

# Visual Information Systems for Traffic Safety and EMS

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## Horan Presentation Outline

- The Need For Integrated Systems
  - TCIS Framework
  - General Design Considerations
- SafeRoadMaps Design and Use
- CrashHelp Design and Plan

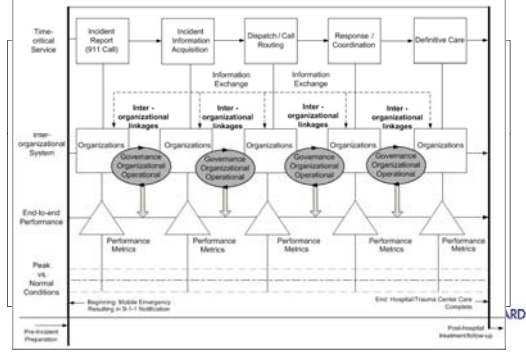


### Social Benefit

- 40,000+ traffic related fatalities per year
  - Approximately 60% are on rural roads
- The average emergency response to rural crashes is 52 minutes, compared to 30 minutes in urban areas
  - Survivability for trauma patients is significantly improved if arrival to a hospital is less than 30 minutes
  - There is significant potential to measure and improve the quality of care throughout the process.
- There is a need to integrated information to:
  - Support the end-to-end emergency response process
  - Provide information that can be used at the point of care, as well as to guide traffic safety analysis and improvements.



### Our Time-Critical Information Services Model



### End-to-End

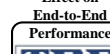


- Need to track a patient from end-to-end – from the time of 9-1-1 notification through to being discharged from a hospital (and rehabilitation)
- Need to integrate data systems across traditional "silos" (pre-hospital, hospital/trauma, crash data systems).
  - Data standards work with NEMESIS, CAP, VEDS, NTDS, etc...
  - Methods for integrating static repositories (e.g., CODES)
- Need to investigate better use of information technology to address time lag in emergency response.
- Need to investigate better use of IT to address information hand-offs for "point of care" decision making
- Need for concepts, methods and systems to "make it happen"

### Low-Performance Architecture ↔ High-Performance Architecture

- |  |   |   |
|--|---|---|
| <ul style="list-style-type: none"> <li>– Incomplete patient record</li> <li>– Wide pre-hospital/hospital gap</li> <li>– Low system usability</li> <li>– Lack of data/comm standards</li> </ul>               | <div style="border: 1px solid black; padding: 5px; width: 60px; margin: 0 auto;">Operational</div>    | <ul style="list-style-type: none"> <li>– Complete patient information</li> <li>– No pre-hospital/hospital gap</li> <li>– High system usability</li> <li>– Optimal use of data/comm standards</li> </ul>   |
| <ul style="list-style-type: none"> <li>– Low end-to-end awareness</li> <li>– Minimal performance feedback</li> <li>– Limited team interaction</li> <li>– Limited stakeholder involvement</li> </ul>          | <div style="border: 1px solid black; padding: 5px; width: 60px; margin: 0 auto;">Organizational</div> | <ul style="list-style-type: none"> <li>– High end-to-end awareness</li> <li>– Complete performance feedback</li> <li>– High degree of team interaction</li> <li>– High stakeholder involvement</li> </ul> |
| <ul style="list-style-type: none"> <li>– Ineffective use of contracts</li> <li>– Limited non-contract info sharing</li> <li>– Unrecognized policy opportunities</li> <li>– Insufficient resources</li> </ul> | <div style="border: 1px solid black; padding: 5px; width: 60px; margin: 0 auto;">Governance</div>     | <ul style="list-style-type: none"> <li>– Effective use of contracts</li> <li>– High non-contract info sharing</li> <li>– Recognized policy opportunities</li> <li>– Sufficient resources</li> </ul>       |

Timeliness and Quality of Service are reduced



Timeliness and Quality of Service are improved



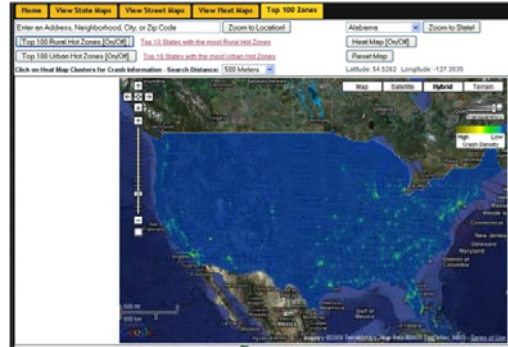
# SafeRoadMaps.org

## SRM Design Goal:

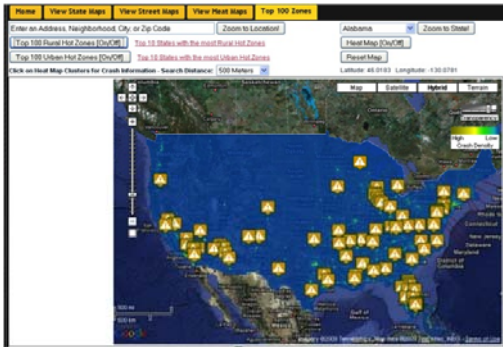
Create an visually-based interactive web-site that would provide citizens and planners with a means to understand traffic safety including policies and fatalities at the local, regional and national level.



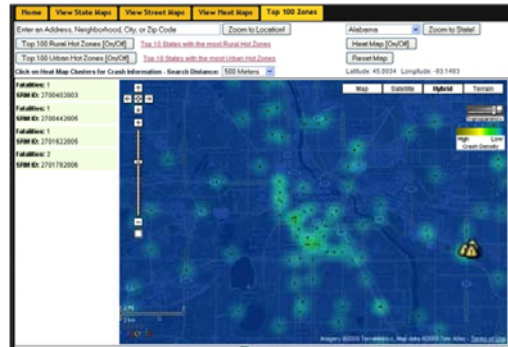
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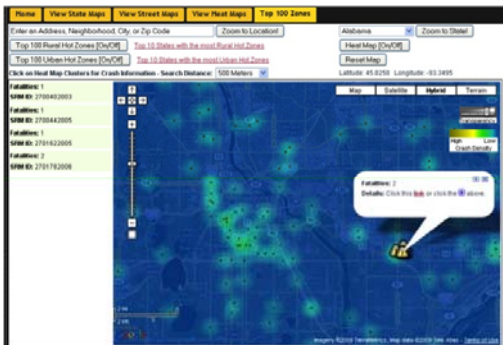
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Fatality	Month	Day	Hour	Minute	Year
2701762006	4	19	16	42	2006

SRM_ID	Road Type	Spreading	Shielding	Residual Type	Passive Type	Age	Dist	Decreased
2701762006	Urban Local Road or Street	No Spreading Not Included	No Protection Not Included	None	Passenger of a Motor Vehicle in Transport	20	None	Yes
2701762006	Urban Local Road or Street	No Spreading Not Included	Not Provided	Low and Shoulder Belt	Passenger of a Motor Vehicle in Transport	20	None	Yes
2701762006	Urban Local Road or Street	No Spreading Not Included	Not Provided	Low and Shoulder Belt	Passenger of a Motor Vehicle in Transport	18	None	Yes
2701762006	Urban Local Road or Street	No Spreading Not Included	Not Provided	None Used	Passenger of a Motor Vehicle in Transport	4	None	Yes
2701762006	Urban Local Road or Street	No Spreading Not Included	Not Provided	Low and Shoulder Belt	Passenger of a Motor Vehicle in Transport	18	None	Yes
2701762006	Urban Local Road or Street	No Spreading Not Included	No Protection Not Included	Low and Shoulder Belt	Driver	18	None	Yes
2701762006	Urban Local Road or Street	No Spreading Not Included	Not Provided	Low and Shoulder Belt	Passenger of a Motor Vehicle in Transport	18	None	Yes
2701762006	Urban Local Road or Street	No Spreading Not Included	Not Provided	Unknown	Other	10	None	Yes
2701762006	Urban Local Road or Street	No Spreading Not Included	Not Provided	Unknown	Passenger of a Motor Vehicle in Transport	16	None	Yes
2701762006	Urban Local Road or Street	No Spreading Not Included	Not Provided	Unknown	Passenger of a Motor Vehicle in Transport	4	None	Yes
2701762006	Urban Local Road or Street	No Spreading Not Included	Not Provided	Unknown	Passenger of a Motor Vehicle in Transport	10	None	Yes
2701762006	Urban Local Road or Street	No Spreading Not Included	Not Provided	Unknown	Passenger of a Motor Vehicle in Transport	12	None	Yes
2701762006	Urban Local Road or Street	No Spreading Not Included	No Protection Not Included	None	Passenger of a Motor Vehicle in Transport	18	None	Yes
2701762006	Urban Local Road or Street	No Spreading Not Included	Not Provided	Low and Shoulder Belt	Driver	18	None	Yes
2701762006	Urban Local Road or Street	No Spreading Not Included	Not Provided	Unknown	Passenger of a Motor Vehicle in Transport	17	None	Yes

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## “CrashHelp”



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## Summary

- Visual Information Systems Can Provide an Innovative Means to Achieve Data Coordination and Transparency for Traffic Safety and EMS.
- To Achieve End-to-End Improvement Requires Acceptance at Operational, Organizational, and Governance Levels.
- Applications and Software As A Service Platforms Represent Promising Approaches to Overcoming Resistance to Change.

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## Acknowledgements

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## Questions??

- Please raise your hand or type in the message box

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