



Next Generation Integrated Mobility:

Driving Smart Cities

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Nathan P. Masek, AICP

Mid-Region MPO

Albuquerque Metropolitan Planning Area (AMPA)

Albuquerque, New Mexico USA

Cutting Edge ITS Planning at MR MPO

Topics of Discussion



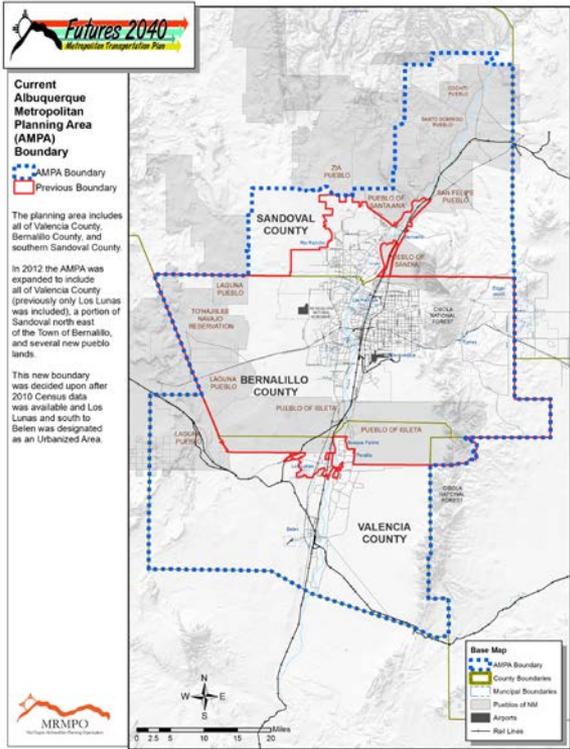
- **MRMPO** – Who, What, Purview
- **ITS Subcommittee** at Work
- Integration with the **Congestion Management Process, Project Prioritization Process, and TIP Development**
- **Advanced Tools, GIS, and the Web**
- Connections to **Regional ITS Architecture**



Metropolitan Planning Organizations (MPO)

.....Who is Involved, What is at Stake?

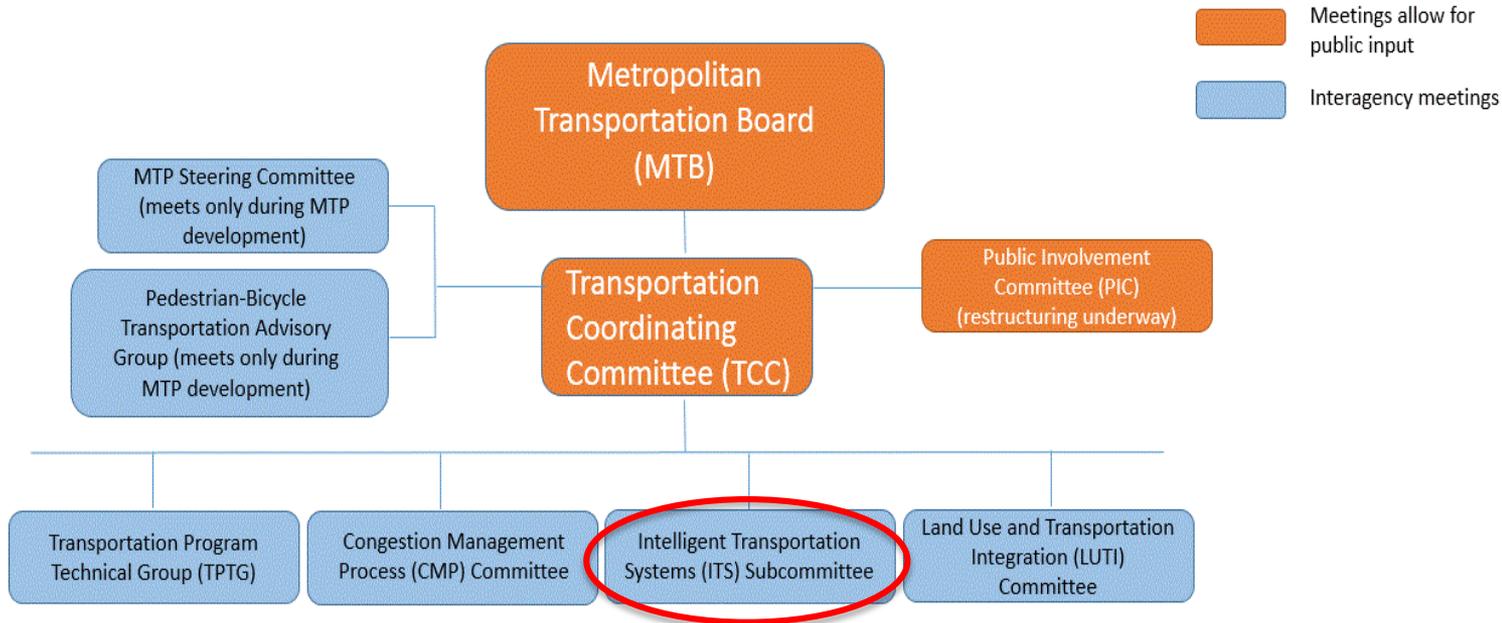
Coordinated Regional Transportation Goals and Strategies



- Regional Transportation Agencies, “member governments”, Metropolitan Transportation Board (MTB)
- Regional Transportation Goals and Strategies, Supporting Multi-Modal Transportation and Mobility
 - Goals and Objectives
- Supporting Technical Committees
- Programming of the MTP, TIP, Guided by CMP and Regional ITS Architecture
- Key Considerations
 - CMP Strategies
 - ITS Architecture.....*Systems Engineering Certification*
 - Project Prioritization Process



Mid Region Metropolitan Planning Organization Board and Committee Structure



But How Does This Help ITS Planning and Project Development?

FHWA/FTA ITS Architecture and Standards FINAL RULE (Rule 940.11)

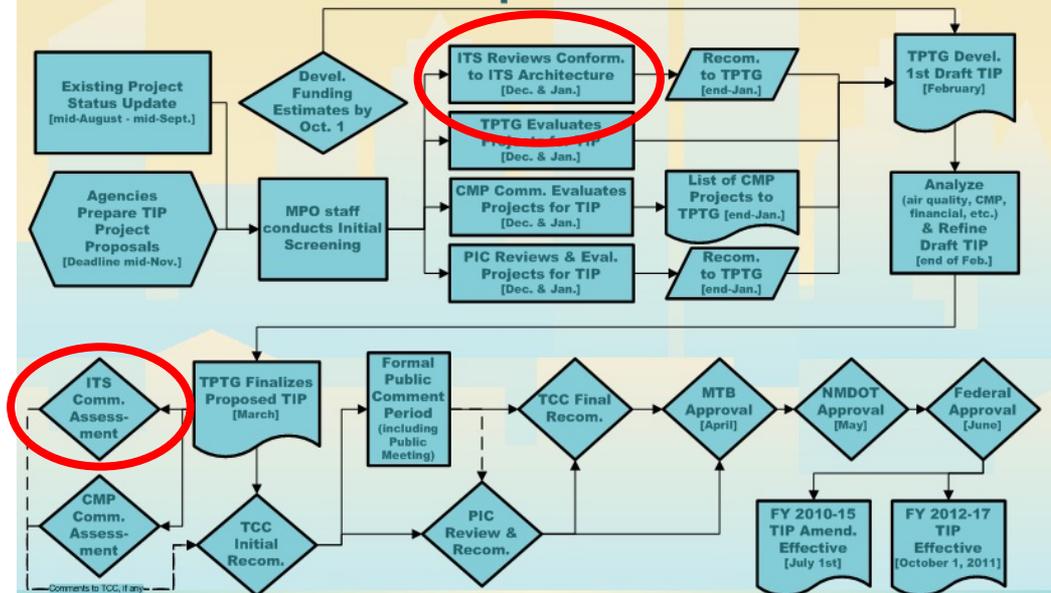
- Stipulates that any project with **ITS Elements** seeking federal funding must be consistent with **the Regional ITS Architecture**
- Requires **Systems Engineering Certification**
- Provides the framework to ensure that
 - Institutional agreements considered,
 - Technical integration is consistent among projects,
 - Regional stakeholders are identified

What We Do at MRCOG – Integrate CMP, Project Prioritization Process (PPP) to TIP Development:

- ITS Subcommittee Reviews Each TIP Project Proposal
- Projects Identified by **Project Type**, and include project-level **Management and Operational Strategies** (TSM&O) from the CMP and ITS:
 - Align to the ITS Services and Service Packages in the Regional Architecture
- Online/Cloud-Based Tools



Mid-Region Metropolitan Planning Organization TIP Development Process



TIP Development, Committee Flow and ITS Subcommittee



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TIP Development – Online Form...HUGE IMPROVEMENT!

Benefits:

- Integrated Project Prioritization Process (**PPP**)
- Ease of Access to the Standard Form
- All System/Supportive Resources are Linked
- Electronic Data – Easily Summarized, Referenced, etc
- Thorough (38 pages long), But Able to Include All Pertinent Areas including:

- Project Information
- Project Delivery
- Mobility/Moving People
- Economic Vitality
- Environmental Resiliency
- Active Places

**MTP Goals/TSM&O
Strats**

- <https://form.jotform.com/72837213684159>



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MRMPO
Mid-Region Metropolitan Planning Organization

Mid-Region Metropolitan Planning Organization
809 Copper Avenue NM, Albuquerque, NM 87102 505-247-1750

FORM C BACKGROUND INFORMATION

1. PROJECT INFORMATION & NARRATIVE QUESTIONS
2. PROJECT DELIVERY
3. MOBILITY / MOVING PEOPLE
4. ECONOMIC VITALITY
5. ENVIRONMENTAL RESILIENCY
6. ACTIVE PLACES

TRANSPORTATION IMPROVEMENT PROGRAM MRMPO Form C

The goal of the Project Prioritization Process is the establishment of an objective, primarily quantitative based method for evaluating and comparing proposed transportation projects. The project prioritization process highlights projects which reflect and incorporate regional priorities from the latest [Metropolitan Transportation Plan \(MTP\)](#) called Futuree 2040. This form is comprised of sections based off the MTP Goals and Objectives and national performance goals. Form C mirrors the [Project Prioritization Guidebook](#) and should be used in conjunction with this form.

Form C Sections:

1. Project Information & Narrative Questions
2. Project Delivery
3. Mobility/Moving People
4. Economic Vitality
5. Environmental Resiliency
6. Active Places

View (AMPA) and Ubranized Boundaries Map

Next

How Do ITS Services & Packages Support the CMP/PPP?

CMP Management and Operations Strategies Match ITS Services

CMP/PPP Goal and Strategy-Areas

- **Active Roadway Mgmt**
- **TDM/Alternative Modes**
- ~~**Physical Rdway Capacity**~~

CMP/PPP Specific Strategies

- **Expanded Signal Timing**
- **Signal Equip. Modernization**
- **Traveler Info. Devices**
- **Comm. Networks/Rdwy Surveillance**
- **Transit Vehicle Information**
- **Transit Pre-Emption**
- **Transit Vehicle Real-Time Information**
- **Queue-Jump Facilities**
- **Smart Parking**
- **Safety Strategies – needs to be expanded**

MRMPO Form C

Page 10 of 38

MANAGEMENT AND OPERATIONS STRATEGIES / Travel Demand Management and Alternative Travel Modes - Identify which strategies are being utilized from the CMP Matrix for the project.

- Fixed guideways and dedicated transit lanes
- Transit service expansion / frequency increase
- Transit vehicle information
- Transit intersection queue-jump lanes and signal priority
- Off-vehicle fare collection
- Park and ride facilities
- Off-street multi-use trails
- On-street bicycle treatments
- Parking management



CMP Management and Operations (TSM&O) Strategies in PPP - ITS “Service Packages”

MANAGEMENT AND OPERATIONS STRATEGIES / Active Roadway Management - Identify which strategies are being utilized from the CMP Matrix for the project.

- Expanded traffic signal timing and coordination ← **ATMS03 – Traffic Signal Control**
- Traffic signal equipment modernization ← **ATMS01 – Network Surveillance, ATMS03 – Traffic Signal Control**
- Traveler information devices ← **ATMS06 – Traffic Info. Dissemination, ATMS08-TIM, ATIS01- Broadcast Traveler Info., MC04- Weather Info. Distribution**
- Communications network and roadway surveillance ← **ATMS01 – Network Surveillance,**
- Access management

MANAGEMENT AND OPERATIONS STRATEGIES / Travel Demand Management and Alternative Travel Modes - Identify which strategies are being utilized from the CMP Matrix for the project.

- Fixed guideways and dedicated transit lanes
- Transit service expansion / frequency increase
- Transit vehicle information ← **APTS01 – Transit Vehicle Tracking, APTS02-Fixed Route Operations**
- Transit intersection queue-jump lanes and signal priority ← **APTS09 – Transit Signal Priority**
- Off-vehicle fare collection
- Park and ride facilities
- Off-street multi-use trails
- On-street bicycle treatments
- Parking management ← **ATMS16 – Parking Facility Management**



MRCOG ITS Products on ArcGIS Online:

AMPA's ITS services:

<http://mrmmpo.maps.arcgis.com/apps/MapJournal/index.html?appid=ae92f5d27d9348fbbc1842ed0ed16231>

AMPA's ITS Deployed Infrastructure "Elements":

<http://mrmmpo.maps.arcgis.com/apps/PublicInformation/index.html?appid=cfc378d974304a3eb051fae09b42c711>



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Compared to ITS Service/Need Areas in the ITS Regional Architecture

- **7 ITS Service Areas in AMPA**
- **Specific ITS Service Packages in Systems Engineering Project Certification requirements, and M & O Strategies in PPP**
 1. **Traffic Management**
 2. **Information Management**
 3. **Traveler Information**
 4. **Incident Management**
 5. **Public Transportation Management**
 6. **Emergency Management**
 7. **Maintenance and Operations**

6. Needs and Services

6.1. Needs Identification

Transportation needs identify the transportation problems that can be solved by ITS services. They also represent a link to transportation planning efforts that define the strategies used to address transportation problems. These strategies involve capital improvements as well as operational improvements and coordination opportunities among stakeholders. ITS solutions usually involve services that improve the efficiency, scope, or safety of operations.

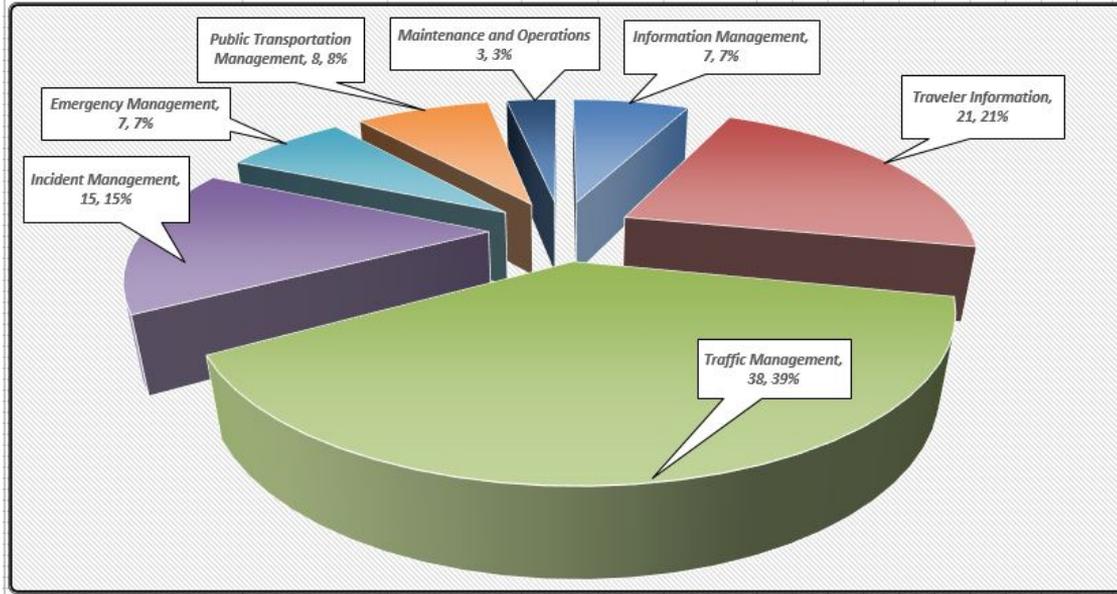
The initial set of user needs described below was developed from information collected as part of the New Mexico Statewide ITS Architecture development effort and customized based upon the AMPA stakeholder meetings. Table 5 below, shows an "X" where the level of regional priority was determined for the user need specified. Some user need prioritizations show specific references to public services (fire/EMS and police). This is done to show the prioritization difference between different public safety agencies. There are also several instances where a priority differs in urban areas vs. rural areas. These cases are identified in the table.

Table 5: Summary of Transportation Needs/Priorities

Need Area	Specific ITS Need	High	Medium	Low	Not a Need
Incident Management	Need improved incident management and coordination within departments and among stakeholders	X			
	Need to reduce delays due to crashes	X			
	Need to reduce the incidence of secondary crashes from incidents	X			
Traffic Management	Need to improve traffic congestion mitigation	X			
	Need to reduce congestion on river crossings	X			
	Need to provide early warning of poor visibility conditions (dust, snow, etc.)	X	X		
	Need traffic signal interconnect and coordination to improve mobility	X			
	Need traffic signal preemption for emergency vehicles	Fire/EMS			Police
	Need advanced warning of flash flood areas			X	
	Need to enhance communications and information sharing between regional agencies	X			

2018-23 TIP - Projects Addressing ITS Need-Areas from Regional ITS Architecture

ITS Service Need Areas (Table 8)	2018-23 TIP Projects	% of total	2018-23 Non-TIP Projects	All Projects	% of All Projects
Information Management	7	4%	4	11	2%
Traveler Information	21	12%	8	29	5%
Traffic Management	38	22%	5	43	3%
Incident Management	15	9%	5	20	3%
Emergency Management	7	4%	0	7	0%
Public Transportation Management	8	5%	0	8	0%
Maintenance and Operations	3	2%	0	3	0%
	99			121	
total projects in TIP:	174	57%			



2018-23 TIP, Summary of ITS Services from the Regional Architecture

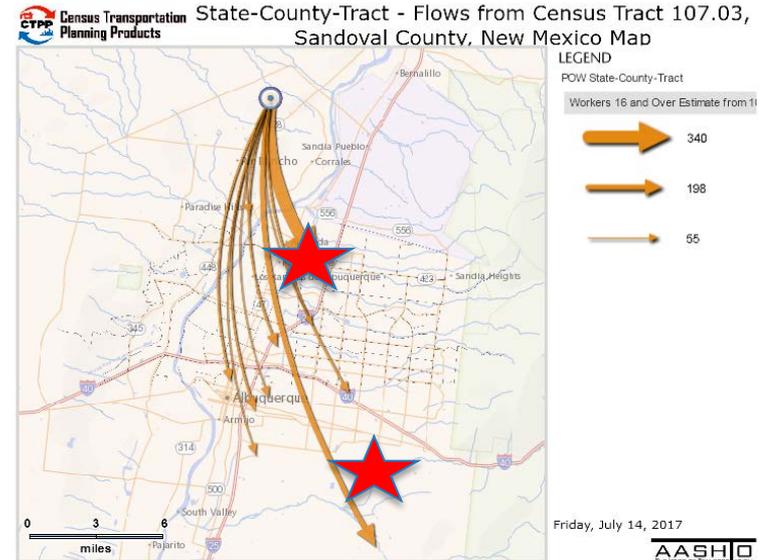
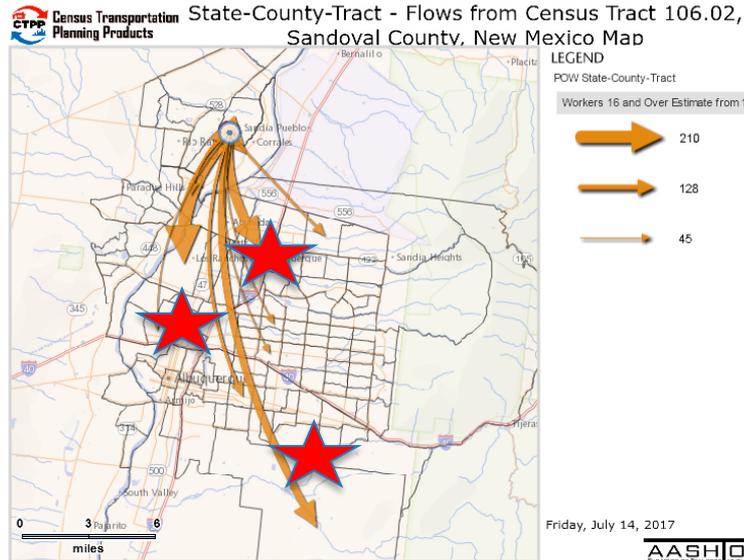


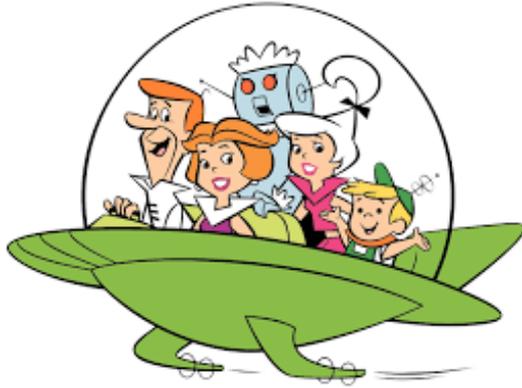
Other Datasets – Travel Markets for Traveler Information

– DMS Location, Correct Destinations/Messages

CTPP Tract Flows to Locate DMS Decision Points

Multiple Tracts, Selected Iteratively





Questions?

Thank you!

Nathan P. Masek, AICP

Senior Transportation Planner
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New Mexico, USA



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