# Intelligent Planning and Institutions:
## The Role of Performance Measurement in

## Achieving Public/Private Cooperation

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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

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*"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

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# 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 facilities high performance transportation projects and the use of IT and ITS to achieve this high performance.

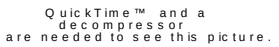
# Sample ITS Impact

- The NaviGAtor systemcovers 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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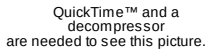


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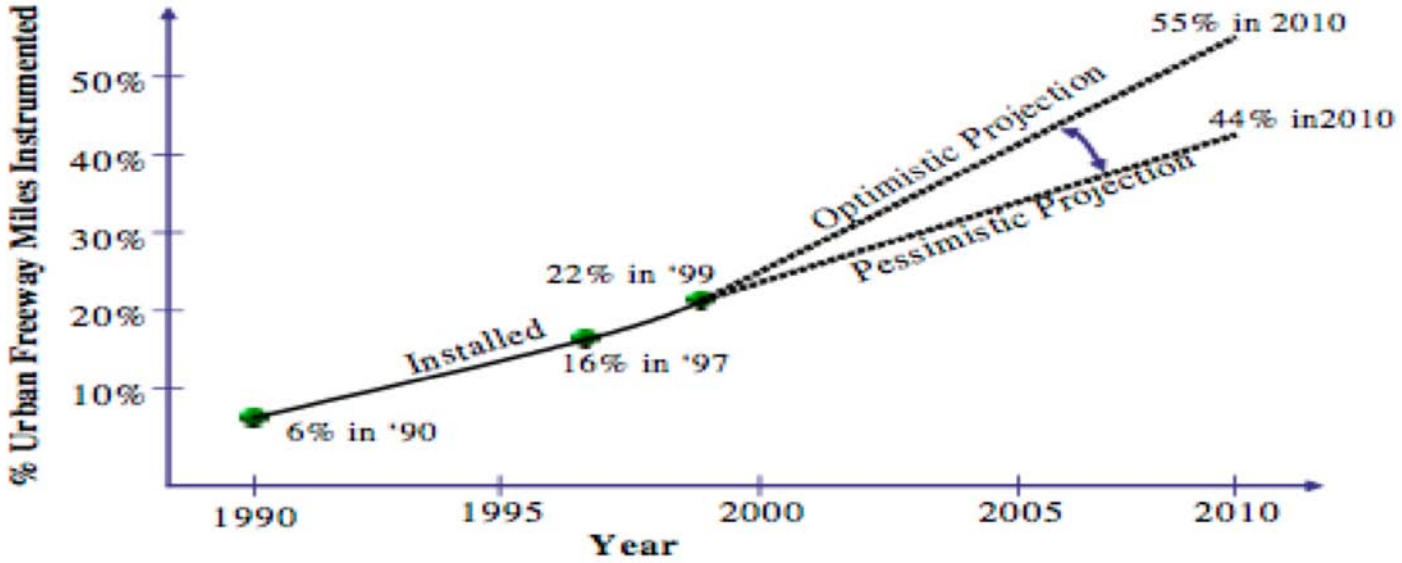
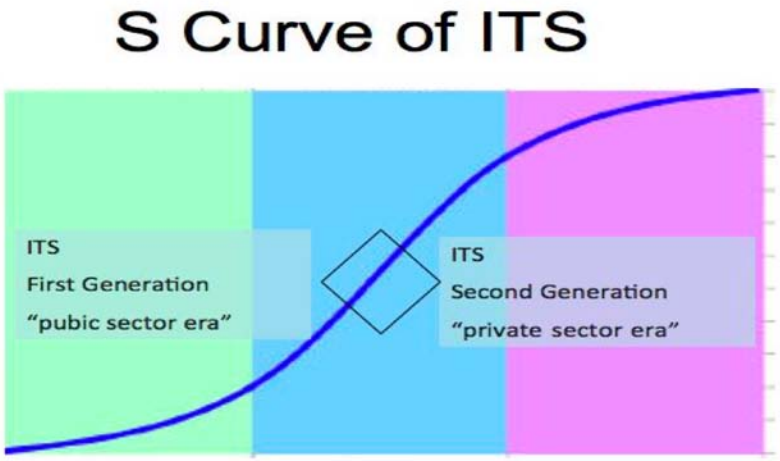
*The Lag in Deployment*



"*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



# 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

QuickTime™ a
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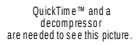
are needed to see t

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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.

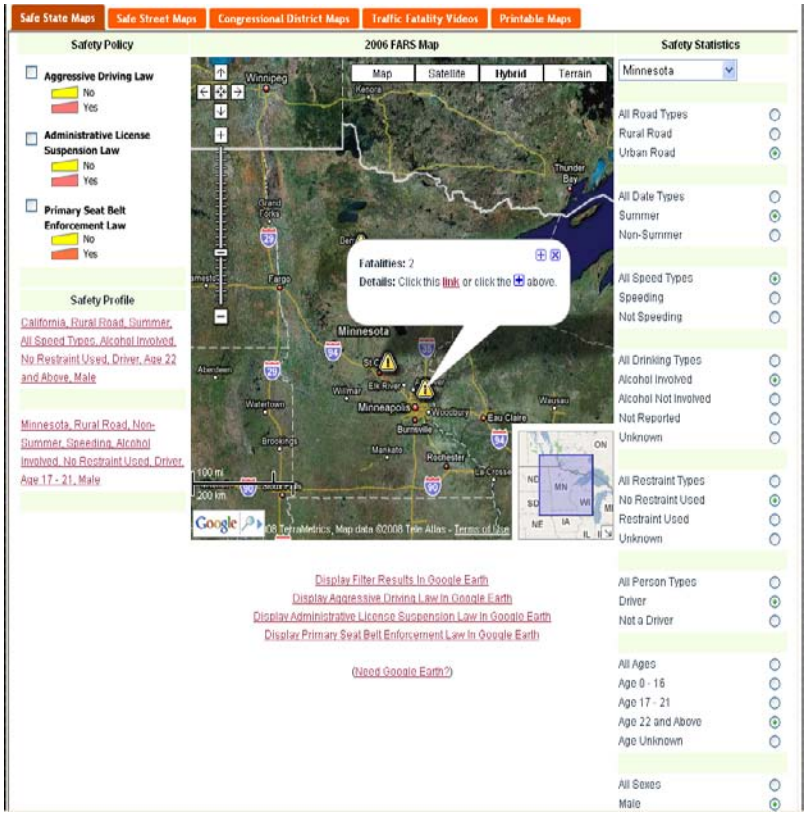
**Strategy 2**: Accelerate public and private innovation in IT implementation through the establishment of a Surface Transportation Technology Innovation Foundation, focusing on metropolitan innovations, rural connectivity innovations and consumer-centric innovations.

**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.

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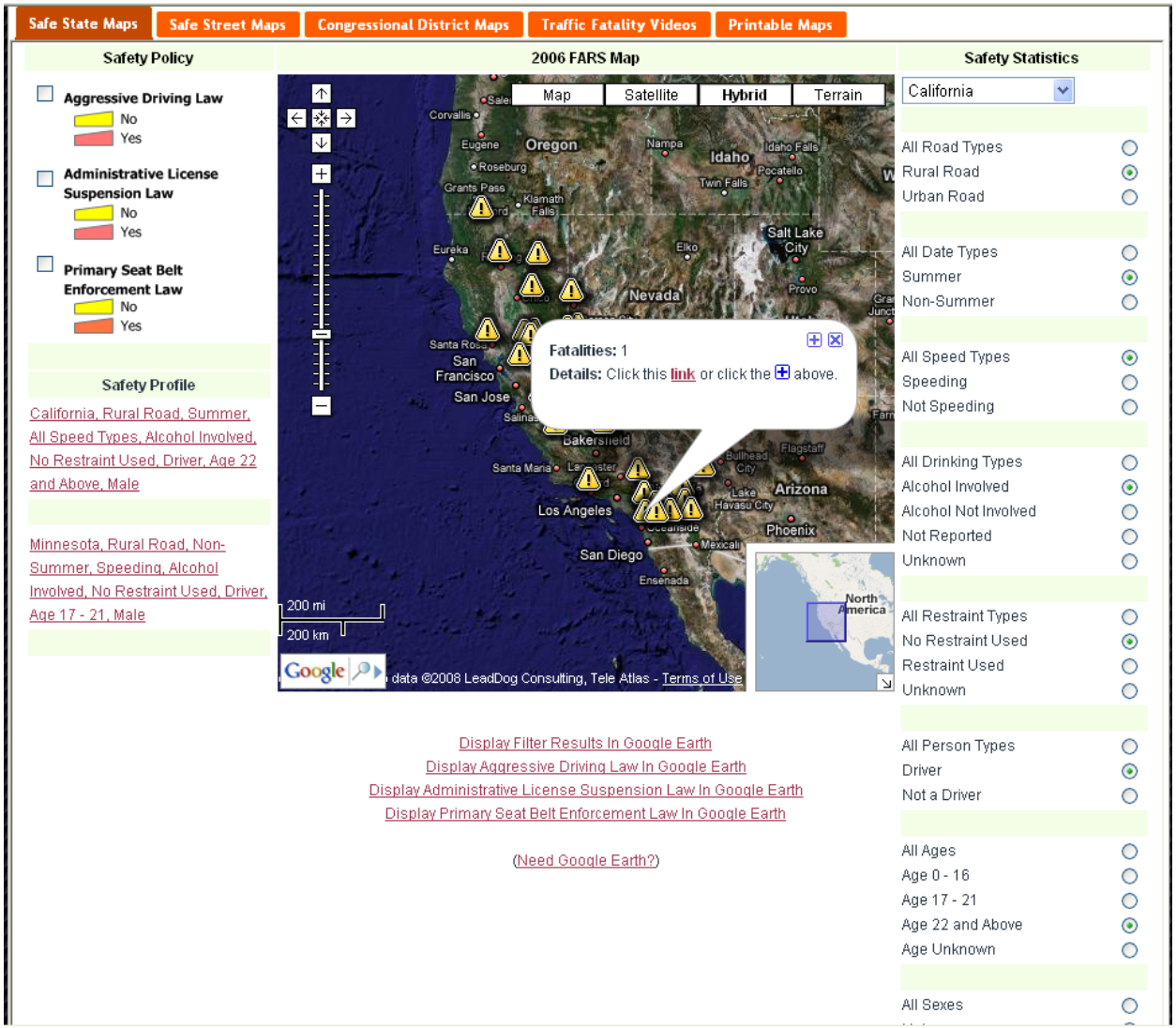
# Interactive Demonstration

www.saferoadmaps.org

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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 □ 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 |




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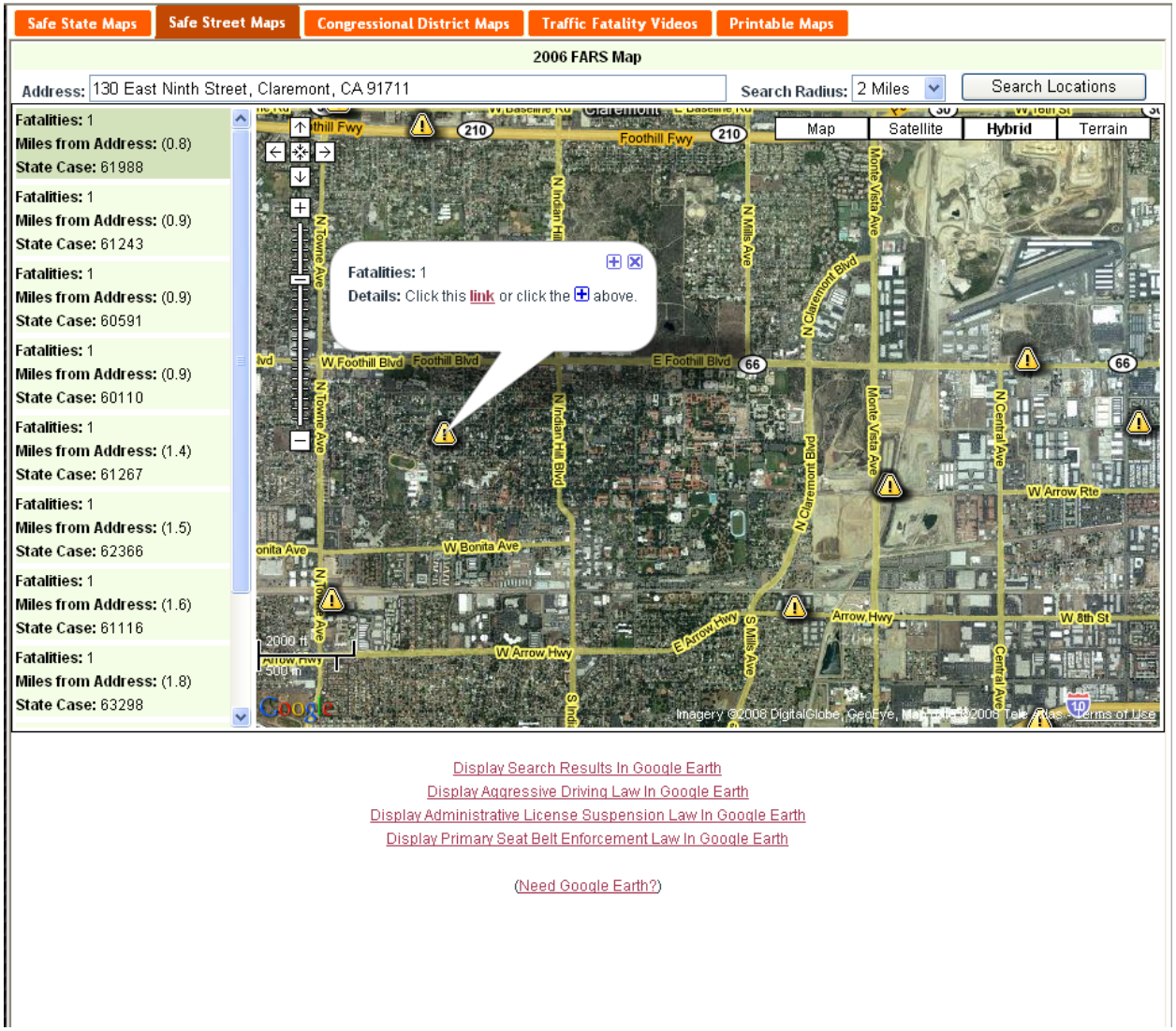


Display Search Results In Google Earth
Display Aggressive Driving Law In Google Earth
Display Administrative License Suspension Law In Google Earth
Display Primary Seat Belt Enforcement Law In Google Earth

(Need Google Earth?)

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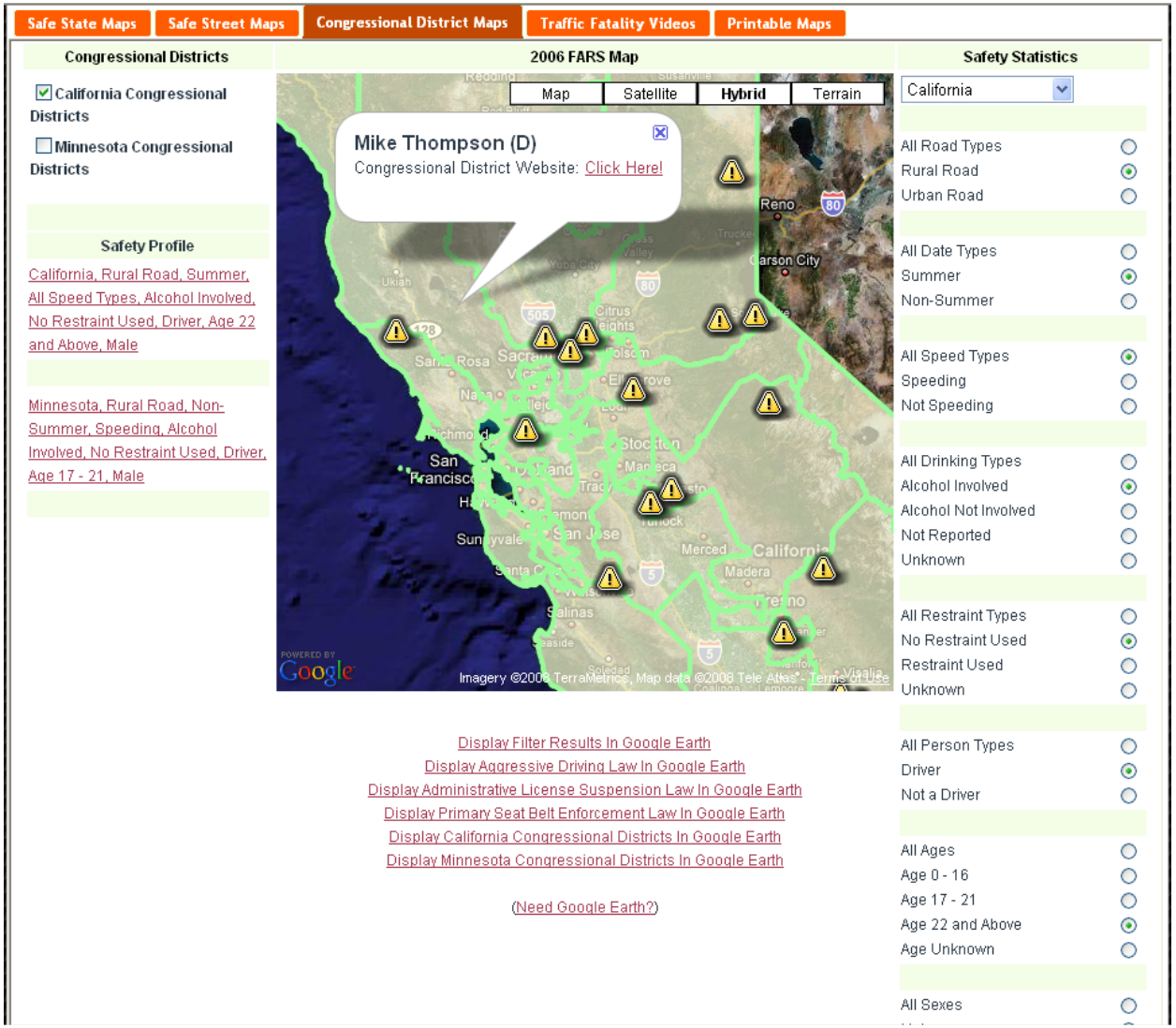


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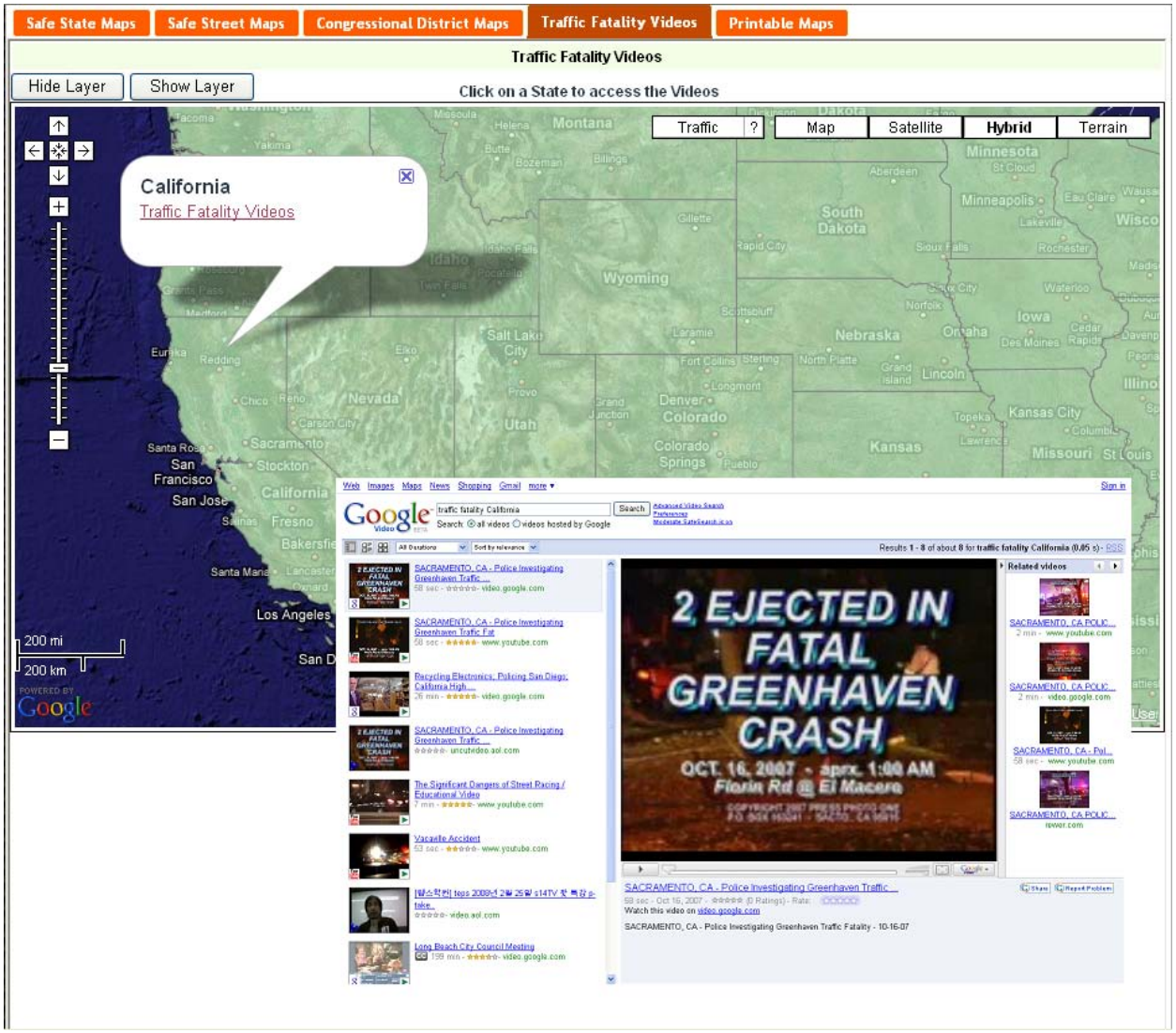


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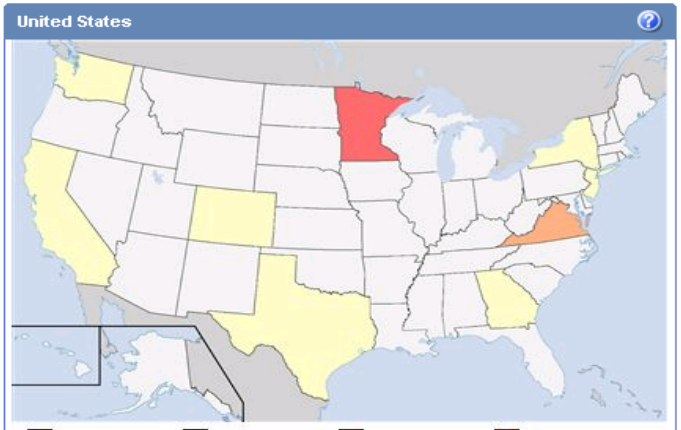
| Fatalities | Month | Day | Hour | Minute | Website Link |
|---|---|---|---|---|---|
| 2 | 7 | 25 | 21 | 49 | |

| 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 |

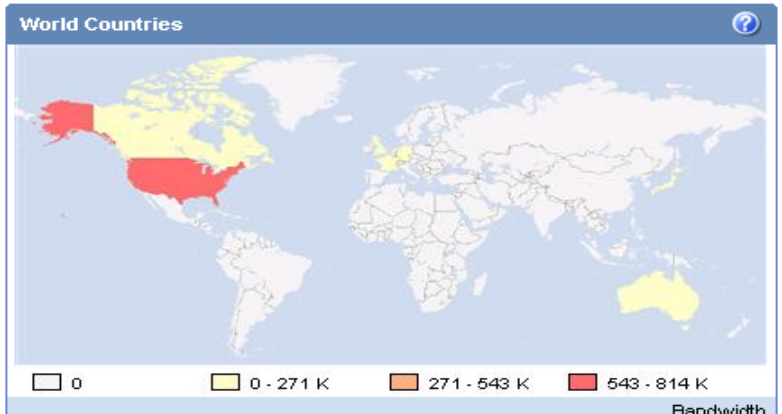


# The Launch

**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.**




| Rank | Region | Page Views | Visits | Hits | Bandwidth (KB) |
|---|---|---|---|---|---|
| 1 | N/A | 133,901 | 19,705 | 474,043 | 0 |
| 2 | Minnesota | 98,098 | 10,507 | 386,078 | 0 |
| 3 | Virginia | 50,530 | 6,096 | 206,693 | 0 |
| 4 | California | 49,143 | 6,875 | 182,390 | 0 |
| 5 | Colorado | 48,553 | 6,023 | 191,841 | 0 |
| 6 | New York | 41,718 | 5,265 | 155,806 | 0 |
| 7 | New Jersey | 30,789 | 3,986 | 114,234 | 0 |
| 8 | Georgia | 29,450 | 3,829 | 111,868 | 0 |
| 9 | Texas | 25,848 | 3,311 | 100,497 | 0 |
| 10 | Washington | 25,420 | 2,720 | 96,500 | 0 |
| Other Items (44) | | 281,094 | 36,582 | 1,113,421 | 0 |
| Total(s) | | 814,544 | 104,899 | 3,133,371 | 0 |
| Average(s) | | 15,084 | 1,942 | 58,025 | 0 |




| Rank | Country | Page Views | Visits | Hits | Bandwidth (KB) |
|---|---|---|---|---|---|
| 1 | United States | 814,544 | 104,899 | 3,133,371 | 0 |
| 2 | N/A | 140,504 | 16,903 | 529,240 | 0 |
| 3 | Canada | 6,776 | 1,234 | 26,738 | 0 |
| 4 | Germany | 6,392 | 794 | 24,898 | 0 |
| 5 | Japan | 3,246 | 357 | 4,612 | 0 |
| 6 | United Kingdom | 1,932 | 328 | 6,863 | 0 |
| 7 | Australia | 924 | 160 | 3,157 | 0 |
| 8 | Switzerland | 609 | 69 | 2,512 | 0 |
| 9 | France | 486 | 62 | 1,505 | 0 |
| 10 | Netherlands | 395 | 60 | 1,427 | 0 |
| Other Items (94) | | 6,056 | 1,119 | 20,820 | 0 |
| Total(s) | | 981,864 | 125,985 | 3,755,143 | 0 |
| Average(s) | | 9,441 | 1,211 | 36,107 | 0 |

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# 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).**


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# 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

Portions of this presentation are based on a paper prepared the the National Transportation Policy Project (NTPP), directed by Emil Frankel.

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

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Thank you!