Executive Summary

Overview and Timeframe

The Miami Valley Regional Planning Commission (MVRPC), in conjunction with the Clark County Springfield Transportation Coordinating Committee (CCSTCC) and the Ohio Department of Transportation (ODOT), initiated the development of the Miami Valley Regional Intelligent Transportation System (ITS) Architecture in September 2003. The Miami Valley Regional ITS Architecture effort, with its 20 year planning horizon, is built on a strong ITS interest in the region and some signature ITS projects which have brought the need for a Regional ITS Architecture to the forefront.

The recently completed Dayton/Springfield Freeway Management System (D/SFMS) preliminary design plan is the region's priority ITS project. This system will provide the capability of operating the freeways in the Miami Valley Region more effectively by leveraging detection and surveillance technologies to enhance safety, reduce congestion and facilitate multi-agency coordination.

Goal

The goal of this effort is to develop a Regional ITS Architecture for the Miami Valley Region in accordance with Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) policies. The FHWA Rule and FTA Policy require that a region that is currently implementing ITS projects must develop a Regional ITS Architecture to guide their deployment by April 8, 2005. Regions without ITS will have to meet this requirement within four years of their first ITS project advancing to final design. The National ITS Architecture is used as a resource in developing the regional architecture. A Regional ITS Architecture should be on a scale commensurate with ITS investment in the region.

The Miami Valley Regional ITS Architecture contains the following elements:

- Description of the region,
- Participating agencies and stakeholders
- Operational concept
- Identification of agreements
- High level system functional requirements
- Interface requirements and information exchanges
- Identification of ITS standards
- Sequence of projects

The Miami Valley Regional ITS Architecture is intended to provide the basis for the ongoing planning of ITS integration in the region. The approach toward developing the Miami Valley Regional ITS Architecture was designed specifically to involve many stakeholders from the region while leveraging the existing ITS Management Committee as a baseline. The approach MVRPC used reaches out to not only traditional transportation agencies and organizations but to safety, emergency management, homeland security, and the media as well. The Miami Valley Regional ITS Architecture includes ITS projects developed and planned by various traffic, transit, and safety agencies within Montgomery, Greene, Miami and Clark counties.

A series of functional flow diagrams were developed by the study team from the stakeholder input gathered at each meeting. The diagrams are based on the National ITS Architecture (similar to the concept utilized in the D/SFMS Project ITS Architecture) and are tailored to illustrate exchange of data and functionality within the region. In addition, an inventory of all ITS-related projects in the region resulted from the committee meetings, indicating the responsible agency and whether the projects are to be completed in the short term (within 3 years) or long term (over 3 years).

Concept of Operations

Based on the input from the Regional ITS Architecture stakeholders, a concept of operations was developed that would address the region's requirements for ITS integration and project development. The concept outlines the critical operational or functional needs and provides, in an easy-to-read narrative format with illustrations, how ITS operations in the region will function with respect to data collection, processing, and dissemination.

The Miami Valley Regional ITS Architecture will provide the following user services or functional capabilities:

- Traffic Management
- Emergency Management
- Transit Management
- Traveler Information
- Multimodal Integration
- Archived Data Management
- Maintenance and Construction Management

As projects identified within the Miami Valley Regional ITS Architecture proceed toward implementation, various types of agreements will be required among stakeholder agencies. These agreements are necessary to establish

the roles and responsibilities of each agency for a particular project. Agreements will solidify the substantial efforts that the Miami Valley regional stakeholders have invested towards developing ITS project plans.

ITS Standards

ITS Standards are documented to insure the applied technologies of ITS projects in the region are integrated in the most efficient means possible. ITS Standards are guidelines or rules specifying the interconnections among elements and the characteristics of technologies and products to be used in ITS installations. As standards are continuously being added to the National ITS Architecture, regular updates to the Miami Valley Regional ITS Architecture applicable standards will be required.

Architecture Maintenance

The Miami Valley Regional ITS Architecture and the associated Turbo Architecture files will be maintained on a regular basis, in conjunction with the update to the Regional Transportation Plan. Establishing a maintenance plan allows for critical updates to be made as planned projects progress and new projects and/or stakeholders are added in the process.

Project Sequencing

ITS projects by their very nature depend on and provide information and infrastructure to other ITS projects in any region. Therefore, it is critical that the sequencing of project development is addressed as part of the Miami Valley Regional ITS Architecture effort. Continued coordination among the Miami Valley agencies will ensure a successful regional ITS program.

Turbo Architecture

Finally, based on all the information documented through this effort, MVRPC developed the Regional ITS Architecture database, utilizing the Turbo Architecture Version 3.0 software. This software, developed by FHWA to assist regions in developing Regional ITS Architectures, will allow MVRPC to easily maintain the project in the future and update progress as projects are built.