
Blank Best Practices Recognition Form

Part 1 - Project Summary

Project Title: Virtual Integrated Safety User Assisted Location Tool (VISUAL-T)

Project Description (three sentences or less): This project utilized GeoMedia and the Arkansas State Highway and Transportation Department's (AHTD) linear referencing system to produce a point every 100 feet along itself with each point including the attribute of the exact log mile and lat/long. The points were then spatially intersected to the Department's road inventory data for additional attributes such as lane width, Average Daily Traffic, type road, etc. These points were then exported to a .kml format viewed in Google Earth so that crash locators (with the Department and law enforcement), could click on the points and provide a more exact log mile location of crash events as well as have additional information about that point on the system to enter in the crash report.

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Lead Agency for Project: Arkansas State Highway and Transportation Department (AHTD)

Participating/Cooperating Agencies (if any): N/A

Which National Agenda goals apply?

1. Once the methodology was created for VISUAL-T, administrators were excited about the tool. One of the most important pieces of crash data that is used by the AHTD to conduct safety evaluations is location. This is why, although Arkansas State Police (ASP) is responsible for all motor vehicle crashes on public roads reported by all law enforcement agencies in the State, the AHTD is responsible for the accuracy of crash locations.

2. The VISUAL-T application has been offered and deployed to many different law enforcement agencies throughout Arkansas. As of January 2013, at least 35 law enforcement agencies have access to VISUAL-T. Up to 55% of all crashes in Arkansas are being located by law enforcement agencies using the tool. The largest user is the Arkansas State Police (ASP), which accounts for about 40% of crashes on Arkansas' State Highway System.
3. Having accurate crash locations in a timely manner allows the AHTD to perform analysis with road inventory, pavement data, etc so that data driven decision can be made about Arkansas' roads.
4. Users of crash data across the AHTD are provided the crash location data so that they can use it in database or spreadsheet format or, if they choose they can map out the crash locations on the AHTD linear referencing for spatial analysis. In addition, all users that would like to have access to VISUAL-T, inside and outside of the AHTD can use it as long as Google Earth is available to them.

Reference the priority in your traffic records strategic plan to which this project applies:

Project Cost: planned \$: \$0 actual \$: \$0 – VISUAL-T was developed with hardware and software that was already in place at the AHTD

Extent of Project Implementation: As of January 2013, at least 35 law enforcement agencies in Arkansas have access to VISUAL-T. Approximately 30 to 55 percent of all crashes in Arkansas are being located by law enforcement agencies using VISUAL-T. The largest user is Arkansas State Police (ASP), which accounts for approximately 25 percent of all crashes statewide or about 40 percent of crashes on the State Highway System.

The AHTD has received a number of positive comments and feedback from law enforcement agencies regarding the VISUAL-T application. Many agencies like the ease of use of the tool, particularly the ability to have an aerial photo in the background and they like having the ability to search for landmarks, streets, and addresses.

Summary of Project Benefits: What was improved, who benefited, and how? There are many benefits to using the VISUAL-T compared to the previous method for locating crashes.

- Law enforcement officers can visually locate a crash in Google Earth and then click on the point nearest to the crash site to obtain the most accurate route, section and log mile information. This eliminates the occurrence of an officer using a route name other than the officially signed highway route number and the need for the officer to interpolate log miles.
- In addition to the point data, city limits or jurisdiction boundaries are provided to assist law enforcements and crash locators to accurately identify crash locations.
- All .kml files are updated every few months to account for route or roadway characteristic changes. They are downloadable from a secured AHTD ftp site. Notifications of updated files are emailed to all the law enforcement agencies that are using the tool. This process significantly reduces the time to get the updated roadway information to the officers.

- Since all the crash locators are using the same .kml files, inconsistencies among staff are reduced.
- Because the visual nature of the tool, there is very minimal training required.
- Because of ease of use, productivity by AHTD crash locators has increased by approximately 10 to 20 percent.

Part Two: Project Detail

Guidance to completing this section—you may delete this italicized guidance section from your final document before returning it.

Project Description:

The 2013 Strategic Highway Safety Plan, which was approved by the Arkansas Highway Commission earlier this year, is focused on striving Toward Zero Deaths. To do this, a data-driven approach is required to most effectively allocate resources to our most critical safety needs. Having accurate and timely crash data to identify safety improvements is paramount to this effort.

One of the most important pieces of crash data that is used by the AHTD to conduct safety evaluations is location. This is why, although Arkansas State Police (ASP) is responsible for all motor vehicle crashes on public roads reported by all law enforcement agencies in the State, the AHTD is responsible for the accuracy of crash locations.

Because approximately 80 percent of all roadway fatal or serious injury crashes occur on the State Highway System, which only accounts for approximately 16 percent of all miles of public roadways in Arkansas, the AHTD currently verifies the locations of crashes on our system only. This responsibility is delegated to the Traffic Safety Section within the Planning and Research Division. This means that in 2011, the latest year crash data that is available, the AHTD verified the locations of almost 37,000 reported crashes, or about 60 percent of all crashes reported statewide.

The Virtual Integrated Safety User Assisted Location Tool or VISUAL-T was developed to better assist law enforcement and AHTD crash locators to accurately identify locations where crash events occurred on all roads eligible for federal aid in Arkansas.

Describe the major process steps for your project, including any unique aspects that enhanced success:

The following is the methodology for the development of the VISUAL-T:

1. Using the GIS platform (GeoMedia), a point every 100 feet (30.48 m) along the LRS was generated with the primary information (County, Route, Section and Log Mile). Each county had a separate file generated.
2. A spatial intersection between these points and the Road Inventory data was performed through dynamic segmentation. In addition to the primary field data, road inventory data was attached to each point.

3. Using the export to .kml capability in GIS, a .kml for each county was generated. This file format would allow access to the data through the Google Earth application.
4. The AHTD crash locators and law enforcement could now click on one of the predefined points in Google Earth. The exact log mile value was returned to the user as well as a list of other attributes.
5. In addition to the point data, city limits locations were provided to the law enforcement officer responding to the crash and were able to determine whether the crash is inside or outside the city limits.
6. The Street View in Google Earth has enabled the users to use the physical features on the ground to ensure accuracy of the crash location.

The .kml files are updated periodically and are provided to the users immediately through emails or a file transfer site. Furthermore, the AHTD personnel can access the point information through ArcGIS Online and its mobile application.

Provide the evidence and reasoning used to determine the success of the project:

Law Enforcement

Training and outreach by the AHTD to state and local law enforcement agencies began in June 2011. The outreach strategy consisted of direct contact with law enforcement agencies to set up one-on-one meetings to demonstrate the benefits of using VISUAL-T and providing flyers and showcasing VISUAL-T at statewide law enforcement conferences. Technical assistance and training by AHTD were provided to any law enforcement agency upon request.

As of January 2013, at least 35 law enforcement agencies in Arkansas have access to VISUAL-T. Approximately 30 to 55 percent of all crashes in Arkansas are being located by law enforcement agencies using VISUAL-T. The largest user is Arkansas State Police (ASP), which accounts for approximately 25 percent of all crashes statewide or about 40 percent of crashes on the State Highway System.

The AHTD has received a number of positive comments and feedback from law enforcement agencies regarding the VISUAL-T application. Many agencies like the ease of use of the tool, particularly the ability to have an aerial photo in the background and they like having the ability to search for landmarks, streets, and addresses.

The drawback some agencies expressed about the reluctance to use VISUAL-T was lack of suitable computer equipment and internet connection. Some agencies also are hesitant to change.

In-House Staff

Since the AHTD began using VISUAL-T, productivity of the crash locator staff has increased by 10 to 20 percent. This is in spite of an additional 5 percent more crashes being located due to the expanded LRS.

Why should this project be recognized as a best practice in traffic records?

Not only has VISUAL-T improved the way Arkansas is locating crash events, it was also developed without additional cost for hardware, software or staff. We were able to use the data and knowledge already in place at the AHTD to accomplish the development of this tool. The

methodology also allowed the AHTD to share the tool to outside agencies with minimal training and no additional hardware or software needed. It took the place of hard copy maps and other methods used by law enforcement and offered a quick, user-friendly tool to locate crash events. It improved our crash data locations which improves traffic safety for Arkansas.