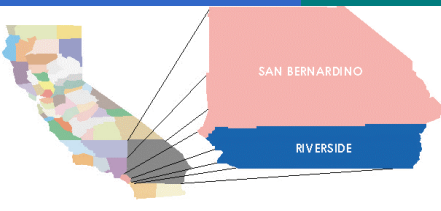


## *Workshop #5*

# Inland Empire Regional ITS Architecture Project

June 10, 2003



# Agenda

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- Introductions
- Recap of Project Background
- Project Sequencing
- Agency Agreements
- Architecture Maintenance
- Standards
- Final Report Overview
- Next Steps



# Project Background

What is ITS?

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# Intelligent Transportation Systems

**Uses electronics,  
communications, and computers  
in an integrated manner to  
improve the efficiency and safety  
of roadways.**



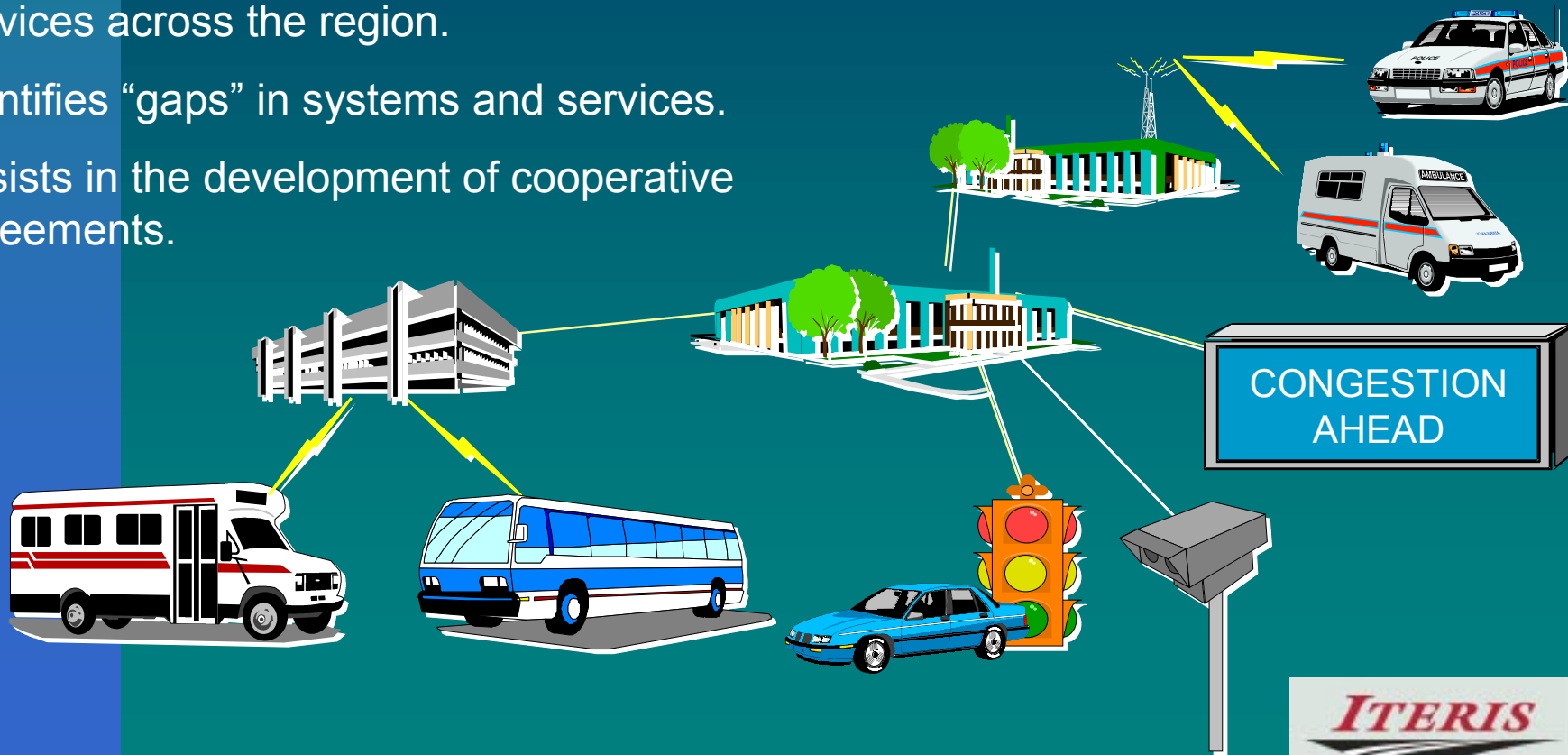
# What is a Regional ITS Architecture?

Provides a structured framework for deployment and integration.

Helps to introduce and interconnect ITS services across the region.

Identifies “gaps” in systems and services.

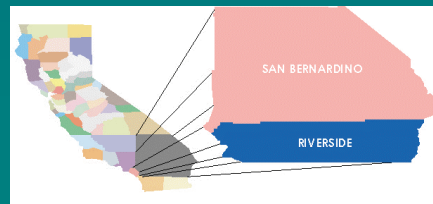
Assists in the development of cooperative agreements.



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# What does a Regional ITS Architecture include?

- Description of the Region
- List of Stakeholders
- Current and Future ITS Elements
- Information Exchange between the ITS Elements
- Operational Concept for the ITS Services
- Functions of each of the ITS Elements
- Applicable ITS Standards
- Project Sequencing
- List of Agreements



# Why this project, why now?

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- FHWA/FTA published a Rule/Policy to foster regional integration by requiring that all ITS projects funded from the Highway Trust Fund be in conformance with the National ITS Architecture and appropriate standards.
- “Conformance” is defined as using the National ITS Architecture to develop a regional ITS architecture tailored to address the local situation and ITS investment needs, and the subsequent adherence of ITS projects to the regional ITS architecture.
- The Inland Empire ITS Strategic Plan preceded the Rule/Policy and is, therefore, in need of modifications in order for the region to continue on a path to conformance.
- Critical date for completion is April 2005.

# Project Objective

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***Develop an ITS architecture  
that is useful to the region  
and in conformance  
with FHWA/FTA guidelines.***





# Architecture Terms

- Stakeholders →
- Inventory
- Needs
- Services
- Operational Concepts
- Functional Requirements
- System Interfaces and Flows

Entities that own/operate transportation systems or have an interest in regional transportation issues



# Architecture Terms

---

- Stakeholders
- Inventory →
- Needs
- Services
- Operational Concepts
- Functional Requirements
- System Interfaces and Flows

Collection of transportation systems for which there is an opportunity for integration



# Architecture Terms

---

- Stakeholders
- Inventory
- Needs →
- Services
- Operational Concepts
- Functional Requirements
- System Interfaces and Flows

List of regional  
transportation problems  
and challenges



# Architecture Terms

---

- Stakeholders
- Inventory
- Needs
- Services →
- Operational Concepts
- Functional Requirements
- System Interfaces and Flows

Things that can be done to improve the efficiency, safety, and convenience of the regional transportation system



# Architecture Terms

- Stakeholders
- Inventory
- Needs
- Services
- Operational Concepts →
- Functional Requirements
- System Interfaces and Flows

Definition of each stakeholder's role in providing ITS services



# Architecture Terms

---

- Stakeholders
- Inventory
- Needs
- Services
- Operational Concepts
- Functional Requirements →
- System Interfaces and Flows

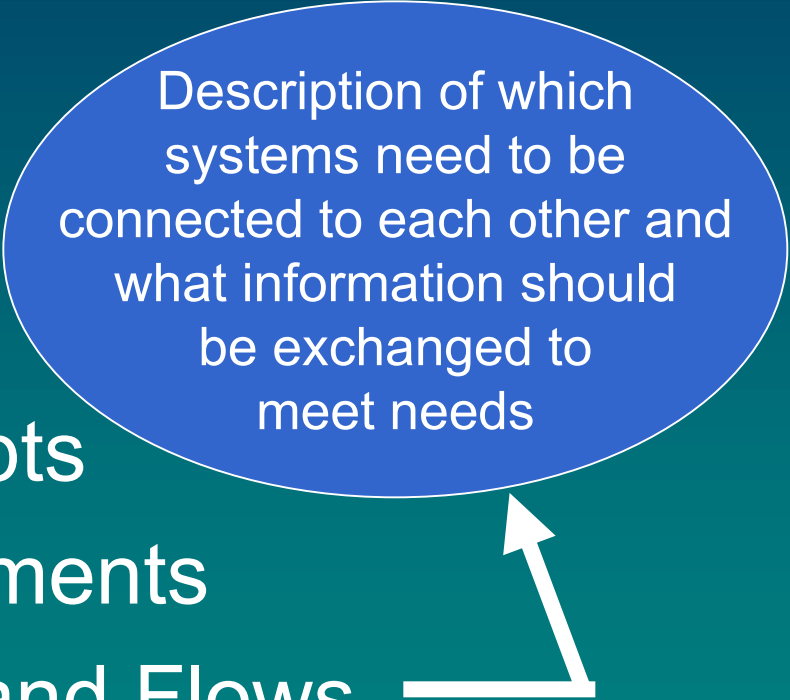
Tasks or activities performed by each system in the region



# Architecture Terms

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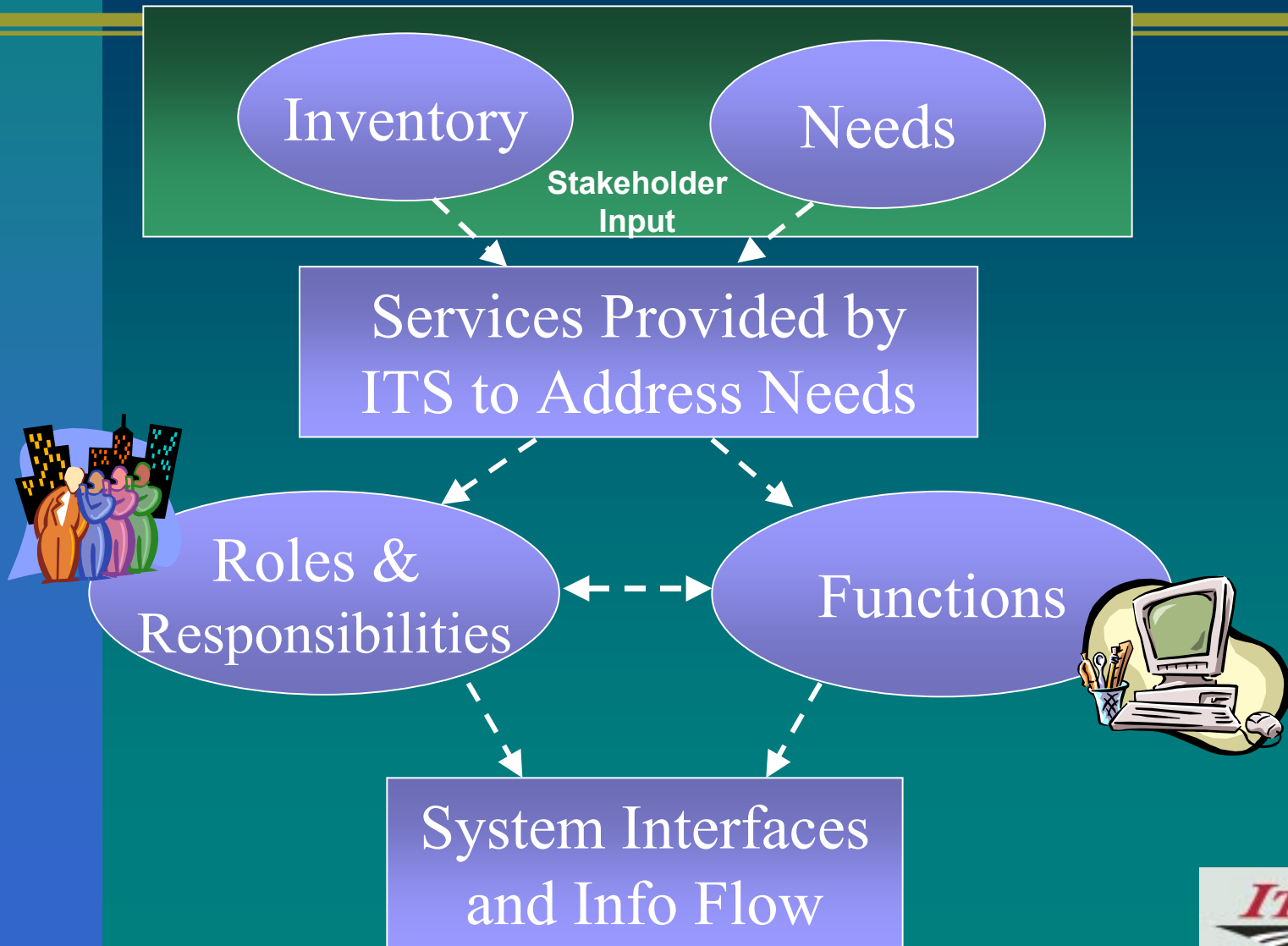
- Stakeholders
- Inventory
- Needs
- Services
- Operational Concepts
- Functional Requirements
- System Interfaces and Flows



Description of which systems need to be connected to each other and what information should be exchanged to meet needs



# Architecture Process



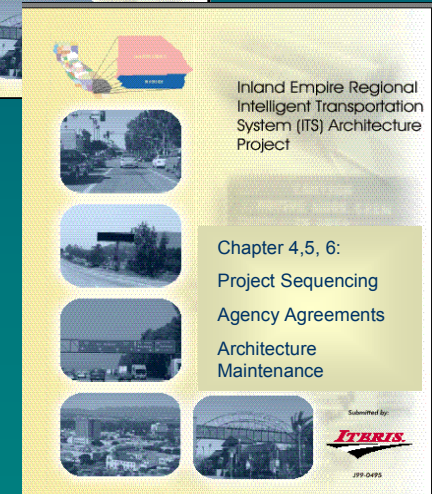
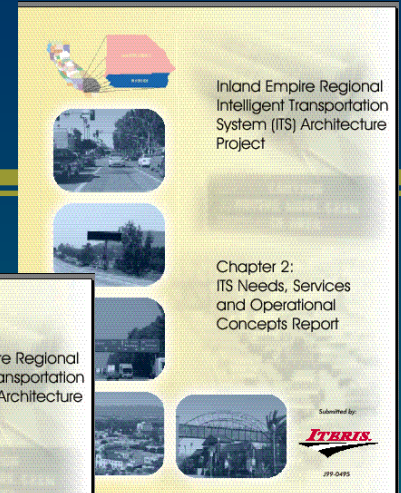
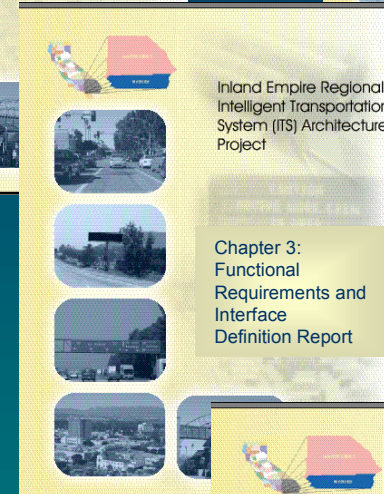
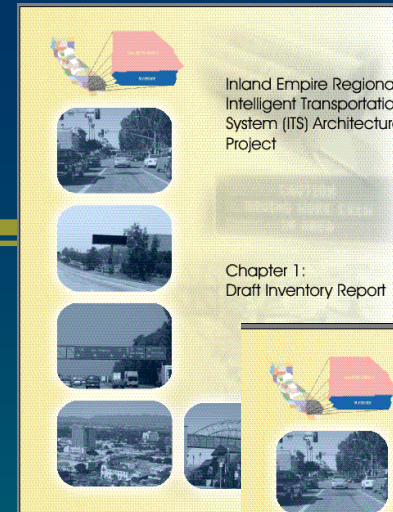


# Project Work Scope

Task 1	Project Management
Task 2	Develop Steering Committee and Identify Stakeholders
Task 3	Define Region and Update ITS Inventory
Task 4	Determine Needs, Services, and Operational Concepts
Task 5	Analyze Functional Requirements and Define Interfaces
Task 6	Develop Project Sequencing
Task 7	Develop List of Agency Agreements
Task 8	Develop Maintenance Plan
Task 9	Produce Final Report

# Deliverables

- Chapter 1
  - Inventory Report
- Chapter 2
  - ITS User Needs, Services & Operational Concepts
- Chapter 3
  - Functional Requirements & Interface Definitions
- Chapter 4, 5, and 6
  - Project Sequencing
  - List of Agency Agreements
  - ITS Architecture Maintenance Plan



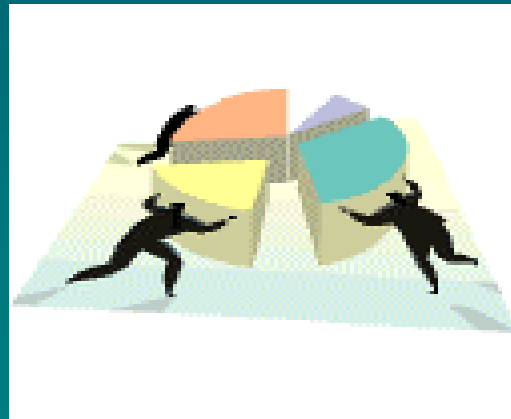
# Deliverables

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- Final Report:
  - Combines Released Deliverables, incorporating all comments
  - Adds a Regional Perspective Section
  - Addresses ITS Standards



# Project Sequencing



# Project Sequencing



- Provides a Path to Regional ITS Implementation
- Needs to be Factored into Traditional Regional Planning Methods
- Demonstrates how Regional ITS Architecture Supports the Life Cycle of a Project



# Project Sequencing



## ■ Steps:

- Analyze gaps within interconnects and information flows.
- Compare to the 1998 IE ITS SDP.
- Review other regional plans for projects.
- Request project ideas from stakeholders.
- Develop list of activities/projects to resolve gaps and issues.
- Rate the projects for implementation as high, medium, and low priority.



# Project Sequencing



- Project Categories:
  - Inland Empire Projects (25)
    - ❖ Covers broad geographic region
    - ❖ Unidentified champion
    - ❖ Multi-agency lead
  - San Bernardino County Projects (5)
  - Riverside County Projects (13)



# Project Sequencing

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- *Refer to Appendix G of Final Report handout.*





# Agency Agreements



# Agency Agreements

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- Each connection between systems represents cooperation between stakeholders.
- An agreement may be necessary to realize regional integration.
- Doesn't mean that 100's of connections equals 100's of agreements.



# Agency Agreements

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- Steps:
  - Compile any existing agreements.
  - Create list of agreements based on interconnects.
  - Determine agreement type.
  - Provide a few sample agreements.



# Agency Agreements

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- Agreement Types:
  - Handshake Agreement
  - Memorandum of Understanding
  - Interagency Agreement
  - Intergovernmental Agreement
  - Operational Agreement
  - Funding Agreement



# Agency Agreements

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- Agreement Focus:
  - ITS Service
  - Involved Stakeholders
  - Type of Agreement
  - Status
  - Agreement Description



# Agency Agreements

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- *Refer to table in Final Report.*



# Architecture Maintenance



# Architecture Maintenance



- Two Purposes:
  - Use of the Architecture for Planning, Design, and Deployment
  - Maintain the Architecture (who, what, when, how, etc.)





# Architecture Maintenance



- Use of the Architecture in Planning:
  - Provides Project Inputs for Developing the Regional Transportation Plan and Long Range Planning Documents



# Architecture Maintenance

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- Use of the Architecture in Design:
  - Provides High Level Requirements During Project Definition



# Architecture Maintenance

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- Use of the Architecture in Deployment:
  - Provides Input for Development of RFPs and Work Scopes



# Architecture Maintenance

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- Maintain the Plan:
  - Who is responsible?
  - What has to be maintained?
  - When will the architecture be updated (how often)?
  - What is the process?



# Who is responsible?

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- Inland Empire Architecture Maintenance Team
  - One each from SANBAG, RCTC, Caltrans D8, SCAG
  - Lead rotates annually
  - Other stakeholder representatives, as needed



# What has to be maintained?



- Entire Architecture
  - *Periodic*
- Project Sequencing, Operational Concepts, Functional Requirements, List of Agency Agreements
  - *Regularly*
- Description of Region, List of Stakeholders, Inventory, Needs, Services, Interconnects, Information Flows
  - *As Needed*



# When to update?

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- Officially update the architecture when the RTP undergoes a formal update (every 3 years).
- Otherwise, keep track as-needed.



# What is the process?

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- Actions that Cause a Need to Update:
  - Project Definition
  - Project Addition/Deletion
  - Project Status
  - Project Priority
  - Change in Regional Needs





# What is the process?

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- Request
- Document
- Review
- Decide
- Implementation
- Release



# ITS Standards



# ITS Standards



- Facilitate deployment
  - Reduces risk and cost
  - Create better products
- 
- Over 80 ITS Standards
  - 5 Different Standards Types  
(communications, data, message sets, equipment, software)

# ITS Standards



- What's in the Report:
  - Standards Development Organizations
  - Stages of Development
  - Standards in Procurement Specs
  - Standards Decision-Making
  - Standards Strategy for the Inland Empire





# Final Report Overview

# Final Report

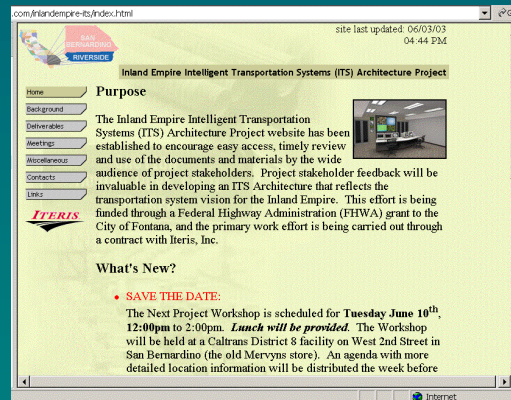
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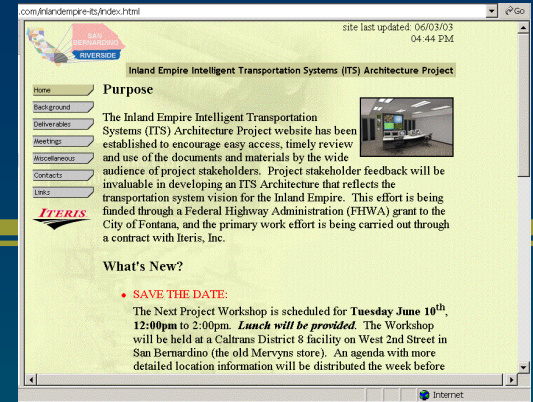
- *Review Draft Report During Meeting*
- Still To Be Included:
  - All Received Comments on Chapters 4, 5, and 6 (new: 6, 7, and 8)
  - Caltrans D8 Interconnect Corrections
  - Results from Upcoming FHWA Meeting



# Web Site Reminder



# Web Site URL



[www.iteris.com/inlandempire-its](http://www.iteris.com/inlandempire-its)







# Next Steps





**Our ITS Architecture is Complete;  
Now, What Do We Do??**

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# Next Steps

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- Acknowledge and Endorse
- Project Scenarios
- Federal Process
  - Who approves?
  - What changes occur to funding process?
  - Application? Checklist?



## *Workshop #5*

# Inland Empire Regional ITS Architecture Project

June 10, 2003

