2040 Metropolitan Transportation Plan

Farmington Metropolitan Planning Organization

Adopted September 24, 2015

Farmington Metropolitan Planning Organization

Aztec • Bloomfield • Farmington • San Juan County • NEW MEXICO

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Farmington Metropolitan Planning Organization

Adopted September 24, 2015 by the Farmington MPO Policy Committee

To view the 2040 MTP online, including appendices, please visit www.farmingtonmpo.org and navigate to the 2040 MTP.

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Online Appendices

Supporting materials which are too lengthy to include here or are better viewed in larger format, such as copies of maps or documentation from the public outreach, can be found at the Farmington MPO website, www.farmingtonmpo.org, and then navigating to the 2040 MTP.

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1 | Introduction

The Metropolitan Transportation Plan (MTP), adopted by the Farmington Metropolitan Planning Organization (MPO), is the long-range transportation plan for the urbanized region that includes the cities of Aztec, Bloomfield, and Farmington and the surrounding urbanized area of San Juan County. The Plan identifies future transportation investments, policies, goals, and strategies for all modes of transportation. Through the projections of where people will live and work, the Plan strives to achieve a balance among all modes of travel, such as vehicular traffic, public transit, pedestrian and bicycle, aviation and freight. This balance must be responsive to demand, and strive to serve unmet needs.

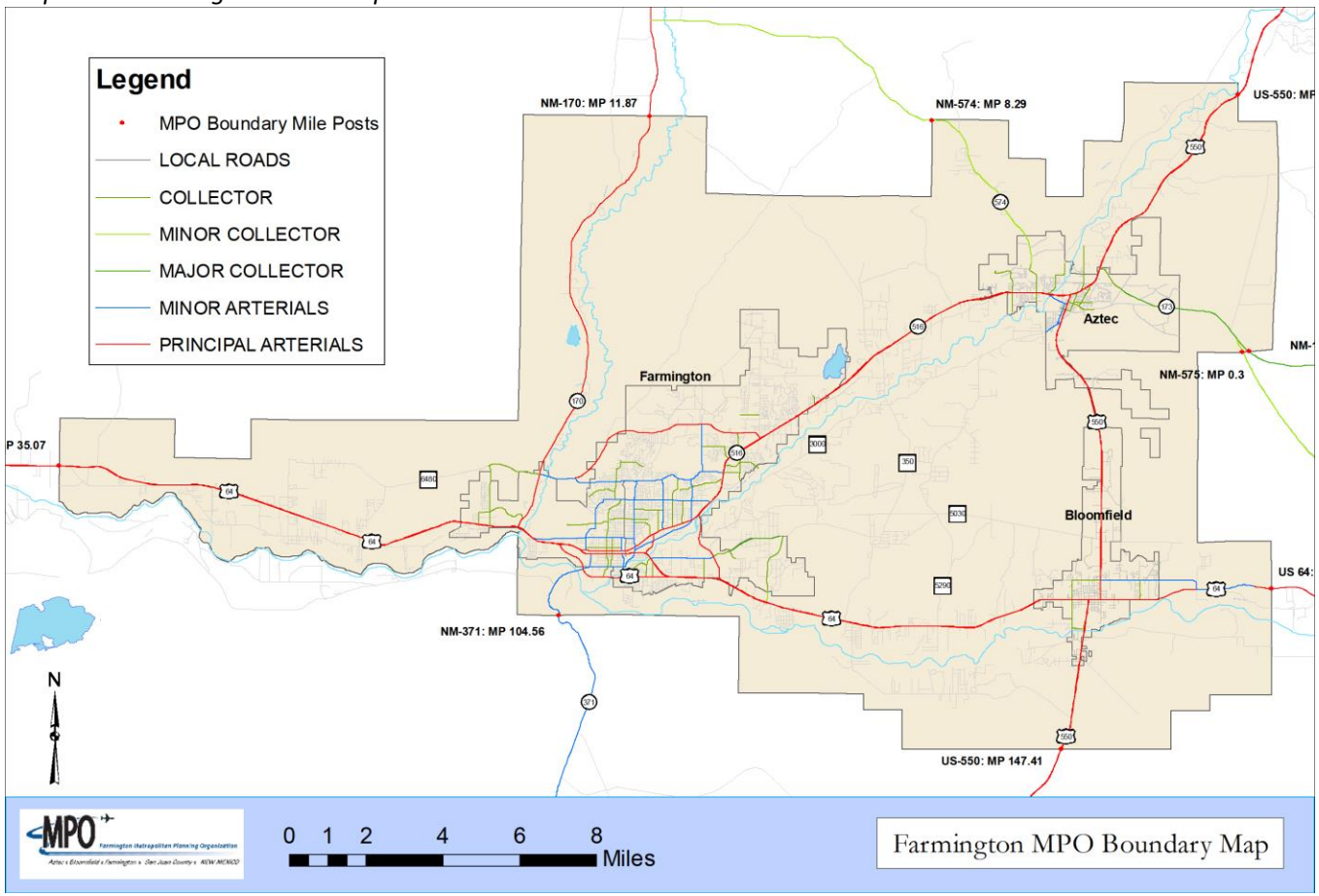
The Metropolitan Transportation Plan identifies specific services and projects for each mode of travel in order to create a transportation system that meets the transportation needs of the region through 2040. Similar to virtually every community across the nation, anticipated revenues are not sufficient to fund all of the transportation projects contemplated. Therefore, projects have been prioritized for implementation so that the Plan can respond to financial constraints required by law.

The Farmington MPO adopted its first Metropolitan Transportation Plan in April 2005, with an update completed in 2010, and amendments to individual chapters over time. This update is a continuation of the guiding document that creates the region's transportation framework for the next 25 years. The Farmington MPO is the formal regional transportation planning forum and is responsible for carrying out federal transportation regulations in order to ensure a comprehensive, coordinated, and continuing transportation planning process.

1.1 FARMINGTON MPO AREA

The Farmington MPO is located San Juan County in the northwest corner of New Mexico. The cities of Farmington, Aztec and Bloomfield, and surrounding areas of the County serve as the economic center for the Four Corners region. The MPO planning area is illustrated in Map 1-1. Several major highways connect this area to cities in New Mexico, Arizona, and Colorado. The total estimated population within the MPO planning area in 2015 is approximately 104,000 people.

Map 1-1 – Farmington MPO Map



In early 2015, citizens in the Kirtland area voted in favor of incorporating the Town of Kirtland. This new town includes only a small portion of the overall population in the Kirtland area – approximately 400 persons. The Town of Kirtland is expected to begin municipal operations in the summer of 2015. The implications for the creation of a new local entity within the MPO are yet to be determined. The area is currently represented in the MPO by San Juan County.

1.2 VISION AND MISSION STATEMENTS

The Metropolitan Transportation Plan is shaped within the framework of the vision and mission statements for the MPO. These were developed in response to the planning factors outlined by federal legislation and in cooperation with the MPO Technical Committee, the MPO Policy Committee, NMDOT and Federal Highway Administration.

Vision Statement
The Farmington Metropolitan Planning Organization vision is for a safe, efficient and reliable multi-modal transportation system that meets the needs of residents and visitors in the region.

Mission Statement
Provide a forum to develop an effective transportation system to move people and goods safely, economically and efficiently while maintaining a high quality of life.

1.3 FARMINGTON MPO GOALS and OBJECTIVES

The Farmington MPO has developed its own goals over time, based on guidance and a collaborative effort with the federal and state transportation agencies, and the region's own needs, priorities and vision. Table 1-1 describes the goals and objectives identified by the MPO that help to support and achieve the Vision and Mission statements.

TABLE 1-1 – Goals and Objectives of the Farmington MPO

GOAL	OBJECTIVES
A. Support the economic vitality of the MPO region by investing strategically in transportation projects and programs which create long-term, financially-sustainable economic value	1. Invest in and maintain transportation infrastructure serving economic activity centers 2. Develop all modes of transportation system for efficient delivery of goods and services and access to businesses, training and jobs 3. Enhance aesthetics and quality of life factors of the transportation system to attract visitors and new residents 4. Expand transit services hours and days of operation to meet needs of residents in the workforce and San Juan College students seeking education and training
B. Foster regional coordination on transportation projects and policies among all levels of government and stakeholder groups	1. Incorporate locally-adopted plans in the MTP 2. Involve local engineers and planners in the transportation planning process 3. Maintain collaborative relationships within the region through ongoing public outreach to stakeholders and open public meetings
C. Develop transportation network connections and associated facilities into a cohesive intermodal system	1. Prioritize the completion of networks for individual modes 2. Increase intermodal connections
D. Manage congestion by prioritizing projects that enhance the capacity-efficient modes like carpooling, transit, biking, and walking and reduce overall person delay	1. Maximize use of the current transportation system 2. Minimize congestion and delay 3. Integrate Intelligent Transportation Systems elements aimed at increasing system efficiency and safety into the regional infrastructure
E. Provide reasonable access for all of the region's residents, regardless of age, income, ability or location	1. Increased multi-modal accessibility by completing networks for all modes 2. Expand transit service hours and days of operation 3. Develop the Complete Streets Design Guidelines for implementation by local government entities
F. Minimize negative environmental impacts and enhance the environmental quality of the MPO region	1. Minimize air quality impacts 2. Minimize impacts to existing development 3. Develop strategies to educate the public about how travel choices affect air quality
G. Build, operate and maintain the metropolitan transportation system in a financially-sustainable, cost-efficient manner	1. Maximize transportation system performance per project costs 2. Include life cycle costing into proposals for all projects 3. Prioritize maintenance of the existing transportation system 4. Research and develop sustainable funding sources

GOAL	OBJECTIVES
H. Identify and implement new technology for multi-modal transportation responsive to demand and unmet needs.	1. Improve multi-modal street design for high activity areas 2. Implement Intelligent Transportation Systems (ITS) technologies
I. Develop a transportation system that enhances quality of life and works in concert with cultural and environmental resources.	1. Include local plans into MTP development 2. Address aesthetics of major thoroughfares within the region and gateways to the cities 3. Minimize access to adjacent developments along key arterials to maximize capacity consistent with access management principles 4. Include MPO review in local development review
J. Integrate transportation and land use planning to improve quality of life and to enhance the natural environment by using transportation investments to proactively shape land use patterns rather than react to growth	1. Encourage the local entities to integrate regional transportation policies into their adopted local plans 2. Emphasize connectivity and development of alternative travel routes as a means to avoid widening of roadways
K. Ensure safety for all modes	1. Improve system safety through improved levels of service and reduced congestion 2. Promote safety design practices for all modes 3. Minimize emergency vehicle response time
L. Coordinate with local agencies on security planning and strategies	1. Implement Intelligent Transportation Systems (ITS) technologies for improving the safety and security of transportation modes 2. Coordinate transportation system design and operation with emergency response and disaster mitigation efforts
M. Foster public private partnerships aimed at reaching regional transportation goals	1. Facilitate connections of all levels of government, school districts, San Juan College, businesses, non-profit organizations and other interested stakeholders 2. Support public private partnerships in identifying needs, accessing data and seeking technical assistance as available
N. Provide a transportation system which promotes healthy living	1. Promote access to healthcare services for all users, with focus on populations without the ability to drive 2. Maintain existing complete streets and expand complete streets infrastructure to promote active transportation modes

1.4 MAP-21 NATIONAL GOALS

The Federal transportation bill, Moving Ahead for Progress in the 21st Century (MAP-21), identifies national goals which form the basis for federal transportation funding rules. It requires implementation of performance-based programming and performance measurement, asset management, safety programs, etc. The MPO works in cooperation with the local entities, the New Mexico Department of Transportation, and the local transit operator to develop the federally mandated planning documents and activities as a part of its planning efforts. The MAP-21 goals are as follows:

GOAL AREA	NATIONAL GOAL
Safety	To achieve a significant reduction in traffic fatalities and serious injuries on all public roads
Infrastructure condition	To maintain the highway infrastructure asset system in a state of good repair
Congestion reduction	To achieve a significant reduction in congestion on the National Highway System
System reliability	To improve the efficiency of the surface transportation system
Freight movement and economic vitality	To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
Environmental sustainability	To enhance the performance of the transportation system while protecting and enhancing the natural environment
Reduced project delivery delays	To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices

1.5 RECENTLY COMPLETED REGIONAL PROJECTS

Some projects identified in the 2035 MTP have been completed in the last five years. They include:

Roadway	Location	Description
Phases 2 and 3 of the US 64 Farmington to Bloomfield Project	Farmington	Intersection improvements at US 64/Browning Parkway and widening beginning in Bloomfield heading west.
NM 371 & N 36	Farmington	Install beacon flasher/advanced warning signal at intersection
NM 173	Aztec	Safety improvements including shoulder widening and sight distance correction
N. Light Plant Rd.	Aztec	Roadway improvements north of NM516
East Main St. Adaptive Traffic Signal	Farmington	Install adaptive traffic control system along East Main St. at 11 intersections
CR 350 & CR 390	San Juan County	Constructed intersection improvements

Bicycle/Pedestrian	Location	Description
20th Street	Farmington	Reconstructed sidewalks on north side of street from Clayton to Sullivan (2 phases)
Vereda del Rio San Juan River Trail	Bloomfield	Constructed new river trail (2 phases)
Animas River Trail	Aztec	Constructed pedestrian trail and added transit stop for connection to Aztec Ruins; extended river trail and constructed pedestrian bridge over Animas River
Piñon Hills Blvd.	Farmington	Constructed sidewalks from Butler to East Main St.
Farmington Ave.	Farmington	Constructed sidewalks from 20th St. to 30th St.
Hutton Ave.	Farmington	Constructed sidewalks near Animas Elementary School
Windsor Ave.	Farmington	Constructed sidewalks near Mesa Verde Elementary School
Hyrdo Plant Rd & McCormick School Rd.	Farmington	Constructed sidewalks near McCormick Elementary School

1.6 LIVABILITY PRINCIPLES

In 2009, the US Department of Transportation (USDOT), Housing and Urban Development (HUD), and the Environmental Protection Agency (EPA) created an interagency partnership to help improve access to affordable housing, to provide more transportation options, and to lower transportation costs while protecting the environment in communities nationwide. This partnership has developed six livability principles as a way to coordinate federal transportation, environmental protection, and housing investments. These principles are factored into many of the goals and policies identified in this document.

1. Providing more transportation choices
   MPO Actions:
   - Encourage investments in multi-modal transportation
   - Investigate expansion routes for Red Apple Transit to serve more population and employment areas
   - Encourage regional and local bicycle/pedestrian projects to develop a network that links neighborhoods, jobs, and recreational destinations

2. Expanding access to affordable housing, particularly housing located close to transit
   MPO Actions:
   - Identify new transit service in the vicinity of existing and planned affordable housing
   - Encourage construction of sidewalks and bike facilities in neighborhoods with high concentrations of affordable housing

3. Enhancing economic competitiveness-–giving people access to jobs, education and services as well as giving businesses access to markets
   MPO Actions:
   - Encourage local planning agencies to promote in-fill development which helps cluster businesses together and maximizes the efficiency of existing transportation infrastructure
   - Recommend freight corridors and truck routes that efficiently distribute local goods
   - Complete gaps in sidewalks and bike paths

4. Targeting federal funds toward existing communities to spur revitalization and protect rural landscapes
   MPO Actions:
   - Place emphasis on road projects that improve conditions within urban cores
   - Promote and support transit-oriented development and accompanying facilities that promote walking and biking

5. Increasing collaboration among federal, state, and local governments to better target investments and improve accountability
   MPO Actions:
   - Encourage participation from representatives of all levels of government for the development of local and regional priorities
   - Work with NMDOT to program and fund prioritized projects

6. Valuing the unique qualities of all communities--whether urban, suburban, or rural
   MPO Actions:
   - Provide convenient transportation choices for accessing national monuments and other landmarks in the MPO area
   - Protect the rural landscape of this area by, encouraging infill development, reducing sprawl and encouraging system preservation strategies
   - Apply the Complete Streets Design Guidelines specific to land uses and to the urban, suburban or rural setting

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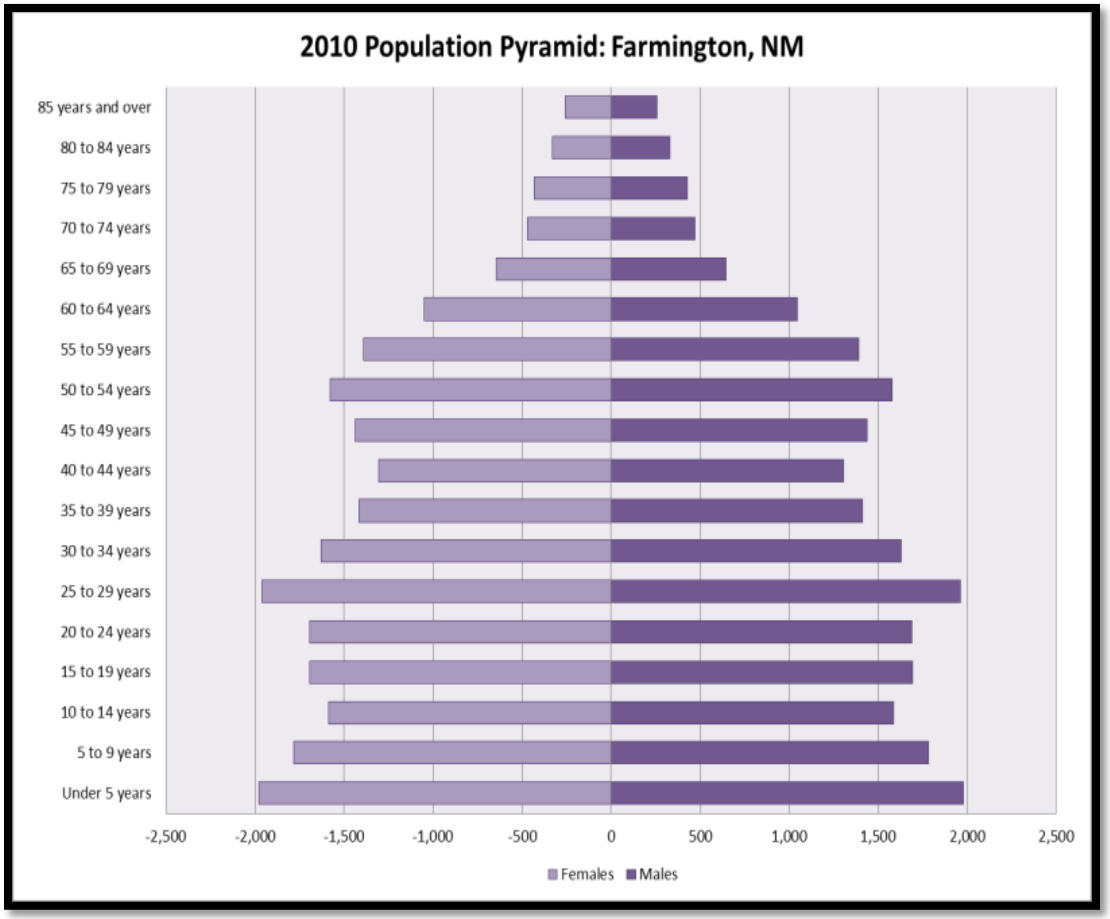
2 | Existing Conditions & Trends

2.1 BACKGROUND

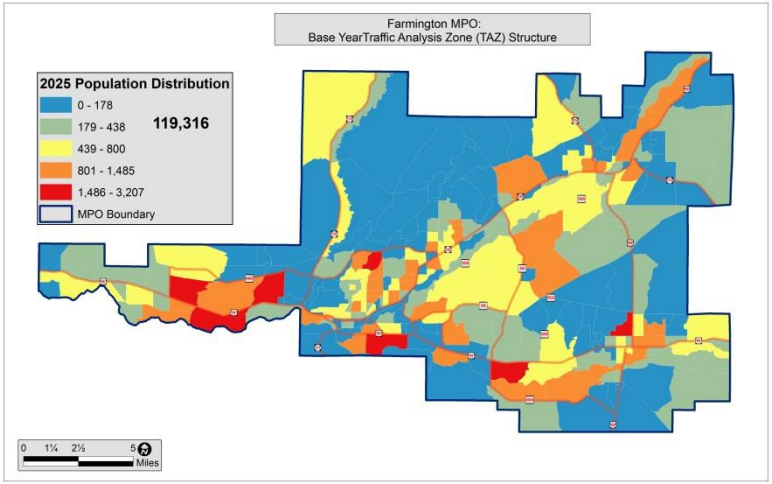
Planning for the horizon year of 2040 requires an understanding of our region's population composition, economic drivers, housing construct, area income and transportation assets. These demographics indicators need to be examined in context with multi-generational demands in transportation planning regionally and nationwide. At the national scale, it is estimated that by 2040 those over the age of sixty-five years will make up 20 percent of the entire population. In addition, those under the age of eighteen will make up almost 23 percent of the population. Together they will comprise forty-three percent of the US population. Results of a 2012 national poll conducted by the American Planning Association (APA) revealed common concerns among millennials and baby boomers regarding desirable community attributes and prosperous economies. Taken together, these demographic changes require that the MPO approach future planning that is able to respond to regional needs which also simultaneously allow for the integration best practices following national trends.

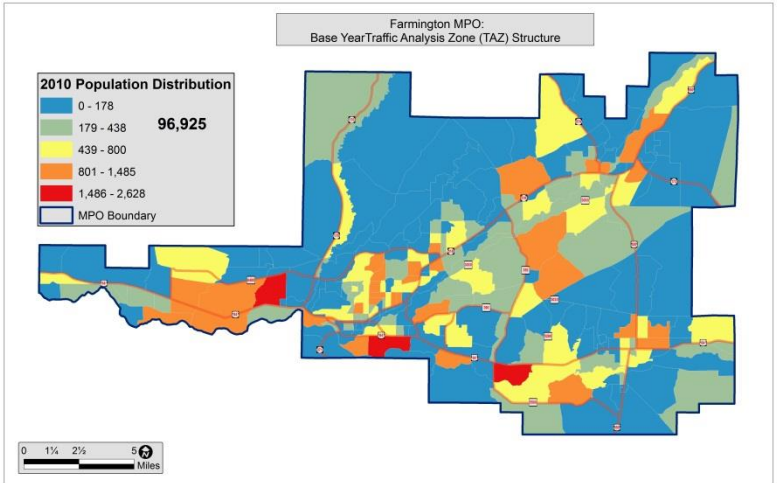


In 2015, almost 100,000 people live in the Farmington MPO region, and over 45,000 people work here. By the year 2040, an additional 40,000 people are expected to live in the region, and an additional 20,000 employed.

2.2 POPULATION

The Farmington MPO region has grown even more rapidly than the county itself, increasing its share of County population from 63% in 1980 to 74% in 2010, the base year for this plan update. The MPO staff and Technical Committee looked at local land use plans and infrastructure in place, and extrapolated this population trend, estimating the region's share will grow moderately to approximately 79% of the County's population by 2040. The MPO Policy Committee concurred with this estimate, which would result in the MPO region's 2010 population of 96,925 growing to 119,316 in 2025 and 138,505 in 2040.





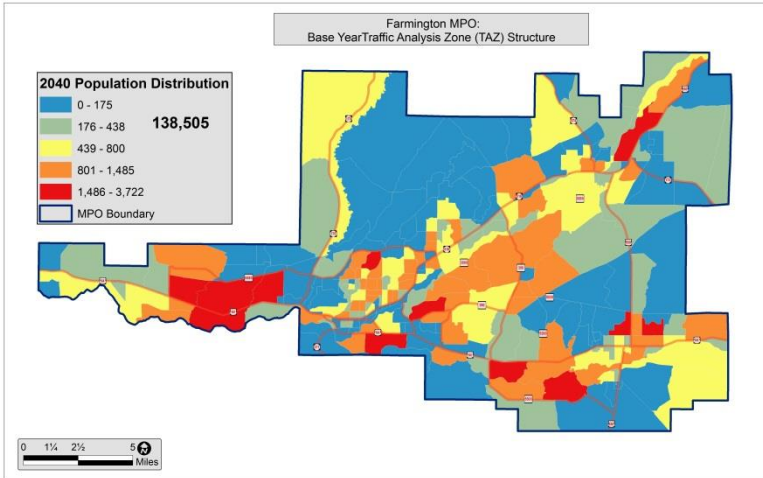


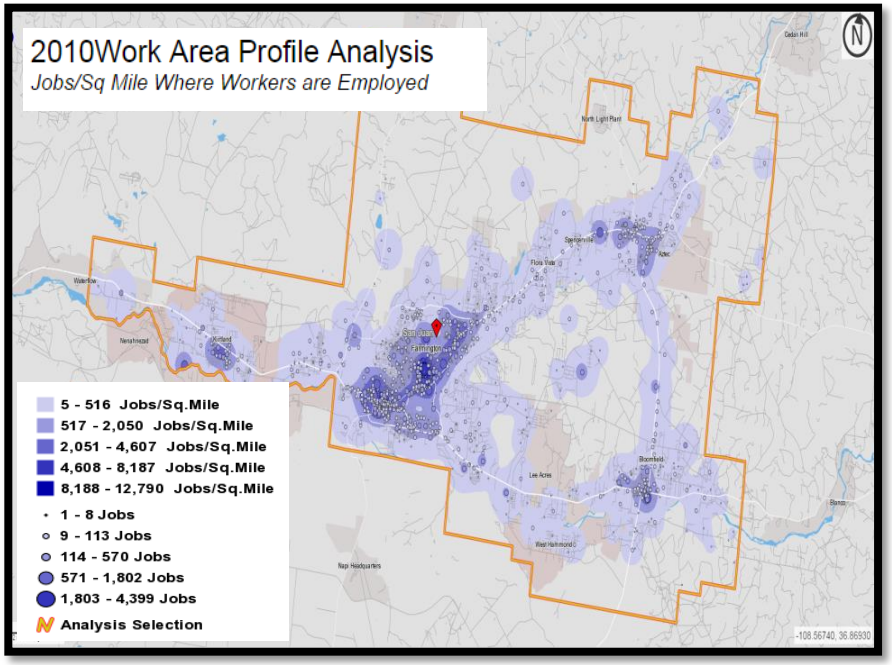
TABLE 2-1 – Future Population Growth

Jurisdiction	2010 Population	2020 Population	2025 Population	2030 Population	2040 Population
Aztec	6,763	7,235	7,732	8,039	8,546
Bloomfield	8,112	8,497	9,331	9,314	9,612
Farmington	45,877	47,323	51,043	51,441	54,086
Kirtland	7,875	9,006	10,404	11,270	12,881
San Juan County (within the MPO)	28,298	34,020	40,806	46,140	53,380
MPO Total	**98,925**	**106,081**	**119,316**	**126,204**	**138,505**
San Juan County (whole county)	130,170	146,388	154,065	161,593	176,678

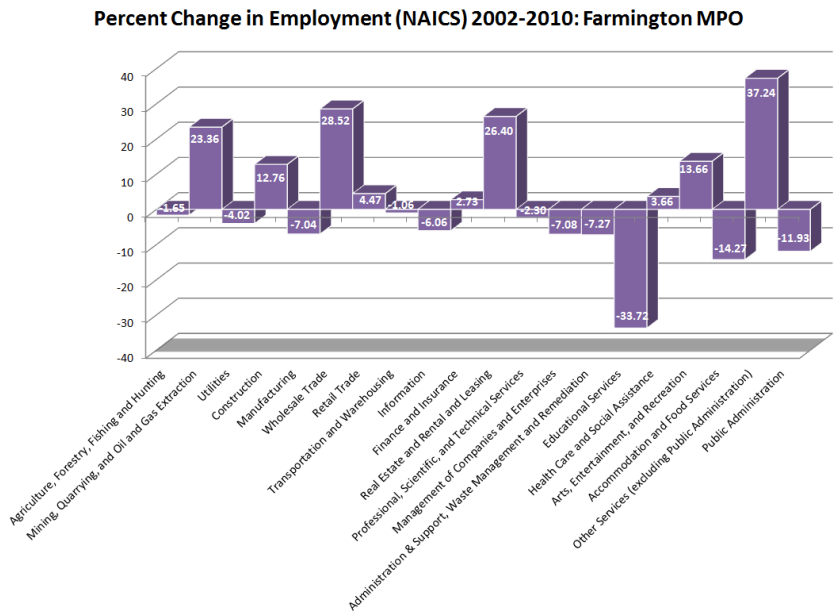
2.3 EMPLOYMENT TRENDS

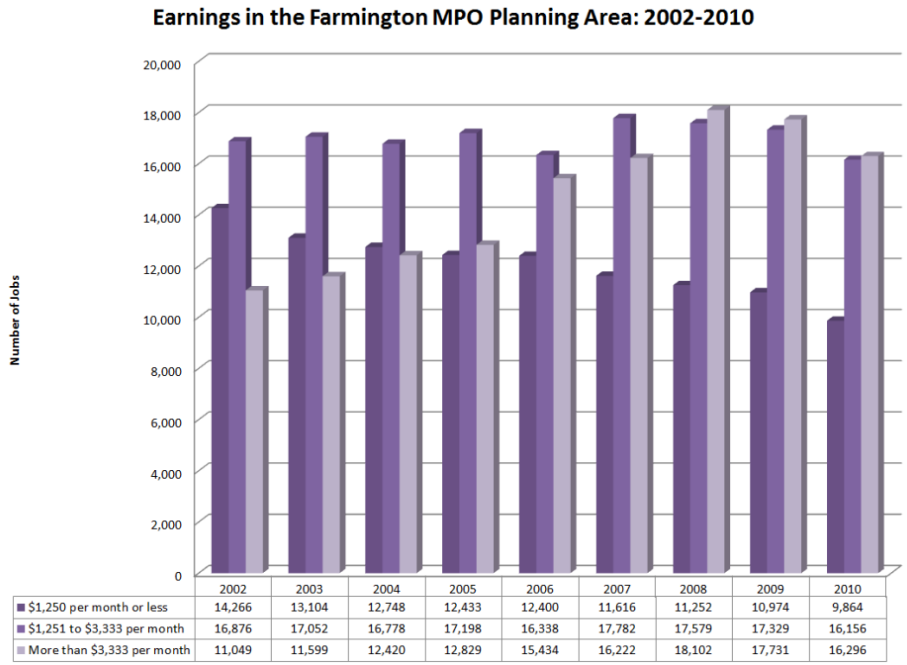
Employment typically changes more readily than population. Since 1996, there have been between 39,000 and 51,000 jobs counted in San Juan County by the US Census Bureau's Quarterly Workforce Indicators (QWI). In 2011, the most recent year for which reports were available, there were 47,000 jobs in San Juan County, while New Mexico Workforce Solutions estimates there will be 55,650 jobs in the County by 2020.

The Census Bureau's On the Map tool, illustrates employment hot spots concentrated in Farmington in and around 20th Street and E. Main. Other pockets include areas along S. Main Street in Aztec, as well as commercial corridors along US 64 in Bloomfield and Kirtland to the west. Other indicators show that from 2002-2010 the positive growth industries in the MPO were in Other Services (37%), Wholesale Trade (28%), Real Estate (26%), Oil & Gas Extraction (23%) and Arts Entertainment & Recreation (14%). Education Services (-33.72%), Accommodation & Food Services



(-14.27%) and Public Administration (-11.93%) experienced negative growth rates during the same time period.



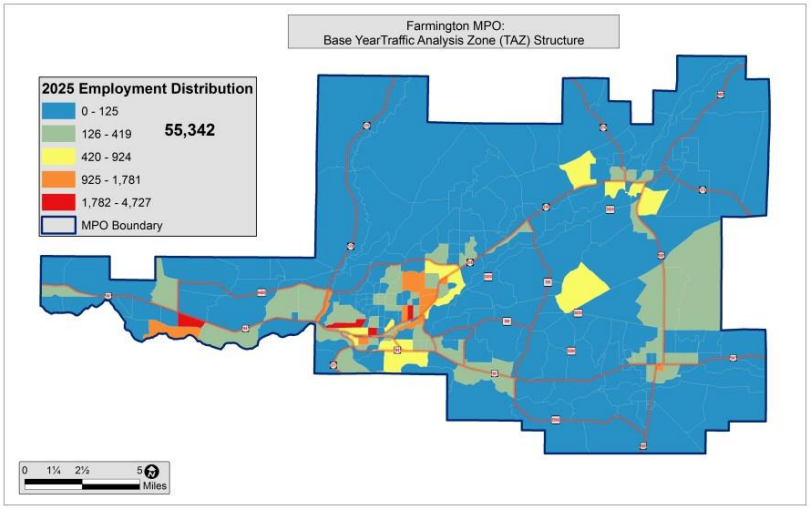


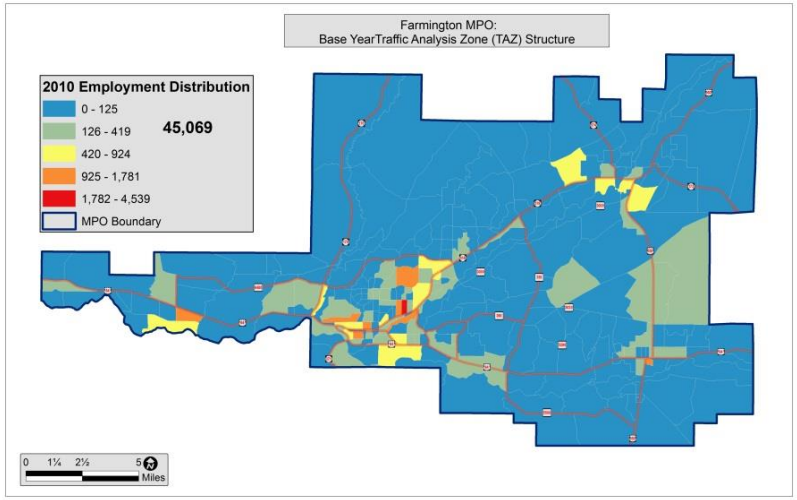
	2002	2003	2004	2005	2006	2007	2008	2009	2010
$1,250 per month or less	14,266	13,104	12,748	12,433	12,400	11,616	11,252	10,974	9,864
$1,251 to $3,333 per month	16,876	17,052	16,778	17,198	16,338	17,782	17,579	17,329	16,156
More than $3,333 per month	11,049	11,599	12,420	12,829	15,434	16,222	18,102	17,731	16,296

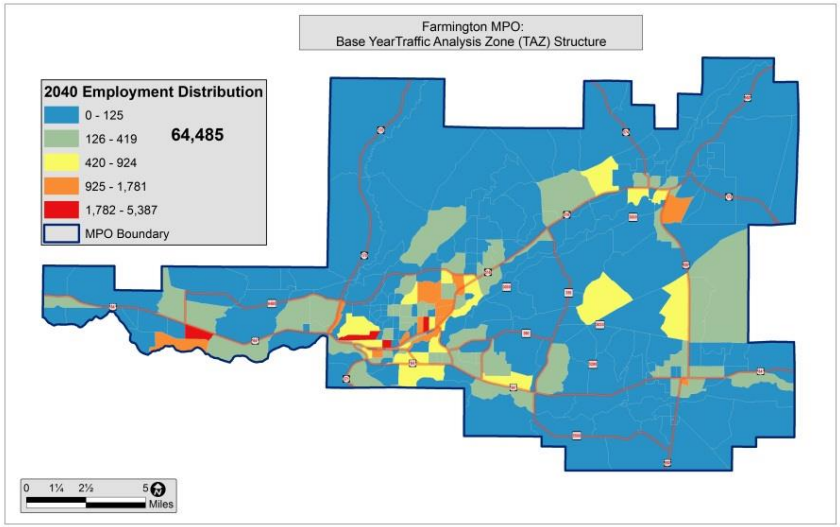
Wages and earnings play a large role in attracting talent and professionals to the region. A study of a 2010 Census age and sex Population pyramid reveals that the largest age cohort in the MPO planning area those 25-29 years. The oil and gas industry which acts as the economic base is a large contributar to those seeking good wages in the area. Other Census data revealed that from 2002-2010, those earning more $3,333 per month increased steadily over this time perdiod in relation to the total number of jobs in the region. The same data reveals that those earning less than $1,250 saw a steady decrease from 2002-2010, while those earning between $1,250 and $3,333 a month remained relatively constant. Overall there was an increase in monthly earnings amongst all those employed between the years of 2002-2012.

2.4 CURRENT and FUTURE EMPLOYMENT

Three employment scenarios were considered based on these trends—no growth, moderate growth and rapid growth. The moderate growth projection was chosen by the MPO Technical Committee for further analysis. In contrast to population, the MPO region has accounted for 97%-91% County employment in recent years, which when extrapolated seems likely to remain stable between 92% and 94%. With these assumptions, the MPO region's employment would grow from 45,069 in 2010 to 55,342 in 2025 and 64,485 in 2040.







The Farmington Metropolitan Planning Organization statistically accounts for approximately 85 percent of the County's economic production.

TABLE 2-2 – Future Employment Growth

Jurisdiction	2010 Employment	2020 Employment	2025 Employment	2030 Employment	2040 Employment
Aztec	2,889	3,205	3,520	3,832	4,144
Bloomfield	3,035	3,450	3,864	4,257	4,649
Farmington	30,618	34,807	37,122	40,778	42,651
Kirtland	3,125	3,453	3,780	4,116	4,452
San Juan County (within the MPO)	5,389	6,623	7,056	7,823	8,589
MPO Total	**45,069**	**52,329**	**55,342**	**58,380**	**64,485**
San Juan County (whole county)	47,648	56,331	59,340	62,799	69,716

2.5 VISUM TRAVEL DEMAND MODELING

These population and employment figures are used in travel demand modeling software (VISUM) in a Geographic Information System (GIS) to forecast future travel patterns. The model maps employment, households and land use by areas called Traffic Analysis Zones (TAZ). A base layer was built in the GIS from San Juan County Assessor's Office parcel data to accurately account for current land use patterns and allocate population from Census Tracts to each TAZ. Staff then analyzed potential future changes by meeting with local stakeholders and discussing land use plans. Three model runs were then performed for the 2010 base year, and 2025 and 2040 forecast years. The MPO used these model runs to identify future roads in Chapter 5.

3 | Public Participation

3.1 OVERVIEW

The MPO's adopted Public Participation Plan outlines a process to engage the public in the transportation planning process. The Plan also allows for the Farmington MPO to meet the requirements of MAP-21 legislation to provide for cooperative, continuous and comprehensive transportation planning, as well as other requirements and best practices for citizen outreach. Through public involvement, the MPO gained perspective on regional priorities and stakeholders assessment of the transportation system. A good public participation plan allows planners and decision makers to identify and understand aspects of the transportation system directly from the users and the general public. This process was integrated into the overall development of the MTP update. A summary of public comments received during the MTP update process is found on the MPO website under Metropolitan Transportation Plan (www.farmingtonmpo.org).

3.2 PUBLIC OUTREACH EFFORTS

In January and February 2014, the MPO began reaching out to local government, stakeholders and the general public through presentations and a stakeholder workshop for this update. In July, the MPO hired a planning consulting firm, Sites Southwest, to facilitate public meetings, conduct stakeholder small group meetings, and to add an online mapping and survey tool. This online tool, "Mapita" from MIG, Inc., was configured to allow respondents to pinpoint the location of an idea or comment on a map. The website also included a more traditional survey. The online survey and mapping was deployed during August and September through emails, links, and other material advertising the MTP

update and meetings. Three hundred and six responses were submitted with the online survey and mapping tool.

The first deployment of the online survey and mapping tool occurred at the San Juan County Fair in early August. The MPO staffed a booth, together with volunteers from the City of Farmington Community Development Department, and informed the public about the MTP update, distributed information about the upcoming meetings, helped citizens take the online survey, and administered a paper version of the survey. There were 55 respondents to the paper survey.

The consultant team then conducted eight stakeholder meetings in smaller groups, and led six evening open house meetings. These meetings were advertised by email, newspaper ads, flyers at meeting locations, and phone calls to stakeholder representatives. The meeting locations were scheduled throughout the MPO area.

Sample of postcard handout inviting public participation; reverse side included meeting and web access information

During this time, the MPO gathered public input at three additional meetings at the invitation of the Farmington Rotary Club, the Community Health Improvement Council and the Farmington Rotary Club. MPO staff also gave two radio interviews. The online survey tool was available in Spanish, and Spanish-speaking MPO staff was in attendance at each meeting. Assistance in Navajo was available by request. The presentations and other public meetings are listed in Table 3-1.

3.3 PUBLIC PARTICIPATION

Public meetings were held at various locations at key points in the development of the plan (Table 3-1). The MPO website was updated with links to the surveys and information about meetings, and MPO staff sent e-mails to contacts to advertise the opportunities for input. The Policy and Technical Committees received updates on the status and progress of the plan update throughout the process. Quarterly newsletters also summarized key accomplishments during the development of the update. The 30-day public comment period for the draft MTP ran from August 12 to September 10, 2015.

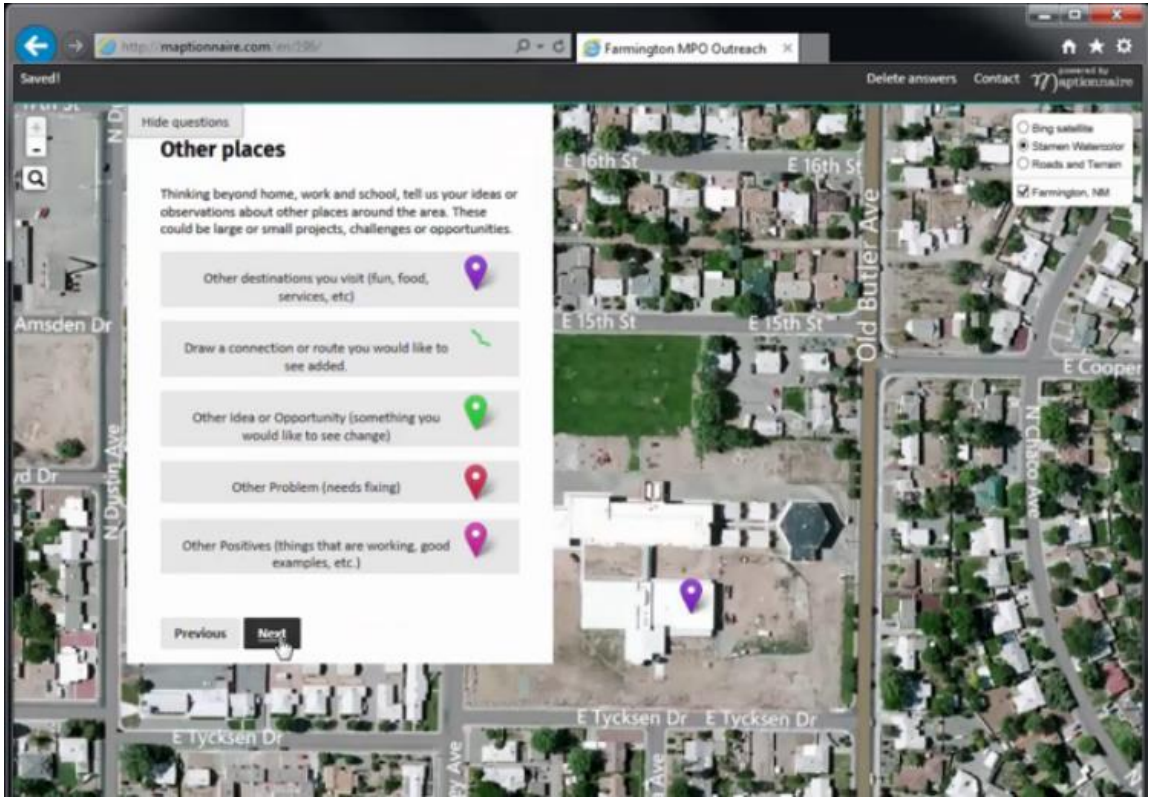
TABLE 3-1 - Public Meetings where the Farmington MPO sought input for the 2040 MTP

WHEN	WHERE	WHAT
January 13, 2014	MPO Office	Presentation to Farmington Chamber of Commerce
January 21, 2014	MPO Office	Presentation to Farmington Young Professionals
January 27, 2014	Aztec Commission Chambers	Presentation to Aztec City Commission
January 27, 2014	Bloomfield City Council Chambers	Presentation to Bloomfield City Council
February 4, 2014	San Juan County Commission Chambers	Presentation to San Juan County Commission
February 5, 2014	MPO Office	Stakeholder outreach meeting
February 10, 2014	San Juan College	Presentation to San Juan College Student Senate
March 18, 2014	Farmington City Hall	Presentation to Farmington City Council in public meeting
August 11-16, 2014	San Juan County Fairgrounds	County Fair booth for public outreach and surveys
August 19, 2014	San Juan College	Public open house
August 20, 2014	MPO Office	Stakeholder input meeting
August 20, 2014	Aztec Commission Chambers	Stakeholder input meeting
August 20, 2014	San Juan College East	Public open house
August 21, 2014	MPO Office	Stakeholder input meeting
August 21, 2014	MPO Office	Stakeholder input meeting
August 21, 2014	San Juan Rehabilitation Hospital	Stakeholder input meeting with Community Health Improvement Council
August 21, 2014	Sycamore Park Community Center	Public open house
August 26, 2014	San Juan County Fairgrounds – McGee Park	Public open house
August 27, 2014	Four Corners Economic Development	Stakeholder input meeting
August 27, 2014	Bloomfield Cultural Center	Stakeholder input meeting
August 27, 2014	Bloomfield Cultural Center	Public open house
August 28, 2014	Farmington Civic Center	Stakeholder input meeting
August 28, 2014	MPO Office	Stakeholder input meeting
August 28, 2014	San Juan Country Club	Stakeholder input meeting with Farmington Rotary Club
August 28, 2014	Kirtland Youth Association	Public open house
September 4, 2014	MPO Office	Stakeholder input meeting with Place Matters
April 2, 2015	MPO Office	Stakeholder input meeting with San Juan Trail Riders
August 25, 2015	Kirtland Youth Association	Public open house for Plan Draft
August 25, 2015	MPO Office	Public open house for Plan Draft
August 26, 2015	Aztec Commission Chambers	Public open house for Plan Draft
August 26, 2015	Bloomfield Seniors Center	Public open house for Plan Draft
August 27, 2015	Farmington Civic Center	Public open house for Plan Draft

3.4 STAKEHOLDER INVOLVEMENT

During the public outreach efforts, staff met with representatives from many stakeholders to seek input and provide information on the development of the plan. The stakeholder groups represented in meetings included:

- Bonnie Dallas Senior Center
- Bloomfield Senior Center
- Central Consolidated School District
- City of Aztec
- City of Bloomfield
- City of Farmington
- Farmington Chamber of Commerce
- Farmington Rio del Sol Kiwanis
- Farmington Rotary Club
- Farmington Municipal School District
- Four Corners Economic Development
- Navajo Ministries
- Northwest Regional Planning Organization (NWRPO)
- Red Apple Transit
- River Reach Foundation
- San Juan Center for Independence (SJCI)
- San Juan College Enterprise Center
- San Juan County
- San Juan County Office of Emergency Management
- San Juan Place Matters
- San Juan Regional Medical Center
- Transit Services for Disabled Veterans



Screen-shot from the online comment mapping tool and survey

3.5 A GROWING REGIONAL TRANSPORTATION PLANNING DISCUSSION

Through this and previous public outreach efforts, the MPO is building a network of participants in the regional transportation planning process. The result is a growing list of stakeholders from an ever-broader scope within the community. The MPO found success in engaging stakeholder representatives through direct invitations to its public open houses and stakeholder meetings, as opposed to general invitations to these events. In order to engage the general public, the MPO will continue to use advertisements in newspapers and community bulletins, as well as e-mail deployment of notices and online surveys. The MPO does not maintain its own social media accounts, but will cooperate with local government and community partners to leverage their efforts for further community outreach. Also, a presence at events such as the San Juan County Fair engaged members from a broad geographic area.

Going forward, the public engagement of the MPO will be two-fold. The MPO will continue engaging stakeholders and the general public in transportation planning decisions. The MPO will also reciprocate as a representative of transportation needs and planning principles in support of the other stakeholder groups in the region.

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4 | Project Prioritization Method

4.1 OVERVIEW

The Project Prioritization Methodology (PPM) is intended to assist local entities and the MPO Technical and Policy Committees in aligning proposed projects with the established vision, mission and goals. Projects which are proposed to be included in the MPO's Transportation Improvement Program (TIP) will be evaluated and ranked based on data, studies and qualitative factors consistent with regional priorities and federal areas of emphasis.

The PPM is a new tool developed as part of the 2040 MTP Update at the recommendation of FHWA following its review of the MPO's decision-making processes. Project prioritization methodologies, and similar tools, are widely used in regional transportation and many other settings. These tools may differ in their complexity and their use of quantitative and qualitative evaluation, including cost-benefit analyses and numeric thresholds for measured standards. The PPM is intended to be refined and recalibrated over time through its use and re-evaluation. In particular, as the data collection of the MPO grows, more numeric comparisons can be employed. The PPM is intended to help formalize the review of projects, further align project selection with established goals, allow for flexibility in comparisons, and enhance the transparency of the decision-making process.

4.2 PROCESS

As the PPM will be used to develop the MPO's TIP, a call for projects will be issued and local entities will provide specific information to show how projects meet regional and national goals. Then, a committee will be formed for the purpose of reviewing and scoring the projects. The committee will include a member of the MPO Policy Committee, a member of the MPO Technical Committee, and two planners from the MPO. This preliminary review will produce a ranked list of projects.

The initial scores and findings will be reviewed with the MPO Technical Committee in a public meeting and Technical Committee members may make modifications to the scoring, findings and project ranking. Their work will be forwarded as a recommendation to the MPO Policy Committee, which will further review the project ranking and vote to establish the TIP.

4.3 MATCHING GOALS with CRITERIA

The MPO's regional goals blended with the planning factors set forth in MAP-21 yielded ten criteria, or Scoring Factors, to serve as the basis for the PPM. In this way, new projects will be proposed, funded, and constructed, with their impacts measured for consistency with the goals and objectives. Two other Scoring Factors emphasize the value of community planning and commitment to the project by including the project in the local entities Infrastructure Capital Improvement Plan, and other local plan documents (e.g. transportation plan, comprehensive plan, economic development plan). Where scorers find that a project especially demonstrates fulfillment of a goal, Key Findings may be made and additional points earned. These Scoring Factors are found in the Scoring Matrix in Table 4-1 below. Table 4-2 shows the relationship of regional goals and national planning factors.

4.4 SCORING and KEY FINDINGS

Using the Scoring Matrix in Table 4-1, projects can earn points in three ways as follows:

Projects will be scored based on the regional and national goals and will earn a score of 0 points to 3 points based on how well a project meets the criteria, and whether that is demonstrated by data and local plans. There are ten such Scoring Factors. Guidance for earning 0 to 3 points is as follows:

- 3 points: The project demonstrates a thorough understanding of how this factor applies and provides clear and compelling documentation on how the project meets the factor.
- 2 points: The project demonstrates a basic understanding of this factor, and provides minimal documentation on how the project meets the factor.
- 1 point: The application demonstrates very little understanding of this factor, and does not provide any documentation on how the project meets the factor.
- 0 points: Does not meet the factor.

Projects will also be scored based on whether the project is included in a local entity planning document and the ICIP:

- 3 points: The project is in the local Infrastructure Capital Improvement Plan.
- 0 points: The project is not in the local Infrastructure Capital Improvement Plan.

- 3 points: The project is identified in an adopted local plan document.
- 0 points: The project is not identified in an adopted local plan document.

Where a project especially fulfills a goal, Key Findings can be made and one additional point may be earned:

- 1 point for each Key Finding demonstrating that the project especially fulfills a goal.

Table 4-1, Scoring Matrix

Scoring Factors (based on Regional and National goals)	Possible Points on Goals	Points Earned on Goals	Key Findings (+1 point per Key Finding in support of Scoring Factor)	Total Points
1. Support economic vitality	3	[0, 1, 2, or 3]	(Key Finding statement) [+1]	
2. Reflect regional coordination and stakeholder involvement	3			
3. Enhance connectivity for complete networks and intermodal connections	3			
4. Manage congestion and incorporate technology to promote system efficiency for all modes	3			
5. Increase accessibility and mobility for all users regardless of age, income or ability	3			
6. Enhance quality of life and preserve cultural and environmental resources	3			
7. Preserve the transportation system in a financially-sustainable, cost-efficient manner	3			
8. Consider the impacts of transportation on land use	3			
9. Increase the safety and security of the transportation system	3			
10. Promote improved public health	3			
ICIP. Inclusion in local Infrastructure Capital Improvement Plan	3	[0 or 3]		
PLAN. Identified in local plan document	3			
Totals	**36**			

The scoring matrix is meant to require study of the many elements of a project, and to sort out the highest quality projects. However, prioritizing projects solely based on this scoring matrix may unduly emphasize the quality of the application and the capacity of the sponsoring entity. Therefore, in addition to a total score, Key Findings may also be made for each Scoring Factor. These may include the timing and severity of the issues a project addresses and should help support a score. These findings earned additional points during initial scoring, and should be considered when a final ranking of projects is completed. They are intended to build flexibility and transparency into the evaluation process.

The MPO does not award funds, and a project's overall score does not indicate that funding will be received. Rather, the PPM process will: (1) assist local entities in regional collaboration to identify high priority projects; (2) align projects with national goals which are used during funding decisions in statewide competitive processes; and (3) emphasize the use of data collection and performance-based programming as required by MAP-21.

Table 4-2, Relationship of FMPO Goals with MAP-21 National Planning Factors

The resulting "Blended Goals and Planning Factors" are the Scoring Factors used in the FMPO's Project Prioritizaiton Methodology

FMPO Goals	MAP-21 National Planning Factors	Blended Goals and Planning Factors
A. Support the economic vitality of the MPO region by investing strategically in projects and programs which create long-term, financially-sustainable economic value	A. Support the economic vitality of the United States, the States, nonmetropolitan areas, and metropolitan areas, especially by enabling global competitiveness, productivity, and efficiency	1. Support economic vitality
B. Foster regional coordination on transportation projects and policies among all levels of government and stakeholder groups M. Foster public private partnerships aimed at reaching regional transportation goals		2. Reflect regional coordination and stakeholder involvement
C. Develop transportation network connections and associated facilities into a cohesive intermodal system	F. Enhance the integration and connectivity of the transportation system, across and between modes throughout the State, for people and freight	3. Enhance connectivity for complete networks and intermodal connections
D. Manage congestion by prioritizing projects that enhance the Quality of Service (QOS) of capacity-efficient modes like carpooling, transit, biking, and walking and reduce overall person delay H. Identify and implement new technology for balanced multi-modal transportation	G. Promote efficient system management and operation	4. Manage congestion and incorporate technology to promote system efficiency for all modes
E. Provide reasonable access and prevent negative impacts of the transportation system for all of the region's residents, regardless of age, income, ability or location	D. Increase the accessibility and mobility of people and freight	5. Increase accessibility and mobility for all users regardless of age, income or ability
F. Minimize negative environmental impacts and enhance the environmental quality of the MPO region I. Develop a transportation system that enhances quality of life and works in concert with cultural and environmental resources.		6. Enhance quality of life and preserve cultural and environmental resources
G. Build, operate and maintain the metropolitan transportation system in a financially-sustainable, cost-efficient manner	H. Emphasize the preservation of the existing transportation system	7. Preserve the transportation system in a financially-sustainable, cost-efficient manner
J. Integrate transportation and land use planning to improve quality of life and to protect the natural environment by using transportation investments to proactively shape land use patterns rather than react to growth	E. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns	8. Consider the impacts of transportation on land use
K. Ensure safety for all modes L. Coordinate with local agencies on security planning and strategies	B. Increase the safety of the transportation system for motorized and nonmotorized users C. Increase the security of the transportation system for motorized and nonmotorized users	9. Increase the safety and security of the transportation system
N. Provide a transportation system which promotes healthy living		10. Promote improved public health

4.5 PRIORITIZED PROJECTS

The new PPM was used to develop the MPO's Transportation Improvement Program (TIP) for the years 2016 to 2021. The TIP contains the list of projects which have funding and are planned to be built in the near term. Following the process described above, the PPM helped rank and prioritize roadway projects, Table 4-3, and bicycle and pedestrian projects, Table 4-4, within the MPO. These same projects are identified in further detail in Chapter 4, Roadway Plan, and Chapter 9, Bicycle/Pedestrian Plan. Further description of the TIP and funding for the projects is found in Chapter 13, Financial Plan. To date, the PPM has only been employed to rank projects included in the development of the new 2016-2021 TIP. Projects previously included in the 2014-2019 TIP were not all ranked. The MPO will work with local entities and NMDOT to complete the scoring and ranking of projects within the MPO.

Table 4-3, Ranked Roadway Projects in 2016-2021 TIP

Rank among Roadway Projects in 2016-21 TIP Call	Project Name	Lead Agency	Estimated Project Cost
1	East Pinon Hills Blvd Extension Phase II	Farmington	$13,265,454
2	Pinon Hills Bridge Connection (CR 3900/ PHB Phase 3)	San Juan County	$8,000,000
3	East Blanco	Bloomfield	$2,000,000
4	Bridge Improvement CR 5500	San Juan County	$3,600,000

Table 4-4, Ranked Bicycle/ Pedestrian Projects in 2016- 2021 TIP

Rank among Bike/Ped Projects in 2016-21 TIP Call	Project Name	Lead Agency	Estimated Project Cost
1	Aztec Ruins-Riverside Path	Aztec	$293,460
2	Foothills from Rinconada to Mesa del Oso	Farmington	$1,100,000
3	Riverside-Townsend Trail	Aztec	$321,000
4	Kirtland Walk Path	San Juan County	$1,000,000
5	20th Steet Sidewalk Project Phase 3	Farmington	$340,590
6	Orchard Street Pedestrian Corridor	Farmington	$2,200,000
7	Anesi Trail	Farmington	$338,132
8	College Blvd Bike Lanes	Farmington	$190,000
9	Lake Farmington	Farmington	$384,000
10	Wildflower Mesa Sidewalk	Farmington	$165,000

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5 | Roadway Plan

5.1 OVERVIEW

Changes in the Federal Transportation bill (MAP-21) now stress that MPOs reconsider the prioritization of future roadway plans and projects. In years past, new road improvements and facilities would react to projected population and employment growth figures. As growth pressures occurred, new infrastructure projects would be created to serve areas or to provide relief to road and street facilities. An example that played out in the Farmington MPO was the design and construction of US 64 from Bloomfield to Farmington. This multi-million dollar per-lane mile project gained momentum in the early 2000s based on projected increases in average annual daily traffic volumes (~25,000 to ~45,000) in 2025 compelling the need to expand capacity.

Making investments to maintain a state of good repair to the MPOs existing infrastructure requires an asset management and system preservation plan. These often played second fiddle to the expansion of the network. MAP-21 legislation now requires MPOs to reverse the emphasis to prioritize asset management and system preservation before the expansion of system facilities. With these new federal guidelines, and the requirements to maintain a fiscally constrained Transportation Improvement Plan (TIP) the MPO approached the roadway plan that meets realistic expectations.

When justifying which new road facilities to program in the regional TIP, the MPO benefits from travel demand software (Visum), which can be used to illustrate a variety of road scenarios that guide the decision-making process. The model can be used as a tool to help prioritize a new or proposed road project which then needs to be appropriately programmed into the MPOs TIP.

5.2 ASSET MANAGEMENT

The American Association of State Highway Officials (AASHTO), created a Transportation Asset Management (TAM) manual which provides guidance for implementing asset management concepts, principles, performance targets, strategies, tools, analysis methods, data collection, and application of management information systems. Their new guide also includes examples of tools for evaluating return on investment, economic efficiency, resource allocation and budgeting decisions. The AASHTO guide was created with the intent and purpose to improve information sharing amongst decision-makers and elected officials. According to their subcommittee on asset management they state:

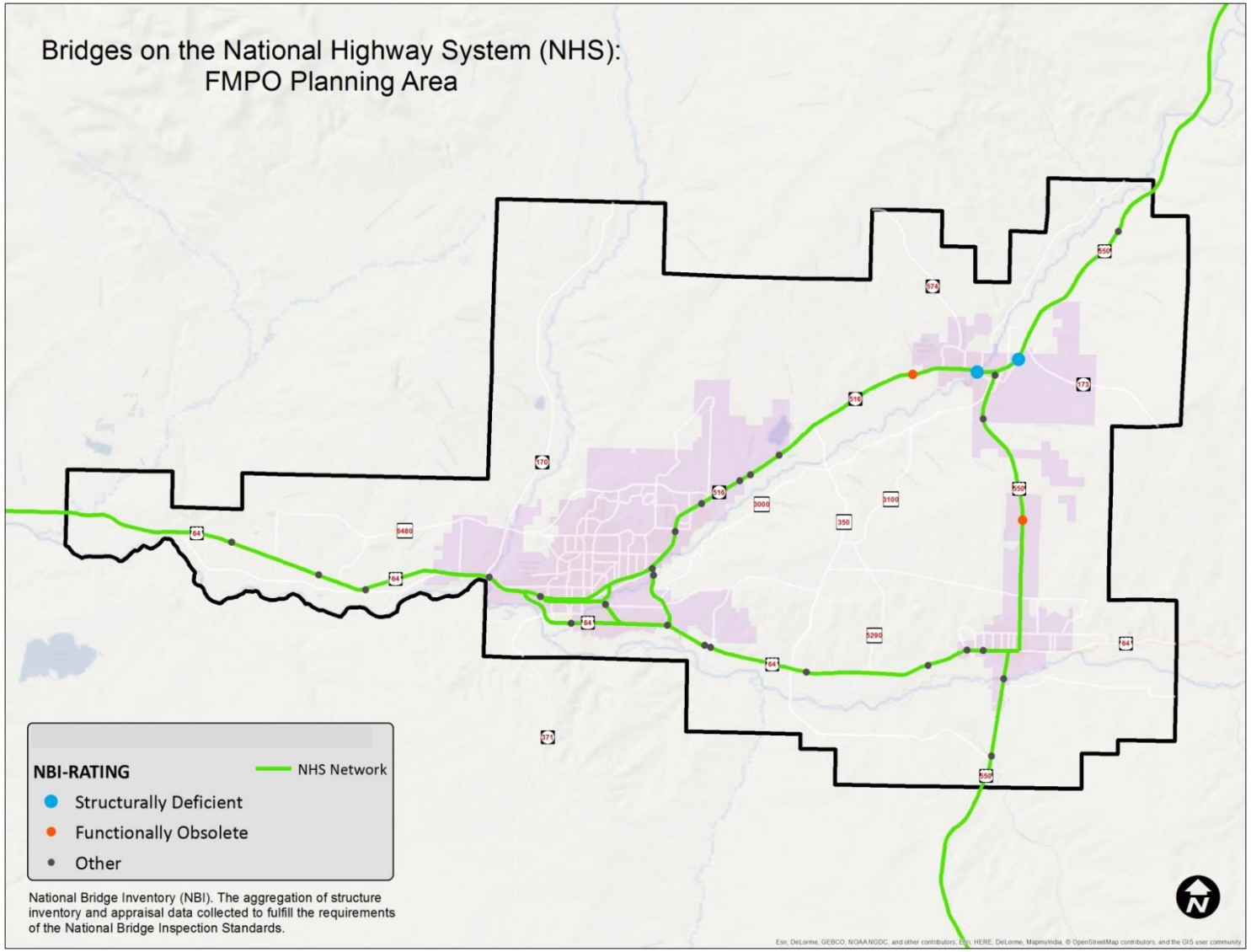
"Transportation Asset Management is a strategic process of operation, maintaining, upgrading and expanding physical assets effectively throughout their lifecycle. It focuses on business and engineering practices for resource allocation, and utilization, with the objective of better decision making based on quality information and well defined objectives."

Some of the basic questions in regards to asset management are:

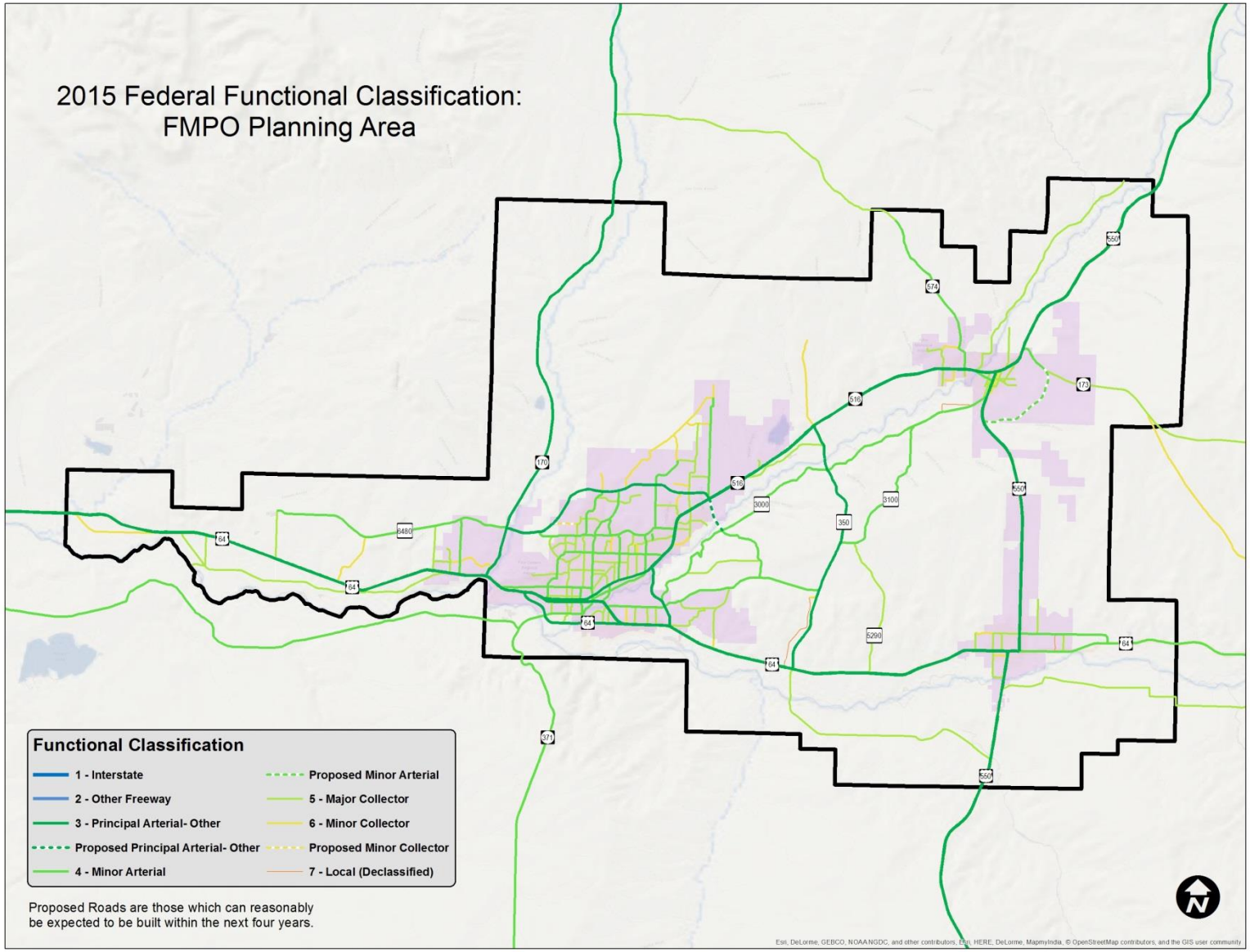
- What is the current state of physical assets?
- What are the required levels of service and performance delivery?
- Which assets are critical to sustained performance?
- What are the best investment strategies for operations, maintenance, replacements, and improvement?
- What is the best long-term funding strategy?

In addition to FHWA requirements, NMDOT planning division will be developing an asset management tier level system which prioritizes the road facilities that will need capital investments to maintain a system of good repair. The MPO will need to consider using state and federal funds to help maintain these facilities and ensure they are programmed appropriately in the TIP. Often times, there is a temptation to approach an asset maintenance program similar to how some motorist would treat their vehicles; that is drive it into the ground before replacing it. The approach unfortunately creates an overbearing cost burden on the MPOs limited financial resources. Preserving and renewing a road structure over time is a far better and cost effective approach when attempting to stretch federal state and local dollars.

Map 5-1, Bridge Needs on the National Highway System in the FMPO Area



Map 5-2, Roadway Functional Classification in the FMPO Area



5.3 ROADWAY FUNCTIONAL CLASSIFICATION

MAP-21 Federal legislation uses functional class to determine eligibility for under the Federal-Aid program. Under this program, "Federal-Aid highway funds are authorized by Congress to assist the States in providing for construction, reconstruction and improvement of highways and bridges on eligible Federal-Aid highway routes and for other specific purpose programs and projects."

These Federal-Aid highways include all National Highway Systems (NHS) routes other roads functionally classified as Interstate, Other Freeways & Expressways, Other Principal Arterials, Minor Arterials, Major Collectors, & Urban Minor Collectors.

5.4 STATE USES OF FUNCTIONAL CLASSIFICATION

State DOTs use functional classification in many decision-making processes for important business areas. These uses are described below (Source: FHWA Highway Functional Classification Concepts, Criteria, and Procedures Manual (2013 Edition)).

- **Program and Project Prioritization-** functional classification is used to prioritize expenditures of projects to maintain the state's transportation network.
- **Asset Management-** functional classification is used to support asset management to protect the state's most valuable/used assets.
- **Safety Programs-** functional classification is used to evaluate and make improvements to state's safety programs. For instance, the type of roadway may be considered when evaluating the significance of crash rates on a particular highway.
- **Highway Design-** functional classification impacts the allowable highway design standards such as speed limit, lance width, and horizontal and vertical alignment.
- **Bridge Programs-** functional classification is used in a state's bridge program to make decisions as where one-lane bridges are acceptable (e.g., on local roads with low traffic volumes).
- **Traffic Control-** functional classification may be used to determine the most appropriate intersection control measures to use.
- **Maintenance-** functional classification may also impact scheduling of general roadway maintenance and snow/ice removal in inclement weather.

5.5 THE MPO's USES OF FUNCTIONAL CLASSIFICATION

At the regional level, functional class help determine which roadways should be included in a regional transportation system and which ones might require asset management priorities and maintenance upgrades. Furthermore, functionally classified roadways describe the various levels of vehicular mobility. Using functional class in the transportation planning process ensures that adjacent land uses and local development are compatible with both existing and future transportation needs. Table 5-1 lists the descriptions and functions of different roadway classifications.

Table 5-1, Roadway Functional Classifications, Descriptions and Functions

FUNCTIONAL CLASS	DESCRIPTION	FUNCTION
Interstate	Highest Class of Arterials; Abutting land uses are NOT directly served by them. Higher speed limits, higher vehicle miles traveled (VMT) and more travel lanes.	Interstates are the highest classification of Arterials and were designed and constructed with mobility and long-distance travel in mind
Principal Arterial – Other Freeway & Expressways	Very similar to interstates, with travel lanes separated by some type of physical barrier, abutting land uses NOT directly served by them. Higher speeds and more lanes higher vehicle miles traveled (VMT).	Roadways in this functional classification category look very similar to Interstates. While there can be regional differences in the use of the terms 'freeway' and 'expressway'.
Principal Arterial- Other	These roadways serve major centers of metropolitan areas, provide a high degree of mobility and can also provide mobility through rural areas.	Unlike their access-controlled counterparts, abutting land uses can be served directly. Forms of access for Other Principal Arterial roadways include driveways to specific parcels and at-grade intersections with other roadways
Minor Arterial	Minor Arterials provide service for trips of moderate length, serve geographic areas that are smaller than their higher Arterial counterparts and offer connectivity to the higher Arterial system.	In an urban context, they interconnect and augment the higher Arterial system, provide intra-community continuity and may carry local bus routes.
Major Collector	Major Collector routes are longer in length; have lower connecting driveway densities; have higher speed limits; are spaced at greater intervals; have higher annual average traffic volumes; and may have more travel lanes.	Serve both land access and traffic circulation in higher density residential, and commercial/industrial areas, penetrate residential neighborhoods, often for significant distances, distribute and channel trips between Local Roads and Arterials, usually over a distance of greater than three quarters of a mile, operating characteristics include higher speeds and more signalized intersections
Minor Collector	Serve both land access and traffic circulation in lower density residential and commercial/industrial areas.	Penetrate residential neighborhoods, often only for a short distance, distribute and channel trips between Local Roads and Arterials, usually over a distance of less than three-quarters of a mile, operating characteristics include lower speeds and fewer signalized intersections
Local	Locally classified roads account for the largest percentage of all roadways in terms of mileage. They are not intended for use in long distance travel.	Provide direct access to adjacent land, provide access to higher systems, carry no through traffic movement, constitute the mileage not classified as part of the Arterial and Collector systems.

5.6 CONGESTION

Congestion can have a negative effect on the quality of life of our residents. One of the first things motorist think of in regards to congestion is the delay time in their daily commute. The inability to calculate travel times due to congestion also adds to the level of frustration by the motorist. Stop and go traffic also burns fuel at a faster rate and contributes to higher levels of air pollution. All too often, pent up frustration can lead to road-rage which can lead to hazardous driving conditions which also exacerbates congestion. In these conditions, it would be all but impossible for emergency response vehicles to access a needed conflict point. Fortunately, the FMPO planning area does not seem to experience the levels of traffic and congestion when compared to other communities our size and larger.

5.7 INDUCED DEMAND

The term "induced" implies that one condition is caused by another imposing condition. As it relates to transportation and the practice of adding capacity, i.e. adding more lanes to an already congested roadway, many economists and engineers argue that the newly added lanes induce more traffic thereby exacerbating the problem they are trying to solve. Some refer to this strategy as "building our way out of traffic".

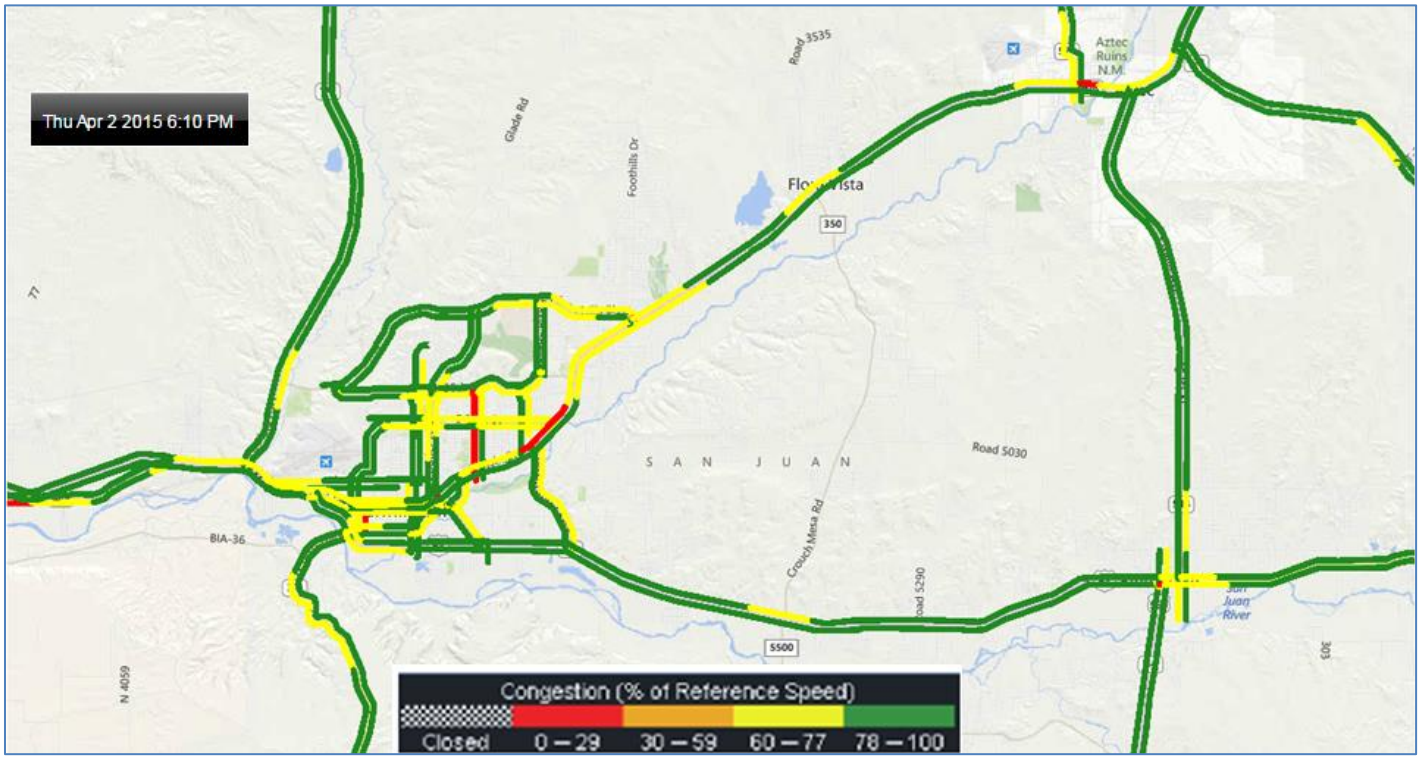
In 2009, economists Matthew Turner of the University of Toronto and Gilles Duranton of the University of Pennsylvania conducted a study comparing new roads and highways built in different U.S. cities between 1980 and 2000, and the total number of miles driven in those cities over the same period. Their research revealed a perfect one to one relationship.

"If a city had increased its road capacity by 10 percent between 1980 and 1990, then the amount of driving in that city went up by 10 percent. If the amount of roads in the same city then went up by 11 percent between 1990 and 2000, the total number of miles driven also went up by 11 percent. It's like the two figures were moving in perfect lockstep, changing at the same exact rate… Interestingly, the effect works in reverse, too. Whenever some city proposes taking lanes away from a road, residents scream that they're going to create a huge traffic snarl. But the data shows that nothing truly terrible happens. The amount of traffic on the road simply readjusts and overall congestion doesn't really increase." (http://www.wired.com/2014/06/wuwt-traffic-induced-demand/)

As communities seek to add new roads to the network in the region, careful considerations should be taken to ensure adding capacity will result in the desired outcomes of reducing congestion. The use of the MPOs Travel Demand Modeling software can be utilized as a tool in the decision making process to illustrate potential outcomes of different road scenarios. In the case of US 64 mentioned at the beginning of this chapter, the travel demand modeling conducted in the early 2000s did not consider the impacts

of creating improved connectivity to the network by modeling the build-out of the Piñon Hills Bridge project. Modeling results conducted by the MPO revealed a decrease in congestion and AADT figures on US-64. Not only would the Piñon Hills Bridge project have reduced the issues of congestion, but would have proved a wise benefit cost scenario in favor of the bridge project by almost $40M. Map 5-3 shows a screenshot from the FMPO travel demand model of congestion as a percentage of reference speed.

Map 5-3, Roadway congestion as a percent of reference speed



5.8 YEAR 2040 ROADWAY SYSTEM

During the development of the previous version of the MTP, the MPO identified several regional roadways which may be needed to accommodate future growth. The future year roadway system was developed using an extensive public involvement process and technical analysis. Working from the current functionally classified roadway system as an overall framework, a future year roadway

network was developed. Arterials and collector streets in the MPO study area comprise the future year roadway networks. Emphasis was placed on making intercity connections for Aztec, Bloomfield and Farmington, in light of expected growth within the cities and on Crouch Mesa (the triangle-shaped area of unincorporated land in the center of the three cities). Table 5-2 describes project details for the six regional projects for the MPO region. The five roadway scenarios are illustrated on the following pages.

Table 5-2, Regional Roadway Scenario Projects

Facility & Location	Scenario #1	Scenario #2	Scenario #3	Scenario #4	Scenario #5
#9 (A, B & C) - Piñon Hills Ext./CR 3900 – East Main to CR 390	X	X	X	X	X
# 17 (A, B & C) - US 64 widening – Browning Pkwy to US 550	X	X		X	
# 15 (A & B) - East Arterial (south) – US 550 to NM 173	X	X	X	X	X
# 16 - East Arterial (north) – NM 173 to US 550				X	X
# 14 - Highline Road – CR 350 to US 550	X	X	X	X	X
# N8 - Piñon Hills Ext to CR 350 Connector	X			X	X

The Federal Highway Administration (FHWA) is actively encouraging and supporting scenario planning. FHWA believes that scenario planning can help citizens, businesses, and government officials understand the impacts of growth, especially the relationship between transportation and the social, environmental and economic development of regions. FHWA sees scenario planning as an enhancement of, not a replacement for, the traditional transportation planning process. It enables communities to better prepare for the future. Scenario planning highlights the major forces that may shape the future and identifies how the various forces might interact, rather than attempting to predict one specific outlook. As a result, regional decision makers are prepared to recognize various forces to make more informed decisions in the present and be better able to adjust and strategize to meet tomorrow's needs.

Other road projects identified in the MTP update process are included in Tables 5-3 to 5-5. Projects listed in Tier 1 are expected to be constructed within the next five years and have full or partial funding (for more information on funding, see Chapter 13, Financial Plan). Projects in Tier 2 are expected to be constructed in 5 to 15 years, and those in Tier 3 represent the far time horizon of the plan. They may be built 15 years or more from today. A map of all roadway projects identified in the MTP is show on Map 5-X. The timing and construction of all projects is dependent on demonstrated need and the availability of funding, both to construct and to maintain the facility.

Map 5-4, Roadway Projects by Tier

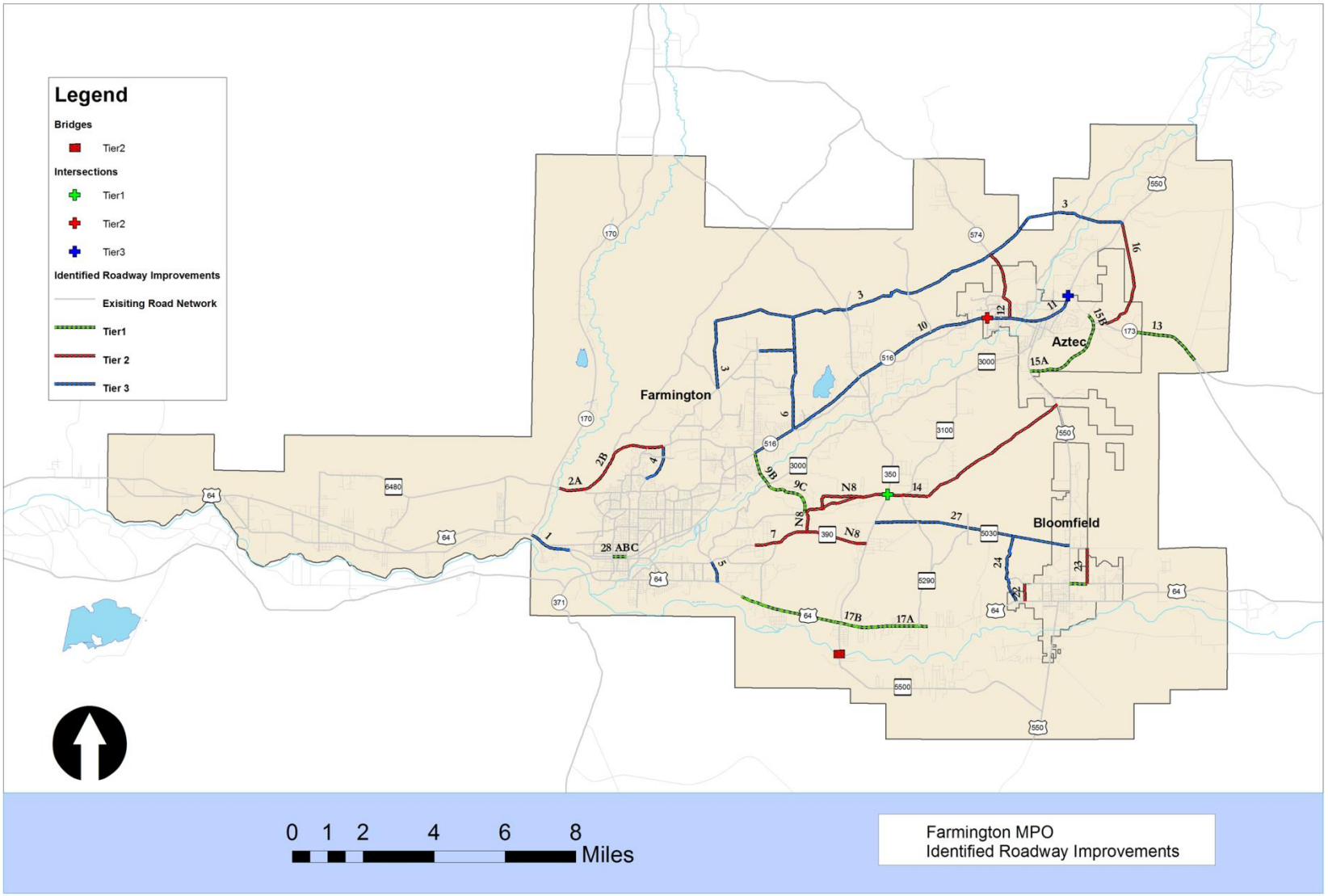


Table 5-3, Tier 1 Roadway Projects

Map #	Facility Name	Entities	Termini	Project Description	Length (feet)	Est. Project Cost	Draft Tier in 2040 MTP
9A	East Pinon Hills Blvd Extension (Phase I)	Farmington	NM 516 to Hubbard	Full rebuild of the Intersection of Piñon Hills and NM 516; Extension of Piñon Hills Blvd to include earthwork, asphalt, street lighting, drainage improvements and signalization upgrades.	4440	$3,950,000	Tier 1
9B	East Pinon Hills Blvd Extension (Phase II)	Farmington, County	Hubbard to South Side River Road (CR 3000)	Includes earthwork, asphalt, intersection lighting, bridges over the Animas River and oxbow, drainage improvements, environmental mitigation.	7340	$13,265,454	Tier 1
9C	East Pinon Hills Blvd Extension (Phase III)	County	South Side River Road (CR 3000) to CR 390	Includes earthwork, asphalt, intersection lighting, drainage improvements, environmental mitigation.	11620	$8,000,000	Tier 1
13	NM 173	NMDOT	MP 2 to NM 575	Safety Improvements	7920	$2,110,000	Tier 1
15A	East Arterial Route Phase 1B	Aztec	US 550 to Legion Road	Construct new 2 lane road (preserve ROW for 2 additional lanes)	14784	$3,500,000	Tier 1
15B	East Arterial Route Phase 2	Aztec	Legion Road to NM 173	Construct new 2 lane road (preserve ROW for 2 additional lanes)	-	$7,319,750	Tier 1
17A	US 64 Phase IV	NMDOT	Mile post 57.8 to 60.2	Widen to 6 lanes	12670	$15,600,000	Tier 1
17B	US 64 Phase V	NMDOT	Mile post 56 to 58	Widen to 6 lanes	10560	$17,655,750	Tier 1
17C	US 64 Phase VI	NMDOT	Mile post 54 to 56	Widen to 6 lanes	10560	$9,000,000	Tier 1
18	CR 350/ CR 390 Intersection	NMDOT	500' South of intersection on CR 350 to 500' North of intersection on CR 350	Preliminary Engineering, ROW acquisition, and construct improvements CR 350/CR390 intersection-500ft North and South of intersection on CR 35, 500ft west of intersection on CR 390.	0	$650,000	Tier 1
21	East Blanco	Bloomfield	US 550 to Saiz Lane	TWLTL; sidewalks; bridge upgrades	2680	$2,000,000	Tier 1
26	Bridge Preservation: US 550 #9178 & #9179	NMDOT	MP 169.5	Bridge Maintenance and Preservation, resurface bridge.	0	$260,000	Tier 1
28A	Downtown Main Street Complete Streets Project (Phase I)	Farmington	Wall Ave to Orchard Ave	Roundabouts, intersection improvements, curb, gutter, and sidewalk, lane reduction and parking reconfiguration.	600	$2,029,920	Tier 1
28B	Downtown Main Street Complete Streets Project (Phase II)	Farmington	Allen Ave to Behrend Ave	Roundabouts, intersection improvements, curb, gutter, and sidewalk, lane reduction and parking reconfiguration.	450	$1,522,440	Tier 1
28C	Downtown Main Street Complete Streets Project (Phase III)	Farmington	Locke Ave to Auburn Ave	Roundabouts, intersection improvements, curb, gutter, and sidewalk, lane reduction and parking reconfiguration.	450	$1,522,440	Tier 1
					Total Est. Project Cost	$88,385,754	

Table 5-4, Tier 2 Roadway Projects

Map #	Facility Name	Entities	Termini	Project Description	Length (feet)	Est. Project Cost	Draft Tier in 2040 MTP
25	Bridge Improvement on CR 5500	County	Bridge 8130 on CR 5500	Replacement of 6-span bridge, wider alignment, add ped facilities	238	$3,600,000	Tier 2
14	Highline Road	All	CR 3950 to US 550	Construct new 2 lane road	27880	$15,000,000	Tier 2
N8	Piñon Hills Blvd Extension to CR 350 Connector	County	Corridor to be determined	Construct a facility to connect Piñon Hills Blvd Extension to Highline Rd	8980	$5,250,000	Tier 2
16	East Arterial (North)	Aztec	NM 173 to US 550	Construct new 2 lane road (preserve ROW for 2 additional lanes)	19025	$13,750,000	Tier 2
7	Wildflower Pkwy	FarmingtonCounty	Approx. Yarrow to CR 3900	Upgrade road - add TWLTL, curb/gutter, sidewalk, bike lanes	4760	$3,125,000	Tier 2
12	Lt Plant Rd	Aztec	NM 516 to approximately Aztec City Limits	Upgrade road to Minor Arterial; curb/gutter, sidewalks	5000	$3,750,000	Tier 2
2A	Piñon Hills Blvd	Farmington	Sports Complex to 30th St	Widen to 4 lanes	3480	$1,600,000	Tier 2
2B	Piñon Hills Blvd	Farmington	30th St to Butler	Widen to 4 lanes	15030	$7,000,000	Tier 2
22	Bergin Ln	Bloomfield	US 64 to West Blanco	Widen existing 2 lanes; curb, gutter, sidewalks	2580	$2,000,000	Tier 2
23	Saiz Ln	Bloomfield	E Blanco to Arizona	Widen existing 2 lanes; curb gutter, sidewalk	5250	$4,375,000	Tier 2
20	Intersect'n of Oliver and NM 516	Aztec	Distance on side streets TBD				Tier 2
19	Intersect'n of NM 173 and US 550	Aztec	Distance on side streets TBD				Tier 2
					Total Est. Project Cost	$59,450,000	

Table 5-5, Tier 3 Roadway Projects

Map #	Facility Name	Entities	Termini	Project Description	Length (feet)	Est. Project Cost	Draft Tier in 2040 MTP
10	NM 516	Farmington, Aztec, County	Piñon Hills to Lt Plant Rd	Widen to 6 lanes; implement access management; install traffic signals; pedestrian facilities	43930	$55,000,000	Tier 3
27	CR 5030	County	CR 350 to US 550	Construct new 2 lane road	29460	$19,200,000	Tier 3
24	Newby Ln/ CR 5075	Bloomfield	US 64 to CR 5030	Upgrade road to Collector	10500	$6,720,000	Tier 3
5	Browning	Farmington	US 64 to Southside River Road	Widen to 6 lanes	9504	$5,280,000	Tier 3
4	Butler	Farmington	38th St to Piñon Hills Blvd	Widen to 4 lanes, add bike lanes	6105	$5,120,000	Tier 3
6	New Road east of Foothills	Farmington	NM 516 to Northern Route	Construct 2 lane road	15950	$10,080,000	Tier 3
1	US 64	Farmington	NM 170 to Murray	Widen to 6 lanes	10450	$4,800,000	Tier 3
3	Northern Route	Farmington, Aztec, County	East Farmington to US 550	Construct new 2 lane road from Farmington to Aztec	61600	$70,000,000	Tier 3
11	NM 516/US 550	Aztec	Lt Plant Rd to NM 173	Widen to 6 lanes and add accel/decel lanes	10454	$30,000,000	Tier 3
					Total Est. Project Cost	$206,200,000	

5.9 SECURING FUNDING FOR PROJECTS

Initial analysis has shown that these new roadway projects can provide relief to existing state-owned highways by redistributing traffic volumes and patterns. New road facilities also provide the opportunity for implementing walking and biking facilities which can be difficult due to right-of-way constraints on existing infrastructure. Performing cost/benefit analyses will become essential to show the importance of investing federal funding into these regional priorities.

The MPO will work in cooperation with NMDOT to secure federal funding for these projects for further planning and engineering analysis and eventually for construction. These projects will be incorporated into the Transportation Improvement Program (TIP) and Statewide Transportation Improvement Program (STIP) so that the project development process can be started.
Because the Federal Gas Tax has not been indexed with inflation since 1993, the purchasing power of 2015 dollars compared to 1993 dollars has an estimated ~38% shortfall. The actions of local entities both locally and throughout the state respond to this shortfall whether through local bonds or state-level politics lobbying, will have the greatest impact on funding regional projects. In addition to state-level funds, the Federal government will issue a new transportation bill with each new presidential administration. The house and senate will also drive how much funding States and MPOs receive based on legislative actions at the highest levels.

5.10 MAJOR THOROUGHFARE PLAN

The area's current regional road network is composed primarily of Principal and Minor Arterial streets and provides the necessary transportation support and access to and from local land uses. Since many corridors are constrained from acquiring additional right-of-way, much of the future demand will likely have to be accommodated through a better connected and more efficient arterial street system.

During development of the MTP, many current and future roadways were identified that could become part of a Major Thoroughfare Plan for the Farmington MPO. As a by-product of the 2035 MTP development process, a Farmington MPO Major Thoroughfare Plan was established via a collaborative process in which all member entities reviewed and agreed to the existing and future expansion of the classified roadway network. Once the Major Thoroughfare Plan was adopted by the MPO Policy Committee it was adopted by each member entity's governing body. It is anticipated that this regionally adopted Major Thoroughfare Plan will allow for corridor preservation and will lead towards a coordinated and cooperative implementation of future roadway projects. With an adopted thoroughfare plan, local planning staffs and developers can make better decisions about the expansion of commercial and residential development that integrates transportation and land use planning.

5.11 ROADWAY POLICIES

Developing and maintaining a comprehensive network of streets and highways that supports the needs of automobile, transit, bicycle, and pedestrian traffic is critical to reducing congestion, improving safety, and increasing mobility within the MPO region. As population and employment continue to grow in the Farmington metropolitan area, a higher burden will be placed on the transportation system. The proposed policies below will assist in developing the best transportation system for the area:

- Ensure an asset management plan is established regionally and in collaboration with NMDOT, which will allow for the prioritization of road maintenance projects that best allocate limited funds
- Ensure travel demand modeling practices apply scenario planning as a tool in the decision making process for all new road project proposals. Evaluate connectivity within the network as a means to improve efficiency before considering adding capacity to our high volume arterials.
- Develop a roadway system that is compatible with the needs of other modes such as bicycles, pedestrians, public transportation and truck freight
- All new arterial roads shall be controlled using access management standards
- Consider safety in the project selection process
- Require land developers to preserve the necessary right-of-way in future travel corridors
- Require private developer contributions in roadway construction in undeveloped areas through the development process
- When approving new land development, ensure that internal, connecting and adjacent streets are able to handle the expected type and intensity of development that is proposed
- Implement access management strategies found within the FMPO Access Management Plan to improve safety and traffic flow
- Implement the Complete Streets policy and design guidelines (see Chapter 7)

5.12 ROADWAY ACTIONS

In order for the regional system to support the needs of the community and provide balanced level of service, and multi-modal transportation functionality, a number of broad actions are needed. These actions create proactive opportunities to address future transportation concerns.

- Continue the implementation of access management practices such as on US 64 as development occurs
- Develop access management corridor plans for new roads

- Collect intersection data, such as turn movement counts
- Develop intersection design standards and signal timing plans
- Analyze signal progression for new developments
- Incorporate pedestrian and transit level of service in conjunction with vehicular levels of service into the travel demand analysis conducted by the MPO

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6 | Transit Plan

6.1 OVERVIEW

Transit service, whether fixed-route or demand-responsive, is intricately linked to many other governmental and planning actions. Providing fixed-route transit service relies upon and reacts to the density of development within the region, the locations of transportation corridors and activity centers, and the design of developments it serves. Travel corridors and activity centers with a mix of uses and a large number of travelers provide the demand that can effectively support higher levels of transit service.

A balanced, multi-modal transportation system sometimes requires shifts in public investment given the historical emphasis on roadways and automobiles. To facilitate a higher level of transit service in the region, new developments and land use patterns should be planned in such a way as to support the non-automobile modes.

Red Apple Transit, the region's fixed-route service, has grown from a loop route system within Farmington with approximately 32,000 riders in 2003 to a linear route system with routes to Aztec, Bloomfield and Kirtland and ridership of approximately 131,000 in 2014. The system has grown in ridership, and also in the number of buses, shelters, and its ability to serve the community.

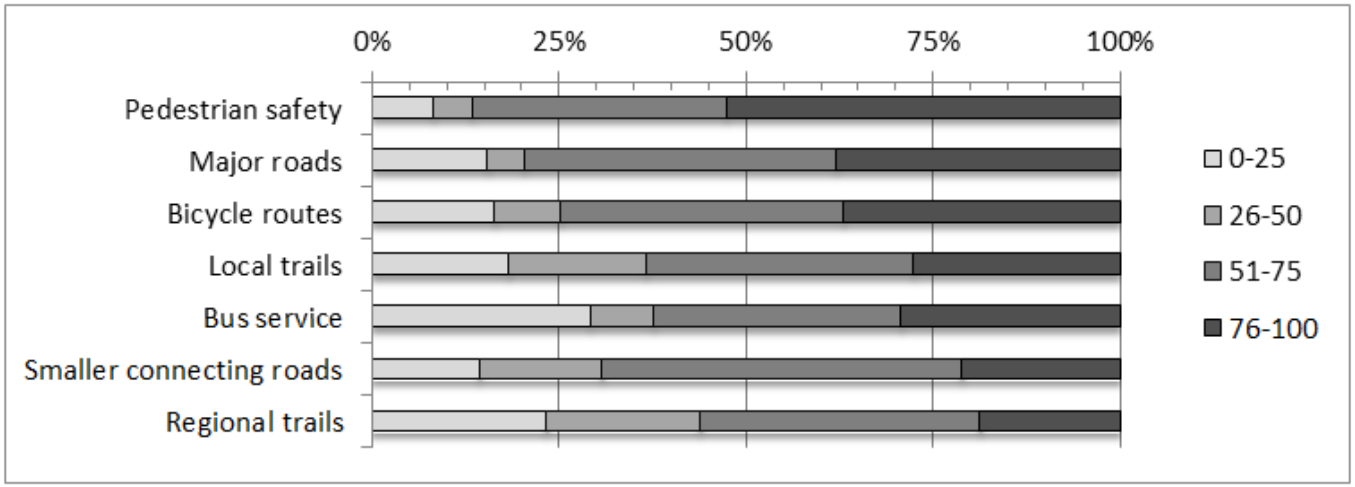
6.2 PUBLIC INPUT ON TRANSIT

Public outreach provided the following data and comments regarding transit:

- Addressing transit needs was one of the top three priority topics during public meetings and stakeholder interviews, along with improving walkability and pedestrian safety.

- When asked to score transit as a priority compared with other parts of the transportation system by respondents to the online survey, bus service had the most variability (see Figure 6-1). Approximately 30 percent of respondents scored bus service as a high priority and approximately 30 percent scored it as a low priority. Seven percent of respondents to the online survey said they had ridden the bus in the past year.
- Stakeholder groups pointed out the following areas of need and ideas for improved transit:
  - Evening service and improved frequency to San Juan College could improve student ridership and allow bus riding students to take evening classes
  - Dial-a-Ride is often entirely booked
  - For those who cannot drive, there are limited options aside from the bus
  - There is a need for a transit connection between Aztec & Bloomfield
  - Several respondents during meetings expressed that the transit system is "better than what we had, but could be better."
  - Where specific businesses or organizations serve populations which rely upon transit, Red Apple Transit could create partnerships with those group to address particular transportation needs and share costs

Figure 6-1: Scoring priorities on the online survey. Shown are the percentages of respondents who ranked these transportation elements from a low of 0 to a high of 100.

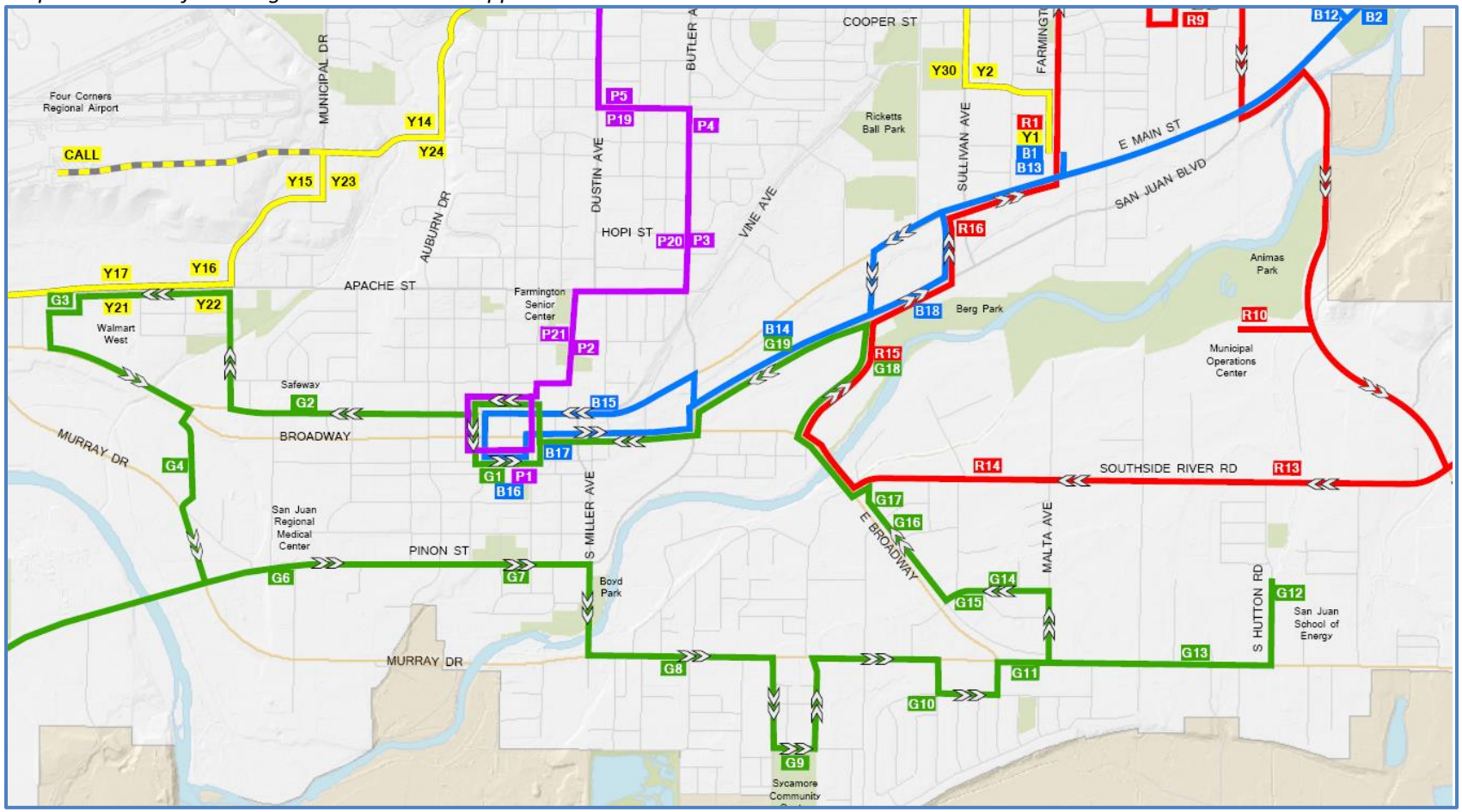


6.3 EXISTING TRANSIT SERVICES

During 2015, Red Apple Transit undertook a study of its routes with the purpose of eliminating non-revenue miles within routes, allowing students to reach San Juan College before 8 a.m., and adding stops along 20th Street in Farmington. The process included a group of stakeholders including transit riders, community service organizations, San Juan College staff, bus drivers, and professional staff of Red Apple Transit. Map 6-1 shows an inset of the Farmington routes to be effective August 2015. The system still will operate five routes within Farmington, plus regional routes to Aztec, Bloomfield and Kirtland.

Other transit operators in the vicinity of the MPO make connections to the Red Apple Transit system with overlapping stops. Navajo Transit serves the Farmington area with two routes and provides connections to Shiprock and other places on the Navajo Nation. Navajo Transit has stops in Farmington and the Kirtland area, with a transfer to Red Apple Transit at US 64 and CR 6400 in Kirtland. Southern Ute Community Action Programs operates a transit service in southwest Colorado, with a connection to the Aztec route at the Aztec City offices.

Map 6-1 – Inset of Farmington Routes on Red Apple Transit



6.4 CURRENT RED APPLE RIDERSHIP

Annual ridership for Red Apple has steadily increased since 2003 (Figure 5-1), with a high year for ridership in 2011 at approximately 150,000 and ridership in 2014 at just over 131,000. Figures 5-2 and 5-3 show the monthly ridership for 2014 for the Farmington and regional routes, respectively. Ridership has been calculated based on fares and from counts by interns hired by the MPO during summer months. As the Red Apple Transit develops, improving the method for counting ridership will be an important part of planning for needs and allocating resources. Management of Red Apple Transit has budgeted to purchase tablet computers to be on buses to assist with ridership counting.

Figure 5-1 – Annual Ridership on Red Apple Transit

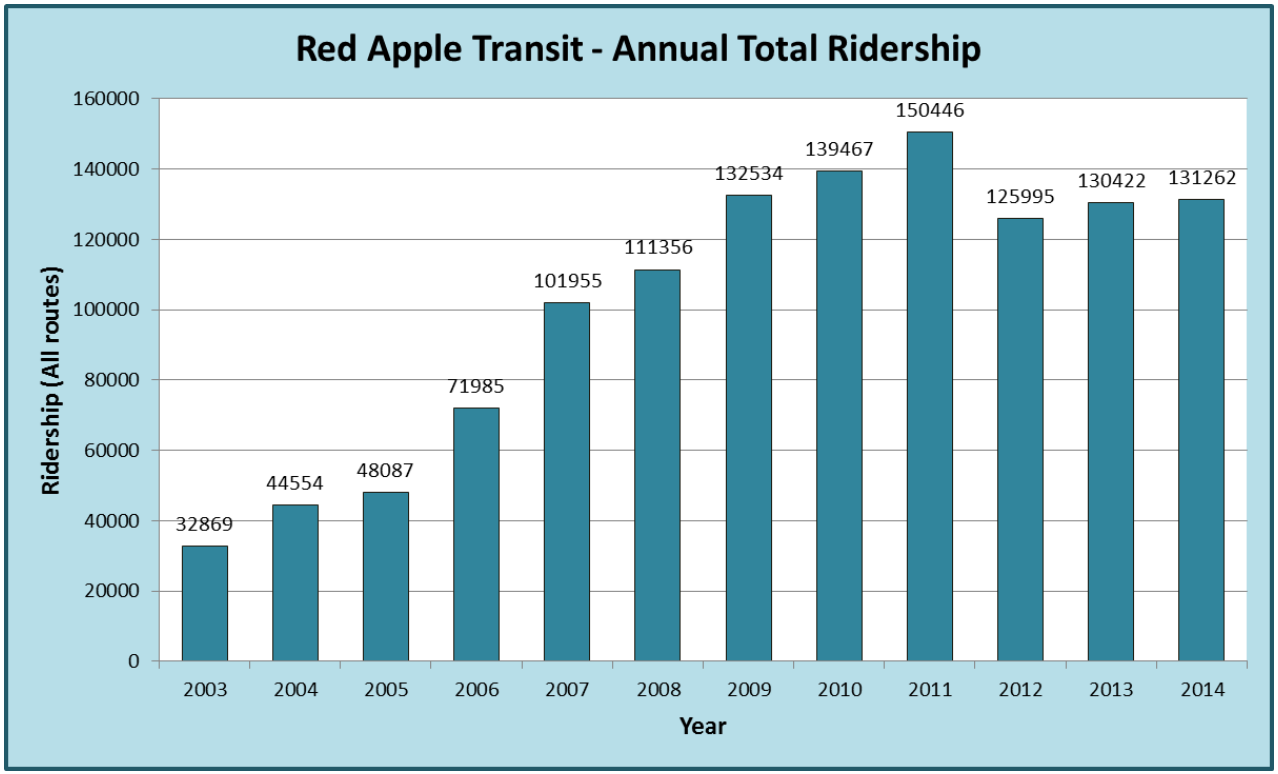


Figure 5-2 – 2014 Monthly Ridership on Farmington Routes for Red Apple Transit

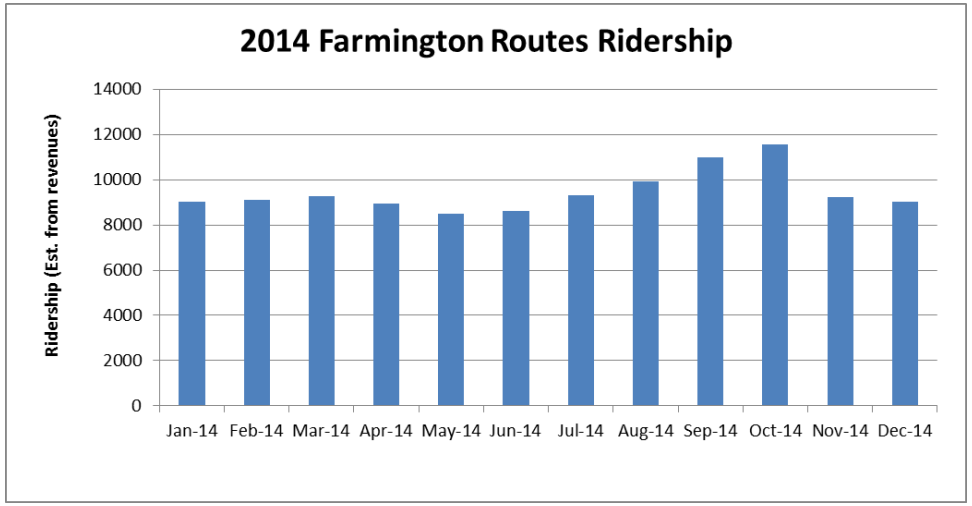
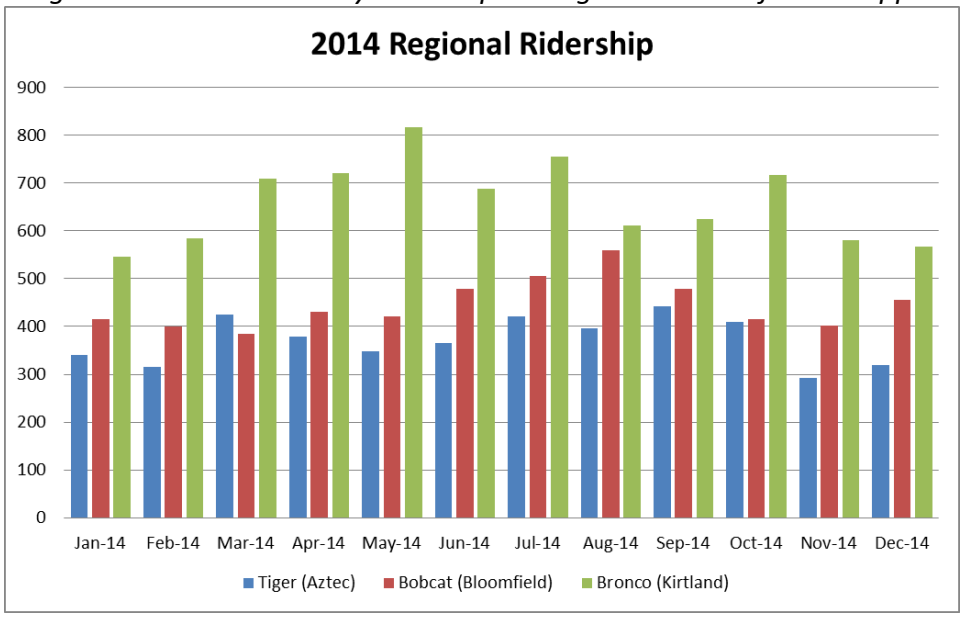


Figure 5-3 – 2014 Monthly Ridership on Regional Routes for Red Apple Transit



6.5 GREATEST TRANSIT NEED

Some people ride transit for lack of a reliable alternative. These often include youth under the age of 18, the elderly, those with a disability, members of households who do not own a vehicle, and low-income households. In 2010, Red Apple Transit contracted with LSC Transportation Consultants on a study of the transit system. One key element of the study is an analysis of the areas of greatest need based on these factors.

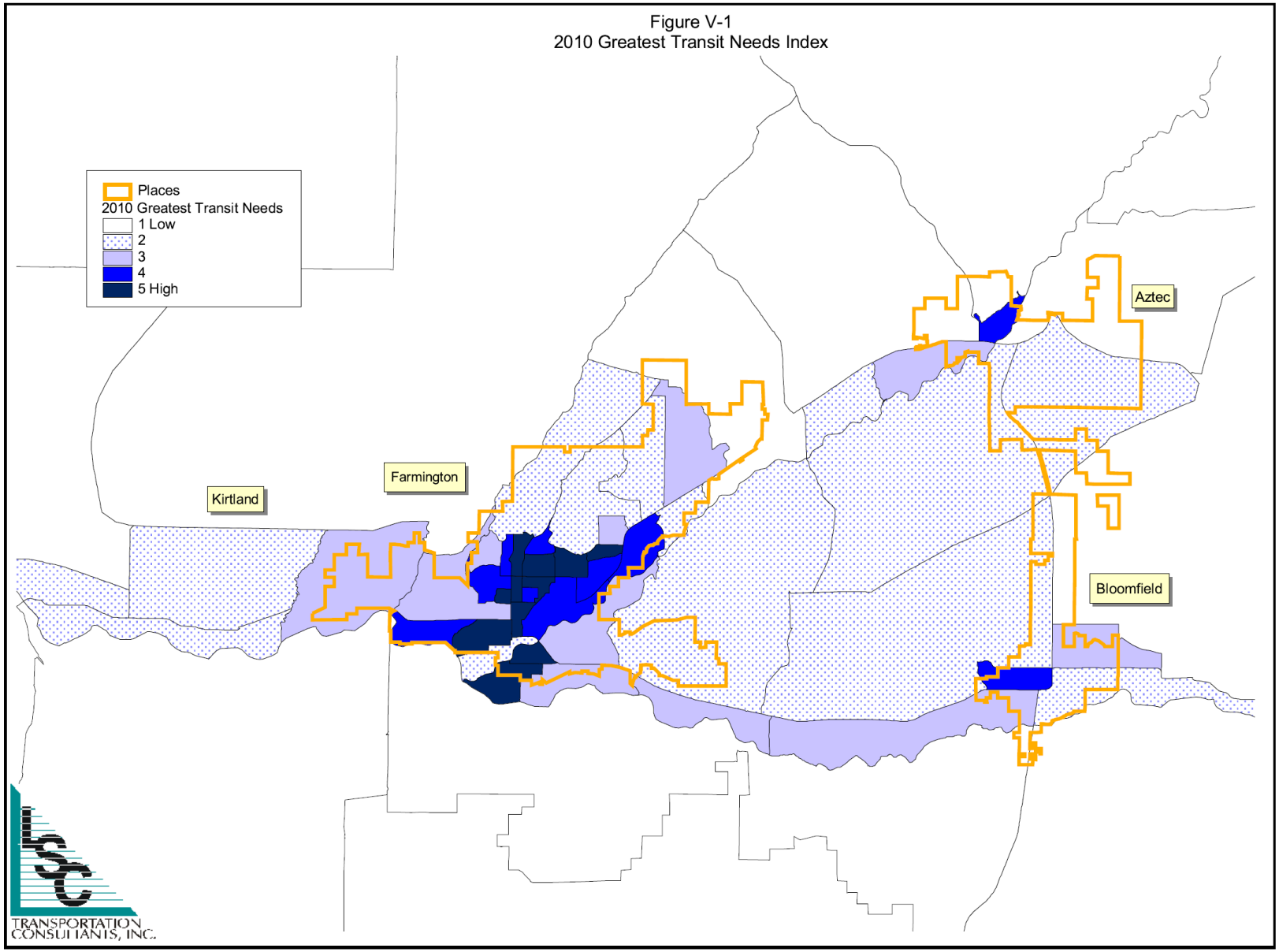
During development of the transit study, this information was collected for analysis to better understand where the focus of transit service should be. The study used 2000 Census data. The data for these population types was compared to total population of these census tracts to determine a percentage of the total population. These percentages were then ranked within each type. The ranks from all of the populations were scored to establish an overall rank. The highest score indicates the greatest transit need. Greatest transit need was developed for 2010, 2020 and 2035 (Maps 6-2 through 6-4). When comparing the three years of data, certain census tracts began to rise to the top because they had large numbers of these population types:

- Areas in central and south Farmington
- The north and west areas of Crouch Mesa
- The northwest and southwest areas of Bloomfield

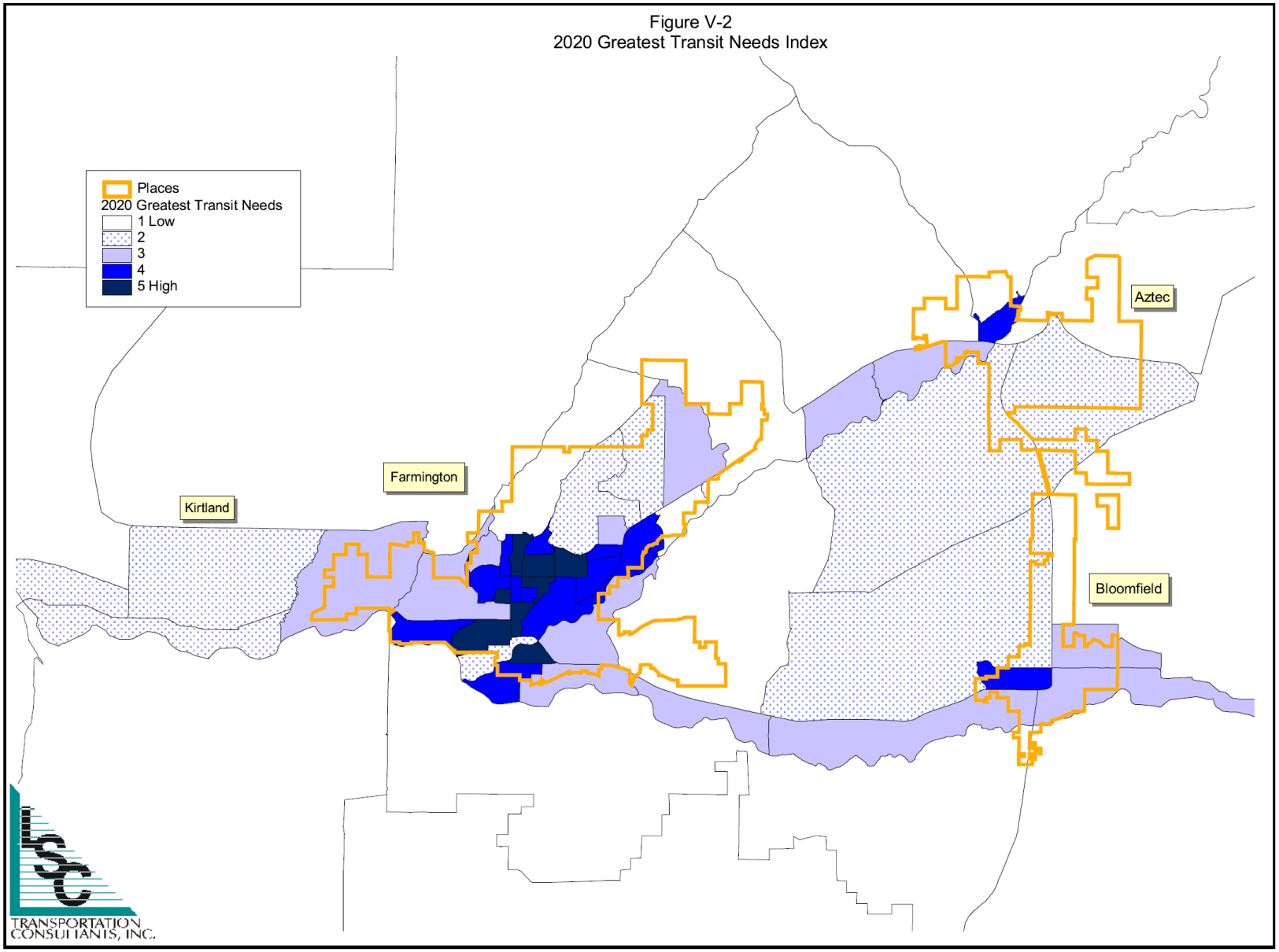
Using data by Traffic Analysis Zone (TAZ), MPO staff grouped population and employment data to project where the largest areas of growth are expected to occur. The data were developed as a way to gauge locations of high concentrations of population and employment. Besides further growth within the three cities, Crouch Mesa and Kirtland will become the fastest growing areas within the MPO.

In addition to the 2010 study, Map 6-5 shows detail on locations of jobs as of 2010 relative to bus stops, with quarter-mile and half-mile catchment areas to emphasize the coverage of transit service for commuting to work. Bus stops provide coverage in most areas of 490 jobs per square mile or greater. Map 6-6 shows the locations of college students as of 2012 relative to bus stops, again with catchment areas displayed. The routes provide service where many students reside, but could improve its coverage in the densest neighborhoods in Farmington and may investigate the needs in the Cedar Hill area northeast of Aztec. Even still, most population is within one half-mile of a bus stop. The system continues to target the areas and populations of greatest need.

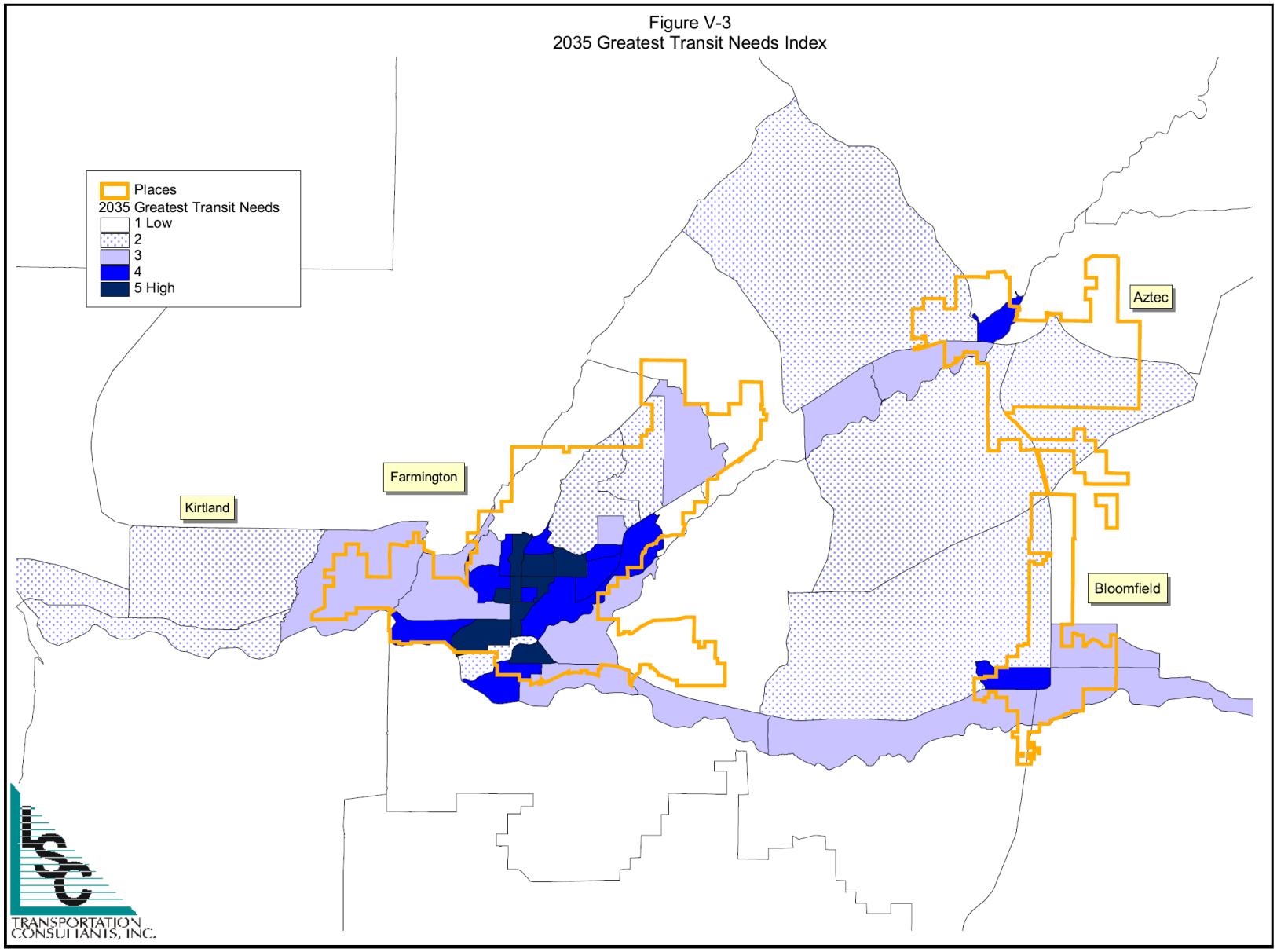
Map 6-2 – 2010 Greatest Transit Need



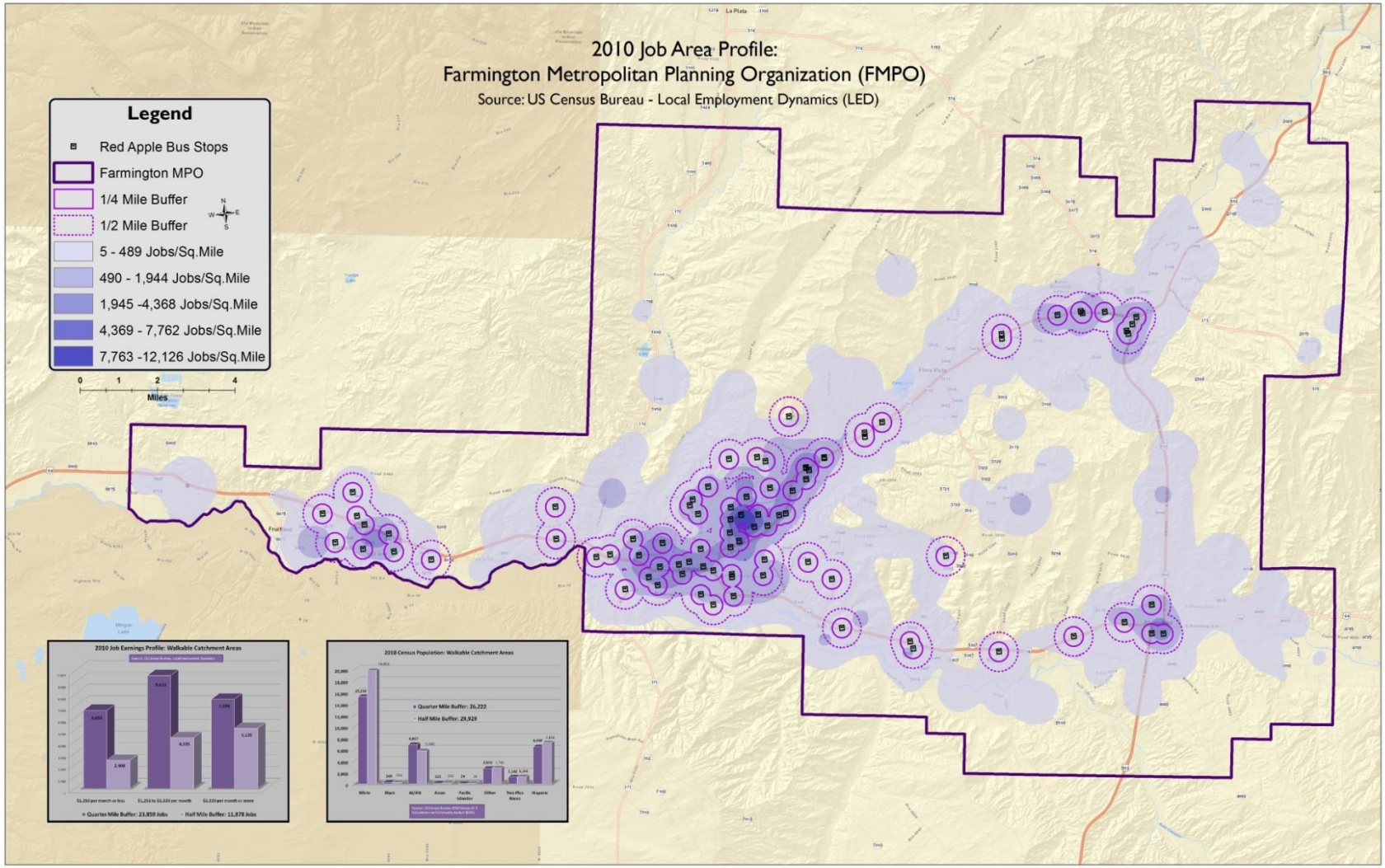
Map 6-3 – 2020 Greatest Transit Need



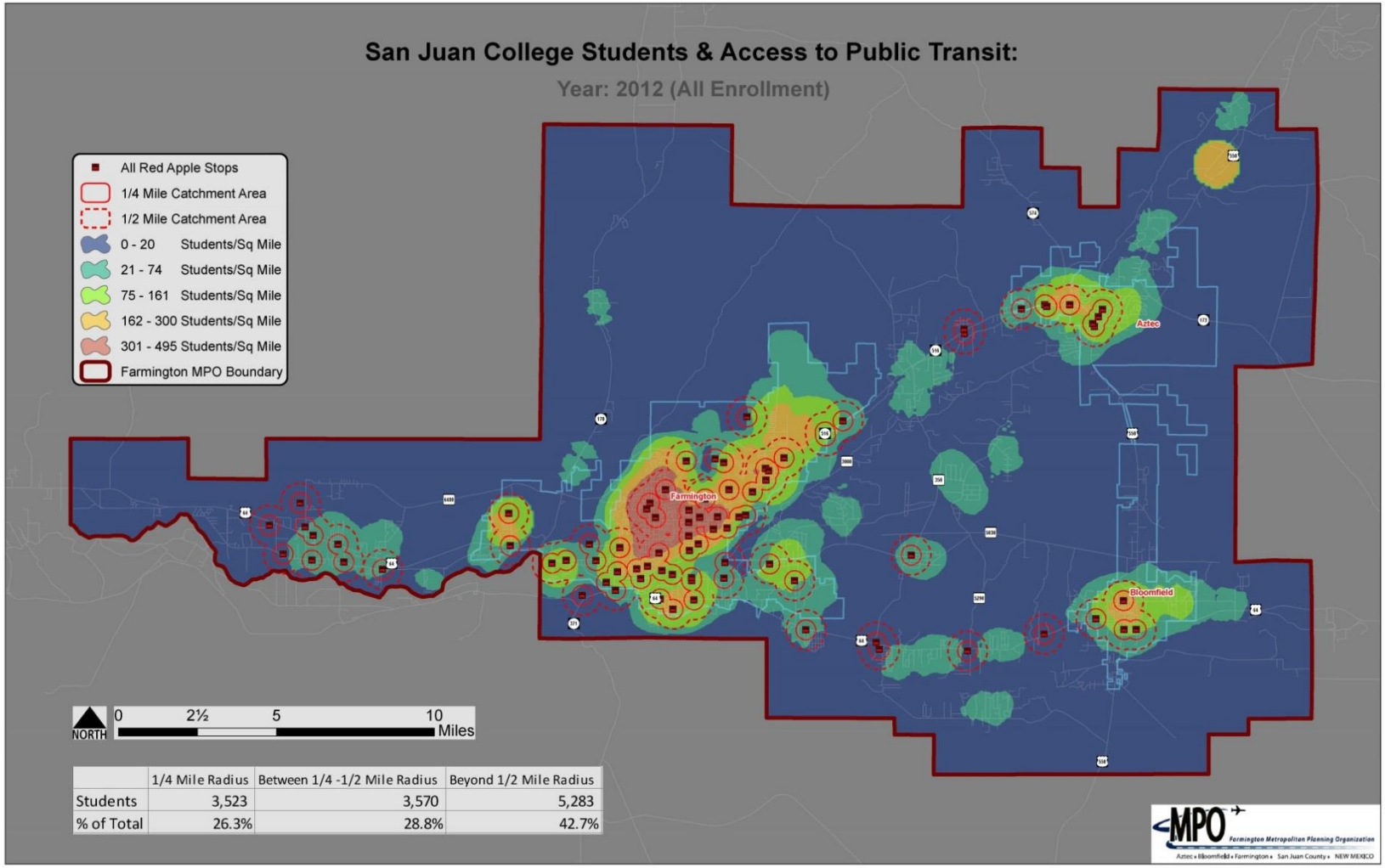
Map 6-4 – 2035 Greatest Transit Need



Map 6-5, Jobs in MPO Area Relative to Bus Stop Locations, 2010



Map 6-6, Bus Stop Locations Relative to San Juan College Student Place of Residence, 2012



	1/4 Mile Radius	Between 1/4 -1/2 Mile Radius	Beyond 1/2 Mile Radius
Students	3,523	3,570	5,283
% of Total	26.3%	28.8%	42.7%

6.6 TRANSIT POLICIES

To support the growth of the transit system and to promote efficiency, Red Apple Transit may use the following policies as guidance:

- Ensure all bus stops are ADA accessible and that sidewalks are constructed to provide direct access to the stops
- Install equipment for buses to gain priority at traffic signals to avoid idling and improve travel times
- Install hardware for electronic ridership counting
- Provide bus shelters at main public destinations
- Encourage land use patterns with mixed uses and higher density areas that support transit
- Study the need and potential locations for a transit hub facility
- Identify activity and retail centers that serve as transfer hubs for transit routes
- Supply route information to Google transit to improve riders' ability to plan trips
- Seek additional local matching funds and increased fare receipts to leverage federal operations grants
- Expand transit service for evenings and weekends, especially to serve more commuters
- Study future optimal configurations and priorities of future routes in the case of increased operations funding
- Continue public outreach on updates to route and bus stop locations
- Update the study of areas of greatest need

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7 | Complete Streets & Roadway Aesthetics

7.1 OVERVIEW

Our streets lay the foundation for how we interface with travel needs, physical exercise, social exchanges and access to goods and services. They are meaningful for all users of our transportation network whether by car, bus, bike or walking.
Over the last several decades, auto-centric transportation plans and designs have limited the mobility needs of the most vulnerable transportation users, i.e., children, seniors and the economically disadvantaged. In many US communities, a narrowed focus on increasing the level of service of vehicle movement has dominated other transportation alternatives in favor of expanding capacity and reducing vehicle delay. It has also placed a costly burden on cities and communities who endeavor to compete economically with ever-evolving demographic shifts and market demands. When planners, engineers, developers and decision makers consider designs that include all users, they can begin to provide a balanced transportation network that improves the quality of life desired in our region. Our streets, if properly designed, can act as a catalyst to economic development attracting investment dollars from the private sector and other partnerships.

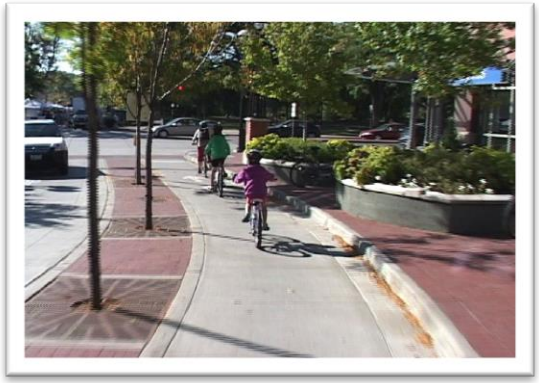
7.2 PURPOSE and NEED

In May of 2012, Farmington MPO staff first invited the Walkable and Livable Communities Institute (WALC) to the Farmington region. Led by their charismatic leader Dan Burden, they discussed with local staff, elected officials, area residents and transportation stakeholders the value of a paradigm shift to complete streets that includes all modes and users of our transportation network.

With momentum and eagerness for complete streets in our region communicated, MPO staff organized a Complete Streets Advisory Group (CSAG) in the fall of 2012. Members represent a diverse cross-section of transportation stakeholders from across the region including Safe Routes to School coordinators, land-use planners, land/commercial developers, civil engineers, public health officials and economic development professionals. The grassroots nature of the complete streets planning process aided MPO staff in determining community values as they pertain to our streets and roadways. The CSAG recommended policies, goals, and design guidelines that reflect the region's consolidated voice. After each proposal was vetted at the Advisory Group level, MPO staff then presented the concepts to the MPO Technical Committee for recommended approval before gaining final approval and adoption from the Policy Committee.

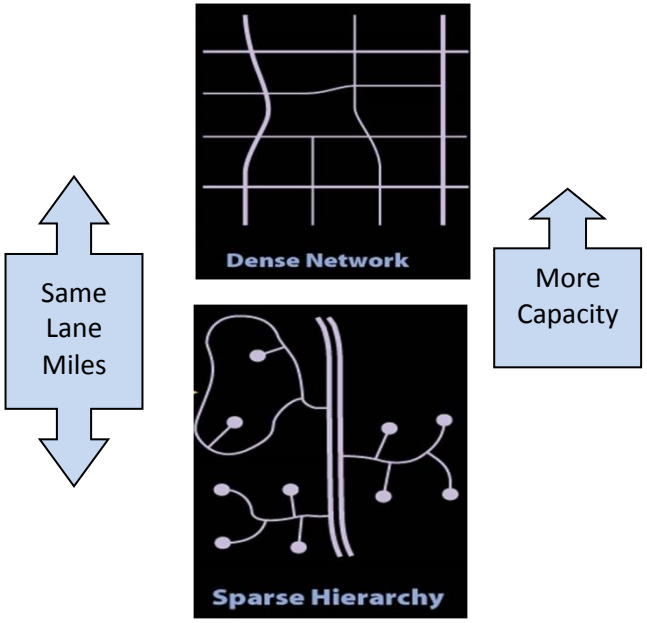
7.3 CORE VALUES

The CSAG was instrumental in establishing the goals and visions that were derived through the planning process. The first task appointed to staff was to share with the public six-core values that were identified by the CSAG. Those values are as follows:

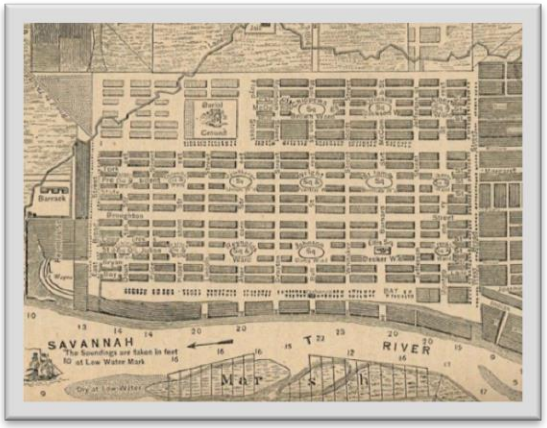


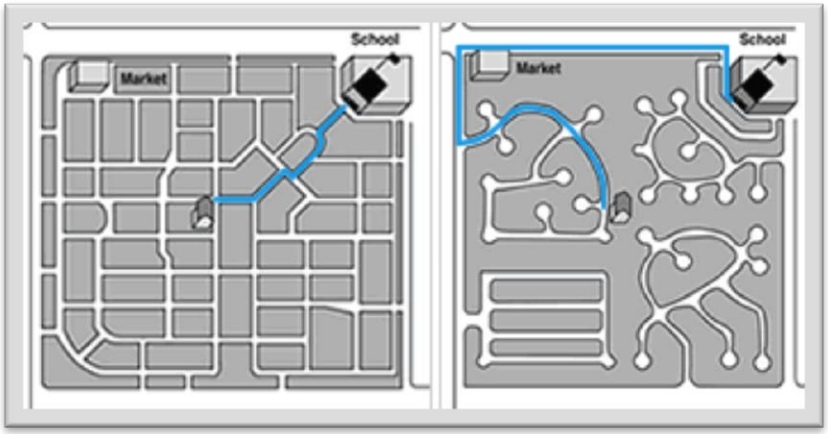
MULTI-MODAL TRANSPORTATION	
Planning, designing, and constructing convenient and appropriate facilities for all modes	
1.	Plan, design and construct appropriate amenities for all modes that provide a balanced and aesthetically pleasing transportation system from urban to rural settings
2.	Design and construct buffers (stripes, medians, etc) between vehicular traffic and other modes where possible
3.	Encourage the use of separate walking/biking paths and equestrian trails, especially along high speed arterials
4.	Build transit stops that are ADA compliant and accessible by walking and biking facilities
5.	Ensure buy-in and support from city departments and transportation agencies that multi-modal features will be incorporated into planning and construction of roads
6.	Encourage the local governments to develop a mechanism for constructing sidewalks for infill and vacant lots.

NETWORK CONNECTIVITY	
Conditions that make it easier to get from one destination to another and that link neighborhoods and districts by minimizing obstructions and restrictions	
1.	Construct linkages - both within and to each other - among neighborhoods, developments, schools, parks, river trails, roads, transit stops, and walking/biking/equestrian networks.
2.	Implement grid patterns within new developments that disperse traffic, provide connectivity for vehicles, pedestrians, and bicyclists, and slow traffic
3.	Design creative uses for easements (alleys, gas lines, etc) and cul-de-sacs (dead-end streets) as a means of connecting walking/biking/equestrian paths
4.	Encourage the local governments to develop a mechanism for constructing sidewalks for infill and vacant lots.
5.	Integrate and enhance natural land forms and topographies into the design and construction of roads and neighborhoods.



Network connectivity in transportation terminology, improves the movement of people and goods whether you are talking about streets, urban bicycle routes, the public transit system or sidewalks and walking trails. There are many benefits to network connectivity including an improvement to traffic on busy streets, elimination of traffic bottlenecks, continuous and direct routes that can encourage travel by walking, biking and public transit; and allowing for improved accessibility for emergency response vehicles as well as for the evacuation of communities in case of disasters.



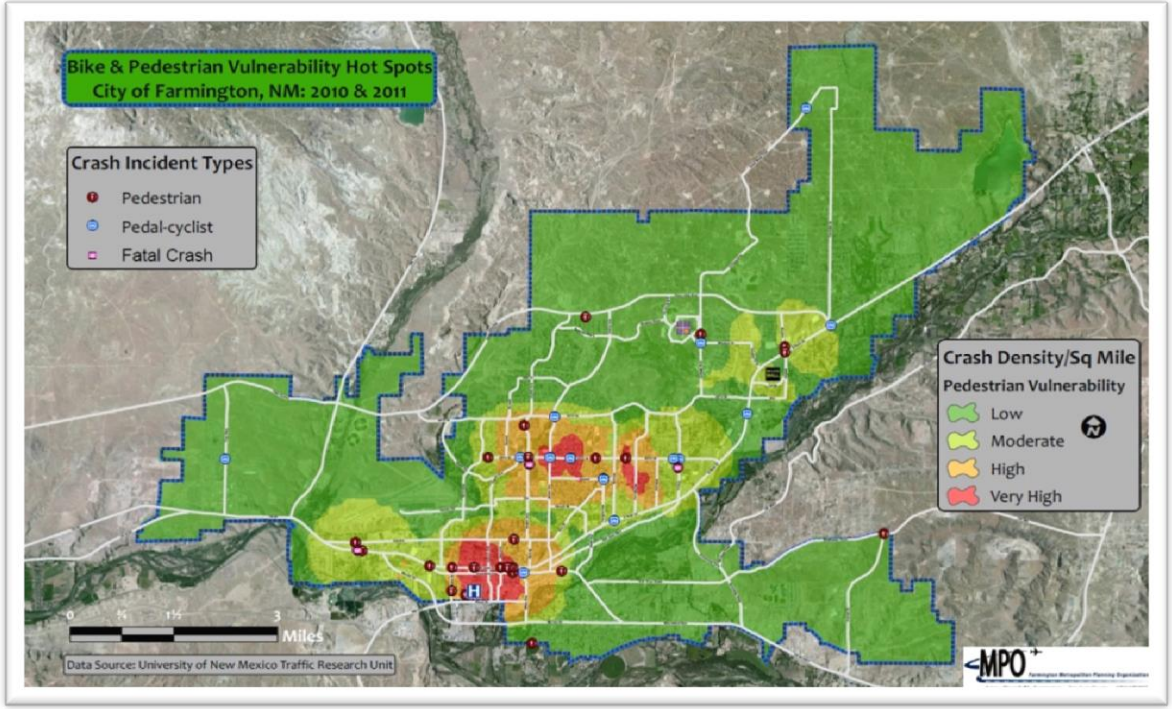


HEALTH	
Providing transportation options that encourage physical activity, improve air quality, reduce congestion, and improve livability	
1.	Ensure that transportation options are provided as a means of promoting healthy activities for all age groups (children, adults, seniors, etc)
2.	Encourage active participation by all socio-economic groups by promoting bicycle/pedestrian events and destinations
3.	Market the health benefits (physical activity, less emissions, etc) of walking, biking, and taking public transit
4.	Develop partnerships with Health Organizations to educate and promote complete streets and healthy life styles.

Through the MPO's Complete Streets Advisory Group and other outreach events, the MPO has successfully made connections with local health professionals such as Blue Cross/Blue Shield, Place Matters, San Juan Regional Medical Center and NM Department of Health. A health profile report of San Juan County Health accessible via the New Mexico Indicator Based Information System (IBIS) shows that adult physical activity in the years 2005, 2007, 2009 was at 45.7% - below the state average of 52.5%. Data from a 2011 health indicators study, the San Juan County Health Forecast, reveals that obesity among adults (those with a body mass index (BMI) greater than 25) was at a staggering 71% for San Juan County. This was above the state average of 60.7% and the national average of 66.9%. Fortunately, there is a movement within San Juan County health practitioners and advocates to examine "health in all policies", which includes looking at infrastructure designs to ensure they are safe, comfortable and convenient for walking, biking and transit modes of travel.

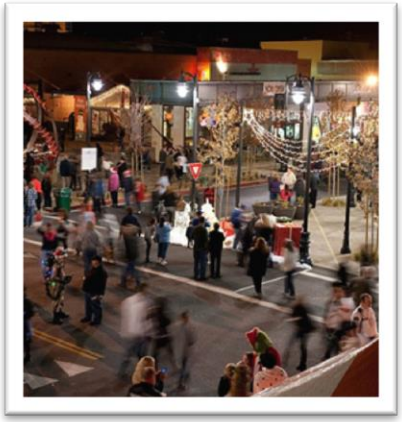
SAFETY	
Designing roads [and pathways] that accommodate all users; providing amenities for each mode type that create separation, increase visibility, and minimize conflict points	
1.	Integrate safety measures (buffers, medians, traffic calming, roundabouts, cross access easements, etc) into all road sections that benefit all users and maximize context appropriate measures
2.	Separate modes using physical structures to ensure the comfort and safety of all users
3.	Provide context appropriate safety measures in urban and rural settings and for paved and unpaved surfaces.
4.	Provide roadway landscaping as a means to slow traffic and appropriate lighting designed to meet land use contexts

An examination of regional crash data will help prioritize safety projects through the State's Highway Safety Improvement Program (HSIP). Vehicular and pedestrian vulnerability "Hot Spot" mapping helps identify corridors or intersections that need counter measures to reduce hazards and improve safety.



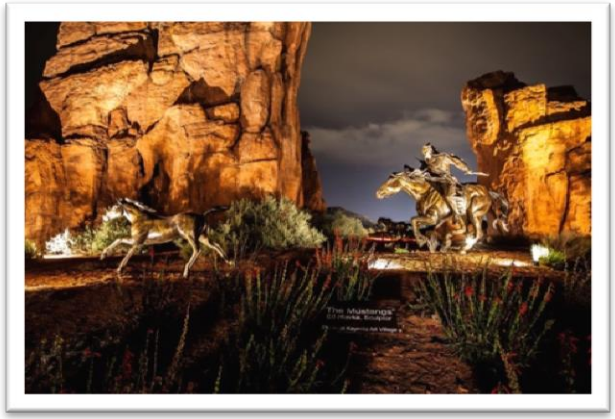
ECONOMIC VITALITY	
Attracting new developments and encouraging growth; supporting and nurturing existing businesses; promoting a mix of uses that complement each other	
1.	Include traffic calming measures (see Safety value) that slow vehicular speeds [in locations] and that encourage people to visit retail and commercial districts by walking, biking and taking transit
2.	Build wider sidewalks that accommodate bump-outs, landscaping, bike racks and seating areas and encourage building placements to front property lines with rear parking access in commercial zones.
3.	Provide spaces (plazas, squares, walkways & parklets) with adequate signage that encourage locals and tourists to linger and shop.
4.	Provide flexibility for public/private partnerships to attract more business & customers
5.	Develop flexible design guidelines that can be applied to the scale of development considered; encourage the development of open spaces that attract pedestrian activity and use of the space.

Economic vitality refers to designing streets that act as catalysts for future economic development which will simultaneously produce a setting which is active, vibrant and conducive to commerce while allowing the movement of all modes of transportation. The City of Lancaster, CA is an example of $10 million community investment in street lighting, landscaping, street pavers, and trees that lead to a revitalization of their downtown. More than $125 million in private sector investments resulted with 40 new businesses and 800 new jobs. Area revenue went up 119% in 2012 only five years after completion in 2007.



STREET AESTHETICS	
Facades, building forms, and street-scapes that are scaled appropriately, pleasing in appearance, and welcoming to residents and visitors alike	
1.	Develop appropriately scaled and attractive public spaces that interrelate with all modes of travel
2.	Enhance the importance of nearby land uses by building road sections with multi-modal options
3.	Encourage the local municipalities and San Juan County to develop entryway signage or monuments and include landscaping and art for downtowns and neighborhoods
4.	Ensure that road cross sections complement, enhance & encourage attention to facade treatments, building forms, street-scapes and underground utilities

Whether you are moving in the rural parts of the County, or commercial corridors or urban centers, streets leave a lasting impression on our minds about the places we live or wish to experience. Some important questions to ask about local street and regional roads in regards to aesthetics are Where do top-quality examples exist in the region? Where do we want to see improvements made? What specific treatments would make vast improvements to street aesthetics? What mechanisms are in place locally or regionally that address maintenance issues? What group of constituents can help make these wishes a reality? How can improved aesthetics enhance economic development?



7.4 STRATEGIES FOR IMPLEMENTING COMPLETE STREETS

The Complete Streets Advisory Group will outline several strategies for funding projects, maintenance and implementing policies in the Complete Streets Design Guidelines.

The Farmington MPO will coordinate the Complete Streets Plan. Activities will include:

- Develop a prioritization process for regional complete street projects
- Seek federal funding and work with the local entities and NMDOT to obtain it
- Monitor and update the Complete Streets Plan as necessary
- Ensure the plan is consistent with the MTP and other comprehensive transportation plans
- Assist with development review to ensure new subdivisions and businesses follow approved policies
- Consult with local organizations and the general public who are involved with pedestrian movement, transit, public health, safety and design, & decision makers
- Identify and seek available grants

8 | Freight, Air & Rail

8.1 OVERVIEW

Transportation systems must serve many modes and functions. In the Farmington MPO area, these include airports and the potential for rail facilities, as well as freight. Existing and future intermodal connecting points are a vital part of the MTP's goals, objectives and policies. Enhancing freight mobility improves regional economic development and with careful planning and engineering can minimize impacts to neighborhoods and the environment. Growing air cargo or linkages to freight corridors may require new or existing road facilities to ensure appropriate transport of goods. Interest in rail service to the area is growing, and the proposition of freight rail from the BNSF rail line along Interstate 40 to the Farmington area is currently being studied. Commuter rail serves the Albuquerque metropolitan area and Santa Fe, and some residents have expressed a desire to see commuter rail from Farmington to Albuquerque.

8.2 PUBLIC INPUT

During public outreach, the MPO received input regarding the status of freight, rail and air service:

- The views of air service in Farmington often expressed in public meetings acknowledged the decline of commercial flight service to and from Four Corners Regional Airport in Farmington as compared with Durango or Albuquerque. Some see Four Corners Regional Airport to be more suited for general aviation, freight cargo, and military use. The single limiting factor for growth of the airport is the inability to expand the runway to handle commercial flights and increased cargo.
- In public meetings, some participants expressed interest in passenger rail service to Albuquerque.

- Participants in many meetings recognized the value of freight rail to the area's economy, both for exporting mining and extracted goods, agricultural products and other goods, as well as for imports.
- Citizens in public meetings acknowledged freight as an integral part of our communities and the movement of freight as an important function of the transportation system, but they wish to mitigate the impacts of large trucks by adherence to truck routes.

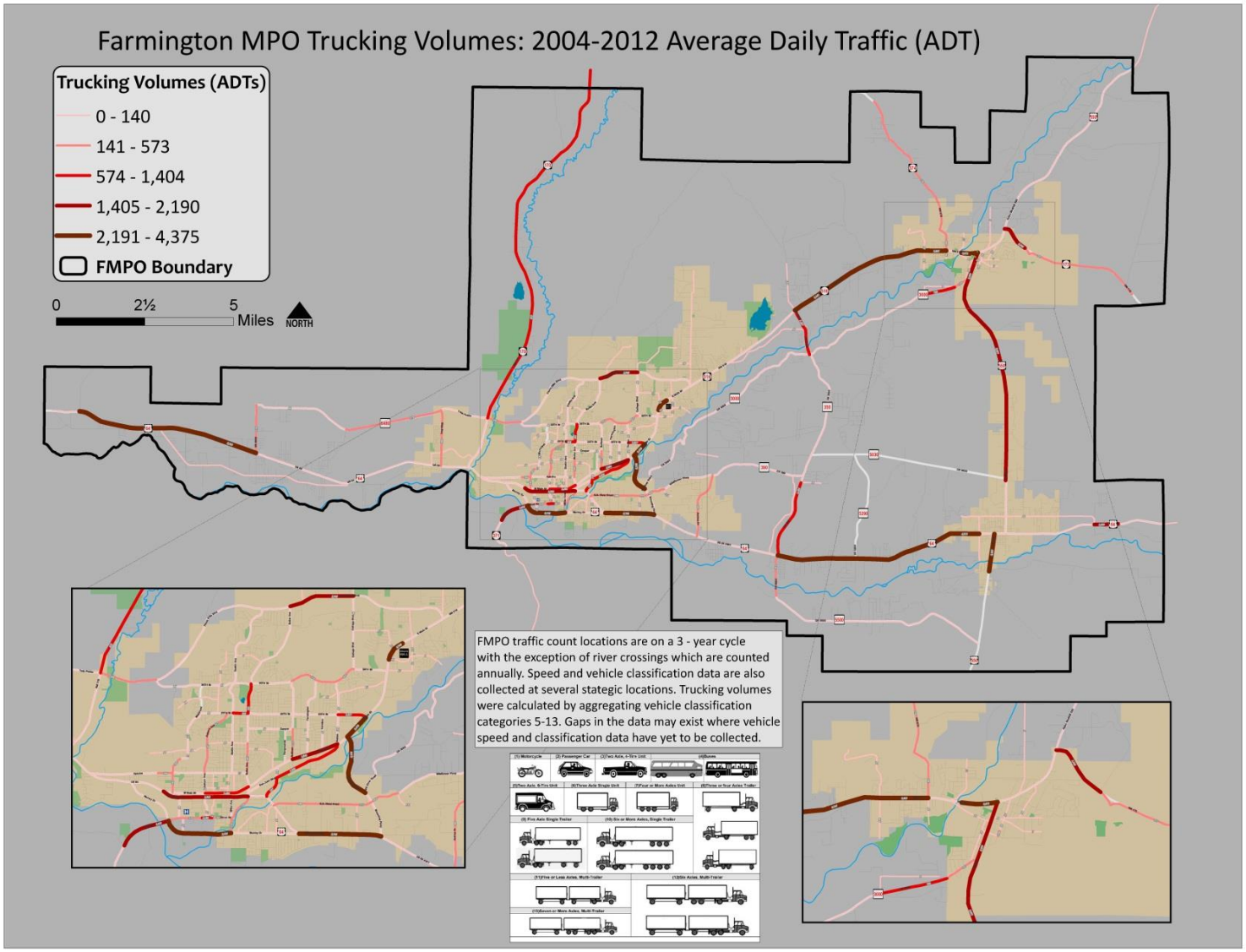
NMDOT is completing the state's Freight Plan concurrent with the New Mexico Transportation Plan. In September 2014, NMDOT hosted a meeting in Farmington on the topic of freight for Northwest New Mexico. While the study is still ongoing, the following input pertained to Northwest New Mexico:

- According to a regional working group convened by NMDOT, the top priorities for freight within Northwest New Mexico are a new rail line in the Farmington area and the movement of oil and gas, fly ash, and agricultural products.
- NMDOT would likely see a reduction in the truck traffic on NM 371 with construction of a parallel rail line and should consider supporting the rail line to save maintenance costs for that highway.
- Transportation infrastructure is the limiting factor in energy production in Northwest New Mexico.
- A rail-truck trans-loading facility and an intermodal yard at Thoreau are being studied by the Navajo Nation and other agencies.

8.3 FREIGHT

With exports from an expansive mineral extraction industry, agricultural produce and other manufactured goods, plus the need to bring finished products to the region's retail sector, freight movement is an important need throughout the MPO region. The role of the Farmington MPO in freight planning is to develop a framework for facilitating and enhancing freight mobility and goods movement in the region, improving the region's economic competitiveness, and minimizing negative environmental and community impacts within the MPO region. Truck volumes are shown on Map 8-1.

MAP 8-1 – Trucking Volumes in the Farmington MPO, 2004-2012



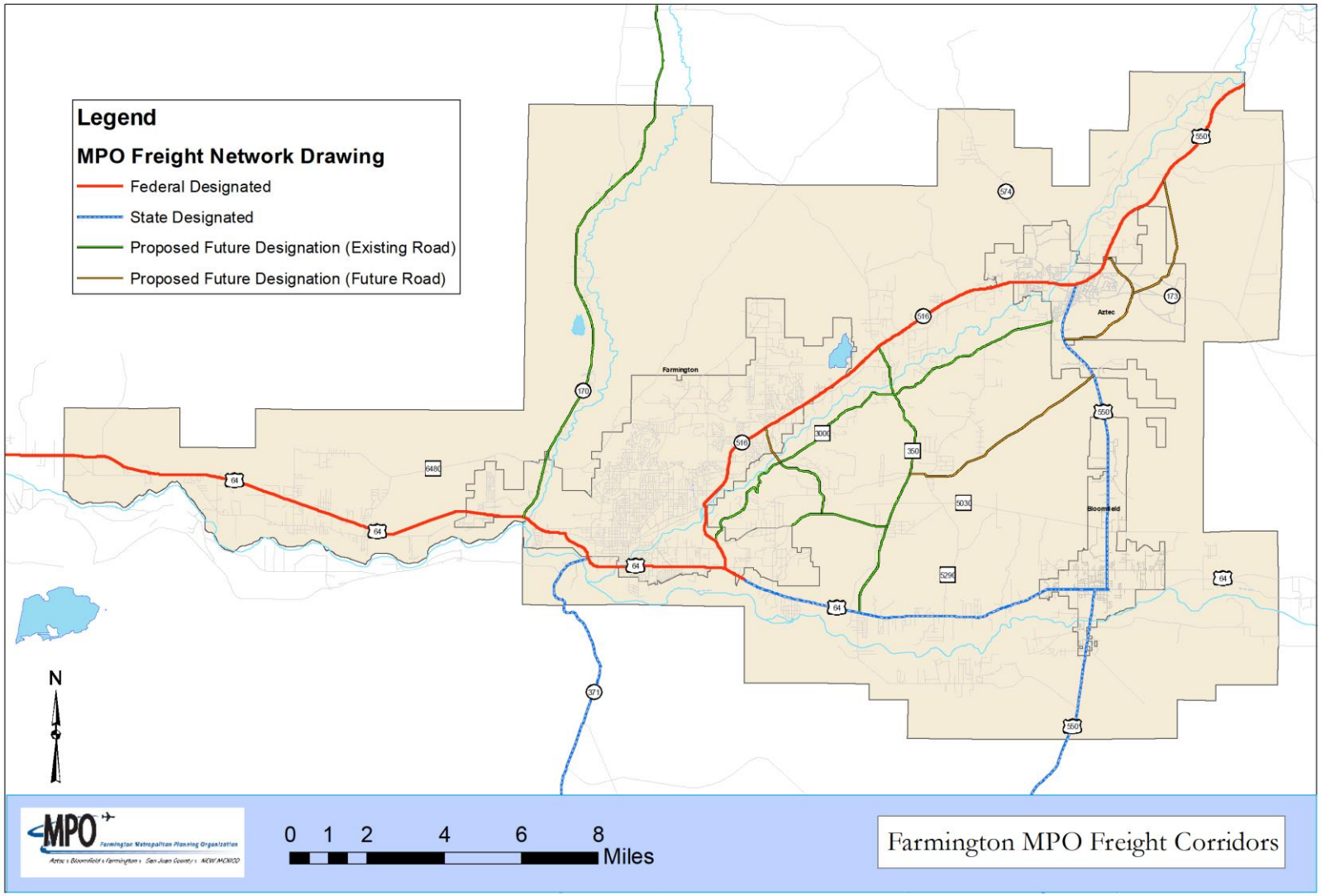
One of the issues identified through public outreach is the impact of freight trucks on the condition of roadways, and their impacts on surrounding land uses. While trucks need to make trips on other roads, federal, state and local facilities have been designated as truck routes to prevent negative impacts to the extent possible. For example, Aztec is proceeding with the East Arterial to provide a route which would allow trucks to avoid their downtown. Map 8-2 shows the truck routes designated in the most recent freight study from 2008. Although that study focused on the interstate corridors and the Albuquerque region, some highlights about the MPO region include:

- US 550 is an identified freight corridor that links the Farmington area to regional, state, and national markets; US 550 is critical to the oil and gas industry.
- US 550 has a projected truck Average Annual Daily Traffic (AADT) of 3,000 growing to 7,000 in 2035.
- US 64 between Farmington and Bloomfield has a projected truck AADT of 7,000 growing to 15,000 in 2035.
- There is a strain on US 550, and maintenance has been deferred on this and other roads.

Area truck routes from the Freight Study are listed below:

Federally-Designated
US 64 from Farmington west to Arizona
NM 516 from US 64 to US 550
US 550 from Aztec to Colorado
State Designated
US 64 Farmington to Bloomfield
US 550 from I-25 to Aztec
NM 371 from Farmington south

MAP 8-2 – Truck Routes in the Farmington MPO



8.4 FUTURE FREIGHT CONSIDERATIONS

Future freight considerations for this area:

- What impacts on the transportation network would come from a rail connection?
- What does Bloomfield plan for freight movement, given freight traffic to/from Colorado and Albuquerque as well as the proposed industrial park north of town? Will all truck traffic rely on US 550 and US 64?
- How will the potential industrial corridor of CR 350 impact the area's road network?
- How will future industrial expansion affect Farmington and Aztec?
- What steps need to be taken to encourage freight trucks to abide by truck routes to the extent possible?
- What facilities and policies are needed to continue to accommodate the freight industry's needs?

In order to facilitate the development of a freight framework, the following considerations should be taken into account to support the vision of an accessible, safe, and efficient surface transportation system that integrates convenience, affordability and improved air quality:

- Increase the efficiency of the existing transportation system and decrease traffic congestion through coordination of traffic operations and development of strategies to reduce travel demand at both the regional and corridor levels.
- Develop and implement operational improvements for the management of traffic along major travel corridors, including incident management, intersection improvements, construction coordination, access management, signal re-timing programs, and freight management.
- Monitor freight travel patterns and identify preferred truck routes and the implementation of truck lanes.

8.5 AIR TRANSPORTATION AND CARGO

The potential for growth of air cargo at either the Farmington or Aztec airports is tied to the potential growth and movement of products within the Four Corners region. Most of the air cargo transported via the airport involves goods moving to or from regional sorting centers and warehouses in Albuquerque or within New Mexico. Parcels and other products are shipped via air cargo to facilitate "just-in-time" arrivals.

The Four Corners Regional Airport in Farmington has commercial air service by one airline to four destinations in Arizona, California and Colorado. The City of Farmington developed a long-range plan for the airport in 2013, which forecasts slow growth in passenger counts over the next 20 years. The plan reviews the limitations of runway length for regional jets and larger commercial jets, and recommended scenarios for improvement options. The plan shows how new air cargo facilities could be located on the northern

portion of the airport's property. The plan also acknowledges general aviation activity. While the plan did not address air cargo specifically, it anticipates accommodating growth in cargo service in the future.

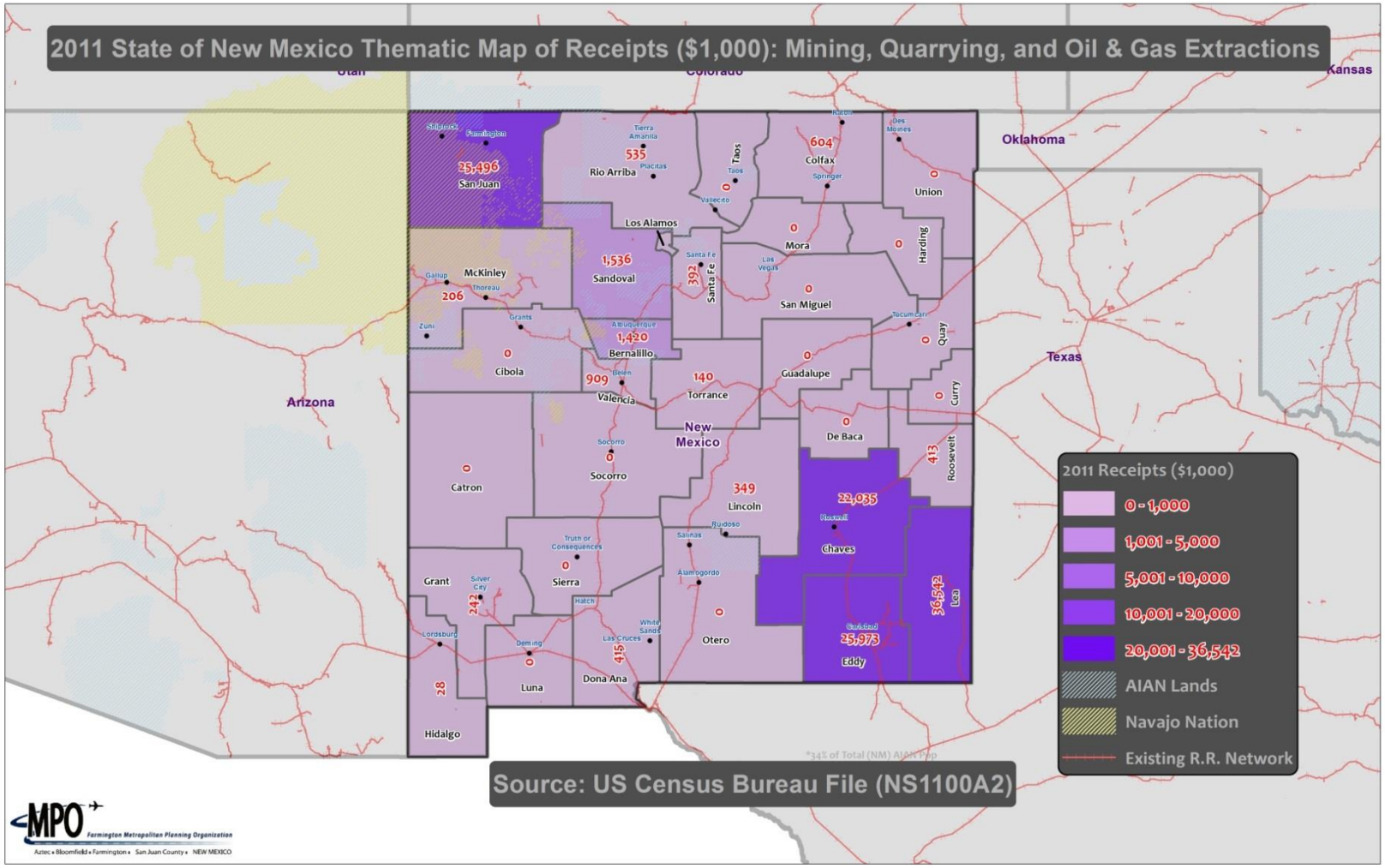
The City of Aztec does not have commercial air service, but serves general aviation. The airport is planning to expand its fuel station and has received a federal grant for the improvements. The airport is also planning to reconstruct the apron and one of its runways.

Roadway improvements and other modal connections may be needed to accompany future increased activity at either airport. The new facilities would need access to the north side of Four Corners Regional Airport, and a collector street has been identified to connect the airport to Piñon Hills Boulevard. Currently, the Red Apple Transit stop serving the Four Corners Regional Airport is an on-demand stop.

8.6 RAIL CONNECTION

In recent years, interest has grown for returning rail to the MPO planning area to serve freight imports and exports. Four Corners Economic Development is working with Navajo Nation and New Mexico Institute of Mining and Technology to study a possible alignment for a rail line from the area southwest of Farmington, along Highway NM 371 south to the Burlington Northern Santa Fe (BNSF) rail line in Thoreau. The distance is approximately 100 miles. An alignment from the Farmington area running west and then south following 491 to Gallup may also be studied. Depending on the alignment and location of the terminus in the Farmington area, there may be additional transportation facilities constructed to accommodate the new rail connection. The new rail line has been discussed as a private venture or public private partnership. The State's Rail Plan, completed in 2014, recommends further study of this rail connection. Map 8-3 shows the State's rail network relative to receipts from mining and extraction activities by county in 2011. This highlights the need for rail connections in support of extractive industries in San Juan County.

MAP 8-3 – State of New Mexico Receipts from Extractions shown with Rail Network



9 | Bicycle & Pedestrian Plan

9.1 OVERVIEW

The walking and biking systems in the MPO Planning Area provide key network connections for non-motorized travel and enhance the quality of life in the area. To this end, the Farmington MPO and the four local government entities adopted a Bicycle and Pedestrian Plan in June 2008, with a previous update in June 2010. The Plan is a guiding document originally developed from the MPO Bicycle/Pedestrian Advisory Group (BPAG), and is updated based on public input and collaboration with local governments. With this MTP, more projects have been identified and are listed and mapped below.

Regional projects identified in the Bicycle/Pedestrian Plan are prioritized as part of the MTP development process. These projects will create bicycle and pedestrian networks that connect the three cities and surrounding communities, while connecting destinations within those areas. The networks include sidewalks, bike lanes, and trails. The Bicycle/Pedestrian Plan outlines policies and recommended standards for implementation as new developments occur, as new roads are built, and as existing infrastructure is reconstructed. Various funding and implementation strategies are described in order to assist the agencies involved with planning and developing the preferred walking and biking network.

In 2012, the MPO formed a Complete Streets Advisory Group (CSAG) to develop Complete Streets Design Guidelines for use by local governments. The CSAG includes stakeholder representatives, local government staff and elected officials interested in designing and building a transportation network to serve the various modes of travel. Chapter 7 is dedicated to the topic of complete streets and the work of the CSAG.

Dimensional standards for bicycle and pedestrian facilities were previously described in this Bicycle/Pedestrian Plan, but will now be found in the Complete Streets Design Guidelines. Other elements of the Bicycle/Pedestrian Plan remain relevant and are included here, along with additional public input and updated policies, strategies and actions. Equestrians in the MPO are also represented in this chapter, as they may use the same facilities as bicyclists and pedestrians, but have their own unique concerns and needs.

9.2 PURPOSE and NEED

The purpose of the Bicycle/Pedestrian Plan is to guide future development to link communities, provide access to parks, schools, residences and businesses, encourage walking and biking for commuting, and improve the health of the citizens and the communities within the Farmington MPO Planning Area.

Through the following needs statements, the MTP strives to meet the needs of all users of the transportation system:

- There is a need to serve those who elect to bike and walk on a regular basis, and those who have no other transportation option. These persons may include: children; the elderly, commuters, students (elementary through college), and persons with disabilities.
- There is a need to improve pedestrian and bicyclist access from residences to destinations such as parks, trails, schools, medical facilities, shopping centers, libraries, and places of employment.
- There is a need to educate motorists and the general public about the rights and responsibilities of bicyclists and pedestrians who use the roads and sidewalks, respectively.

9.3 PUBLIC INPUT

Through public outreach, citizens and stakeholders identified their priorities regarding bicycle and pedestrian modes of travel:

- Missing connections in bicycle and pedestrian facilities along roadways, and the limited walkability of the transportation system are two of the top three priority issues identified in public meetings and stakeholder interviews.
- Pedestrian safety is the highest priority transportation issue which needs to be addressed and the one for which respondents were most willing to pay, according to both online and paper survey responses. Bicycle routes were the third highest priority for online survey respondents and the second highest issue for which they were willing to pay.
- For respondents to the paper survey, bicycle routes were the fifth most important issue, and the third highest mode for which they would be willing to pay.
- Of online survey respondents to questions regarding commuting to work, 12 percent commute by walking at least once per month, and 10 percent commute at least once per month by bicycle. Further, 32 percent said there are no sidewalks for destinations to which they walk, and 24 percent said there are missing links in the sidewalk system.

- For respondents to paper surveys, 58 percent identified the lack of a safe place to walk as a problem which needs to be fixed, making it the second most important issue. They also indicated that separated bike lanes are more likely to encourage them to bicycle more, followed by striped bike lanes.
- Of online survey respondents to a question about bicycle route improvements, 35 percent said striped bike lanes would encourage them to ride more, while 31 percent said signs designating routes would do so.
- Local trails are a higher priority than regional trails, according to respondents of the online survey.
- In public meetings and with stakeholder groups, the area trails system continually received praise, and citizens would like to see its development continued, with more connections made between the river trail network and the rest of the community.

9.4 GOALS and OBJECTIVES

The existing Bicycle and Pedestrian Plan identifies the following goals and objectives, all of which fall within the framework of the goals described in the MPO Metropolitan Transportation Plan.

GOALS
Goal 1 - Encourage citizens to walk and ride bikes as life-long, healthy habits.
Goal 2 - Increase the quality and quantity of bicycle and pedestrian facilities in a strategic manner.
Goal 3 - Promote the idea of walking and biking for commuting as well as for recreation.
Goal 4 - Educate motorists, bicyclists, and pedestrians about bicyclist and pedestrian rights and responsibilities for the proper use of roads, sidewalks, and paths.

OBJECTIVES
• Link resources and programs, such as Safe Routes to School, to improve unsafe walking and biking locations.
• Encourage and support groups (e.g. bike clubs and stores, police departments) to provide bicycle safety equipment.
• Develop education programs that clearly define rules for safe walking and biking to motorists, children, and adults.
• Collect data on bicycle and pedestrian trips as a way to evaluate the effectiveness of walking and biking facilities.
• Identify the current deficiencies in the bicycle/pedestrian network and develop a method to eliminate gaps in the existing bicycle and pedestrian system.
• Monitor TIP project descriptions to ensure that bicycle and pedestrian facilities are included where appropriate.
• Identify locations for bicycle and pedestrian facilities and amenities, such as bicycle racks at civic buildings and safe, convenient connections to transit stops.
• Develop the MPO to be the clearinghouse for collecting and updating data on bicycle and pedestrian activity (pedestrian counts,

OBJECTIVES
surveys) and making the data accessible for entity staff, elected officials, and the public.
• Increase public awareness of pedestrians and bicyclists.
• Support the efforts of local municipalities in including bicycle and pedestrian facilities as components of their capital programs and site review approval processes.
• Develop walking/biking and trails maps for use by local residents, visitors, and others.
• Publish information that outlines safety tips and rules of the road responsibilities for motorists, bicyclists, and pedestrians regarding the appropriate use of bicycle and pedestrian facilities.
• Encourage and promote multi-modal strategies to all those involved with the planning and design of transportation facilities.
• Investigate new right-of-way possibilities such as utility or ditch easements for pedestrian and bicycle paths.

9.5 IDENTIFYING WALKING and BIKING IMPROVEMENTS

Walking and biking facility improvements were initially identified during development of the Bicycle/Pedestrian Plan by collecting information from city plans, proposed river trail plans, and the Metropolitan Transportation Plan (MTP). With input from the local government staff, additional improvements were incorporated into the plan. Public input identified general key needs, such as improved pedestrian safety and completion of missing connections to sidewalk, bike path, and trail networks. In many locations, large roads are unsafe to cross because of the number and width of travel lanes, the speed of vehicles, and the simple absence of marked crossings.

The Plan serves as a mechanism for the identification of corridors to preserve for future walking and biking improvements. The MPO should develop a better method of translating regional public into actual projects sponsored by local government. The project prioritization method in Chapter 4 aligns project criteria with goals; the goals in turn are supported by public input. But public input can be better used to generate the ideas for improvements.

9.6 BICYCLE and PEDESTRIAN PROJECTS

The MPO developed lists of regional bicycle/pedestrian improvements. The projects are listed on Tables 9-1 to 9-3 and are shown in Map 9-1. Projects listed in Tier 1 are likely to be built within 5 years. Tier 2 projects are likely to be built in 5 to 15 years, and Tier 3 projects are long range projects and may be built in 15 or more years. The Farmington MPO and the participating entities will work together to secure funding for these projects. In practice, projects have most often built in phases depending on funding and right-of-way availability.

TABLE 9-1 – Tier 1 Regional Bicycle/Pedestrian Priorities in the MPO

Map Num	Road/Facility Name	City or Area	From Road/ Place	To Road/ Place	Type of Facility	Location Type/Surface	Length	Est. Project Cost	Draft Tier in 2040 MTP
18	Foothills	Farmington	Rinconada	Mesa del Oso	Bikelanes and Multimodal path	On- and off-road/Hard	2400	$1,100,000	Tier 1
33	Riverside-Townsend Trail	Aztec	West side of Riverside Park	Loop back to west side of Riverside Park	Multimodal	Off-road/Crusher fines	8700	$321,000	Tier 1
14	20th Street Sidewalk Ph 3	Farmington	Fairview	Clayton	Sidewalk	Separated from road/hard	2600	$340,590	Tier 1
11	Orchard Street Pedestrian Corridor	Farmington	Main Street	Animas River	TBD sidewalks and bike lanes	On road/Hard	5280	$2,200,000	Tier 1
20	Anesi Trail	Farmington	Herrera	Largo and Rail Road	Multimodal	Off-road/Crusher fines	14800	$338,132	Tier 1
16	College Blvd Bike Lanes	Farmington	Piedra Vista HS	Sandalwood	Bike lanes	On road/ Hard	2500	$190,000	Tier 1
26	Lake Farmington	Farmington	Lake Farmigton	Around Lake Farmington	Multimodal	Off-road/Crusher fines	16370	$384,000	Tier 1
22	Wildflower Mesa Sidewalk	Farmington	Wildflower Parkway	Mesa Vista Middle School	Sidewalk	On road/concrete	800	$165,000	Tier 1
12	Hydro Plant Road Sidewalk	Farmington	E Murray	S Butler	Sidewalk	On road/concrete	2503	$169,384	Tier 1
43	Vereda del Rio San Juan River Trail, Phase II	Bloomfield	Existing trail	0.324 Miles East	Multimodal	Multi-Use/Asphalt	1710	$199,636	Tier 1
44	Vereda del Rio San Juan River Trail, Phase III	Bloomfield	End Phase II	0.495 Miles East	Multimodal	Multi-Use/Asphalt	2620	$203,050	Tier 1
15	Butler to San Juan College along Sunrise	Farmington	Butler	San Juan College	Multimodal	Multi-Use Path/Concrete	4700	$274,000	Tier 1
41	East Blanco Blvd	Bloomfield	US 550 N (1st St)	US 64	Bike lanes and sidewalks	On road /Concrete	14200	$1,662,000	Tier 1
13	San Juan and East Main	Farmington	San Juan/ Butler	E Main/ Piñon Hills	Wide sidewalk/ path	Multi-Use Path/Hard	24500	$1,424,000	Tier 1
3A	Pinon Hills Blvd	Farmington	30th	Sports Complex	Bike lane (westbound)	On road /Hard	3500	$286,000	Tier 1
24	Wildflower Parkway	County	Approx. at Yarrow	CR 350	Multimodal	Multi-Use Path/Hard	19500	$1,132,000	Tier 1
29	CR 350	County	US 64	NM 516	Bike lanes	On road /Existing	39700	$3,244,000	Tier 1
25	Path parallel to US 64	Bloomfield, Farmington, County	Andrea/US 64	Ruth Ln/US 64	Multimodal	Multi-Use Path/Hard	42000	$2,440,000	Tier 1
37	Connect from Animas River trail to Bloomfield	Aztec, Bloomfield	Hartman Park (Aztec)	Blanco/Ruth Ln (Bloomfield)	Multimodal	Multi-Use Path/Hard	37300	$2,168,000	Tier 1
32	Oliver-McWilliams Trail	Aztec	50 acre open space	Ruins Road trail junction	Multimodal	On- and off-road/Hard	8600' on-road & 4600' off-road	$1,972,000	Tier 1
35	Ruins Road Trail	Aztec	Chaco/NM 516	Trail Junction	Multimodal	Off-road/Crusher fines	4600	$84,000	Tier 1
1	Kirtland Walk Path	County	Kirtland Elementary on CR 6446	US 64 and CR 6575	Sidewalk and multimodal path	On- and off-road/Hard	16025	$1,000,000	Tier 1
2	Kirtland path (larger project than "walk path")	County	Troy King/ Twin Peaks	CR 6675/ CR 6100	Bike rt on Twin Pks & CR 6500; Multi-use path on CR 6400 & CR 6100	On road, multi-use path/Hard	14100	$820,000	Tier 1
							Total Est. Project Cost	$13,146,000	

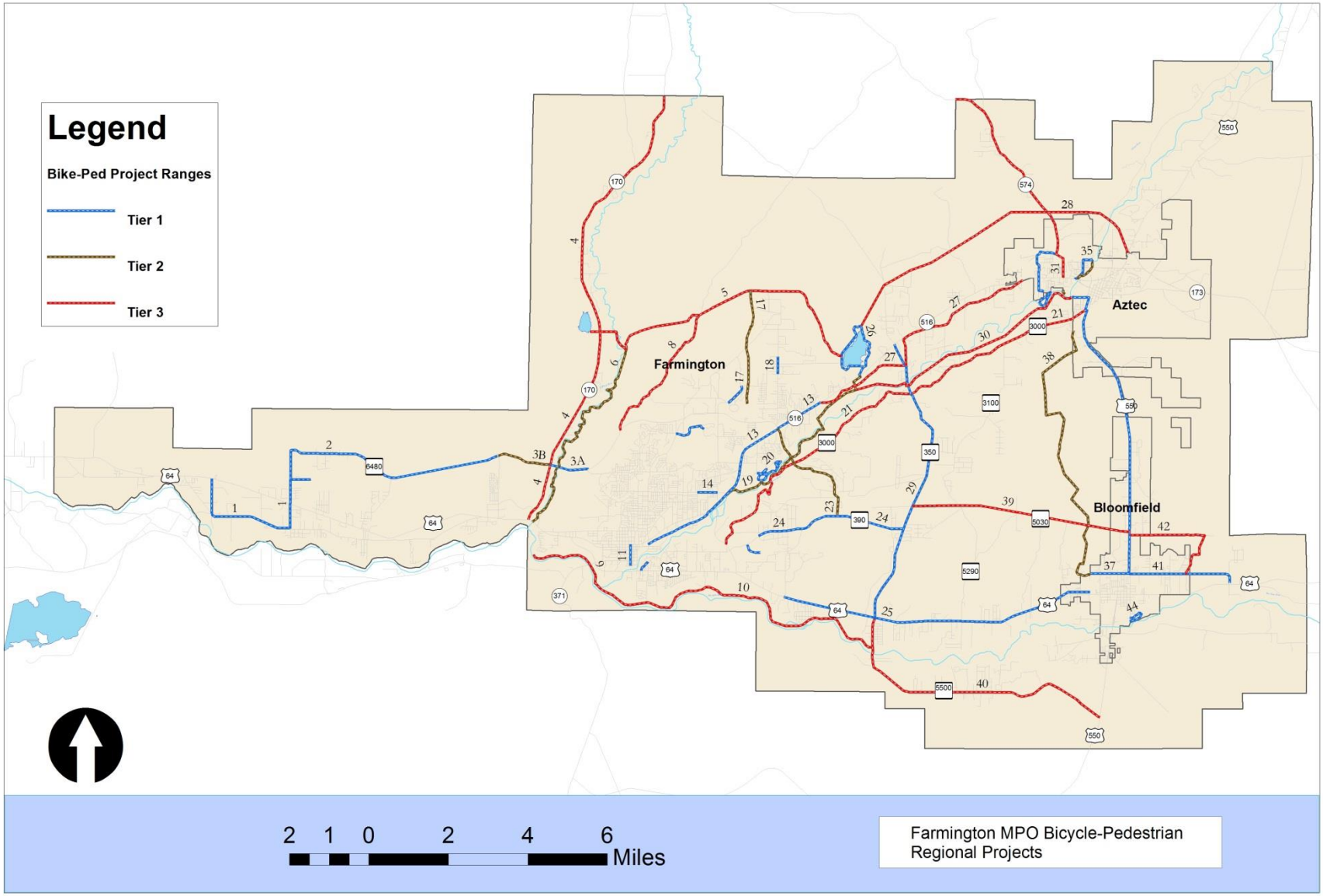
TABLE 9-2 – Tier 2 Regional Bicycle/Pedestrian Projects

Map Num	Road/Facility Name	City or Area	From Road/ Place	To Road/ Place	Type of Facility	Location Type/Surface	Length	Est. Project Cost	Draft Tier in 2040 MTP
3B	Twin Peaks Rd from NM 170 to Troy King Road	Farmington, County	NM 170	Troy King Rd	Bike lanes	On road/Hard	6575	$672,500	Tier 2
38	Blmfld-Aztec Hike/Mtn Bike trail	Aztec, Bloomfield	Wilderness Park (west of Ruth)	S. Rio Grande (Aztec)	Multimodal (mtn bike/ hike)	Off-road/Crusher fines	40800	$245,000	Tier 2
19	Animas River/E. Main	Farmington, County	Gateway Park	Farmington Lake	Multimodal	Off-road/Crusher fines	42300	$255,000	Tier 2
23	PHB Extension/ CR 3900	Farmington, County	CR 390/ CR3900	PHB/ E Main	Multimodal	Multi-use Path/Hard	26000	$1,887,500	Tier 2
36	Riverside Trail	Aztec	North end of River trail	Aztec Ruins via River Trl	Multimodal	Off-road/Crusher fines	5250	$733,650	Tier 2
17	Lions Wilderness Trail	Farmington	Lions Wild Pk	Fmtn Lake Trail	Multimodal	Off-road/Crusher fines	15800	$95,000	Tier 2
6	La Plata River	Farmington, County	Sports Complex	Jackson Lake Junction	Multimodal	Off-road/Crusher fines	22400	$135,000	Tier 2
7	La Plata River	Farmington	Westland Park	Sports Complex	Multimodal	Off-road/Crusher fines	6700	$40,000	Tier 2
51	Riverside Trl B	Aztec	Existing river trail	Existing Riverside Pk loop trail	Multimodal	Off-road/Crusher fines	800	$130,000	Tier 2
							Total Est. Project Cost	$4,193,650	

Table 9-3 – Tier 3 Regional Bicycle/Pedestrian Projects

Map Num	Road/Facility Name	City or Area	From Road/ Place	To Road/ Place	Type of Facility	Location Type/Surface	Length	Est. Project Cost	Draft Tier in 2040 MTP
30	Animas River Trail	Aztec, Farmington	South of Farmington Lk	Hartman Park (Aztec)	Multimodal	Off-road/Crusher fines	34000	$262,400	Tier 3
27	Old Aztec Hwy & CR 3050	County	NM 516/ CR 3520	NM 516/ CR 3050	Bike route	On road/Existing	35000	$0	Tier 3
21	CR 3000	County	Browning Pkwy	US 550	Bike route	On road/Existing	63200	$0	Tier 3
9	San Juan River	Farmington, County	San Juan/ Animas River	River Bend Park	Multimodal	Off-road/Crusher fines	11300	$86,400	Tier 3
31	Light Plant Rd	Aztec, County	NM 516	MPO boundary	Bike route	On road/Existing	30600	$0	Tier 3
39	CR 5030	Bloomfield, County	CR 350	US 550	Multimodal	Multi-use Path/Hard	30600	$2,844,800	Tier 3
8	Glade Road	Farmington, County	PHB/Glade Rd	Farm Lake Trail	Multimodal	Off-road/Crusher fines	20400	$156,800	Tier 3
10	San Juan River	Farmington, County	San Juan/ Animas River	CR 5500	Multimodal	Off-road/Crusher fines	44000	$339,200	Tier 3
28	Farmington-Aztec route	Aztec, Farmington, County	Farmington Lake	US 550/ NM 173	Multimodal	Off-road/Crusher fines	44500	$342,400	Tier 3
5	Farmington Lake Trail	Farmington, County	Jackson Lake Junction	Farmington Lake	Multimodal	Off-road/Crusher fines	43700	$336,000	Tier 3
4	La Plata Rd (NM 170)	County	US 64	North end MPO boundary	Bike route	On road/Existing	63400	$0	Tier 3
40	CR 5500 (West Hammond)	Bloomfield, County	US 64	US 550	Bike Route (Bike lanes)	On road/Existing	39700	$0	Tier 3
42	CR 4935 (Arroyo)	Bloomfield	Arroyo/ E. Blanco	CR 4900 (Arizona)/ US 550	Bike route	On road/Existing	16200	$0	Tier 3
							Total Est. Project Cost	$4,019,200	

MAP 9-1 – Regional Bicycle/Pedestrian Improvements by Tier



9.7 BICYCLE and PEDESTRIAN POLICIES

Policies provide guidelines for future development of the walking and biking network. The policies offer an overall framework as to how and why bicycle and pedestrian facilities need to be implemented.

- For all new residential and commercial development, encourage the provision of complete pedestrian and bicycle facilities to create consistent networks rather than installing these facilities on a piece-meal basis.
- For rural areas (or low density areas) reasonable efforts should be made to obtain right-of-way (ROW) for future construction of pedestrian and bicycle facilities.
- Encourage construction of appropriate pedestrian and biking facilities simultaneously with the construction of new road projects and major road reconstruction projects for roads classified as collector and above.
- Locate applicable bicycle and pedestrian facilities in a safe and efficient manner along all arterial and collector streets. For example, for arterial roads with a speed limit greater than 30mph, consider building a separated multi-use trail in the vicinity of the road. Safety and convenience should be analyzed when determining whether to construct on-road or off-road facilities.
- Transit stops shall be ADA accessible and be connected to residential neighborhoods, commercial buildings, and retail shops by pedestrian and bicycle facilities.
- Each road classification should have typical road sections that incorporate applicable bicycle and pedestrian facilities.
- Maintain/preserve cross-development access in new developments so that new construction does not block off planned biking/walking paths.
- Provide a hearing process and public notification if a new development will block, disrupt, or interfere with an existing walk and/or bike route.
- Provide posted signs and on-road pavement markings to let motorists and bicyclists know when bike lanes end so that motorists and bicyclists know where/when to yield, merge or share the road.
- Publish the “rules of the road” for bicyclists, pedestrians, and motorists and make these publications available at public facilities such as libraries, city halls, motor vehicle division offices, and similar places.
- Sweep highway shoulders and bike lanes on a regular basis to minimize debris that has the potential to cause accidents.
- Preserve ROW for future facilities, use existing corridors, and ensure consistency with adopted plans. Bicycle and pedestrian projects can reduce or eliminate ROW acquisition costs when implemented in existing corridors. Utility, ditch, or other right-of-ways should be investigated as the potential location for multi-modal paths and trail projects.

9.8 BICYCLE and PEDESTRIAN FUNDING STRATEGIES

There are several ways to secure funding for the proposed improvements that have been identified. Beyond common funding options from the federal, state, and local levels, the Farmington MPO and the entities should proactively seek out other funding sources, whether through grants, private contributions, or creating a budget dedicated to funding the projects. Funding for the regional improvements will be a primary responsibility of the Farmington MPO. Federal funding that is awarded to entities of the Farmington MPO must be included in the TIP, and subsequently added into the Statewide TIP (STIP).

Federal Funding

Walking and biking improvements that focus on serving a transportation commuting purpose stand the greatest chance of receiving federal funding. While not all-inclusive, many regional walking and biking improvements could be funded from the following programs:

- National Highway Performance Program (NHPP)
- Surface Transportation Program (STP)
- Highway Safety Improvement Program (HSIP)
- Transportation Alternatives Program (TAP)
- Recreational Trails Program (RTP)

Local Funding

The local governments should dedicate or continue to dedicate a portion of road funding in the Capital Improvement Program (CIP) to the construction or maintenance of new and existing facilities. Opportunities to apply for grants should be actively pursued. To complement the development of the regional walking and biking system, local governments should consider:

- Funding pedestrian and bicycle improvements at the same time new roads are built or existing roads are retrofitted.
- Setting aside local funds that are dedicated to walking and biking improvements.
- Road impact fees that may be used for motorized and non-motorized improvements.
- Establish Improvement Districts or Transportation Districts for funding projects in the district's area.

9.9 BICYCLE and PEDESTRIAN IMPLEMENTATION STRATEGIES

The Bicycle/Pedestrian Plan outlines several strategies for funding projects and implementing policies.

Strategy 1 – Responsibilities and Support

The Farmington MPO will coordinate the Bicycle/Pedestrian Plan. Activities include:

- Assist in the adoption and implementation of the Complete Streets Design Guidelines as local government standards
- Develop a prioritization process for regional projects
- Assist local entities and NMDOT to obtain federal funding
- Monitor and update the Bicycle/Pedestrian Plan as necessary
- Ensure the plan is consistent with the MTP and other comprehensive transportation plans
- Assist with development review to ensure new subdivisions and businesses follow approved policies
- Consult with local organizations and the general public who are involved with walking and biking improvements

The local governments will develop the elements of the Bicycle/Pedestrian Plan. Activities will include:

- Construct applicable walking and biking facilities in conjunction with maintenance projects
- Incorporate applicable elements of this plan into local planning documents and processes
- Dedicate local funding to the construction of new pedestrian and bicycle facilities
- Modify the CIP to fund walking and biking improvements
- Ensure that all traffic control plans comply with MUTCD
- Review the Bicycle/Pedestrian Plan as part of the subdivision and development review process
- Coordinate local projects among the cities in preparation for the regional projects
- Map out projects using assessor and township maps and aerial photography to better define locations for the projects

Strategy 2 – Multi-modal Improvements

The importance of incorporating multi-modal aspects into all road projects is becoming increasingly more emphasized. From the national level to the local level, legislation is being passed to implement “complete streets”, meaning roads will accommodate all

types of users. The Farmington MPO and its members should actively pursue ways to incorporate multi-modal elements into new improvements and retrofitted/reconstructed projects.

Strategy 3 – Educate and Encourage Walking and Biking
Public awareness and acceptance of walking and biking as a viable means of transportation will require the use of effective education and encouragement methods. While the Bicycle/Pedestrian Plan describes tools for providing more mode choice, the MPO should investigate ways to get people involved and interested in walking and biking.

Strategy 4 – Maintain the Facilities
Encourage local government in their efforts for maintaining the transportation system, and track progress through performance measurement reporting. Sufficient maintenance of current walking and biking facilities requires local and state government staff time and funding. Regular inspection, cleaning, and striping are critical to user safety.

Strategy 5 – Pedestrian and Bicycle Amenities
Pedestrians and bicyclists routinely need amenities to complement their walking or biking trip. Possible ideas for cities and local business to implement include installing benches and bike racks at public destinations, and posting signs and informational kiosks.

9.10 BICYCLE and PEDESTRIAN ACTIONS

The Farmington MPO will investigate implementing these actions to further promote the plan:

- Continue to convene the Complete Streets Advisory Group to ensure that bicycle/pedestrian planning activities and projects constructed by the entities within the Farmington MPO are consistent with the strategies and policies outlined in the Bicycle/Pedestrian Plan. After completion of the Design Guidelines, the Group may function to coordinate implementation, organize ongoing educational efforts, or other related tasks.
- Incorporate pedestrian safety as part of the MPO's Safety Plan to be developed.
- Collect data on bicycle and pedestrian trips in an effort to prioritize investments.
- Establish bicycle/pedestrian targets for the creation of a mode split component in the MPO traffic model.
- Assist local governments and school districts with applying for federal Safe Routes to School funding.
- Create a Bicycle Suitability Map.
- Assist local entities to created funding dedicated to bicycle and pedestrian projects annually.

9.11 EQUESTRIAN

Equestrians in the MPO area typically ride for recreation or to participate in competitive trail rides. At times, they also ride on public roads or multi-use paths to reach trail destinations. In identifying potential locations for equestrian trails, safety concerns are crucial and increase awareness of protocols for the safety of all is needed. Different situations to be aware of include minimizing the potential for conflicts between equestrians and other modes of transportation (bridges, bike/pedestrian trail crossings, motorized and non-motorized traffic). Having a distance of 15 miles of trail is needed for competitive trail rides, and these events draw visitors from outside the area. There existing several equestrian facilities and popular trails on public and private land in and around the MPO area, including the Glade Recreation Area, Navajo Dam, Piñon Mesa, Farmington Lake, the Sheriff's Posse venue, and McGee Park.

To assist the equestrian community in preserving and improving the ability to ride within the area, the MPO could provide a forum for local stakeholders. This work would identify locations for trails and coordinate efforts with other interested parties such as local, state, federal land owners, and oil and gas and ditch companies which own land and rights-of-way where equestrian uses may occur. Public input provided by equestrians highlighted several areas of concern. (Meeting notes are included in the appendix with other public comment.)

Needs and issued to be addressed include:

- Equestrians are moved further and further out from recreational areas by motorized vehicle users.
- Recreational lands need to be marked to include equestrian use, and signs need to list horses as being allowed.
- In order to safely cross roadways and other facilities, more crossings and connections, such as culverts, could be designated and prepared. This is especially needed for crossing all highways and other major roads.
- Coordination needs to occur in order to connect more riding locations and to use existing rights-of-way such as irrigation ditches, trail parks, pipeline rights-of-way and oilfield roads.
- Trails for horses located along but separated from other users are ideal, and wear only minimal path. Because of safety concerns, the separation horses need from others depends on what the horse is passing.
- Horses can and do use paths and trails, including hard surfaces, which are also used by pedestrians, bicyclists, and motorized vehicle users.
- More widespread education is needed about how to behave around horses, for the protection of the other users of trails and roads, the rider and the horse. (This includes yielding the right-of-way to the horse and vocally acknowledging the horse's rider.)

- The MPO area is a regional destination for equestrians during winter months and more trail connections will improve the ability to publicize the area's amenities.
- Like other trail users, equestrians hope to see more trail connections made between the communities, and to riding venues.

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10 | Public Safety & Health

10.1 OVERVIEW

One of the seven national goal areas of MAP-21 is "To achieve a significant reduction in fatalities and serious injuries on all public roads". Safety is addressed during design of new roadways, intersections, and bicycle/pedestrian facilities. Safety is measured by the reduction in crash rates and can be achieved through the implementation of a variety of existing and innovative techniques.

10.2 ROADWAY SAFETY

The State of New Mexico ranks fairly high above the national scale for vehicle crash and fatality rates *(NMDOT Traffic Safety Bureau 2006 Annual Crash Report)*. NMDOT completed its Comprehensive Transportation Safety Plan (CTSP) in 2006 which presented 12 safety emphasis areas and 94 strategies. As of 2009, nearly 70 percent of the strategies are being implemented to some degree. Data has shown that since 2006, total highway fatalities dropped by 15 percent, a good indication that the strategies in the CTSP are having an effect.

The NMDOT Traffic Safety Bureau has data on the number of crashes for each entity from 2007 to 2011. Table 8-1 illustrates crash data for the top 10 cities in the State of New Mexico. Not surprisingly Albuquerque has the highest number of crashes in this time period, with as many as 20,951 in a year, as the State's largest city with over 522,804 residents. Farmington was fourth on the list, with up to 1,601 crashes in a year, over the same time period. A closer examination reveals that the crashes per 1,000 city residents, Farmington crash rate of 29.39 crashes per 1,000 residents is just below Albuquerque's figure of 30.82 crashes per 1,000 residents.

Table 10-1 –Top 10 crashes by entity in New Mexico

Rank	City	Total Crashes					2011 Population	Crashes per 1,000 City Residents
		2007	2008	2009	2010	2011		
1	Albuquerque	20,951	18,961	18,302	16,491	17,035	552,804	30.82
2	Las Cruces	3,460	3,167	3,200	3,246	3,354	99,665	33.65
3	Santa Fe	2,892	2,709	2,413	2,236	2,200	68,642	32.05
4	Farmington	1,601	1,508	1,393	1,282	1,330	45,256	29.39
5	Rio Rancho	1,209	1,064	1,251	1,176	1,196	89,320	13.39
6	Roswell	1,225	1,323	1,198	1,159	1,071	48,546	22.06
7	Hobbs	945	935	731	800	886	34,488	25.69
8	Clovis	954	853	1,074	944	800	38,776	20.63
9	Alamogordo	736	677	702	682	758	31,327	24.20
10	Gallup	736	757	760	760	737	22,329	33.01
All Other Cities		14,395	14,487	15,132	14,026	13,860	-	-
Statewide Total		49,104	46,441	46,156	42,802	43,227	2,078,674	20.80

Table 10-2 –Top 10 crashes by county in New Mexico

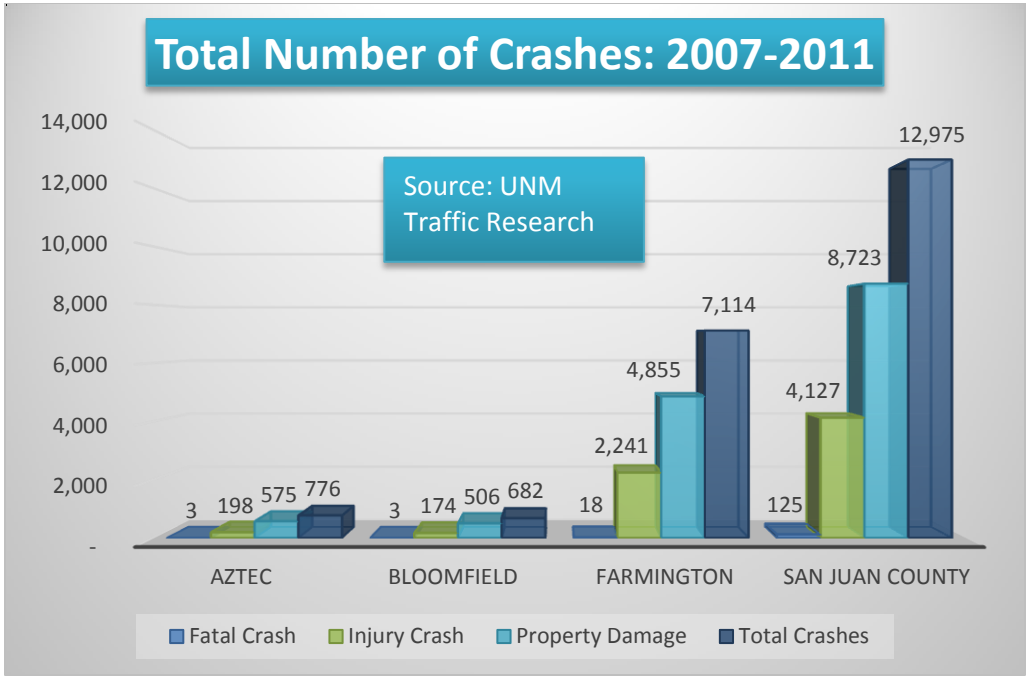
2011 Rank	County	Total Crashes					Percent of All 2011 Crashes	Percent Change 2007 to 2011	Percent Change 2010 to 2011
		2006	2008	2009	2010	2011			
1	Bernalillo	21,241	19,456	18,716	17,005	17,447	**40.4%**	-17.9%	**2.6%**
2	Doña Ana	4,051	3,995	4,137	4,140	4,177	**9.7%**	**3.1%**	**0.9%**
3	Santa Fe	3,808	3,763	3,511	3,325	3,283	**7.6%**	-13.8%	-1.3%
4	San Juan	2,909	2,843	2,619	2,363	2,431	**5.6%**	-16.4%	**2.9%**
5	Sandoval	1,995	1,889	1,964	1,949	1,821	**4.2%**	-8.7%	-6.6%
6	Lea	1,486	1,471	1,259	1,300	1,447	**3.3%**	-2.6%	**11.3%**
7	Chaves	1,514	1,647	1,494	1,413	1,342	**3.1%**	-11.4%	-5.0%
8	McKinley	1,382	1,178	1,318	1,298	1,332	**3.1%**	-3.6%	**2.6%**
9	Otero	1,235	1,057	1,104	1,101	1,165	**2.7%**	-5.7%	**5.8%**
10	Curry	996	1,007	1,225	1,095	940	**2.2%**	-5.6%	-14.2%
All Other Counties		8,701	8,134	8,809	7,813	7,842	**18.1%**	-9.9%	**0.4%**
Total		49,318	46,440	46,156	42,802	43,227	**100.0%**	-12.4%	**1.0%**

Table 10-3 – Top 10 highest crash fatality rates by county in New Mexico

2011 Rank[1]	County	Fatalities in Crashes					Percent of all 2011 Fatalities	Percent Change 2007 to 2011	Percent Change 2010 to 2011
		2007	2008	2009	2010	2011			
1	Bernalillo	68	57	57	46	44	**12.5%**	-35.3%	-4.3%
2	McKinley	39	32	34	25	33	**9.4%**	-15.4%	**32.0%**
3	San Juan	40	30	15	30	28	**8.0%**	-30.0%	-6.7%
4	Santa Fe	18	14	23	26	18	**5.1%**	0.0%	-30.8%
4	Doña Ana	22	13	29	25	18	**5.1%**	-18.2%	-28.0%
6	Lea	15	16	13	20	15	**4.3%**	0.0%	-25.0%
7	Chaves	9	10	16	18	14	**4.0%**	**55.6%**	-22.2%
7	Otero	8	9	8	12	14	**4.0%**	**75.0%**	**16.7%**
9	Valencia	13	10	5	11	13	**3.7%**	0.0%	**18.2%**
9	Cibola	13	7	9	9	13	**3.7%**	0.0%	**44.4%**
All Other Counties		168	168	152	127	141	**40.2%**	-16.1%	**11.0%**
Total		413	366	361	349	351	**100.0%**	-15.0%	**0.6%**

Table 10-4 – Top 10 highest pedestrian fatality numbers by county in New Mexico

2011 Rank[1]	County	Pedestrian Fatalities in Crashes					Percent in 2011
		2007	2008	2009	2010	2011	
1	Bernalillo	18	14	11	9	9	25.0%
2	McKinley	10	7	9	1	6	16.7%
3	San Juan	7	2	3	6	5	13.9%
4	Santa Fe	2	2	4	3	3	8.3%
5	Rio Arriba	1	1	2	0	2	5.6%
5	Chaves	0	1	1	0	2	5.6%
5	Otero	0	1	2	4	2	5.6%
8	San Miguel	0	1	1	0	1	2.8%
8	Socorro	1	1	0	0	1	2.8%
8	Sandoval	2	2	0	0	1	2.8%
8	Lea	1	1	1	0	1	2.8%
8	Taos	2	1	0	1	1	2.8%
8	Cibola	2	1	0	0	1	2.8%
8	Guadalupe	1	0	0	0	1	2.8%
All Other Counties		5	5	7	10	0	0.0%
Total		52	40	41	34	36	100.0%



Grant Avenue, San Francisco, CA. Photo: Renee S. Swen

25 mph

Grant Avenue in San Francisco runs through China Town. This narrow street is typically bustling with shops and street activity - keeping drivers alert and cautious.

Second Street, Long Beach, CA. Photo: Dave Amos

25 mph

With street trees, parallel parking, and frequent crossings, it feels natural to drive 25 miles per hour or less on Second Street in Long Beach, CA.

Ocean Boulevard, Myrtle Beach, SC. Photo: Google

25 mph

With wide lanes, Ocean Boulevard once resembled an expressway more than an urban street, encouraging speeds much greater than the posted 25 mph speed limit.

Design Speed vs. Posted Speed

When considering how to improve the safety of our streets, one important element to consider is the posted speed vs the design speed. For example, of the images on the right, the top two incorporate specific design elements that helps keep speeds at or below 25 mph. The top image has a narrow lane juxtaposed next to landscaping, parked vehicles, and building enclosures which influence motorists to keep alert for potential passing pedestrians. The second image illustrates a shared travel lane and bike lane in a downtown district. The motorist must navigate at slower speeds to accommodate multi-modal travel lanes. The bottom image is also a 25 mph zone; however, it accommodates wider travel lanes, has no opposite lane travel barriers and has four-lanes of traffic. A motorist will feel compelled to navigate this street at or above the posted speed limit.

A common practice in New Mexico is to establish Safety Corridors which reduce the speed limit along highway corridors such as the one created between Farmington and Kirtland on US 64. Although motorists are made aware of the safety corridor signage, design speed is not taken into consideration which forces compliance to the speed limit by law enforcement alone. Design speeds can help ensure driving conditions and goals are met, by traffic calming measures such as external landscaping or infrastructure treatments.

Roadway Safety Goals

The focus of vehicle safety should be on reducing the chances of a crash occurring through both infrastructure improvements and policy enforcement:

- Fund and prepare safety studies for area corridors with high levels of crashes to determine what measures can be taken to reduce the number of crashes
- Fund and prepare corridor access management studies that reduce conflict points and control turning movements

Table 10-5 - Crash Rates by Entity (per thousand people)

	2005	2006	2007	3 Year Change
Aztec	31	36	28	-3
Bloomfield	23	20	19	-4
Farmington	39	36	38	-1
San Juan County	24	23	22	-2
State of New Mexico	25	25	25	0

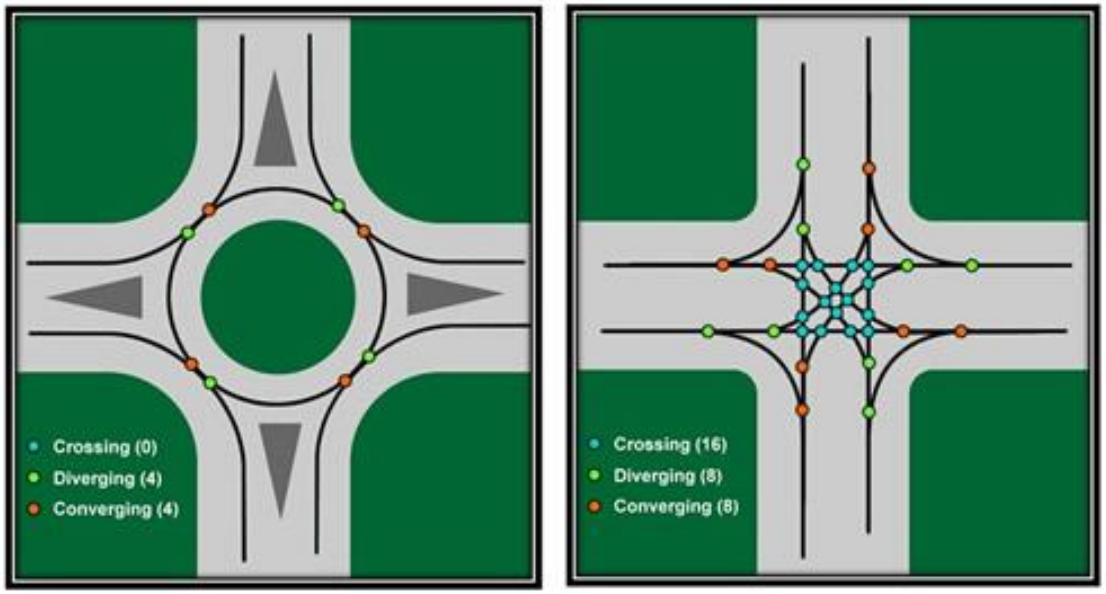
(Source: NMDOT Traffic Safety Bureau – 2005-2007 Annual Reports for each entity; Crash rate is number of crashes divided by entity population, times 1000)

10.3 INTERSECTION SAFETY

Most often, crashes occur at an intersection. A typical 2-lane intersection includes 32 conflict points based on through and turning movements. Driver inattentiveness and red light running violations are common causes for intersection crashes. Pedestrians and bicyclists often need to negotiate an intersection, which can increase the potential for conflict even more. A roundabout has the ability to reduce the conflict points from 32 down to 8 depending on the number of lanes.

Several approaches are already in place for making intersections safer:

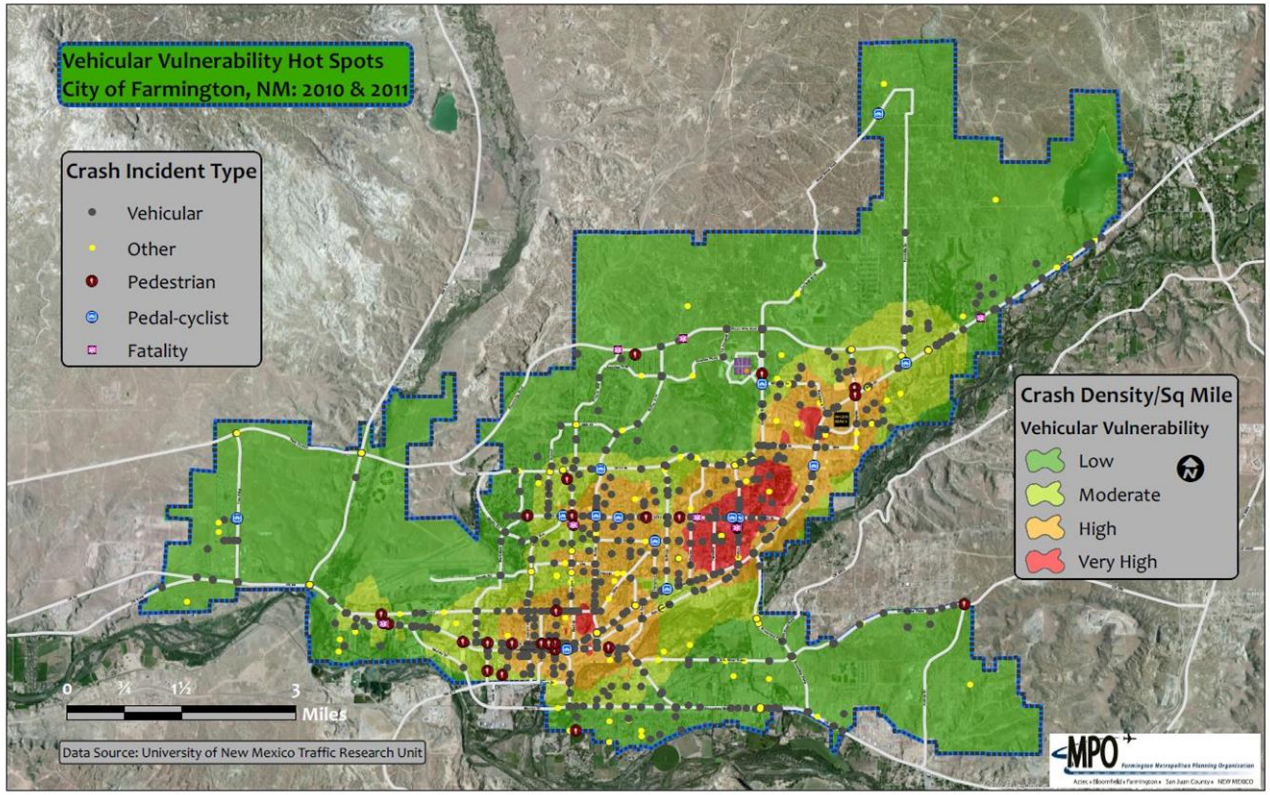
- Improving corner sight distances by keeping corners free of signs, landscaping, and other obstacles
- Replacing a signalized intersection with a roundabout
- Installing pedestrian countdown signals
- Installing pavement flashers that are activated by pedestrians
- Painting crosswalks or using highly visible material for crosswalks
- Incorporate traffic calming
- Implement "road diets", which reduce the number of travel lanes



Top Crash Locations

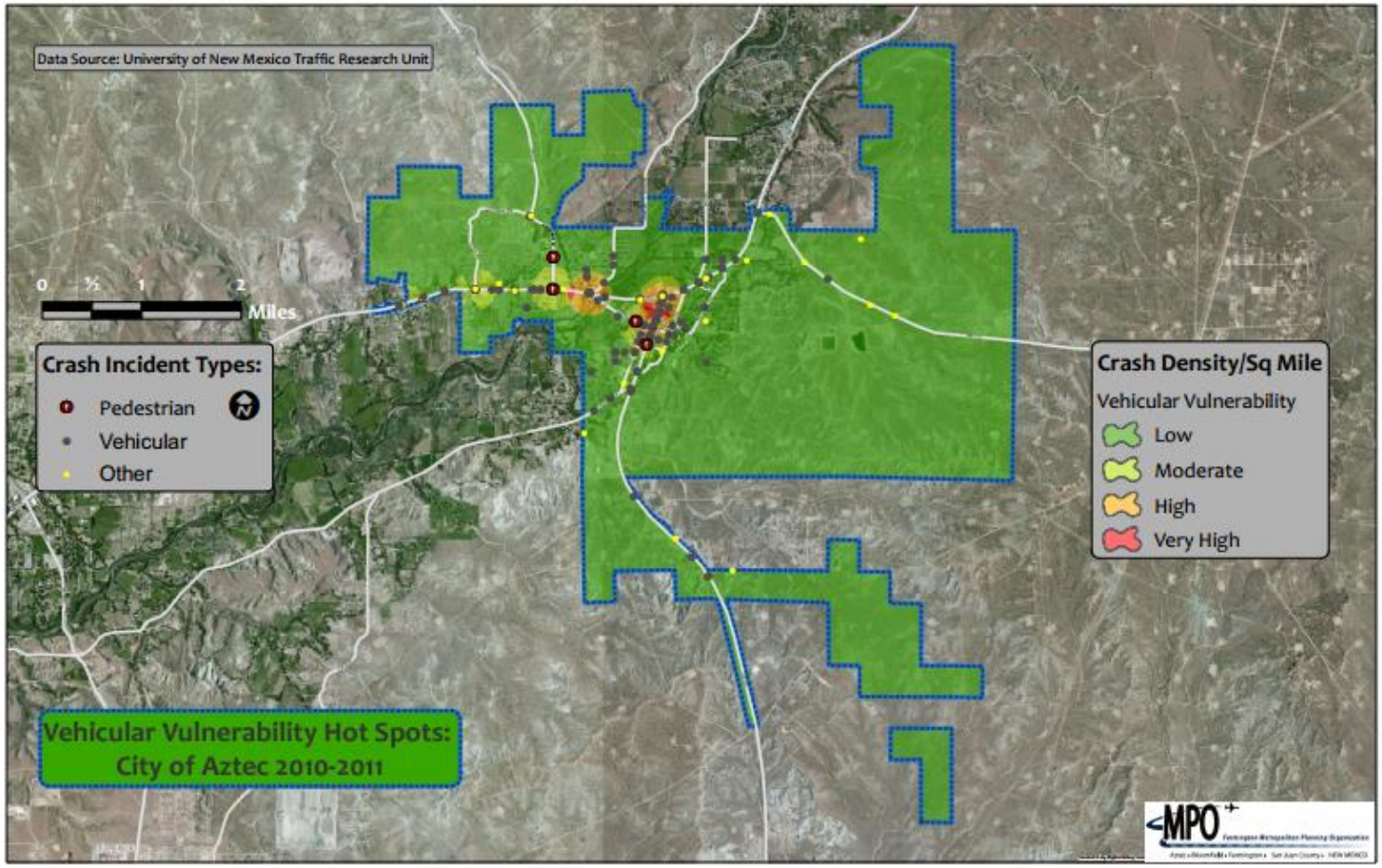
Crash data obtained from the NMDOT Traffic Safety Bureau describes certain corridors and specific intersections that have the highest number of crashes. The MPO can use this information to inventory and prioritize safety improvements to achieve a reduction in the number of crashes at these locations. For each entity, these roads tend to have the highest volumes of daily traffic.

Map 10-1 – Crash Hot Spot Mapping City of Farmington between 2010 and 2011



Farmington		
• 20th Street at Butler	• NM 516 at E. Main St	• NM 516 at 30th
• 20th Street at E. Main St	• NM 516 at Cliffside	•

Map 10-2 – Road Intersections with the Most Crashes by San Juan County between 2010 and 2011



San Juan County	
• US 64 and CR 6500	• US 64 and CR 350
• NM 516 and CR 350	• US 64 and CR 6100

Table 10-2 – Road Intersections with the Most Crashes by Entity between 2010 and 2011

Aztec		
• NM 516 (Aztec Blvd) at Oliver	• NM 516 at Chaco	• NM 516 at Ruins Rd
• NM 516 at Lt. Plant Rd	• US 550 (Main Ave) at NM 516	•

(Source: NMDOT Traffic Safety Bureau – 2010-2011 Annual Reports for each entity)

Intersection Safety Techniques

Based on the National Cooperative Highway Research Program (NCHRP) Report 500 - Volumes 5 & 12, the Federal Highway Administration is considering new technologies to address intersection safety. Pilot projects using some of the techniques are in place; however, the FHWA acknowledges that substantial data has not yet been collected regarding the full benefit of these technologies:

- Investigate the potential benefit of innovative technologies for pedestrians crossing at intersections
- Construct raised pavement markers for illuminating crosswalks or turning movements at intersections
- Install red signal enforcement lights to reduce red light running violations
- Embed LEDs into traffic control signs for better visibility

Intersection Safety Goals

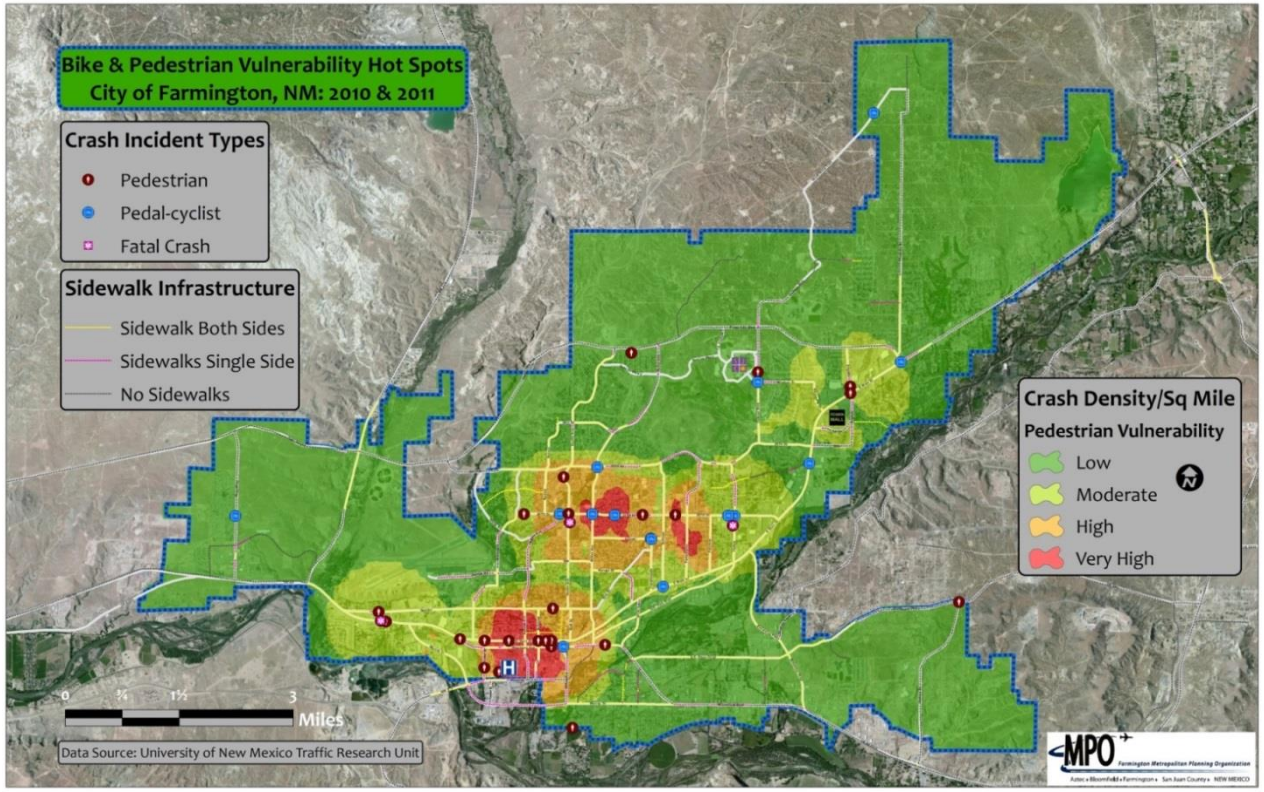
Intersection safety goals include:

- Maintain clear sight lines at all intersections by developing and enforcing standards that prevent obstructed sight triangle
- Construct applicable pedestrian amenities that increase safety at intersections with multiple lanes

10.4 BICYCLE and PEDESTRIAN SAFETY

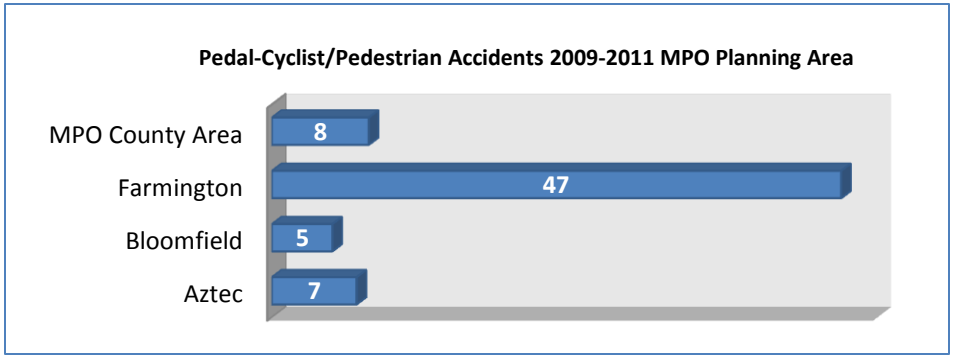
In the State of New Mexico, bicyclists and pedestrians have all the rights and responsibilities as a vehicle when traveling on a roadway. Through improved design, markings, education and better awareness, motorists and bicyclists can share the road and reduce the chances of potential conflict. Pedestrians can safely walk along and cross streets.

The 2011 Annual Report from the Traffic Safety Bureau indicates improper driving and driver inattention are the leading causes of crashes. From 2009 to 2011, there were a total of 67 pedestrian crashes combined within the three cities and the urbanized area of San Juan County. Hot spot analysis helps communities know where to address safety as it relates to pedestrian activities. As seen below, the City of Farmington is experiencing high vulnerability in and around 20th Street and W. Main Street in the downtown area.



(Source: NMDOT Traffic Safety Bureau – 2009-2011 GIS Isolated Data)

Bicycle/Pedestrian Safety Goals



- Publish information that outlines safety tips to educate motorists about the rights of bicyclists
- Inventory and prioritize sidewalks that need to be reconstructed or retrofitted
- Build bike lanes or bicycle facilities and sidewalks at the same time new roads are built or major reconstruction of existing roads occurs
- Incorporate Complete Streets policies and design guidelines and traffic calming that promote equal consideration of needs for motorists, transit users, bicyclists, and pedestrians
- Implement innovative crosswalk technologies that reduce vehicle speeds and make pedestrians more visible to motorists
- Educate motorists, bicyclists and pedestrians on rules of conduct and the results of crashes with vehicles

10.5 SAFE ROUTES TO SCHOOL

The Safe Routes to School (SRTS) program is an initiative to make walking and biking to school a safer traveling endeavor for students through engineering improvements, educational trainings, encouragement activities, and enforcement practices. The program has been implemented by many schools and cities over the years.

In 2008, stakeholders in the City of Farmington, led by a Safe Routes to School Coordinator, created a SRTS Committee to encourage participation in the SRTS program. The Coordinator started with holding events and identifying safety concerns at Mesa Verde Elementary. As the program grew, interest spread to two other schools in Farmington – McKinley Elementary, Apache Elementary, Ladera Elementary and Animas Elementary – through the efforts of parents, teachers and administrators at those schools.

In 2009 the City of Farmington successfully received Phase 1 funding through the federal SRTS program. The funding has been used for various school activities to promote the program as well as for developing Action Plans for the participating schools. The Action Plans outline improvements and strategies and parties involved to achieve safer walking and biking routes for our students.

Various improvements have been identified or completed by each of the 5 participating schools:

Apache Elementary	Ladera Elementary	McKinley Elementary	Animas Elementary	Mesa Verde Elementary
• Improve sidewalks along Apache St near school grounds. Completed 2014	• Improve sidewalks near the school grounds	• Mark a school zone • Raised cross-walk. Completed 2014	• Start SRTS program. Completed 2014	• Improve sidewalks from Silver Ridge neighborhood to sidewalk network along College Blvd. (Completed 2014)
• Construct a new pedestrian walkway along the east side of the parking lot to connect the school building to the sidewalk along Apache St	• Construct a new roundabout at the south parking lot	• Evaluate traffic conditions along Monterey St. to determine if signage or engineering improvements are needed	• Widen the sidewalk network along Hutton Ave.	• Increase the size of waiting areas at intersections that have crosswalks

The SRTS Coordinator and other parent volunteers have prepared several safety trainings and presentations at the schools. As parents and students are educated, they become more inclined to participate and assist with promoting the program. The schools are in the early stages of developing walking and biking goals. Through the efforts of those involved, each school will soon develop a successful and sustainable SRTS program.

Safe Routes to School Goals

- Achieve a 20% walking ratio for each participating school (the percentage of students who walk to school)

- Have other schools and communities join the Safe Routes to School program each year
- Perform at least one SRTS activity at each participating school each year

10.6 PUBLIC HEALTH

The transportation system can impact public health in positive and negative ways. Streets and trails can provide venues for exercise and connect the community to recreation and healthcare. Unsafe locations on streets or air pollutants can have can have near-term and long-term negative impacts. There is increasing use of health analysis tools to use in evaluating projects and policies in any discipline, and they can be employed in planning and designing the transportation system. Public health is also included as a goal and criteria within the project prioritization methodology.

Public Health & Urban Planning: Common Roots

With the aftermath of the industrial revolution leading to unsanitary housing and living conditions, the professional fields of public health and urban planning once converged on policies to improve public health which lead to a decrease in the rate and spread of infectious diseases (cholera, typhoid and others). Zoning regulations and planning movements such as the Garden City and City Beautiful movements in the early 20th Century, shifted housing previously juxtaposed to polluting factories into locations better suited for the working class. With medical breakthroughs and new zoning standards, macro-level policies and coordination amongst these professions shifted to individual lifestyle risk factors in the public health sector, while urban planners began designing suburbs outside of the urban core.

Having eradicated most of the deadly infectious diseases, another health indicator of concern bore its ugly head in the form of chronic diseases such as heart disease, diabetes obesity and the like. According to the Centers for disease control, chronic diseases are the leading causes of death in the United States and account for 7 out of 10 deaths in America. Over 75% of our health care dollars are spent on treating chronic diseases. (Centers for Disease Control and Prevention, "Chronic Diseases and Health Promotion," Chronic Disease Prevention and Health Promotion Homepage, May 9, 2014 http://www.cdc.gov/chronicdisease/overview/

Health Impact Assessment

According to the National Research Council, a health impact assessment (HIA) is a systematic process that uses an array of data sources and analytic methods and considers input from stakeholders to determine the potential effects of a proposed policy, plan, program, or project on the health of a population and the distribution of those effects within the population. A HIA provides recommendations on monitoring and managing those effects. A HIA can be large or small depending on the time and scope of a project review.

Health in All Policies (HiAP)

As urban planners consider aesthetics, economic, and environmental impacts of place making, Health in all Policies (HiAP) considers how every plan, action, or program impacts health and well-being. (Linda Rudolph, *Health in All Policies: A guide for State and Local Governments*, American Public Health Association and Public Health Institute, 2013.)

According to the National Association of County & City Health Officials, (HiAP) is a change in the systems that determine how decisions are made and implemented by local, state, and federal government to ensure that policy decisions have neutral or beneficial impacts on the determinants of health. HiAP emphasizes the need to collaborate across sectors to achieve common health goals, and is an innovative approach to the processes through which policies are created and implemented.

11 | Security

11.1 OVERVIEW

As one of eight national planning factors of MAP-21, each MPO must plan for security as a way to safeguard travelers and the transportation system. Security planning involves effective communication and coordination among various emergency and enforcement agencies. Furthermore, plans for how the transportation system can effectively serve the needs of the public in the event of an emergency, or to prevent hazards and incidents, must be readily understood and utilized by these agencies.

11.2 EMERGENCY OPERATIONS and HAZARD MITIGATION PLANS

The San Juan County Office of Emergency Management, San Juan County and the cities of Aztec, Bloomfield and Farmington have developed an Emergency Operations Plan (EOP) for safety and security in the communities and the region. The EOP sets forth protocols of who will be involved in responding to emergencies and how the response occurs.

The Office of Emergency Management and the local governments have also created a Multi-Jurisdictional Natural Hazard Mitigation Plan (HMP). The plan identifies hazards most likely to impact the area, and policies and procedures to save lives, minimize injuries, protect property, and perform other essential activities. The HMP addresses drought, flooding, wildfire and wildland urban interface, and hazardous material transport. The plan assesses the risks of each hazard, and describes steps for implementing a mitigation plan. The HMP also identifies projects which are needed to improve the prevention of and response to these hazards.

11.3 SECURITY PLANNING and THE ROLE OF THE MPO

While the role of the Farmington MPO may be small in terms of security planning, the MPO can partner with various agencies in pursuit of hazard mitigation and improved emergency response. The MPO is encouraged to take the following steps related to security planning:

- Review local and statewide plans for emergency planning/security elements
- Include security needs into review of proposed projects and the transportation system as a whole, including transportation network connectivity
- Incorporate transit security planning into the MTP
- Define the role of public transportation operators, the MPO, and the state in promoting security
- Identify critical facilities and transportation system elements for evacuation planning
- Develop security goals and appropriate strategies
- Work with emergency response agencies for disseminating information to the public as quickly as possible
- Implement Intelligent Transportation Systems (ITS) technologies for emergency traffic flow, evacuation, etc.

There are a few roles local governments within the MPO can perform with regards to security planning:

- **Traditional** – The local governments incorporate system operations and management (O&M) into their ongoing transportation planning activities. The focus would be on specific O&M projects that arise as part of the transportation planning process, but the primary responsibility for operations-type projects would rest elsewhere, most likely with the region's operations agencies.
- **Convener** – The MPO would act as a forum where operations plans could be discussed and coordinated with other plans in the region. Regular meetings on operations issues would be held, but the MPO would still not be responsible for developing a regional operations plan.
- **Champion** – The MPO would work aggressively to develop a regional consensus on operations planning. MPO planners work with operating agencies to create programs and projects that improve system performance. The MPO takes the lead in developing regional agreements on coordinated operations.

Currently, the OEM and local government have taken the lead on security planning, with the MPO available for assistance when needed. At this time, it is very unlikely that the MPO, as a regional transportation planning forum, could program funding for O&M strategies for improving the abilities of the transportation system to handle emergency situations. Additional roles and responsibilities could be further studied and/or analyzed in the future.

11.4 SECURITY GOALS and STRATEGIES

In order to perform any type of role related to security, the MPO should consider the following strategies for achieving security goals:

- Locate funding for communications systems, such as ITS, and other technologies to disseminate information and speed response during incidents
- Identify the impacts of proposed projects on security and include security criteria in the project prioritization methodology (see Chapter 4)
- Provide a forum for security and safety agencies to coordinate prevention strategies
- Coordinate with security officials in development of prevention strategies
- Identify new strategies, technologies and projects that can help prevent events
- Conduct or fund vulnerability analyses on regional transportation facilities and services
- Secure management of data and information on transportation system vulnerabilities

11.5 EVACUATION PLANNING

In coordination with San Juan County Office of Emergency Management, the MPO has identified primary and secondary evacuation routes in the event that a security incident occurs (Map 11-1):

- **Primary Routes –** US 64, US 550, NM 516, Piñon Hills Blvd, CR 350, and NM 170
- **Secondary Routes** – NM 371, Twin Peaks/CR 6480, Wildflower/CR 390, East Blanco Blvd, NM 574, 20th St, 30th St, and Butler.

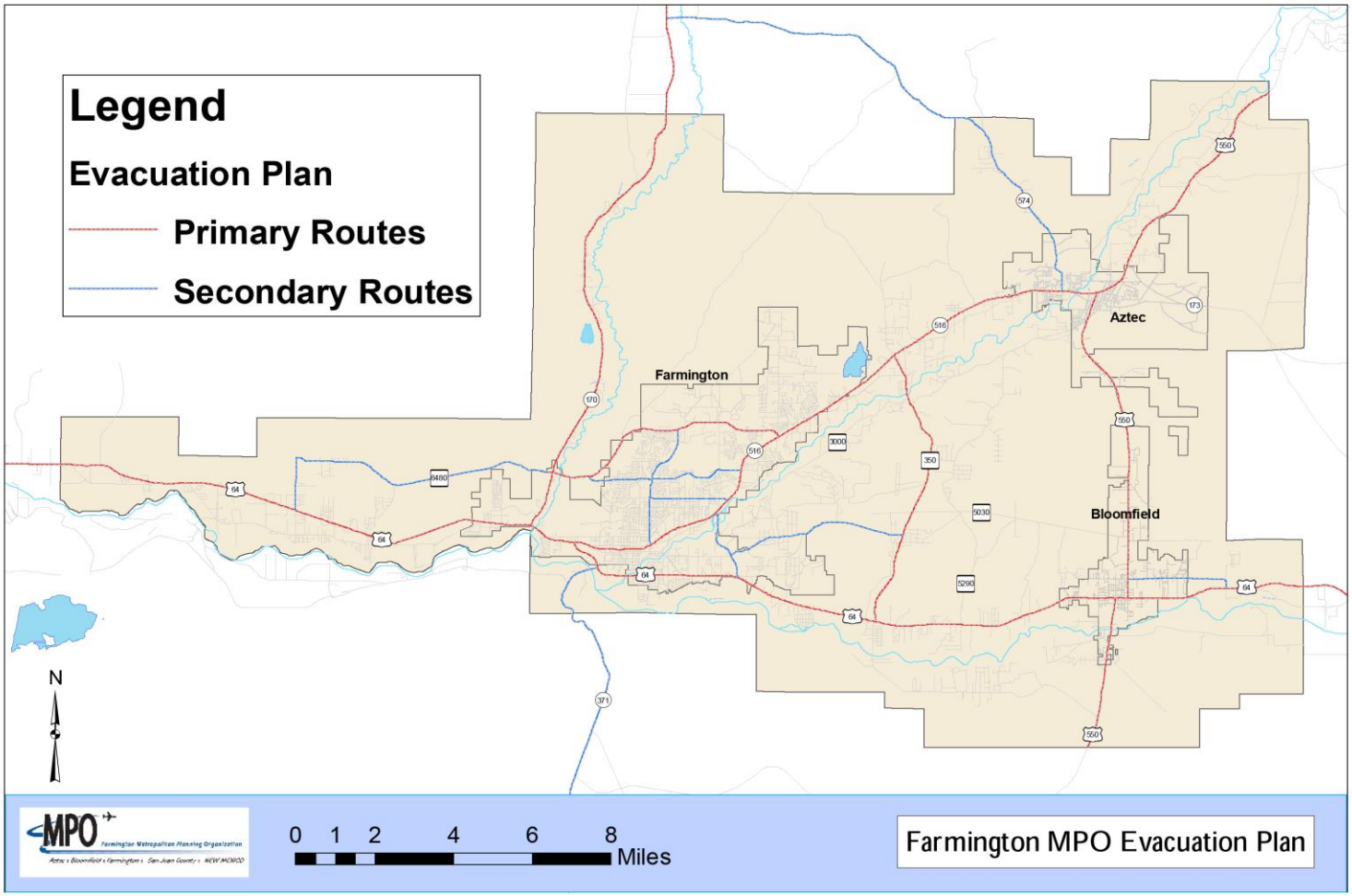
It should be noted that San Juan County already has an emergency alert system in place which sends out messages to inform the public about severe weather or other incidents. It is conceivable that the identified evacuation routes could be incorporated into this alert system so as to direct the public to which routes to use. The actual routes for evacuation depend on the details of specific events.

11.6 TRANSIT SECURITY

All efforts should be made to ensure the safety and security of public transit users. Red Apple Transit staff is involved in the planning efforts of the San Juan County Emergency Management Office and is available to assist in emergency response efforts in times of evacuation. Security and safety measures on Red Apple Transit should be taken, such as:

- Provide bus stops and shelters that are well-lit and located in places that are highly visible
- Install on-board cameras to discourage crime and monitor activities
- Continue to coordinate with emergency responder and prepare to assist during events requiring evacuation

MAP 11-1 – Identification of Major Evacuation Routes in the Farmington MPO



12 | Transportation Policies & Strategies

12.1 OVERVIEW

The following sections focus on specific areas that relate to or are affected by transportation decisions. By concentrating on these areas, the MPO can make better decisions for achieving its vision, mission, and goals.

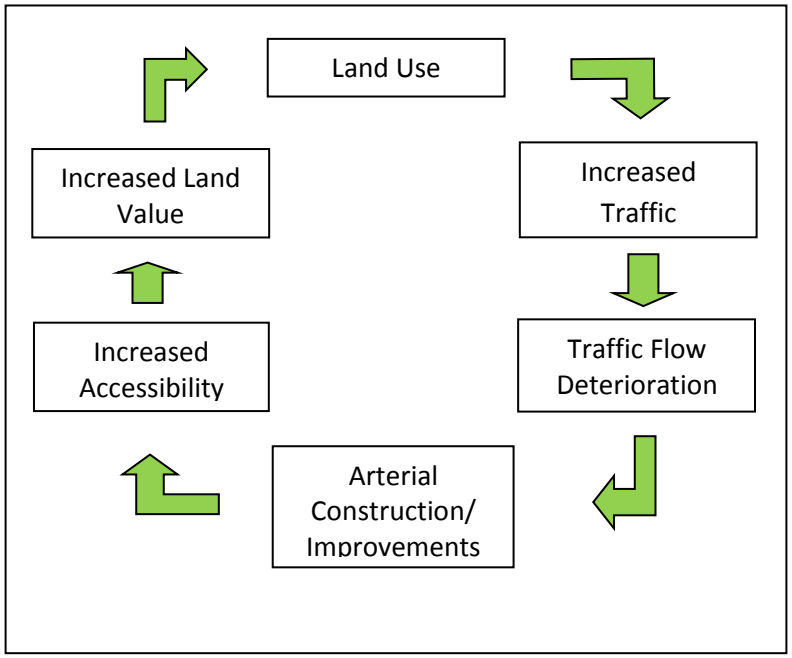
12.2 TRANSPORTATION AND LAND USE

Transportation and land use are intrinsically linked – one affects the other and each must be considered as communities in the MPO area continue to grow. The location and density of development affects, and is affected by, the transportation system and other infrastructure. Communities face tradeoffs regarding the density of development in the rural or urban settings, the amenities built with a given density, and the accompanying tax-base. Also, a lack of connectivity within the transportation network reduces the number of routes available for trips and consolidates traffic. This may lead to wider roads, a further separation of land uses and a loss of human scale to development and the public space of the street. Transit, walking, and biking can become ineffective due to long distances and safety concerns.

The work of the Complete Streets Advisory Group is centered on developing Design Guidelines for use by area local governments, developers and others to create streets which serve the variety of modes of travel. These streets are suited to the surrounding land use and the street's particular functional classification. Complete Streets includes complete networks for the variety of travel modes and can produce a positive relationship between the transportation network and land uses. The Design Guideline is being drafted to encourage complete streets applications in many different settings – from rural

to urban; commercial, to residential or industrial; and narrow lanes to broad boulevards.

Smart transportation and land use decisions increase the viable options people have for accessing employment opportunities, goods, services, and other resources to improve the quality of their lives. A balance between transportation and land use should be sought. The MPO, along with NMDOT, local transit systems, and the local entities should develop partnerships and incorporate land use considerations into their transportation planning activities. The following policies and strategies should be implemented to achieve the transportation/land use balance:



Source: Iowa Access Management Handbook

- Develop a Complete Streets policy that integrates all transportation modes into the design and construction of roadways
- Employ the MPO major thoroughfare plan to preserve corridors and prevent future developments from interfering with future corridors
- Encourage the development of complimentary land uses
- Identify activity centers that become the focal point for a variety of surrounding land uses
- Promote reuse and in-fill development to strengthen existing parts of the communities in the MPO Planning Area
- Create transportation and land use master plans for developing areas in San Juan county that are located in unincorporated areas
- Develop a specific budget and funding source to construct more walking and biking facilities
- Establish a stable budget and funding source for transportation upgrades, maintenance and improvements
- Perform scenario planning which incorporates transportation modeling with land use data

12.3 OZONE & PARTICULATE MATTER

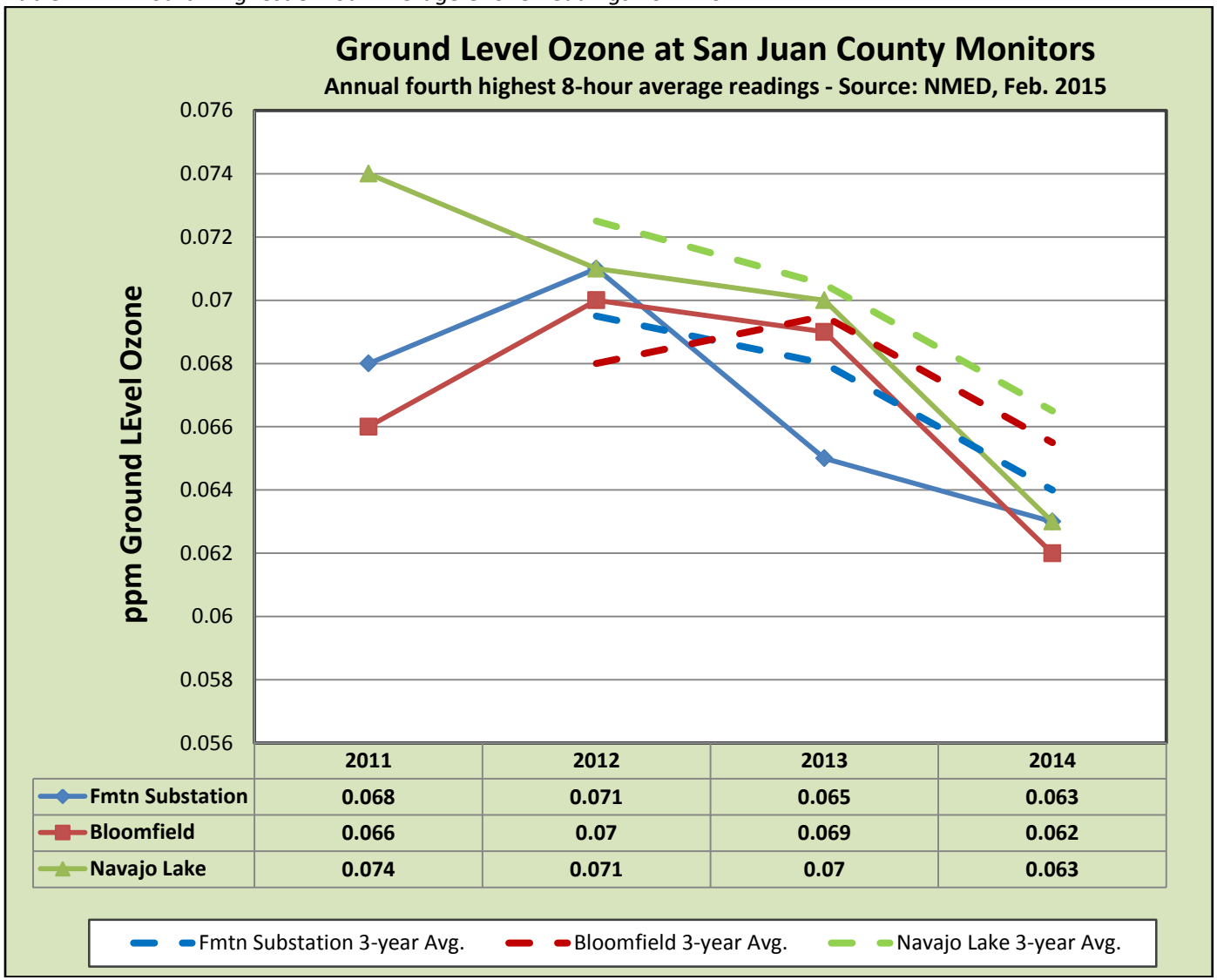
Transportation decisions have a direct impact on air quality and environmental issues. More vehicles on the road, longer commutes and idling engines increase pollutants emitted into the air. Ozone and particulate matter are two common pollutants that can be caused by transportation. Emissions standards for these pollutants are monitored and enforced by the Environmental Protection Agency (EPA).

Currently, the Farmington MPO is in attainment for all air quality standards. In recent years, data collected at regional monitoring stations and a reduction in the ozone standard to 0.075 parts per million (ppm) have indicated that San Juan County has been on the threshold of being in non-compliance for ozone standards but is steadily trending down (see Table 12-1). In November, 2014, EPA proposed to reduce the standard to a range of 0.060ppm to 0.070ppm. A decision on the new standards will be made by October 1, 2015 and a decision regarding designation would occur in 2017 and would be based on 2014-2016 measurements. If the area is designated as being in nonattainment, the State Environment Department and EPA would work to develop a plan for addressing pollutants that lead to ozone creation. As a result, more stringent reporting and congestion mitigation requirements efforts would go into effect. Violations of air quality standards can lead to federal funds being withheld from the MPO.

As of early 2010, the New Mexico Environmental Department (NMED) has focused its efforts on point sources of pollution; that is, what impacts are coal power plants and oil wells having on ozone levels. The Four Corners Air Quality Group identifies strategies for mitigating ozone creation. To avoid falling into non-attainment and the subsequent additional requirements, the MPO should pro-actively implement policies that reduce the sources that contribute to ozone from a transportation standpoint:

- Encourage policies which reduce pollutants, congestion, and which increase non-motorized or high-occupancy travel
- Facilitate updates to the MPO's ITS Architecture, in collaboration with NMDOT
- Assist local entities and NMDOT to implement ITS elements that reduce congestion
- Synchronize signals on major corridors to improve arterial travel flow movements
- Support planning efforts and development review by local government to New housing, business, and retail developments should be built around transit stops
- Continue to develop a Complete Streets Design Guideline and offer support during implementation by local governments
- Encourage the use of walking and biking by creating higher density and mixed-use developments

Table 12-1 – Fourth Highest 8-Hour Average Ozone Readings 2011-2014



	2011	2012	2013	2014
Fmtn Substation	0.068	0.071	0.065	0.063
Bloomfield	0.066	0.07	0.069	0.062
Navajo Lake	0.074	0.071	0.07	0.063

Nationwide, innovative strategies are being discussed or implemented as the newest ways to reduce transportation-related emissions. While typically seen in non-attainment, large metropolitan areas, the MPO may consider the costs and benefits of the following strategies:

- Tax drivers based on distance traveled
- Charge vehicles to park at public facilities
- Implement road pricing, where motorists pay directly for using a particular road or for traveling in certain areas during peak time periods
- Create car-sharing programs to minimize personal automobile use
- Build rail systems that reduce vehicle trips and promote denser developments
- Telecommuting
- Incentives from businesses to employees to use other alternatives modes of travel

12.4 SYSTEM PRESERVATION AND EFFICIENCY

Transportation policy should include efforts to preserve the existing transportation system and improve its efficiency. System preservation can reduce costs over the life of infrastructure. While it is understood that new facilities will need to be built in the future to meet demand, maintaining the existing system reduces costly future improvements, reduces the tendency for urban sprawl to occur, and maintains access to neighborhoods, jobs, and employment centers.

Performance measurement requirements of MAP-21 include maintenance of the existing transportation network, and could require funds be dedicated to system preservation if targets for maintenance are not met. This will require states to focus funding on system preservation ahead of expanding capacity.

In order to preserve the transportation system, the following policies and strategies should be implemented:

- Preserve right-of-way (ROW) that allows future expansion of existing roadways without impacting or disrupting adjacent land uses.
- Select and enact pavement preservation strategies before roadways and bridges require extensive repair or re-building.
- Implement access management strategies to maintain the functionality of road classifications.
- Implement signal coordination plans for major corridors to reduce congestion and the need for adding more capacity to roadways.
- Research and consider implementing road diets, which can replace two travel lanes with bike lanes and/or parking lanes to improve safety.
- Construct roundabouts in warranted locations as a means of reducing congestion.

- Improve network connectivity to disperse vehicle trips.
- Connect and enhance the networks for bicycle, pedestrian, and transit modes to maximize the usefulness of these existing facilities and systems.
- Employ ITS technologies.
- Create and maintain funding strategies.
- Develop asset management plans at the local level and in coordination with NMDOT.
- Investigate and include life cycle cost into project development.
- Re-evaluate the areas of greatest need and route configurations to improve the efficiency of the transit system.

12.5 INTELLIGENT TRANSPORTATION SYSTEMS

Intelligent Transportation Systems (ITS) are integrated technologies that improve safety and mobility on roadways, coordinate emergency management procedures, and distribute regional traveler information. ITS Program Areas include Traffic Management, Traveler Information, Public Transportation Management, and Emergency Management.

An ITS architecture is a computer software program that an MPO uses to inventory the various ITS elements and stakeholders involved. The Farmington MPO architecture describes the stakeholders who are involved with ITS, the types of ITS technologies and services to implement, and the roles and responsibilities of the stakeholders. The MPO adopted an ITS architecture for the area in November 2006 and renewed it in November 2008. In 2014, NMDOT contracted for an update to regional ITS Architectures throughout the state. For a list of potential projects identified through the update process by various stakeholders, see the Farmington MPO website, www.farmingtonmpo.org.

13 | Financial Plan

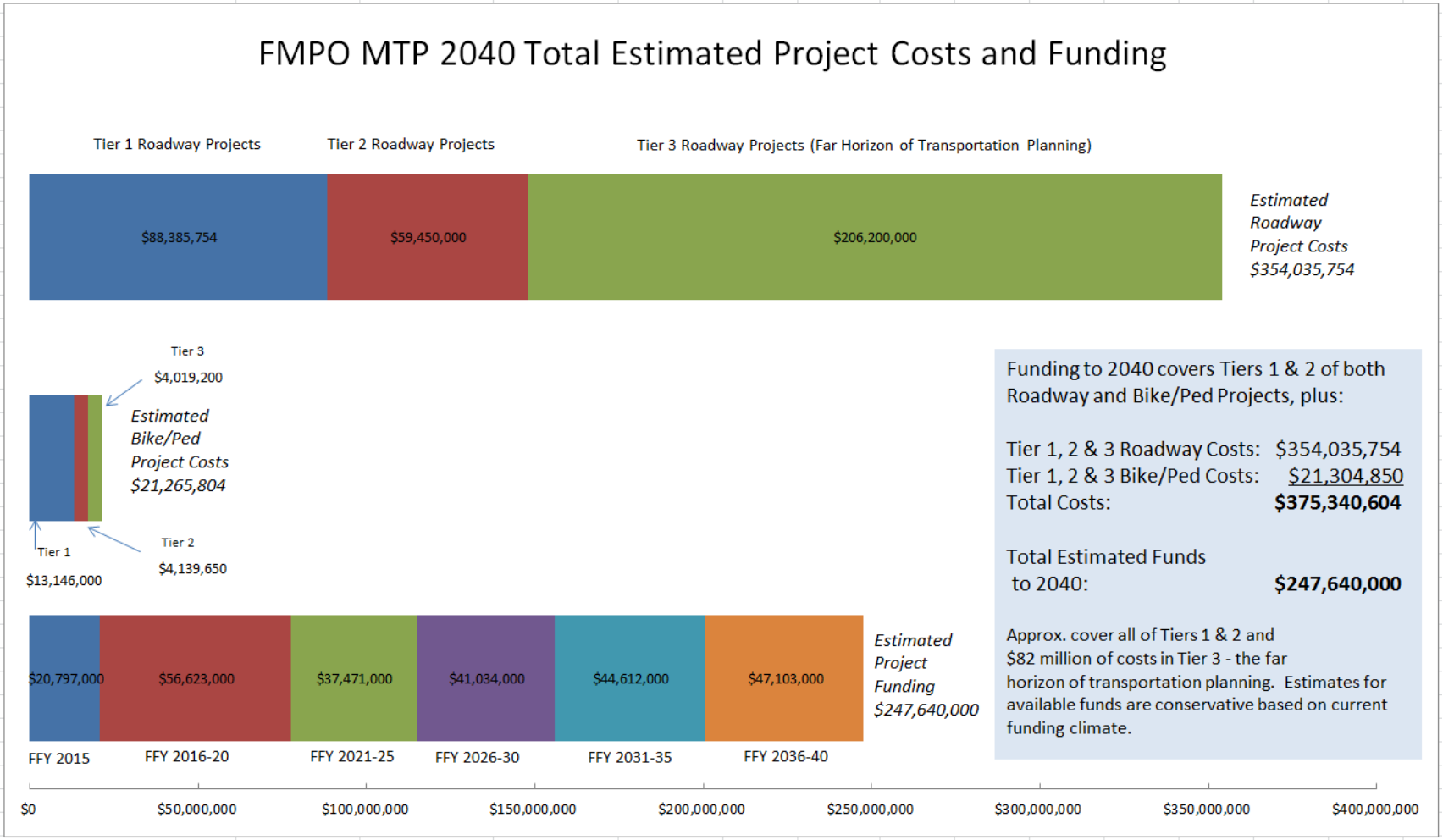
13.1 OVERVIEW

According to MAP-21, the Metropolitan Transportation Plan must show how anticipated transportation projects are based on reasonable estimates of available funds. MAP-21 also establishes performance based programming and requires states and MPOs to develop performance measures regarding system maintenance and condition, fatalities and injuries, congestion, emissions, and freight movement. These federal policies, and long range planning in the New Mexico Transportation Plan (NMTP) by NMDOT, will direct federal and state funding to system maintenance, operations efficiency and safety ahead of building new capacity. The goals of the MTP align with state and federal goals and incorporate regional priorities.

The continuing planning process used by the MPO and its partners combines long-term regional projections with near-term adjustments and implementation. The MTP employs a 25-year planning horizon, and is updated every five years. For the next 25 years, population projections for the MPO area are for growth: from approximately 97,000 in 2015 to 138,000 in 2040. This MTP, and previous versions, have identified many projects to accommodate that growth as it occurs. However, present financial projections by federal, state and local government are more conservative and projected funds do not cover all potential projects listed in the MTP. Therefore, regular review of system needs, demographic and economic trends, performance measures and funding, will provide the ongoing re-adjustment to match the area's transportation needs and goals with these conditions and factors.

Figure 13-1 shows the aggregated costs of roadway and bike/pedestrian projects identified in the chapters of the MTP, each shown in tiers by time frame: Tier 1 (next 5 years), Tier 2 (5-15 years), and Tier 3 (15-25 years and beyond). Also shown are the total projected available funds, by five-year time periods. Near-term projects are listed below in Table 13-1. For details regarding project costs in Tiers 2 and 3, see Chapters 5 and 9. Details regarding funding are also discussed below.

Figure 13-1 – Comparison of Future Estimated Project Costs in the MTP and Anticipated Funds



13.2 FINANCIAL PLANNING IN THE NEAR TERM

Developing and administering a Transportation Improvement Program (TIP) is one of the principal functions of an MPO. The TIP is a list of near-term, regionally-significant projects for which funds are identified. These projects align with the MTP and can be lead and funded by local government entities or NMDOT. Projects often include a mix of local, state and federal dollars.

The TIP is the basis for the available funds in the near-term from local, state and federal sources. In June 2015, the MPO developed a TIP for the federal fiscal years of 2016 to 2021. The projects included are shown on Table 13-1. For almost all of the projects shown, identified funding equals the total estimated project cost. Some projects have found partial funding and sponsoring agencies and/or the state are working to complete the funding. For three projects which are partially funded, the present shortfall is approximately $17 million. As funding is identified for projects, they will be added to the TIP by amendment.

Vereda del Rio San Juan River Trail in Bloomfield

Table 13-1 – FMPO FFY 2016-2021 TIP – Funding Detail as of June 30, 2015

Project Name	Lead Agency	Estimated Project Cost	Total Funding Amt	Est. Unfunded Amt
East Arterial Route Phase II	Aztec	$7,319,750	$7,319,750	$0
Vereda del Rio San Juan River Trail Phase II	Bloomfield	$199,636	$199,636	$0
Vereda del Rio San Juan River Trail Phase III	Bloomfield	$203,050	$203,050	$0
Red Apple Transit Capital/Operating	Farmington	$1,289,587	$1,289,587	$0
Red Apple Transit Bus Route Accessibility	Farmington	$81,577	$81,578	$0
East Pinon Hills Boulevard Extension Phase I*	Farmington	$3,950,000	$3,700,000	$250,000
East Pinon Hills Blvd Extension Phase II*	Farmington	$13,265,454	$250,000	$13,015,454
US 64 Phase IV	NMDOT D-5	$15,600,000	$15,600,000	$0
US 64 Phase VI	NMDOT D-5	$9,000,000	$9,000,000	$0
US 64 Phase V*	NMDOT D-5	$17,655,750	$14,198,714	$3,457,036
NM 173	NMDOT D-5	$2,110,000	$2,110,000	$0
Bridge Preservation: US 550 #9178 & #9179	NMDOT D-5	$260,000	$260,000	$0
Pinon Hills Bridge Connection (CR 3900/ PHB Ext. Phase 3)	San Juan County	$8,000,000	$8,000,000	$0
Kirtland Walk Path	San Juan County	$1,000,000	$1,000,000	$0
CR 350/ CR 390 Intersection	San Juan County	$650,000	$650,000	$0

* - Note: Partly unfunded projects may have more funding pending, with local entities and/or NMDOT working to complete the funding for the project. This amount reflects funding identified through June 30, 2015.

As seen in Table 13-2, NMDOT anticipates that, from 2016 to 2019, the current funding amounts assigned to projects are all the funds they expect to have available. Through their own long-range plan, the NMTP, NMDOT anticipates approximately 5 million dollars may be available each year in 2020 and 2021.

Table 13-2 – Projected Available Local, State and Federal funds (not including Transit)

FMPO Projected Funds for New and Rebuilt Projects - 2015 to 2040

Fund Source	FFY 2015	FFY 2016 Projection	FFY 2017 Projection	FFY 2018 Projection	FFY 2019 Projection	FFY 2020 Projection	TOTAL FFY 2016-2020	TOTAL FFY 2021-2025	TOTAL FFY 2026-2030	TOTAL FFY 2031-2035	TOTAL FFY 2036-2040
Total Local Funding New and Rebuilt Projects	$1,762,000	$9,705,000	$2,058,000	$1,542,000	$1,871,000	$1,917,000	$17,093,000	$10,760,000	$12,754,000	$14,679,000	$15,393,000
Total Federal and State Funding New and Rebuilt Projects	$19,034,000	$8,296,000	$8,972,000	$8,262,000	$9,000,000	$5,000,000	$39,530,000	$26,711,000	$28,280,000	$29,933,000	$31,709,000
Total Federal, State and Local Funding New and Rebuilt Projects	$20,797,000	$18,001,000	$11,030,000	$9,804,000	$10,871,000	$6,917,000	$56,623,000	$37,471,000	$41,034,000	$44,612,000	$47,103,000

13.3 FINANCIAL PLANNING IN THE LONG TERM

Long-term projections for costs and available funds come from a variety of sources. Estimating costs begins with the projects identified in the MTP, with expected price tags assigned by the project's potential sponsor. A few projects have some level of study completed and may have close approximate cost figures. Some are new ideas, far into the future, or large in scope. Estimated project costs will need to be refined in the future. Nevertheless, future project costs show the magnitude of funding needed based on best current information.

In consultation with staff from each entity, projects were assigned to a tier, or time frame, based on the likelihood of the need, likelihood of available funding, or local priority. Future projects and their tiers are reflected in Chapter 5 and Chapter 9. To reflect "year of expenditure" dollars, annual inflation on construction costs were projected at approximately 2.5 percent, or about 25 percent in a decade and 60 percent in 20 years.

Estimating future funds is a compilation of the expected revenue available for transportation from each local entity, plus NMDOT's estimate of available state and federal funds. The future funding picture for state and federal funds is being clarified by NMDOT through an Asset Management Plan. Inflation rates were provided by each entity.

13.4 FUNDING SOURCES

The MPO itself does not receive funding to sponsor construction of projects; projects are sponsored by the three cities, the county, Red Apple Transit, and NMDOT.

Local entities may use their general funds as well as dedicated infrastructure funds to complete regional transportation improvements. These funds rely on revenues from various sources including local sales and property taxes, fees, and bond levies. When they receive federal funding for a project, it comes through NMDOT in cooperation with from the following sources:

- **National Highway Performance Program (NHPP) –** Used to construct improvements on urban and rural roads that are part of the NHS system.
- **Surface Transportation Program (STP) –** provides flexible funding that may be used by States and localities for projects on any Federal-aid highway, including the NHS and bridge projects on any public road.
- **Transportation Alternatives Program (TAP) –** Part of the STP program, this source funds specific walking and biking improvements that create facilities, provide safety, or preserve rail corridors for conversion into walk/bike trails.
- **Highway Safety Improvement Program –** Also part of STP, used for projects that provide safety or improve dangerous conditions on roadways, at intersections, or for walkers and bicyclists.
- **Recreational Trails Program –** provides funds for the creation or maintenance of new or existing trails, typically for non-motorized modes of travel.
- **Transportation, Community, and System Preservation (TCSP) –** intended to improve efficiency of the existing transportation system by reducing environmental impacts and the need for new infrastructure.
- **High Priority Projects Program –** commonly known as 'earmarks', this program provides designated funding for specific projects identified in SAFETEA-LU.

Local entities may also receive state funds, which typically include the General Fund, Severance Tax, and the Municipal Arterial Program (MAP). Additional revenues sources may come from impact fees if established by the individual entities under NM State Statute.

13.5 ESTIMATED MAINTENANCE FUNDING

Maintenance is performed by the three cities within their jurisdictions, by San Juan County in the remainder of the MPO, and by NMDOT on New Mexico and United States highways. Table 13-3 shows the compilation of projected federal, state, and local funds for operation and maintenance of the system, with future figures shown in five year periods.

Table 13-3 – Estimated Federal, State and Local Operation and Maintenance Funds, 2015-2040

FMPO Projected Operation and Maintenance Funds - 2015 to 2040

Fund Source	FFY 2015	FFY 2016 Projection	FFY 2017 Projection	FFY 2018 Projection	FFY 2019 Projection	FFY 2020 Projection	TOTAL FFY 2016-2020	TOTAL FFY 2021-2025	TOTAL FFY 2026-2030	TOTAL FFY 2031-2035	TOTAL FFY 2036-2040
Total Local Operation and Maintenance	$11,195,000	$12,243,000	$11,717,000	$11,431,000	$11,623,000	$11,822,000	$58,836,000	$62,605,000	$69,822,000	$78,640,000	$88,813,000
Total Federal and State Operation and Maintenance	$1,600,000	$1,600,000	$1,600,000	$1,600,000	$1,600,000	$1,600,000	$8,000,000	$8,280,000	$8,767,000	$9,283,000	$9,829,000
Total Federal, State and Local Funding O&M	$12,795,000	$13,843,000	$13,317,000	$13,031,000	$13,223,000	$13,422,000	$66,836,000	$70,885,000	$78,590,000	$87,923,000	$98,642,000

MAP-21 requires the establishment of several performance measures related to road and bridge condition. As stated above, NMDOT is developing an Asset Management Plan statewide for state and federal facilities for which it is responsible. Local government within the MPO will cooperate with NMDOT to set maintenance condition targets and outline the means of measuring and reporting those conditions. That plan is expected to be prepared in 2016.

13.6 TRANSIT FUNDING

Red Apple Transit receives Federal Transit Administration 5307 grant funds for operations and for capital purchases and projects. The City of Farmington provides matching funds, including contributions by Aztec, Bloomfield, San Juan County, and fare box

receipts, to leverage these federal dollars. Federal grant money spent on operations covers 50 percent of an expense and requires a 50 percent local match. Similarly, federal grants pay 80 percent of a capital or personnel expense and require a 20 percent local match. Based on operation contracts and expenses, planning expenses, and budgeted capital needs, Red Apple Transit determines how to allocate the grant in a given year. Based on the mix of operations and capital expenditure, the revenue sources, may show close to 50 percent of revenues from FTA grants when most work is operations, or some percentage greater than 50 percent from FTA grants, when Red Apple leverages more funds for capital needs. As an example, Figure 13-2 shows the dollar amounts and percentage of total revenues dedicated to Red Apple Transit in FY2015. Table 13-4 shows the total annual figure of operating revenue/expenditure from Fiscal Years 2010 to 2014 (both revenue and expenditure are equal in final budget reporting).

Figure 13-2 Sample year FY 2015 of Revenues

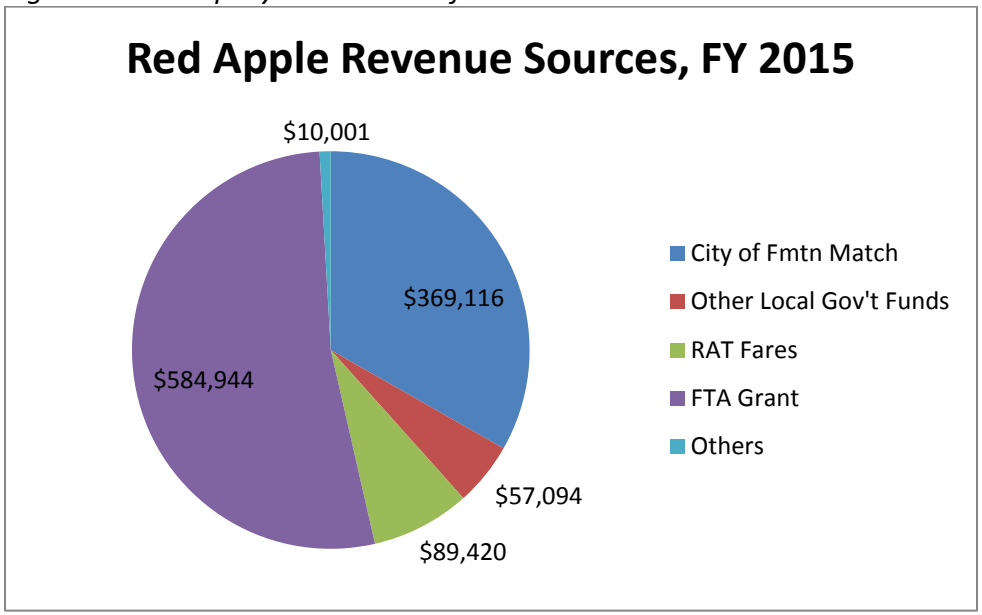


Table 13-4 Recent Total Operating Revenue/Expenditure for Red Apple Transit FY 2010 to 2014

FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
$ 811,273	$ 1,011,895	$ 1,041,825	$ 963,688	$ 953,939

Red Apple consistently budgets for an increase in operating expense of between 2 and 3 percent per year. Table 13-5 contains projected operating expenses if these increased at 2.5 percent annually to 2040. Red Apple Transit currently uses a contractor, Ride Right, LLC, to carry out its service operations.

Table 13-5 Projected Future Operating Expenses per Year and for 5-year Periods

	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040
Projected Avg Ann Operating Exp. per Year	$1,056,467	$1,195,296	$1,352,368	$1,530,080	$1,731,145
Total for 5-year Period	$5,282,337	$5,976,479	$6,761,838	$7,650,399	$8,655,724

Red Apple Transit is currently spending grant money allocated in 2012, and the combination of fares and local match limits any future expansion of the system. The Red Apple Transit also continually looks for way to improve the efficiency from the existing number of routes, and current levels of federal grants and matching funds.

Red Apple Transit also pursues federal grants to purchase new equipment or infrastructure, such as busses or bus stops and shelters. Such capital purchases can be made using FTA 5309 Capital grants which provide 80 percent of federal funding with a 20 percent local match. For example, Red Apple keeps a fleet of 14 busses and it anticipates purchasing 2 busses each year to replace its fleet. Each bus costs an estimated $76,000 and usually lasts between 6 and 7 years. Therefore, to replace the fleet costs approximately $1,064,000 over 7 years (with $212,800 coming from local matching funds and $851,200 coming from federal grants).

Red Apple Transit recently commissioned a study to select a transit hub location within Farmington. Estimated costs and funding options will be considered by Red Apple Transit following the results of the study, expected by the end of 2015. Red Apple Transit also is adding shelters and amenities to existing routes through federal Transportation Alternatives Program funds in 2016 and 2017. They were awarded approximately $82,000 to improve bus route accessibility at eight locations on the system.

13.7 POTENTIAL REVENUE STREAMS

It will be advantageous for the Farmington MPO and its members to investigate other revenue streams beyond the traditional federal, state, and local funding programs. Committees established by the New Mexico Legislature are researching new funding

source options to aid transportation improvements throughout the state. When recommendations from these committees are issued, the MPO may consider implementing these funding options that are applicable to this area.

Toll Collection/User Fees

Facilities could be constructed through the selling of bonds and be operated and maintained by toll collections. There are currently no existing toll facilities in the region. Toll revenue estimates would depend on traffic volumes of the roadway, trip length, and established use fee.

Public/Private Partnerships

Public/private partnerships could be used in financing transportation facilities. These ventures include roadways, bridges, right-of-way, pedestrian facilities, auxiliary lanes, and signalization. Public/private partnerships may also be used for parking facilities, bicycle facilities, transit improvements (including shelters), operational improvements, providing matching funds for transportation improvement projects (including enhancement projects), toll facilities, and other situations which may help leverage available financing for transportation improvements.

Borrowing

Borrowing allows the region the opportunity to build a project sooner, with the understanding that the borrowed money will need to be repaid out of future revenue streams. This could be accomplished through the issuance of bonds.

New Mexico State Transportation Commission

Work with the New Mexico State Transportation Commission to receive a larger portion of federal and state transportation funding allocated within District Five.

14 | Implementation Plan

14.1 OVERVIEW

The MTP identifies projects and policies for the variety of modes and on a variety of topics to develop and maintain the area's transportation system consistent with the vision and goals of the communities within the MPO. The 2040 MTP implementation plan contains a summary of the keys tasks identified to carry out this plan in the future. Implementation considers the agencies involved, the available resources and the projected time frame for carrying out the tasks.

The Transportation Improvement Program (TIP) contains lists of funded and unfunded projects, and many of the tasks to be carried out to implement the plan are found or will be found within the TIP. Tasks to be completed related to the individual plan elements and include future road, bicycle and pedestrian projects, anticipated freight and rail activities, adoption and use of the region's Complete Streets Design Guidelines, and ongoing regional collaboration among stakeholders. Each task will have a financial aspect, some of which are addressed specifically in Chapter 13, others will occur in the regular work of the MPO or others, and funding for other tasks is yet to be determined.

14.2 TASKS

Table 14-1 contains the list of specific tasks identified throughout the MTP. Many tasks are broad in nature, such as developing and administering the TIP and the construction of projects. Each project within the TIP represents a very detailed process and involves planning to identify the project, securing funding – often from more than one source, obtaining certifications and right-of-way, full design, and construction. For many of the tasks, some details and desired outcomes have been identified, while some details must still be resolved.

Table 14-1 – Tasks for Implementation of the 2040 MTP

TASK	DESCRIPTION	AGENCY	RESOURCES	ESTIMATED TIME FRAME
Maintain Transportation Improvement Program (TIP) and prioritize projects	Local entities and NMDOT propose projects, MPO works with them to develop TIP, MPO administers TIP coordination	MPO with local entities and NMDOT	MPO planning work funded by Federal grants and local match	Ongoing, with updated TIP developed every two years and amended or modified as needed
Construct projects in TIP (principal means of implementation for road, safety, bike and pedestrian projects)	Local entities and NMDOT construct projects which are identified, developed and funded	Local entities, NMDOT, FHWA	Local, state and federal funding sources, projects are identified, developed and constructed by lead agency	Time frame is specific to projects and determined by local entities and NMDOT; current TIP is for 2016-2021
Provide a forum for regional collaboration and stakeholder involvement	Continue to engage stakeholders in regional planning process in committees, advisory groups, and general participation	MPO, local entities, NMDOT, local stakeholders	MPO planning work funded by Federal grants and local match	Ongoing, with new or updated planning documents
MPO adopts regional Complete Streets Design Guidelines document and present to local governments to consider adoption	Regional stakeholders are developing a Complete Streets Design Guideline to improve multi-modal networks and their connections	MPO with local stakeholders	MPO planning work funded by Federal grants and local match	Planned adoption in 2015

TASK	DESCRIPTION	AGENCY	RESOURCES	ESTIMATED TIME FRAME
Implement Complete Streets Design Guidelines	Use Complete Streets Design Guidelines in the development and construction of all new or reconstruction projects	Local entities and NMDOT as lead agencies, MPO staff	Complete Streets Design Guideline, Local entity and NMDOT staff as lead agencies, with MPO staff	Upon adoption in 2015 and ongoing
Inventory of bicycle and pedestrian facilities	Update maps of the existing bicycle and pedestrian facilities and plan a means for continuous updating	MPO with local entities and NMDOT	MPO planning work, local entities staff and NMDOT staff	Update in mid-2016
Roadway corridor study and preservation	Study the future alignments and conduct corridor studies for new and existing roadways identified in the MTP	MPO with local entities and NMDOT	MPO planning work, local entities staff and NMDOT staff	Based on Tier and in cooperation with lead agency
Trail and multi-modal corridor study and preservation	Study the future alignments and conduct corridor studies for new and existing trails and multi-modal paths (including utility, ditch, riverine and other locations) identified in the MTP	MPO with local entities and NMDOT	MPO planning work, local entities staff and NMDOT staff	Based on Tier and in cooperation with lead agency

TASK	DESCRIPTION	AGENCY	RESOURCES	ESTIMATED TIME FRAME
Investigate service expansions for Red Apple Transit	Investigate additional transit routes within Farmington and other communities, including between Aztec and Bloomfield, and expanded service to evenings and weekends	Red Apple Transit and MPO	MPO Federal transit planning grants and Red Apple Transit grants	2016 to 2017
Update analysis of areas of greatest need for transit	Study of regional demographics and transportation preferences to identify locations with the greatest transit need and potential locations for ridership growth	Red Apple Transit and MPO	MPO Federal transit planning grants and Red Apple Transit grants	Mid 2016
Encourage and/or enforce compliance with truck routes for through truck traffic within cities (identify, compile and map)	Local entities and NMDOT have, and may in the future, posted designated truck routes to direct freight trucks moving through the cities to use those routes	Local entities, with NMDOT, including local and state law police	Resource used will be dependent on the actions taken by local entities and NMDOT	To be determined by local entities and NMDOT

TASK	DESCRIPTION	AGENCY	RESOURCES	ESTIMATED TIME FRAME
Work with developers of prospective freight rail terminus on connecting transportation needs	In the case that a new freight rail line is constructed in or near the MPO area, other infrastructure may need to be planned and constructed to accommodate this new activity	To be determined based on location and parties involved in rail line's construction	Anticipate private planning, design and engineering, with coordination by applicable local entities, tribal entities, MPO, and NMDOT	To be determined based on timing of prospective rail terminus development
Scenario planning	In cooperation with local entities, MPO will employ scenario planning software to model future land use and transportation patterns and alternatives	MPO, with cooperation from local entities	MPO purchased scenario planning software, MPO planning grants	Preliminary work in late 2015 and 2016; develop first model scenarios in 2017; ongoing use with preparation of subsequent MTP in 2019 and 2020
Mode split data preparation	Investigate and prepare baseline information for bicycle and pedestrian trips; continue vehicle traffic counts program; and obtain transit ridership data from Red Apple	MPO, with NMDOT and local entities	MPO Federal planning and transit grants, new Red Apple Transit ridership counting equipment	Anticipate first data collection and reporting in late 2016

TASK	DESCRIPTION	AGENCY	RESOURCES	ESTIMATED TIME FRAME
Monitor regulations and levels of ozone, particulate matter and other pollutants in MPO	NM Environment Department (NMED) monitors levels of ozone, particulate matter, and other pollutants for compliance with regulations	MPO, with NMED	MPO Federal planning grants and NMED programs	Updates in early 2016 and ongoing reporting by NMED
Implementation of regional Intelligent Transportation Systems (ITS) Architecture	Include use of ITS Architecture in project and program development by local entities and NMDOT; update ITS Architecture as needed	Local entities and NMDOT in project or program development, updates by MPO	Local entity and NMDOT project and program development efforts, NMDOT ITS Bureau, MPO Federal grants	Current and ongoing
Cooperate with NMDOT on development and implementation of asset management in MPO area	Assist NMDOT on creating its Asset Management Plan as it relates to the MPO area	NMDOT, with local entities and MPO	NMDOT Asset Management work, with local entity and MPO staff cooperation	Currently underway, expected completion by NMDOT in 2016
Investigate and prepare coordinated asset management plan for entities of MPO	In addition to NMDOT's Asset Management work, investigate a coordinated effort on asset management among the three cities and the county	MPO and local entities, with assistance from NMDOT	MPO Federal planning grants, local entity and NMDOT staff cooperation	Late 2016 to 2017

TASK	DESCRIPTION	AGENCY	RESOURCES	ESTIMATED TIME FRAME
Investigate sources of additional funding for projects identified in MTP	Work with NMDOT, local entities, and other community partners on allocating existing fund sources, and identifying new fund sources for the variety of mode and project types	MPO, local entities, and community partners	Coordinated efforts of agencies listed	Ongoing
Develop MPO Safety Plan document	Prepare a Safety Plan for the MPO which addresses specific safety topics and specific needs in the MPO	MPO, with local entities and NMDOT	MPO Federal planning grants, NMDOT Statewide Highway Safety Plan and other NMDOT resources, cooperation and data from local entities	Begin early 2016 with adoption by late 2016
Investigate establishing Safe Routes To School programs in more schools and districts in the MPO area	Identify other interested schools and districts to participate in the Safe Routes To School programs and assist local entities and schools to identify safety projects around schools	MPO, school districts, local entities, San Juan Safe Communities	MPO and Farmington Safe Routes to School Coordinator	Late 2015 and early 2016
Address public health in project or policy development	Find or develop tools to address public health impacts as part of project and policy development	MPO, with public health stakeholders	Existing tool kits and review criteria, MPO Federal planning grants	Late 2015 to early 2016

TASK	DESCRIPTION	AGENCY	RESOURCES	ESTIMATED TIME FRAME
Performance measurement and reporting	Per MAP-21, Federal, State and MPO identify measures of the transportation system and set targets to help align funding priorities with performance	MPO with NMDOT and FHWA, Local governments	MPO planning work, especially data collection, funded by Federal grants and local match; guidance and cooperation with FHWA and NMDOT	Establish measures and align MPO's data collection capacity during late 2015 and 2016; reporting every two years

15 | Performance Measures

15.1 OVERVIEW

A vision, with goals and objectives, forms a framework and gives direction for decisions about the transportation system. Measuring performance provides the ability to assess the results of transportation funding and policy decisions. By measuring the outcomes – through data collection, operational experience, and public input – managers of the transportation system can evaluate whether projects and policies are trending toward targets and achieving goals.

MAP-21 transportation legislation requires the US Department of Transportation (USDOT) to establish a set of performance measures to be used at the state and metropolitan level. As a division of USDOT, Federal Highway Administration (FHWA) is establishing the measures. State Departments of Transportation and MPOs will then set their own targets. Each measure is an attribute of the system operations of the transportation system, vehicle miles traveled or crash rate. A target is a desired outcome for a given measure.

15.2 PERFORMANCE MEASURES, TARGETS & DATA COLLECTION

FHWA is publishing measures relating to Safety, Pavement and Bridge Condition, Congestion Mitigation and Air Quality, and Freight Movement. As of February 3, 2015, measures for Safety and Pavement and Bridge Condition had been published. Table 15-1 summarizes current, proposed performance measurement guidance, including the individual measures within the first two categories. Where guidance on targets has been proposed, this is also listed. Each measurement area is explained in separate sections in this chapter. Measures in the incomplete categories are expected during 2015.

USDOT will also establish measures for transit performance measurement centered on maintaining a "state of good repair" for equipment, the rolling stock, infrastructure and facilities. All these only proposed measures until finalized by USDOT later in 2015.

NMDOT will use the Federal guidance as a basis for performance measurement within the state, and the MPO may also identify and establish measures consistent with its own regional goals. The MPO will collaborate with the local, state and federal agencies to establish and complete these measures on an ongoing basis. Based on the measures established and the data to be collected by NMDOT, the MPO may need to expand the scope of its own data collecting activities.

Table 15-1 – Performance Measures for the Farmington MPO

Safety	**Baseline**	**Target**	**Trend**
Total fatalities of vehicle passengers (5-year rolling average)			
Total injuries of vehicle passengers (5-year rolling average)			
Fatalities of vehicle passengers per 100 million vehicle miles travelled (5-year rolling average)			
Injuries of vehicle passengers per 100 million vehicle miles travelled (5-year rolling average)			
Pedestrian fatalities			
Pedestrian fatalities per capita			
Bicyclist fatalities			
Bicyclist fatalities per capita			

System Performance on NHS			
Pending from FHWA			

Paving and Infrastructure Condition			
Percentage of Non-Interstate system National Highway System pavement lane miles in Good condition			
Percentage of Non-Interstate system National Highway System pavement lane miles in Poor condition			
Percentage of bridges on National Highway System in Good condition			
Percentage of bridges on National Highway System in Poor condition			

Congestion Mitigation			
Pending from FHWA			

Air Quality			
Pending from FHWA			

Freight Movement			
Pending from FHWA			

Transit			
Percentage of Equipment in State of Good Repair			
Percentage of Rolling Stock in State of Good Repair			
Percentage of Infrastructure in State of Good Repair			
Percentage of Facilities in State of Good Repair			
Ridership			
Cost per rider			
Ridership rate/riders per available seats			

15.3 SAFETY PERFORMANCE MEASUREMENT

To carry out the purposes of the federal Highway Safety Improvement Program, FHWA proposes safety performance measures as the 5-year rolling averages for total fatalities and serious injuries and, for fatalities and serious injuries per 100 million vehicle miles traveled. These measures will be applicable to all public roads regardless of ownership or functional classification.

According to federal guidance on these safety measures, NMDOT will set targets for each and, within 180 days, the MPO will support the NMDOT target or set its own numerical target.

15.4 PAVING & INFRASTRUCTURE CONDITION

In order to implement the purposes of the National Highway Performance Program, FHWA proposes measures that would be applicable to all Non-Interstate NHS pavements regardless of ownership or maintenance responsibility. FHWA proposes to measure the lane miles of pavement in Good condition and in Poor condition. Further, FHWA proposes to measure the condition all bridges on the NHS, regardless of ownership or maintenance responsibility. The bridges would be measured as the percentage of bridges on the NHS in Good condition and those in Poor condition.

According to Federal requirement for reporting, the MPO will set its own 4-year targets for the measures, in coordination with NMDOT. The target for lane miles in Good condition in the MPO is [to be determined] and for lane miles in Poor condition is [to be determined]. The status of lane miles in Good condition and Poor condition [is to be completed with NMDOT]. The State will report the status of these measures in biennial performance reports. Map 11-1 shows the locations of roads and bridges on the NHS.

15.5 CONGESTION MITIGATION & AIR QUALITY

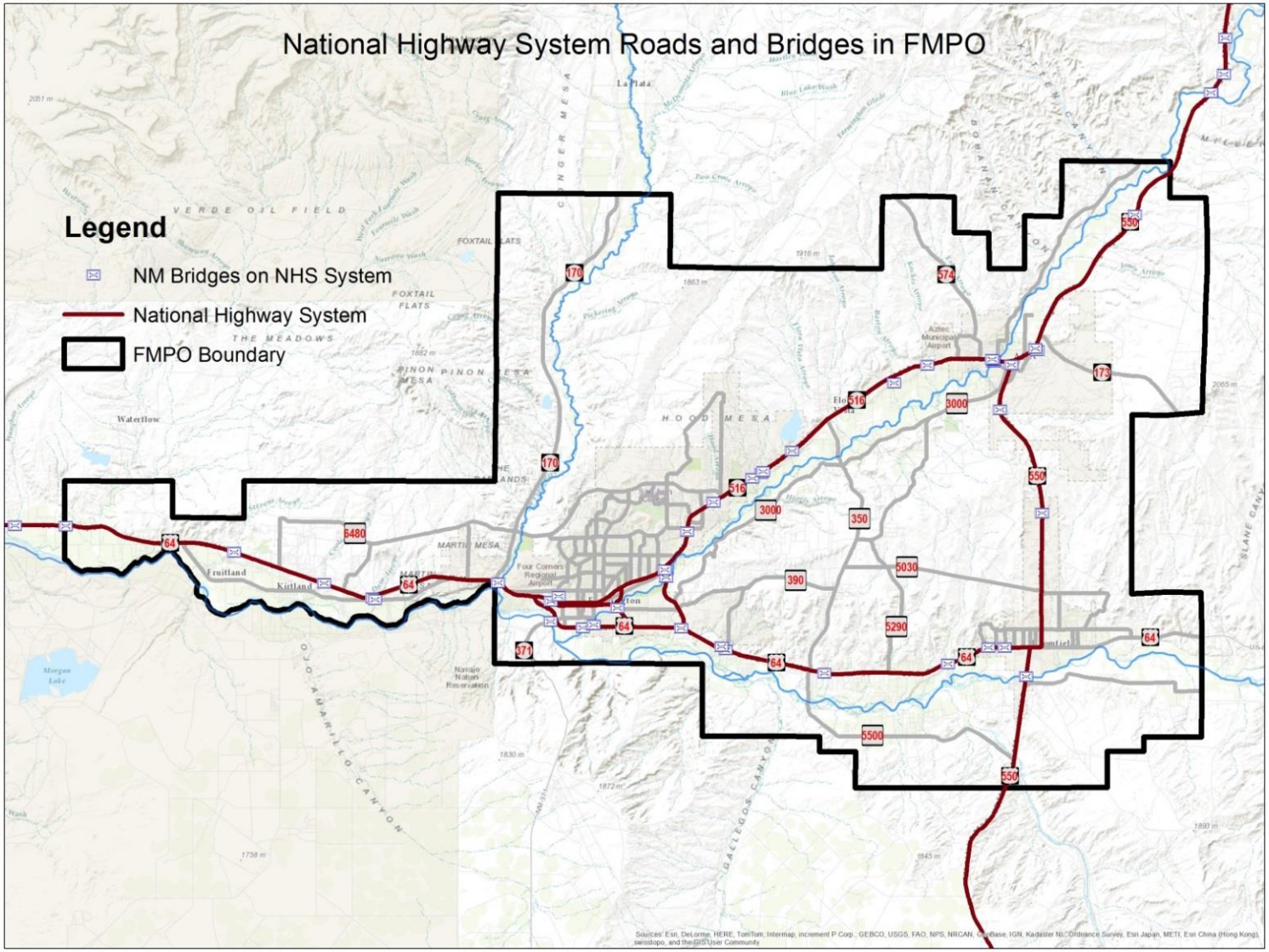
[Federal guidance for this measure is forthcoming.]

15.6 FREIGHT MOVEMENT

[Federal guidance for this measure is forthcoming.]

15.7 TRANSIT

Federal guidance on performance measurement for the transit system is focused on the state of good repair of the assets of a provider receiving Federal funds. The measures assess whether there is a "State of Good Repair" in four areas: the Equipment, Rolling Stock, Infrastructure and Facilities.

The MPO, together with Red Apple Transit, will also measure ridership. In the past, measurement has been extrapolated from revenue, though rides with monthly passes were only estimated. Actual ridership counts had occurred only during summer months along with a survey administered by MPO interns. Red Apple Transit is pursuing software and equipment to count all rides on all routes.

Map 15-1 – National Highway System Roads and Bridges in FMPO