

Acknowledgements & Stakeholders

Acknowledgements

- ❑ Federal Railroad Administration (FRA)*
- ❑ Volpe Center
- ❑ Association of American Railroads (AAR)
- ❑ Railroad Research Foundation (RRF)
- ❑ George Washington University (GWU)

Project Partners

- ❑ Michael Coplen (FRA)
- ❑ Scott Gabree, Ph.D. (Volpe)
- ❑ Stephanie Chase, Ph.D. (Volpe)
- ❑ Michael Martino (AAR/RRF)
- ❑ Ann Doucette, Ph.D. (GWU)

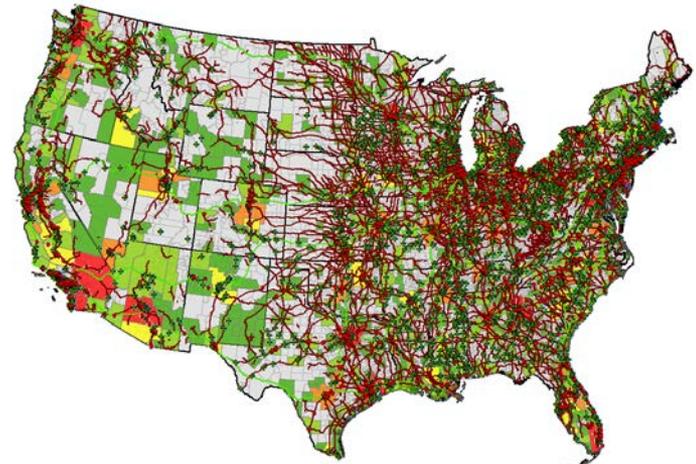
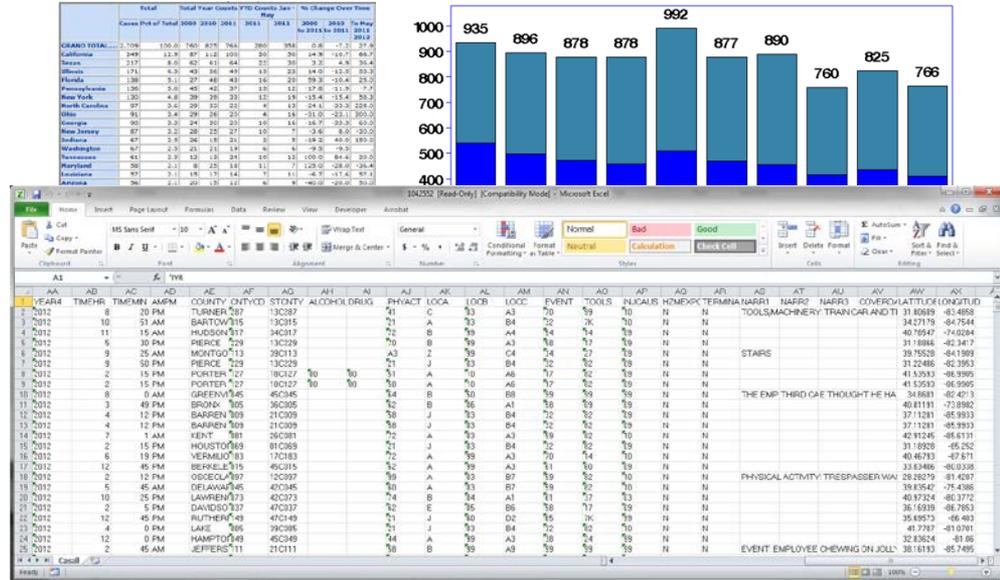
* Funding for this effort is provided the FRA Office of Research and Development

Project Goals

- ❑ Develop GIS mapping tool which can:
 - Track all incidents on railroad rights-of-way
 - Identify possible causes for these incidents and pinpoint locations at higher risk for future incidents
 - Evaluate the effectiveness of countermeasures
- ❑ Provide relevant and useful information to key decision makers

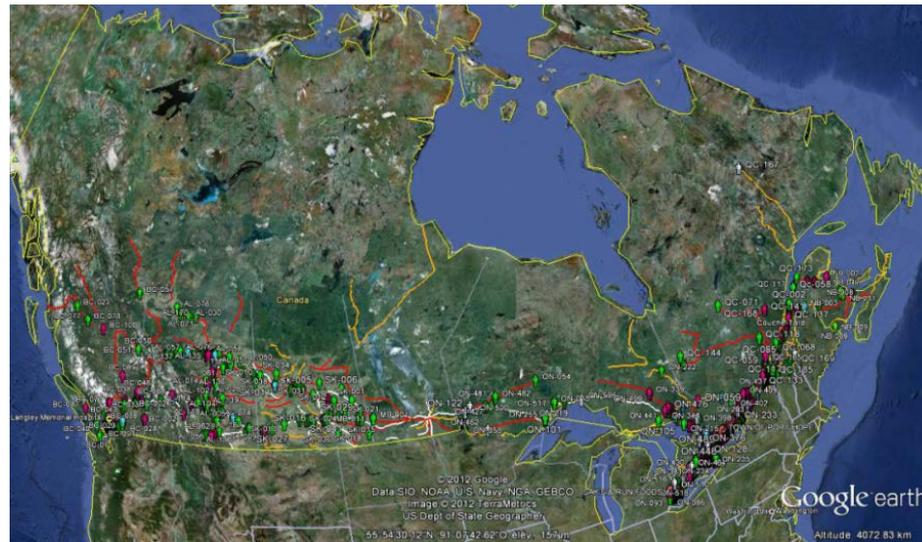
Motivation for this effort

- ❑ No easy way to track and visualize where trespasser incidents occur
- ❑ Expansion of high-speed rail in the United States
- ❑ Pair individual/incident with information about the location
- ❑ Identify stakeholders who should be made aware of findings, for example:
 - Railroad
 - Local community
 - Schools
- ❑ A visual map of these incidents will provide an easy and quick way to identify areas of concern

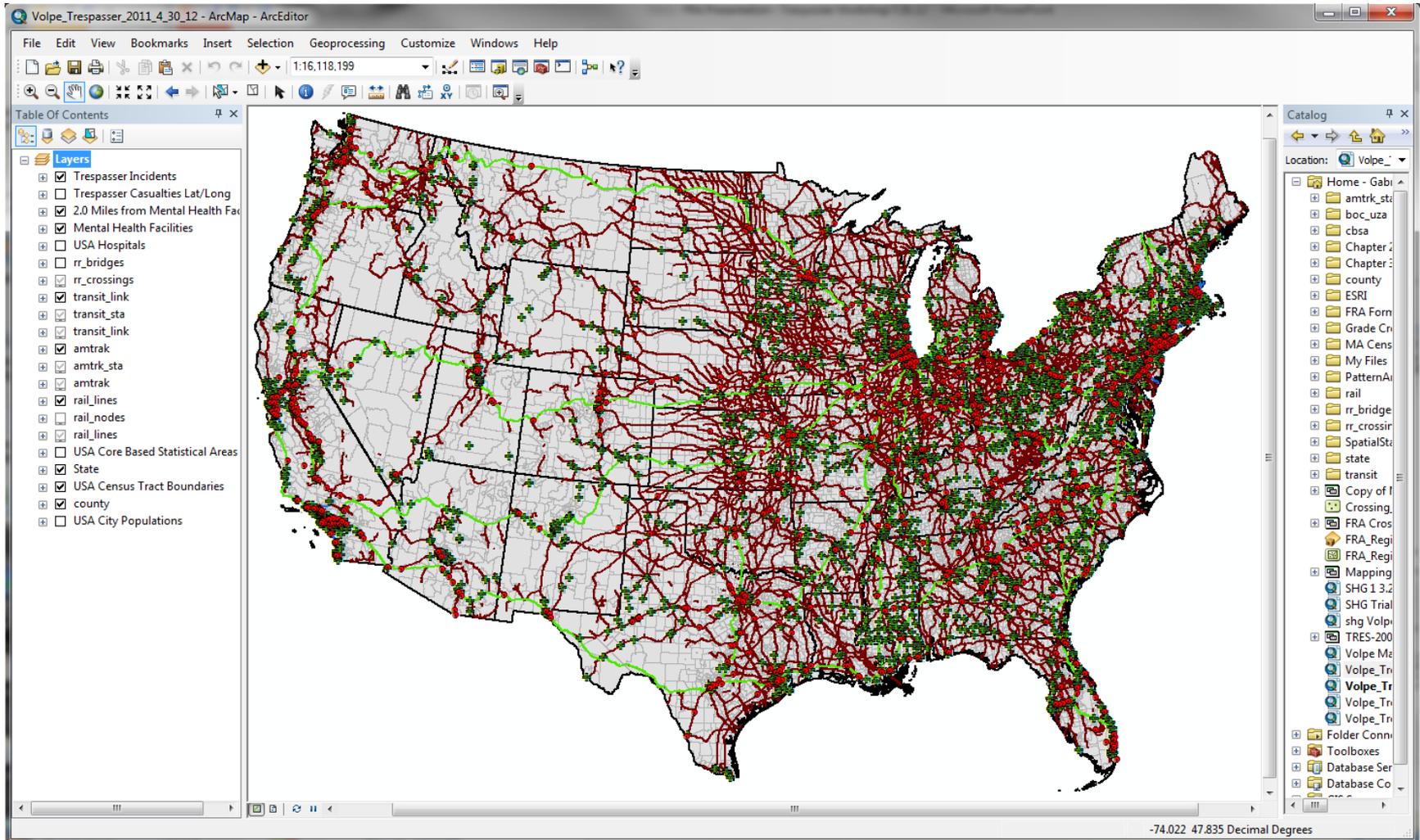


Previous Work

- ❑ Demographic profiles of trespasser and suicide victims
 - More extensively investigated in Europe and Australia
 - Some have been conducted in the US (e.g., FRA 2008)
- ❑ GIS software used to identify hotspots
 - Mapping of trespasser and suicide incidents on Google Maps by Dr. Brian Mishara and Dr. Cecil Bardon – Universite du Quebec a Montreal
 - Trespass prevention research study in West Palm Beach, FL (daSilva and Carroll, 2011)

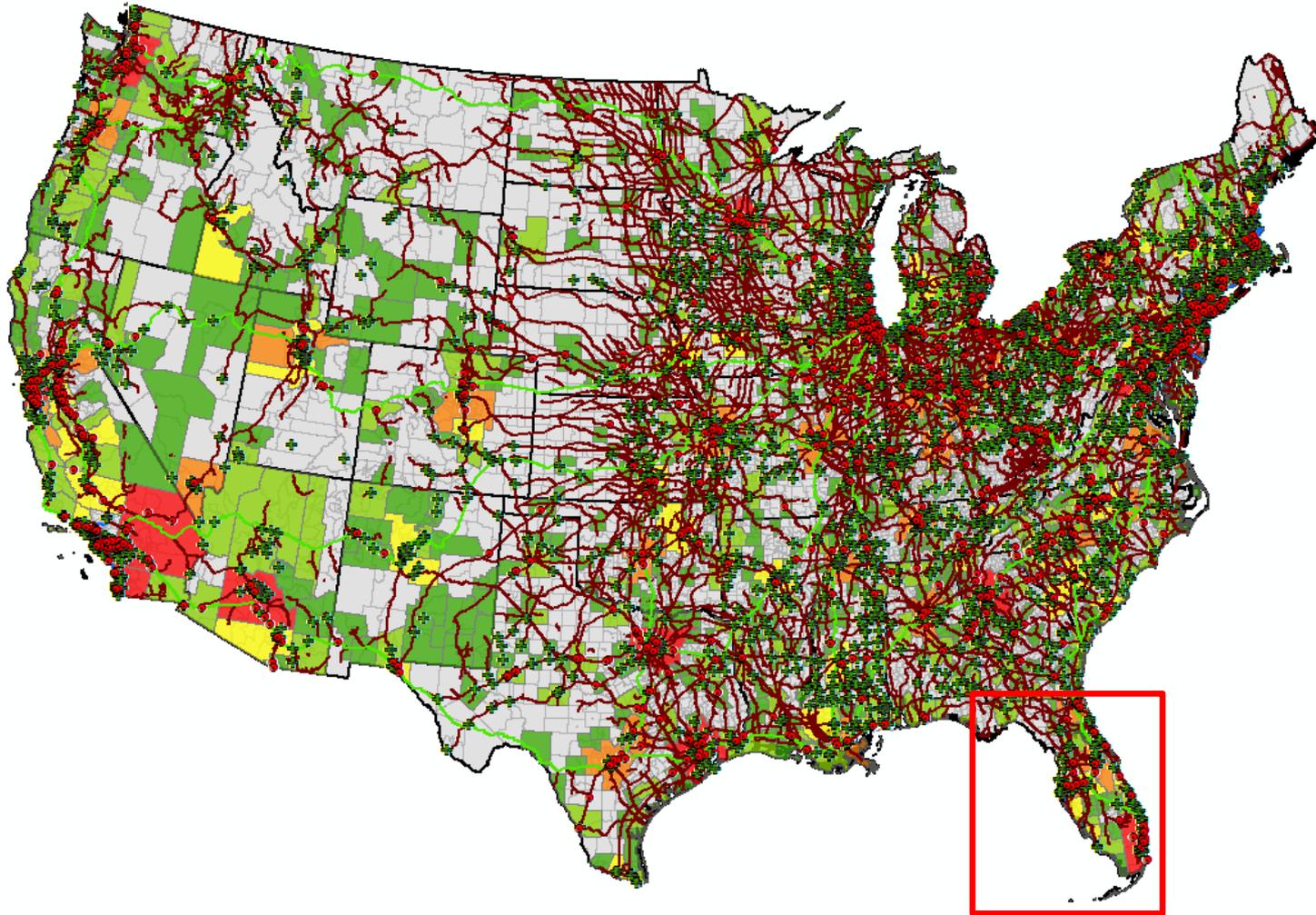


Current Effort: GIS Mapping Tool

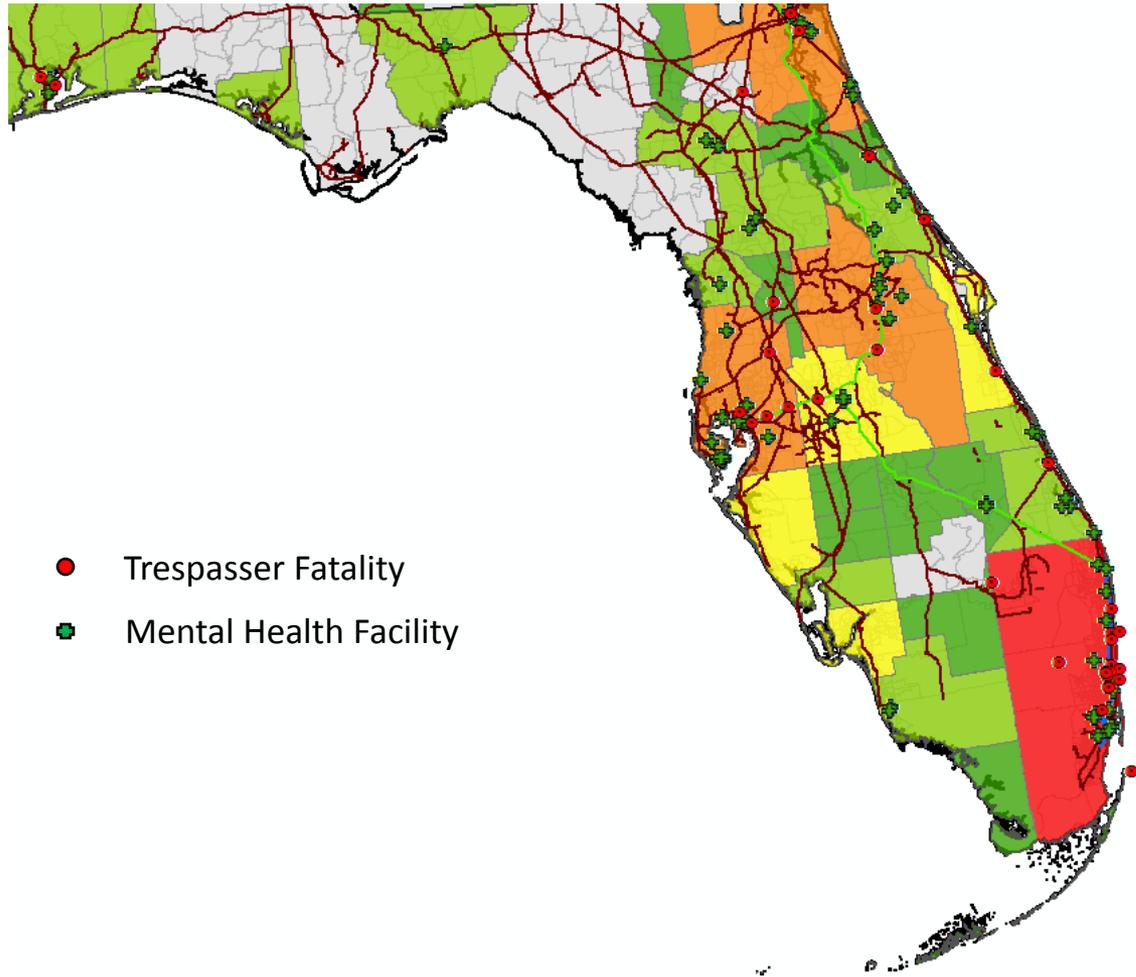


ArcGIS Software – ArcMap 10

GIS Mapping Tool



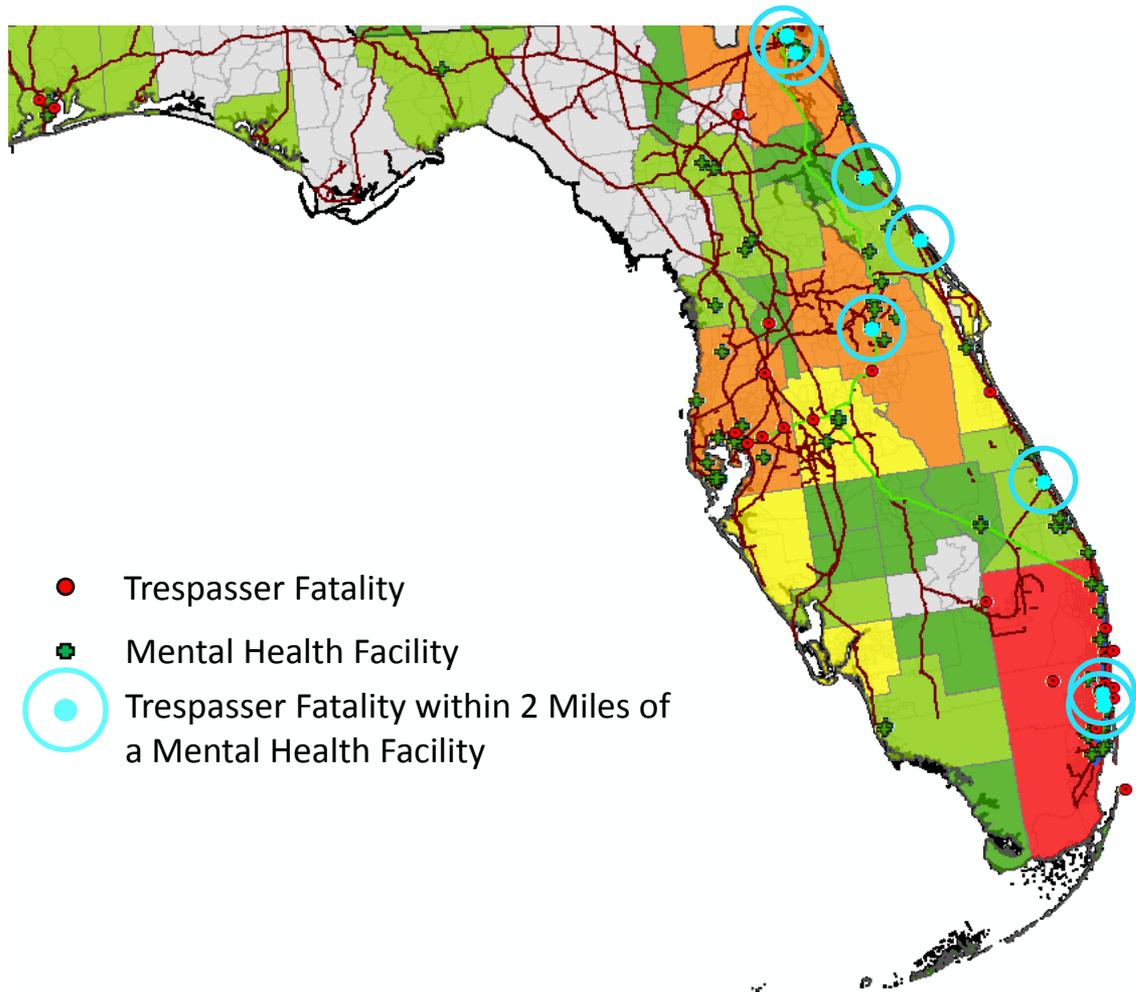
GIS Mapping Tool



Data Sample

- ❑ Incidents occurred in the State of Florida
- ❑ Trespasser incidents between 6/2011 and 2/2012

GIS Mapping Tool



- Trespasser Fatality
- Mental Health Facility
- Trespasser Fatality within 2 Miles of a Mental Health Facility

Data Sample

- Incident occurred in the State of Florida
- Trespasser incidents between 6/2011 and 2/2012
- Incident was less than 2 miles from a mental health facility

GIS Mapping Tool



GIS Mapping Tool

□ Data to be included:

- Demographics of the individual
- Intentional vs. Unintentional
- Characteristics of the site and surrounding area
- Hospitals, schools, parks & playgrounds
- Grade crossings
- Quiet zones
- Date of incident
- Time of day
- Location



GIS Mapping Tool

❑ Likely Benefits

- Visualization tool that is user friendly and easy to maintain
- Identification of hot spots and target demographics
- Insight into why an event occurred (e.g., shortcut to a nearby school)
- Identify community based interventions
- Explore effectiveness of past and current countermeasures

❑ Possible Roadblocks

- Data from the FRA before June 2011 is only specified at the county level
- Available data is not detailed or consistent due to current data reporting protocols

Other GIS Mapping Tool Uses

- ❑ Investigation of existing/past countermeasures to look for evidence of effectiveness
 - Signage
 - Media training
 - Means restriction (e.g., fencing)
 - Public outreach

- ❑ Investigate the difference between trespasser and suicide hot spots

- ❑ Once a hot spot is identified:
 - Why at that location?
 - Media driven
 - Geographical
 - Characteristics of the individual (age, gender, etc.)

 - Who needs this information?
 - Communities
 - Schools
 - Railroads

Next Steps

- ❑ Work with key stakeholders to identify uses (and potential misuses) of the data
- ❑ Identify additional data sources to compliment existing FRA/Carrier data
- ❑ Work with data users to design and implement a useful tool

Questions?