

This topic is “practice ready.” Yes No

Railroad Crossing Inventory – A Modern Approach

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Abstract

The Federal Railroad Administration (FRA) maintains a database of all the railroad crossings in the country. This database includes information on physical and safety attributes for each crossing. Specific data are collected regularly by the railroads and by state transportation departments. The data collected in this effort, along with meeting the federal mandates, provides the Iowa Department of Transportation (DOT) with information that helps us plan and prioritize approximately \$5 million in funding for grade crossing surface and signal work and evaluate crossing safety throughout the state.

A state data record consists of nearly 200 pieces of data for a crossing of which a large portion of it must be collected by personnel in the field. With approximately 5,000 crossings in Iowa, this data collection is a huge effort. In previous years, the data was recorded manually on paper forms provided by the FRA and hand entered into the database. Photographs of the crossing were transferred manually to the database as well. This was slow and inefficient, requiring summer-long work over multiple years to complete the state. Also, there are safety concerns that led us to minimize the time spent near a railroad crossing whenever possible.

Personnel at the Iowa DOT have been working for the last three years to develop an automated system for recording this data and transferring it to the federal database. The system utilizes iPads in coordination with Geographic Information System (GIS) and locating services links to collect and automatically file data from each crossing. During field testing in 2016, the two-person team averaged less than 15 minutes per crossing including travel time between crossings. Data were checked at the main office and requests for reevaluation were sent directly to the team in the field. Additionally, the iPads were used to take pictures at each crossing that were directly attached to the record being sent to the office. The data collection effort continues for the summer of 2017 using iPads and different software. Partial results of that effort should be available by the July/August timeframe. The intended goal is to complete 50-66% of the state by the end of this summer.

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