

Intelligent Planning and Institutions: The Role of Performance Measurement in Achieving Public/Private Cooperation

Thomas A. Horan, Ph.D.
Claremont Graduate University

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The Future of Cities and Travel
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“Transportation may be one of the least innovative sectors of the economy. Innovations that recognize the crossover benefits and economies of scale between transportation and information technology could potentially reap enormous rewards for society. “

Mark Warner, Co-Chair, National Transportation Policy Project

“Given the fundamental importance of good performance data and modeling to all of the plans discussed in this report, the Commission recommends that an important goal for research under the National RD&T plan should be to improve the Nation’s ability to measure project performance data, including research into improved traffic, safety, environmental, and energy modeling.”

The National Surface Transportation Policy and
Revenue Study Commission, 2008

The Connection

IT and ITS can drive development of transparent performance metrics and in so doing spur innovation and cooperation.

Presentation Points

Point 1: Over the decade and a half of public ITS expenditures, there are have been a range of accomplishments in achieving positive traffic management impacts.

Point 2: While the ITS program has become “mainstreamed” into the federal aid program, the overall pace of deployment has been modest with only 6% of roadways being instrumented.

Point 3: Given the relative lag in the use of IT to improve transportation system performance and innovation, there needs to be a more sustained focus on ways to accelerate this use, including leveraging private sector innovation and resources.

Point 4: The direction should be toward a Systems Intelligence capability that facilitates high performance transportation projects and the use of IT and ITS to achieve this high performance.

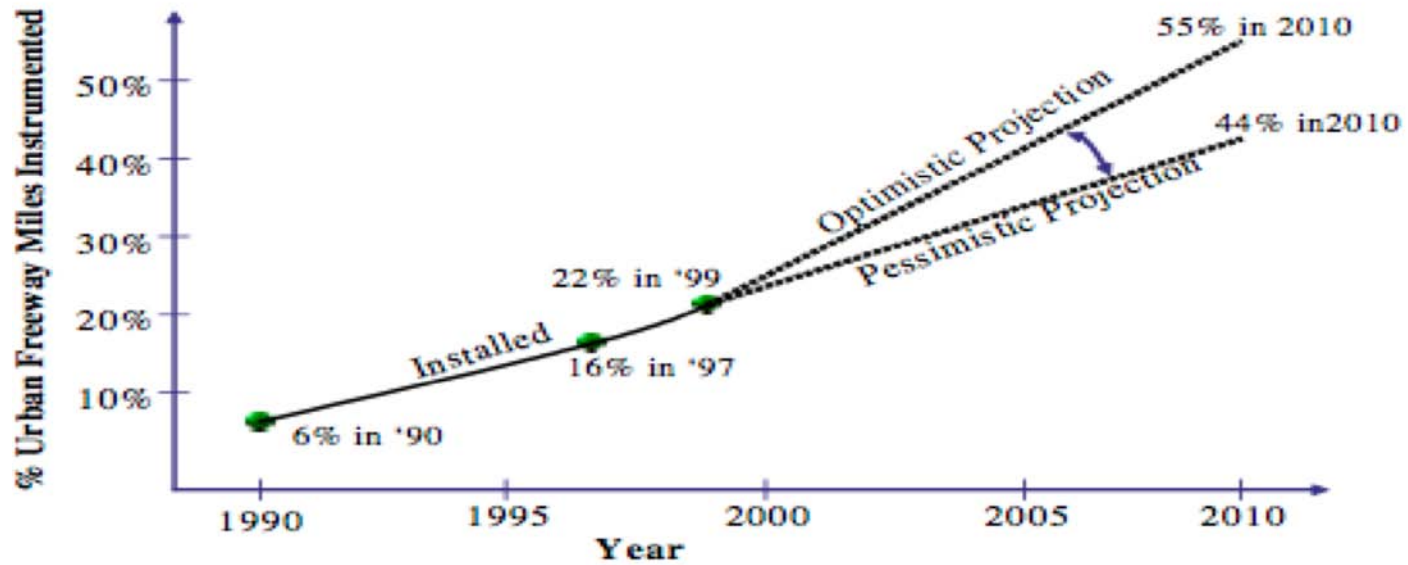
Sample ITS Impact

- The NaviGator system covers 140 freeway miles in the Atlanta metropolitan area. The NaviGator system includes a traffic management center (TMC), freeway management components, advanced traveler information systems, and an incident management program.
- A systematic evaluation was conducted in 2006 (see Guin, et al). This evaluation found that the program resulted in an average 46-minute reduction in incident duration time (69 percent) and reduced incident delay by 7.25 million vehicle-hours (54 percent).
- Safety benefits in the NaviGator coverage area included a 69 percent reduction in secondary crashes. Researchers estimated that the secondary crash rate was reduced from 676 to 210 crashes annually.
- In comparing these benefits to the program costs, the evaluators found a 4.1 to 1 benefit to cost ratio (Guin, 2006).

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decompressor
are needed to see this picture.

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The Lag in Deployment

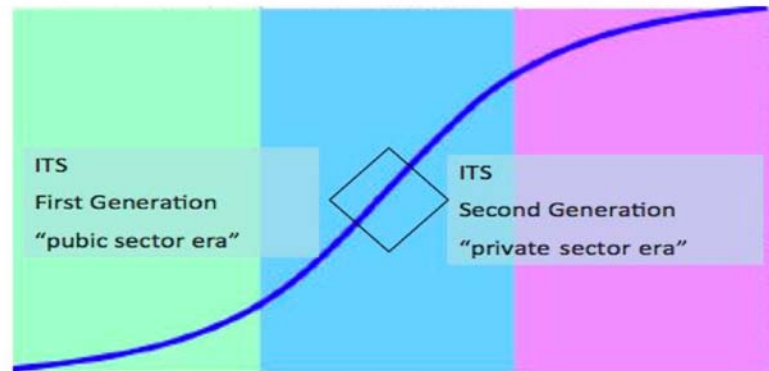


“Data collection is a key tool to give policymakers information on how the transportation system is functioning. Data on the system and its individual facilities and modes are useful in their own right for decision making, but are also essential to enable other effective approaches, such as linking grant disbursements to grantees’ performance. As discussed previously, DOT does not have complete data in some crucial areas; the effective use of data in safety programs, despite problems, demonstrates the potential of more comprehensive data gathering to improve evaluations and induce improved performance in the surface transportation system.”

GAO, 2007

Accelerating Through Private Sector Engagement

S Curve of ITS



Market Developments

“World intelligent transportation systems market is forecast to maintain a high CAGR of 11.6% over 2000-2010 and reach US\$12.5 billion in 2010. United States constitutes the largest market for intelligent transportation systems, with an estimated share of about 40% in 2007.”



Market Data Developments

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Strategies for Moving Forward

Strategy 1: Develop a credible IT-based system to assessing performance at the state, regional and national level through a function such as National Surface Transportation Performance Monitoring Service.

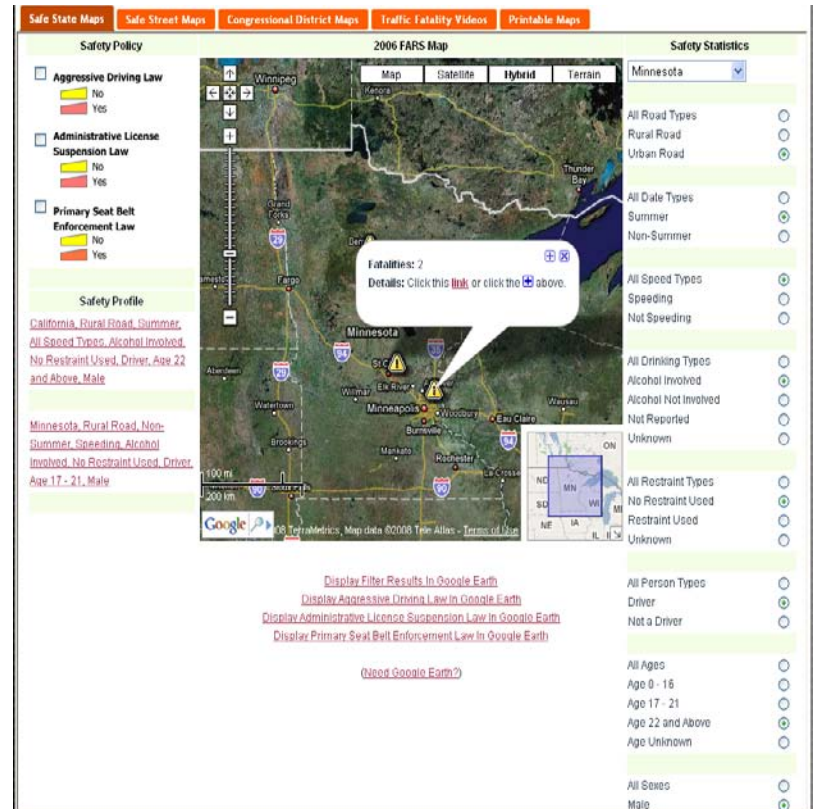
Strategy 2: Accelerate public and private innovation in IT implementation through the establishment of a Surface Transportation Technology Innovation Foundation, focusing on metropolitan innovations, rural connectivity innovations and consumer-centric innovations.

Strategy 3: The third strategy is to restructure the highly fragmented federal transportation research program to better align performance needs and gaps through creation of Centers of Excellence In Transportation Performance R&D.

SafeRoadMaps

Prototype Objective:

Create an visually-based interactive web-site that would provide citizens and planners with a means to understand traffic safety performance including policies and fatalities at the local, regional and national level.



Interactive Demonstration

www.saferoadmaps.org

[Safe State Maps](#)
[Safe Street Maps](#)
[Congressional District Maps](#)
[Traffic Fatality Videos](#)
[Printable Maps](#)

Safety Policy	2006 FARS Map	Safety Statistics
<input type="checkbox"/> Aggressive Driving Law <input type="checkbox"/> No <input type="checkbox"/> Yes		California <input type="button" value="v"/> All Road Types <input type="radio"/> Rural Road <input checked="" type="radio"/> Urban Road <input type="radio"/>
<input type="checkbox"/> Administrative License Suspension Law <input type="checkbox"/> No <input type="checkbox"/> Yes		All Date Types <input type="radio"/> Summer <input checked="" type="radio"/> Non-Summer <input type="radio"/>
<input type="checkbox"/> Primary Seat Belt Enforcement Law <input type="checkbox"/> No <input type="checkbox"/> Yes		All Speed Types <input checked="" type="radio"/> Speeding <input type="radio"/> Not Speeding <input type="radio"/>
Safety Profile California, Rural Road, Summer, All Speed Types, Alcohol Involved, No Restraint Used, Driver, Age 22 and Above, Male		All Drinking Types <input type="radio"/> Alcohol Involved <input checked="" type="radio"/> Alcohol Not Involved <input type="radio"/> Not Reported <input type="radio"/> Unknown <input type="radio"/>
Minnesota, Rural Road, Non-Summer, Speeding, Alcohol Involved, No Restraint Used, Driver, Age 17 - 21, Male		All Restraint Types <input type="radio"/> No Restraint Used <input checked="" type="radio"/> Restraint Used <input type="radio"/> Unknown <input type="radio"/>
		All Person Types <input type="radio"/> Driver <input checked="" type="radio"/> Not a Driver <input type="radio"/>
		All Ages <input type="radio"/> Age 0 - 16 <input type="radio"/> Age 17 - 21 <input type="radio"/> Age 22 and Above <input checked="" type="radio"/> Age Unknown <input type="radio"/>
		All Sexes <input type="radio"/>

[Display Filter Results In Google Earth](#)
[Display Aggressive Driving Law In Google Earth](#)
[Display Administrative License Suspension Law In Google Earth](#)
[Display Primary Seat Belt Enforcement Law In Google Earth](#)

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Fatalities	Month	Day	Hour	Minute	Website Link
1	6	2	19	2	

State Case	Road Type	Speeding	Drinking	Restraint Type	Person Type	Age	Sex	Deceased
61411	Rural Principal Arterial - Other	Yes (Speeding Involved)	Yes (Alcohol Involved)	None Used/Not Applicable <input type="checkbox"/> Not a Motor Vehicle Occupant	Driver	27	Male	Yes
61411	Rural Principal Arterial - Other	Yes (Speeding Involved)	No (Alcohol Not Involved)	Lap and Shoulder Belt	Driver	60	Male	No



[Safe State Maps](#)
[Safe Street Maps](#)
[Congressional District Maps](#)
[Traffic Fatality Videos](#)
[Printable Maps](#)

2006 FARS Map

Address: Search Radius:

Fatalities: 1
Miles from Address: (0.8)
State Case: 61988

Fatalities: 1
Miles from Address: (0.9)
State Case: 61243

Fatalities: 1
Miles from Address: (0.9)
State Case: 60591

Fatalities: 1
Miles from Address: (0.9)
State Case: 60110

Fatalities: 1
Miles from Address: (1.4)
State Case: 61267

Fatalities: 1
Miles from Address: (1.5)
State Case: 62366

Fatalities: 1
Miles from Address: (1.6)
State Case: 61116

Fatalities: 1
Miles from Address: (1.8)
State Case: 63298

Fatalities: 1

Details: Click this [link](#) or click the [+](#) above.

[Display Search Results In Google Earth](#)
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Congressional Districts

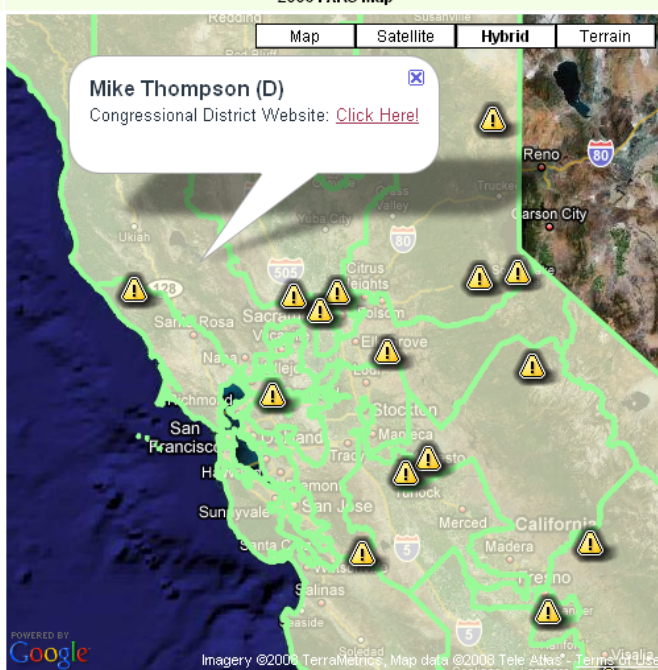
- California Congressional Districts
- Minnesota Congressional Districts

Safety Profile

[California, Rural Road, Summer, All Speed Types, Alcohol Involved, No Restraint Used, Driver, Age 22 and Above, Male](#)

[Minnesota, Rural Road, Non-Summer, Speeding, Alcohol Involved, No Restraint Used, Driver, Age 17 - 21, Male](#)

2006 FARS Map



Safety Statistics

California	<input type="button" value="v"/>
All Road Types	<input type="radio"/>
Rural Road	<input checked="" type="radio"/>
Urban Road	<input type="radio"/>
All Date Types	<input type="radio"/>
Summer	<input checked="" type="radio"/>
Non-Summer	<input type="radio"/>
All Speed Types	<input checked="" type="radio"/>
Speeding	<input type="radio"/>
Not Speeding	<input type="radio"/>
All Drinking Types	<input type="radio"/>
Alcohol Involved	<input checked="" type="radio"/>
Alcohol Not Involved	<input type="radio"/>
Not Reported	<input type="radio"/>
Unknown	<input type="radio"/>
All Restraint Types	<input type="radio"/>
No Restraint Used	<input checked="" type="radio"/>
Restraint Used	<input type="radio"/>
Unknown	<input type="radio"/>
All Person Types	<input type="radio"/>
Driver	<input checked="" type="radio"/>
Not a Driver	<input type="radio"/>
All Ages	<input type="radio"/>
Age 0 - 16	<input type="radio"/>
Age 17 - 21	<input type="radio"/>
Age 22 and Above	<input checked="" type="radio"/>
Age Unknown	<input type="radio"/>
All Sexes	<input type="radio"/>

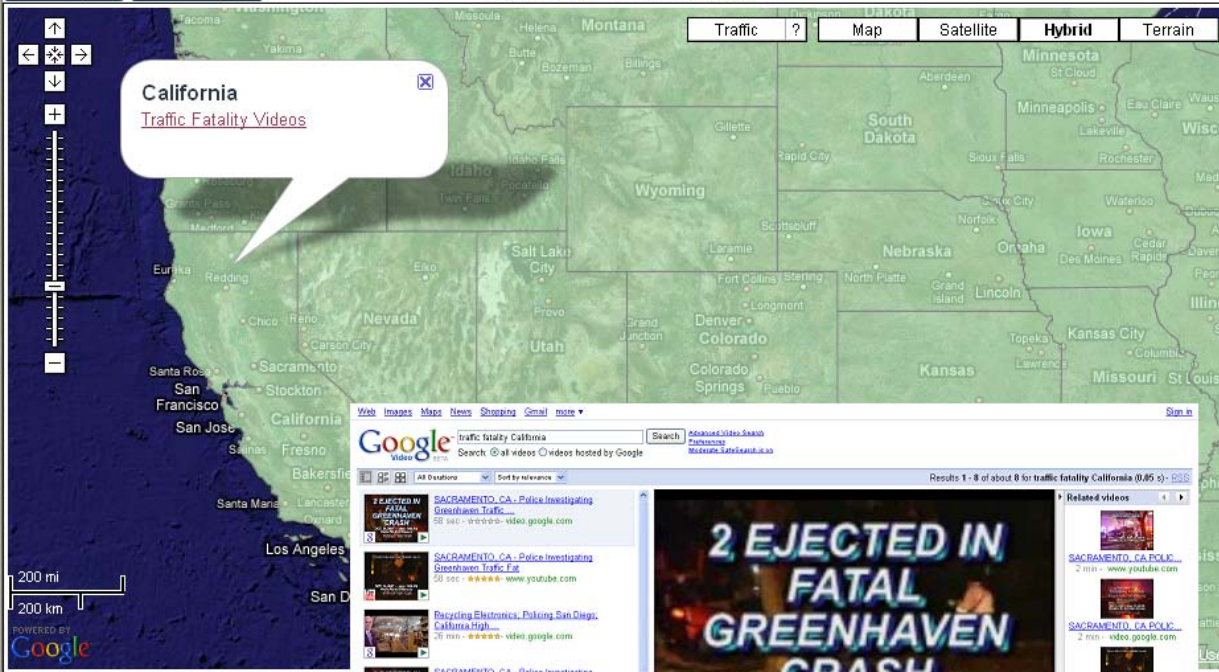
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- [Display Minnesota Congressional Districts In Google Earth](#)

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Traffic Fatality Videos

Hide Layer | Show Layer

Click on a State to access the Videos



Google Video Search Results for "traffic fatality California"

Search: © all videos © videos hosted by Google

Results: 1 - 8 of about 8 for traffic fatality California (0.65 s) - GSS

- SACRAMENTO, CA - Police Investigating Greenhaven Traffic**
58 sec - video.google.com
- SACRAMENTO, CA - Police Investigating Greenhaven Traffic Fat**
58 sec - www.youtube.com
- Recycling Electronics, Poking San Diego, California High...**
26 min - video.google.com
- SACRAMENTO, CA - Police Investigating Greenhaven Traffic**
49 sec - uncredited.aol.com
- The Significant Dangers of Street Racing / Educational Video**
7 min - www.youtube.com
- Vacaville Accident**
53 sec - www.youtube.com
- WFSB-TV News 2009-12-25 @ 11:41 TV**
www.video.aol.com
- Long Beach City Council Meeting**
1:59 min - video.google.com

2 EJECTED IN FATAL GREENHAVEN CRASH
OCT. 16, 2007 - approx. 1:00 AM
Florin Rd @ El Macera

Related videos

- SACRAMENTO, CA POLI... 2 min - www.youtube.com
- SACRAMENTO, CA POLI... 2 min - video.google.com
- SACRAMENTO, CA - Pol... 58 sec - www.youtube.com
- SACRAMENTO, CA POLI... ipswal.com

SACRAMENTO, CA - Police Investigating Greenhaven Traffic
58 sec - Oct 16, 2007 - 00000 (0 Ratings) - Rate: 000000
Watch this video on [video.google.com](#)

SACRAMENTO, CA - Police Investigating Greenhaven Traffic Fatality - 10:16:07

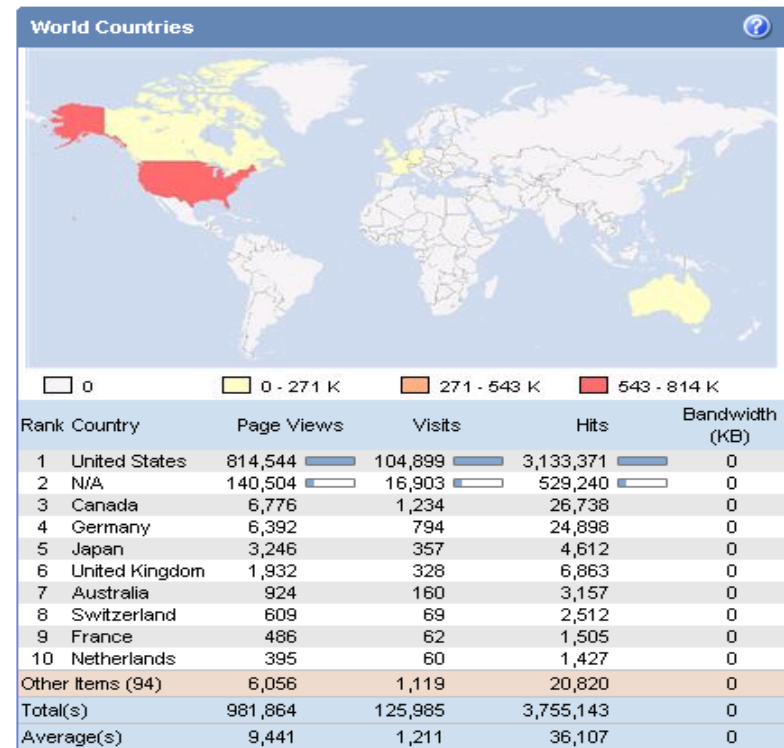
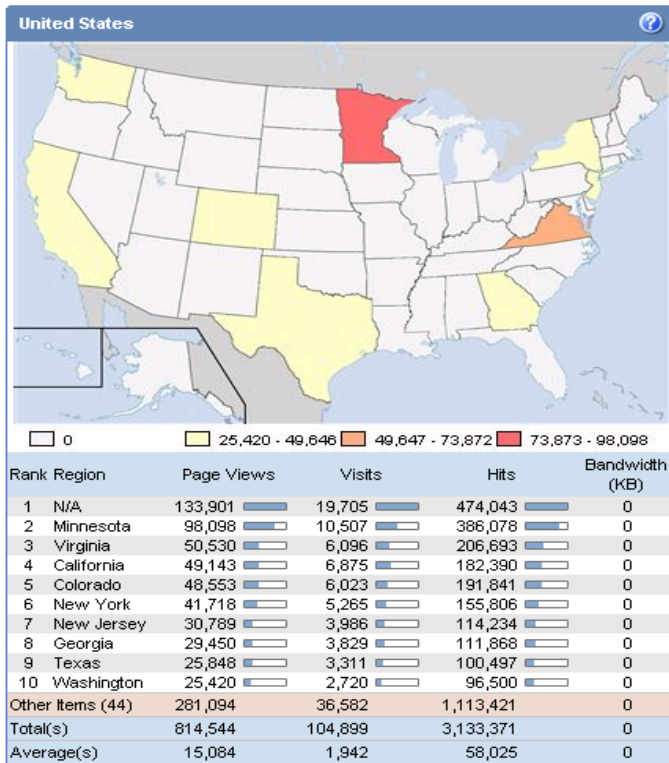
Fatalities	Month	Day	Hour	Minute	Website Link
2	7	25	21	49	

State Case	Road Type	Speeding	Drinking	Restraint Type	Person Type	Age	Sex	Deceased
270255	Urban Principal Arterial	No (Speeding Not Involved)	Yes (Alcohol Involved)	None Used/Not Applicable – Not a Motor Vehicle Occupant	Driver	47	Male	Yes
270255	Urban Principal Arterial	No (Speeding Not Involved)	Not Reported	None Used/Not Applicable – Not a Motor Vehicle Occupant	Passenger of a Motor Vehicle in Transport	32	Female	Yes
270255	Urban Principal Arterial	No (Speeding Not Involved)	No (Alcohol Not Involved)	None Used/Not Applicable – Not a Motor Vehicle Occupant	Driver	17	Female	No
270255	Urban Principal Arterial	No (Speeding Not Involved)	No (Alcohol Not Involved)	Lap and Shoulder Belt	Driver	52	Female	No
270255	Urban Principal Arterial	No (Speeding Not Involved)	Not Reported	None Used/Not Applicable – Not a Motor Vehicle Occupant	Passenger of a Motor Vehicle in Transport	16	Female	No
270255	Urban Principal Arterial	No (Speeding Not Involved)	Not Reported	Lap and Shoulder Belt	Passenger of a Motor Vehicle in Transport	23	Male	No
270255	Urban Principal Arterial	No (Speeding Not Involved)	Not Reported	Lap and Shoulder Belt	Passenger of a Motor Vehicle in Transport	53	Male	No



The Launch

The launch at the CERS Summer Institute on 28 July 2008, which generated over 3 million hits in the first three days, as well as media coverage from around the world suggests that indeed there is a strong traveler interest in this type of information.



The Launch

This usage paralleled the media coverage which included:

- over 150 reports in newspapers ([GoogleNews](#)),
- television news ([KARE11](#)),
- radio, and
- related new-media outlets ([Google](#)).



The screenshot shows the KARE 11 website interface. At the top, the KARE 11 logo is displayed with the text "MINNEAPOLIS • ST. PAUL". To the right is a search bar with the text "SEARCH: All | Articles | Sports | Video" and a search input field containing "hp". A notification box on the right says "Grocery delivery coming soon". Below the logo is a navigation menu with links: HOME, NEWS, WEATHER, TRAFFIC, SPORTS, SHOWS, COMMUNITY, OUT & ABOUT, LIFE, LINKS, ABOUT US. A secondary menu includes MORE: FORUMS | KARE VIDEOS | PHOTO GALLERY | TV FAQ | TV SCHEDULE | HealthFair | metromix | momslike. A comment prompt says "Comment, blog & share photos" with a "Log In" link. A banner for "Breast Cancer: The Journey" is visible. The main content area features a "LOCAL NEWS" section with the headline "First of its kind road map aims to get you there... alive" and "Updated: 3 months ago". Below the headline are social media sharing options: Read Comments, Print Article, Email Article, Larger Text, and Smaller Text. An advertisement for "GIVE. ADVOCATE. VOLUNTEER. LIVE UNITED.™" is displayed, featuring the "United Way" logo and the text "Join the movement at [livesunited.org](#)". The article text includes: "Some folks at the University of Minnesota would like you to think of something most of you would rather not. Just how many people die on Minnesota roads. The U of M is publishing a new website tracking every fatality in 2006, including where it happened and what was involved. The hope is you'll log on, and look at your most traveled route. The site is called [saferoadmaps.org](#) and it was developed by the U of M's Center for Excellence in Rural Safety. While it includes details of more than 42,000 fatal accidents in the U.S. in 2006, both urban and rural, the goal is to raise awareness of just how deadly rural roads can be. Once on the website, you can either enter an address or zip code or zoom in on a map of the U.S. to find just where fatal accidents have occurred in your neighborhood. Those who developed the site say in Minnesota, more fatal crashes occur on rural roads than urban, even though only 23% of Minnesotans live in rural areas. Lee Munnich, director of the U of M's Center for Excellence in Rural Safety says 'the reason is that people tend to drive faster on rural roads and they may feel safer but they should be following the speed limits.'" An "ARTICLE IMAGES" section shows a photo of a road with cars. A "WATCH VIDEO" section shows a video player with the KARE 11.com logo and a video player interface with a 00:00 timer. A caption below the video reads: "Some folks at the University of Minnesota would like you to think of something most of you would rather not. Just how..."

Conclusions

- There is an increasing emphasis on surface transportation performance as an organizing principle for policy, funding, and R&D.
- IT and ITS can play a critical role in creating systems intelligence on performance, but to do that requires a strong role by the private sector in order to achieve economies of scale and other innovative dynamics.
- Public policy should create the requirements and demands for transportation performance accountability and then create a means for the private and public sector to cooperate in servicing this demand.
- New systems, such as portrayed in the SafeRoadMaps illustration, should be dynamic, interactive, intuitive, near-real time with trend and forecasting capabilities.

Acknowledgements

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The SafeRoadMaps system is being developed in collaboration with the Center for Excellence in Rural Safety, directed by Lee Munnich.

Thank you!