cents today

Minnesota today has lowest inflation-adjusted tax rate since 1925

Tax rate adjusted for CPI inflation (2004 dollars)

Nominal tax rate (current year dollars)

Source: Ryan 2005
Federal gasoline excise tax - 1932 to 2004

- Tax rate adjusted for CPI inflation (2004 dollars)
- Nominal tax rate (current year dollars)

70% loss in purchasing power after 24 years

Source: Ryan 2005
“Raise the gas tax by 8 1/2 cents a gallon by 2014. ...

Some 3 1/2 cents of the gas tax increase dedicated to paying the debt service on $2 billion in road and bridge bonds. ...

Increase the sales tax in the seven-county metro area by 0.25% for transit. ...

Boost license tab fees on newly purchased cars and trucks (1.25% on sale of new cars, drops 10% y⁻¹). ...

Borrows $1 billion over the next two years, with $600 million earmarked for repairing or replacing the state’s 13 most dangerous bridges. ...”

Source: Pioneer Press 2008
Politics
### Actors

<table>
<thead>
<tr>
<th></th>
<th>Tim Pawlenty</th>
<th>Lt Gov (Rep) &amp; DOT Commissioner</th>
<th>Carol Molnau</th>
<th>Aspirations ('08 running for VP, '12 for President)</th>
<th>Cabinet appointment not confirmed</th>
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<tbody>
<tr>
<td><strong>Name</strong></td>
<td>&quot;no new taxes&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Position</strong></td>
<td>Gov (Rep)</td>
<td></td>
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<tr>
<td><strong>Aspirations</strong></td>
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</tbody>
</table>
CNN Poll: 2012 Republican Presidential Nomination
(Oct 28, 2009)

Republican Voters
32% Huckabee
25% Palin
21% Romney
10% Someone else
5% Tim Pawlenty (... but it’s still early)

Source: CNN
Override Six are Republicans who voted with DFL to override Gov. Pawlenty veto
* lost leadership position in Republican party

<table>
<thead>
<tr>
<th>Representative</th>
<th>Endorsement</th>
<th>Primary</th>
<th>General Election</th>
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<tbody>
<tr>
<td>Bud Heidgerken*</td>
<td>retired</td>
<td></td>
<td>Paul Anderson (Rep)</td>
</tr>
<tr>
<td>(13A-Freeport)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rod Hamilton*</td>
<td>Rod Hamilton</td>
<td>Rod Hamilton</td>
<td>Rod Hamilton (Rep)</td>
</tr>
<tr>
<td>(22B-Mountain Lake)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ron Erhardt</td>
<td>Keith Downley</td>
<td>Erhardt switches to Independent Party</td>
<td>Keith Downley (Rep)</td>
</tr>
<tr>
<td>(41A-Edina)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neil Peterson</td>
<td>Jan Schneider</td>
<td>Jan Schneider</td>
<td>Paul Rosenthal (DFL)</td>
</tr>
<tr>
<td>(41B-Bloomington)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jim Abeler</td>
<td>no endorsement</td>
<td>Jim Abeler (defeated Don Huizenga)</td>
<td>Jim Abeler (Rep)</td>
</tr>
<tr>
<td>(48B-Anoka)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kathy Tingelstad</td>
<td>retired</td>
<td></td>
<td>Jerry Newton (DFL)</td>
</tr>
<tr>
<td>(49B-Andover)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: various
The replacement bridge was hurried
This is good, a lack of a bridge costs the economy. (Xie and Levinson estimated between $127,000 and $170,000 per day, MnDOT estimated $400,000 per day)

Timeline of reconstruction

Contractor received $200,000 per day bonus for early completion.

Source Mn/DOT, MPR
No Snow Removal, No De-icing

Air Rights: Real Estate

This is bad, lots of ideas were missed.

But bridge is LRT - Compatible
Opening in the dark of night
The I-35W St. Anthony Fall Bridge, Opened Sept. 18, 2008
Traffic Reactions
Travel behavior changes after network disruption as well as after the replacement of disrupted links are not well-understood.

To date, NONE of the existing traffic equilibration models has been validated with field data.

This research also challenges assumptions of equilibrium, determinism, perfect information, utility maximization.
Data Collection Efforts

- Mail-in Survey
- 13-week long GPS-based study
- Web-based Survey
- Mail-in Survey

Traffic Monitoring on Freeway Network

Aug 1st 2007

Sep 18th 2008  Oct 12th 2008
Data Analysis

Traffic: Unexpected Cause, Unexpected Effect: Empirical Observations of Twin Cities Traffic Behavior after the I-35W Bridge Collapse and Reopening

Individual: Planned Versus Unplanned: Travel Impacts and Adjustment Strategies of the Collapse and the Reopening of I-35W Bridge

Combined: Measuring Winners and Losers from the new I-35W Mississippi River Bridge
### Macroscopic Measures

#### Traffic Counts on River Crossings

<table>
<thead>
<tr>
<th>Bridge</th>
<th>Before</th>
<th>After</th>
<th>Change</th>
<th>Before Reopen</th>
<th>After Reopen</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-35W</td>
<td>140000</td>
<td>0</td>
<td>-100.00%</td>
<td>0</td>
<td>120349</td>
<td></td>
</tr>
<tr>
<td>Arterial total</td>
<td>152311</td>
<td>197566</td>
<td>29.70%</td>
<td>169983</td>
<td>95895</td>
<td>-43.60%</td>
</tr>
<tr>
<td>Freeway total</td>
<td>572274</td>
<td>481040</td>
<td>-15.90%</td>
<td>488717</td>
<td>583127</td>
<td>19.30%</td>
</tr>
<tr>
<td>Total</td>
<td>724585</td>
<td>678606</td>
<td>-6.30%</td>
<td>658700</td>
<td>679022</td>
<td>3.10%</td>
</tr>
</tbody>
</table>

Source: Zhu and Levinson (2009)
Traffic on the new I-35W bridge

- 80% of the daily traffic carried by the old bridge
- Why: Gas Prices, Recession, Fear of bridge, Change in Travel Patterns

Source: Zhu and Levinson (2009)

- I-94 traffic returned to 2006 levels when bridge reopens

Source: Zhu and Levinson (2009)
Week to week volatility

RMSE

Source: Zhu and Levinson (2009)
GPS Study
Individual & System Effects
Subjects

are between 25-65 years,

are legal drivers,

have a full-time job and follow a “common” work schedule,

commute by driving alone,

are likely to be affected by the reopening of the new I-35W Mississippi River bridge (or are in control group, likely to be unaffected).
## Data and Assumptions

<table>
<thead>
<tr>
<th>Phase Definition *</th>
<th>Time Periods</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before Sep 18</td>
</tr>
<tr>
<td>Phase 1</td>
<td>Dawn</td>
</tr>
<tr>
<td>Phase 2</td>
<td>Morning Peak</td>
</tr>
<tr>
<td>Phase 3</td>
<td>Mid-day</td>
</tr>
<tr>
<td>Phase 4</td>
<td>Afternoon Peak</td>
</tr>
<tr>
<td>Phase 5</td>
<td>Evening</td>
</tr>
</tbody>
</table>

VHT, VKT, ... under the travel demand of LEHD**, MetCouncil Planning Model***, and Freeway traffic counts****

** Parthasarathi and Levinson (2009)
*** BHWA (2006)
**** 2009 Travel Demand Forecasting
***** From MnDOT Loop Detector Stations

- Dijkstra’s shortest path algorithm applied to the map with congested travel time derived from GPS observations.
Speed Changes during Morning Peak Period after the Reopening of I-35W Bridge

Sep18/Oct12
Aug25/Sep18

Speed Changes
km/h
-26.26 -20.00
-19.99 -10.00
-9.99 -5.00
-4.99 -2.50
-2.49 -0.00
0.01 -2.50
2.51 -5.00
5.01 -10.00
10.01 -20.00
20.01 -44.91
<10 Samples
I-35W Bridge
Changes in Morning Commute Time for Census Blocks after the Reopening of I-35W Bridge

By residential location

Changes in Morning Commute Time

- Sep 18 / Oct 12
- Aug 25 / Sep 18

min / person
- 2.01 - 6.00
- 1.01 - 2.00
- 0.51 - 1.00
- 0.26 - 0.50
- 0.01 - 0.25
- -0.24 - 0.00
- -0.49 - -0.25
- -0.99 - -0.50
- -1.99 - -1.00
- -3.03 - -2.00

No Residents

Freeway
I-94 de-striping
Speed Changes during Morning Peak Period after the Fourth Lane on I-94 Bridge Removed

Oct12/Nov30
Aug25/Sep18

Speed Changes
km/h
-40.64 -20.00
-19.99 -10.00
-9.99 - 5.00
-4.99 - 2.50
-2.49 - 0.00
0.01 - 2.50
2.51 - 5.00
5.01 - 10.00
10.01 - 20.00
20.01 - 54.81
<10 Samples
I-35W Bridge
Changes in Morning Commute Time for Census Blocks after the Fourth Lane on I-94 Bridge Removed

By residential location

Changes in Morning Commute Time

- Oct 12 / Nov 30
- Aug 25 / Sep 18

min / person

- 2.01 - 6.00
- 1.01 - 2.00
- 0.51 - 1.00
- 0.26 - 0.50
- 0.01 - 0.25
- -0.24 - 0.00
- -0.49 - -0.25
- -0.99 - -0.50
- -1.99 - -1.00
- -3.03 - -2.00

No Residents

Freeway
Histogram of Commute Time Changes after Oct12

Number of Commuters

Time Changes (min/person)

-3 -2.5 -2 -1.5 -1 -0.5 0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 5 5.5 6

-5km
-10km
-20km
TwinCities
Total Travel Cost (Vehicles Hours Traveled) for all Work Trips (LEHD Data for Trips, GPS Speeds)

<table>
<thead>
<tr>
<th></th>
<th>Morning Peak</th>
<th>Afternoon Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1</td>
<td>3.87 $10^5$</td>
<td>4.27 $10^5$</td>
</tr>
<tr>
<td>Phase 2</td>
<td>3.86 $10^5$</td>
<td>4.26 $10^5$</td>
</tr>
<tr>
<td>Phase 3</td>
<td>3.88 $10^5$</td>
<td>4.25 $10^5$</td>
</tr>
</tbody>
</table>
Evolution in **Freeway** Vehicles Hours Traveled and Vehicle Kilometers Traveled

<table>
<thead>
<tr>
<th>Phase</th>
<th>VHT</th>
<th>VKT</th>
<th>Speed</th>
<th>Morning Peak</th>
<th>Mid-day</th>
<th>Afternoon Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$9.50 \times 10^4$</td>
<td>$8.01 \times 10^6$</td>
<td>84.3 km/h</td>
<td>$1.20 \times 10^5$</td>
<td>$9.91 \times 10^6$</td>
<td>$1.79 \times 10^5$</td>
</tr>
<tr>
<td>Phase 1</td>
<td>VHT</td>
<td>VKT</td>
<td>Speed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$9.40 \times 10^4$</td>
<td>$7.94 \times 10^6$</td>
<td>84.4 km/h</td>
<td>$1.20 \times 10^5$</td>
<td>$9.91 \times 10^6$</td>
<td>$1.81 \times 10^5$</td>
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<tr>
<td>Phase 2</td>
<td>VHT</td>
<td>VKT</td>
<td>Speed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$9.38 \times 10^4$</td>
<td>$7.85 \times 10^6$</td>
<td>83.7 km/h</td>
<td>$1.20 \times 10^5$</td>
<td>$9.89 \times 10^6$</td>
<td>$1.81 \times 10^5$</td>
</tr>
<tr>
<td>Phase 3</td>
<td>VHT</td>
<td>VKT</td>
<td>Speed</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Findings

Network conditions improve during the middle of the day and the afternoon peak.

During morning peak, travel cost reduced after the bridge reopening, but increased after the fourth lane of the I-94 bridge was removed.

The majority of I-35W Bridge users were previous arterial bridge users who switched to freeways to benefit from this new fast link.
Findings (cont.)

There are both winners and losers as a result of the new bridge.

Inertia in travel habit played a role in generating sub-optimal route choice.

The definition of impact zone is also important.
Policy Implications
Unlike bridges, road networks are seldom "fracture critical"
Operations during construction

Bridges (and road sections) need not be kept open while being re-constructioned.

Traffic will find its way. Actual effects less than forecast. Network is redundant (work ongoing to measure this w/Jenelius).

Faster, cheaper construction if no need to accommodate traffic (bridge rebuilt in less than year).
Other consequences

1. August 1, 2007: I-35W
2. January 2008 Hastings Bridge
3. March 20, 2008 St. Cloud Bridge
4. March 26, 2008 University of Minnesota Pedestrian Bridge
5. April 25, 2008 Lowry Avenue
6. May 6, 2008 Blatnik Bridge (I-535) in Duluth
7. June 4, 2008 MnDOT barricades Hwy. 43 bridge over Mississippi River at Winona
We are not good at dealing with low probability, high consequence decisions. We are not good at assessing the value of either.
Yet, notable bridge failures on Interstate Highways, ... not so rare

<table>
<thead>
<tr>
<th>Location</th>
<th>Date</th>
<th>Facility</th>
<th>Proximate cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tampa Bay, FL</td>
<td>May 9, 1980</td>
<td>I-275</td>
<td>ship collision</td>
</tr>
<tr>
<td>Greenwich, CT</td>
<td>June 28, 1983</td>
<td>I-95</td>
<td>metal corrosion, fatigue</td>
</tr>
<tr>
<td>Oakland, CA</td>
<td>October 17, 1989</td>
<td>Bay Bridge</td>
<td>earthquake</td>
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<tr>
<td>Oakland, CA</td>
<td>October 17, 1989</td>
<td>I-880</td>
<td>earthquake</td>
</tr>
<tr>
<td>Milwaukee, WI</td>
<td>December 13, 2000</td>
<td>I-794</td>
<td>weather, traffic?</td>
</tr>
<tr>
<td>Webbers Falls, OK</td>
<td>May 26, 2002</td>
<td>I-40</td>
<td>barge collision</td>
</tr>
<tr>
<td>Bridgeport, CT</td>
<td>March 2003</td>
<td>I-95</td>
<td>car-truck fire</td>
</tr>
<tr>
<td>Oakland, CA</td>
<td>April 29, 2007</td>
<td>MacArthur Maze</td>
<td>truck explosion</td>
</tr>
<tr>
<td>Minneapolis, MN</td>
<td>August 1, 2007</td>
<td>I-35W</td>
<td>design, construction</td>
</tr>
</tbody>
</table>
The Interstate is Mature

Cumulative Length (%) out of 42,795 miles (68,912 km)

Half the system is from 1965 or before
Half the system is from 1965 or before

The Interstate is Mature

Cumulative Length (%) out of 42,795 miles (68,912 km)
The Interstate is Mature

Cumulative Length (%) out of 42,795 miles (68,912 km)

Half the system is from 1965 or before
Strategies for maturity:
Strategies for maturity:

Abandonment
Strategies for maturity:

Abandonment

Cash cow - using resources for something else
Strategies for maturity:

Abandonment

Cash cow - using resources for something else

Maintenance & Rehabilitation
Strategies for maturity:

Abandonment

Cash cow - using resources for something else

Maintenance & Rehabilitation

Replacement
Strategies for maturity:

Abandonment

Cash cow - using resources for something else

Maintenance & Rehabilitation

Replacement
Infrastructure should be fully exploited to its capacity, not beyond.
Infrastructure should be fully exploited to its capacity, not beyond.
Infrastructure should be fully exploited to its capacity, not beyond.

But this sign is not terribly reassuring.
In the US context, there should be more money for transportation, we are eroding capital.
If there isn’t … we should spend our money more carefully, taking care of the existing systems and users first, and **graceful** abandonments as necessary.

“Fix it first.”
Bridge Failure

Pavement Failure

“Failing” Traffic Conditions

All bad, all different, some more serious than others.
Research Papers


Zhu, Shanjiang, and David Levinson (2009) People don’t use the shortest path. (working paper).

Thank you

dlevinson@umn.edu
nexus.umn.edu
Timeline

- 1967 Bridge opens to traffic
- 2007, Aug 1 - I-35W Mississippi River Bridge Collapse
- 2008, Feb 25 - Gas Tax Override
- 2008, Feb 28 - Molnau not confirmed by Legislature as Commissioner
- 2008, Sep 1-4 - GOP Convention in St. Paul
- 2008, Sep 9 - Primary Election in Mn.
- 2008, Sep 18 - New Bridge opens
- 2008, Nov. 4 - General Election