

Grade Crossing Electronic Document Management System – The Web Based Cost Effective Comprehensive Inventory and Project Management System

Highway-rail grade crossings are critical junctures where highways and railways intersect. Between 2006 and 2011, there were 11,118 train-vehicle collisions at highway-rail grade crossings that resulted in 4,637 injuries and 1,403 fatalities to highway users, train passengers and railroad employees. Reducing the number of collisions is an important public policy goal.

One approach to achieving this goal is to maintain the best quality information concerning grade crossing engineering, operational and related safety characteristics available in an easy to use electronic information management system. Such a system can identify high risk grade crossings and assist in managing improvements at those locations to reduce risk and optimize the funding and project management of those improvements.

In order to facilitate the adoption of best practices in Grade Crossing Electronic Document Management Systems (GCEMDS), the American Association of State Highway and Transportation Officials (AASHTO) established a Technology Implementation Group (TIG) to document and promote state of the art grade crossing information systems among the States. AASHTO has identified GCEMDS as a high-payoff, ready-to-use, innovative technology that with its use can be highly beneficial to states and their industry partners.

A GCEMDS is a comprehensive highway-rail grade crossing information system for day-to-day highway-rail crossing inventory data collection and management as specified on the US DOT Inventory Form. The system provides electronic updates to the National Highway-Rail Grade Crossing and Structure Inventory File, facilitating railroad-related internal communications, electronic document storage, and expedited external (inter-agency) communications between the State DOT, Public Utility Commission, Railroad companies, and the Federal Railroad Administration (FRA).

A GCEMDS is typically developed with the highway-rail crossing inventory element as the core “module.” Additional data “modules” can be added to handle development of proposed improvement programs, collision tracking, crossing inspections, and GIS mapping. GCEMDS can be internet or intranet based and communicate electronically with all partners in the grade crossing arena (ex. Railroads, PUC, FRA, FHWA). A GCEMDS can incorporate photographs, scanned images of documents, and other “non-data” pieces of information. GCEMDS can be linked into other State DOT systems for the sharing of data.

GCEMDS, as have been developed recently by PennDOT and several other states, have proven to be of great benefit in facilitating internal railroad crossing communications and necessary external communications between the State DOT, the FRA, and railroad companies. Railroad companies are able to securely submit and view documents through the web that pertain to projects in which they are involved.

The TIG executive committee has formed a Lead State Team for GCEMDS. The Team Members - with support from AASHTO staff - include the FRA, Illinois, North Carolina, Pennsylvania, and Virginia. So far the TIG team has conducted a survey of states and railroads identifying the current state of the art, as well as ideal system components. Results of the survey and complete information on the GCEMDS TIG can be obtained at:

<http://tig.transportation.org/Pages/GradeCrossingElectronicDocumentManagementSystem.aspx>