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Transit Asset Inventory Development and Integration

Asset Management Methodology/Condition Assessment Methodology Research

Background

For some time, the Federal Transit Administration (FTA) and the U.S. transit industry have been working to improve the understanding and practice of transit asset management. Improving transit asset management is now a national policy. In its 2010 National State of Good Repair Assessment, FTA found an estimated backlog of \$50 to \$80 billion in deferred maintenance and replacement needs, of which the vast majority is rail-related. The enactment of Moving Ahead for Progress in the 21st Century (MAP-21) places the requirement on transit agencies to prepare a Transit Asset Management Plan. Transit agency customers, policy makers, and public agencies are holding agency management accountable for performance and increasingly expect more business-like management practices.

Objectives

The research goal/objectives were to provide FTA with a plan or roadmap for how transit agencies can leverage existing asset management and maintenance data, regardless of which asset management or maintenance data collection system the agency employs. To achieve this goal, the team developed a process for defining recommended industry-integrated standard asset inventory structures, data elements, and hierarchical relationships. This process is described in detail in this report.

Findings and Conclusions

The ability to track hundreds of thousands of assets through a synchronized business process and to provide accurate, readily-available engineering data will be a significant step toward achieving cost-effective management goals.

This report summarizes the results of a 13-month effort by CodeRed Business Solutions (CRBS) to consider how urban rail transit agencies can leverage data within their maintenance management systems to build asset inventories for higher-level analysis. This would provide a way to optimize transit agency investments in bus/rail capital assets and provide reporting to meet current and future FTA requirements. The research goal/requirement was to provide FTA with a plan or roadmap for transit agencies to leverage existing asset management and maintenance data, regardless of which asset management or maintenance data collection system the agency deploys.

To achieve this goal, the research team developed a process for defining recommended industry-integrated standard asset inventory structures, data elements, and hierarchical relationships. This report documents that process, using a representative transit agency, St. Louis Metro (Metro). In addition, this report includes a reference document that delineates and illustrates how larger capital items can be related through the proposed hierarchical relationships to data recorded in maintenance management systems.

Metro already had a well-developed maintenance system and a well-developed scheduled maintenance plan and process. All Metro maintenance divisions had clearly-defined inspection plans. Most divisions have well-documented inspection policies and procedures, and these policies and procedures are regularly updated based on manufacturers' recommendations and Metro's own experience. The maintenance management and materials management divisions at Metro coordinate scheduled maintenance activities with parts ordering activities by using M-5. This process ensures that every bus and rail car has all the necessary parts required to perform scheduled maintenance activities. The agency's ability to schedule and plan 95 percent of its maintenance activity enhances its ability to produce one of the lowest maintenance costs per mile for bus fleets in the country. The scheduled maintenance model used by Metro's bus division is critical to successful operations. As it is non-proprietary, this model is detailed extensively in this report.

Benefits

Through asset management, transit agencies can more effectively use available funds to improve the physical condition and performance of their system. This, in turn, has the potential to increase ridership. The ability to track hundreds of thousands of assets through a synchronized business process and to provide accurate, readily-available engineering data will be a significant step toward achieving cost-effective management goals.

Project Information

FTA Report No. 0023

This research project was conducted by CodeRed Business Solutions. For more information, contact FTA Project Manager Terrell Williams at (202) 366-0232 or terrell.williams@dot.gov. All research reports can be found at www.fta.dot.gov/research.