## North Valley Architecture ITS Inventory Surveys (Lunch)





# **ITS Inventory**

- Includes Existing and Planned ITS
- Focuses on "Centers"
- Need to Collect System Name, Associated Stakeholder(s), Description, Status, Field Element Types, External Data Exchange Interfaces





## **ITS Inventory for 3 County Geographic Boundaries**







## **ITS Inventory**

#### Refer to Survey Documents





#### North Valley Architecture and National ITS Architecture – How does it Impact the Region?





# **Discussion Topics**

- A. Recap: What is Regional Architecture?
- B. Your Regional Architecture
- C. Using Your Regional Arch and the Impact on the Region.





# **Learning Objective:**

You will be able to identify key elements in a Regional ITS Architecture necessary to comply with FHWA/FTA requirements.

You will be able to recognize how ITS fits into the region and how your agency fits into the regional ITS perspective.





# What is a Regional ITS Architecture?



- Stakeholders
- Inventory
- Needs
- Services

Public/Private Agencies that own/operate transportation systems or have an interest in regional transportation issues

- Operational Concepts
- Functional Requirements
- System Interfaces and Flows





- Stakeholders
- Inventory
- Needs
- Services
- Operational Concepts
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Collection of Transportation Systems for which there is an opportunity for integration

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





List of existing regional transportation problems and potential future challenges

# **Example of Needs met by ITS**

#### Needs are a Description of the Region's Transportation Problems

- May be general needs (e.g. reduce congestion)
- May be specific (e.g. provide up to date weather information to travelers)









- Stakeholders
- Inventory
- Needs
- Services
- Operational Concepts

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

- Functional Requirements
  - System Interfaces and Flows





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

Definition of each <u>Stakeholder's</u> role in providing ITS services







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

Tasks or activities performed by each <u>system</u> in the region







- 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**





# **Stakeholders & Systems**

- Glenn, Colusa, and Butte Counties
- BCAG
- Cities of Chico, Paradise, Oroville, Biggs, Gridley, Orland, Willows, Colusa and Williams
- Butte County Transit, Chico Area Transit, Oroville Area Transit and others
  - Chico State University

- Caltrans District 3
- Caltrans Headquarters
- California Highway Patrol
- Federal Highway Administration
- Emergency Service Agencies (Police and Fire Departments)
- Others??





## What is in *Your* Regional ITS Arch?



# Value of Regional Architecture

- In Planning
  - To align projects with Federal funding requirements
- In Design
  - To provide technical guidelines, functions, and standards for ITS projects to follow
- In Deployment
  - To ensure the ability of data exchange and system integration





# How Can You Use Your Regional Architecture?

Discussed from

three viewpoints:

- 1. Regional Planner
- 2. Project Implementer
- 3. Regional Architecture "Keeper"







# Regional ITS Architecture and Planning Activities







#### **Regional Arch. and the TIP Process**



**Regional Architecture Use from Three Viewpoints** 

- 1. Regional Planner
- 2. Project Implementer
- 3. Regional Arch. "Keeper"





# Project Implementation Using a Regional ITS Architecture







# ITS Project 1 Initial Definition: Arterial Traffic Management







# (General) Project Implementation Steps

- 1. Plan
- 2. Design
- 3. Develop
- 4. Install and Test
- 5. Operate and Maintain





# A "Systems Engineering" Process Structures Project Execution



**Regional Architecture Use** from Three Viewpoints

- 1. Regional Planner
- 2. Project Implementer
- 3. Regional Arch. "Keeper"

(Butte County Assn. Governments)





# BCAG Must Receive and Distribute Information



# BCAG Must Manage the "Change Process"

- Enter all changes into Regional Architecture as projects are designed
- Notify other parties of changes that will affect them
- Resolve different visions/plans to preserve regional ITS integration
- Enter all changes into Regional Architecture as projects are completed
  - Distribute new R.A. versions periodically







# **Questions on Regional Arch?**





# **For More Information** ...

#### Courses:

- TE-23 Using and Maintaining Your Reg. Arch.
- TE-21 Fundamentals of Systems Engineering
- TE-24 Configuration Management
- NHI 137013 Using the National ITS Arch.
- Others ...

Websites:

- EDL www.its.dot.gov/itsweb/welcome.htm
- National Arch. www.iteris.com/itsarch/
- Others ...





#### Web Site URL

## www.iteris.com/northvalleyITS





# **Questions on Any Topics?**

#### ITS?

- ITS Architecture?
- National ITS Architecture?
- Regional ITS Architecture?
- Architecture and Planning?
- Architecture and Implementation?



