CHAPTER 9: PLAN IMPLEMENTATION AND EVALUATION

MRMPO is not an implementing agency. That is, MRMPO is not responsible for building infrastructure projects or overseeing the actual construction of transportation facilities. Rather, it is our federal mandate to coordinate regional planning efforts through the development of a long-range plan, to facilitate a process whereby member governments prioritize and allocate funds for transportation projects, and to provide technical assistance where staff may be of service. It is our primary mission to assist our member governments and agencies with the tools and information that may be of use as they implement their own projects and ideally, as they forward the goals laid out in *Connections 2040 MTP.*

With this in mind, this chapter provides a summary of tools available through MRMPO to improve our transportation systems and ensure a safe, equitable, and fiscally responsible future. It begins with a high-level summary of the key documents, plans, and policies that have been developed or established with the guidance of the Metropolitan Transportation Board. Next, there is an analysis and discussion about environmental justice concerns and how this plan affects traditionally underserved populations. Then there is a summary of gaps in transportation planning, both systemic and location-based, that MRMPO has collected through its extensive public outreach process as well as key examples of the many pathways that agencies can utilize to fill those gaps. The chapter ends with some potential next steps for elevating our efforts at MRMPO as we continue to devote our work toward navigating the complexities involved in transportation planning in the Albuquerque Metropolitan Planning Area.

Local Collaboration

MRMPO will continue to work towards the alignment and coordination of local planning efforts and plans, including financial plans, that help result in the orderly, sustainable, and cost-effective improvement of local and regional infrastructure.

> **Meeting the goals of the MTP and the principles of the Target Scenario requires collaboration among local governments and planning partners in the AMPA who participated in the development of this plan.**

9.1 Implementation Tools

The MTP is implemented in various ways, including through existing MPO efforts that help administer the continuing, comprehensive, and collaborative long-range transportation planning process.

a. Transit Mode Share Goal and TIP Set Aside

Transit policy measures including mode share goals and a funding set-aside were adopted by the Metropolitan Transportation Board in previous MTP development efforts. MRMPO's policy body, the Metropolitan Transportation Board, adopted a resolution that calls for 20 percent of all trips along a priority network to be taken by transit by 2040. Along with these mode share goals, a TIP set-aside was adopted that requires a minimum of 25 percent of certain federal funds (currently STP-Large Urban) that are programmed through the TIP be directed toward transit projects that expand service along the Priority Transit Investment Network (see the Priority Investment Transit Network Map in Chapter 4).

While the mode share goals and TIP set-aside are important initiatives, they must be complemented by an integrated vision for land use and infrastructure investments in order to succeed. To help accomplish this, elements of the Priority Transit Network have been added to the Target Scenario as a part of this MTP.

b. Transportation Improvement Program (TIP)

The Transportation Improvement Program (TIP) is a federally-mandated short-term plan that programs funding for transportation projects in the metropolitan area. In order for a project in the AMPA to receive federal highway or transit funding, it must first be included in the TIP. It must also be included in or consistent with the MTP, making the TIP the near-term implementation program for the long-range plan. The TIP must also include non-federally funded projects that are considered "regionally significant." In short, the TIP document functions as the region's mechanism for allocating limited funding resources among various transportation needs and serves as a tool for transportation professionals and the general public to track the use of local, state, and federal transportation dollars.

The TIP covers a six-year period, with the first four years constituting the "Federal TIP" (or the federally-mandated portion) plus two informational years. A "new" TIP is developed every two years by adding the next two subsequent fiscal years. Each fiscal year must be fiscally constrained, meaning that the amount of funds programmed must not exceed the amount of funds estimated to be available in each year[1].

TIP Development

The TIP is developed by MRMPO staff in coordination with the Transportation Program Technical Group (TPTG) using the process established in the *TIP Policies and Procedures* manual. The TIP is then adopted by the Metropolitan Transportation Board of the MRMPO after considering any recommendations of the Transportation Coordinating Committee and after there has been opportunity provided for public comment on the draft document. Once approved by the MTB, the TIP is transmitted to the NMDOT for inclusion, without modification, into the Statewide Transportation Improvement Program (STIP) followed by final approval from the Federal Highway Administration and the Federal Transit Administration.

The Relationship Between the TIP and the MTP

The MTP is a minimum twenty-year multimodal long-range transportation plan that provides a framework for development of the associated TIP. The *2040 Connections MTP* will serve as the AMPA's roadmap to guide transportation investments and decisions regarding transit enhancements and expansions, bicycle and pedestrian improvements, transportation demand management strategies, Intelligent Transportation System enhancements, and various roadway improvements. Those needs are translated into implementable projects and programmed for federal funds by means of the TIP. While the MTP establishes the goals and framework, the TIP serves as a tool for program and project implementation.

FAST Act TIP Requirements

The current federal transportation authorization bill, the FAST Act, along with the federal regulations, lists requirements for a TIP:

- A TIP shall contain projects consistent with the current metropolitan transportation plan
- A TIP, once implemented, is designed to make progress toward achieving the performance targets
- A TIP shall include, to the maximum extent practicable, a description of the anticipated effect of the transportation improvement program toward achieving the performance targets established in the metropolitan transportation plan, linking investment priorities to those performance targets

To ensure that the TIP implements the MTP, makes progress toward achieving performance targets, and achieves a performance-based approach, each of the MTP goals has been evaluated and linked to one or more of the national goals set forth by current transportation legislation. This helps ensure that MRMPO's transportation planning and programming processes are inherently performance-based. It is important to note that each individual project will not always align with or satisfy every established performance measure perfectly to allow for, ultimately, achieving adopted targets.

[1] Read more about the TIP here: https://www.mrcog-nm.gov/277/Short-Range-Plan-TIP

Because of this reality, MRMPO's goal is to implement a program of projects that will collectively focus on improving surface transportation in the AMPA by focusing our efforts on:

- Improving pavement and bridge conditions
- Improving system performance and reducing traffic congestion AMPA-wide
- Decreasing serious injuries and fatalities
- Reducing on-road mobile source emissions
- Improving freight movement throughout the AMPA

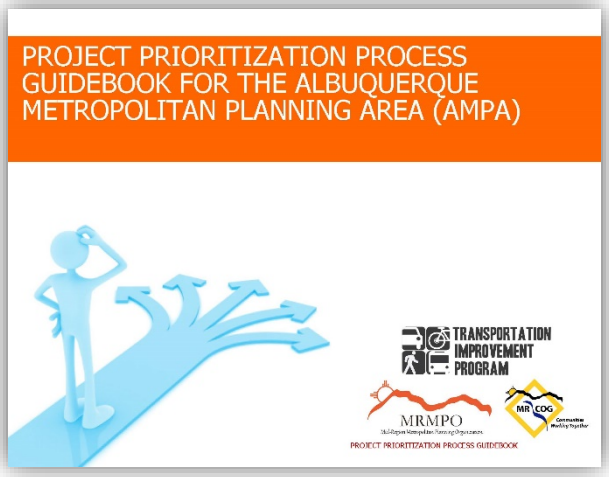
It is through these efforts that the TIP can collectively make an impact in transforming the Federal Aid Highway Program towards a performance-based approach.

c. The Project Prioritization Process (PPP)

The Project Prioritization Process is used to prioritize and select projects from the MTP for funding through the TIP. Overall, the PPP helps establish a short-range TIP that implements the long-range transportation plan's goals and objectives while adhering to and linking investment priorities to national performance goals, measures, and adopted targets. In developing a new TIP, local agencies submit project proposals to MRMPO staff that are scored and ranked through the PPP. The PPP is structured to prioritize projects which best meet the four goals of the MTP.[2]

Multifaceted projects that address a number of MTP goals and target key geographic areas identified in the MTP generally receive higher scores. Additionally, each agency proposing projects may provide further qualitative information to aid in the assessment of the various project proposals (e.g., the value of the project to the region, the community, or potential impacts) to help determine which projects should ultimately be programmed in the TIP. In practice, the project scores and ranking tables utilized in the PPP have emerged as a valuable tool and have resulted in an increase in funding for regionally significant and beneficial projects.

Figure 9-1: PPP Guidebook



The PPP is updated with each TIP cycle as new data becomes available and new policies are introduced. New crash rate, traffic volume, and travel time data are available each year and are utilized to ensure projects are evaluated on the most recently observed transportation conditions. Every four years new socioeconomic data is developed as part of the MTP update. This includes base year population and employment estimates as well as updated projections. Updated socioeconomic data is also used when available.

[2] The 2018 PPP can be accessed here: https://www.mrcog-nm.gov/DocumentCenter/View/3501/Project-Prioritization-Process-Guidebook-PDF?bidId=.

d. Collaboration with School Districts

School districts are invited to participate in transportation planning activities at the MPO at the committee levels and at the policy board level. Each metro area school district is eligible for one vote on the Metropolitan Transportation Board or a seat as an associate member (at the district's discretion).

MRMPO and metro area school districts have begun sharing proposals and plans for capital projects in an effort to coordinate school projects affecting traffic on roadways and roadway projects affecting access to schools. In 2019 MRMPO approved a charter for the Transportation Program Technical Group (TPTG), a committee of staff members from various transportation agencies and school districts, to provide guidelines for their coordination efforts. The charter added the following:

Coordination of proposed construction projects of school facilities with public works agencies and nearby schools in order to provide advice and recommendations to the TCC, including the following:

- Impact Assessment - determination of possible traffic impacts of school facilities projects on transportation infrastructure in the vicinity of the project, as well as impacts of construction phase timing on daily school operations.
- Identification of Impacts Needing Further Study – based on the assessment of potential impacts, identify those requiring further analyses and discussion to mitigate the impacts.
- Identify opportunities to apply Federal, local, and school district funds in a coordinated manner to improve network connectivity and access to planned future school sites. Recommendations would be provided to the TCC for consideration during the TIP development process.
- Identify potential Safe Routes to Schools (SRTS) eligible projects, which would improve the safety of school children being transported to/from school.

In addition to the collaboration efforts, a set of guidelines is being prepared that will provide parameters for traffic impact studies by school districts for facility projects. The guidelines will also serve to summarize state laws regarding allowable expenditures and limitations on expenditures by school districts on traffic/access mitigation measures. This is under development and is expected to be completed by Fall 2020.

Figure 9-2: Public School in the AMPA

Source: freeABQimages.com

e. Long Range Transportation Systems (LRTS) Guide

The *LRTS Guide* provides design guidance for new and reconstructed roadways to work toward a more complete, connected, and safe transportation system that meets the needs for users of all transportation modes. MRMPO developed the *LRTS Guide* to respond to the growing need for transportation networks to become more efficient at addressing congestion, providing multimodal options for all users, supporting economic development, and improving public health.

Figure 9-3: LRTS Guide Document

The *LRTS Guide* incorporates multimodal accommodations guidance based on national best practices. The intent for future roadways is to find the minimum right-of-way needed for good multi-modal accommodation and to design transportation networks that support adjacent land uses. In this way, the *LRTS Guide* supports all the MTP goals: Optimized Mobility, Active Transportation, Economic Linkages, and Environmental Resiliency. In addition, the *LRTS Guide* supports the Target Scenario by linking more coordinated land use and transportation planning as well as appropriate design standards to enhance the propensity for bicycle and pedestrian trips.

Figure 9-4: Enhanced bicycle facility in the AMPA

Complete Streets

The *LRTS Guide* also serves to implement the Complete Streets Resolution (R-11-09) passed by the Metropolitan Transportation Board in 2011 which called for updating documents and policy to integrate Complete Streets One of the key findings of the *2035 MTP* was that the strategy of adding roadway capacity was not sufficient to address congestion across the AMPA. The good news is there are promising strategies that not only address congestion but that also have economic and health benefits. These strategies involve developing Complete Streets by integrating land use and transportation planning to improve conditions for all users.

Long Range Systems Maps

By showing where future roadways, bikeways, and transit lines are planned and desired, the region can better assess future connectivity needs and ensure complete and efficient networks are developed. To that end, foundational to the *LRTS Guide* are a series of system maps; the Long Range Roadway System, the Long Range Bikeway System, the Long Range Transit System, and the Pedestrian Priority Index.

Support of the Target Scenario

The *LRTS Guide* supports the *Connections 2040* MTP and the principles of the Target Scenario by providing a means to look at transportation and land use together while also integrating Complete Streets principles, particularly for activity centers where trips taken by transit, walking, and bicycling are encouraged. The Target Scenario is supported by a growing desire to foster public spaces where people like to congregate, and the *LRTS Guide* provides recommendations based on nationally recognized practices on how to make streets more inviting. Instead of creating a parallel effort, the *LRTS Guide* identifies a range of opportunities and provides recommendations for network connectivity, multi-modal accommodation, land use integration at a variety of development levels, and can inform master plans, corridor studies, and individual roadway projects. It is in this way that the *LRTS Guide* weaves the principles of the Target Scenario into current planning efforts.

Figure 9-5: Inadequate Sidewalk

Multimodal Needs

Nationally recognized guidance is included and referenced in the *LRTS Guide*. There is an evolving understanding of multimodal needs, and communities are creating new ways to improve walking, transit, and bicycling conditions. Often minimum design recommendations do not provide sufficient levels of comfort for people to consider changing modes. The *LRTS Guide* helps to prioritize locations where roadway design needs to go beyond minimum accommodations for different modes. For example, activity centers where pedestrian travel is prioritized involves slowing down motorized traffic, providing wider sidewalks, and including street trees to help people choose to walk over driving to destinations within the activity center. Minimum design recommendations would not necessarily have achieved such desired outcomes. The Guide is part of the *Connections 2040* MTP but is also a standalone document.

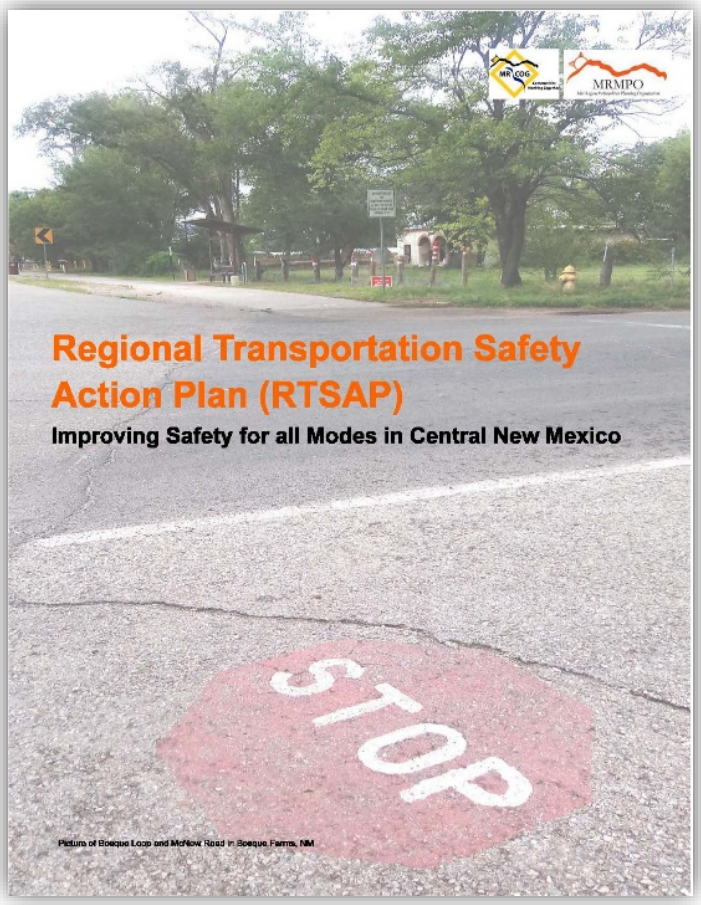
The *LRTS Guide* has been updated concurrently with the *Connections 2040* MTP and includes updated information and guidance on green infrastructure, intersection design, and road diet applications. The LRTS Guide is found in Appendix E of this document.

f. Regional Transportation Safety Action Plan (RTSAP)

The RTSAP is a regional comprehensive safety plan that serves as a mechanism for implementing safety policy and street improvements in the AMPA. The latest crash data that is available from the New Mexico Department of Transportation was used for analysis, and the focus of the plan was on determining where fatalities and injuries occurred for walking, biking, motor vehicle, and motorcycle travel.

A highlight of the plan is the High Fatal and Injury Network (HFIN), which ranks both intersection and street segments in the AMPA that are above average, and therefore guides the region on how to better prioritize projects where safety improvements should be made so that they have the greatest impact on preventing fatalities and serious injuries. The plan was adopted by the MTB in 2018 and is much more extensive than previous crash reports. The RTSAP includes a greater safety vision for the region emulated on the Vision Zero belief that traffic fatalities and injuries are not inevitable side effects of the transportation system. Vision Zero takes a proactive stance and recommends strategies to prevent crashes from happening in the first place by prioritizing traffic safety.

Figure 9-6: RTSAP Cover



The RTSAP is a more elaborative planning effort than previously taken on by MRMPO that expands data analysis, identifies safety emphasis areas, and provides improved action items to prevent future crashes. Top contributing factors to crashes, alcohol involvement, and types of pedestrian crashes were also evaluated. In addition to data analysis, MRMPO also expanded agency and public input, conducted field visits in both urban and rural areas, and incorporated national best practice research as part of the plan development. The RTSAP emphasizes the need to prioritize safety over speed and recommends the adoption of Vision Zero policy.[3]

[3] The RTSAP can be found on the MRCOG website here: https://www.mrcog-nm.gov/255/Safety-Analysis

g. Congestion Management Process (CMP) Corridor Rankings

The CMP is an ongoing mechanism for discussing regional transportation challenges and identifying strategies for managing congestion by location. A primary function of the CMP is to evaluate the effectiveness of transportation strategies and coordinate regional transportation decision making. Corridors are ranked about every two years. Rankings are based on peak hour traffic volume, average peak hour travel speed, and crash rates. The rankings provide an in-depth analysis of the source and extent of congestion along corridors. They assist local agencies in identifying transportation needs and are used by MRMPO to help determine which projects should receive federal funding. The rankings are used to highlight which corridors could use the most attention for addressing congestion and for ranking projects in the Project Prioritization Process (projects along more congested corridors receive more prioritization points)[4].

Table 9-1: Top 10 Congested Corridors in the AMPA, 2016

RANK	RTE	V/C Points	Speed Points	Crash Points	Total
1	ALAMEDA BLVD.	67.84	21.33	1.76	90.93
2	ISLETA BLVD.	58.37	22.07	9.40	89.83
3	BRIDGE/CESAR CHAVEZ	57.46	20.26	11.75	89.47
4	U.S. 550	53.21	20.23	6.71	80.16
5	MONTANO	40.22	23.48	11.57	75.28
6	PASEO DEL NORTE	39.02	14.07	12.86	65.95
7	JEFFERSON	24.23	29.71	10.25	64.19
8	RIO BRAVO/DENNIS CHAVEZ	21.21	22.77	14.10	58.08
9	PARADISE BLVD.	31.57	10.88	14.77	57.22
10	SAN MATEO	7.50	32.30	14.30	54.10

h. Incident Management Plan (IMP)

Incident Management Plans help implement congestion management (narrowly) and the Optimized Mobility goal of the MTP (broadly) in the AMPA. IMPs help reduce travel delay due to incidents and improve safety before and after an incident. The ITS Subcommittee will soon be facilitating the development of an AMPA-specific IMP which will foster inter-agency coordination on recurring and non-recurring congestion and incidents, which is key in our region's "congestion toolbox." More information about the regional IMP is found in Chapter 4.

[4] More information on the CMP and corridor rankings can be found here: https://www.mrcog-nm.gov/244/Congestion-Management-Process

i. Intelligent Transportation Systems Architecture (ITS)

The Albuquerque Metropolitan Planning Area Regional ITS Architecture Addendum document establishes a regional framework for coordinated ITS deployment for projects within the AMPA. The document serves as a "consensus blueprint" for all ITS deployment to help meet the identified transportation needs of the region. A subsequent addendum integrates the planned ITS architecture into MRCOG's transportation planning and project programming process by making the ITS consideration part of MTP and TIP project review. In other words, projects approved to receive federal funding through the TIP are reviewed by the ITS Subcommittee for consistency with the AMPA Regional ITS Architecture. In addition, the ITS Subcommittee monitors and evaluates ITS implementation across all jurisdictions to help ensure ITS infrastructure is deployed in a systematic way throughout the region. See Chapter 4 for more information on ITS efforts in the AMPA.

Figure 9-7: Dynamic Message Sign in the AMPA

j. Development Review

MRMPO has a development review process for proposed land use development projects in the City of Albuquerque, Bernalillo County, Rio Rancho, and Los Lunas. MRMPO staff review proposed projects to provide consistency between land use practices and the transportation goals set forth in the MTP, particularly the goals identified in the Target Scenario. MRMPO provides comments to these member agencies regarding specific cases, while also inviting all member agencies to utilize the data and resources we have available to facilitate the integration of land use and transportation planning.

k. Fiscal Indicator Tool

In 2019 MRMPO worked with a consultant team to build a Fiscal Indicator Tool (FIT), which is a model that calculates the major capital and ongoing operation and maintenance costs of public infrastructure under difference future growth scenarios. The FIT is a complement to MRMPO's existing analytical toolbox which includes a travel demand model (CUBE), a land use model (UrbanSim), an accessibility model (TRAM), and an economic model (REMI). These models help to implement the MTP by simulating 'what if' scenarios regarding infrastructure or policy alternatives and generating performance measures that allow us to anticipate the future transportation, land use, and economic impacts. The FIT estimates select public costs associated with different growth patterns and land use policies which supports policymakers in their efforts to make the most efficient use of limited municipal resources (see Chapter 6 for more information about the FIT).

I. Target Scenario

The Target Scenario is a guiding vision for growth in the region and plays an important role in the implementation of the MTP. The Target Scenario was developed during the previous MTP and is updated in Connections 2040 with land use and transportation partners in the region thereby renewing the critical link between transportation and land use planning and policy. Through scenario planning we have the opportunity as a region to discuss how we would like to grow in the future and make concrete steps towards smarter development, which in turn enables us to plan more efficient transportation systems and reduce trips and travel delays.

The Target Scenario is integrated into the long-range transportation planning process in various ways. Summary statistics of the scenario's performance is evaluated in Chapter 3 and demonstrates how a shift in development patterns would compare against growth conditions under the Trend Scenario. Coordinated transportation and land use planning results in a stronger economy, better public health and safety, broader environmental resilience, and improved mobility throughout the region. The Target Scenario provides both a toolkit of Guiding Principles and Key Locations that represent best practices for future planning in the region, and a yardstick with which member governments can measure their progress. MRMPO datasets and modeling tools have the capability to assist local efforts to measure our success in moving the needle toward the Target Scenario and project the impact of changes in policy and planning practice. MRMPO staff are available to serve their regional planning partners through technical analysis and facilitating regional efforts to ensure that key aspects of the Target Scenario are integrated into planning policies and products.

Figure 9-8: Activity Center, AMPA

Source: FreeABQimages.com

Local Efforts that Support the Target Scenario

Local jurisdictions were asked what plans have been adopted since the last MTP, whether there were new developments that embody the concepts behind the Target Scenario, and if they felt the guiding principles had been integrated in some of their work. A partial list of some the new plans, updated documents, and projects that are supportive of the Target Scenario are found below. These include new mixed-use designations, preservation of commercial land west of Rio Grande, and expanded locations for multi-family housing. Not all projects and plans are listed.

- Albuquerque/Bernalillo County Comprehensive Plan (ABC to Z) [5]
- ABQ Ride's Albuquerque Rapid Transit Project
- City of Albuquerque's first HAWK signal
- City of Albuquerque Bus Rapid Transit service
- Completion of 94 percent of the 50-Mile Activity Loop
- City of Albuquerque Bikeways & Trails Facilities Plan
- City of Albuquerque Development Process Manual Amendments
- Mixed-use developments such as Downtown Imperial Building, The Rainforest, One Central, and The Highlands
- Bernalillo County East Route 66 Sector Development Plan
- Bernalillo County West Central Sector Development Plan
- Bernalillo County Sunport Commerce Center Design Overlay Zone
- Bernalillo County Upper Petroglyphs Sector Development Plan
- Bernalillo County Valle del Sol Sector Development Plan
- Bernalillo County Atrisco Vista Blvd extension study from Paseo del Norte to Southern Blvd
- Bernalillo County Bridge Boulevard Phase 2 Reconstruction
- Los Lunas Facebook Center and surrounding development
- Central New Mexico expansions in Valencia County
- Los Lunas Rail Runner Station Community Center
- Belen Aviation related industry development
- Belen Railroad related Industry development
- Santo Domingo Multi-Use Trail
- City of Rio Rancho Unit 10 Specific Area Plan
- City of Rio Rancho residential development along Broadmoor between Northern Boulevard and Paseo del Volcan

Albuquerque Bernalillo County Comprehensive Plan Update (ABC to Z): A Regional Success Story

The City of Albuquerque overhauled its land use and development guiding plans, regulations, and development technical standards in a way that is consistent with the *Futures 2040 MTP*. In fact, the City of Albuquerque and Bernalillo County in their ABC to Z effort rewrote the Comprehensive Plan to emphasize the land use and transportation connection, including enhanced chapters on transportation and land use and a new chapter on urban design. The Comprehensive Plan also adopted new center types that are more reflective of the direction these areas are envisioned to take over time, and identifies and protects areas of consistency for neighborhoods that do not desire change. Downtown and Urban Centers were established to recognize the areas in the City where the most urban growth is desired and anticipated. Employment Centers were established to identify locations to preserve and enhance job growth, industrial, office, and retail development. Finally, the transportation chapter was developed in close consultation with MRCOG staff to establish a policy framework for different road speeds, level of service goals, design features, and access control that is consistent with the Long Range Transportation Systems (LRTS) Guide.

[5] Bernalillo County has not approved the City adopted 2017 City of Albuquerque and Bernalillo County Comprehensive Plan (ABC-Z).

9.2 Environmental Justice

Environmental Justice (EJ) refers to the "fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies."[6] In particular, environmental justice addresses how communities of color and low-income populations are affected by government actions, including transportation decisions made as part of the metropolitan transportation planning process. The *Connections 2040 MTP* plays an important role in environmental justice by analyzing existing conditions and considering how transportation investments can improve access for low-income and historically marginalized communities.

The three fundamental principles of environmental justice are:

1. Avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on communities of color and low-income populations
2. Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process
3. Prevent the denial of, reduction in, or significant delay in the receipt of benefits by persons of color and low-income populations

a. Title VI of the Civil Rights Act

Environmental justice programs stem from Title VI of the Civil Rights Act of 1964, which prohibits discrimination on the basis of race, color or national origin and specifies that recipients of federal funds must certify nondiscrimination. Environmental justice requirements were first issued in 1994 Presidential Executive Order 12898, which directed every federal agency to make environmental justice part of its mission by identifying and addressing all effects of programs, policies, and activities on "minority" and low-income populations.[7]

In 1997, the U.S. Department of Transportation expanded upon the requirements of the 1994 environmental justice Executive Order and clarified the role and responsibilities for transportation decision-makers relating to environmental justice. **In 1999, the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) issued a memorandum providing guidance for implementing Title VI requirements in metropolitan and statewide transportation planning**.

Therefore, the metropolitan transportation planning process must comply with both environmental justice and Title VI requirements. The federal requirements which MRMPO must follow include:

- Ensuring that the MTP and the TIP comply with Title VI of the Civil Rights Act.
- Identifying residential, employment, and transportation patterns of low-income and persons of color so that those populations' needs can be identified and addressed, and the benefits and burdens of transportation investments can be distributed fairly.

[6] Environmental Protection Agency, http://www.epa.gov/environmentaljustice/

[7] "Communities of color" and "persons of color" is used for comparison in the environmental justice analyses in this chapter to refer to the Census-identified populations of all ethnic categories other than 'White, non-Hispanic'.

- Evaluating and improving MRMPO's public involvement processes where necessary to eliminate participation barriers and to engage communities of color and low-income populations in transportation decision-making.

Limited English Proficiency (LEP)

In addition to environmental justice and Title VI requirements, MRMPO must also comply with Executive Order 13166, which requires the organization to take reasonable steps to ensure that Limited English Proficient (LEP) persons have access to programs, services, and information provided by MRMPO. Limited English Proficient persons are persons who do not speak English as their primary language, and have a limited ability to read, speak, write, or understand English.

b. Environmental Justice Assessments

This MTP primarily addresses environmental justice by assessing where low-income and persons of color reside, and how those populations are served by the transportation network, particularly the transit network. The following map highlights census tracts that scored high on the EJ Index[8], defined as an EJ score of 9 or above, indicating where there is a high concentration of poverty and persons of color based on 2014-2018 American Community Survey. The index gives an idea of where to focus attention when evaluating environmental justice issues. The highest concentrations of these communities are primarily within the City of Albuquerque, including the Southeast Heights, the South Valley, and the Southwest Mesa, as well as among Pueblos.

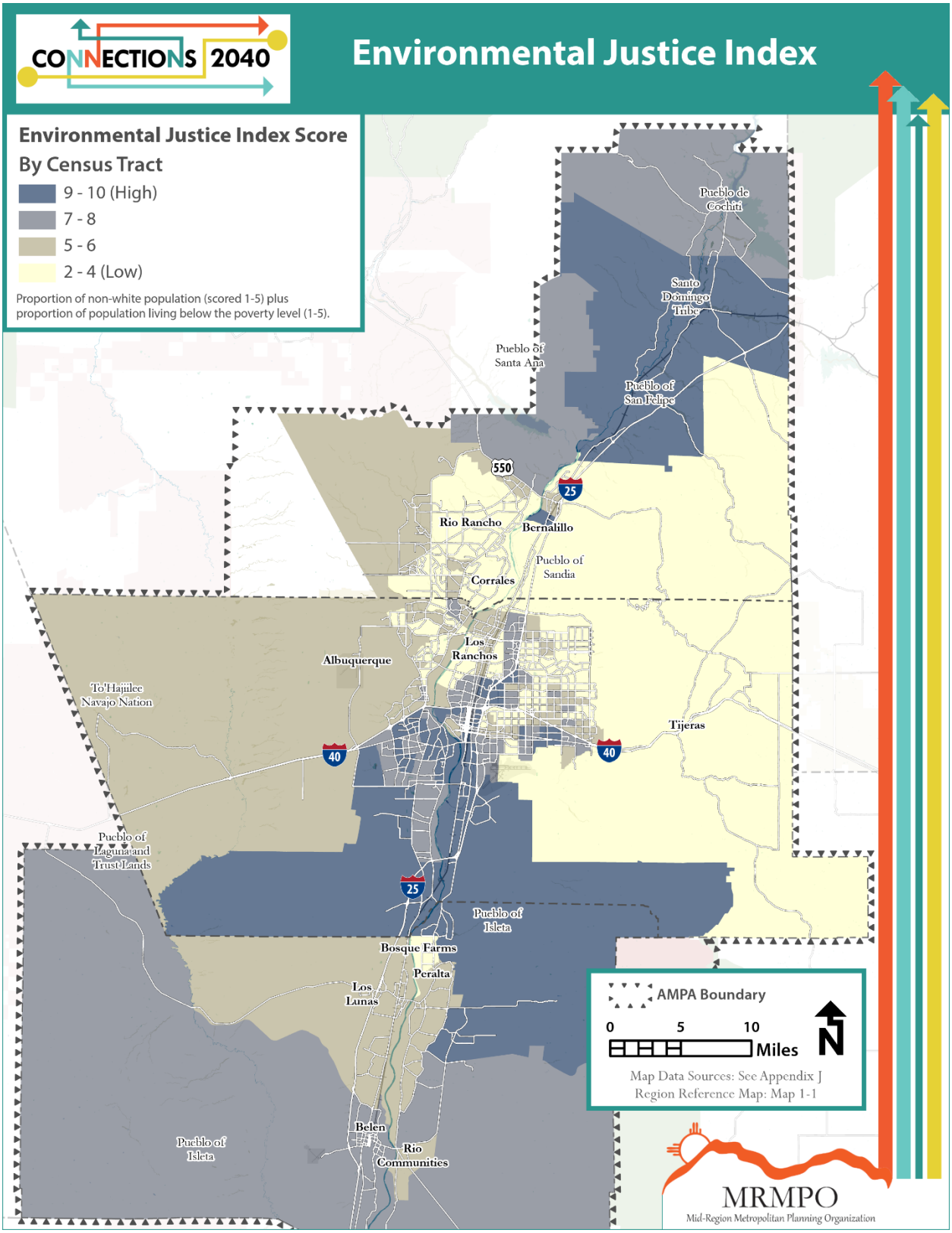
Environmental justice considerations have been incorporated into many important products used in regional transportation decision-making, including the Project Prioritization Process, which helps prioritize which projects will be selected to receive federal funding.

Environmental Justice and Transportation Project Selection

The Project Prioritization Process, which informs how projects are selected for inclusion in the TIP, uses environmental justice criteria as a scoring factor; awarding points to projects if they are located within or adjacent to identified environmental justice communities. Because such an analysis cannot be performed during the Project Prioritization Process, the assumption is made that a project will benefit rather than burden the adjacent community. However, explanation of the project's impacts to adjacent communities is also required since the benefits may not be clear.

[8] Using "natural breaks" in five classes, percentage of census tract represented by persons of color and individuals with 12 months of income below the poverty level were used to assign a corresponding score between 1 and 5, with the resulting scores combined to produce an overall "environmental justice score" for each tract.

Map 9-1: Environmental Justice Index



Equitable Access and Environmental Impacts

MRMPO's Transportation Accessibility Model (TRAM) was used to assess whether populations living in environmental justice tracts have greater or lesser access to various destinations than the AMPA as a whole. This model provides walking, biking, and automobile time travelled, or distance, along the actual configuration of the roadway network.

TRAM assumes that the sidewalks are present and in good condition and that pedestrians and bikes are not allowed along the Interstate system. The assessment used demographic data from the 2014-2018 American Community Survey in order to compare access to transit, tree canopy, parks and open space, grocery stores and healthcare facilities across the region.

Transit accessibility is particularly important for low-income populations as it is a more economical form of travel that provides access to jobs without having to rely on an automobile.

> **Approximately 305,000 people, or 34 percent of the AMPA population live within a five-minute walk (1/4 mile) of a bus stop. Within a ten-minute walk (or 1/2 mile), this number expands to around 517,792 people, or about 58.5 percent of the total Albuquerque Metro Planning Area.**

Figure 9-9: ABQ RIDE Bus Stop, AMPA

Access to Transit

Access to transit for EJ populations is slightly greater than for the rest of the AMPA. The numbers are close, suggesting equal access, but it is important to consider the difference between equal and equitable. Low-income populations are, in general, more dependent on transit service for their transportation needs, so it makes sense from an equity standpoint that they should be better served by transit than those with less need for it. Analyses such as these can help inform transit planning to bridge the gap between need and equitable access.

Figure 9-10: ABQ RIDE Bus in Downtown

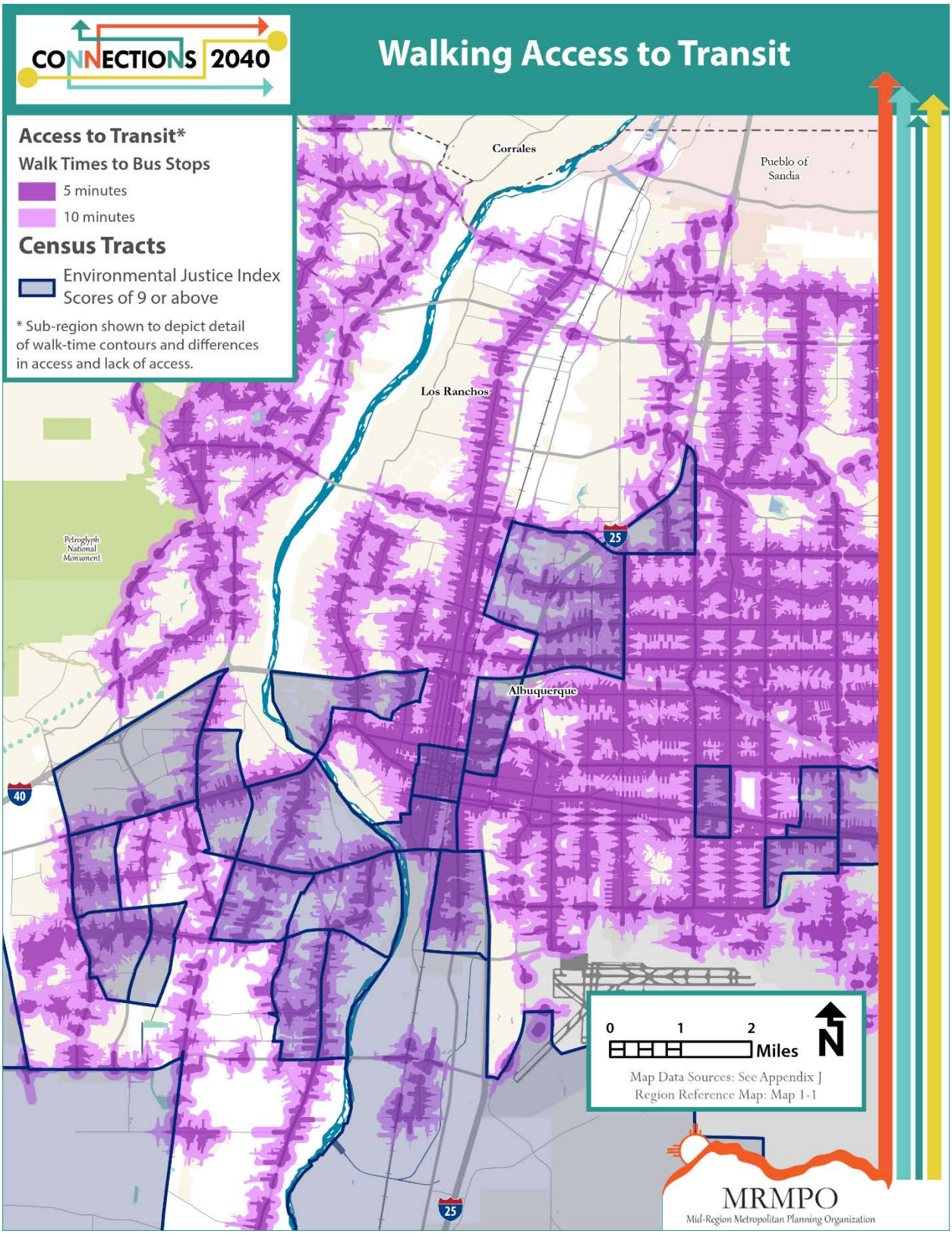
Table 9-2: Accessibility of EJ and Non-EJ Population to Transit in the AMPA, 2018

Average walk time to nearest Bus stop	Population in High EJ Scoring Tracts	% Population in High EJ Scoring Tracts	Population in non-EJ Tracts	% Population in non-EJ Tracts
5 minutes (1/4 mile)	51,505	36%	252,994	34%
10 minutes (1/2 mile)	90,379	63%	427,413	58%

Table 9-3: Accessibility of Transit for Low-Income and Persons of Color in the AMPA, 2018

Persons of Color: 534,478		White, Non-Hispanic Population: 350,000	
Within ¼ Mile of Transit Service	34%	Within ¼ Mile of Transit Service	35%
Within ½ Mile of Transit Service	59%	Within ½ Mile of Transit Service	57%
Population Below the Poverty Level: 147,357		**Population Above the Poverty Level: 737,121**	
Within ¼ Mile of Transit Service	40%	Within ¼ Mile of Transit Service	33%
Within ½ Mile of Transit Service	65%	Within ½ Mile of Transit Service	57%

Map 9-2: Walking Access to Transit and Environmental Justice Populations



Tree Canopy Coverage

Access to the shade of trees and proximity to cooling vegetation helps to relieve the impacts of exposure to urban heat extremes (see Chapter 7). Studies show that populations in poverty are most vulnerable to extreme heat, partially because they are more likely to depend on transit and non-motorized transportation, and in doing so endure more exposure to harsh outdoor urban environments. Trees, parks, and natural open spaces are an important element of the urban environment for both physical and mental health. Comparison of tree canopy coverage by census tract was performed using a digital inventory of the Albuquerque urban area provided by the Nature Conservancy. This was generated from computerized imagery analysis of 4-band 1-meter resolution aerial photographs captured in the summer of 2016 by the National Agriculture Imagery Program (NAIP). The imagery was further evaluated using a Classification and Regression Trees (CART) classifier and hand-digitized training data in Google Earth Engine (GEE). This data provides a fair estimate of overall area tree coverage.

Figure 9-11: Bosque Trees in the AMPA

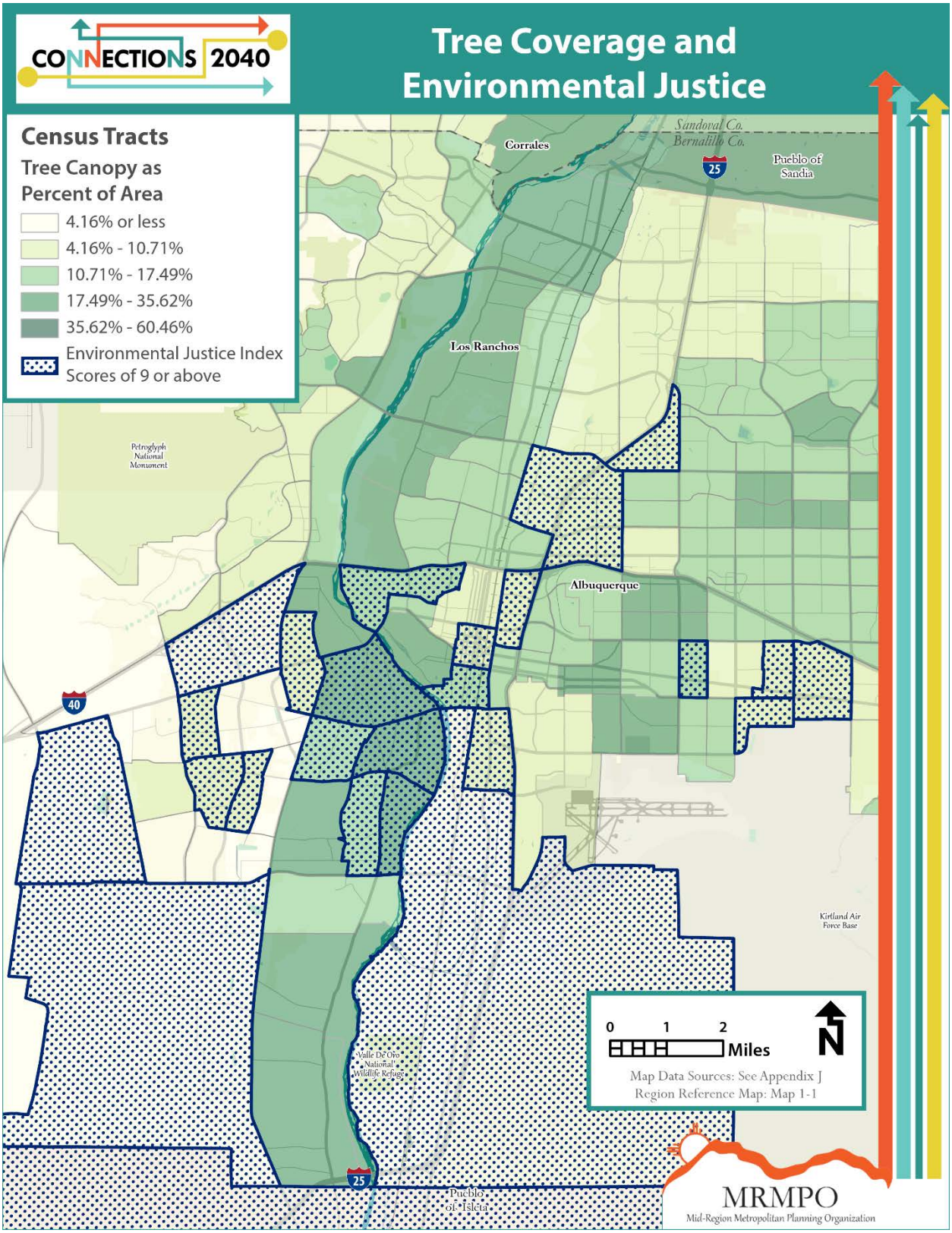
Analysis of the data shows that the majority of high EJ-scoring tracts have less than 10 percent tree canopy, whereas the majority of the remaining AMPA tracts have between 10 and 20 percent. Relatively few tracts have greater than 20 percent canopy, and only two of those has greater than 30 percent coverage (large tracts in the Cibola National Forest).

Table 9-4: Tree Canopy Coverage in the AMPA

Tree Canopy Coverage	10% or less	10-20%	Greater than 20%
EJ Scoring Tracts	63%	30%	7%
Non-EJ Scoring Tracts	29%	60%	11%

These figures reveal a clear disparity between EJ and non-EJ communities related to tree canopy and access to shade. This could be addressed with local policies that require climate appropriate tree planting and other beneficial landscaping when developing residential lots particularly in EJ communities and when constructing affordable housing. In addition, traditional lawns are highly-consumptive water uses, and costs associated with their upkeep contribute to the disparity seen between area incomes and tree cover. Xeriscaping with a selection of drought-tolerant tree species and increased use of water catchment landscape designs are ways to affordably and efficiently support more abundant vegetation in our arid environment. Xeriscaping incentives and rebate programs that are offered by some municipalities are a step in the right direction.

Map 9-3: Tree Canopy Coverage and Environmental Justice in the Albuquerque Metro Area



Urban Heat Islands

Access to tree cover and green open spaces is particularly important in light of climate change projections that indicate an increase in temperature in our region, and the health and mortality impacts associated with exposure to the extreme heat. Heat islands occur in areas within a city that become hotter than others due to disparities in the way communities are planned, developed, and maintained, leading to a concentration of heat-absorbing buildings and pavements and a lack of cooling vegetation. This is a serious environmental justice and public safety issue as populations in poverty, children, the elderly, and those with existing health issues or disabilities are especially vulnerable to heat-related illness and death.

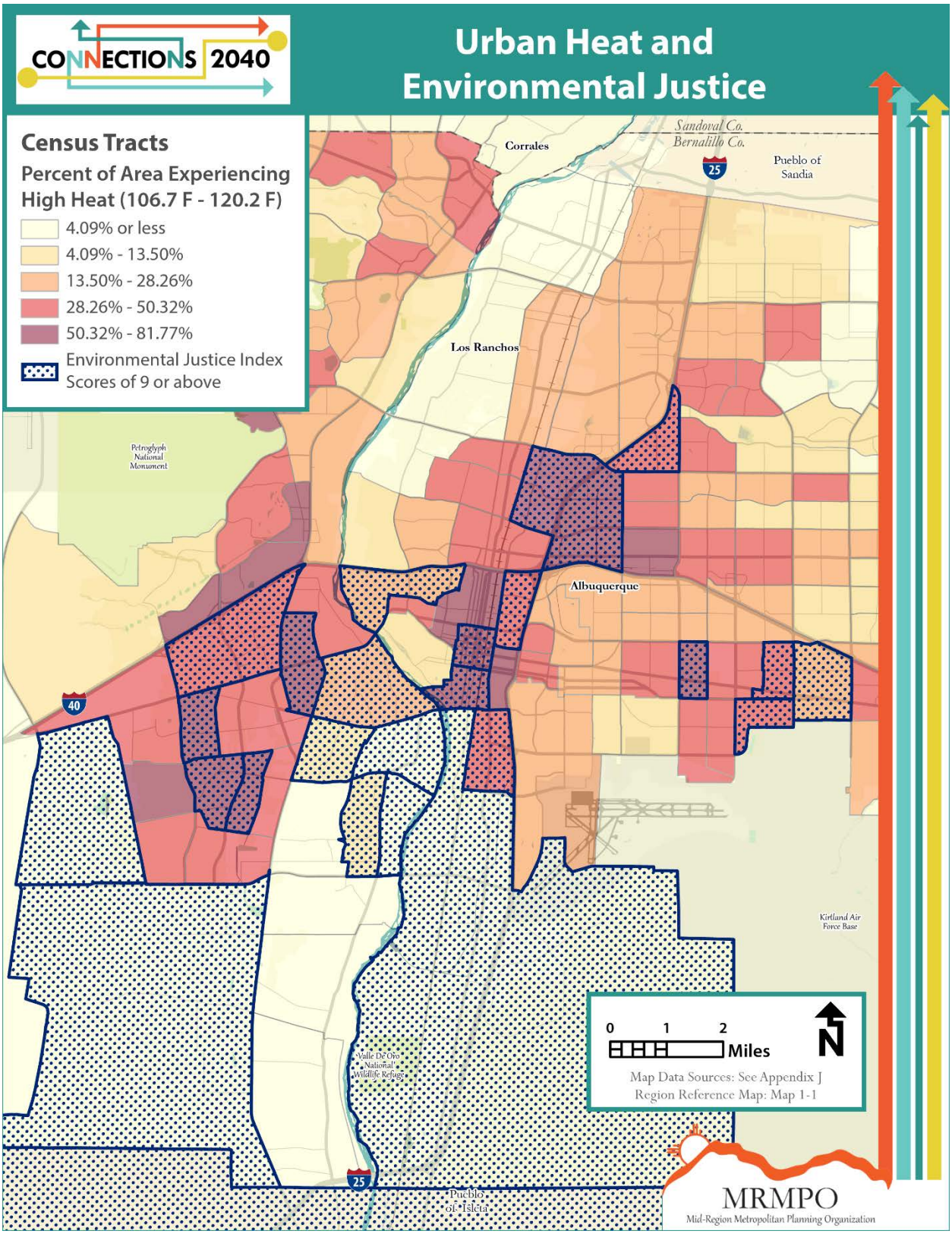
There is a correlation between areas that demonstrate the hottest temperatures and environmental justice communities in the AMPA. Using data provided by the Trust for Public Land's Urban Heat Island study[9] performed as part of the Greenprint initiative with Bernalillo County, the following map shows census tracts ranked by percentage area covered by islands of extreme heat in the hottest months of the year. Highlighted tracts indicate where the highest concentrations of people of color and those with incomes below poverty combine to score high on the environmental justice index. Areas of highest concentrated heat include approximately 34% of the populations scoring highest on the EJ Index, and only 9% of others. This analysis also indicates that the hottest areas of the city are also home to concentrations of other vulnerable populations such as youth and seniors. The map can help determine priority locations that will more equitably distribute potentially life-saving investments such as additional tree plantings and parks.

Table 9-5: Urban Heat Islands in the AMPA

% of Tract Area w/ Urban Heat Islands of 106.7 - 120.2 F	Household Units with No Car	Under 18 Population	Population 65 and Older	Population with 1 or more Disabilities	Population in High EJ Scoring Tracts (9 or Above)	Population of Low EJ-Scoring Tracts (8 or Below)
0-4%	10.7%	22.7%	31.2%	23.7%	19.5%	24.9%
4-13.5%	15.7%	15.4%	18.4%	16.6%	6.3%	18.5%
13.5-28.3%	22.0%	18.6%	20.9%	19.9%	15.3%	22.0%
28.3-50%	37.6%	27.0%	21.7%	27.9%	24.5%	26.0%
50-81.2%	13.9%	16.4%	7.7%	11.9%	34.4%	8.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

[9] Generated from LANDSAT Satellite Sensory Data of land surface temperatures in June and August of 2014 and 2015 plus National Land Cover Dataset impervious surface estimates, to create a scaled overlay representing extreme heat areas.

Map 9-4: Urban Heat and Environmental Justice in the Albuquerque Metro Area



Access to Open Space

Figure 9-12: People Enjoying Open Space Along the Bosque

While the AMPA is rich in outdoor recreation opportunities, environmental justice tracts are comparatively lacking in easy access to public outdoor recreation sites. Lack of convenient access to trees and natural environments is a public health issue, since communities without access face disproportionately high levels of chronic disease and poor health outcomes due to decreased air quality, increasing exposure to extreme heat, and lack of outdoor recreation opportunities. Approximately 55 percent of the population from high scoring EJ Index communities live within a 10-minute walk of a park or open space, while 62 percent for the rest of the AMPA population has comparable access. This analysis included publicly accessible parks and open spaces of the cities, counties, state, and federal agencies for which GIS data was available, and excluded private recreation sites like golf courses and highly "green" agricultural properties in the valley.

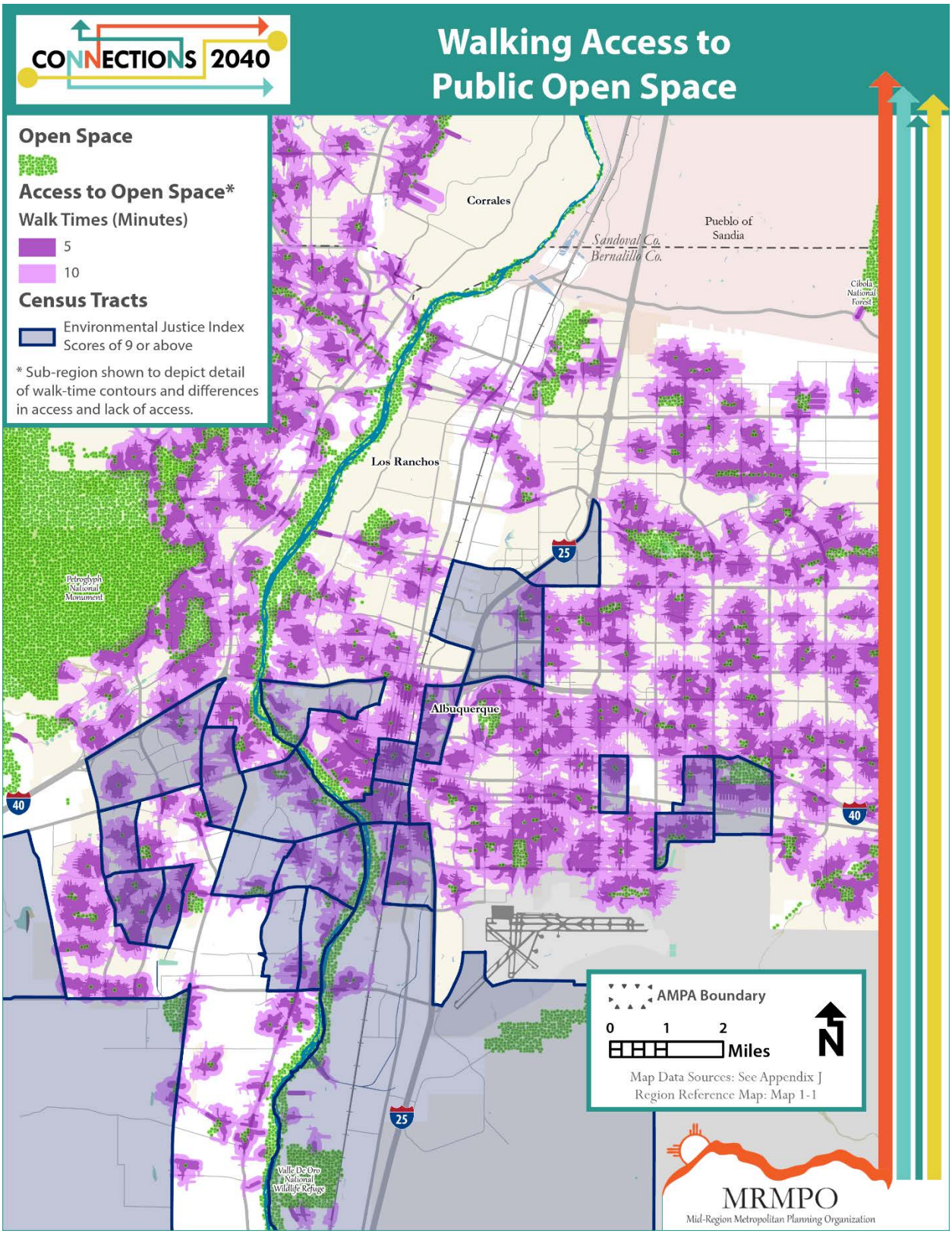
Table 9-6: Accessibility of Outdoor Recreation for Populations in the AMPA, 2017

Average walk time to nearest Park or Open Space	Population in High EJ Scoring Tracts	% Population in High EJ Scoring Tracts	Population in non-EJ Tracts	% Population in non-EJ Tracts
5 minutes (1/4 mile)	40,266	28%	231,364	31%
10 minutes (1/2 mile)	78,782	55%	457,453	62%

The largest gaps in access to open space for high-EJ scoring tracts are the southwest Albuquerque area; the predominantly commercial and industrial areas near Interstate-25 North; and along Central Avenue southeast, and there are several other smaller gaps where new parks could increase access for all. This information is useful to prioritize investments of public funds and to address fair distribution of these essential urban elements. Efforts to increase tree canopies and access to outdoor recreation should not increase housing costs or displace low income communities. According to the Trust for Public Land ParkScore® analysis for the City of Albuquerque, 87 percent of all residents live within a 10-minute walk of a park, far outperforming the nation which stands at 54 percent.[10]

[10] See www.tpl.org/city/albuquerque-new-mexico for more details on the ParkScore®.

Map 9-5: Walking Access to Open Space and Environmental Justice Populations



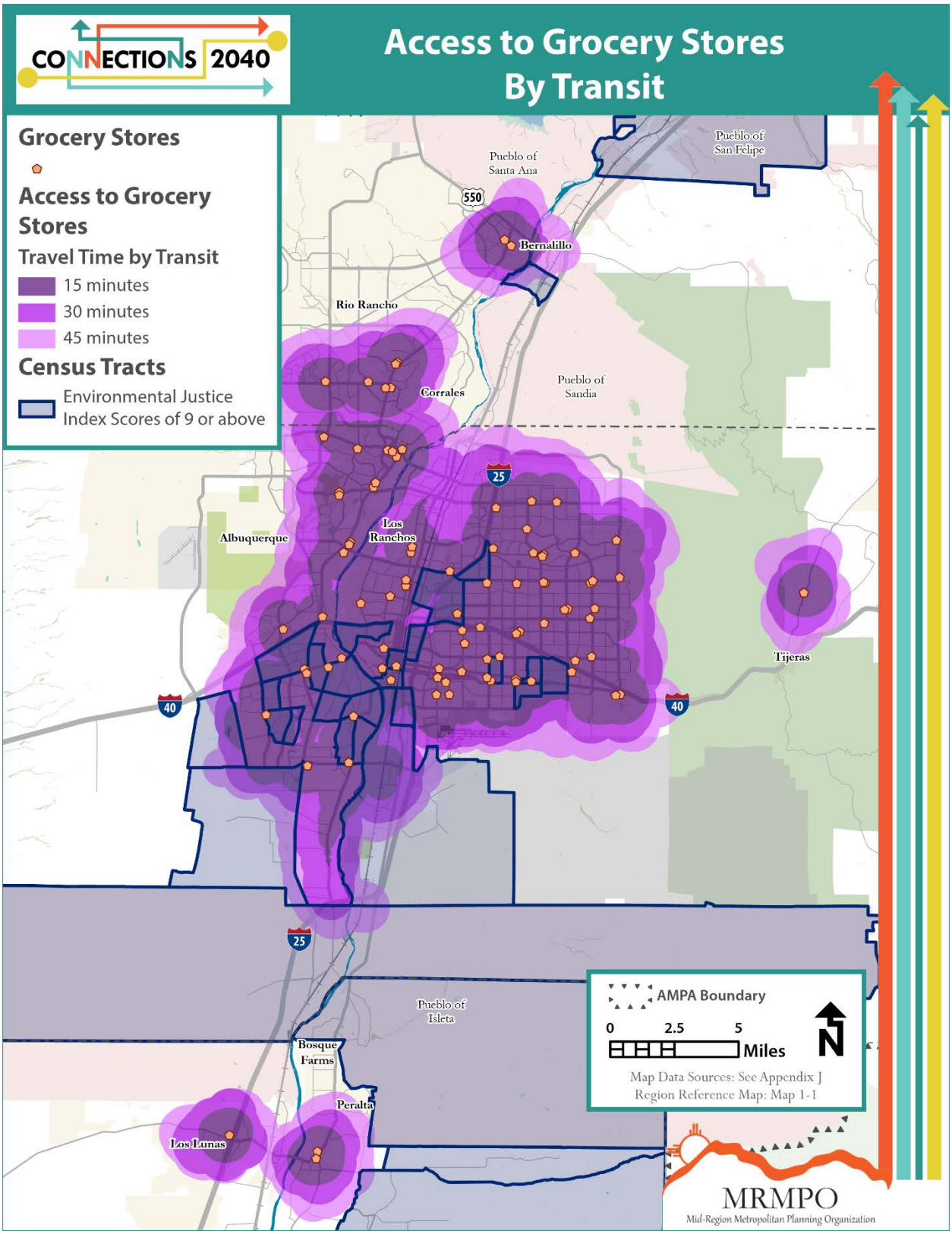
Transit Access to Grocery Stores

An important consideration for transit planning and public health is the relative availability of access to daily services, such as grocery stores. Grocery stores are of great importance because they supply wholesome foods for home-cooked meals, and other items necessary for health maintenance. The ability to reach grocery stores in a reasonable amount of time is especially important for transit-dependent populations who may not have access to a vehicle, but is also a determining factor for others who might choose transit to reduce environmental impacts or simply to save money on the cost of fuel. The results of this analysis show that demographic groups that are more likely to be transit dependent have slightly better access to grocery stores than the general population. Additionally, much of the region's urban area populations can reach a grocery store within 45 minutes or less. The map shows that residents of rural areas, such as in the Village of Corrales or Valencia County, are more dependent on personally owned vehicles for grocery trips.

Table 9-7: Transit Access to Grocery Stores for Various Demographic Groups

	% of Total Pop	% of Households with 65 and Older	% of Occupied Housing Units with No Vehicle	% of Households in Poverty	% of EJ Population
Transit Access within 30 Minutes	57.9%	60.3%	81.3%	69.1%	64.4%

Map 9-6: Access to Grocery Stores by Transit



Accessibility of Healthcare Sites and Facilities

Another important intersection between public health and transportation planning is the ability to access healthcare by transit. The challenge of reaching medical appointments and clinics was raised by the public, especially for those living in rural areas and for those who are transit-dependent. In order to investigate this further MRMPO analyzed accessibility to health services by mapping transit travel time contours from major healthcare facilities that serve the public and provide healthcare on a regular or short-term basis.[11] All of these facilities provide Medicare services. The facilities include hospitals, medical centers, and federally qualified health centers. These do not include home health services and nursing homes. Data was collected from the Department of Health & Human Services (HHS), New Mexico Data Collaborative, and Bernalillo County Assessor's Office. Socio-demographic information was incorporated to analyze access for those more likely to need transit service: seniors (over age 65), family households in poverty, and occupied housing units without a car.

This analysis assumes all the healthcare facilities are available to the transit user. However, in reality many people in the region have limited hospital choices depending on their health care provider, and the facilities have varying capacities and abilities to serve potential clients. Despite this limitation, the analysis provides a reasonable view of general accessibility patterns in the region.

The analysis shows that access to major healthcare facilities via transit takes less time for people living in Albuquerque's central and southeast areas, particularly in areas along Lomas Boulevard and in the Northeast along Montgomery Boulevard to Wyoming Boulevard, as well as areas congruent to North I-25. On the Westside, people living in areas near the Bernalillo/Sandoval County line and to a somewhat lesser degree, areas along Coors Boulevard near I-40 have shortest travel times to major healthcare facilities. Compared to the same analysis completed for the last MTP, the people living in the South Valley have much shorter travel times to major healthcare facilities via transit due to new facilities being located on the Westside and an increase in transit routes and stops.

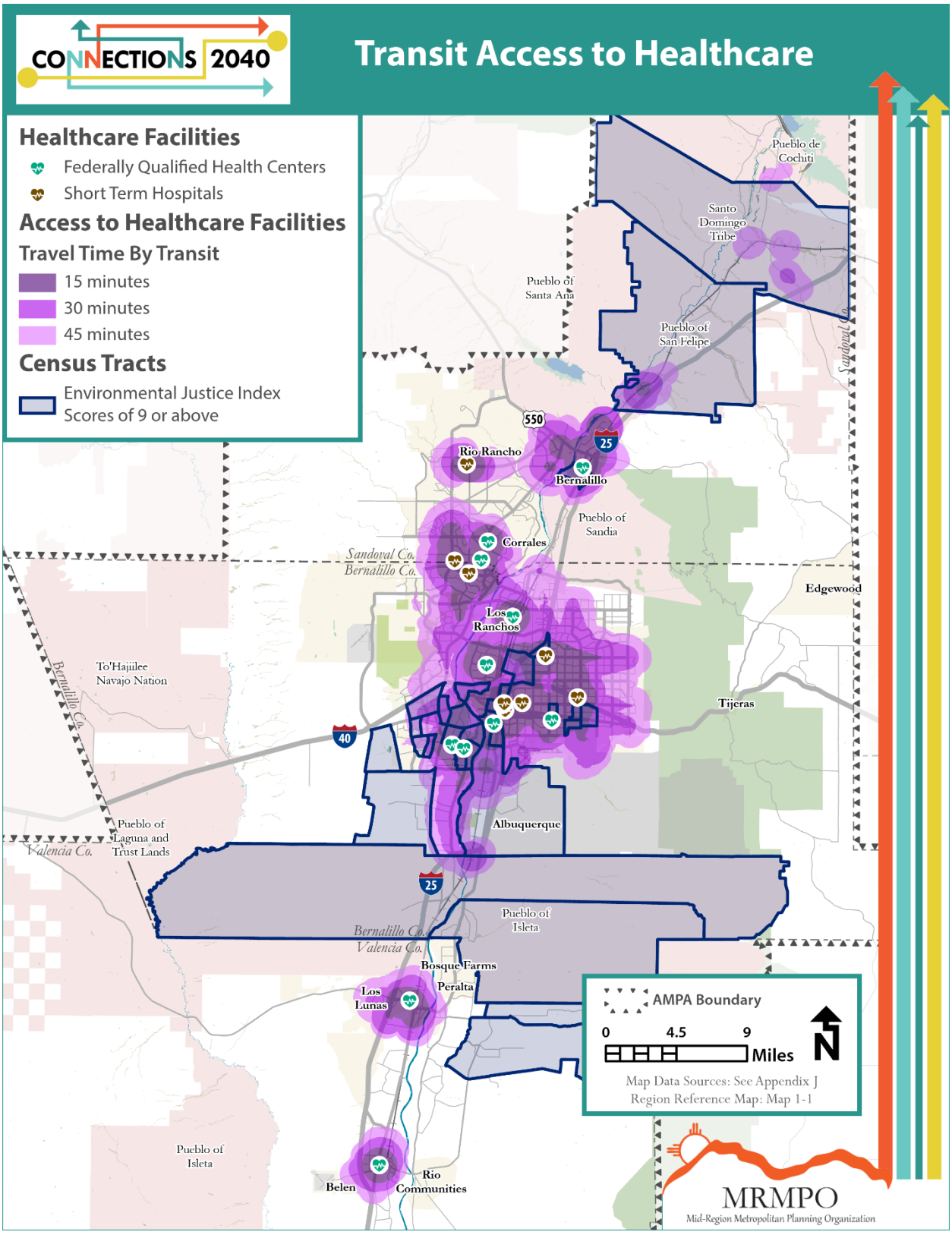
The following table shows that seniors have slightly better transit access to hospitals than the total population, while households without access to a vehicle have much better access to healthcare by transit. EJ populations and households living below the poverty level have moderately better access to healthcare via transit than the total population. In general, populations most likely to depend on public transit are better served in terms of transit access to medical facilities.

Table 9-8: Transit Access to Healthcare Facilities for Various Demographic Groups

	% of Total Pop	Households with 65 and Older	Occupied Housing Units with No Vehicle	Households in Poverty	EJ Population
Transit Access within 30 Minutes	57.9%	60.3%	81.3%	69.1%	64.4%

[11] Note that demand response services (e.g., Rio Metro's dial-a-ride in Rio Rancho and Valencia County and ABQ RIDE paratransit) also provide access to healthcare facilities but cannot be incorporated into a TRAM analysis.

Map 9-7: Accessibility of Major Healthcare Facilities by Transit



c. MRMPO Public Outreach

MRMPO offers opportunities to participate in the planning process in different locations across the AMPA to help ensure no geographic area is excluded from its public participation efforts. With respect to engaging communities of Limited English Proficiency, MRMPO translates certain key documents into Spanish (e.g., surveys and the Title VI Plan) and provides contact information in Spanish on its website. Despite MRMPO's efforts at public outreach, there remains much work to be done in terms of engaging the general public, and particularly environmental justice communities, in the transportation planning process. Increased participation leads to better transportation decisions and outcomes for all.

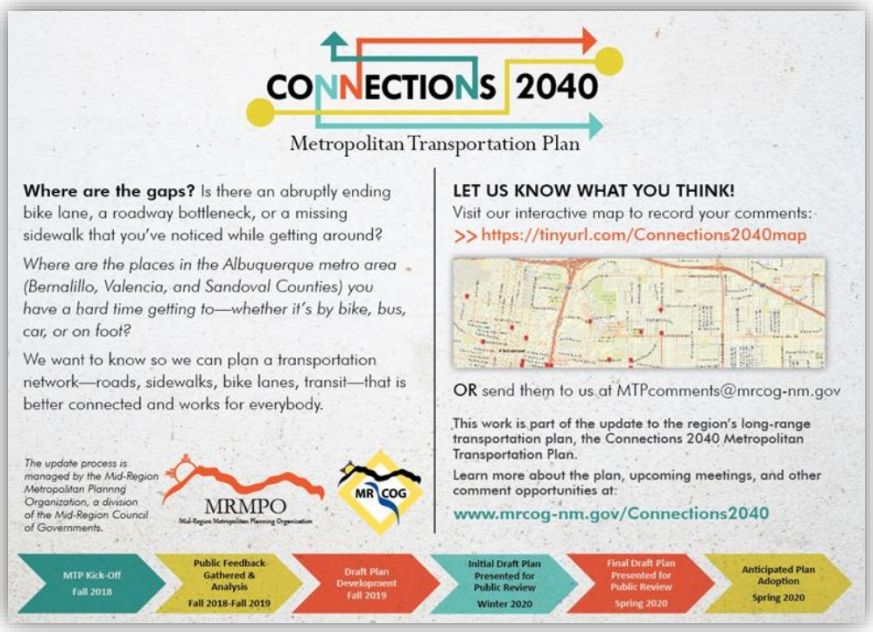
MRMPO continues its efforts for engaging environmental justice and other underrepresented populations. New outreach strategies have been employed by MRMPO staff. For the *Connections 2040 MTP*, MRMPO attended community events and existing organizational meetings, paying particular attention to environmental justice communities, in an attempt to gather more feedback from low-income and minority populations. This was a part of an overarching change in outreach that focused on attending events and meetings that are already on-going, as opposed to inviting people to attend meetings hosted by MRMPO. In addition, more participation from younger adults was sought as participation from this age group has historically been low in MTP public outreach efforts. MRMPO will also perform its planning activities through an equity-minded lens, ensuring adverse effects on low-income and minority populations are avoided, or at least minimized or mitigated.

Figure 9-13: MTP promotional postcard in Spanish

9.3 Transportation Gaps in the Region

As part of the development process for *Connections 2040 MTP*, MRMPO staff set out to identify gaps in the transportation system. The term "gaps" is used here to refer to common problem areas or challenges that travelers throughout the region face. Gaps in the transportation system can occur for all modes of travel and include issues such as roadway connectivity and traffic flow, transit route service and frequency, bicycle route connections and safety, and pedestrian crosswalk markings and signal timing.

Figure 9-14: Invitation to the Public to Identify Gaps



Staff developed multiple avenues for feedback on the region's transportation network. Through various platforms, members of the public and agency staff were asked about the type of transportation problems they face when traversing the region, and where they encounter them. This information was collected using methods that included an interactive online map, in-person public meetings, written comments, and MPO committee discussions.

The feedback staff received fell into two distinct categories: the first is "spot gaps", which pinpoint a specific geographical location or problem area in the transportation network; the second is "system gaps," which refer to more systemic transportation issues that can be applied broadly to areas within metropolitan area.

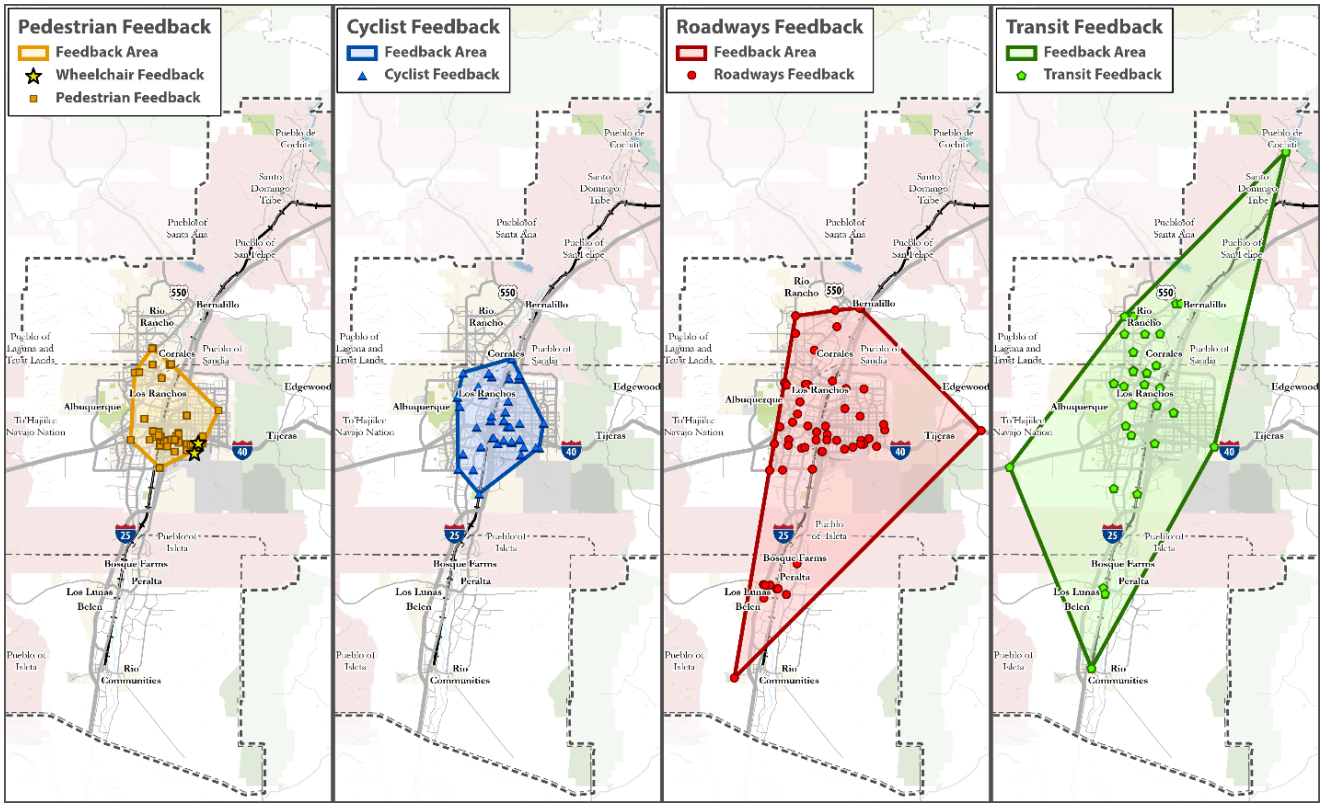
An example of each is provided here:

- Spot Gap example: Crossing the intersection of San Mateo and Montgomery is difficult.
- System Gap example: It is difficult to cross the street at many intersections.

Spot Gaps

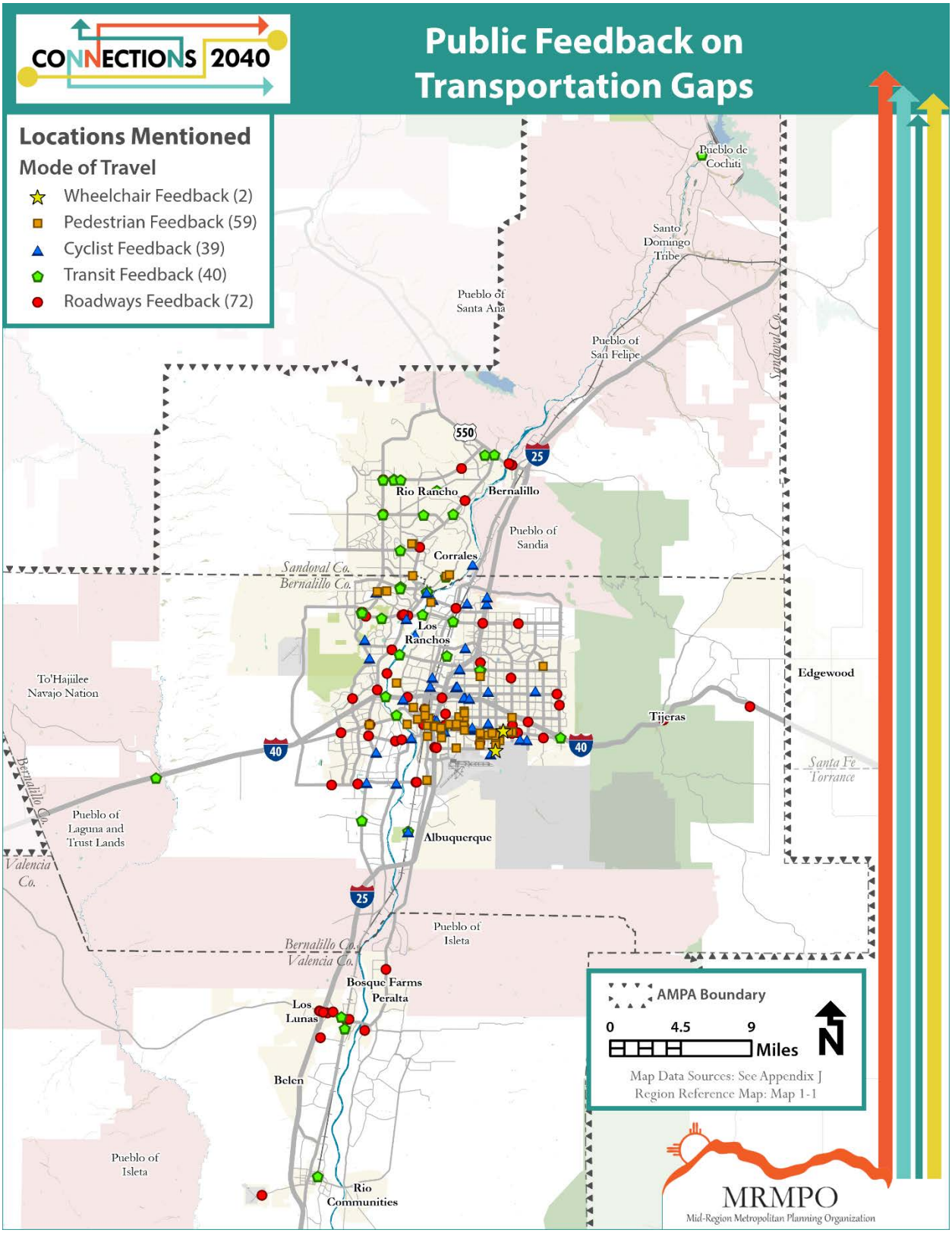
Spot gaps indicate a location where a respondent had a specific transportation issue or concern. Each point on the maps below was submitted by a member of the public or agency staff either using the interactive online map available on MRMPO's website or on paper maps at public meetings. Respondents had the opportunity to click on a location, chose a mode, and then report their concern. The following figure shows the results of that feedback in terms of where issues were observed by mode.

Figure 9-15: Spot Gaps Distribution by Mode in the AMPA



In general, pedestrian concerns were primarily within the urban core of Albuquerque in areas of concentrated pedestrian activity such as the Central Avenue corridor. Bicycle problem areas include popular trails and open space. Roadway concerns had a wider reach and capture issues with the river crossings and other congestion hot spots, and the transit comments spanned the entire region and reflect a desire for expanded transit access. Following MTP adoption, MRMPO staff will work with member agencies to provide greater detail about content behind the comments submitted at specific locations and investigate how the project selection process can assist in addressing these needs. The following map combines all of the spot gap locations identified through the MTP development process.

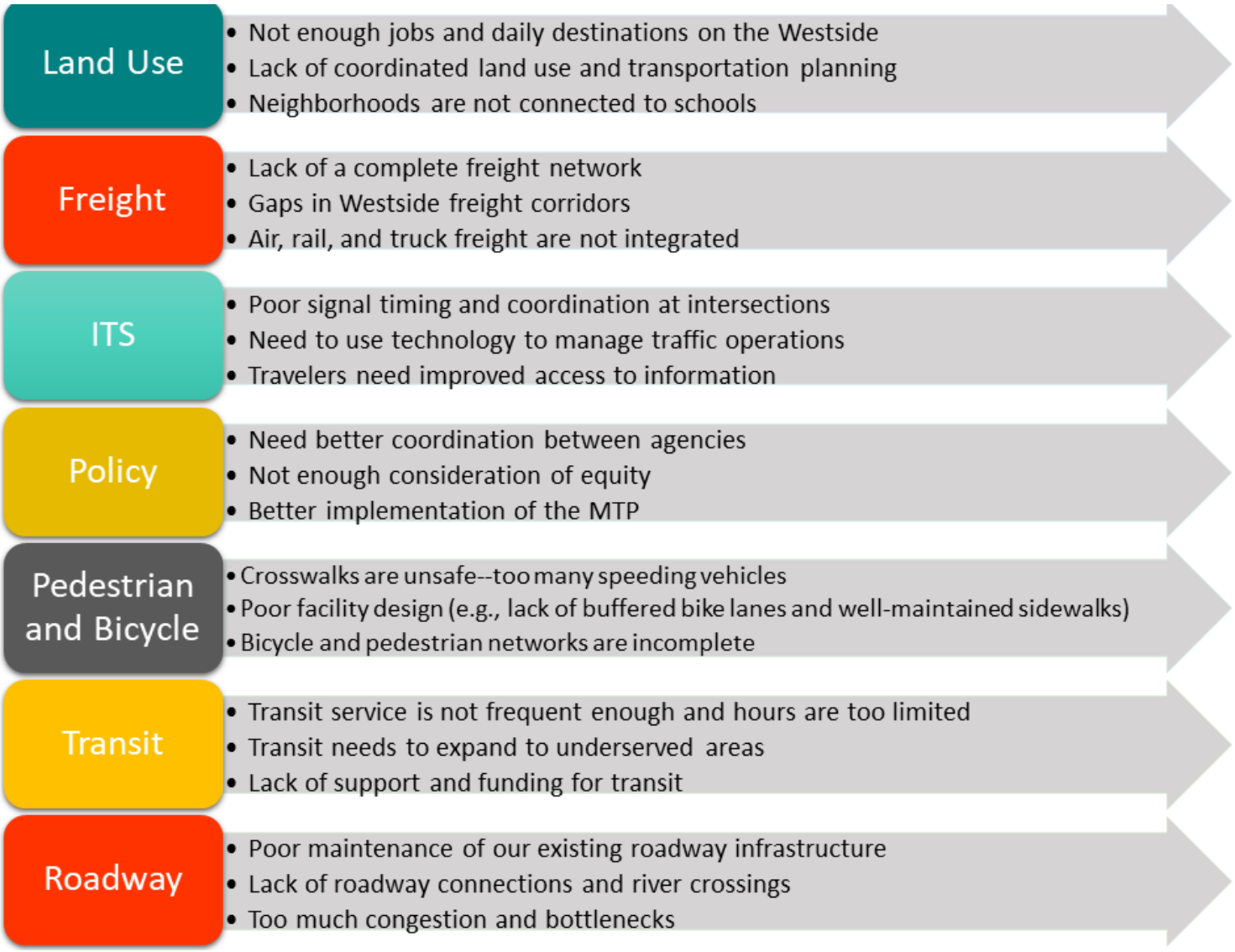
Map 9-8: Public Responses on Transportation Gaps in the AMPA



System Gaps

MRMPO also received a substantial amount of feedback regarding problems attributed to the overall transportation network rather than a specific location. These more general issues are referred to here as system gaps. MRMPO staff worked together to sift through all comments and identify common themes. Staff found that many issues were reiterated multiple times and these were brought forward as the top system gaps and the results are summarized in the following graphic.

Figure 9-16: Top System Gaps in the AMPA as Reported by the Public



Many respondents expressed broad concerns about safety, particularly the safety of persons traveling by foot, bike or transit. While safety comments covered an array of issues from vehicle speeds to street design, the vast majority pertained to crosswalks. Respondents repeatedly remarked that they found existing crosswalks to be unsafe for crossing, disconnected from neighborhoods, and in areas where they felt threatened by speeding vehicles. Comments pertaining to roadway concerns often centered around a need for more bridge crossings, poor signalization at intersections, and a need to maintain existing infrastructure. Transit related comments frequently stated that transit was not accessible or frequent enough. In addition, multiple respondents felt that the freight network on the westside lacked connectivity, and that there was not enough coordination of transportation planning between agencies.

Figure 9-17: Transportation Gap in the AMPA

9.4 Recommended Pathways for Achieving the MTP Goals

MRMPO staff developed a list of broad pathways, or strategies, to address system gaps identified during the public feedback process. The pathways are the synthesis of strategies in the *Futures 2040 MTP*, strategies identified by MRMPO committees, public comments, and input from other experts in the transportation arena. The following tables provide a summary of the key pathways categorized by MTP goal. A complete list of pathways is available in Appendix G.

While not all pathways are appropriate for all member agencies, this should be considered a toolbox from which jurisdictions and other entities can find appropriate regional strategies. MRMPO staff are available to assist with these efforts upon request.

Figure 9-18: Key Pathways for Meeting the MTP Goals (Optimized Mobility, Economic Linkages)

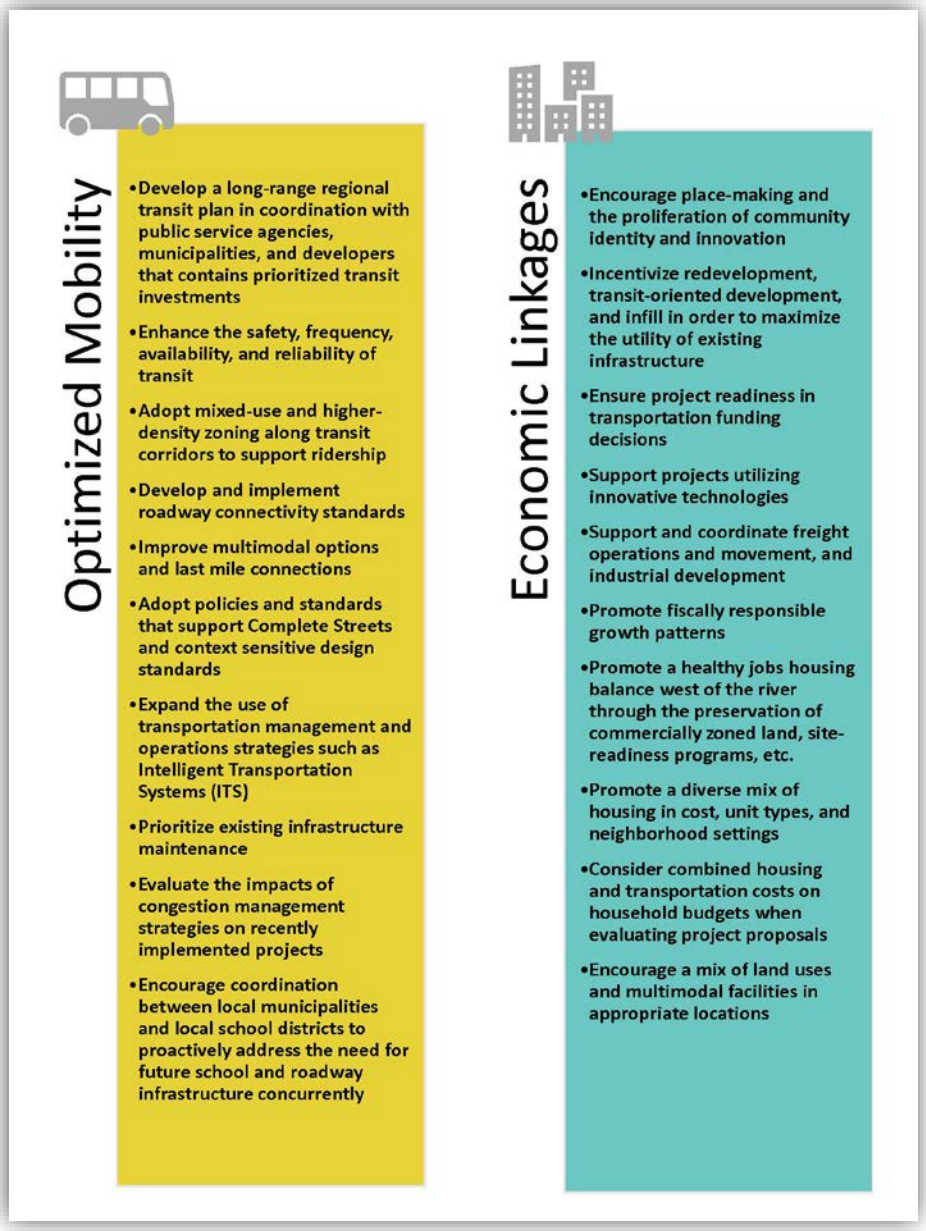
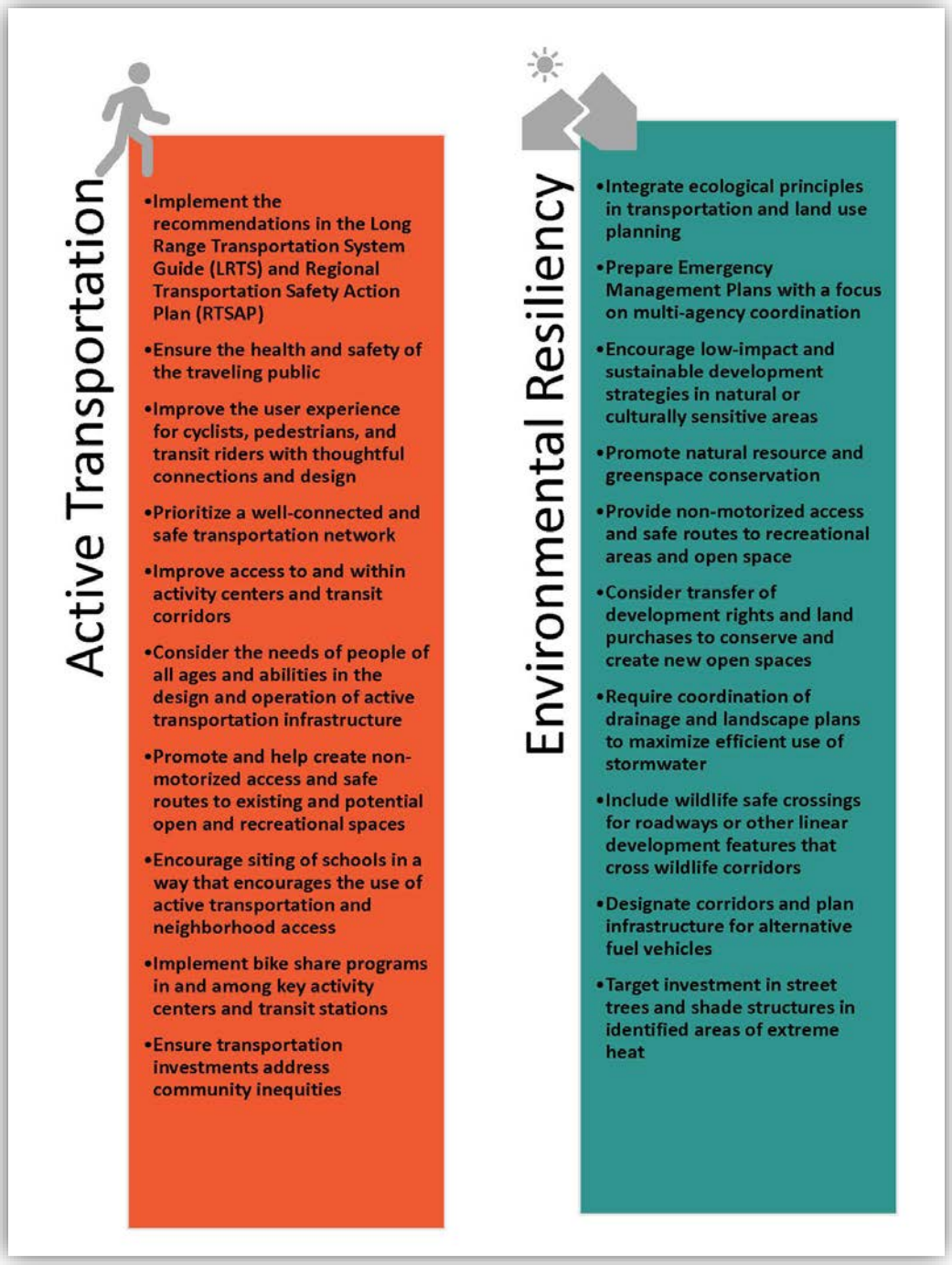


Figure 9-19: Key Pathways for Meeting the MTP Goals

(Active Transportation/Environmental Resiliency)



9.5 Next Steps

The role of the MTP and the metropolitan transportation planning process is to identify regional needs and assist member agencies in transportation infrastructure decision-making. Each MTP is another step toward a more complete and coherent understanding of the overarching challenges facing the region – transportation and otherwise – and the strategies that best address them. The MTP is updated regularly, which helps it remain a relevant and meaningful resource for member agencies and the general public. The process and methodologies are constantly being revised as new information and ideas emerge and each MTP builds on the one that came before.

> **While the *2035 MTP* explored the critical link between land use and transportation, the *Futures 2040 MTP* took the next step to investigate the relationship between alternative development patterns through its scenario planning process. The *Connections 2040 MTP* builds upon a central concept within *Futures 2040 MTP*, existing system preservation, and focuses on identifying and prioritizing gaps in existing networks and improving connections throughout the region.**

The MTP will be updated again in five years and will contain new projections and analysis. For the time in between the approval of the *Connections 2040 MTP* and the next update, MRMPO has identified several potential activities to pursue as well as opportunities to advance in-house tools and analytical capabilities. These steps should help to better inform transportation and land use investments and policy decisions. As always, these are regional efforts and will require participation from member agencies throughout the AMPA. Some next steps may include:

- Create additional land use and transportation scenario modeling.
- Research and explore new technologies such as connected and autonomous vehicles, connected infrastructure, and "smart cities" applications,
- Further investigate freight travel and freight corridors, and consider a freight/travel study.
- Use Fiscal Impact Tool to examine full costs of alternative land use scenarios.
- Refine MTP project selection process to better align projects with MTP goals and Target Scenario.
- Revisit MTP goals and pathways.
- Develop an implementation plan for MTP pathways through MRMPO committees.
- Integrate and expand bicycle and pedestrian count data.
- Evaluate progress toward Federal performance measures targets.
- Analyze new 2020 Census data and integrate findings into the next MTP.
- Revise the Project Prioritization Process to include a simplification of the tool, a change to GIS-based review, and integration of PM measures as appropriate.
- Investigate the potential to create a comprehensive regional pedestrian network map including pedestrian infrastructure needs and ADA facilities.

Now it's your turn. Tell us your ideas…you just may see them in the next Metropolitan Transportation Plan!