Washington College Mapping and Analysis Support for the Maryland State Police

Addressing the use of GIS mapping for Impaired Driving **Enforcement**

Presenter: Erica McMaster

Project Overview

- Grant awarded to Washington College from Maryland Highway Safety Office (MHSO) to provide Maryland State Police (MSP) data and analysis to support MSP's newly created DUI Detachment.
- The mission of the DUI Detachment is to reduce impaired driving in the Baltimore and D.C. metropolitan areas of Maryland.
- To support this effort, analysts at Washington College are using multiple data sources to develop risk projections for linear roads (linear risk terrain model) to help identify road segments that should be targeted for saturation patrols in order to reduce DUI incidents.

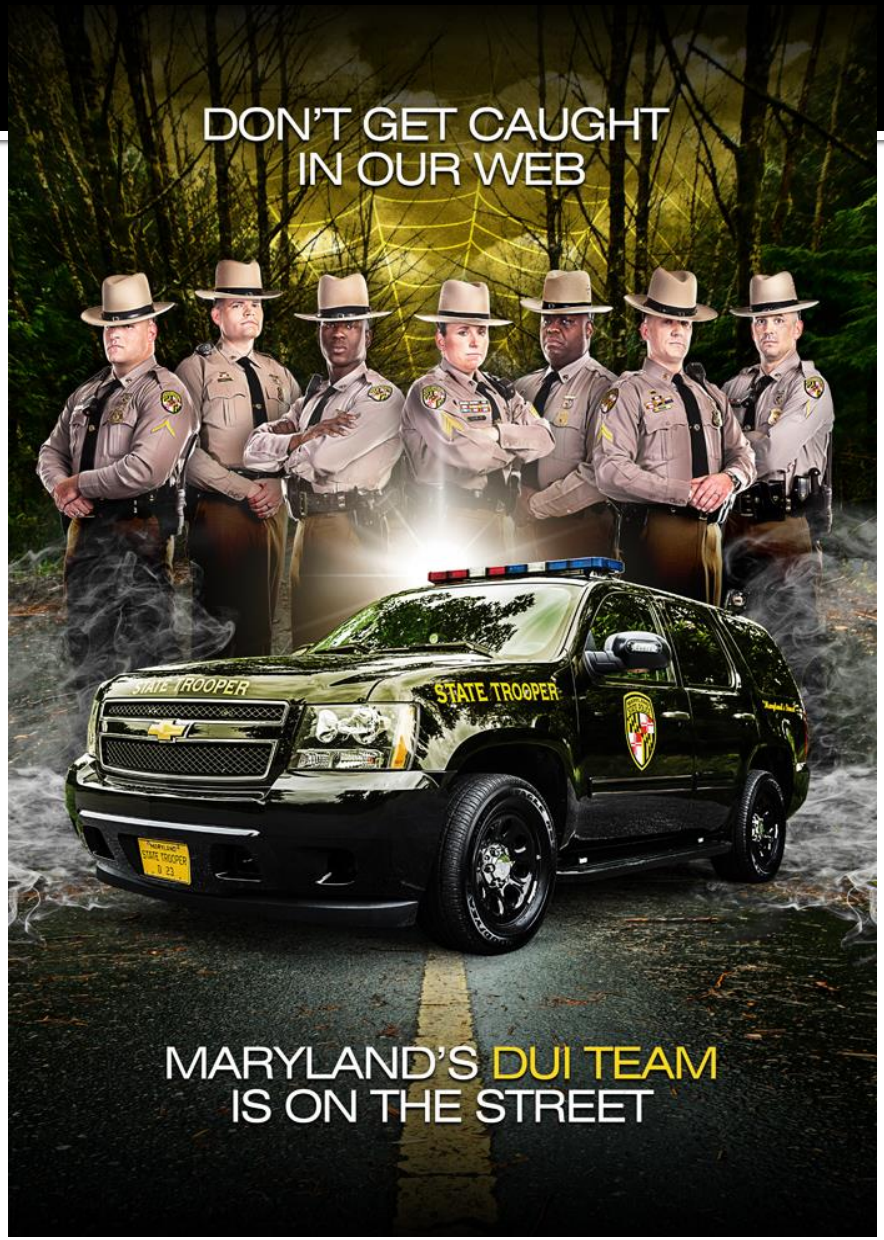
Grant Objectives

- Support the MSP DUI Detachment with analysis and mapping
- Prepare weekly geospatial analysis reports of MSP DUI Detachment activities
- Analyze offenders under supervision for impaired driving
- Analyze issued tickets related to impaired driving
- Analyze saturation patrols and DUI checkpoints data
- Analyze reported accidents related to impaired driving
- Web-enable geospatial data analysis results

Agencies Involved

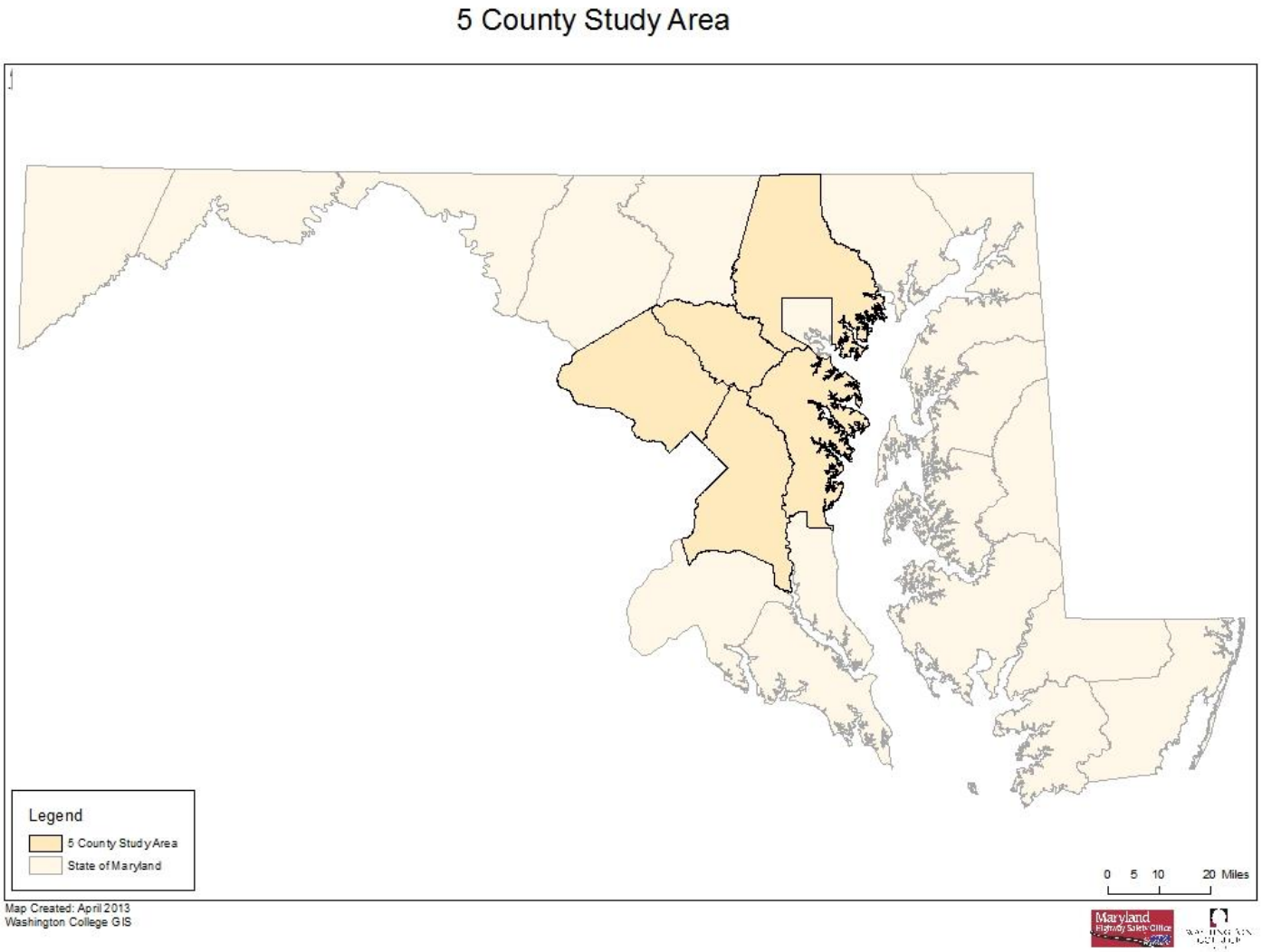
- Maryland Highway Safety Office
- Maryland State Police
- Prince George's County Police Department
- Baltimore County Police Department
- Howard County Police Department
- Anne Arundel County Police Department
- State Highway Administration
- Maryland Department of Public Safety and Correctional Services
- Local law enforcement
- County liquor boards

Support for the DUI Detachment



- Planning Support
- Ongoing Mapping, Analysis and Reporting Support

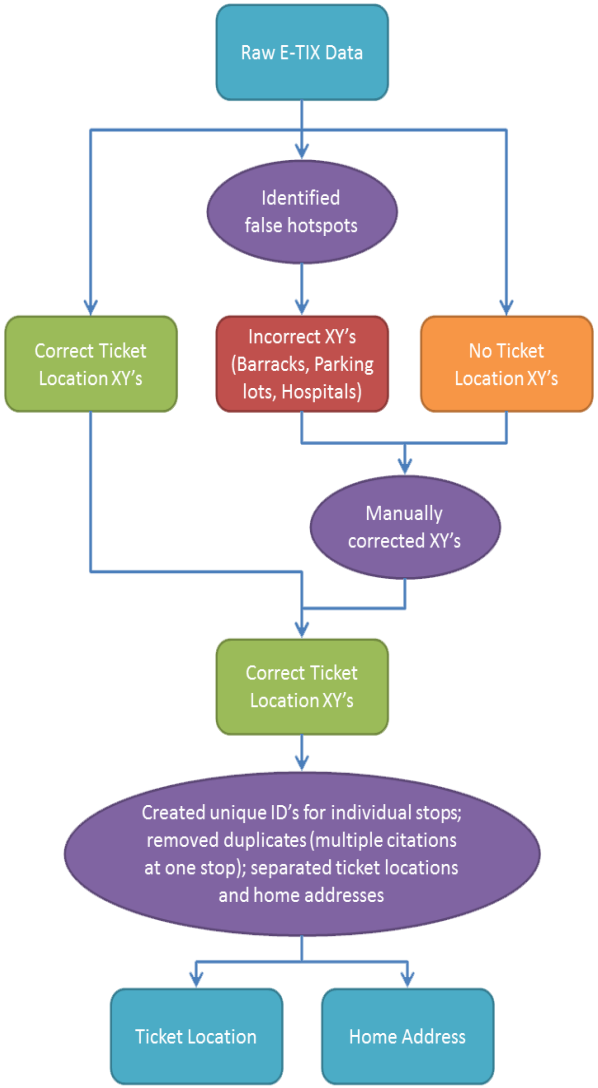
Advance Planning



Data Sets

- ETIX (citations)
- Crash Data
- Liquor License/Bar database
- Parole and Probation
- Alcohol Incident Reports

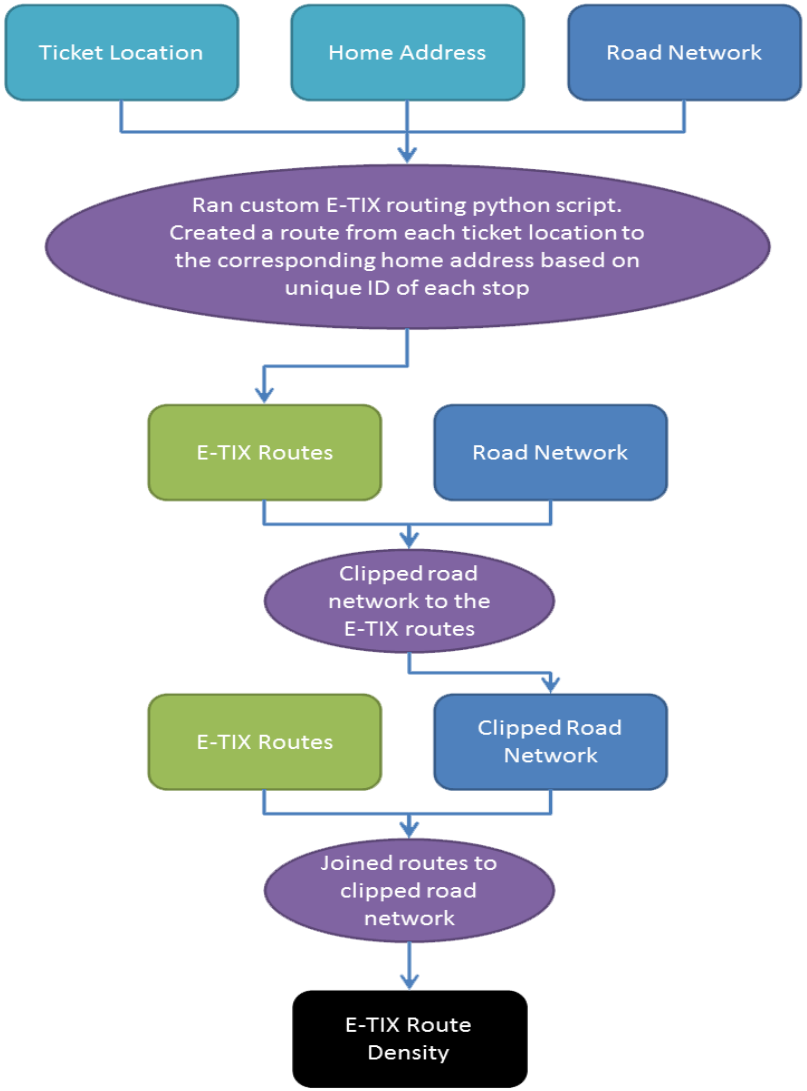
Citation (ETIX) Preprocessing



Linear Risk Terrain Analysis – Sample Data Process

- Inputs
  - Ticket location (x,y)
  - Home address (geocode)
  - Road network (Mid-atlantic Network Analyst route)
- Process
  - Separate the citations to one traffic incident
  - Run the route processing to create a linear route between the offender's ticket and home location
  - Display the results

Citation (ETIX) Routing

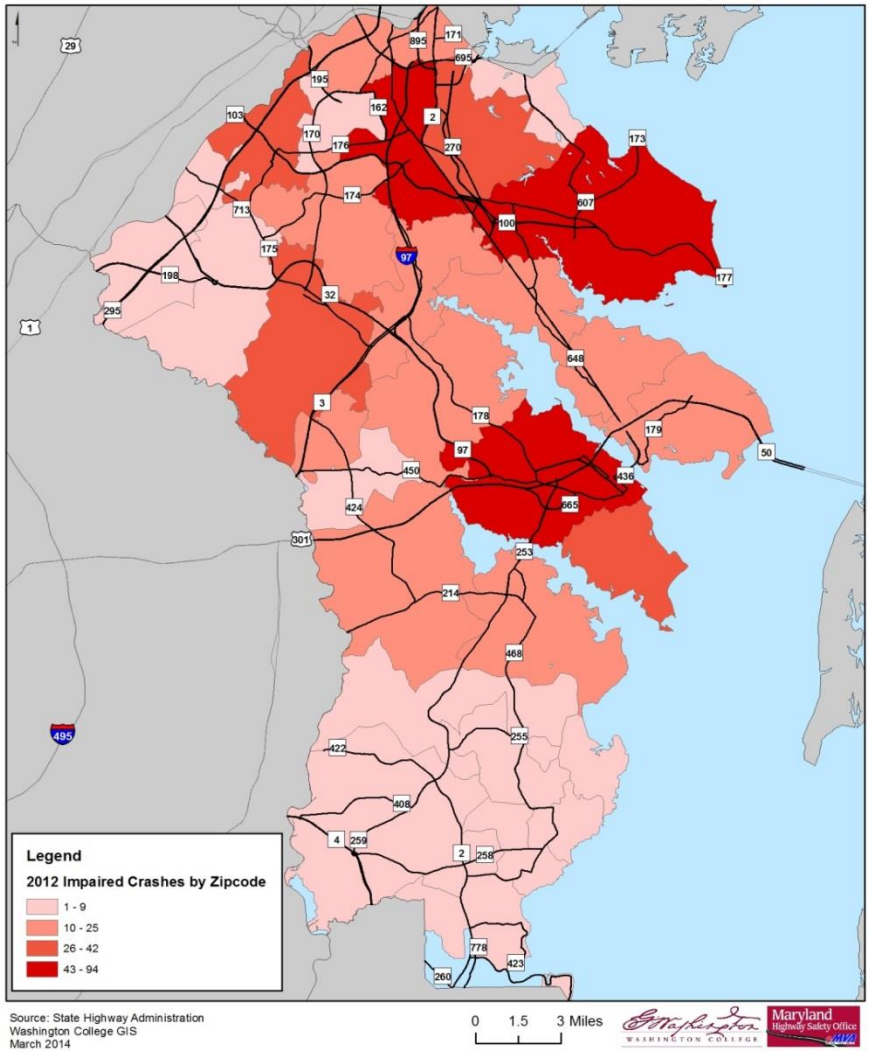


Data Accessibility

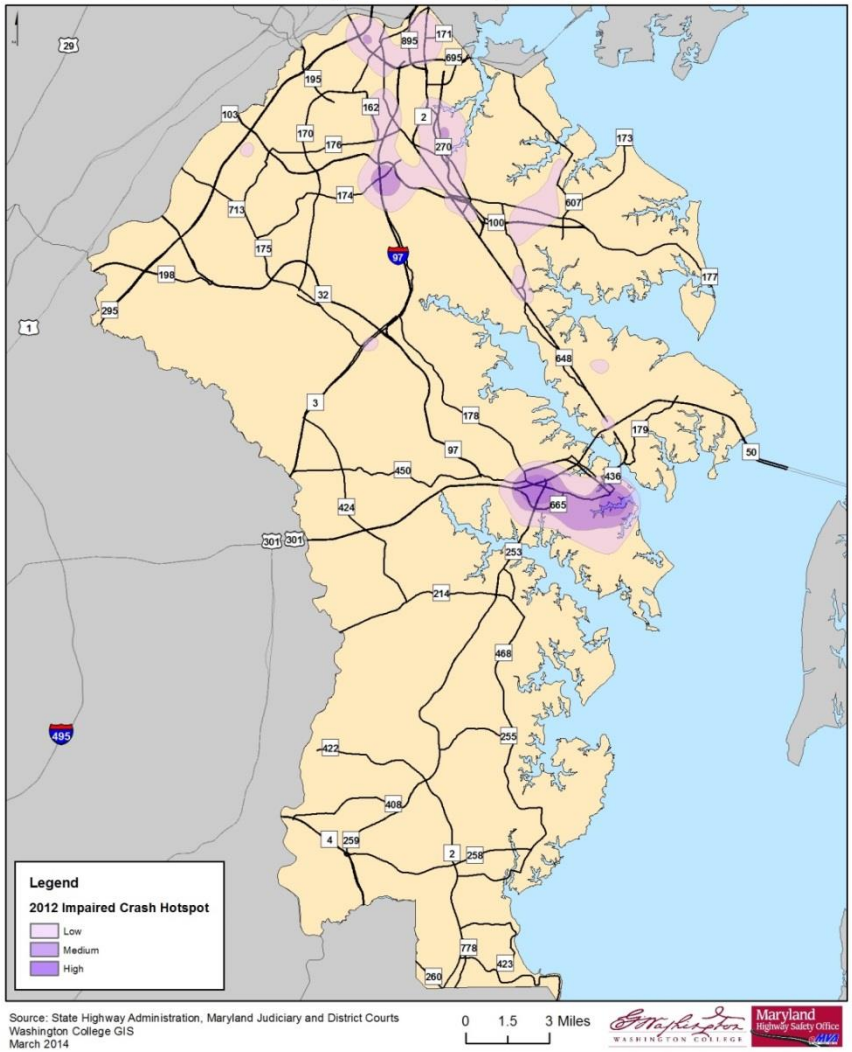
- Static PDF maps shared via FTP
  - Useful for static patrol maps requested by Law Enforcement Agencies
- Web sever application
  - Useful for dynamic information
  - Ability to turn layers off and on
  - Ability to print from the application to create a static map

Static Maps

Anne Arundel County Alcohol-Impaired Crashes by Zipcode

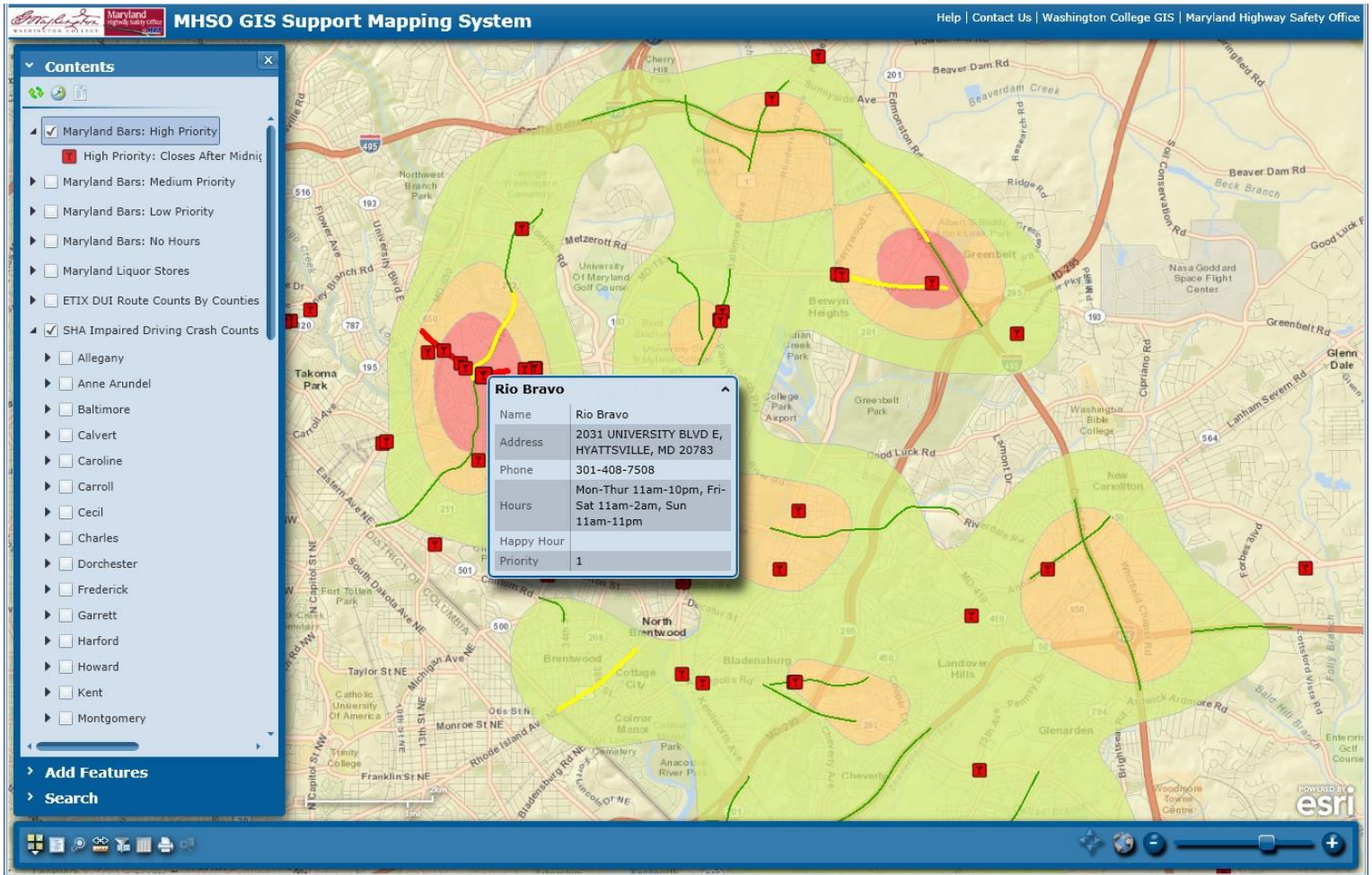


Anne Arundel County Alcohol-Impaired Crash Hotspots



Web Mapping Application

Alcohol-Impaired Crash Density of Northern Prince George's County with Alcohol-Impaired Crashes by 1 Mile Road Segments and High Priority Bars Overlaid



Conclusion

- Data collection & acquisition is key to spatial analysis
  - Location information must be collected
  - Formatting data is the most time consuming task
  - Develop a schedule to receive & download required sources
- Communication between the analysis team and law enforcement agencies drives success
- Data accessibility to all partners must be established early in the project

Contact Information

Erica McMaster, Senior GIS Project Manager
Washington College GIS Program
emcmaster2@washcoll.edu