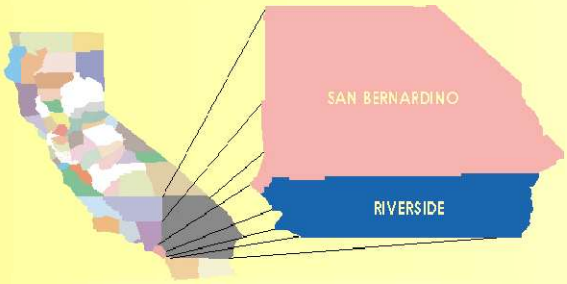

Inland Empire Regional Intelligent Transportation System (ITS) Architecture Project

Chapter 4: Draft Project Sequencing Report

Chapter 5: Draft List of Agency Agreements

Chapter 6: Draft ITS Architecture Maintenance Plan

Submitted by:

ITERIS

J99-0495

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INLAND EMPIRE REGIONAL INTELLIGENT TRANSPORTATION SYSTEMS (ITS) ARCHITECTURE PROJECT

CHAPTER 4

DRAFT
PROJECT SEQUENCING REPORT

Submitted by

ITERIS, INC.

May 30, 2003

Contained in this Report…

Each of the written deliverables for the Inland Empire Regional Intelligent Transportation Systems (ITS) Architecture Project will be introduced to the project stakeholders as an individual Chapter of the overall project documentation set. This Report is the fourth Chapter in what will ultimately be one comprehensive document concerning the ITS Architecture development as well as other associated activities. After receiving stakeholder comments on each Chapter, a disposition of comments will be released detailing the individual comments and how they will be dealt with in modifying the Chapter under review. The individual Chapters (revised based on stakeholder comments) will be re-issued as one document in the Final Report.

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

This Report contains the following sections.

Section 4.1: Introduction
A brief introduction and background to the project is offered in this section.

Section 4.2: Regional ITS Architecture Implementation
This section provides a brief description of intermediary steps involved in moving from Regional ITS Architecture planning to Regional ITS Architecture implementation.

Section 4.3: Project Sequencing
More detail on the goals and objectives of Project Sequencing in the process of moving from ITS planning to ITS implementation is explained.

Section 4.4: Process for Determining Inland Empire Projects
This section describes the iterative process used to develop the list of ITS projects that are planned to implement the Inland Empire Regional ITS build-out.

4.0 PROJECT SEQUENCING REPORT

4.1 Introduction

The Inland Empire* Intelligent Transportation Systems (ITS) Strategic Plan, developed in 1998, was a joint effort of the local transportation agencies to develop an approach for integration of regional ITS opportunities and projects. Since the development of this Plan, the Federal Highway Administration (FHWA) published a Rule (National ITS Architecture and Standards) and the Federal Transit Agency (FTA) published a companion Policy to implement Section 5206(e) of the Transportation Equity Act for the 21st Century (TEA-21). This Rule/Policy seeks 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.

4.2 Regional ITS Architecture Implementation

In moving from Regional ITS Architecture "planning" to Regional ITS Architecture "implementation", a few intermediary steps are usually followed to carryout a logical progression of ITS deployment. These steps define the series of staged projects, enabling agency agreements, and supporting ITS standards that will support progressive, efficient implementation of ITS in the region. Presentation of a series of staged ITS projects for the Inland Empire is shown in this Chapter (Chapter 4). The needed enabling agreements, and the various possibilities for the different types of agreement needed, are provided in Chapter 5. Chapter 5 information is derived in some part on an analysis of the staged projects in this chapter. ITS standards that are most relevant to the Inland Empire will be covered in the Final Report.

4.3 Project Sequencing

The regional ITS architecture is implemented through many individual ITS projects and private sector initiatives that occur over years, or even decades. In this step of the Regional ITS Architecture development, a sequence, or ordering, of ITS projects that will contribute to the integrated regional transportation system depicted in the regional ITS architecture is defined.

Both the traditional planning process and the regional ITS architecture planning process have the same goal: to use local knowledge and a consensus process to determine the best sequence of projects to create a transportation network that best meets the needs of the region. Development of this project sequencing recommendation is a specific requirement of the FHWA ITS Architecture Rule.

The two main objectives of project sequencing are to:

- Create an efficient sequence of ITS projects based on regional needs and project readiness, and
- Build consensus around the defined project sequence

* The Inland Empire is the moniker for the Counties of Riverside and San Bernardino in California.

4.4 Process for Determining Inland Empire Projects

The development of the list of projects for the Inland Empire ITS Architecture was performed in an iterative process. The initial candidate project list was developed from an analysis of the interconnects and architecture flows diagrams as detailed in Appendix C of Chapter 3.

This initial list was then compared to the 1998 Inland Empire ITS Strategic Deployment Plan. Where there were projects in the Strategic Deployment Plan missing from the initial list, they were "filled-in" to the initial list for a revised version of the candidate project list.

Then, an examination of regional transportation programming information was performed to further fill-in any gaps in the initial candidate project list. Concurrent to this activity, a request was made of the stakeholders group to provide input on plans or thoughts for further ITS deployment in the Inland Empire.

The project list was then further refined based on stakeholder input on previously identified needs and priorities and relative readiness of planned projects. Inter-dependencies on other projects were also considered at this stage in the development and refinement of the project sequencing.

In order for the Inland Empire stakeholders to be able to stratify the project list into something more meaningful to their respective management structures and policy boards, the overall project list was broken into three categories. First is a category called Inland Empire Projects. Inland Empire Projects generally cover two different types of projects: 1) projects that will cover a broad geographic area of the two county Inland Empire – typically Caltrans projects, and 2) projects that have been identified as being a need in the Inland Empire but without a positively identified "champion" or stakeholder to carryout a specific project of the type identified. The projects in the latter category could be considered generic project descriptions that could be performed by any one, or any multitude, of deploying agencies.

Then, in a more simplified approach, other projects that are more closely associated with a single county, or a specific stakeholder within a single county, have been categorized as San Bernardino County Projects and Riverside County Projects.

Appendix A contains the listing of Inland Empire Projects, **Appendix B** contains the listing of Riverside County Projects, and **Appendix C** contains the listing of San Bernardino County Projects.

INLAND EMPIRE REGIONAL INTELLIGENT TRANSPORTATION SYSTEMS (ITS) ARCHITECTURE PROJECT

CHAPTER 5

DRAFT
LIST OF AGENCY AGREEMENTS

Submitted by

ITERIS, INC.

May 30, 2003

Contained in this Report…

Each of the written deliverables for the Inland Empire Regional Intelligent Transportation Systems (ITS) Architecture Project will be introduced to the project stakeholders as an individual Chapter of the overall project documentation set. This Report is the fifth Chapter in what will ultimately be one comprehensive document concerning the ITS Architecture development as well as other associated activities. After receiving stakeholder comments on each Chapter, a disposition of comments will be released detailing the individual comments and how they will be dealt with in modifying the Chapter under review. The individual Chapters (revised based on stakeholder comments) will be re-issued as one document in the Final Report.

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- Chapter 2: ITS User Needs, Services and Operational Concepts
- Chapter 3: Functional Requirements and Interface Definitions
- Chapter 4: Project Sequencing
- **Chapter 5: List of Agency Agreements**
- Chapter 6: ITS Architecture Maintenance Plan
- FINAL REPORT

This Report contains the following sections:

Section 5.1: Introduction
A brief introduction and background to the project is offered in this section.

Section 5.2: Purpose of Agency Agreements
This section introduces the purpose and origin of agency agreements for ITS deployment.

Section 5.3: Type of Agreements
A primer on the typical types of agreements used in ITS deployment is presented.

Section 5.4: Agreement Focus
This section discusses a recommendation for the focus of an agreement.

Section 5.5: List of Agreements
A suggested list of agreements for the Inland Empire is provided in this section.

5.0 LIST OF AGENCY AGREEMENTS

5.1 Introduction

The Inland Empire* Intelligent Transportation Systems (ITS) Strategic Plan, developed in 1998, was a joint effort of the local transportation agencies to develop an approach for integration of regional ITS opportunities and projects. Since the development of this Plan, the Federal Highway Administration (FHWA) published a Rule (National ITS Architecture and Standards) and the Federal Transit Agency (FTA) published a companion Policy to implement Section 5206(e) of the Transportation Equity Act for the 21st Century (TEA-21). This Rule/Policy seeks 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.

5.2 Purpose of Agency Agreements

Agreements among the different stakeholder agencies and organizations in the Inland Empire may be required to realize the integration proposed in the regional ITS architecture. Each connection between systems in the regional ITS architecture represents cooperation between stakeholders and a potential requirement for an agreement.

Typically, existing stakeholder agreements that support sharing of information, funding, or specific ITS projects are reviewed and assessed to determine if they can be extended and used to support the cooperative implementation and operation of ITS. Although the Inland Empire stakeholders have not alerted the consultant team to the existence of any agreements that could be utilized, assumptions have been made on the existence of agreements for providing current services. The list of the required Inland Empire agreements was developed based on the operational concepts, knowledge of the types of ITS requested by the region, and the information that needs to be exchanged.

5.3 Types of Agreements

There is considerable variation between regions and among stakeholders regarding the types of agreements that are created to support ITS integration. The FHWA Regional ITS Architecture Guidance Document presents some common types of agreements, as noted in **Table 5.3-1**:

* The Inland Empire is the moniker for the Counties of Riverside and San Bernardino in California.

Table 5.3-1 – Agreement Types

Type of Agreement	Description
Handshake Agreement	• Early agreement between one or more partners • Not recommended for long term operations
Memorandum of Understanding (MOU)	• Initial agreement used to provide minimal detail and usually demonstrating a general consensus • Used to expand a more detailed agreement like a Interagency Agreement which may be broad in scope but contains all of the standard contract clauses required by a specific agency • May serve as a means to modify a much broader Master Funding Agreement, allowing the master agreement to cover various ITS projects throughout the region and the MOUs to specify the scope and differences between the projects
Interagency Agreement	• Between public agencies (e.g., transit authorities, cities, counties, etc.) for operations, services, or funding • Documents responsibility, functions and liability, at a minimum
Intergovernmental Agreement	• Between governmental agencies (e.g., agreements between State DOTs, MPOs, etc.)
Operational Agreement	• Between any agency involved in funding, operating, maintaining or using the right-of-way of another public or private agency • Identifies respective responsibilities for all activities associated with shared systems being operated and/or maintained
Funding Agreement	• Documents the funding arrangements for ITS projects (and other projects) • Includes at a minimum standard funding clauses, detailed scope, services to be performed, detailed project budgets, etc.
Master Agreements	• Standard contract and/or legal verbiage for a specific agency and serving as a master agreement by which all business is done and ca be found in the legal department of many public agencies • Allows states, cities, transit agencies, and other public agencies that do business with the same agencies over and over (e.g., cities and counties) to have one Master Agreement that uses smaller agreements (e.g., MOUs, Scope-of-Work and Budget Modifications, Funding Agreements, Project Agreements, etc.) to modify or expand the boundaries of the larger agreement to include more specific language

5.4 Agreement Focus

Rather than a focus on a specific technology in an agreement, the focus usually is on the scope-of-service and specific agency responsibilities for various components of the service. The agreement should also describe the high-level information that each agency needs to exchange in order to meet the goals and expectations of the other rather than defining how the delivery of that information will occur.

A simple handshake agreement may be enough for some Inland Empire activities. But, once interconnections and integration of systems begin, agencies may want to have something more substantial in place. A documented agreement will aid the Inland Empire agencies in planning their operational costs, understanding their respective roles and responsibilities, and in building trust for future projects. Formal agreements are necessary where funding or financial arrangements are defined or participation in large regionally significant projects is required. **Appendix D** contains sample agreements for Inland Empire Stakeholder review and use.

5.5 List of Agreements

Table 5.5-1 presents a list of agreements. Each entry is first categorized by market package (i.e. ITS service delivery area). Then the involved stakeholders, the type of agreement that is anticipated, the high-level status, and a description of the purpose of the agreement are identified.

Table 5.5-1 – List of Agreements

ITS Service	Involved Stakeholders	Type of Agreement	Status	Agreement Description
Interstate Traffic Management	Caltrans and Arizona DOT (ADOT)	Intergovernmental Agreement	May exist in some form which could be amended	Provides details on exchange of data for incident management and coordination and construction zone planning.
Interstate Traffic Management	Caltrans and Nevada DOT (NDOT)	Intergovernmental Agreement	New, not pre-existing	Provides details on exchange of data for incident management and coordination and construction zone planning.
Interjurisdictional Traffic Management	Caltrans D8 and other adjacent Caltrans districts and CHP and other TBD Southern California centers	Interagency Agreement	May exist in some form which could be amended	Provides for data exchange and device control and details jurisdiction-to-jurisdiction operations and regional incident management.
Regional Traffic Management and Emergency Services	Caltrans and Local Cities and Counties and Emergency Services Providers	Memorandum of Understanding	May exist in some form which could be amended	Provides for signal operations and coordination and local incident management.

ITS Service	Involved Stakeholders	Type of Agreement	Status	Agreement Description
Emergency Vehicle Signal Pre-emption	Caltrans and/or Local Cities and Counties and Emergency Services Providers	Interagency Agreement	New, not pre-existing	Documents details on roles, responsibilities, and functions for emergency vehicle pre-emption at signalized intersections within a city for police, fire, ambulance, or other agency.
Transit Signal Priority	Caltrans and/or Local Cities and Counties and Transit Agencies	Interagency Agreement	New, not pre-existing	Documents details on roles, responsibilities, and functions for transit vehicle priority at signalized intersection within a city for a transit agency.
Railroad Grade Crossing	Caltrans and/or Local Cities and Counties and Rail Services Providers	Interagency Agreement	New, not pre-existing	Documents details on roles, responsibilities, and functions for rail grade crossing coordination and optimization at signalized intersections within a city for a rail agency.
Call Answering Service and Freeway Service Patrol	Caltrans, CHP, RCTC and SANBAG	Interagency Agreement	May exist in some form which could be amended	Documents details on roles, responsibilities, and functions for providing a call answering service and freeway service patrol activities.
Transit Fare Management	All Transit Agencies	Master Agreement	New, not pre-existing	Provides details on the usage of a common regional fare card and the requisite financial accountability methods.
Smart Call Boxes	Caltrans, RCTC and SANBAG	Memorandum of Understanding	May exist in some form which could be amended	Documents details on roles, responsibilities, and functions for providing smart call box activities and data collection.

ITS Service	Involved Stakeholders	Type of Agreement	Status	Agreement Description
Traveler Information	All Agencies and Information Service Providers (media)	Memorandum of Understanding	New, not pre-existing	Documents expectations, roles, and responsibilities for the provision of transportation-related data and information to the traveling public.
Archived Data Management	All Agencies and PeMS	Memorandum of Understanding	New, not pre-existing	Documents expectations, roles, and responsibilities for the provision of transportation-related data and information to a public archive agency.
Commercial Vehicle Operations Administration	To be addressed outside of region	Not applicable	Not applicable	Not applicable

INLAND EMPIRE REGIONAL INTELLIGENT TRANSPORTATION SYSTEMS (ITS) ARCHITECTURE PROJECT

CHAPTER 6

DRAFT ITS ARCHITECTURE MAINTENANCE PLAN

Submitted by

ITERIS, INC.

May 30, 2003

Contained in this Report…

Each of the written deliverables for the Inland Empire Regional Intelligent Transportation Systems (ITS) Architecture Project will be introduced to the project stakeholders as an individual Chapter of the overall project documentation set. This Report is the third Chapter in what will ultimately be one comprehensive document concerning the ITS Architecture development as well as other associated activities. After receiving stakeholder comments on each Chapter, a disposition of comments will be released detailing the individual comments and how they will be dealt with in modifying the Chapter under review. The individual Chapters (revised based on stakeholder comments) will be re-issued as one document in the Final Report.

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- Chapter 3: Functional Requirements and Interface Definitions
- Chapter 4: Project Sequencing
- Chapter 5: List of Agency Agreements
- **Chapter 6: ITS Architecture Maintenance Plan**
- FINAL REPORT

This Report contains the following sections.

Section 6.1: Introduction
A brief introduction to ITS Architecture Maintenance is offered in this section.

Section 6.2: Architecture Use
This section outlines the usage of the regional architecture in ITS planning, design, and deployment processes.

Section 6.3: Architecture Maintenance
This section provides details on overall responsibility for the architecture, what has to be maintained, when it needs to updates, and what process should be used.

Section 6.4: The Change Management Process
The focus of this section is on how changes to the architecture are identifies, how they are defined, made, reviewed, implemented, and released.

6.0 ITS ARCHITECTURE MAINTENANCE PLAN

6.1 Introduction

An ITS Architecture is a blueprint for the deployment of ITS in a region and, since deployment is not static, regional architecture is also a living document. Just as one wouldn't think of building a home without consulting the framework designed specifically for the home in the blueprint, regional ITS architecture, if maintained, is just as invaluable for regional ITS deployment as a blueprint is in building a new home. This Chapter provides information on:

- How to use regional architecture for planning, design and deployment.
- Answers to the questions:
  - Who is responsible for architecture maintenance?
  - What has to be maintained?
  - When will the architecture be updated (how often)?
  - What is the process by which architecture will be modified/changed?

6.2 Architecture Use

The success of the Inland Empire Regional ITS Architecture is dependent upon effective use of the architecture once it is completed. The Architecture should be mainstreamed into the planning and deployment processes of the Inland Empire region throughout the Metropolitan Planning Organizations (MPOs) and numerous cities and counties. The architecture is anticipated to be a valuable tool for stakeholders to use in planning their projects to support regional and even statewide goals.

There are two critical times when you can use a regional ITS architecture. First, to assist in the traditional transportation planning process that occurs with MPOs such as the San Bernardino Associated Governments (SANBAG), Riverside County Transportation Commission (RCTC), Southern California Association of Governments (SCAG), or by local and other regional planning organizations to define projects and the sequence and priority in which those ITS projects will be implemented or deployed.

The other is in design and implementation/deployment of ITS projects in the region. In order to get the most out of regional architecture, this Chapter introduces and expands on specific planning processes that already exist and how the Inland Empire Regional Architecture will be maintained to support those processes in the future.

One of the most challenging yet valuable experiences of developing a regional ITS architecture is the commingling of expertise of department of transportation operations personnel and regional transportation planners. In order for a regional ITS architecture to reflect all ITS in a region, it will cross the boundaries of ITS planning, ITS deployment, and traffic operations. In the Inland Empire, some of these personnel are the same folks, but some are not and for those stakeholders involved who may be operations oriented rather than planning oriented, this section provides some background.

6.2.1 Using Regional Architecture in Planning

The goal of the transportation planning process is to make quality, informed decisions on the investment of public funds for regional transportation systems and services. The regional outputs of the transportation planning process are, basically, two regional plans:

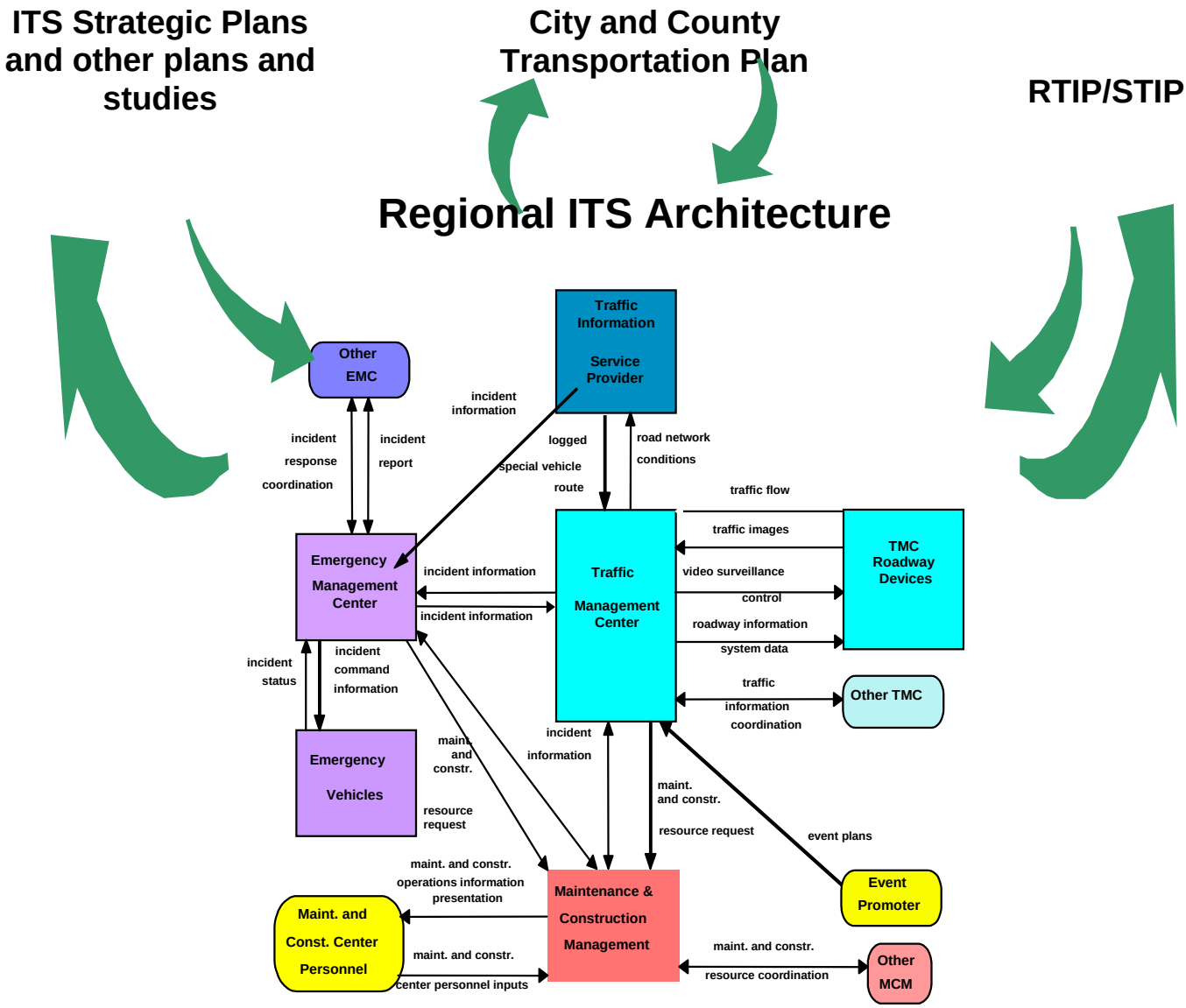
- The Regional Transportation Plan (RTP) is a long-range plan with a horizon of at least 20 years and is updated every few (usually around three) years.
- The Transportation Improvement Program/Plan (TIP/STIP), which is a short-term plan that gets updated annually for the state.

A regional ITS Architecture supports development of these two plans but it also supports ongoing updates of these plans. Previously, when the ITS inventory was being defined, regional services were being determined and operational concepts were defined, and these plans were used to feed into the development of the regional architecture. Once the regional architecture is a regionally approved document, the tables will turn and the regional architecture is a vital tool for feeding projects into development of these planning documents, as detailed in the diagram below.

The Inland Empire Regional Architecture provides a structure for deployment for projects that are identified in the RTP and TIP. An example of an "Incident Management" project is provided in **Figure 6.2.1-1** with the arrows indicating how that project would be fed into the planning process. Since the regional ITS architecture is a "living document", one source that summarizes existing and planned ITS projects in the region, if everyone uses the same document, deployments occur in an economical and efficient manner according to funding, linkages, technology, and other regional stakeholder priorities. New opportunities for integration are also visible once all of the projects are included; many of these opportunities already have had some regional consensus built during the architecture development process.

The Inland Empire Regional Architecture helps identify where agencies share functions, projects can be defined and integrated with regional dependencies and requirements taken into consideration.

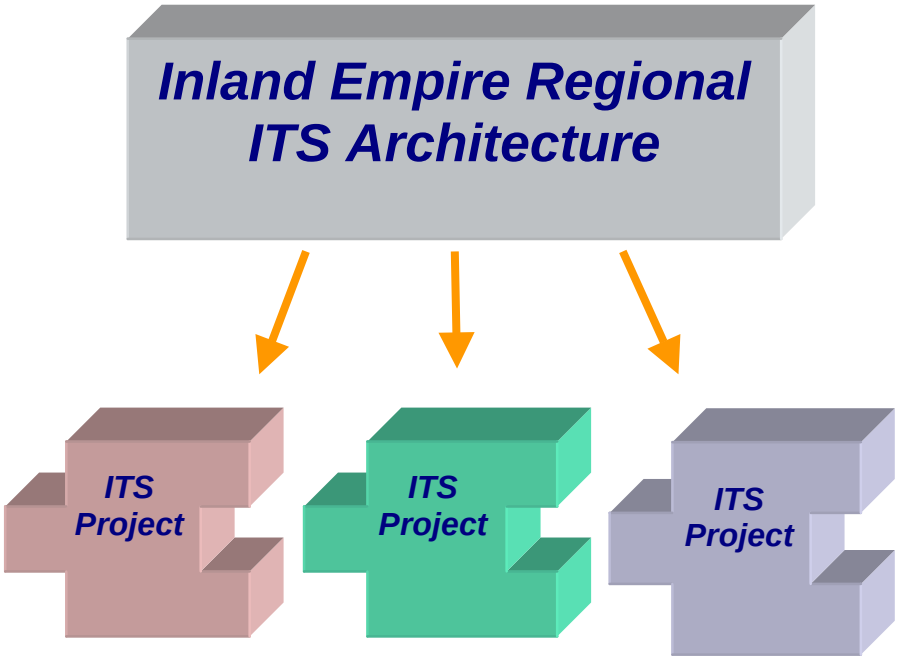
Figure 6.2.1-1 – The Regional ITS Architecture In the Regional Planning Process



6.2.2 Using Regional Architecture in Design

The regional ITS architecture also assists in defining high-level requirements in ITS system design for specific project development. Because consensus is a critical part of regional ITS architecture development, regional architecture serves as a source for defining regional projects by simply "pulling projects out" of the regional architecture. Regional stakeholders have already agreed upon and planned for these projects in future deployment. Since they have already been identified and "mapped" to the national ITS architecture, interconnects between stakeholders and the "information (architecture) flows" have standards, functions and equipment packages attached to them. In the design phase of project development, the National ITS Architecture can be used as a valuable resource to cut and paste various access databases that contain standards and functions, which can then be used in the design effort for ITS projects. **Figure 6.2.2-1** is a visual representation of the building block approach to the Regional ITS Architecture implementation process.

Figure 6.2.2-1 – Regional ITS Architecture Building Blocks



6.2.3 Using Regional Architecture in ITS Deployment

The information (architecture) flows and regional services (market packages) included in the Inland Empire area are defined in greater detail in the National ITS Architecture. The detailed databases are a valuable resource and can be cut and pasted when writing functional requirements for ITS deployments.

Functional requirements can be used in deployment for:

- Development of requests for proposals (RFP) and/or scopes of services for various ITS projects that are going to be procured
- Market Packages can be used as operational concepts for various projects when modified to be more specific to Inland Empire ITS Projects.

6.3 Architecture Maintenance

The Inland Empire Area regional ITS architecture should be modified as plans and priorities change, ITS projects are implemented, and the ITS needs and services evolve in the region. The Inland Empire Area ITS Architecture was developed with a ten-year time horizon. As the architecture is updated, it will be extended further into the future. The goal of maintaining the architecture is to keep an up-to-date regional ITS architecture that is accessible and easily used for deploying ITS in the Inland Empire area.

The key aspects of the maintenance process, which are defined in this section are:

- Who is responsible for architecture maintenance?
- What has to be maintained?
- When will the architecture be updated (how often)?
- What is the process by which architecture will be modified/changed?

6.3.1 Who is responsible for Architecture Maintenance?

Just as a group of stakeholders were key to the development of the Inland Empire Area Architecture, it is imperative that stakeholders stay involved in the on-going maintenance. Once regional architecture has been completed and approved by all participating agencies, an Inland Empire Architecture Maintenance Team should be developed that has at least one representative from SANBAG, RCTC, SCAG, and Caltrans Operations. This Maintenance Team should make modification decisions together with each of the four agencies having one vote in regional decisions for modifying the architecture. In order to ensure that the architecture stays up-to-date, the first action of this Team should be to determine which agency (SANDAG, RCTC, SCAG, or Caltrans) will take formal responsibility for making physical changes toward maintaining the architecture. This leadership role can also rotate on an annual basis for an equal share of responsibility and accountability.

6.3.2 What has to be maintained?

There are several different parts and reports that make up the Inland Empire Regional Architecture. Some require more frequent updates than others, but the entire document will need a periodic review for consistency with regional vision and goals. The current version of Regional ITS Architecture will be established as the baseline Architecture and maintenance time frames identified in this Chapter will begin upon completion.

The Inland Empire Area regional ITS architecture is stored in Microsoft Access databases and is represented through a set of outputs including reports and diagrams. The most significant portions of the

architecture will be maintained through updates in the electronic database using TurboArchitecture™. Additionally, the Inland Empire area regional ITS architecture contains several other documents that should be updated on regularly intervals:

- Project Sequencing Report *as needed*
- Operational Concept *as needed*
- Functional Requirements *as needed*
- List of Agency Agreements *as needed*

To aid the Inland Empire in architecture version document control, the filename of the database should contain the date on which the architecture was updated. This will allow the current version to be easily identified.

The following information should be maintained in the TurboArchitecture™ databases:

1. Description of the Region
2. List of Stakeholders, including key contact information
3. Inventory of existing and planned ITS systems in the region
4. Documented regional needs and ITS services associated with supporting systems in the region (Market Packages)
5. Existing and planned interconnects and information flows for the region

Outputs such as interconnect and architecture flow diagrams, inventory lists, stakeholder lists and other diagrams and reports can be produced by a member of the Maintenance Team from TurboArchitecture™ outputs, so they are by-products of the architecture database. These outputs can be updated as necessary for meetings or outreach activities.

6.3.3 When will the Architecture be updated (how often)?

The Turbo Architecture™ databases should become an appendix to the RTP and, as the RTP undergoes a formal update once every three years, the architecture should undergo any major modifications at that time. This will be a natural result of the architecture being stream lined into the regional planning process to ensure that the Architecture continues to accurately represent the region.

The operational concept, system functional requirements, project sequencing list, and the list of agency agreements represent high-level views of the Inland Empire Area architecture and do not necessarily need to be modified each time a revision is made to the architecture. However, these documents will be modified as the architecture is broadened to address new needs and services or on an *as needed* basis.

6.3.4 What is the process by which the Architecture will be modified/changed?

Because changes can arise from many sources, and very likely will arise from some sources outside the technical expertise of a single agency, it is a good idea for a group of people from different stakeholder areas to be involved in maintenance of the architecture. Representatives from traffic, transit, emergency management, and other key stakeholders from the team that developed the architecture should provide input to the Maintenance Team for review. Getting input from the stakeholders guarantees that the architecture continues to reflect the desires of the stakeholders in the region.

To allow stakeholders to use the architecture for their planning and deployment activities, the current architecture database should be available from the Inland Empire Maintenance Team. For easy access, other regional stakeholders should be notified by e-mail when the architecture database and all other current documentation has an exact location or website from which to be accessed.

In addition to maintaining the architecture, this maintenance plan should be reviewed periodically for required changes. This maintenance plan was developed during the initial development of the Inland Empire Area Regional ITS Architecture. Use of the architecture and modifications to it may differ from what was anticipated. Revising the plan will ensure that the goal of architecture maintenance is realized.

6.4 The Change Management Process

The change management process is the procedure for modifying the Architecture. It specifies how changes are identified, how often they will be made, and how the changes will be defined, reviewed, implemented and released.

6.4.1 How Changes Are Identified

The Inland Empire Area regional ITS architecture was created as a consensus view of what ITS systems the stakeholders in the region have currently implemented and what systems they plan to implement in the future. The architecture will need to be updated to reflect changes resulting from project implementation or resulting from the planning process itself. There are many actions that may cause a need to update the architecture.

- **Changes for Project Definition**. When actually defined, a project may add, subtract or modify elements, interfaces, or information flows from the regional ITS architecture. Because the architecture is meant to describe not only ITS planned for the region, but also the current ITS implementations, it should be updated to correctly reflect the deployed projects.

  There are several generic stakeholders in the Inland Empire Area architecture. These generic stakeholders group multiple stakeholders from the region. For example, small municipal transit agencies are all identified under one regional ITS element identified as "Small Municipal Transit Agencies". As stakeholders can be better identified that are covered by these generic stakeholder terms, the descriptions of these stakeholders will be added to the Architecture. As their respective elements plan and deploy ITS systems, they should be added as separate elements and stakeholders in the architecture.

- **Changes for Project Addition/Deletion.** Occasionally a project will be added, deleted or modified during the planning process. When this occurs, the aspects of the regional ITS architecture associated with the project have to be added, deleted or modified.

- **Changes in Project Status.** As projects are deployed, the status of the architecture elements, services and flows that are part of the project will have to be changed from planned to existing. Elements, services and flows will be considered to exist when they are substantially complete in that they have been turned on, tested and are currently being used.

- **Changes in Project Priority.** Due to funding constraints, technological changes or other considerations, a project planned of the region may be delayed or accelerated. Such changes will need to be reflected in the Inland Empire Area ITS Architecture.

- **Changes in Regional Needs**. Over time the needs in a region can change and the corresponding aspects of the regional ITS architecture will have to be updated.

While the Inland Empire Area ITS Architecture was developed with input from several stakeholders in the region, not all stakeholders could or wanted to participate. As ITS deployment increases and benefits of integration are realized, additional stakeholders will become interested in ITS, the architecture should be updated to reflect their place in the regional view of ITS. The systems they operate and their interfaces will have to be added or revised.

Additionally, the National ITS Architecture itself is a living resource of information and in order to keep a life of at least 20 years into the future, it is expanded and updated from time to time to include new user services or refine existing services. In recent years the National ITS Architecture users asked that maintenance and construction activities be included in the architecture and with national security issues that have arisen since September 11, 2001, in order to address homeland security in transportation systems new security and emergency management entities are being added. How these changes in the national "template" effect the Inland Empire Area regional ITS architecture should be considered as the Regional Architecture is updated. The National ITS Architecture may have expanded to include a user service that has been discussed in a region, but not been included in the regional ITS architecture, or been included in only a limited manner.

6.4.2 How Often Changes Are Made

A comprehensive architecture update will be completed every three years, concurrent with the update of the Inland Empire Metropolitan Area Long Range Transportation Plan or the RTP. The comprehensive update would include involving new stakeholders, reviewing services planned for the area, etc.

Minor revisions, such as changes in the status of an information (architecture) flow between stakeholders, can be made as the information is known or even on an annual basis. Minor changes can be made by members of the Maintenance Team with consensus among themselves.

6.4.3 Change Definition, Review, Implementation, and Release

Any stakeholder in the Inland Empire region can propose a change to the regional architecture. Stakeholders should inform the Inland Empire Maintenance Team of the status of any projects with ITS aspects. To properly maintain the architecture, Inland Empire Maintenance Team should be informed not only of when projects are planned; but also when projects are completed or when changes made during design or construction impact the regional architecture.

Stakeholders should propose changes in writing to the Inland Empire Maintenance Team. Proposals should clearly define the architecture aspects to be added, deleted or revised. The reasons for proposed modifications should be given. Each proposal should include contact information for the person proposing the change so he or she can be contacted if questions arise.

Each proposed modification will be reviewed and considered by the Inland Empire Maintenance Team. If the proposal impacts other stakeholders, someone from the Team will contact the stakeholders to confirm their agreement with the modification. If the issue warrants it, a stakeholder meeting to discuss the modification may be held. If consensus in favor of the modification is reached, the Maintenance

Team member who is identified as the "keeper of the databases" should make the revision in the architecture database.

Once the regional architecture has been modified, the stakeholders in the region should be notified. The Inland Empire Maintenance Team should maintain a list of stakeholders and their contact information. The stakeholders should be notified of architecture updates and informed on how to obtain the latest version of the architecture.

List of Acronyms

AD	Archived Data
ADOT	Arizona Department of Transportation
ADUS	Archived Data User Service
APTS	Advanced Public Transportation Systems
ATIS	Advanced Traveler Information System
ATMS	Advanced Traffic Management System
AVI	Automated Vehicle Identification
AVL	Automated Vehicle Locator
AVSS	Advanced Vehicle Safety Systems
CAD	Computer Aided Dispatch
Caltrans	California Department of Transportation
CCTV	Closed Circuit Television
CVISN	Commercial Vehicle Information Systems & Networks
CVO	Commercial Vehicle Operations
CHP	California Highway Patrol
CMS	Changeable Message Sign
DOT	Department of Transportation
EM	Emergency Management
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FSP	Freeway Service Patrol
FTA	Federal Transit Authority
HAR	Highway Advisory Radio
HOV	High Occupancy Vehicles
ISP	Information Service Provider
ITS	Intelligent Transportation System(s)
MCO	Maintenance & Construction Operations
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
NDOT	Nevada Department of Transportation
PeMS	Freeway Performance Measurement System
RCTC	Riverside County Transportation Commission
RTA	Riverside Transit Authority
RTP	Regional Transportation Plan
RTIP	Regional Transportation Improvement Program
RWIS	Road Weather Information System
SANBAG	San Bernardino Associated Governments
SCAG	Southern California Association of Governments
STIP	State Transportation Improvement Program
TEA-21	Transportation Equity Act for the 21st Century
TIP	Transportation Improvement Program
TMC	Traffic Management Center

TMC	Transportation Management Center
TOC	Traffic Operations Center
TOC	Transportation Operations Center

APPENDIX A

INLAND EMPIRE PROJECTS

Appendix A
Inland Empire Projects

Project #	Project Description	Participating Agencies	Market Package(s) Addressed	Priority for Deployment (1=H, 2=M, 3=L)
IE-1	**Caltrans D-8 TMC Connection to NDOT ATMS** - The initial objective of this project would be the establishment of a communications link between the Nevada DOT ATMS that would allow for the exchange of traffic, travel and incident information between Nevada DOT and Caltrans. Most typically this would include the capability for each agency to monitor traffic condition information and be alerted to incidents occurring in the other agency's jurisdiction. This could allow for better motorist notification and traffic handling. In the longer term, each agency may decide that they would allow the other to take limited control of field assets in certain pre-defined situations.	- Caltrans - NDOT	ATMS 6 ATMS 7	1
IE-2	**Caltrans Traffic Operations Systems (TOS) Expansion** - This project is a "catch-all" for expansion of the many and varied Caltrans traffic management systems and field elements that are monitored and controlled by Caltrans at the Inland Empire TMC. TOS elements referenced by this project include: closed circuit television (CCTV) cameras and systems, highway advisory radio (HAR) systems and transmitters, road weather information systems (RWIS) and field sensors, changeable message signs (CMS), vehicle speed detection stations, communications infrastructure, etc.	- Caltrans - CHP - others as appropriate	ATMS 1 ATMS 4 ATMS 6 ATMS 8 ATMS 19 MCO 3 MCO 4	1
IE-3	**Inland Empire Dynamic Ridesharing System** - This project would implement a dynamic ridesharing system that would facilitate a mode shift from single occupant vehicles (SOVs) to transit and other ridesharing opportunities. This could be a stand-alone project or part of a larger Southern California effort.	- SANBAG - RCTC - SCAG - transit operators - the private sector - others as appropriate	ATMS 9 APTS 8	1
IE-4	**Traffic Signal Interconnect** - This project is a "catch-all" for any agency (local or state) desiring to implement traffic signal interconnects within its own jurisdiction. The interconnect technology is not specified in this project description; it could be via fiber optics, copper wire, wireless technologies or some other technology.	- Caltrans - various cities	ATMS 7	1

Appendix A
Inland Empire Projects

Project #	Project Description	Participating Agencies	Market Package(s) Addressed	Priority for Deployment (1=H, 2=M, 3=L)
IE-5	**Ultimate Inland Empire Caltrans/CHP Transportation Management Center (TMC)** - Development of a fully functional TMC staffed by Caltrans and CHP personnel. The proposed physical structure should meet all state and federal guidelines for an Emergency Operating Center. A proposed site for a TMC building has been identified near the I-15/SR-210 interchange. Consideration to be give to establishing a regional data collection point and a single point for ISP interface.	- Caltrans - CHP - others as appropriate	EM 1 ATMS 4 ATMS 6 ATMS 8 AD 1 MCO 3	1
IE-6	**Commercial Vehicle Traveler Information System** - This project would implement an advanced traveler information system (ATIS) geared toward commercial vehicle operators. The system could disseminate information regarding traffic, truck routing and commercial vehicle amenities (truck stops, truck fueling locations, etc.). This could be a stand-alone project or part of a larger Southern California or statewide effort.	- the private sector - others as appropriate	ATIS 1 ATIS 2 ATIS 7	2
IE-7	**Emergency Vehicle Traffic Signal Preemption (Caltrans)** - This project would implement emergency vehicle preemption at selected Caltrans operated/controlled signalized intersections throughout the Inland Empire.	- Caltrans - various - emergency response agencies	EM 2	2
IE-8	**Emergency Vehicle Traffic Signal Preemption (other local agencies)** - This project would implement emergency vehicle preemption at selected local city and county operated/controlled signalized intersections throughout the Inland Empire.	- various local city and county agencies - various emergency response agencies	EM 2	2
IE-9	**Freeway Ramp Metering Expansion** - This project would expand the current freeway ramp metering program in the Inland Empire as congestion and ramp volumes warrant. The Ultimate TMC should have the capability to monitor and control the ramp metering function.	- Caltrans - other local agencies as appropriate	ATMS 4	2

Appendix A
Inland Empire Projects

Project #	Project Description	Participating Agencies	Market Package(s) Addressed	Priority for Deployment (1=H, 2=M, 3=L)
IE-10	**Local Agency TMC Development (other local agencies)** - These projects would develop local agency (city and county level) TMCs with varying levels of capability depending on the needs of the individual local agency. These projects would allow for command and control of the field assets of each individual agency as well as the ability to share data and or information with other agencies on an as needed basis. Shared control of field assets would be voluntary on an agency by agency basis.	- local city and county agencies as appropriate - others as appropriate	ATMS 1 ATMS 3 ATMS 6 AD 1	2
IE-11	**Regional Universal Transit Fare Card System** - This project will implement a Universal Fare Media system to be used by the various transit operators in the Inland Empire. The standard will likely be established on a statewide basis or on a regionwide basis and extended to be implemented in the Inland Empire.	- Caltrans - SCAG - various transit agencies	APTS 4	2
IE-12	**Transit Vehicle Traffic Signal Priority (Caltrans)** - This project would implement transit vehicle priority at selected Caltrans operated/controlled signalized intersections throughout the Inland Empire.	- Caltrans - various transit agencies	APTS 7	2
IE-13	**Transit Vehicle Traffic Signal Priority (other local agencies)** - This project would implement transit vehicle priority at selected local city and county operated/controlled signalized intersections throughout the Inland Empire.	- various local city and county agencies - various transit agencies	APTS 7	2
IE-14	**Caltrans CVO Administration Connection to Regional Data Archive** - This project would connect elements of the Caltrans CVO Administration system(s) to a Southern California Regional Data Archive. The primary intent of the data collection would be to gather truck count and classification data for data reporting purposes such as HPMS, as well as for other regional transportation and air quality planning purposes. Other data may be requested for other purposes in the future.	- DMV - SCAG - Caltrans	AD 1 AD 2	3

Appendix A
Inland Empire Projects

Project #	Project Description	Participating Agencies	Market Package(s) Addressed	Priority for Deployment (1=H, 2=M, 3=L)
IE-15	**Caltrans D-8 TMC Connection to ADOT ATMS** - The initial objective of this project would be the establishment of a communications link between the Arizona DOT ATMS that would allow for the exchange of traffic, travel and incident information between Arizona DOT and Caltrans. Most typically this would include the capability for each agency to monitor traffic condition information and be alerted to incidents occurring in the other agency's jurisdiction. This could allow for better motorist notification and traffic handling. In the longer term, each agency may decide that they would allow the other to take limited control of field assets in certain pre-defined situations.	- Caltrans - ADOT	ATMS 6 ATMS 7	3
IE-16	**Caltrans D-8 TMC Connection to Metrolink Operations Center** - This project would establish a communications link between the Caltrans D-8 TMC and the Metrolink Operations Center that would allow Caltrans to view Metrolink train location information and Metrolink to view traffic condition information. This would be most beneficial to Metrolink in an emergency when one or more of the Metrolink rail lines is not in operation. The agencies could exchange of traffic, travel, incident and train location information. This project is similar in concept to intertie projects between cities and Caltrans D-8.	- Caltrans - Metrolink	ATIS 1 ATMS 7	3
IE-17	**Caltrans D-8 TMC Connection to Various Transit Management Centers** - This project will establish a communications link between the Caltrans D-8 TMC and various Transit Management Centers that would allow Caltrans to view transit vehicle location information and the various Transit Management Centers to view traffic condition information. The agencies could exchange of traffic, travel, incident and vehicle location information. This project is similar in concept to intertie projects between cities and Caltrans D-8.	- Caltrans - various transit agencies	ATIS 1 ATMS 7	3
IE-18	**Caltrans Maintenance Vehicle AVL** - This project would implement automated vehicle location (AVL) technology on Caltrans D-8 maintenance vehicles. This system could be used to more efficiently deploy field assets during adverse weather events. It could eventually allow maintenance supervisors in a central location to monitor usage and quantities of maintenance materials (sand, road de-icing salt, etc.) carried in maintenance vehicles. Additionally, if implemented, this system could also monitor maintenance vehicle "health" to better manage the mechanical condition of the maintenance vehicle fleet.	- Caltrans	MCO 1	3

Appendix A
Inland Empire Projects

Project #	Project Description	Participating Agencies	Market Package(s) Addressed	Priority for Deployment (1=H, 2=M, 3=L)
IE-19	**DMV CVO Administration Connection to Regional Data Archive** - This project would connect elements of the DMV CVO Administration system(s) to a Southern California Regional Data Archive. The primary intent of the data collection would be to gather truck count and classification data for data reporting purposes such as HPMS, as well as for other regional transportation and air quality planning purposes. Other data may be requested for other purposes in the future.	- DMV - SCAG - Caltrans	AD 1 AD 2	3
IE-20	**Interconnect various city signal systems with Caltrans signal system(s)** - This project would implement enhanced interconnects and possibly coordination between various city signal systems and Caltrans signal system(s).	- Caltrans and various cities	ATMS 7	3
IE-21	**Interconnect various local city signal systems with other local city signal system(s)** - This project would implement enhanced interconnects and possibly coordination between various city signal systems and Caltrans signal system(s). This project is similar in concept to the San Bernardino Valley Coordinated Signal System project.	- Caltrans - various cities	ATMS 7	3
IE-22	**Interconnect various transit management systems with other transit management systems** - This project would enable transit agencies to exchange incident, vehicle location and arrival status information among multiple transit operators. This is similar in concept to a project currently underway where RTA and SunLine will be able to share vehicle location information to better coordinate service at their common service boundary.	- Omnitrans - RTA - SunLine - Metrolink - other local transit operators - others as appropriate	APTS 8	3
IE-23	**ITS Data Warehouse** - This project will implement a multi-agency ITS data warehouse for the Inland Empire.	- various agencies as appropriate	AD 2	3
IE-24	**Local traffic signal system connection to TANN** - This project will allow for the transfer of traveler information originating in local traffic signal systems to TANN for further dissemination.	- local city and county agencies as appropriate - TANN - others as appropriate	ATIS 1	3

Appendix A
Inland Empire Projects

Project #	Project Description	Participating Agencies	Market Package(s) Addressed	Priority for Deployment (1=H, 2=M, 3=L)
IE-25	**Transit Management Systems connection to TANN** - This project will allow for the transfer of transit vehicle arrival status and transit traveler information originating in the transit agencies to TANN for further dissemination.	- Omnitrans - RTA - SunLine - Metrolink - other local transit operators - others as appropriate	APTS 8	3

APPENDIX B

RIVERSIDE COUNTY PROJECTS

Appendix B
Riverside County Projects

Project #	City	Project Description	Participating Agencies	Market Package(s) Addressed	Priority for Deployment (1=H, 2=M, 3=L)
Riv-1	Corona	**City of Corona TMC** - This project will implement a city-owned/operated TMC located at a City facility. The TMC development will include the implementation of an advanced transportation management system (ATMS) that includes advanced traffic signal controllers, CCTV, dynamic message signs and an upgraded communications system between the TMC and the field assets. Traveler information will be made available from the TMC to the local cable television system and an Internet website as well as other media outlets.	- Corona	ATMS 1 ATMS 3 ATMS 6 ATIS 1	1
Riv-2	Corona	**City of Corona TMC Intertie to Caltrans D-8 TMC** - This project would interconnect the City of Corona TMC and the Caltrans D-8 TMC. Each agency will be able to view traffic conditions on the roadway network of the other agency, including video images. Shared control of field elements is not anticipated at this time but the capability could be implemented in the future if the respective agencies so desire. Part of this project will also include coordination of Caltrans operated traffic signals with City operated signals.	- Corona - Caltrans	ATMS 7 ATIS 1	1
Riv-3	Temecula	**City of Temecula TOC** - This project will implement a city-owned/operated TOC located at a City facility. The TOC development will include the implementation of improved traffic condition monitoring and CCTV.	- Temecula	ATMS 1 ATMS 3 ATMS 6	1
Riv-4	Temecula	**City of Temecula TOC Intertie to Caltrans D-8 TMC** - This project would interconnect the City of Temecula TOC and the Caltrans D-8 TMC. Each agency will be able to view traffic conditions on the roadway network of the other agency, including video images. Shared control of field elements is not anticipated at this time but the capability could be implemented in the future if the respective agencies so desire.	- Temecula - Caltrans	ATMS 1 ATMS 3 ATMS 6 ATMS 7 ATIS 1	1

Appendix B
Riverside County Projects

Project #	City	Project Description	Participating Agencies	Market Package(s) Addressed	Priority for Deployment (1=H, 2=M, 3=L)
Riv-5	various	**Interconnect RTA AVL system(s) with SunLine AVL system(s)** - This project will enable RTA and SunLine to exchange vehicle location and arrival status information to better coordinate service at their common service boundary.	- RTA - SunLine	APTS 8	1
Riv-6	various	**RTA/SunLine jointly deployed Advanced Public Transit Systems (APTS) -** This project will implement a variety of transit technologies on RTA and SunLine fixed route and paratransit fleets. Among the candidate technologies are an AVL/CAD system, automated passenger counters (APCs) and a transit traveler information system.	- RTA - SunLine - others as appropriate	APTS 1 APTS 2 APTS 3 APTS 4 APTS 8	1
Riv-7	Corona	**North Main Corona Metrolink Station Parking Management System** - This system will implement a yet to be constructed parking structure at the North Main Corona Metrolink Station. It will include visual displays at the entrances of the structure that convey parking availability to incoming customers. It is envisioned that there would also be a connection to the appropriate transit management systems that would allow the display of real time bus and train arrival status on the same visual display.	- RCTC - Metrolink - RTA - others as appropriate	ATMS 16 APTS 8	2
Riv-8	Corona	**TANN connection to North Main Corona Metrolink Station Parking Management System** - This project will allow for the transfer of transit vehicle arrival status for the various transit agencies serving the North Main Corona Metrolink Station, as well as parking availability status to TANN.	- RCTC - TANN - others as appropriate	ATIS 1	2
Riv-9	Corona	**Transit Management Systems (Riv Co) connection to North Main Corona Metrolink Station Parking Management System** - This project will allow for the transfer of transit vehicle arrival status for the various transit agencies serving the North Main Corona Metrolink Station to the North Main Corona Metrolink Station Parking Management System.	- RCTC - Metrolink - RTA - Corona Cruiser - others as appropriate	ATMS 16 APTS 8	2

Appendix B
Riverside County Projects

Project #	City	Project Description	Participating Agencies	Market Package(s) Addressed	Priority for Deployment (1=H, 2=M, 3=L)
Riv-10	Corona	**Transit Signal Priority Project** - This project will implement transit signal priority at selected intersections, or on selected corridors, in the City of Corona.	- Corona - RTA - Corona Cruiser - others as appropriate	APTS 7	2
Riv-11	Moreno Valley	**Transit Signal Priority Project** - This project will implement transit signal priority at selected intersections, or on selected corridors, in the City of Moreno Valley.	- Moreno Valley - RTA - others as appropriate	APTS 7	2
Riv-12	Temecula	**Transit Signal Priority Project** - This project will implement transit signal priority at selected intersections, or on selected corridors, in the City of Temecula.	- Temecula - RTA - others as appropriate	APTS 7	3
Riv-13	various	**Transit Signal Priority Project** - This project will implement transit signal priority at selected intersections, or on selected corridors, in the Coachella Valley area.	- SunLine Transit - various cities	APTS 7	3

APPENDIX C

SAN BERNARDINO COUNTY PROJECTS

Appendix C
San Bernardino County Projects

Project #	City	Project Description	Participating Agencies	Market Package(s) Addressed	Priority for Deployment (1=H, 2=M, 3=L)
SB-1	Fontana	**City of Fontana TMC Intertie to Caltrans D-8 TMC** - This project would interconnect the City of Fontana TMC and the Caltrans D-8 TMC. Each agency will be able to view traffic conditions on the roadway network of the other agency, including video images. Shared control of field elements is not anticipated at this time but the capability could be implemented in the future if the respective agencies so desire. Part of this project will also include coordination of Caltrans operated traffic signals with City operated signals.	- Fontana - Caltrans	ATMS 1 ATMS 3 ATMS 6 ATMS 7 ATIS 1	1
SB-2	various	**Omnitrans Advanced Public Transit Systems (APTS) -** This project will implement a variety of transit technologies on Omnitrans fixed route and paratransit fleets. Among the candidate technologies are an AVL/CAD system, automated passenger counters (APCs) and a transit traveler information system.	- Omnitrans	APTS 1 APTS 2 APTS 3 APTS 4 APTS 8	1
SB-3	various	**San Bernardino Valley Coordinated Traffic Signal System Project (Tiers 1, 2, 3 and 4)** - The overall project, currently in deployment of Tier 1 and soon to begin Tier 2, will eventually interconnect and coordinate approximately 1,200 signals on regionally significant arterials in the San Bernardino Valley. The goal of the project is to coordinate signals to minimize stops and delays to motorists. The project relies on using existing interconnect, where available, and adding hardwire, spread spectrum or telephone interconnect for the missing links. The project will also upgrade and expand existing traffic control systems with new, advanced traffic control systems and controllers. Eventually, Valley traffic signals could be controlled by one (or a small number) of systems for true "Regional Traffic Control".	- SANBAG - Caltrans - various SB Valley cities - SB County	ATMS 7	1
SB-4	Fontana	**Transit Signal Priority Project** - This project will implement transit signal priority at selected intersections, or on selected corridors, in the City of Fontana.	- Fontana - Omnitrans - others as appropriate	APTS 7	2

Appendix C
San Bernardino County Projects

Project #	City	Project Description	Participating Agencies	Market Package(s) Addressed	Priority for Deployment (1=H, 2=M, 3=L)
SB-5	Fontana	**Fontana Traveler Information connection to TANN** - This project will allow for the transfer of traveler information originating in the Fontana Traveler Information System to TANN.	- Fontana - TANN - others as appropriate	ATIS 1	3

APPENDIX D

SAMPLE AGREEMENTS

Sample Memorandum of Understanding

This Memorandum of Understanding (MOU) recognizes that _____ Corridor, is an important regional route and provides important local access to commercial and other activities in each of the jurisdictions it serves. As regional routes, there is a need to provide efficient traffic operations across jurisdictional boundaries. Because of the importance of the Corridor to the local and regional economies, each local jurisdiction will retain the authority to control its own transportation systems, including the operation of traffic signals.

The purpose of this MOU is to acknowledge the agreement of all participating agencies to work cooperatively to improve the management and operation of the parallel arterials along the Corridor transportation systems. This MOU is *not* a legally binding contract – it constitutes solely a guide to the intentions and policies of the participating agencies.

This MOU sets forth the roles and responsibilities of the participating agencies in the development, implementation and maintenance of intelligent transportation system projects. The MOU is not intended to authorize funding. Commitments providing for the payment of funds or authorizing specific work phases will be covered by one or more separate agreements.

Responsibilities

Corridor Technical Advisory Committee (TAC): The TAC consists of staff members of the agencies listed above. The TAC will be responsible for providing advice on the design, implementation, and operation of the transportation facilities along the Corridor and the associated arterials. It is the responsibility of each agency represented on the TAC to ensure that the appropriate staff person who can address the specific issues on the agenda attend the TAC meetings. The TAC will meet on an as-needed basis to fulfill its responsibilities.

Cities, County and State: The participation agencies that operate and maintain traffic systems have the following responsibilities:

1. Design and engineering review,
2. Operations and maintenance of traffic systems within the agency's own jurisdiction,
3. Review of timing plans and participation in timing plan development,
4. Construction management (when applicable),
5. Cooperate with all participating agencies to develop traffic operations strategies to efficiently move traffic in the corridor,
6. Implementing timing plans and periodically reviewing changes when updates are made,
7. Sharing the use of interconnect cable and communications equipment with nearby jurisdictions to provide cost-effective signal system communications,
8. Notify nearby jurisdictions when service interruptions occur that could affect system operations.
9. Responding to emergency traffic conditions.

Metropolitan Planning Organization (MPO): The MPO will have the following responsibilities:

1. County-wide planning,
2. Pursuing funding for future phases,
3. Grand management,
4. Partnership agreement of development,
5. Design and engineering review,
6. Developing necessary agreements,
7. Construction management (when applicable),
8. System operations and management,
9. Providing funding to manage the program,
10. Managing the delivery of capital project elements of the program,
11. Program administration and management,
12. Overall design, engineering, contract management,
13. Coordinating the TAC meetings.

Roles of Others: Others will assist with coordination issues, including providing advice and other assistance with multi-agency agreements, programming and funding issues, resolution of disagreements and contracting issues.

Other Agreements

Other transportation related agreements (maintenance or otherwise) will remain effective between the agencies in the corridor.

Term

This MOU is in effect as of _____ and will terminate on _____ unless the term is modified by the Technical Advisory Committee, and respective participating City Counsels or Governing Boards.

The following agencies support the Memorandum of Understanding for the Corridor Management:

Signed by: Date

Appendix D – Sample Interagency Agreement using a Joint Powers Authority Method

The _____, a municipal corporation _____ duly organized and existing under its Charter and the Constitution of the State of California (the "City") and the _____ Transit District, a transit district duly organized and created in accordance with the Public Utilities Code of the State of California (the "District") and the _____Joint Powers Board, a joint exercise of powers agency comprised of the City _____, _____ Transit District, and _____ Transportation Authority, duly created and organized in accordance with the Government Code of the State of California (the "JPB") all of which entities shall be referred to herein collectively as the "Members," hereby enter into this Joint Powers Agreement (this "Agreement") creating the Joint Powers Authority (the "Authority"). All Members are public entities organized and operating under the laws of the State of California and each is a public agency as defined in the Government Code of the State of California.

Recitals

A. The Members may jointly exercise any power common to them

B. The Members desire to jointly participate in the construction, development and operation of a _____.

C. The governing board of each Member has determined that it is in such Member's best interest and in the public interest that this Agreement be executed and that it participates as a Member of the Authority.

Agreement

1. Formation of the Authority. The Members hereby create a separate joint exercise of powers agency which is named the _____Joint Powers Authority.

2. Parties to Agreement. Each Member certifies that it intends to, and does, contract with every Member that is a signatory to this Agreement and, in addition, with such other entities as may later be added as Members pursuant to Section 16 of this Agreement. Each Member also certifies that the deletion of any Member from this Agreement does not affect this Agreement nor each remaining Member's intent to contract with the other Members then remaining.

3. Purpose. Subject to compliance with all relevant environmental review and regulations, the Authority will develop, design, construct, renovate, rehabilitate, improve, operate, manage and maintain a _____.

4. Limitation. Except as otherwise authorized or permitted by the Law and for purposes of, and to the extent required by the Government Code of the State of California, the Authority is subject to the restrictions upon the manner of exercising the powers of the City as specified in the Bylaws.

5. Powers. The Authority is authorized, in it's own name, to do all acts necessary to fulfill the purposes of this Agreement including, but not limited to each of the following:

    (a) Make and enter into contracts;

(b) Incur debts, liabilities and obligations; provided that no debt, liability or obligation of Authority is a debt, liability or obligation of any Member except as separately agreed to by a Member;

(c) Acquire, hold, construct, manage, maintain, sell or otherwise dispose of real and personal property by appropriate mean;

(d) Receive contributions and donations of property, funds, services and other forms of assistance from any source;

(e) Apply for, accept, and receive and disburse grants, loans, and other aids from any agency of the United States of America or the State of California;

(f) Sue and be sued in its own name;

(g) Employ agents and employees;

(h) Lease real or personal property as lessee and as lessor;

(i) Receive, collect, invest and disburse moneys;

(j) Execute and deliver certificates of participation, issue revenue bonds and issue other forms and evidences of indebtedness, as provided by law;

(k) Carry out other duties as required to accomplish other responsibilities as set forth in this Agreement;

(l) Assign, delegate or contract with a Member or third party to perform any of the duties of the Board, including, but not limited to, acting as administrator for the Authority;

(m) Charge and apportion to local agencies (with the exception of the Members) that benefit from its services the administrative costs and expenses incurred in the exercise of the powers authorized in this Agreement and leases.

(n) Exercise all other powers necessary and proper to carry out the provisions of the Agreement, and

(o) Enter into and approve agreements and leases.

These powers will be exercised in the manner provided by applicable law and as expressly set forth in this Agreement.

6. Appointment of an Administrator.

(a) The City is hereby appointed by the Members as the administrator (the "Administrator") to execute the provisions of this Agreement and implement programs undertaken by the Authority. The Members acknowledge that this designation may cause potential conflicts of interest to arise and waive any liability on the part of the City arising out of any such conflict of interest.

(b) Subject to Section 7 of this Agreement, the Authority will compensate the City for services rendered.

(c) If the City ceases to serve as the Administrator, the Board may appoint a successor entity, agency, person, firm or corporation, including a nonprofit corporation, to serve as the Administrator to execute the provisions of this Agreement and implement programs undertaken by the Authority.

7. Capitalization of the Authority. Capitalization of the Authority which shall include but not be limited to all costs incurred and associated with the design, planning, construction, operation and maintenance pursuant to this Agreement shall e derived exclusively from external funding sources. The Members of the Authority shall not be responsible for any costs incurred by the Authority in fulfillment of its purposes pursuant to this Agreement and/or the Bylaws.

8. Board of Directors.

   (a) Directors and Alternates. Each member shall initially appoint three directors. Each Member may, in a director's absence appoint an alternate director for said director. Any new member added after the formation of the Authority may appoint additional directors and alternate directors in accordance with Section 16 of this Agreement.

   (b) Compensation. Directors and alternate directors are not entitled to compensation. The Board may authorize reimbursement of expenses incurred by directors or alternate directors.

   (c) Delegation of Powers. The Board may, pursuant to section 9, delegate certain powers to committees but may not delegate the power to dismiss the Administrator, or amend the Bylaws.

9. Committees. The Board may create committees as set forth in the Bylaws. All directors are eligible for appointment to one or more committees.

10. Officers and Employees.

    (a) The officers of the Authority are the Chair, Vice-Chair, Executive Director, Chief Financial Officer, Secretary and Legal Counsel.

    (b) The Chair and Vice-Chair are directors elected by the Board at its first meeting. The initial term of the Chair and Vice-Chair shall run from the date of their election to office. Thereafter, the term of office for the Chair and Vice-Chair is one (1) year. The Executive Director, Secretary, Chief Financial Officer and Legal Counsel serve as set forth in the Bylaws. The duties of the officers are described in the Bylaws. The Chair and Vice-Chair assume their office upon election. The Executive Director, Chief Financial Officer, Secretary and Legal Counsel assume the duties of their office upon appointment by the Board. If either the Chair or Vice-Chair ceases to be a director, the resulting vacancy will be filled at the next meeting of the Board.

    (c) The Chair and Vice-Chair are not entitled to compensation. The Board may authorize reimbursement of expenses incurred by officers.

11. Limitation of Liability of Members for Debts and Obligations of the Authority. The debts, liabilities, and obligations of the Authority do not constitute the debts, liabilities, nor obligations of any party to this Agreement. A Member may separately contract for or assume responsibility for specific debts, liabilities, or obligations of the Authority. Notwithstanding any other provision of this Agreement, no fee, assessment or charge may be levied against a current Member without express consent of the Member.

12. Fiscal Year. The first fiscal year of the Authority is the period from the date of this Agreement through June 30, _____. Each subsequent fiscal year of the Authority begins on July 1 and ends on June 30.

13. Budget. The Board may adopt, at is sole discretion, an annual or multi-year budget before the beginning of a fiscal year.

14. Annual Audits and Audit Reports. The Chief Financial Officer will cause an annual financial audit to be made by an independent public accountant with respect to all Authority receipts, disbursements, other transactions and entries into the books. A report of the financial audit will be filed as a public record with each Member. The audit will be file no later than required by State law. The Authority will pay the cost of the financial audit in the same manner as other administrative costs.

15. Establishment and Administration of Funds.

    (a) The Authority is responsible for the strict accountability of all funds and reports of all receipts and disbursements. It will comply with every provision of law relating to the establishment and administration of funds.

    (b) The funds will be accounted for on a full accrual basis.

    (c) The Chief Financial Officer will receive, invest, and disburse funds only in accordance with procedures established by the Board and in conformity with applicable law. The Chief Financial Officer will procure a fidelity bond in accordance with the Bylaws.

16. New Members. For the purpose of this Section only, all Members admitted after the formation of the Authority are New Members.

    (a) A public entity may be admitted as a New Member only upon concurrence of the Members evidenced by an amendment of this Agreement and upon complying with all other requirements established by the Board and the Bylaws.

    (b) Each applicant for membership as a New Member must pay all fees and expenses, if any, set by the Board.

    (c) For each New Member admitted, the City shall appoint one (1) additional director and one (1) additional alternate director to serve on the Board of the Authority.

17. Ex-Officio Members. Public entities may be invited to serve as ex-officio Members of the Authority as provided in the Bylaws.

18. Withdrawal. Members may withdraw in accordance with conditions set forth in the Bylaws provided that no Member may withdraw if such withdrawal would adversely affect any bonds, liabilities or other forms of indebtedness issued by the Authority.

19. Indemnification. The Authority shall acquire such insurance protection as it deems necessary to protect the interests of the Authority, the Members to this Agreement and the public. The Authority shall assume the defense of and indemnify and save harmless each party to this Agreement and its respective officers, agents and employees, from all claims, losses, damages, costs, injury and liability of every kind, nature and description directly or indirectly arising from the performance of any of the activities of the Authority undertaken pursuant to this Agreement.

20. Expulsions/Suspension. The Authority may expel or suspend a Member by a two-thirds (2/3) vote of the Board for an event of default of this Agreement or the Bylaws as determined by the Board. The procedures for hearing and notice of expulsion and suspension of a Member are as provided in the Bylaws.

21. Termination and Distribution.

(a) This Agreement shall continue until terminated. However, it may not be terminated until such time as all principal of an interest on any bonds, liabilities or other forms of indebtedness of the Authority are paid in full. Thereafter, this Agreement may be terminated by the written consent of two-thirds (2/3) of the Members; provided, however, that this Agreement and the Authority continue to exist after termination for the purpose of disposing of all claims, distribution of assets and other functions necessary to conclude the obligations and affairs of the Authority.

(b) After completion of the Authority's purposes, any surplus money on deposit in any fund or account of the Authority will be disbursed as provided in the Bylaws. The Board is vested with all powers of the Authority for the purpose of concluding and dissolving the business affairs of the Authority.

22. Adoption of City Contracting Provisions. The Authority hereby adopts the provisions of the Municipal Code of the City_____ Administrative Code, as amended, and as set forth below.

(a) Public Contracting Provisions. The Authority shall comply with all restrictions and requirements prohibiting discrimination of any kind in employment and contracting as amended from time to time, which is hereby incorporated by reference as if fully set forth herein. The Authority shall be only responsible for the administration of such requirements. Unless otherwise provided by a resolution of the Board of the Authority, prevailing wages shall be paid for the construction and operation of the transit terminal and related facilities.

23. Notices. Notice to each Member under this Agreement is sufficient if mailed to the Member and separately to the Member's direct to their respective addresses as follows:

City:

District:

Joint Powers Board:

24. Prohibition Against Assignment. No Member may assign a right, claim, or interest it may have under this Agreement. No creditor, assignee or third party beneficiary of a Member has a right, claim or title to any part, share, interest, fund or asset of the Authority. However, nothing in this Section prevents the Authority form assigning any interest or right it may have under this Agreement to a third party.

25. Amendments. This Agreement may be amended at any time by the written agreement of the Members.

26. Severability. If any portion, term, condition or provision of this Agreement is determined by a court to be illegal or in conflict with a law of the State of California, or is otherwise rendered unenforceable or ineffectual, the validity of the remaining portions, terms, conditions and provisions is not affected.

27. Liability of the Authority. Subject to limitations thereon contained in any trust agreement or other documents pursuant tot which financing of the Authority are implemented, funds of the Authority may be used to defend, indemnify, and hold harmless the authority, any Member, any director or alternate, and any employee or officer of the Authority for their actions taken within the scope of their duties while acting on behalf of the Authority.

28. Environmental Compliance. Execution of this Agreement does not substitute for any required review process nor guarantee approval. Design and development will be considered through the local land use permitting process, which requires environmental.

29. Governing Law. This Agreement will be governed by and construed in accordance with the laws of the State of California.

30. Counterparts. This Agreement may be executed in several counterparts, each of which is an original and all of which constitutes but one and the same instrument.

31. Effective Date. This Agreement becomes effective and the Authority exists as a separate public entity upon its execution by the Members.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year written below.

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