

Intelligent Transportation Systems (ITS) Systems Engineering for Arterial and Freeway Management

Date 11/3/14

Location: Various locations in the Twin Cities Metro Area and out-state districts

Partners: MnDOT, FHWA, Alliant Engineering, Athey Creek Consultants

Project completion: June 30, 2010

Description of project

In 1991, the Federal Highway Administration (FHWA) published their 23 CFR Rule 940 which “provides policies and procedures for implementing section 5206(e) of the Transportation Equity Act for the 21st Century (TEA–21), Public Law 105–178, 112 Stat. 457, pertaining to conformance with the National Intelligent Transportation Systems Architecture and Standards.” Rule 940 further states in section 940.5 that “ITS projects shall conform to the National ITS Architecture and standards in accordance with the requirements contained in this part. Conformance with the National ITS Architecture is interpreted to mean the use of the National ITS Architecture to develop a regional ITS architecture, and the subsequent adherence of all ITS projects to that regional ITS architecture. Development of the regional ITS architecture should be consistent with the transportation planning process for Statewide and Metropolitan Transportation Planning.” MnDOT envisions that all future ITS deployments will adhere to FHWA Rule 940, and existing systems will reach compliance upon their eventual upgrades. This can be accomplished by creating a Concept of Operations for both arterial and freeway traffic management systems along with the corresponding checklists that ensures proper planning methods to foster integration of deployment and operations for ITS projects.

Benefits

- Improved Federal compliance with CFR Rule 940
- Better management of ITS deployments in urban and rural areas
- Seamless coordination with Minnesota’s ITS architecture
- Need for individual Concepts of Operation per ITS project eliminated

Lessons Learned

The following lessons are expected to be learned during the course of the project:

- How the use of a standardized ITS Concept of Operations can lessen the time needed for design of an ITS based traffic management system
- How the use of a standardized checklist can speed up deployments of ITS based traffic management systems
- The best use of ITS for arterial traffic management
- A high level concept of the existing ITS freeway management and what needs to be done with further deployments



For More Information

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