6.4.1   **GIS Based Non-Signalized Intersection Data Inventory Tool to Improve Traffic Safety in Alabama**

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Improving roadway safety is a top priority of State Departments of Transportation (DOTs) across the nation. DOTs employ the use of roadway data inventories to aid in decision making for better design, roadway improvements, and maintenance. The high number of intersection and intersection related crashes across the nation suggests the need to better understand intersection characteristics that may be contributing to crashes.

Many states have linear referencing systems associated with geographic information systems (GIS) for crash mapping, but correlating crash data to roadway characteristics is much more challenging due to a lack of roadway and intersection data. Currently, limited time and resources are the largest hurdles for implementation of comprehensive roadway and intersection data inventories, but online resources exist that DOTs can leverage to capture desired data.

While the Alabama DOT is manually visiting all state owned signalized intersections, due to the large number of non-signalized intersections along state routes, a remote method to collect intersection characteristics was developed. Google Maps and Google Street View were used as a form of remote sensing, which was tied to a node-link linear referencing method maintained by the Alabama DOT. A GIS based Intersection Data Inventory Web Portal was created to collect and record non-signalized intersection parameters. This pilot study investigated nine different non-signalized intersection types, including crossroad ramp terminals. For each intersection type, 30 replicas were randomly selected from across the state, totaling 270 intersections. For each intersection, a total of 25 intersection level parameters were collected, such as traffic control type, skew angle, and speed limits. In addition, each intersection leg had 19 leg level parameters collected, such as median type and width and pedestrian crossing control. Through the use of the GIS web portal, an average intersection can be cataloged in approximately 15 minutes. Future work will investigate expanding this approach to collect all non-signalized intersections along state routes.