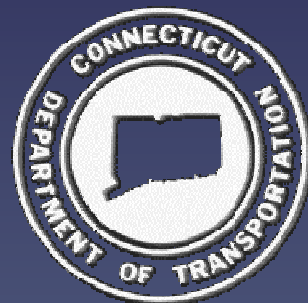


Hartford Area ITS Architecture

Final Presentation
July 15, 2004



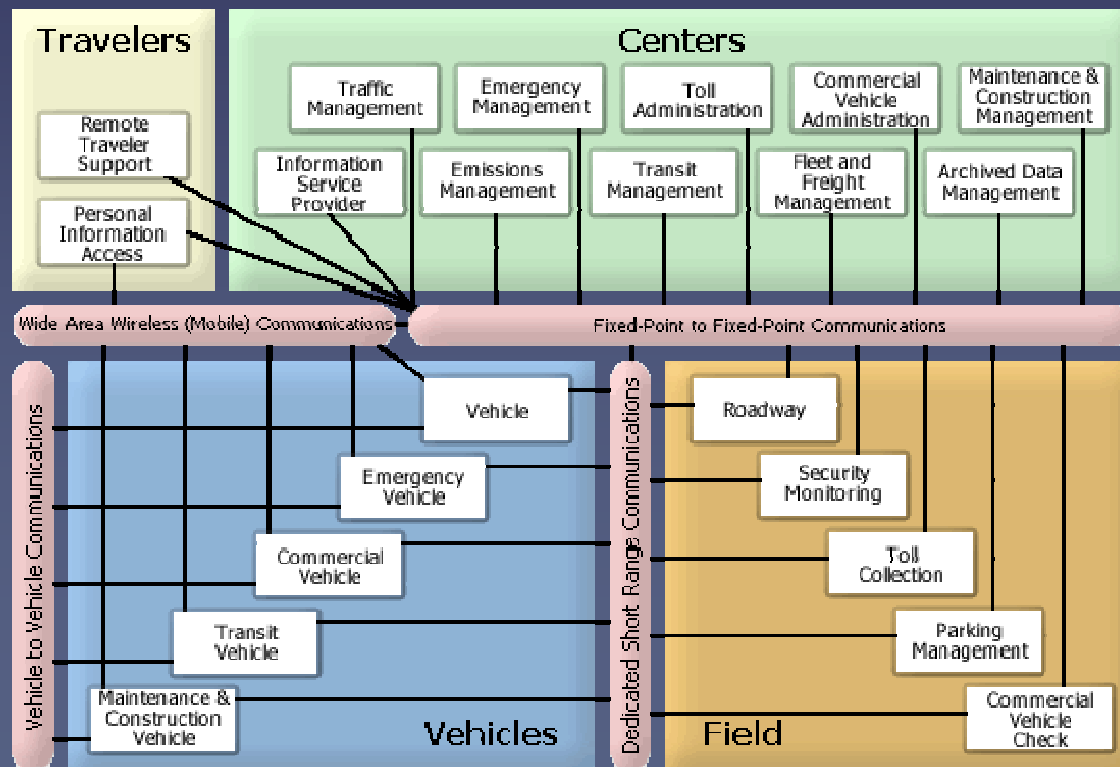
Meeting Agenda

- Review of Architecture Development Process
- Overview of Architecture Website
- Overview of Draft Report
- Application of the Architecture
 - Examples
 - Maintenance

Regional ITS Architecture Background

ITS Architecture Definition

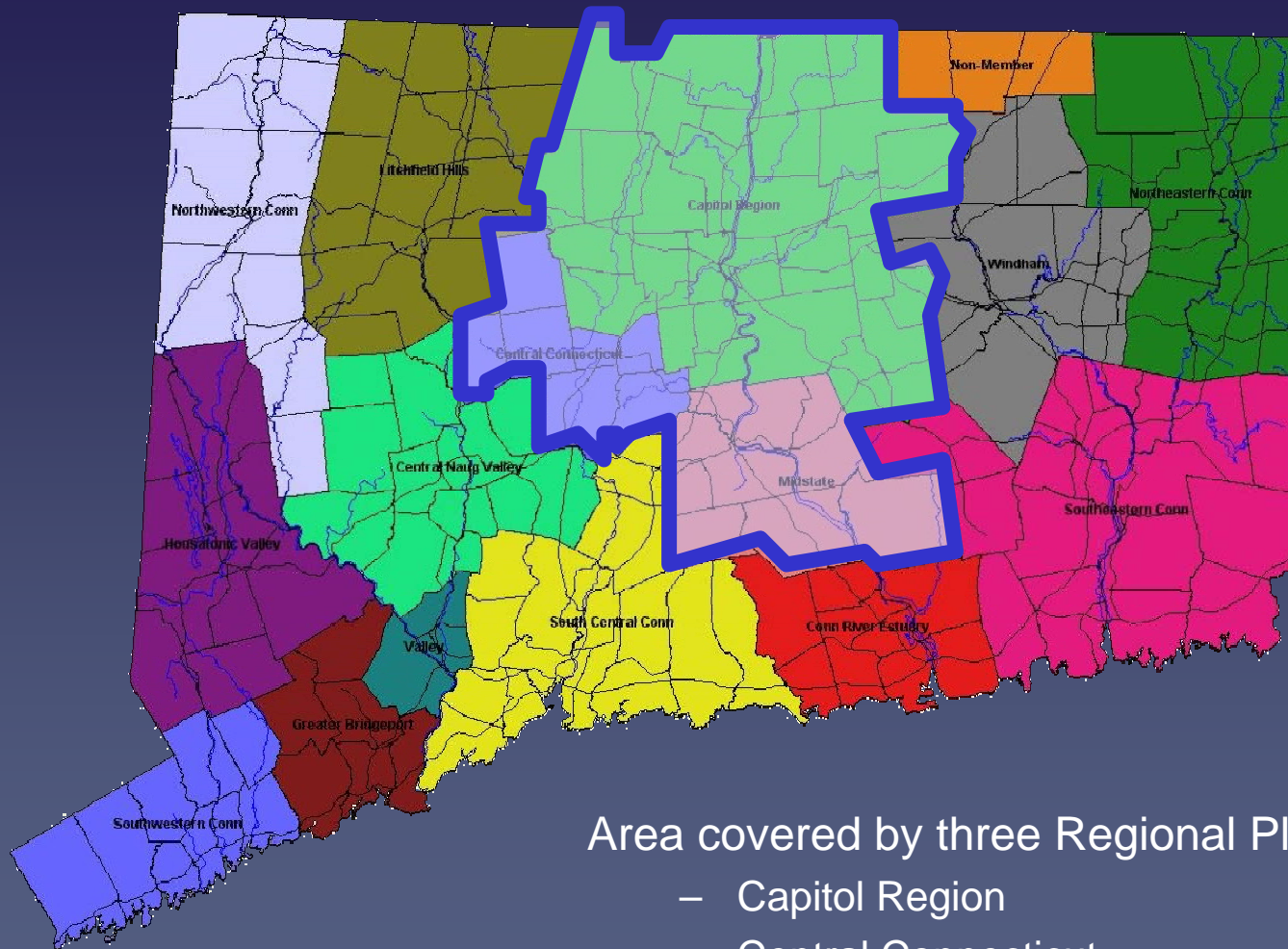
- National ITS Architecture
 - A general framework for planning, defining, and integrating ITS
 - Defines the component systems and their interconnections and information exchanges
- Regional ITS Architecture
 - A specific regional framework for ensuring institutional agreement and technical integration for the implementation of ITS projects in a particular region



Federal Requirements

- All ITS projects funded through the Highway Trust Fund (in whole or in part) must conform with the National ITS Architecture and applicable standards.
- FHWA Rule and FTA Policy:
 - Conformance with the National ITS Architecture defined as the use of the National ITS Architecture to develop a Regional ITS Architecture.
 - Regions with ITS projects (as of 2001) must develop a Regional ITS Architecture by April 8, 2005.

Study Area



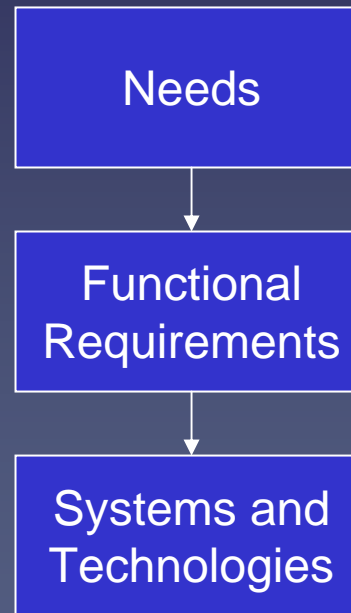
Area covered by three Regional Planning Agencies:

- Capitol Region
- Central Connecticut
- Midstate

- Follow-up project for Statewide ITS Architecture

Architecture Development Approach

- Previous studies to be used as starting point
 - Updating based on current deployment and needs assessment
- Top-down approach to development:
- Stakeholder participation essential for:
 - Identification of needs
 - Identification of existing systems to integrate
 - Interagency coordination



Stakeholder Involvement

- Initial Input Meetings
 - Provide background on project
 - Confirm and supplement ITS inventory
 - Obtain information on needs, current activities, and planned projects
- Architecture Development Workshop
 - Obtain input on architecture elements and interfaces
- Review of Draft Architecture Website
- Review Meeting for Draft Architecture

Stakeholder Involvement (cont'd.)

- Initial Input Meetings held in March 2004:
 - Greater Hartford Incident Management Steering Committee
 - Door-to-Door Transit Operators
 - Municipalities
 - Fixed-Route Transit Operators
 - CROG Emergency Planning Technical Committee

Overview of Draft Report

Report Sections

- Introduction
- Stakeholder Involvement
- Needs Assessment
- ITS Inventory
- ITS Architecture
- Operational Concept
- Functional Requirements
- Implementation Plan
- Operational Agreements
- ITS Standards
- Summary

Report Sections

- **Introduction**
- Stakeholder Involvement
- Needs Assessment
- ITS Inventory
- ITS Architecture
- Operational Concept
- Functional Requirements
- Implementation Plan
- Operational Agreements
- ITS Standards
- Summary
- Background on ITS Architecture
(FHWA Rule and FTA Policy attached as appendices)
- Definition of study region

Report Sections

- Introduction
 - **Stakeholder Involvement**
 - Needs Assessment
 - ITS Inventory
 - ITS Architecture
 - Operational Concept
 - Functional Requirements
 - Implementation Plan
 - Operational Agreements
 - ITS Standards
 - Summary
- Identification of stakeholders
 - Summary of their involvement in the architecture development process

Report Sections

- Introduction
- Stakeholder Involvement
- **Needs Assessment**
- ITS Inventory
- ITS Architecture
- Operational Concept
- Functional Requirements
- Implementation Plan
- Operational Agreements
- ITS Standards
- Summary
- Existing documentation
 - 1997 ITS Strategic Plan
 - 1999 ITS Implementation Plan
 - Planning documents
- Input meetings
(minutes attached as appendix)
- Identification of regional needs
 - Incident response coordination
 - Transit vehicle tracking
 - Roadway information sharing
 - Transit security
 - Centralized transit information
 - Transit coordination

Report Sections

- Introduction
 - Stakeholder Involvement
 - Needs Assessment
 - **ITS Inventory**
 - ITS Architecture
 - Operational Concept
 - Functional Requirements
 - Implementation Plan
 - Operational Agreements
 - ITS Standards
 - Summary
- ITS elements in the region
 - By stakeholder
 - By function (subsystem from National ITS Architecture)

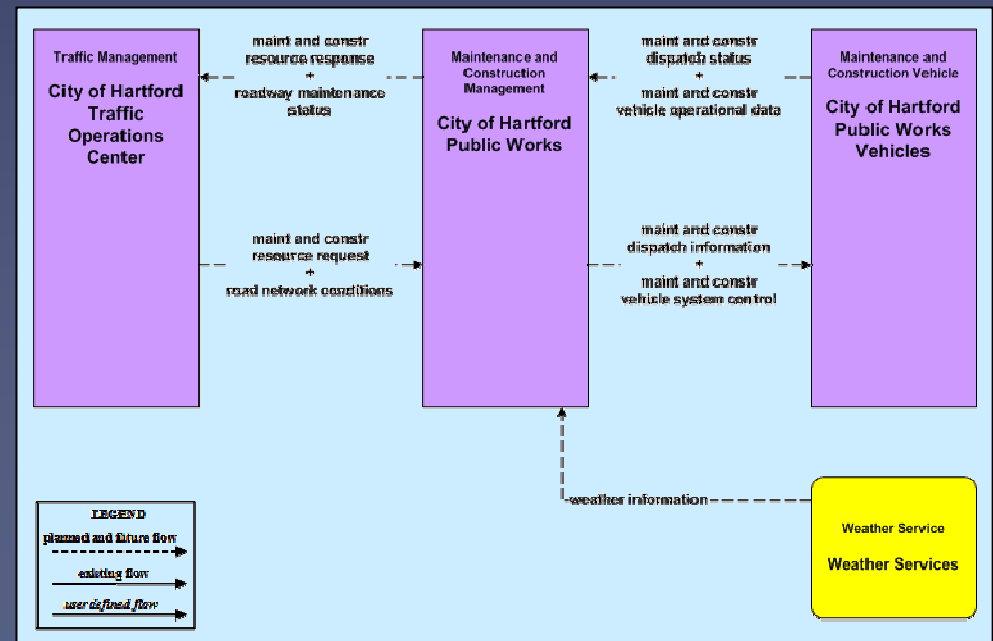
Report Sections

- Introduction
 - Stakeholder Involvement
 - Needs Assessment
 - ITS Inventory
 - **ITS Architecture**
 - Operational Concept
 - Functional Requirements
 - Implementation Plan
 - Operational Agreements
 - ITS Standards
 - Summary
- Description of the architecture
 - Link to the architecture website
 - Navigation of the website

Report Sections

- Introduction
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- ITS Architecture
- **Operational Concept**
- Functional Requirements
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- Summary

- Agency roles defined by Market Packages in the architecture
- Market package diagrams indicate interfacing elements and information to be exchanged to support a specific function

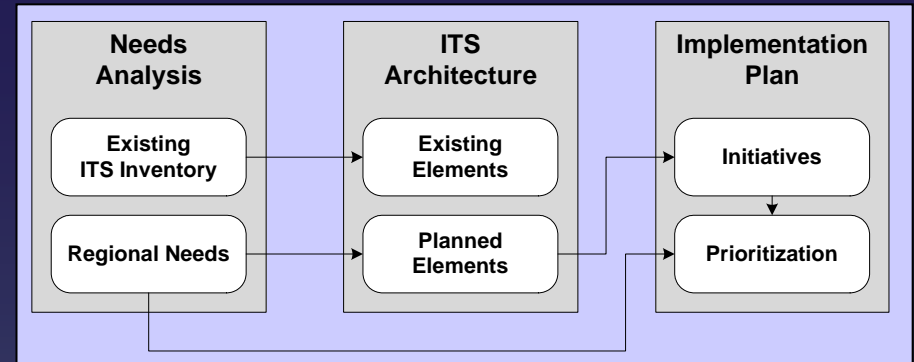


Report Sections

- Introduction
 - Stakeholder Involvement
 - Needs Assessment
 - ITS Inventory
 - ITS Architecture
 - Operational Concept
 - **Functional Requirements**
 - Implementation Plan
 - Operational Agreements
 - ITS Standards
 - Summary
- System requirements defined by Equipment Packages:
 - Each element is associated with National ITS Architecture equipment packages.
 - Each equipment package has associated functional requirements.

Report Sections

- Introduction
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- Operational Concept
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- **Implementation Plan**
- Operational Agreements
- ITS Standards
- Summary



- Identification of ITS Initiatives to implement planned elements and interfaces
 - Traffic Management
 - Parking Management
 - Maintenance & Construction Mgt.
 - Public Transportation
 - Traveler Information
 - Commercial Vehicle Operations
 - Emergency Management
 - Archived Data Management
- Identification of high-priority initiatives

Report Sections

- Introduction
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 - ITS Inventory
 - ITS Architecture
 - Operational Concept
 - Functional Requirements
 - Implementation Plan
 - **Operational Agreements**
 - ITS Standards
 - Summary
- Considerations for interagency agreements
 - Recommendations for agreements
 - Formalization of existing working arrangements
 - Agreements for new interfaces

Report Sections

- Introduction
 - Stakeholder Involvement
 - Needs Assessment
 - ITS Inventory
 - ITS Architecture
 - Operational Concept
 - Functional Requirements
 - Implementation Plan
 - Operational Agreements
 - **ITS Standards**
 - Summary
- Identification of ITS standards that may be relevant
 - Relevant standards for each interface are presented in the architecture website

Report Sections

- Introduction
- Stakeholder Involvement
- Needs Assessment
- ITS Inventory
- ITS Architecture
- Operational Concept
- Functional Requirements
- Implementation Plan
- Operational Agreements
- ITS Standards
- **Summary**
- Architecture development approach
- Themes that emerged during the process
- Recommendations provided by the process
- Maintenance of the architecture

Overview of Website

Regional ITS Architecture Website

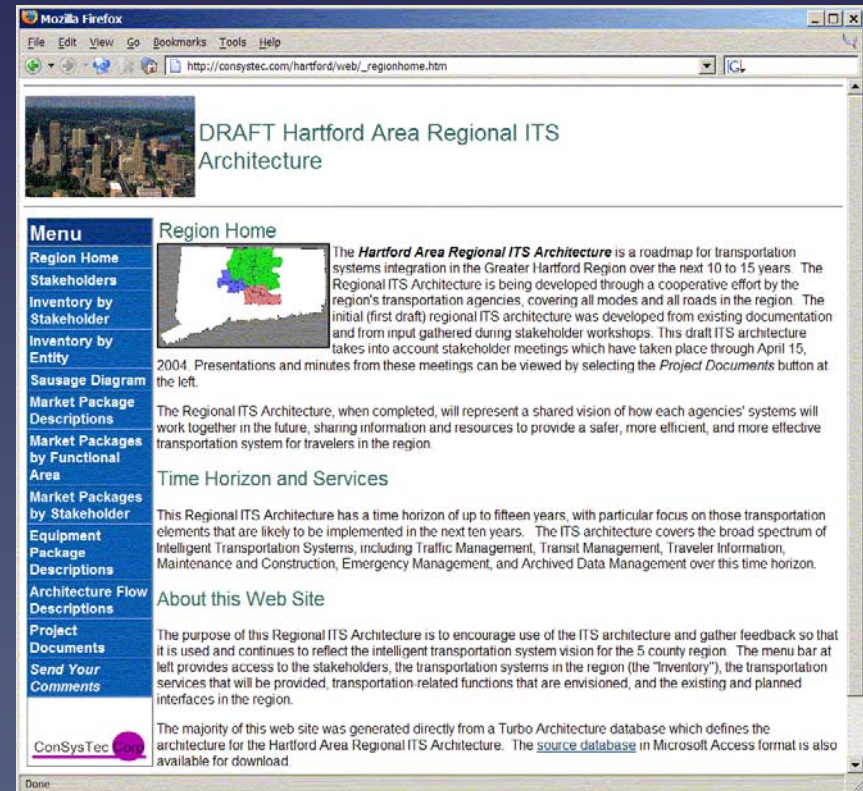
- Website location:

http://consystec.com/hartford/web/_regionhome.htm

- Provides the following information:
 - Stakeholders
 - ITS Inventory
 - Interfaces
 - Market Packages
 - Relevant information from National ITS Architecture
(Market Package, Equipment Package, and Architecture Flow descriptions)
 - Project Presentations

Advantages of Interactive Presentation

- Allows different views of the architecture:
 - By Stakeholder
 - By Function
- Facilitates access to detailed information
 - Element descriptions
 - Interface details
 - National ITS Architecture information
- Provides referenced link to send comments to project team



Website Menu

Menu
Region Home
Stakeholders
Inventory by Stakeholder
Inventory by Entity
Sausage Diagram
Market Package Descriptions
Market Packages by Functional Area
Market Packages by Stakeholder
Equipment Package Descriptions
Architecture Flow Descriptions
Project Documents
<i>Send Your Comments</i>


- **Stakeholders:** List of regional stakeholders and their descriptions
- **Inventory:** Listing of ITS elements in the region
 - By Stakeholder: shows elements held by each stakeholder
 - By Entity: groups elements with related functions
- **Market Packages:** Groups of elements/interfaces that address a specific function
 - By Functional Area: grouped by National ITS Architecture service area
 - By Stakeholder: shows market packages relevant to each stakeholder

Website Demonstration

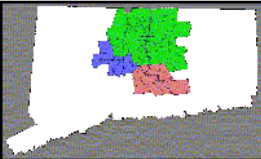
Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://consystec.com/hartford/web/_regionhome.htm



DRAFT Hartford Area Regional ITS Architecture

Menu	Region Home
Region Home	
Stakeholders	The Hartford Area Regional ITS Architecture is a roadmap for transportation systems integration in the Greater Hartford Region over the next 10 to 15 years. The Regional ITS Architecture is being developed through a cooperative effort by the region's transportation agencies, covering all modes and all roads in the region. The initial (first draft) regional ITS architecture was developed from existing documentation and from input gathered during stakeholder workshops. This draft ITS architecture takes into account stakeholder meetings which have taken place through April 15, 2004. Presentations and minutes from these meetings can be viewed by selecting the <i>Project Documents</i> button at the left.
Inventory by Stakeholder	The Regional ITS Architecture, when completed, will represent a shared vision of how each agencies' systems will work together in the future, sharing information and resources to provide a safer, more efficient, and more effective transportation system for travelers in the region.
Inventory by Entity	Time Horizon and Services
Sausage Diagram	This Regional ITS Architecture has a time horizon of up to fifteen years, with particular focus on those transportation elements that are likely to be implemented in the next ten years. The ITS architecture covers the broad spectrum of Intelligent Transportation Systems, including Traffic Management, Transit Management, Traveler Information, Maintenance and Construction, Emergency Management, and Archived Data Management over this time horizon.
Market Package Descriptions	About this Web Site
Market Packages by Functional Area	The purpose of this Regional ITS Architecture is to encourage use of the ITS architecture and gather feedback so that it is used and continues to reflect the intelligent transportation system vision for the 5 county region. The menu bar at left provides access to the stakeholders, the transportation systems in the region (the "Inventory"), the transportation services that will be provided, transportation-related functions that are envisioned, and the existing and planned interfaces in the region.
Market Packages by Stakeholder	The majority of this web site was generated directly from a Turbo Architecture database which defines the architecture for the Hartford Area Regional ITS Architecture. The source database in Microsoft Access format is also available for download.
Equipment Package Descriptions	
Architecture Flow Descriptions	
Project Documents	
Send Your Comments	

ConSysTec Corp

Done

Application of the Architecture

Examples:

- Municipality acquiring Dynamic Message Sign
 - Determine interfaces and information flows that it should support
 - Identify relevant standards
- CT Transit installing Electronic Kiosks
 - Determine whether the project conforms to the Regional ITS Architecture
- Municipality planning for Emergency Operations Center
 - What agencies should the EOC interface with?
 - How should evacuation planning be organized?

Next Steps

- Finalize Regional ITS Architecture
 - Final website review
 - Comments on draft report
- Ongoing maintenance of the Architecture by ConnDOT and the RPAs
- Planning for Statewide ITS Architecture