APPENDIX A
LIST OF ACRONYMS

List of Acronyms

AASHTO	American Association of State Highway and Transportation Officials
AD	Archived Data
ADOT	Arizona Department of Transportation
ADUS	Archived Data User Service
ANSI	American National Standards Institute
APTS	Advanced Public Transportation Systems
ASTM	American Society For Testing and Materials
ATIS	Advanced Traveler Information Systems
ATMIS	Advanced Transportation Management and Information Systems
ATMS	Advanced Transportation Management Systems
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
CEA	Consumer Electronics Association
CTC	County Transportation Commission
CVISN	Commercial Vehicle Information Systems & Networks
CVO	Commercial Vehicle Operations
CHP	California Highway Patrol
CMS	Changeable Message Sign
DOT	Department of Transportation
EIA	Energy Information Administration
EM	Emergency Management
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FSP	Freeway Service Patrol
FTA	Federal Transit Administration
HAR	Highway Advisory Radio
HOV	High Occupancy Vehicles
IEEE	Institute of Electrical and Electronics Engineers
ISP	Information Service Provider
ITE	Institute of Transportation Engineers
ITS	Intelligent Transportation System(s)
MCO	Maintenance & Construction Operations
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
NDOT	Nevada Department of Transportation
NEMA	National Electrical Manufacturers Association

PeMS	Freeway Performance Measurement System
RCTC	Riverside County Transportation Commission
RTA	Riverside Transit Agency
RTP	Regional Transportation Plan
RTIP	Regional Transportation Improvement Program
RWIS	Road Weather Information Systems
SAE	Society of Automotive Engineers
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 B

LIST OF STAKEHOLDERS

Appendix B
Inland Empire Regional ITS Architecture - Stakeholder List

Agency	Stakeholder Category
California Speedway	Activity Centers
March Joint Powers Authority	Airports
Ontario International Airport	Airports
Palm Springs International Airport	Airports
San Bernardino International Airport	Airports
Southern California Logistics Airport	Airports
Adelanto	Cities
Banning	Cities
Barstow	Cities
Beaumont	Cities
Big Bear Lake	Cities
Blythe	Cities
Calimesa	Cities
Canyon Lake	Cities
Cathedral City	Cities
Chino	Cities
Chino Hills	Cities
Coachella	Cities
Colton	Cities
Corona	Cities
Desert Hot Springs	Cities
Fontana	Cities
Grand Terrace	Cities
Hemet	Cities
Hesperia	Cities
Highland	Cities
Indian Wells	Cities
Indio	Cities
La Quinta	Cities
Lake Elsinore	Cities
Loma Linda	Cities
Montclair	Cities
Moreno Valley	Cities
Murrieta	Cities
Needles	Cities
Norco	Cities
Ontario	Cities
Palm Desert	Cities
Palm Springs	Cities
Perris	Cities
Rancho Cucamonga	Cities
Rancho Mirage	Cities
Redlands	Cities
Rialto	Cities
Riverside	Cities
San Bernardino	Cities
San Jacinto	Cities
Temecula	Cities
Twentynine Palms	Cities
Upland	Cities
Victorville	Cities

Appendix B
Inland Empire Regional ITS Architecture - Stakeholder List

Agency	Stakeholder Category
Yucaipa	Cities
FHWA, CA Division	Federal Agencies
FTA/FHWA L.A. Metropolitan Office	Federal Agencies
Coachella Valley Assn. of Governments (CVAG)	Local Agencies
Riverside County	Local Agencies
Riverside County Transportation Commission	Local Agencies
San Bernardino Associated Governments	Local Agencies
San Bernardino County	Local Agencies
Southern California Assn. Of Governments (SCAG)	Local Agencies
Western Riv. Council of Governments (WRCOG)	Local Agencies
Arizona Department of Transportation (ADOT)	Other State Agencies
Nevada Department of Transportation (NDOT)	Other State Agencies
Regional Transportation Commission (RTC) of Southern Nevada	Other Local Agencies
California Highway Patrol (CHP)	Public Safety Agencies
Riverside County Sheriff - Tech. Services Division	Public Safety Agencies
San Bernardino County Fire	Public Safety Agencies
Caltrans, Division of Research and Innovation	State Agencies
Caltrans, District 8	State Agencies
Apple Valley	Town
Yucca Valley	Town
Banning Transit	Transit Agencies
Beaumont Transit	Transit Agencies
Corona Transit	Transit Agencies
Morongo Basin Transit Authority (MBTA)	Transit Agencies
Mountain Area Regional Transit Authority (MARTA)	Transit Agencies
Needles Area Transit (NAT)	Transit Agencies
Omnitrans	Transit Agencies
Palo Verde Valley Transit Agency (PVVTA - City of Blythe)	Transit Agencies
Riverside Special Services (City of Riverside)	Transit Agencies
Riverside Transit Agency (RTA)	Transit Agencies
So. Calif. Regional Rail Authority (SCRRA)	Transit Agencies
SunLine Transit Agency	Transit Agencies
Victor Valley Transit Authority (VVTA)	Transit Agencies

APPENDIX C

INVENTORY BY STAKEHOLDER

Inland Empire Inventory by Stakeholder

Stakeholder	***Element***	***Status***	***Architecture Entity***
Arizona DOT (ADOT)			
	Arizona DOT (ADOT) ATMS	Planned	Other TM (Terminator)
California Department of Motor Vehicles (DMV)			
	DMV CVO Administration (PrePass)	Existing	Commercial Vehicle Administration (Subsystem)
California Highway Patrol (CHP)			
	CHP CAD System	Existing	Emergency Management (Subsystem)
	CHP Vehicles	Existing	Emergency Vehicle Subsystem (Subsystem)
Caltrans D-8			
	Caltrans D-8 TMC	Existing	Archived Data Management Subsystem (Subsystem)
		Existing	Information Service Provider (Subsystem)
	Caltrans D-8 Maintenance and Construction Mgmt System	Existing	Maintenance and Construction Mgmt (Subsystem)
	Caltrans D-8 Roadway Maintenance Vehicles	Existing	Maintenance and Construction Vehicle (Subsystem)
	Caltrans D-8 Signal Ops Roadside Equipment	Existing	Roadway Subsystem (Subsystem)
	Caltrans D-8 TMC Roadside Equipment	Existing	Roadway Subsystem (Subsystem)
	Caltrans D-8 Signal Ops	Existing	Traffic Management (Subsystem)
	Caltrans D-8 TMC	Existing	Traffic Management (Subsystem)
Caltrans HQ			
	Caltrans CVO Administration (Pre-pass)	Existing	Commercial Vehicle Administration (Subsystem)
	CVO Weigh Stations (including weigh-in-motion)	Existing	Commercial Vehicle Check (Subsystem)

Stakeholder	***Element***	***Status***	***Architecture Entity***
City of Corona			
	Corona TMC	Existing	Information Service Provider (Subsystem)
	Corona TMC Roadside Equipment	Existing	Roadway Subsystem (Subsystem)
	Corona TMC	Existing	Traffic Management (Subsystem)
City of Fontana			
	Fontana Police Dispatch Center	Existing	Emergency Management (Subsystem)
	Fontana Emergency Vehicles	Existing	Emergency Vehicle Subsystem (Subsystem)
	Fontana Traveler Information	Existing	Information Service Provider (Subsystem)
	Fontana TMC	Existing	Information Service Provider (Subsystem)
	Fontana TMC Roadside Equipment	Existing	Roadway Subsystem (Subsystem)
	Fontana TMC	Existing	Traffic Management (Subsystem)
City of Temecula			
	Temecula TOC Roadside Equipment	Existing	Roadway Subsystem (Subsystem)
	Temecula TOC	Existing	Traffic Management (Subsystem)
General Public			
	User Personal Computing Devices	Existing	Personal Information Access (Subsystem)

Stakeholder	***Element***	***Status***	***Architecture Entity***
Local Cities and Counties			
	Local Police and Sheriff Departments Systems	Existing	Emergency Management (Subsystem)
	Local and other Fire Departments Systems	Existing	Emergency Management (Subsystem)
	Local and other Fire Vehicles	Existing	Emergency Vehicle Subsystem (Subsystem)
	Local Police and Sheriff Dept Vehicles	Existing	Emergency Vehicle Subsystem (Subsystem)
	Local City and County Roadside Equipment	Existing	Roadway Subsystem (Subsystem)
	Local City and County Signal Systems	Existing	Traffic Management (Subsystem)
	Municipal and small transit agencies systems	Existing	Transit Management (Subsystem)
	Municipal and small transit agencies vehicles	Existing	Transit Vehicle Subsystem (Subsystem)
Metrolink			
	Metrolink Operations Center	Existing	Transit Management (Subsystem)
	Metrolink Trains	Existing	Transit Vehicle Subsystem (Subsystem)
Nevada DOT (NDOT)			
	Nevada DOT (NDOT) ATMS	Existing	Other TM (Terminator)
Omnitrans			
	Omnitrans Fixed Route	Existing	Transit Management (Subsystem)
	Omnitrans Paratransit	Existing	Transit Management (Subsystem)
	Omnitrans Transit Vehicles	Existing	Transit Vehicle Subsystem (Subsystem)
Partners for Advanced Transit and Highways (PATH)			
	Performance Monitoring System (PeMS)	Existing	Archived Data Management Subsystem (Subsystem)
		Existing	Other TM (Terminator)
Private Commercial Vehicle Owners			
	Commercial Vehicles	Existing	Commercial Vehicle Subsystem (Subsystem)

Stakeholder	***Element***	***Status***	***Architecture Entity***
Private Tow Companies			
	Tow Trucks (FSP)	Existing	Emergency Vehicle Subsystem (Subsystem)
Public/Private Information Service Providers			
	Regional Traveler Information Service Providers	Existing	Information Service Provider (Subsystem)
Railroad Operators			
	Rail Grade Crossing Warning Eqpt.	Existing	Wayside Equipment (Terminator)
Riverside County Transportation Commission (RCTC)			
	Riverside Freeway Service Patrol (FSP)	Existing	Emergency Management (Subsystem)
	North Main Corona Metrolink Station Pkg Mgmt System	Planned	Parking Management (Subsystem)
	Riverside County Smart Call Boxes	Existing	Roadway Subsystem (Subsystem)
	Riverside County Call Boxes	Existing	Emergency Telecommunications System (Terminator)
Riverside Transit Agency (RTA)			
	RTA Fixed Route	Existing	Transit Management (Subsystem)
	RTA Paratransit	Existing	Transit Management (Subsystem)
	RTA Transit Vehicles	Existing	Transit Vehicle Subsystem (Subsystem)
San Bernardino Associated Governments (SANBAG)			
	Inland Empire Call Answering Center	Existing	Emergency Management (Subsystem)
	San Bernardino Freeway Service Patrol (FSP)	Planned	Emergency Management (Subsystem)
	San Bernardino County Smart Call Boxes	Existing	Roadway Subsystem (Subsystem)
	San Bernardino County Call Boxes	Existing	Emergency Telecommunications System (Terminator)
Southern California Association of Governments (SCAG)			
	Regional Archived Data Repository	Existing	Archived Data Management Subsystem (Subsystem)

Stakeholder	***Element***	***Status***	***Architecture Entity***
SunLine Transit Agency			
	SunLine Fixed Route	Existing	Transit Management (Subsystem)
	SunLine Paratransit	Existing	Transit Management (Subsystem)
	SunLine Transit Vehicles	Existing	Transit Vehicle Subsystem (Subsystem)
TV, radio and other media outlets (Internet, kiosks, etc.)			
	Media	Existing	Information Service Provider (Subsystem)
		Existing	Media (Terminator)

APPENDIX D

INVENTORY BY ARCHITECTURE ENTITY

Inland Empire Inventory by Architecture Entity

Architecture Entity	***Element***	***Stakeholder***	***Status***
Archived Data Management Subsystem			
	Caltrans D-8 TMC	Caltrans D-8	Existing
	Performance Monitoring System (PeMS)	Partners for Advanced Transit and Highways (PATH)	Existing
	Regional Archived Data Repository	Southern California Association of Governments (SCAG)	Existing
Commercial Vehicle Administration			
	Caltrans CVO Administration (Pre-pass)	Caltrans HQ	Existing
	DMV CVO Administration (PrePass)	California Department of Motor Vehicles (DMV)	Existing
Commercial Vehicle Check			
	CVO Weigh Stations (including weigh-in-motion)	Caltrans HQ	Existing
Commercial Vehicle Subsystem			
	Commercial Vehicles	Private Commercial Vehicle Owners	Existing
Emergency Management			
	CHP CAD System	California Highway Patrol (CHP)	Existing
	Fontana Police Dispatch Center	City of Fontana	Existing
	Inland Empire Call Answering Center	San Bernardino Associated Governments (SANBAG)	Existing
	Local and other Fire Departments Systems	Local Cities and Counties	Existing
	Local Police and Sheriff Departments Systems	Local Cities and Counties	Existing
	Riverside Freeway Service Patrol	Riverside County Transportation Commission (RCTC)	Existing
	San Bernardino Freeway Service Patrol	San Bernardino Associated Governments (SANBAG)	Planned
Emergency Vehicle Subsystem			
	CHP Vehicles	California Highway Patrol (CHP)	Existing
	Fontana Emergency Vehicles	City of Fontana	Existing
	Local and other Fire Vehicles	Local Cities and Counties	Existing
	Local Police and Sheriff Dept Vehicles	Local Cities and Counties	Existing
	Tow Trucks (FSP)	Private Tow Companies	Existing

Architecture Entity	***Element***	***Stakeholder***	***Status***
Emissions Management			
Fleet and Freight Management			
Information Service Provider			
	Caltrans D-8 TMC	Caltrans D-8	Existing
	Corona TMC	City of Corona	Existing
	Fontana TMC	City of Fontana	Existing
	Fontana Traveler Information	City of Fontana	Existing
	Media	TV, radio and other media outlets (Internet, kiosks, etc.)	Existing
	Regional Traveler Information Service Providers	Public/Private Information Service Providers	Existing
Maintenance and Construction Management			
	Caltrans D-8 Maintenance and Construction Mgmt System	Caltrans D-8	Existing
Maintenance and Construction Vehicle			
	Caltrans D-8 Roadway Maintenance Vehicles	Caltrans D-8	Existing
Parking Management			
	North Main Corona Metrolink Station Pkg Mgmt System	Riverside County Transportation Commission (RCTC)	Planned
Personal Information Access			
	User Personal Computing Devices	General Public	Existing
Remote Traveler Support			

Architecture Entity	***Element***	***Stakeholder***	***Status***
Roadway Subsystem			
	Caltrans D-8 Signal Ops Roadside Equipment	Caltrans D-8	Existing
	Caltrans D-8 TMC Roadside Equipment	Caltrans D-8	Existing
	Corona TMC Roadside Equipment	City of Corona	Existing
	Fontana TMC Roadside Equipment	City of Fontana	Existing
	Local City and County Roadside Equipment	Local Cities and Counties	Existing
	Riverside County Smart Call Boxes	Riverside County Transportation Commission (RCTC)	Existing
	San Bernardino County Smart Call Boxes	San Bernardino Associated Governments (SANBAG)	Existing
	Temecula TOC Roadside Equipment	City of Temecula	Existing
Toll Administration			
Toll Collection			
Traffic Management			
	Caltrans D-8 Signal Ops	Caltrans D-8	Existing
	Caltrans D-8 TMC	Caltrans D-8	Existing
	Corona TMC	City of Corona	Existing
	Fontana TMC	City of Fontana	Existing
	Local City and County Signal Systems	Local Cities and Counties	Existing
	Temecula TOC	City of Temecula	Existing

Architecture Entity	***Element***	***Stakeholder***	***Status***
Transit Management			
	Metrolink Operations Center	Metrolink	Existing
	Municipal and small transit agencies systems	Local Cities and Counties	Existing
	Omnitrans Fixed Route	Omnitrans	Existing
	Omnitrans Paratransit	Omnitrans	Existing
	RTA Fixed Route	Riverside Transit Agency (RTA)	Existing
	RTA Paratransit	Riverside Transit Agency (RTA)	Existing
	SunLine Fixed Route	SunLine Transit Agency	Existing
	SunLine Paratransit	SunLine Transit Agency	Existing
Transit Vehicle Subsystem			
	Metrolink Trains	Metrolink	Existing
	Municipal and small transit agencies vehicles	Local Cities and Counties	Existing
	Omnitrans Transit Vehicles	Omnitrans	Existing
	RTA Transit Vehicles	Riverside Transit Agency (RTA)	Existing
	SunLine Transit Vehicles	SunLine Transit Agency	Existing
Vehicle			

Terminators

Architecture Entity	***Element***	***Stakeholder***	***Status***
Archived Data Administrator			
Archived Data User Systems			
Asset Management			
Basic Commercial Vehicle			
Basic Maintenance and Construction Vehicle			
Basic Transit Vehicle			
Basic Vehicle			
Care Facility			
Commercial Vehicle Driver			
Commercial Vehicle Manager			
CVO Information Requestor			
CVO Inspector			
DMV			
Driver			
Emergency Personnel			
Emergency System Operator			
Emergency Telecommunications System			
	Riverside County Call Boxes	Riverside County Transportation Commission (RCTC)	Existing
	San Bernardino County Call Boxes	San Bernardino Associated Governments (SANBAG)	Existing

Architecture Entity	***Element***	***Stakeholder***	***Status***
Enforcement Agency			
Environment			
Equipment Repair Facility			
Event Promoters			
Financial Institution			
Government Reporting Systems			
Intermodal Freight Depot			
Intermodal Freight Shipper			
ISP Operator			
Location Data Source			
Maintenance and Construction Administrative			
Maintenance and Construction Center Personnel			
Maintenance and Construction Field Personnel			
Map Update Provider			
Media			
	Media	TV, radio and other media outlets (Internet, kiosks, etc.)	Existing
Multimodal Crossings			
Multimodal Transportation Service Provider			
Other Archives			
Other CVAS			
Other Data Sources			

Architecture Entity	***Element***	***Stakeholder***	***Status***
Other EM			
Other ISP			
Other MCM			
Other MCV			
Other Parking			
Other Roadway			
Other TM			
	Arizona DOT (ADOT) ATMS	Arizona DOT (ADOT)	Planned
	Nevada DOT (NDOT) ATMS	Nevada DOT (NDOT)	Existing
	Performance Monitoring System (PeMS)	Partners for Advanced Transit and Highways (PATH)	Existing
Other Toll Administration			
Other TRM			
Other Vehicle			
Parking Operator			
Pedestrians			
Potential Obstacles			
Rail Operations			
Roadway Environment			
Secure Area Environment			
Storage Facility			
Surface Transportation Weather Service			

Architecture Entity	***Element***	***Stakeholder***	***Status***
Toll Administrator			
Toll Operator			
Trade Regulatory Agencies			
Traffic			
Traffic Operations Personnel			
Transit Driver			
Transit Fleet Manager			
Transit Maintenance Personnel			
Transit System Operators			
Transit User			
Traveler			
Traveler Card			
Vehicle Characteristics			
Wayside Equipment			
	Rail Grade Crossing Warning Eqpt.	Railroad Operators	Existing
Weather Service			
Yellow Pages Service Providers			

APPENDIX E
ITS NEEDS SURVEY

ITS Needs Survey and Exercise

Background:
The following pages contain a fairly comprehensive listing of ITS Needs that Iteris compiled based on our knowledge of the Inland Empire transportation challenges and based on situations we have encountered in other similar locales. This list was distributed at the project Workshop conducted in San Bernardino on March 4, 2003. The group went over the list in some detail and Iteris was able to garner some valuable input regarding Relative Priority of specific Needs on the list.

How can you help?
We are asking all of the project stakeholders to scan through the following list of potential ITS Needs and give us their input on relevancy and priority. Please let us know whether specific Needs are either a High Priority for the Region or a Low Priority for the Region, from your perspective. There is even value in having reviewers scan only specific subject areas of the list to provide input. For example, there would be value in having transit agency representatives review and provide input on the Public Transportation Management portion of the list, even if they do not provide input on other portions of the list. Also, more importantly, please let us know if you have any other items to add to the list.

Specific Instructions:
Please insert your name, agency and other requested contact information on the following page. Then please review the following list of ITS Needs and provide your input on the relative priority of selected Needs for the Inland Empire. Insert the letter H for High, M for Medium and L for Low in the "Relative Priority" column of the ITS Needs list.

Then, please email this file to Tom Petrosino, of Iteris at tmp@iteris.com.

We will then take the input into account when preparing Needs and Services deliverable.

Workshop #2
ITS Needs Exercise

Reviewer Name	
Representing	
Phone #	
Email address	

H=High, M=Medium, L=Low

ITS Categories	Needs	Relative Priority
Arterial / Traffic Management		
Examples: *Signal Coordination, Centralized Control, Vehicle Detection Systems, Video Systems, Adaptive Signal Control, Traffic Management Systems / Centers, Highway Rail Intersection Technologies*	Improve system operation monitoring	
	Provide systemwide arterial management strategies	
	Develop access management plans/strategies (signal spacing)	
	Improve signal optimization	
	Improve traffic flow monitoring	
	Provide more widespread centralized computer control	
	Improve hardware issues in interconnecting signal systems between agencies	
	Improve signal control and timing	
	Improve/implement ability to remotely modify signal timing	
	Better manage congestion at signals	
	Reduce detector failures when pavement “breaks up”	
	Improve emergency vehicle preemption systems (speed-up return to coordination)	
	Reduce emergency vehicle delays at signals	
	Reduce transit vehicle delays at signals	
	Better balance signal timings favoring local traffic over through traffic	
	Improve inter-jurisdictional continuity	
	Upgrade signal hardware	
	Implement or improve signal coordination	
	Better manage periods of high traffic demand in poor roadway conditions	
	Provide quality real time congestion related information	
	Remote monitoring of signal system status / operations by public safety agencies	
	Reduce vehicle traffic delays at grade crossings	
	Better coordinate grade crossing operations with signals	
	Deploy network vs. corridor based signal coordination	

H=High, M=Medium, L=Low

ITS Categories	Needs	Relative Priority
Freeway Management Systems		
Examples: Vehicle Speed Detection Systems, Video Systems, Ramp Metering, Variable Message Signs, Highway Advisory Radio, Traffic Management Systems/Centers	Deploy additional vehicle detection coverage	
	Implement additional field device interconnect	
	Improve collection of traffic demand data	
	Improve inter-agency coordination	
	Improve information exchange between Caltrans District 8 and other Caltrans Districts	
	Improve information exchange between Caltrans and Nevada DOT and Arizona DOT	
	Improve information exchange between Caltrans District 8 and other local agencies	
	Improve incident response, especially in rural areas	
	Disseminate more timely incident information dissemination (traveler information)	
	Better manage periods of high traffic demand in poor roadway conditions	
	Provide quality real time congestion related information	
	Improve traveler information/directions (suggested routing for travelers not familiar with the region)	

H=High, M=Medium, L=Low

ITS Categories	Needs	Relative Priority
Public Transportation Management		
Examples: *Public Transportation Management, En-route Transit Information, Personalized Public Transit, Public Traveler Safety, Traveler Service Information, Ride Matching and Reservations, Smart Card Payment/Transaction Systems*	Improve regional and interregional trip planning	
	Improve patron safety (in-vehicle and at stations / waypoints)	
	Better notification and coordination of special event loads resulting in congestion	
	Provide transit priority at signals	
	Implement bus queue jump lanes	
	Improve transit transfers within and between systems and modes to improve service delivery	
	Enable dissemination / display of bus arrival times	
	Enable transit agencies to locate bus fleet (AVI/AVL)	
	Improved information exchange between/among transit agencies	
	Improved information exchange between transit agencies and freeway / arterial management centers	
	Disseminate better rail information and arrival times (connectivity issues)	
	Provide quality real time congestion related information	
	Enable emergency information dissemination to transit operators	
	Improve efficiency of social service transportation providers	

H=High, M-Medium, L=Low

ITS Categories	Needs	Relative Priority
Emergency Management		
Examples: *Incident Detection, Incident Management, Hazardous Materials Response and Handling, Emergency Notification and Personal Security, Emergency Vehicle Management, Advanced Dispatching and Response Systems*	Reduce response delays at signals	
	Improve response to weather events	
	Provide alternate route plans	
	Increase broad understanding of existing incident management procedures for: OES, FEMA, FHWA, CDF, USFS, CHP, Fish & Game, etc.	
	Increase broad understanding of, and implement Standardized Emergency Management System (SEMS)	
	Better notification of recreational routes closed in winter	
	Improve incident response coordination between agencies	
	Improve incident detection	
	Improve incident response times	
	Improve communications in mountain and rural areas of the region	
	Better information dissemination regarding diversion of trucks	
	Improve traffic management during wildfires (evacuation, response, suppression, etc.)	
	Improve response to hazardous materials spills / incidents (better manage resulting traffic congestion, improve clean-up time)	
	Increase use of portable traffic control equipment (CMS, HAR, etc.)	
	Provide quality real time congestion related information	
	Improve traveler information / directions (suggested routing for travelers not familiar with the region)	

H=High, M-Medium, L=Low

ITS Categories	Needs	Relative Priority
Maintenance and Construction Operations		
Examples: *Advanced Work Zone Management and Traffic Control, Vehicle Detection Systems, Video Systems, Vehicle / Speed Detection Systems, Variable Message Signs, Highway Advisory Radio, Integration with Traffic Management Systems / Centers, Advanced Dispatching and Routing Systems, Advanced Vehicle Tracking Systems, Fleet Maintenance and Management Systems*	Provide automated vehicle location systems for maintenance and construction operations vehicles	
	Improve / enhance work zone traffic handling plans	
	Improve detection and removal of falling rocks, snow, mud and trees on roadways	
	Provide more data source locations for the National Weather Service	
	Improve coordination on construction notification and information distribution	
	Improve fleet information / management (maintenance schedules, mileage accumulations, tracking snow removal vehicles w/AVL)	
	Coordinate traffic control plans between jurisdictions	
	Increase use of portable traffic control equipment (CMS, HAR, etc.)	
	Provide signal preemption for some maintenance fleet vehicles	
	Interagency coordination on most advantageous placement of maintenance vehicles (prior to anticipated need)	
	Provide quality real time congestion related information	
	Improved traveler information/directions (suggested routing for travelers not familiar with the region)	

H=High, M-Medium, L=Low

ITS Categories	Needs	Relative Priority
Regional Traveler Information		
Examples: *En-route Traveler Information, Pre-trip Traveler Information, Portable Event Management Systems, In-vehicle Route Guidance, Traffic Information, Variable Message Signs, Highway Advisory Radio, Internet, Media, Tourist Information Systems*	Provide quality real time congestion related information	
	Expand traveler information delivery methods	
	Improve method of disseminating Caltrans delay and incident data	
	Use public access cable television to disseminate traffic and weather information	
	Improve quality and timeliness of communications	
	Improve processes for announcing when chain control is in effect in mountains and passes	
	Better disseminate correct traffic information	
	Provide timely, accurate information on road conditions	
	Better manage traffic flow to and from recreation areas	
	Improve procedures to get accurate information disseminated in a timely manner	
	Develop interstate / inter-region traveler information covering a wide area (targeted to CVO)	
	Improve targeted traveler information for tourists and recreation travelers at visitor information areas / rest stops, etc.	
	Provide weather and road info access at rest stops (could be radar screen video/monitor)	
	Provide more data source locations for the National Weather Service	
	Provide information distribution to private/commercial information service providers (ISPs)	
	Provide better road construction information and notification	
	Provide more timely dissemination of traveler information	
	Provide alternate weather and road information	
	Improve traveler information/directions (suggested routing for travelers not familiar with the region)	

H=High, M-Medium, L=Low

ITS Categories	Needs	Relative Priority
Commercial Vehicle Operations		
Examples: *Commercial Vehicle Electronic Clearance, Automated Roadside Safety Inspection, On-board Safety Monitoring, Commercial Vehicle Administration Processes, Hazardous Material Incident Response, Commercial Vehicle Fleet Management, Services to Assist Agricultural Harvesting and Migration*	Provide interstate / inter-region traveler information covering a wide area (targeted to CVO)	
	Provide tracking of hazmat vehicles	
	Provide better information dissemination of winter vehicle restrictions (Chain control issues (ON/OFF))	
	Provide quality real time congestion related information	
	Improve truck storage / parking information (during major road closures)	
	Disseminate better information regarding limited alternative routes	
	Improve congestion management during seasonal/local events	

H=High, M=Medium, L=Low

ITS Categories	Needs	Relative Priority
Electronic Payment Systems		
Examples: *Electronic Toll Collection Systems, Electronic Transit Fare Payment Systems (Smart Cards)*	Improved transit fare payment systems	

H=High, M=Medium, L=Low

ITS Categories	Needs	Relative Priority
Advanced Vehicle Control and Safety Systems		
Examples: Longitudinal Collision Avoidance, Lateral Collision Avoidance, Intersection Collision Avoidance, Vision Enhancement for Crash Avoidance, Safety Readiness, Pre-crash Restraint Deployment, Automated Highway System	Snow plow tracking project	
	Advanced warning signs for road icing, excess speed, etc.	
	Reduce red light running	

H=High, M=Medium, L=Low

ITS Categories	Needs	Relative Priority
Integration		
Examples: Integration of Systems, Integration With Traffic Management Centers, Central vs. Distributed Control, Communications Infrastructure, Integration of Agencies, Institutional Issues	Improve information sharing among agencies	
	Improve communication limitations	
	Reduce dependency on proprietary systems	
	Improve understanding and capabilities of other agencies	
	Develop better understand needs of other agencies	
	Coordination with schools and Office of Emergency Services	
	Provide central information clearinghouse	
	Use common verbiage	
	Use common road condition classifications	
	Reduce impacts of different operating systems for signal control	
	Develop integrated GIS for Region	
	Develop political agreements (MOUs)	
	Improve system compatibility	
	Improve agency coordination (Incident Mgmt, General Information, ICS & Incident Command)	

APPENDIX G

INLAND EMPIRE PROJECTS
RIVERSIDE COUNTY PROJECTS
SAN BERNARDINO COUNTY PROJECTS

Appendix G
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, but are not limited to: 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 Ridesharing System** - This project would implement a 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 - 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 local city and county agencies	ATMS 7	1

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Inland Empire Projects

Project #	Project Description	Participating Agencies	Market Package(s) Addressed	Priority for Deployment (1=H, 2=M, 3=L)
IE-5	**Permanent Inland Empire Caltrans/CHP Transportation Management Center (TMC)** - Development and construction 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 should be given to establishing a regional data collection point and a single point for ISP interface.	- Caltrans - CHP - RCTC - SANBAG - 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.	- Caltrans - the private sector - CHP - 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 Permanent Caltrans/CHP TMC should have the capability to monitor and control the ramp metering function.	- Caltrans - other local agencies as appropriate - CHP	ATMS 4	2

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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 TOC/TMC Development (other local agencies)** - This project is a "catch-all" for any local agency desiring to develop and implement a local TOC/TMC, either individually or jointly with other neighboring agencies. These projects would develop local agency (city and county level) TOCs/TMCs with varying levels of capability depending on the needs of the deploying local agency, or agencies. 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 - others as appropriate	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	**Traffic Signal Re-timing/Re-synchronization** - This project is a "catch-all" for any agency (local or state) seeking to update signal timing, coordination and synchronization on a periodic basis to account for changes in population and traffic patterns.	- local city and county agencies as appropriate - Caltrans - others as appropriate	ATMS 1 ATMS 3 ATMS 7	2

Appendix G
Inland Empire Projects

Project #	Project Description	Participating Agencies	Market Package(s) Addressed	Priority for Deployment (1=H, 2=M, 3=L)
IE-15	**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 - others as appropriate	AD 1 AD 2	3
IE-16	**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-17	**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 traffic, travel, incident and train location information. This project is similar in concept to intertie projects between cities and Caltrans D-8.	- Caltrans - Metrolink - RCTC - SANBAG	ATIS 1 ATMS 7	3
IE-18	**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 - RCTC - SANBAG	ATIS 1 ATMS 7	3

Appendix G
Inland Empire Projects

Project #	Project Description	Participating Agencies	Market Package(s) Addressed	Priority for Deployment (1=H, 2=M, 3=L)
IE-19	**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 - others as appropriate	MCO 1	3
IE-20	**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-21	**Interconnect various city and county signal systems with Caltrans signal system(s)** - This project would implement enhanced interconnects and possibly coordination between various city/county signal systems and Caltrans signal system(s).	- Caltrans - various local city and county agencies	ATMS 7	3
IE-22	**Interconnect various local city and county signal systems with other local city and county signal system(s)** - This project would implement enhanced interconnects and possibly coordination between various city/county signal systems and Caltrans signal system(s). The San Bernardino Valley Coordinated Signal System project intends to implement this concept in various corridors in the San Bernardino Valley.	- Caltrans - various local city and county agencies - others as appropriate	ATMS 7	3
IE-23	**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

Appendix G
Inland Empire Projects

Project #	Project Description	Participating Agencies	Market Package(s) Addressed	Priority for Deployment (1=H, 2=M, 3=L)
IE-24	**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-25	**Local traffic signal system connection(s) to Advanced Traveler Information Systems (ATIS) and/or Information Service Providers (ISPs)** - This project will allow for the transfer of traveler information originating in local traffic signal systems to Advanced Traveler Information Systems (ATIS) and/or Information Service Providers ISPs) for further dissemination.	- local city and county agencies as appropriate - ISPs - others as appropriate	ATIS 1	3
IE-26	**Transit Management Systems connection to ATIS/ISP** - This project will allow for the transfer of transit vehicle arrival status and transit traveler information originating in the transit agencies to ATIS/ISPs for further dissemination.	- Omnitrans - RTA - SunLine - Metrolink - other local transit operators - ISPs - others as appropriate	APTS 8	3

Appendix G
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
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

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Riverside County Projects

Project #	City	Project Description	Participating Agencies	Market Package(s) Addressed	Priority for Deployment (1=H, 2=M, 3=L)
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	various	**RTA Transit Traveler Information System** - This system would deploy transit traveler information at various transit transfer points and bus stops, in anticipation of the roll-out of bus rapid transit (BRT) service. Information elements could include, but not be limited to bus arrival/departure status, transfer status, etc.	- RTA - others as appropriate	APTS 8	2
Riv-8	Corona	**North Main Corona Metrolink Station Parking Structure Management System** - At a yet to be constructed parking structure at the North Main Corona Metrolink Station a parking management system will be implemented. It will include visual displays at the entrances of the structure that convey parking availability and possibly available parking space locations 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 and departure status on the same visual display.	- RCTC - Metrolink - RTA - others as appropriate	ATMS 16 APTS 8	2
Riv-9	Corona	**Advanced Traveler Information Systems (ATIS)/Information Service Provider (ISP) connection to North Main Corona Metrolink Station Parking Structure 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 various ATIS/ISPs.	- RCTC - ISPs - others as appropriate	ATIS 1	2

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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 Management Systems (Riv Co) connection to North Main Corona Metrolink Station Parking Structure 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 Structure Management System.	- RCTC - Metrolink - RTA - Corona Cruiser - others as appropriate	ATMS 16 APTS 8	2
Riv-11	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-12	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-13	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-14	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 G
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), on-board digital audio/video systems and a transit traveler information system.	- Omnitrans	APTS 1 APTS 2 APTS 3 APTS 4 APTS 5 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 - various SB Valley cities - SB County - Caltrans	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 G
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	San Bernardino	**Transit Signal Priority Project** - This project will implement transit signal priority at selected intersections, or on selected corridors, in the City of San Bernardino.	- San Bernardino - Omnitrans - others as appropriate	APTS 7	2
SB-6	various	**Omnitrans Transit Traveler Information System** - This system would deploy transit traveler information at various transit transfer points and bus stops, in anticipation of the roll-out of bus rapid transit (BRT) service. Information elements could include, but not be limited to bus arrival/departure status, transfer status, etc.	- Omnitrans - others as appropriate	APTS 8	3

APPENDIX H

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

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.

APPENDIX I

INLAND EMPIRE ITS STANDARDS

Appendix I
Inland Empire ITS Standards

Flow Name	Lead SDO	Standard Name	
Flow: archive requests			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
Flow: archive status			
Flow: arriving train information			
	IEEE	Standard for Interface Between the Rail Subsystem and the Highway Subsystem at a HRI	IEEE P1570
Flow: bad tag list			
	AASHTO/ITE/NEMA	TCIP - Fare Collection (FC) Business Area Standard	NTCIP 1408
Flow: broadcast information			
	EIA/CEA	Data Radio Channel (DARC) System	CEA/EIA-794
	EIA/CEA	Subcarrier Traffic Information Channel (STIC) System	CEA/EIA-795
	SAE	ISP-Vehicle Location Referencing Standard	SAE J1746
	SAE	Data Dictionary for Advanced Traveler Information System (ATIS)	SAE J2353
	SAE	Message Set for Advanced Traveler Information System (ATIS)	SAE J2354
	SAE	Standard for ATIS Message Sets Delivered Over Bandwidth Restricted Media	SAE J2369
	SAE	Rules for Standardizing Street Names and Route IDs	SAE J2529
	SAE	Messages for Handling Strings and Look-Up Tables in ATIS Standards	SAE J2540
Flow: commercial vehicle archive data			
	ANSI	Commercial Vehicle Safety and Credentials Information Exchange	ANSI TS285
	ANSI	Commercial Vehicle Credentials	ANSI TS286
Flow: credentials information			
Flow: credentials status information			
	ANSI	Commercial Vehicle Safety and Credentials Information Exchange	ANSI TS285
Flow: data collection and monitoring control			
	AASHTO/ITE/NEMA	Global Object Definitions	NTCIP 1201
	AASHTO/ITE/NEMA	Data Collection & Monitoring Devices	NTCIP 1206
	AASHTO/ITE/NEMA	NTCIP Center-to-Field Standards Group	See Footnotes
Flow: driver instructions			
	AASHTO/ITE/NEMA	TCIP - Spatial Representation (SP) Business Area Standard	NTCIP 1405
	AASHTO/ITE/NEMA	TCIP - Control Center (CC) Business Area Standard	NTCIP 1407

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Flow Name	Lead SDO	Standard Name	
Flow: electronic screening request			
	ASTM	Specification for Dedicated Short Range Communication (DSRC) Data Link Layer: Medium Access and Logical Link Control	ASTM PS 105-99
	ASTM	Specification for Dedicated Short Range Communication (DSRC) Physical Layer using Microwave in the 902-928 MHz	ASTM PS 111-98
	IEEE	Standard for Message Sets for Vehicle/Roadside Communications	IEEE Std 1455-1999
Flow: emergency notification			
	AASHTO/ITE/NEMA	TCIP - Incident Management (IM) Business Area Standard	NTCIP 1402
	AASHTO/ITE/NEMA	TCIP - Spatial Representation (SP) Business Area Standard	NTCIP 1405
Flow: emergency traffic control request			
	AASHTO/ITE/NEMA	Global Object Definitions	NTCIP 1201
	AASHTO/ITE/NEMA	Objects for Signal Control Priority	NTCIP 1211
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	IEEE	Standard for Traffic Incident Management Message Sets for Use by EMCs	IEEE P1512.1
	IEEE	Standard for Emergency Management Data Dictionary	IEEE P1512.a
Flow: emergency traffic control response			
	AASHTO/ITE/NEMA	Global Object Definitions	NTCIP 1201
	AASHTO/ITE/NEMA	Objects for Signal Control Priority	NTCIP 1211
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	IEEE	Standard for Traffic Incident Management Message Sets for Use by EMCs	IEEE P1512.1
	IEEE	Standard for Emergency Management Data Dictionary	IEEE P1512.a
	ITE	Standard for Functional Level Traffic Management Data Dictionary (TMDD)	ITE TM 1.03
	ITE	Message Sets for External TMC Communication (MS/ETMCC)	ITE TM 2.01
Flow: environmental conditions data			
	AASHTO/ITE/NEMA	Global Object Definitions	NTCIP 1201
	AASHTO/ITE/NEMA	Object Definitions for Environmental Sensor Stations & Roadside Weather Info System	NTCIP 1204
	AASHTO/ITE/NEMA	NTCIP Center-to-Field Standards Group	See Footnotes
Flow: equipment maintenance status			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	
Flow: external reports			
Flow: fare and payment status			
	AASHTO/ITE/NEMA	TCIP - Fare Collection (FC) Business Area Standard	NTCIP 1408
Flow: fare management information			
Flow: field equipment status			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	ITE	Standard for Functional Level Traffic Management Data Dictionary (TMDD)	ITE TM 1.03
	ITE	Message Sets for External TMC Communication (MS/ETMCC)	ITE TM 2.01
Flow: freeway control data			
	AASHTO/ITE/NEMA	Global Object Definitions	NTCIP 1201
	AASHTO/ITE/NEMA	Ramp Meter Controller Objects	NTCIP 1207
	AASHTO/ITE/NEMA	NTCIP Center-to-Field Standards Group	See Footnotes
Flow: freeway control status			
	AASHTO/ITE/NEMA	Global Object Definitions	NTCIP 1201
	AASHTO/ITE/NEMA	Ramp Meter Controller Objects	NTCIP 1207

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Inland Empire ITS Standards

Flow Name	Lead SDO	Standard Name	
	AASHTO/ITE/NEMA	NTCIP Center-to-Field Standards Group	See Footnotes
Flow: hri operational status			
	IEEE	Standard for Interface Between the Rail Subsystem and the Highway Subsystem at a Highway Rail Intersection	IEEE P1570
Flow: incident information			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	IEEE	Standard for Traffic Incident Management Message Sets for Use by EMCs	IEEE P1512.1
	IEEE	Standard for Emergency Management Data Dictionary	IEEE P1512.a
	IEEE	Standard for Common Incident Management Message Sets (IMMS) for use by EMCs	IEEE P1512-2000
	ITE	Standard for Functional Level Traffic Management Data Dictionary (TMDD)	ITE TM 1.03
	ITE	Message Sets for External TMC Communication (MS/ETMCC)	ITE TM 2.01
Flow: incident information for media			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	IEEE	Standard for Emergency Management Data Dictionary	IEEE P1512.a
	IEEE	Standard for Common Incident Management Message Sets (IMMS) for use by EMCs	IEEE P1512-2000
Flow: incident information request			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	IEEE	Standard for Traffic Incident Management Message Sets for Use by EMCs	IEEE P1512.1
	IEEE	Standard for Emergency Management Data Dictionary	IEEE P1512.a
	IEEE	Standard for Common Incident Management Message Sets (IMMS) for use by EMCs	IEEE P1512-2000
Flow: incident response status			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	IEEE	Standard for Traffic Incident Management Message Sets for Use by EMCs	IEEE P1512.1
	IEEE	Standard for Emergency Management Data Dictionary	IEEE P1512.a
	IEEE	Standard for Common Incident Management Message Sets (IMMS) for use by EMCs	IEEE P1512-2000
Flow: intersection blockage notification			
	IEEE	Standard for Interface Between the Rail Subsystem and the Highway Subsystem at a Highway Rail Intersection	IEEE P1570
Flow: local signal preemption request			
	AASHTO/ITE/NEMA	Global Object Definitions	NTCIP 1201
	AASHTO/ITE/NEMA	Objects for Signal Control Priority	NTCIP 1211
	ASTM	Standard Specification for 5.9 GHz Data Link Layer	ASTM 5 GHz Data Link
	ASTM	Standard Specification for 5.9 GHz Physical Layer	ASTM 5 GHz Phys
	ASTM	Specification for Dedicated Short Range Communication (DSRC) Data Link Layer: Medium Access and Logical Link Control	ASTM PS 105-99
	ASTM	Specification for Dedicated Short Range Communication (DSRC) Physical Layer using Microwave in the 902-928 MHz	ASTM PS 111-98
	IEEE	Security/Privacy of Vehicle/RS Communications including Smart Card Communications	IEEE P1556
Flow: local signal priority request			
	AASHTO/ITE/NEMA	Global Object Definitions	NTCIP 1201
	AASHTO/ITE/NEMA	Objects for Signal Control Priority	NTCIP 1211

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Flow Name	Lead SDO	Standard Name	
	ASTM	Standard Specification for 5.9 GHz Data Link Layer	ASTM 5 GHz Data Link
	ASTM	Standard Specification for 5.9 GHz Physical Layer	ASTM 5 GHz Phys
	ASTM	Specification for Dedicated Short Range Communication (DSRC) Data Link Layer: Medium Access and Logical Link Control	ASTM PS 105-99
	ASTM	Specification for Dedicated Short Range Communication (DSRC) Physical Layer using Microwave in the 902-928 MHz	ASTM PS 111-98
	IEEE	Security/Privacy of Vehicle/RS Communications including Smart Card Communications	IEEE P1556
Flow: maint and constr archive data			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	ITE	Standard for Functional Level Traffic Management Data Dictionary (TMDD)	ITE TM 1.03
	ITE	Message Sets for External TMC Communication (MS/ETMCC)	ITE TM 2.01
Flow: maint and constr resource request			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	ITE	Standard for Functional Level Traffic Management Data Dictionary (TMDD)	ITE TM 1.03
	ITE	Message Sets for External TMC Communication (MS/ETMCC)	ITE TM 2.01
Flow: maint and constr resource response			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	ITE	Standard for Functional Level Traffic Management Data Dictionary (TMDD)	ITE TM 1.03
	ITE	Message Sets for External TMC Communication (MS/ETMCC)	ITE TM 2.01
Flow: maint and constr work plans			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
Flow: media information request			
	ITE	Standard for Functional Level Traffic Management Data Dictionary (TMDD)	ITE TM 1.03
	ITE	Message Sets for External TMC Communication (MS/ETMCC)	ITE TM 2.01
	SAE	Data Dictionary for Advanced Traveler Information System (ATIS)	SAE J2353
	SAE	Message Set for Advanced Traveler Information System (ATIS)	SAE J2354
	SAE	Rules for Standardizing Street Names and Route IDs	SAE J2529
	SAE	Messages for Handling Strings and Look-Up Tables in ATIS Standards	SAE J2540
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	IEEE	Standard for Emergency Management Data Dictionary	IEEE P1512.a
	IEEE	Standard for Common Incident Management Message Sets (IMMS) for use by EMCs	IEEE P1512-2000
	AASHTO/ITE/NEMA	TCIP - Common Public Transportation (CPT) Business Area Standard	NTCIP 1401
	AASHTO/ITE/NEMA	TCIP - Incident Management (IM) Business Area Standard	NTCIP 1402
	AASHTO/ITE/NEMA	TCIP - Spatial Representation (SP) Business Area Standard	NTCIP 1405
Flow: parking archive data			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes

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Flow Name	Lead SDO	Standard Name	
Flow: parking information			
	SAE	Data Dictionary for Advanced Traveler Information System (ATIS)	SAE J2353
	SAE	Message Set for Advanced Traveler Information System (ATIS)	SAE J2354
	SAE	Rules for Standardizing Street Names and Route IDs	SAE J2529
	SAE	Messages for Handling Strings and Look-Up Tables in ATIS Standards	SAE J2540
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
Flow: parking lot data request			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	SAE	Data Dictionary for Advanced Traveler Information System (ATIS)	SAE J2353
	SAE	Message Set for Advanced Traveler Information System (ATIS)	SAE J2354
	SAE	Rules for Standardizing Street Names and Route IDs	SAE J2529
	SAE	Messages for Handling Strings and Look-Up Tables in ATIS Standards	SAE J2540
Flow: pass/pull-in			
	ASTM	Specification for Dedicated Short Range Communication (DSRC) Data Link Layer: Medium Access and Logical Link Control	ASTM PS 105-99
	ASTM	Specification for Dedicated Short Range Communication (DSRC) Physical Layer using Microwave in the 902-928 MHz	ASTM PS 111-98
	IEEE	Standard for Message Sets for Vehicle/Roadside Communications	IEEE Std 1455-1999
Flow: personal transit information			
	AASHTO/ITE/NEMA	TCIP - Common Public Transportation (CPT) Business Area Standard	NTCIP 1401
	AASHTO/ITE/NEMA	TCIP - Passenger Information (PI) Business Area Standard	NTCIP 1403
	AASHTO/ITE/NEMA	TCIP - Spatial Representation (SP) Business Area Standard	NTCIP 1405
	SAE	Data Dictionary for Advanced Traveler Information System (ATIS)	SAE J2353
	SAE	Message Set for Advanced Traveler Information System (ATIS)	SAE J2354
	SAE	Rules for Standardizing Street Names and Route IDs	SAE J2529
	SAE	Messages for Handling Strings and Look-Up Tables in ATIS Standards	SAE J2540

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Flow Name	Lead SDO	Standard Name	
Flow: remote surveillance control			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	ITE	Standard for Functional Level Traffic Management Data Dictionary (TMDD)	ITE TM 1.03
	ITE	Message Sets for External TMC Communication (MS/ETMCC)	ITE TM 2.01
Flow: request for road network conditions			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	ITE	Standard for Functional Level Traffic Management Data Dictionary (TMDD)	ITE TM 1.03
	ITE	Message Sets for External TMC Communication (MS/ETMCC)	ITE TM 2.01
	SAE	Data Dictionary for Advanced Traveler Information System (ATIS)	SAE J2353
	SAE	Message Set for Advanced Traveler Information System (ATIS)	SAE J2354
	SAE	Rules for Standardizing Street Names and Route IDs	SAE J2529
	SAE	Messages for Handling Strings and Look-Up Tables in ATIS Standards	SAE J2540
Flow: request for vehicle measures			
	AASHTO/ITE/NEMA	TCIP - Spatial Representation (SP) Business Area Standard	NTCIP 1405
	AASHTO/ITE/NEMA	TCIP - Control Center (CC) Business Area Standard	NTCIP 1407
Flow: request tag data			
	ASTM	Specification for Dedicated Short Range Communication (DSRC) Data Link Layer: Medium Access and Logical Link Control	ASTM PS 105-99
	ASTM	Specification for Dedicated Short Range Communication (DSRC) Physical Layer using Microwave in the 902-928 MHz	ASTM PS 111-98
Flow: resource deployment status			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	IEEE	Standard for Traffic Incident Management Message Sets for Use by EMCs	IEEE P1512.1
	IEEE	Standard for Emergency Management Data Dictionary	IEEE P1512.a
	IEEE	Standard for Common Incident Management Message Sets (IMMS) for use by EMCs	IEEE P1512-2000
Flow: resource request			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	IEEE	Standard for Traffic Incident Management Message Sets for Use by EMCs	IEEE P1512.1
	IEEE	Standard for Emergency Management Data Dictionary	IEEE P1512.a
	IEEE	Standard for Common Incident Management Message Sets (IMMS) for use by EMCs	IEEE P1512-2000
Flow: road network conditions			
	AASHTO/ITE/NEMA	Message Set for Weather Reports	NTCIP 1301
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	ITE	Standard for Functional Level Traffic Management Data Dictionary (TMDD)	ITE TM 1.03
	ITE	Message Sets for External TMC Communication (MS/ETMCC)	ITE TM 2.01
	SAE	Data Dictionary for Advanced Traveler Information System (ATIS)	SAE J2353
	SAE	Message Set for Advanced Traveler Information System (ATIS)	SAE J2354
	SAE	Rules for Standardizing Street Names and Route IDs	SAE J2529
	SAE	Messages for Handling Strings and Look-Up Tables in ATIS Standards	SAE J2540

Flow Name	Lead SDO	Standard Name	
Flow: road network probe information			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	ITE	Standard for Functional Level Traffic Management Data Dictionary (TMDD)	ITE TM 1.03
	ITE	Message Sets for External TMC Communication (MS/ETMCC)	ITE TM 2.01
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	ITE	Standard for Functional Level Traffic Management Data Dictionary (TMDD)	ITE TM 1.03
	ITE	Message Sets for External TMC Communication (MS/ETMCC)	ITE TM 2.01
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	ITE	Standard for Functional Level Traffic Management Data Dictionary (TMDD)	ITE TM 1.03
	ITE	Message Sets for External TMC Communication (MS/ETMCC)	ITE TM 2.01
Flow: road weather information			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
Flow: roadside archive data			
	AASHTO/ITE/NEMA	Global Object Definitions	NTCIP 1201
	AASHTO/ITE/NEMA	Data Collection & Monitoring Devices	NTCIP 1206
	AASHTO/ITE/NEMA	NTCIP Center-to-Field Standards Group	See Footnotes
Flow: roadway information system data			
	AASHTO/ITE/NEMA	Global Object Definitions	NTCIP 1201
	AASHTO/ITE/NEMA	Object Definitions for Dynamic Message Signs	NTCIP 1203
	AASHTO/ITE/NEMA	NTCIP Center-to-Field Standards Group	See Footnotes
Flow: roadway information system status			
	AASHTO/ITE/NEMA	Global Object Definitions	NTCIP 1201
	AASHTO/ITE/NEMA	Object Definitions for Dynamic Message Signs	NTCIP 1203
	AASHTO/ITE/NEMA	NTCIP Center-to-Field Standards Group	See Footnotes

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Flow Name	Lead SDO	Standard Name	
Flow: roadway maintenance status			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	
Flow: safety inspection report			
	ANSI	Commercial Vehicle Safety Reports	ANSI TS284
Flow: safety status information			
	ANSI	Commercial Vehicle Safety and Credentials Information Exchange	ANSI TS285
Flow: signal control data			
	AASHTO/ITE/NEMA	Global Object Definitions	NTCIP 1201
	AASHTO/ITE/NEMA	Object Definitions for Actuated Traffic Signal Controller Units	NTCIP 1202
	AASHTO/ITE/NEMA	Objects for Signal Systems Master	NTCIP 1210
	AASHTO/ITE/NEMA	Objects for Signal Control Priority	NTCIP 1211
	AASHTO/ITE/NEMA	NTCIP Center-to-Field Standards Group	See Footnotes
Flow: signal control status			
	AASHTO/ITE/NEMA	Global Object Definitions	NTCIP 1201
	AASHTO/ITE/NEMA	Object Definitions for Actuated Traffic Signal Controller Units	NTCIP 1202
	AASHTO/ITE/NEMA	Objects for Signal Systems Master	NTCIP 1210
	AASHTO/ITE/NEMA	NTCIP Center-to-Field Standards Group	See Footnotes
Flow: speed monitoring control			
	AASHTO/ITE/NEMA	Global Object Definitions	NTCIP 1201
	AASHTO/ITE/NEMA	Transportation System Sensor Objects	NTCIP 1209
	AASHTO/ITE/NEMA	NTCIP Center-to-Field Standards Group	See Footnotes
Flow: speed monitoring information			
	AASHTO/ITE/NEMA	Global Object Definitions	NTCIP 1201
	AASHTO/ITE/NEMA	Transportation System Sensor Objects	NTCIP 1209
	AASHTO/ITE/NEMA	NTCIP Center-to-Field Standards Group	See Footnotes
Flow: tag data			
	ASTM	Specification for Dedicated Short Range Communication (DSRC) Data Link Layer: Medium Access and Logical Link Control	ASTM PS 105-99
	ASTM	Specification for Dedicated Short Range Communication (DSRC) Physical Layer using Microwave in the 902-928 MHz	ASTM PS 111-98
Flow: track status			
	IEEE	Standard for Interface Between the Rail Subsystem and the Highway Subsystem at a Highway Rail Intersection	IEEE P1570

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Flow Name	Lead SDO	Standard Name	
Flow: traffic archive data			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	ASTM	ADMS Data Dictionary Specifications	ASTM DD 17.54.00.2
	ITE	Standard for Functional Level Traffic Management Data Dictionary (TMDD)	ITE TM 1.03
	ITE	Message Sets for External TMC Communication (MS/ETMCC)	ITE TM 2.01
Flow: traffic control coordination			
	AASHTO/ITE/NEMA	Objects for Signal Systems Master	NTCIP 1210
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	ITE	Standard for Functional Level Traffic Management Data Dictionary (TMDD)	ITE TM 1.03
	ITE	Message Sets for External TMC Communication (MS/ETMCC)	ITE TM 2.01
Flow: traffic control priority request			
	AASHTO/ITE/NEMA	Global Object Definitions	NTCIP 1201
	AASHTO/ITE/NEMA	Objects for Signal Control Priority	NTCIP 1211
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
Flow: traffic control priority status			
	AASHTO/ITE/NEMA	Global Object Definitions	NTCIP 1201
	AASHTO/ITE/NEMA	Objects for Signal Control Priority	NTCIP 1211
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	ITE	Standard for Functional Level Traffic Management Data Dictionary (TMDD)	ITE TM 1.03
	ITE	Message Sets for External TMC Communication (MS/ETMCC)	ITE TM 2.01
Flow: traffic flow			
	AASHTO/ITE/NEMA	Global Object Definitions	NTCIP 1201
	AASHTO/ITE/NEMA	Transportation System Sensor Objects	NTCIP 1209
	AASHTO/ITE/NEMA	NTCIP Center-to-Field Standards Group	See Footnotes
Flow: traffic images			
	AASHTO/ITE/NEMA	Global Object Definitions	NTCIP 1201
	AASHTO/ITE/NEMA	Data Dictionary for Closed Circuit Television (CCTV)	NTCIP 1205
	AASHTO/ITE/NEMA	Object Definitions for Video Switches	NTCIP 1208
	AASHTO/ITE/NEMA	NTCIP Center-to-Field Standards Group	See Footnotes
Flow: traffic information coordination			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	
	ITE	Standard for Functional Level Traffic Management Data Dictionary (TMDD)	ITE TM 1.03
	ITE	Message Sets for External TMC Communication (MS/ETMCC)	ITE TM 2.01
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes

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Flow Name	Lead SDO	Standard Name	
Flow: traffic sensor control			
	AASHTO/ITE/NEMA	Global Object Definitions	NTCIP 1201
	AASHTO/ITE/NEMA	Transportation System Sensor Objects	NTCIP 1209
	AASHTO/ITE/NEMA	NTCIP Center-to-Field Standards Group	See Footnotes
Flow: transit and fare schedules			
	AASHTO/ITE/NEMA	TCIP - Common Public Transportation (CPT) Business Area Standard	NTCIP 1401
	AASHTO/ITE/NEMA	TCIP - Scheduling/Runcutting (SCH) Business Area Standard	NTCIP 1404
	AASHTO/ITE/NEMA	TCIP - Spatial Representation (SP) Business Area Standard	NTCIP 1405
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
Flow: transit archive data			
	AASHTO/ITE/NEMA	TCIP - Common Public Transportation (CPT) Business Area Standard	NTCIP 1401
	AASHTO/ITE/NEMA	TCIP - Passenger Information (PI) Business Area Standard	NTCIP 1403
	AASHTO/ITE/NEMA	TCIP - Onboard (OB) Business Area Standard	NTCIP 1406
	AASHTO/ITE/NEMA	TCIP - Control Center (CC) Business Area Standard	NTCIP 1407
	AASHTO/ITE/NEMA	TCIP - Fare Collection (FC) Business Area Standard	NTCIP 1408
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
Flow: transit incident information			
	AASHTO/ITE/NEMA	TCIP - Common Public Transportation (CPT) Business Area Standard	NTCIP 1401
	AASHTO/ITE/NEMA	TCIP - Incident Management (IM) Business Area Standard	NTCIP 1402
	AASHTO/ITE/NEMA	TCIP - Spatial Representation (SP) Business Area Standard	NTCIP 1405
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	AASHTO/ITE/NEMA	TCIP - Common Public Transportation (CPT) Business Area Standard	NTCIP 1401
	AASHTO/ITE/NEMA	TCIP - Incident Management (IM) Business Area Standard	NTCIP 1402
	AASHTO/ITE/NEMA	TCIP - Spatial Representation (SP) Business Area Standard	NTCIP 1405
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
Flow: transit incidents for media			
Flow: transit information for media			

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Flow Name	Lead SDO	Standard Name	
Flow: transit information request			
	AASHTO/ITE/NEMA	TCIP - Passenger Information (PI) Business Area Standard	NTCIP 1403
	AASHTO/ITE/NEMA	TCIP - Spatial Representation (SP) Business Area Standard	NTCIP 1405
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	SAE	Data Dictionary for Advanced Traveler Information System (ATIS)	SAE J2353
	SAE	Message Set for Advanced Traveler Information System (ATIS)	SAE J2354
	SAE	Rules for Standardizing Street Names and Route IDs	SAE J2529
	SAE	Messages for Handling Strings and Look-Up Tables in ATIS Standards	SAE J2540
Flow: transit information user request			
	AASHTO/ITE/NEMA	TCIP - Passenger Information (PI) Business Area Standard	NTCIP 1403
	AASHTO/ITE/NEMA	TCIP - Spatial Representation (SP) Business Area Standard	NTCIP 1405
	SAE	Data Dictionary for Advanced Traveler Information System (ATIS)	SAE J2353
	SAE	Message Set for Advanced Traveler Information System (ATIS)	SAE J2354
	SAE	Rules for Standardizing Street Names and Route IDs	SAE J2529
	SAE	Messages for Handling Strings and Look-Up Tables in ATIS Standards	SAE J2540
Flow: transit parking coordination			
	AASHTO/ITE/NEMA	TCIP - Spatial Representation (SP) Business Area Standard	NTCIP 1405
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	AASHTO/ITE/NEMA	TCIP - Spatial Representation (SP) Business Area Standard	NTCIP 1405
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	AASHTO/ITE/NEMA	TCIP - Spatial Representation (SP) Business Area Standard	NTCIP 1405
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
Flow: transit parking lot response			
Flow: transit schedule information			
	AASHTO/ITE/NEMA	TCIP - Common Public Transportation (CPT) Business Area Standard	NTCIP 1401
	AASHTO/ITE/NEMA	TCIP - Scheduling/Runcutting (SCH) Business Area Standard	NTCIP 1404
	AASHTO/ITE/NEMA	TCIP - Spatial Representation (SP) Business Area Standard	NTCIP 1405
	AASHTO/ITE/NEMA	TCIP - Control Center (CC) Business Area Standard	NTCIP 1407

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Flow Name	Lead SDO	Standard Name	
Flow: transit traveler information			
	AASHTO/ITE/NEMA	TCIP - Common Public Transportation (CPT) Business Area Standard	NTCIP 1401
	AASHTO/ITE/NEMA	TCIP - Passenger Information (PI) Business Area Standard	NTCIP 1403
	AASHTO/ITE/NEMA	TCIP - Spatial Representation (SP) Business Area Standard	NTCIP 1405
	SAE	Data Dictionary for Advanced Traveler Information System (ATIS)	SAE J2353
	SAE	Message Set for Advanced Traveler Information System (ATIS)	SAE J2354
	SAE	Rules for Standardizing Street Names and Route IDs	SAE J2529
	SAE	Messages for Handling Strings and Look-Up Tables in ATIS Standards	SAE J2540
Flow: transit traveler request			
	AASHTO/ITE/NEMA	TCIP - Passenger Information (PI) Business Area Standard	NTCIP 1403
	AASHTO/ITE/NEMA	TCIP - Spatial Representation (SP) Business Area Standard	NTCIP 1405
Flow: transit vehicle conditions			
	AASHTO/ITE/NEMA	TCIP - Onboard (OB) Business Area Standard	NTCIP 1406
Flow: transit vehicle location data			
	AASHTO/ITE/NEMA	TCIP - Common Public Transportation (CPT) Business Area Standard	NTCIP 1401
	AASHTO/ITE/NEMA	TCIP - Onboard (OB) Business Area Standard	NTCIP 1406
	AASHTO/ITE/NEMA	TCIP - Common Public Transportation (CPT) Business Area Standard	NTCIP 1401
	AASHTO/ITE/NEMA	TCIP - Onboard (OB) Business Area Standard	NTCIP 1406
Flow: transit vehicle passenger and use data			
Flow: transit vehicle schedule performance			
	AASHTO/ITE/NEMA	TCIP - Spatial Representation (SP) Business Area Standard	NTCIP 1405
	AASHTO/ITE/NEMA	TCIP - Onboard (OB) Business Area Standard	NTCIP 1406
	AASHTO/ITE/NEMA	TCIP - Control Center (CC) Business Area Standard	NTCIP 1407

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Flow Name	Lead SDO	Standard Name	
Flow: traveler archive data			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	ASTM	ADMS Data Dictionary Specifications	ASTM DD 17.54.00.2
	SAE	Data Dictionary for Advanced Traveler Information System (ATIS)	SAE J2353
	SAE	Message Set for Advanced Traveler Information System (ATIS)	SAE J2354
	SAE	Rules for Standardizing Street Names and Route IDs	SAE J2529
	SAE	Messages for Handling Strings and Look-Up Tables in ATIS Standards	SAE J2540
Flow: traveler information for media			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	SAE	Data Dictionary for Advanced Traveler Information System (ATIS)	SAE J2353
	SAE	Message Set for Advanced Traveler Information System (ATIS)	SAE J2354
	SAE	Rules for Standardizing Street Names and Route IDs	SAE J2529
	SAE	Messages for Handling Strings and Look-Up Tables in ATIS Standards	SAE J2540
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	SAE	Data Dictionary for Advanced Traveler Information System (ATIS)	SAE J2353
	SAE	Message Set for Advanced Traveler Information System (ATIS)	SAE J2354
	SAE	Rules for Standardizing Street Names and Route IDs	SAE J2529
	SAE	Messages for Handling Strings and Look-Up Tables in ATIS Standards	SAE J2540
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See Footnotes
	SAE	Data Dictionary for Advanced Traveler Information System (ATIS)	SAE J2353
	SAE	Message Set for Advanced Traveler Information System (ATIS)	SAE J2354
	SAE	Rules for Standardizing Street Names and Route IDs	SAE J2529
	SAE	Messages for Handling Strings and Look-Up Tables in ATIS Standards	SAE J2540
Flow: video surveillance control			
	AASHTO/ITE/NEMA	Global Object Definitions	NTCIP 1201
	AASHTO/ITE/NEMA	Data Dictionary for Closed Circuit Television (CCTV)	NTCIP 1205
	AASHTO/ITE/NEMA	Object Definitions for Video Switches	NTCIP 1208
	AASHTO/ITE/NEMA	NTCIP Center-to-Field Standards Group	See Footnotes
Flow: work plan feedback			
	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	
Flow: work zone information			

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Footnotes:		
NTCIP Center-to-Center Standards Group	**Standard Name**	
AASHTO/ITE/NEMA	Base Standard: Octet Encoding Rules (OER)	NTCIP 1102
AASHTO/ITE/NEMA	CORBA Naming Convention	NTCIP 1104
AASHTO/ITE/NEMA	CORBA Security Service	NTCIP 1105
AASHTO/ITE/NEMA	CORBA Near-Real Time Data Service	NTCIP 1106
AASHTO/ITE/NEMA	Subnet Profile for Ethernet	NTCIP 2104
AASHTO/ITE/NEMA	Internet (TCP/IP and UDP/IP) Transport Profile	NTCIP 2202
AASHTO/ITE/NEMA	Application Profile for File Transfer Protocol (FTP)	NTCIP 2303
AASHTO/ITE/NEMA	Application Profile for Data Exchange ASN.1 (DATEX)	NTCIP 2304
AASHTO/ITE/NEMA	Application Profile for Common Object Request Broker Architecture (CORBA)	NTCIP 2305
AASHTO/ITE/NEMA	Information Profile for DATEX	NTCIP 2501
AASHTO/ITE/NEMA	Information Profile for CORBA	NTCIP 2502
NTCIP Center-to-Field Standards Group		
AASHTO/ITE/NEMA	Simple Transportation Management Framework (STMF)	NTCIP 1101
AASHTO/ITE/NEMA	Base Standard: Octet Encoding Rules (OER)	NTCIP 1102
AASHTO/ITE/NEMA	Simple Transportation Management Protocol (STMP)	NTCIP 1103
AASHTO/ITE/NEMA	Class B Profile	NTCIP 2001
AASHTO/ITE/NEMA	Point to Multi-Point Protocol Using RS-232 Subnetwork Profile	NTCIP 2101
AASHTO/ITE/NEMA	Subnet Profile for PMPP Over FSK modems	NTCIP 2102
AASHTO/ITE/NEMA	Subnet Profile for Point-to-Point Protocol using RS 232	NTCIP 2103
AASHTO/ITE/NEMA	Subnet Profile for Ethernet	NTCIP 2104
AASHTO/ITE/NEMA	Transportation Transport Profile	NTCIP 2201
AASHTO/ITE/NEMA	Internet (TCP/IP and UDP/IP) Transport Profile	NTCIP 2202
AASHTO/ITE/NEMA	Application Profile for Simple Transportation Management Framework (STMF)	NTCIP 2301
AASHTO/ITE/NEMA	Application Profile for Trivial File Transfer Protocol	NTCIP 2302
AASHTO/ITE/NEMA	Application Profile for File Transfer Protocol (FTP)	NTCIP 2303

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Standards Acronyms		
AASHTO	American Association of State Highway and Transportation Officials	
ANSI	American National Standards Institute	
ASTM	American Society For Testing and Materials	
CEA	Consumer Electronics Association	
EIA	Energy Information Administration	
IEEE	Institute of Electrical and Electronics Engineers	
ITE	Institute of Transportation Engineers	
NEMA	National Electrical Manufacturers Association	
SAE	Society of Automotive Engineers	