

NEW MEXICO 2040 PLAN

Technical Analysis Report

Appendix B

prepared for

New Mexico Department of Transportation

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1.0 Introduction



The New Mexico 2040 Plan (2040 Plan) provides strategic direction for how the New Mexico Department of Transportation (NMDOT) and its planning partners will invest in the transportation system over the next 25 years. The plan reflects current and future transportation opportunities and challenges, and responds to major external constraints and trends that shape use of the transportation system. The 2040 Plan reflects both national and state priorities. National priorities are established by Federal transportation law, while state priorities are identified through the plan development process.

The 2040 Plan is a performance-based, multimodal transportation plan:

- “Performance-based” means that the plan serves as a framework for NMDOT and its planning partners to make decisions in a more effective, efficient, transparent, and predictable way by using quality data and information to assess projects and programs. The assessment process relies on the vision, goals, objectives, performance measures, and targets specified in the plan. The performance-based nature of the plan means that it explicitly addresses tradeoffs that NMDOT and its partners must make between different investment choices in light of budget constraints.
- “Multimodal” means that the plan establishes investment priorities for moving people and goods using a variety of different transportation modes: cars, trucks, buses, vanpools, freight trains, passenger trains, walking, bicycles, airplanes, and others.

1.1 Plan Development Process

The 2040 Plan was developed by the NMDOT, working in close cooperation with the state’s five Metropolitan Planning Organizations (MPOs) and seven Regional Transportation Planning Organizations (RTPOs) (see Figure 1.1). The MPOs have responsibility for transportation planning in urban areas over 50,000 people, while the RTPOs have responsibility for transportation planning in rural New Mexico. The plan also reflects input derived from a robust public engagement process that involved the state’s federally-recognized tribes, other state and federal agencies, stakeholders in the private and non-profit sectors, and the general public.

Key elements of the plan development process, diagramed in Figure 1.2, included:

- **Coordinating Committees.** The project team organized several Coordinating Committees to provide a formal means of discussing and vetting ideas and proposals as they came through the plan development process. The intent was to examine proposals from a variety of key perspectives, including: NMDOT managers; MPO and RTPO planners; New Mexico’s 22 federally-recognized tribes; other state, federal, and tribal executive agencies; freight service providers and users; and “Interested Parties” (as defined in Federal transportation law).

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- **Cooperative Roundtable.** Comprised of NMDOT, MPO, and RTPO planners, the Cooperative Roundtable provided oversight on the 2040 Plan development process and provided a venue to coordinate between state and regional transportation planning efforts.

Figure 1.1 NMDOT's Metropolitan and Regional Planning Partners

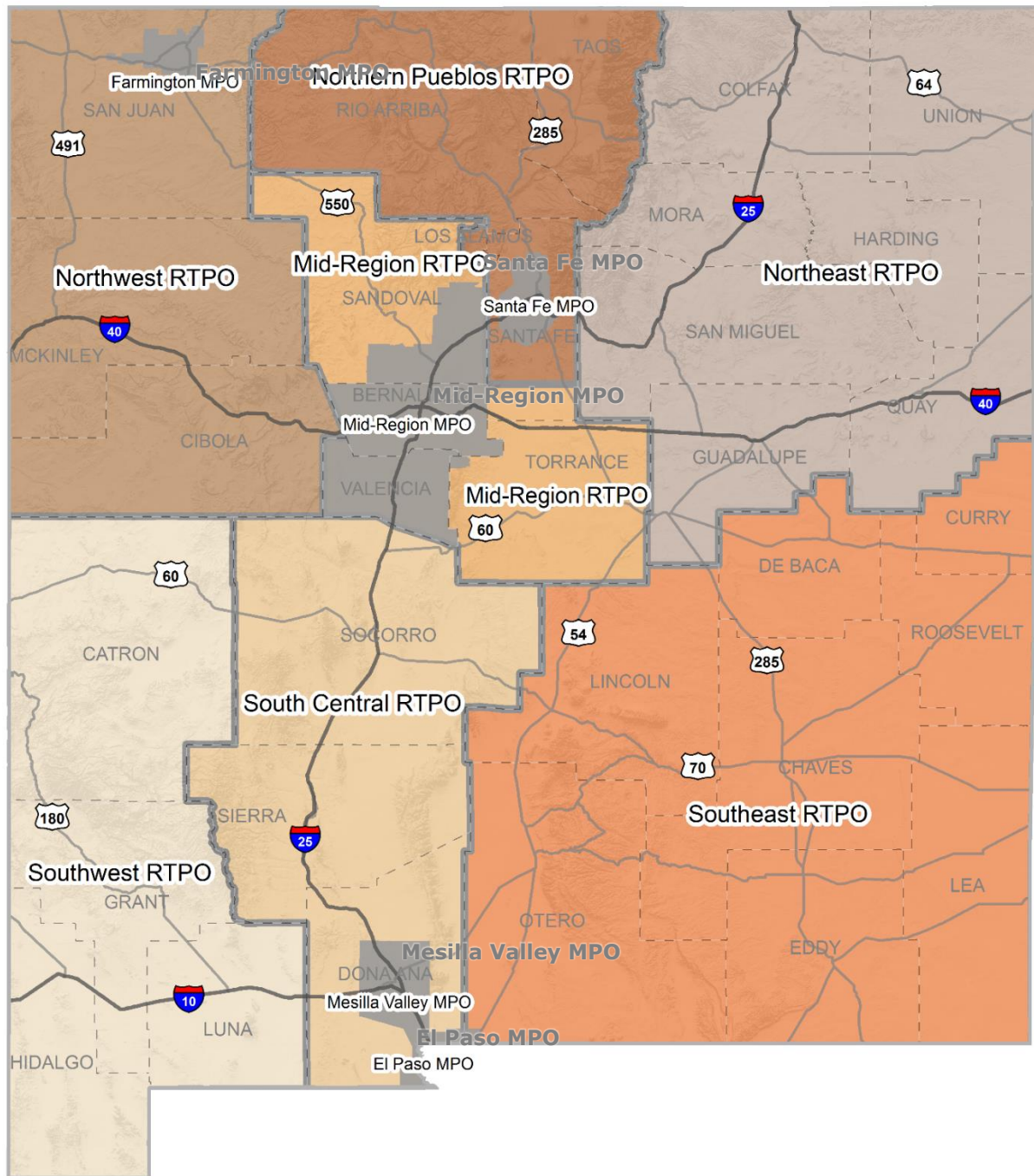
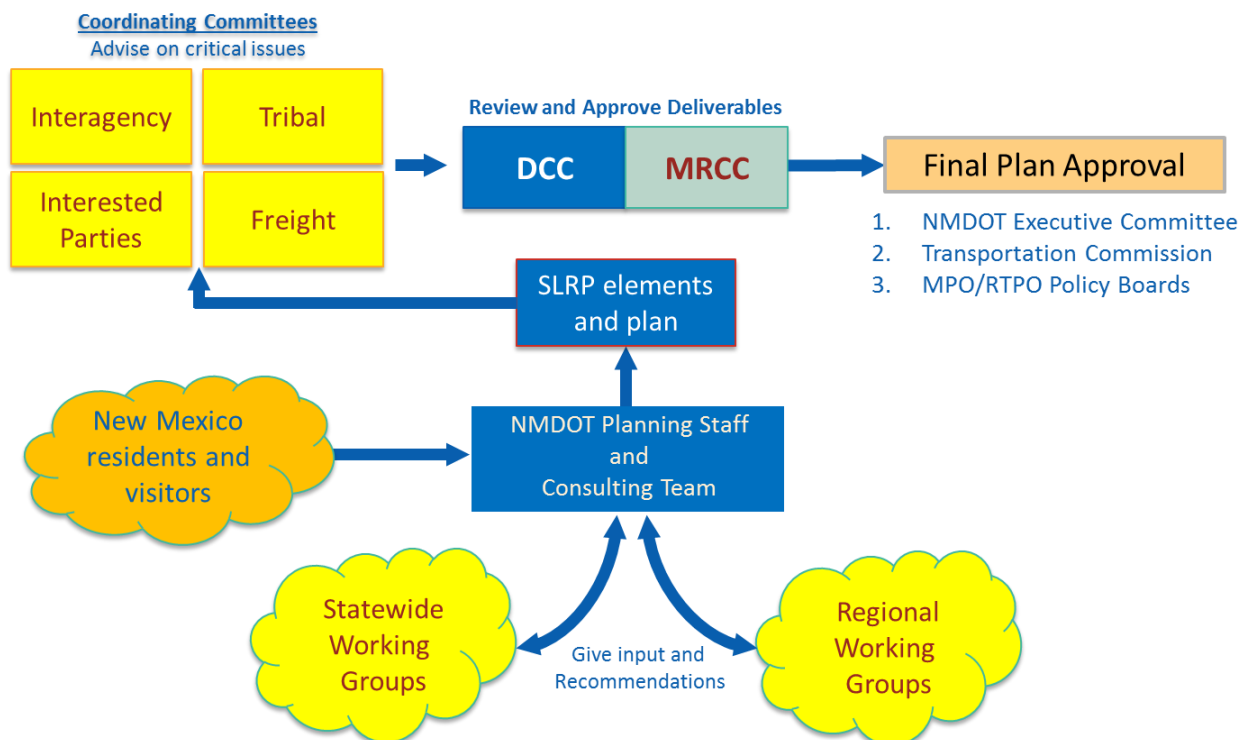


Figure 1.2 2040 Plan Stakeholder Coordination and Plan Approval Process



- **Statewide Working Groups (SWG).** NMDOT formed nine Statewide Working Groups to give advice during the plan development process (Figure 1.3). The SWGs were comprised of subject-matter experts from a variety of public, private, and non-profit agencies and organizations. The intent was to bring together individuals with a wide range of knowledge, expertise and opinions to identify issues, generate ideas, and discuss the implications of plan alternatives in nine topic areas. The groups provide depth of information and analysis to support the plan.
- **Regional Working Groups (RWG).** The Regional Working groups were formed cooperatively by NMDOT and the RTPO staff in each of the RTPO regions. Their composition mirrored that of the Statewide Working Groups in that they were comprised of subject-matter experts from a variety of public, private, and non-profit agencies and organizations. Unlike the SWGs, however, the RWGs focused on regional rather than statewide issues and concerns. Their primary purpose was to generate ideas and advise their respective RTPOs and NMDOT on the priority concerns and goals for each of their regions.
- **Targeted meetings and workshops.** The project team held meetings and workshops with various targeted groups to introduce them to the plan and obtain input. (See 2040 Plan Appendix D.) The intent was to supplement the input obtained from the Statewide and Regional Working Groups.
- **Statewide public survey.** The statewide public survey provided a high-level overview of the transportation concerns and priorities of New Mexicans. Conducted in both English and Spanish by Harris Interactive, Inc., it was designed to be representative of the entire state, providing a general sense of which transportation issues and priorities might currently be foremost in the public mind.
- **RWG and Tribal questionnaire.** The project team administered a questionnaire to members of the Regional Working Groups and also distributed the questionnaire to members of the Tribal Coordinating Committee to redistribute to their respective tribal leaders. For comparative purposes, the questions included on the questionnaire were generally identical to those in the statewide public survey.
- **Public gatherings.** Public meetings were held at select points throughout the process. (See list in 2040 Plan Appendix D.) These events gave the public opportunities to learn about and comment on the plan.
- **Public information stations.** In addition to the public meetings, NMDOT and RTPO staff reached out to New Mexicans where they were – at conferences, New Mexico legislature

FIGURE 1.3

Statewide working groups:

SWG-1	Public Health, Safety and Security
SWG-2	State of Good Repair
SWG-3	Access, Mobility, and Connectivity
SWG-4	Economic Vitality – Freight Movement
SWG-5	Economic Vitality – Regional Development, Border Considerations, Rural/Urban Equity, and Environmental Justice
SWG-6	Visitor Travel, Recreation, and Tourism
SWG-7	Federal, State, and Tribal Lands
SWG-8	Cultural Resources, Historic Resources, Landscapes, and the Natural Environment
SWG-9	Plan Implementation and Project Delivery

Regional working groups:

RWG-1	Mid-Region RTPO
RWG-2	Northeast RTPO
RWG-3	Northern Pueblos RTPO
RWG-4	Northwest RTPO
RWG-5	South Central RTPO
RWG-6	Southeast RTPO
RWG-7	Southwest RTPO



“Transportation Day,” and other events – through deployment of information stations. NMDOT or RTPD planners set up and staffed these at various locations throughout the state as opportunities arose to do so. (See list in 2040 Plan Appendix D.) They provided an additional opportunity to engage with the public on the key issues addressed by the plan.

- **Presentations at publicly noticed MPO and RTPD meetings.** During every phase of the plan development process, the 2040 Plan project manager (and sometimes other NMDOT Planning & Safety Division staff) gave presentations to each of the MPO and RTPD technical and policy committees. (See list in 2040 Plan Appendix D.) The intent was twofold: First, the presentations kept the committee members up to date on the status of the plan as it was developed. Second, since all of the MPO and RTPD technical and policy committees were publicly noticed, the presentations offered an additional means for the public to learn about the plan.
- **Other presentations:** Throughout the planning process, the 2040 Plan project manager gave presentations on the plan to various interested groups, typically following an invitation to do so from the groups themselves. (See list in 2040 Plan Appendix D.)

Plan Development Phases

Development of the 2040 Plan took place in four phases. Each phase focused on a specific question (see Figure 1.4).

Figure 1.4 Plan Development Phases

PHASE 1: Existing Conditions – “Where Are We Now?”

- Data and Information Needs Assessment
- Existing Conditions and Trends Analysis

PHASE 2: Strategic Direction – “Where Do We Want To Go?”

- Vision, Goals, Objectives, and Performance Measures
- Scenario Analysis
- Target Setting

PHASE 3: Resource Allocation – “How Will We Get There?”

- SLRP Alternatives Analysis

PHASE 4: Implementation – “What Will It Take?”

- Plan Writing, Graphic Design, & Document Management
- Plan Approval and Implementation



1.2 Purpose of the Technical Analysis Report

This report summarizes the analysis conducted as part of Phase III of the plan development, as well as additional analysis conducted to support the final 2040 Plan. The document includes the following information:

- **Section 2.0: 2040 Plan Alternatives.** This section describes how the alternatives were developed as part of the overall process and some of the critical assumptions behind these alternatives.
- **Section 3.0: Priority Tiers.** One element of the plan was the development of priority tiers for state infrastructure. This section describes the purpose of tiering, the factors used to identify tiers, the application of these tiers to specific modal elements, and the potential uses of those tiers moving forward.
- **Section 4.0: State of Good Repair Needs Assessment.** As part of the alternatives analysis, the 2040 Plan project team analyzed long term needs in a few key areas. This was not a comprehensive needs assessment, but an assessment of needs in areas of focus identified during the 2040 Plan process. This section describes a few key measures of long term bridge, pavement, and transit operations and preservation needs.
- **Section 5.0: NMDOT Construction Costs.** During the plan development process, a critical question for the future was how construction costs impact NMDOT's ability to invest in its system. This section describes the inflation factors used to project future construction costs.
- **Section 6.0: Health Impact Analysis.** One element of the 2040 Plan was an attempt to understand the impact of transportation investment choices on human health. This section describes how these issues were addressed in the 2040 Plan.
- **Section 7.0: Strategy Database.** During Phases II and III of plan development, a range of strategies were identified. This process is described in Section 2.0, and the complete listing of strategies is provided in this section.



2.0 2040 Plan Alternatives

Phase III of 2040 Plan development involved identifying potential investment alternatives and evaluating those alternatives. The purpose of this process was not necessarily to select a preferred alternative, but to present choices to NMDOT staff and stakeholders and develop a future vision and strategy comprised of the most effective elements of each alternative.

Three alternatives were developed as part of the 2040 Plan process. The alternatives describe three possible futures and how NMDOT could prioritize investments under varied conditions. The scenario analysis provides New Mexico with a clear understanding of the trigger points at which technological, environmental, and demographic change significantly impact transportation planning and policy decisions.

2.1 Strategy Development Process

The alternatives analysis process began in earlier phases of work through the gathering of potential strategies and policies. The project team compiled a database of project, policy, and program strategies identified by the Regional and Statewide Working Groups as well as strategies documented in existing plans. The comprehensive database, included in Section 7 of this document, allows users to search and sort for transportation strategies based on the following characteristics:

- Type – Project, policy, or programmatic strategy;
- Mode – Multimodal, Bicycle/Pedestrian, Transit, Highway, Rail, Air;
- Region – Statewide, Northwest, Northern Pueblos, Northeast, Southeast, South Central, Southeast, Mid-Region;
- Scale – Statewide/Region-to-region, Within Region, Within Community;
- Time Horizon – Short-term (1-5 years), Medium-term (6-15 years), Long-term (15+ years);
- Goal Area – Transparency & Accountability, Safety, Preservation & Maintenance, Multimodal Mobility & Connectivity, Culture & Environment

2.2 Alternatives Development Process

The alternatives developed for the 2040 Plan were based on the full set of strategies, as well as on a set of key themes that emerged from all of the public and stakeholder engagement conducted as part of the plan. Ten key themes emerged from the plan development process:

1. **Find sustainable sources of revenue/spend funds more efficiently.** Recognizing recent declines in purchasing power of both federal and State funding sources, as well as increased costs and aging infrastructure, sustainable revenue was a key need identified to fund critical projects and programs. At the same time, efficient use of funds is critical.
2. **Preserve and maintain what we already have.** Stakeholders recognized that the first priority for NMDOT and other agency investments should be on taking care of the roads, bridges, railroads, transit services, and other transportation infrastructure that already exists.
3. **Improve public transportation.** Stakeholders identified the need for more service, better connectivity, better bus stops, and other efforts to make New Mexico's many transit systems work more effectively. This includes addressing a variety of needs from commuting, to access to health care, to long distance travel for tourists and residents.
4. **Support economic development.** Providing strategic highway links, rail lines/facilities, Amtrak, walkable Main Streets, tourism, and transit service for job access and tourists all help link transportation investments to economic development.
5. **Address public health and safety needs.** Participants clearly noted the need for transportation investments to support "active" transportation modes (walking and bicycling), protect vulnerable system users (seniors, children, disabled, etc.), and address rural roadway safety, among other similar issues.
6. **Provide access and mobility for everyone, everywhere.** Stakeholders clearly noted that NMDOT and other transportation agencies should address the needs of all system users (not just some) and in all communities (urban, rural, and tribal). This grew from a recognition that an aging population and other changes likely produce new and different mobility needs. Participants in the process also recognized the importance of addressing the needs of tourists, visitors, and recreational travelers.
7. **Support freight movement.** Freight plays a critical role in the economy, and New Mexico is no exception. Stakeholders identified the importance of making it easy for freight of all types to move by all modes (road, rail, air, etc.), as well as facilitating intermodal connectivity.
8. **Protect and preserve what makes New Mexico special and unique.** New Mexico's culture, history, landscapes, flora, and fauna were raised as a centerpiece of everything the state does. Respecting this uniqueness was a theme woven throughout the plan development process, for a wide range of reasons from cultural sensitivity to environmental stewardship to tourism and economic reasons, as well as for resident's quality of life.
9. **Coordinate across jurisdictional/regulatory boundaries.** Participants in the plan development process highlighted the value they saw in the 2040 Plan being developed in a coordinated and collaborative manner. Carrying the approach of the plan forward was an important objective of the plan.



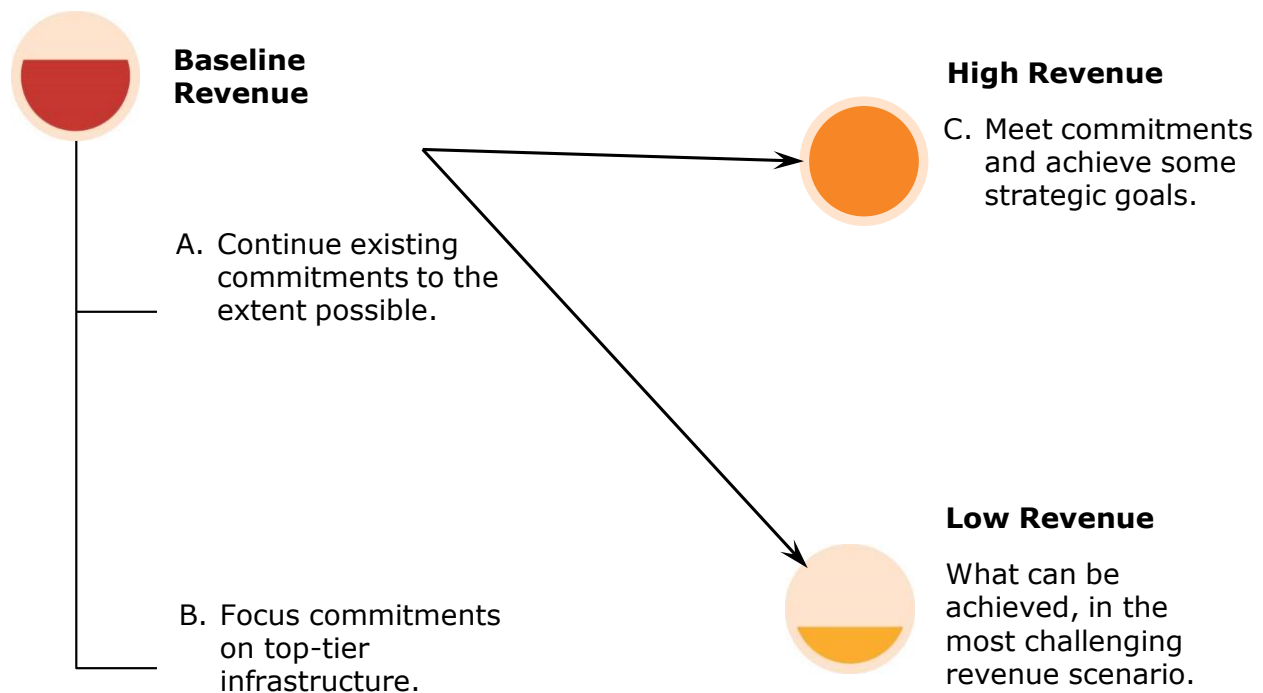
- 10. Improve data collection, management, and sharing.** Underlying all of the other key findings was a clear, strong need to improve the quality, availability, and openness of NMDOT and other data sources.

These themes were used first to develop alternatives, and remained important in the overall development of the plan.

2.3 Alternatives Reviewed

Figure 2.1 describes the three basic alternatives identified for analysis, as well as the relationship between these alternatives development and revenue projections.¹ Each alternative included an identification of overall priorities, required policy changes, and budget assumptions. To help stakeholders review the alternatives, principal advantages and acknowledged constraints were identified, based on the analysis conducted for the plan. The following sections summarize these characteristics for each alternative.

Figure 2.1 Relationship of Alternatives to Revenue Projections



¹ See Appendix B, Scenario Analysis Technical Report for details on funding the three alternatives.

Alternative A: Trend Based on Current Practices

The tagline for Alternative A was “*Working to meet current commitments given revenue constraints*”. The following elements were included in this alternative.

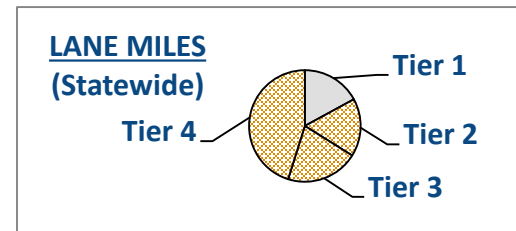
NMDOT Priorities

1. Safety:

- ❖ Reduce fatalities and serious injuries through data-driven and innovative processes.

2. State of Good Repair: Continue current level of investment to preserve and maintain highways and bridges in a state of good repair. Use historic approaches to identify needs and program funds.

- ❖ Tier 1: “Silver” Standard
- ❖ Tier 2: “Bronze” Standard
- ❖ Tier 3: “Bronze” Standard
- ❖ Tier 4: “Bronze” Standard



3. Capital Investment in High-Demand Regions: Focus limited capital funds to address issues in regions with existing critical needs or experiencing the highest levels of demand (e.g., the border area, oil patch, etc.)

Supportive Policies

1. This alternative assumes that there would be no change from existing policies.

Budget Assumptions

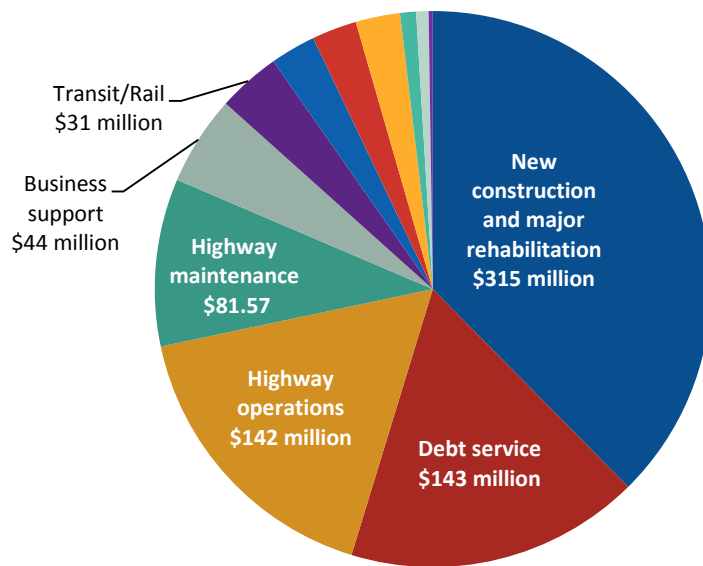
The following budget assumptions were included in this scenario. Figure 2.2 presents a summary of existing funding distribution to major NMDOT programs.

- ❑ *Transportation revenues remain flat, with purchasing power of dollars declining over time.*
- ❑ *Operating and maintenance budgets remain flat.* Existing NMDOT programs continue to operate with current budget levels, but with increasing difficulty due to rising costs.
- ❑ *Debt service commitment remains high through 2027.* Debt service continues to average around \$143 million per year, or approximately 17 percent of NMDOT’s annual budget (\$838 million).



- ❑ *"Discretionary" spending can increase only if fixed costs are reduced.* Fixed costs include all those associated with keeping NMDOT in operation, maintaining current assets in a state of good repair, honoring existing contracts, and servicing bonded debt. Discretionary = everything else.

Figure 2.2 Current NMDOT Funding Distribution



Note: Not shown pie slices include: Traffic Safety & Statistics (\$22 million), Local Government Road Fund (\$22 million), Programs and Infrastructure (\$22 million), Planning & Research (\$8 million), Aviation (\$6 million), and Other (\$2 million)

Principal Advantages

- Maintains existing commitments to the best of NMDOT's abilities given current practices.
- Relies on tested and familiar approaches to funding, planning, and implementing projects.

Acknowledged Constraints

- May lead to deterioration in overall performance due to declining purchasing power of revenues (i.e., increasing costs).
- Does not address significant capacity deficiencies.
- Minimal multimodal accommodation.
- Limits flexibility to proactively address areas of strategic statewide need related to economic development, freight, safety, public health, etc.

- Assumes no change in size, pay level, or composition of NMDOT work force to deliver current program more effectively.

Alternative B: Management and Operations plus Focused Investment

The tagline for Alternative B was “*Improve management practices and prioritize investments in top tier corridors to enable greater focus on state of good repair, economic development and statewide priorities*”. The following elements were included in this alternative.

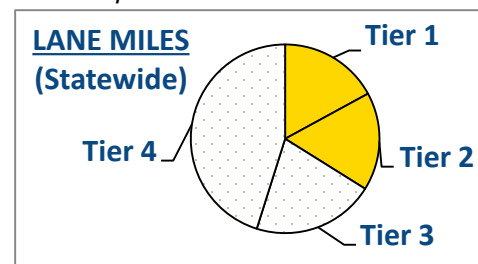
NMDOT Priorities

1. Safety and Public Health:

- ❖ Reduce fatalities and serious injuries through data-driven and innovative processes.
- ❖ Proactively address emerging transportation-related public health concerns (lack of physical activity and poor air quality) by increasing support for active transportation and transit.

2. State of Good Repair / Asset Management: Maintain highways and bridges in a state of good repair by applying a proactive, “preservation-first” asset management strategy. *Note: Studies indicate that applying proactive, preservation-first management strategies to assets provides significant reductions in life-cycle costs, allowing limited revenues to be redirected to other critical priorities*

- ❖ Tier 1: “Gold” Standard
- ❖ Tier 2: “Gold” Standard
- ❖ Tier 3: TBD
- ❖ Tier 4: TBD



3. Enhance Capacity Through Better Operations and Demand Management: Take an “operations and demand management first” approach to enhancing capacity instead of relying on scarce capital funds.
4. Strategic Investment in “Key” Corridors: Focus maintenance and capital improvement funds to support movement of people and freight (by car, bus, bicycle, foot, truck or train) along a limited number of “key” corridors (i.e., corridors with statewide, interstate, or international significance).



Supportive Policies

1. Life-Cycle Cost Basis: NMDOT shall make all decisions regarding expenditure of capital funds based on analysis of the long-term, life-cycle cost of building, operating, and maintaining assets over time.
2. "Operations and Demand Management First": NMDOT shall exhaust all cost-effective operations and demand management strategies to address congestion prior to using capital funds to expand capacity.
3. "Key Corridors First": NMDOT shall prioritize expenditure of funds on key corridors (which shall be defined with respect to each mode of transportation).

Budget Assumptions

The following budget assumptions were included in this scenario.

- ❑ *Transportation revenues remain flat, with purchasing power of dollars declining over time.*
- ❑ *Asset management relieves some pressure on operating and maintenance budgets: Existing NMDOT programs continue to operate with current budget levels, but with somewhat more flexibility to respond to rising costs or address emerging needs.*
- ❑ *Debt service commitment remains high through 2027: Debt service continues to average around \$143 million per year, or approximately 17 percent of NMDOT's annual budget (\$838 million).*
- ❑ *Better management of operations provides some budgetary flexibility for additional discretionary spending.*
- ❑ *Discretionary spending focuses on higher tier corridors and a more diverse set of transportation modes.*

Principal Advantages

- Addresses areas of significant need, including congestion and safety in urban and rural areas
- Focuses scarce NMDOT resources on corridors serving the greatest number of people and highest freight volumes
- Addresses growing transportation-related public health concerns in a proactive fashion

Acknowledged Constraints

- Requires adjustments to new business practices (asset management, systems management, etc.)



- Limits performance improvements mostly to top tier corridors
- May create concerns about equity of State investment in the transportation system

Alternative C: Aspirational Vision plus New Revenues

The tagline for Alternative C was “*Development of new revenue sources enables NMDOT to address strategic priorities without having to let go of current commitments*”. The following elements were included in this alternative.

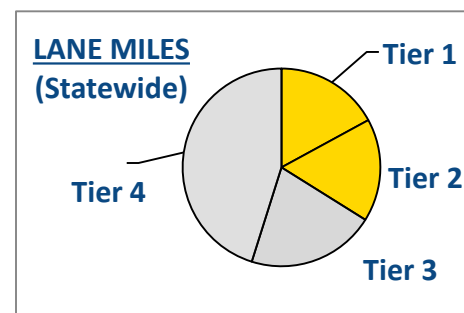
NMDOT Priorities

1. Safety, Public Health, and Aging Population:

- ❖ Reduce fatalities and serious injuries through data-driven, innovative, and proactive processes.
- ❖ Prioritize safety improvements based on risk of potential future crashes, not just past crash history.
- ❖ Proactively address transportation-related public health concerns (lack of physical activity and poor air quality) by increasing support for active transportation and transit.
- ❖ Align transportation system more closely to serve the needs of New Mexico’s aging population.

2. State of Good Repair / Asset Management: Maintain all of NMDOT’s assets in a state of good repair by dedicating sufficient funds to achieve at least a “silver” standard for all roads, bridges, and other modal infrastructure and by applying a proactive, “preservation-first” asset management strategy (see note in Alt B).

- ❖ Tier 1: “Gold” Standard
- ❖ Tier 2: “Gold” Standard
- ❖ Tier 3: “Silver” Standard
- ❖ Tier 4: “Silver” Standard



- #### **3. Enhance Capacity Through Better Operations and Demand Management:** Take an “operations and demand management first” approach to enhancing capacity instead of relying on scarce capital funds.
- #### **4. Strategic Investment in “Key” Corridors:** Focus capital improvement and maintenance funds to support movement of people and freight (by car, bus, truck or train) along a



limited number of “key” corridors (i.e., corridors with regional, statewide, interstate, or international significance).

5. Strategic Investment in New Initiatives: Address proven statewide needs with new capital projects or programmatic initiatives using new revenue sources. (See list on the reverse side of this sheet for examples.)

Supportive Policies

1. Life-Cycle Cost Basis: NMDOT shall make all decisions regarding expenditure of capital funds based on analysis of the long-term, life-cycle cost of building, operating, and maintaining assets over time.
2. “Operations and Demand Management First”: NMDOT shall exhaust all cost-effective operations and demand management strategies to address congestion prior to using capital funds to expand capacity.
3. “Key Corridors First”: NMDOT shall prioritize expenditure of funds on key corridors (which shall be defined with respect to each mode of transportation).
4. Require and respect local plans: NMDOT will target funds to support communities that develop local transportation plans and demonstrate the financial and administrative capacity to implement them successfully.

Budget Assumptions

The following budget assumptions were included in this scenario.

- ☐ *Transportation revenues increase based on one or more new sources of funds. (See reverse side of this sheet for examples.)*
- ☐ *Operating budgets adjust to meet planning priorities. Existing programs continue to operate with augmented or redistributed funds to address new priorities successfully.*
- ☐ *Better management of assets and operations/demand provides some budgetary flexibility.*
- ☐ *Discretionary spending focuses on strategic investments across all transportation modes.*
- ☐ *Debt service commitment remains high through 2027. Debt service continues to average around \$143 million per year, or approximately 17 percent of NMDOT’s annual budget (\$838 million).*

Principal Advantages

- Allows NMDOT to maintain the transportation system at a much higher level and address critical statewide needs



- Enables NMDOT to focus some resources on important projects or programs of local, regional, statewide, interstate, or international interest

Acknowledged Constraints

- Requires significant new revenue source(s) with buy-in from the public and elected officials
- Even with increased funding, NMDOT will face challenges meeting all system needs
- With relatively low levels of congestion on most highways, additional funding may lead to further development of an already sparsely used system.



3.0 *Priority Tiers*



Increasingly, NMDOT is being asked to do more with fewer resources. By establishing priority tiers, the extensive public infrastructure system can be segregated by corridor and its relative significance. Using a tiered system approach enables NMDOT to focus scarce resources in a cost-effective manner, ensuring that high-priority tiers are maintained adequately. The tiering framework is intended as a tool to support decision making. A simple way for NMDOT to understand if it is addressing the most significant elements of its multimodal transportation network.

The transportation network tiers were developed around the principle of connectivity, which is the fundamental role that NMDOT plays in providing a multimodal transportation system. Local agencies (cities and counties) primarily provide circulation (by road, transit, etc.). The State's primary role is to connect communities, cities, and regions of the state.

The priority tiers were developed using a combination of quantitative and qualitative processes. Thresholds were set based on objective, functional indicators, and stakeholder input contributed to the threshold determinations and the relative importance of each indicator.

3.1 *Highway System*

NMDOT considered a range of criteria when defining priority tiers and thresholds for the state's highway system, including roadway functional classification (Figure 3.1), average daily traffic volumes (Figure 3.2), and regional connections between the state's largest population centers (Figure 3.3). After an initial assessment, NMDOT refined the tier criteria to also consider connections to the state's major tourist sites (Figure 3.4) and made final adjustments based on stakeholder input.² The resulting priority tiers for New Mexico's highway system are designated by the following thresholds:

- **Tier 1** – Includes all interstate highways. By definition, interstates are at the top of the highway functional classification framework. They are limited access, divided highways that are intended to provide the highest levels of mobility for both freight and person movement.
- **Tier 2** – Includes corridors that connect cities with populations greater than 20,000; have traffic volumes that exceed 10,000 vehicles per day; and/or provide access to high-demand tourist destinations (examples include Taos, Carlsbad Canyon National Park, and White Sands National Monument).

² NMDOT presented the draft priority tier maps during the third round of Regional Working Group meetings in November and December 2014, the Statewide Working Group Plenary meeting on December 2, 2014, and the second round of public meetings in December 2014.

- **Tier 3** – Includes corridors that connect cities with populations between 10,000 and 20,000; have traffic volumes between 5,000 and 10,000 vehicles per day; provide access to other popular tourist destinations not identified in Tier 2 (examples include Bandelier, El Malpais, and El Morro National Monuments and Cumbres and Toltec Scenic Railroad); and/or any remaining National Highway System roadways.
- **Tier 4** – All other state-owned roads.



Figure 3.1 Roadway Functional Classification

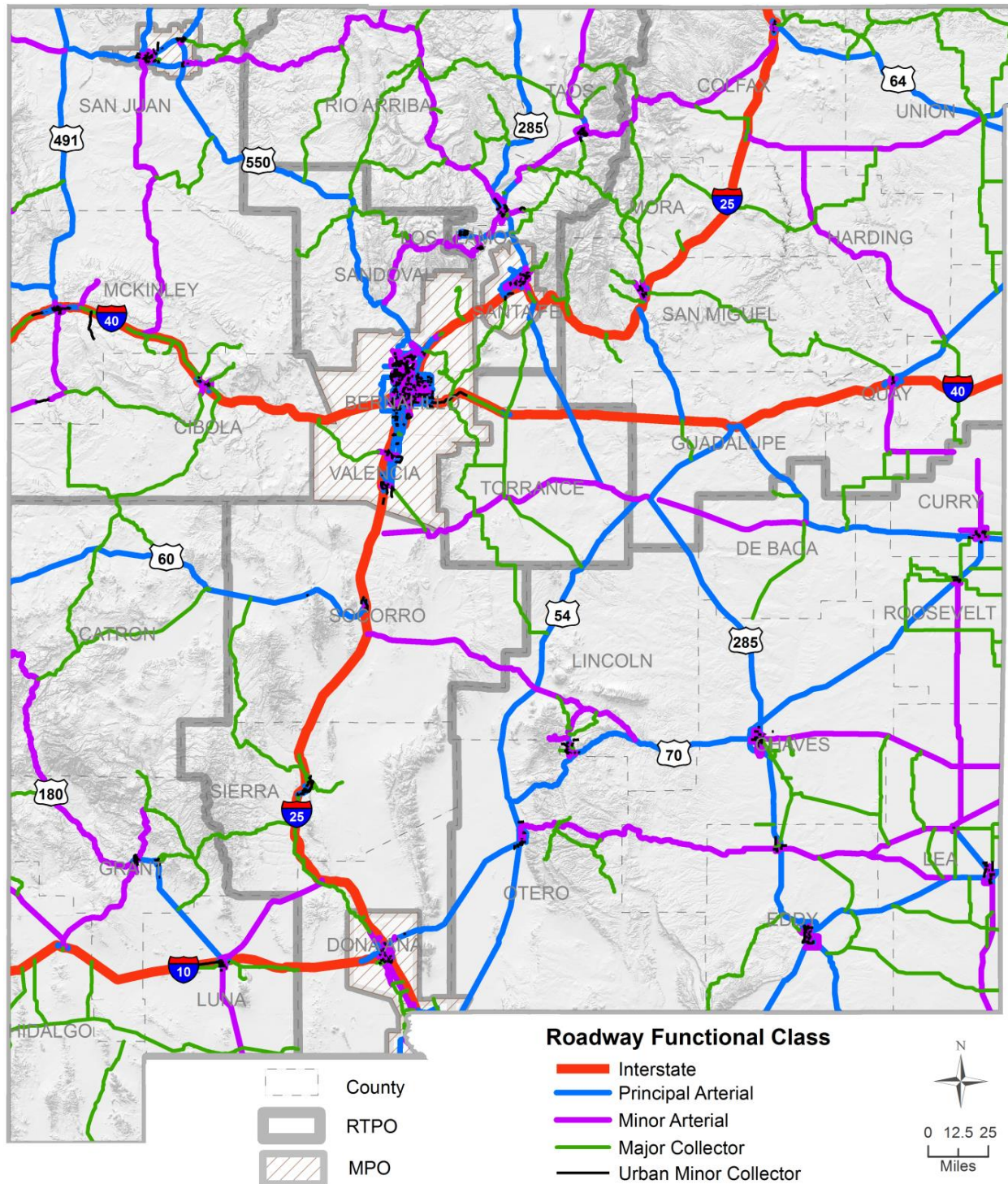


Figure 3.2 Average Daily Traffic Volumes

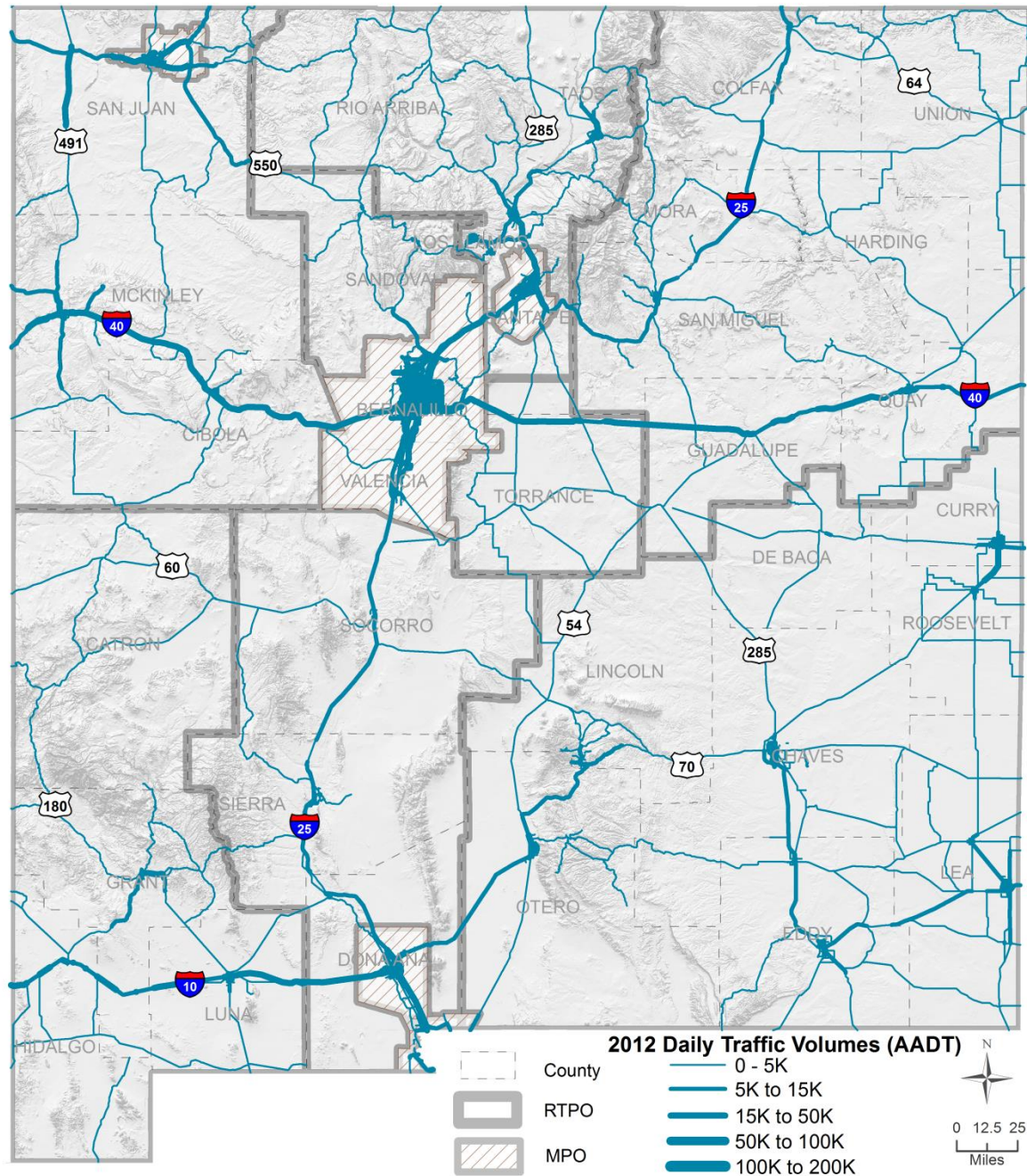


Figure 3.3 Proposed Roadway Tier System

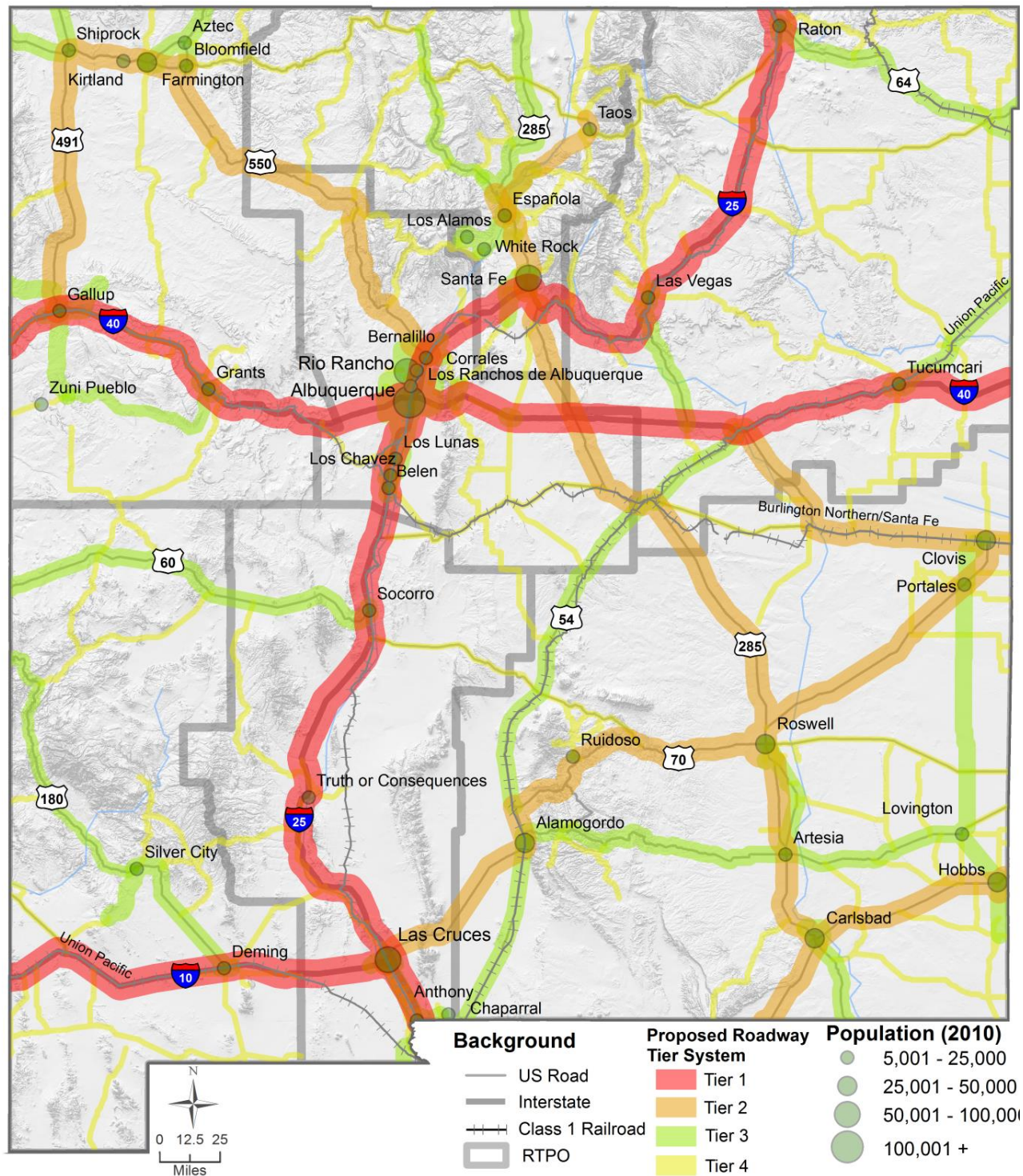


Figure 3.4 Priority Tiers Overlaid with Tourist Destinations

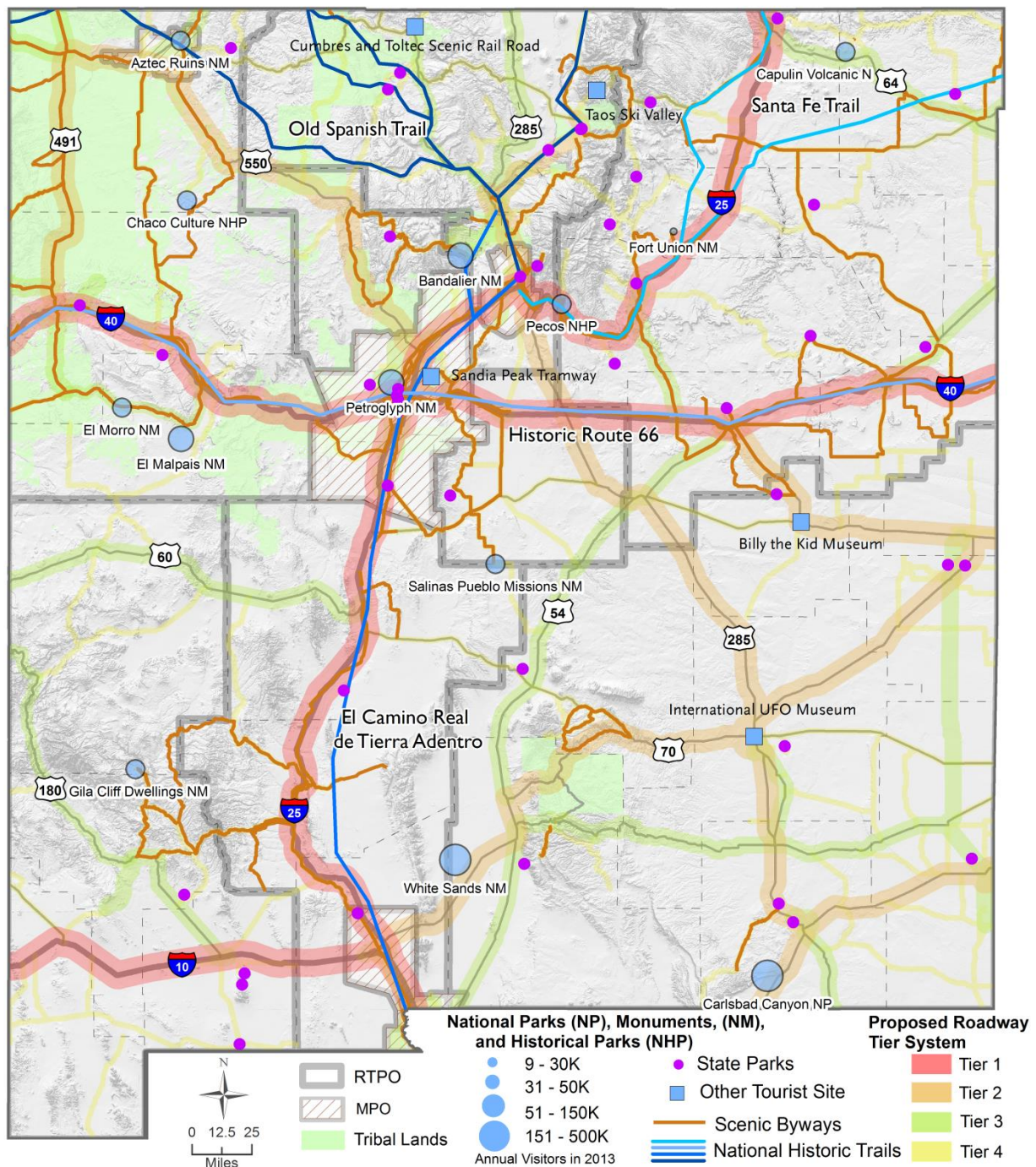


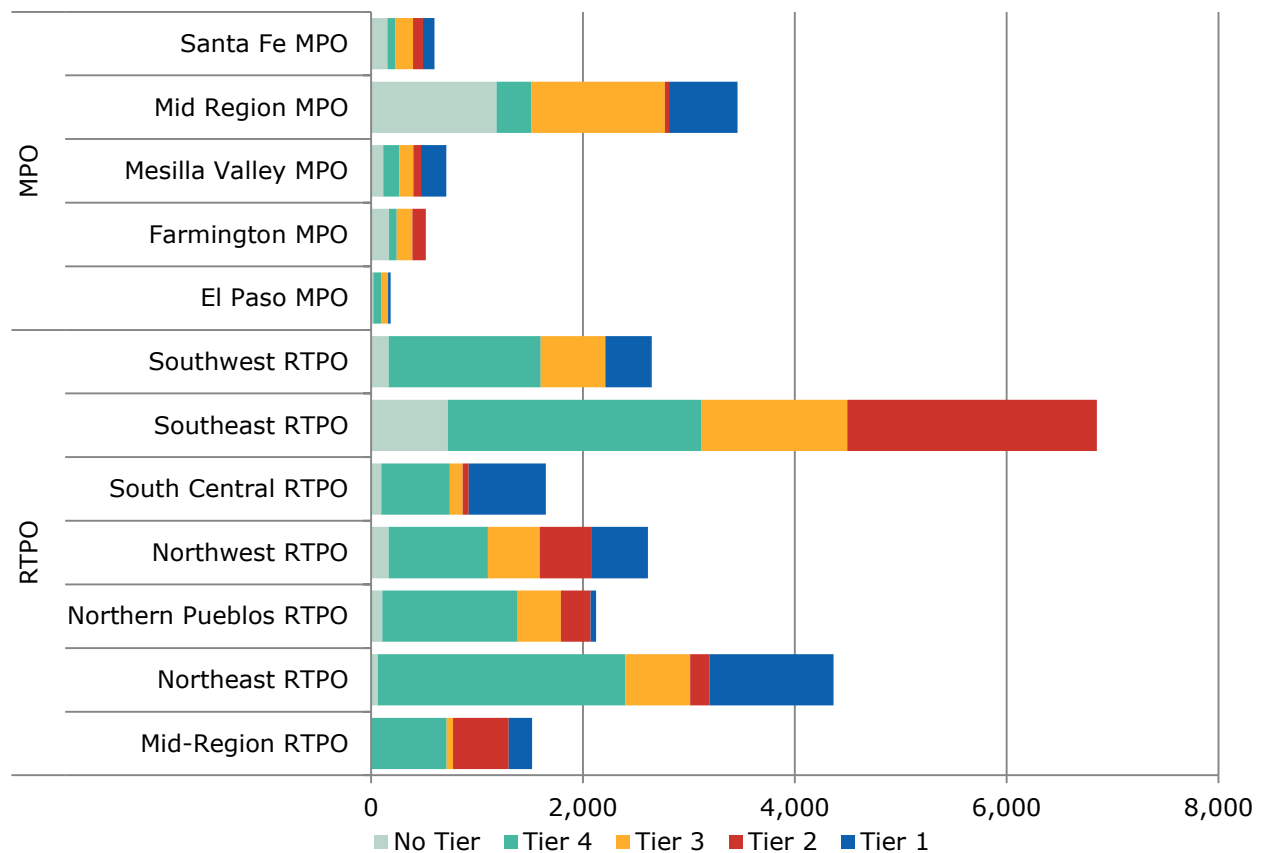
Table 3.1 and Figure 3.5 summarize the total lane miles in each priority tier by functional class and region, respectively. Note that the data used to represent the tiers include all Federal-aid eligible roads



Table 3.1 Highway Lane Miles by Tier

Priority Tier	Lane Miles
Tier 1	4,158
Tier 2	4,234
Tier 3	5,453
Tier 4	10,452
No Tier	4,902
Total	29,199

Figure 3.5 Lane Miles per Tier among New Mexico RTPOs and MPOs



3.2 Freight System

New Mexico's multimodal freight system is comprised of a network of highways (Figure 3.6 and Figure 3.7), two Class I railroads and several shortline railroads (Figure 3.8), one airport

capable of handling air cargo, and three international border crossings. NMDOT prioritized elements of the freight system into tiers using the following criteria:

- Tier 1: Interstates (I-10, I-40, I-25), Class I Railroads (BNSF Railway and Union Pacific), and air cargo airports (i.e., Albuquerque International Sunport).
- Tier 2: Remainder of truck priority network (including US 285, US 84, US 550, and US 70) and high demand shortline railroads.
- Tier 3: Remainder of active shortline rail roads, regionally significant freight network.
- Tier 4: Abandoned railroads.

Additional detail on the freight system is provided in the New Mexico Freight Plan.



Figure 3.6 Key Freight Infrastructure

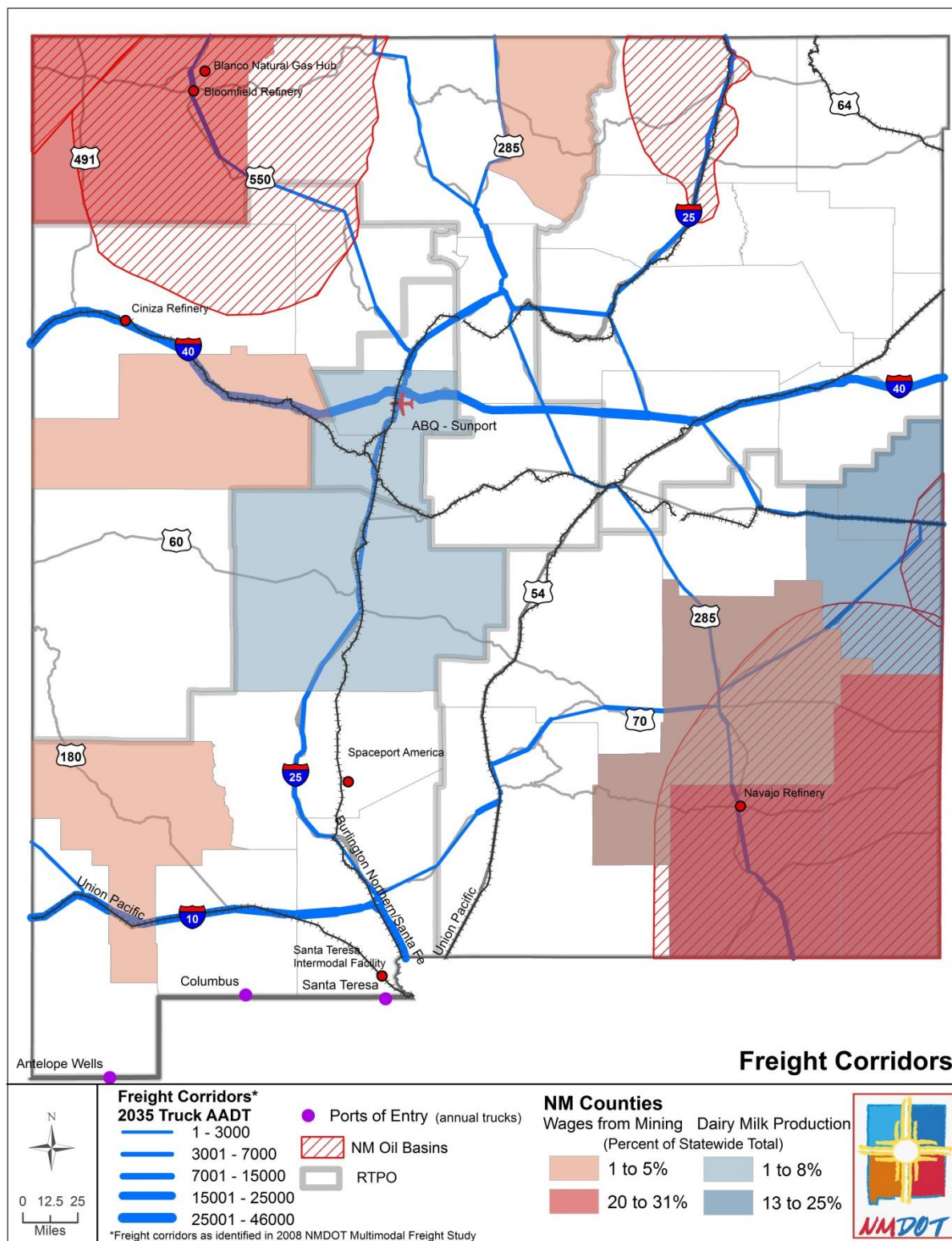


Figure 3.7 Current and Projected Truck Traffic
2002-2035

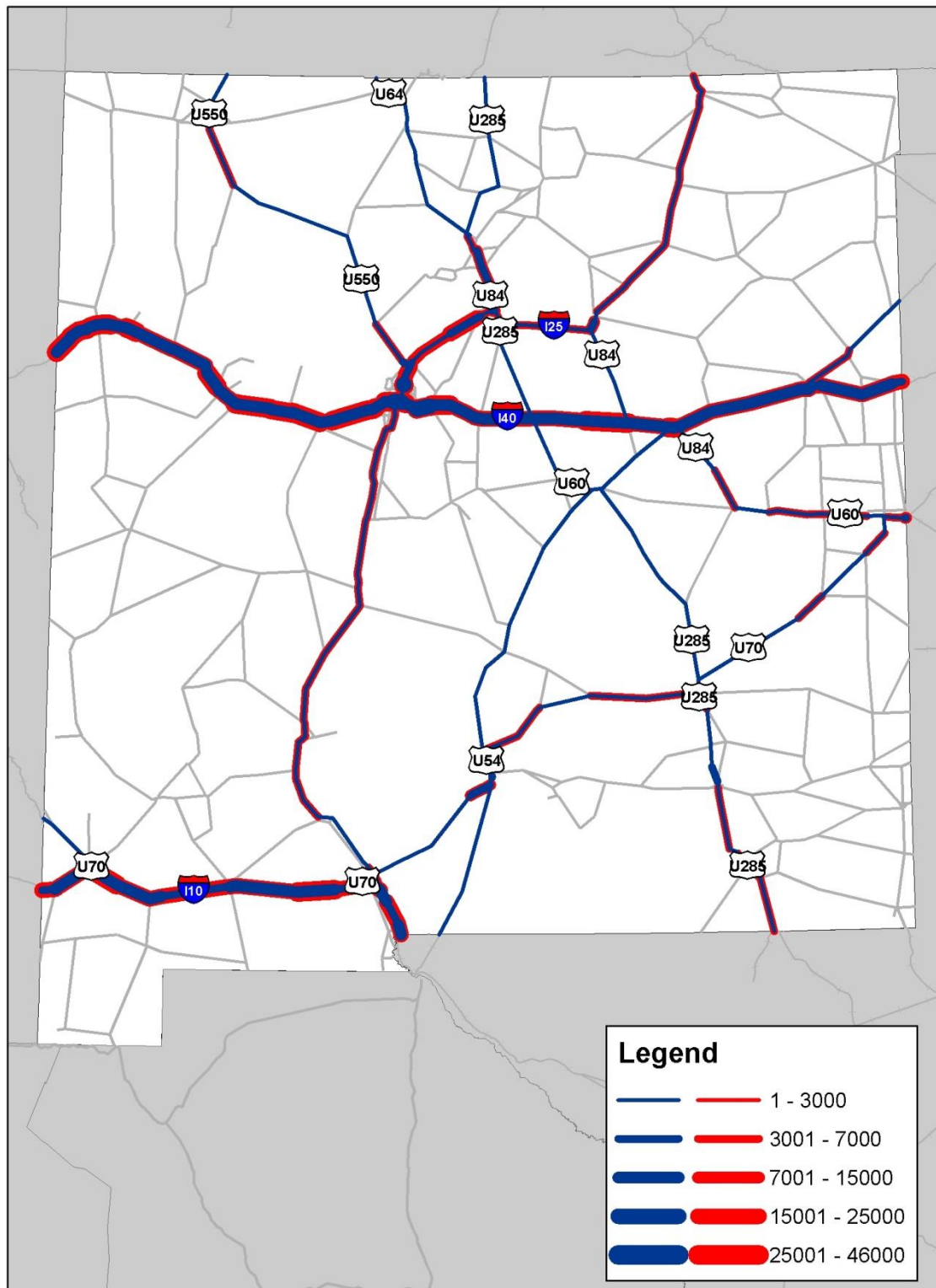
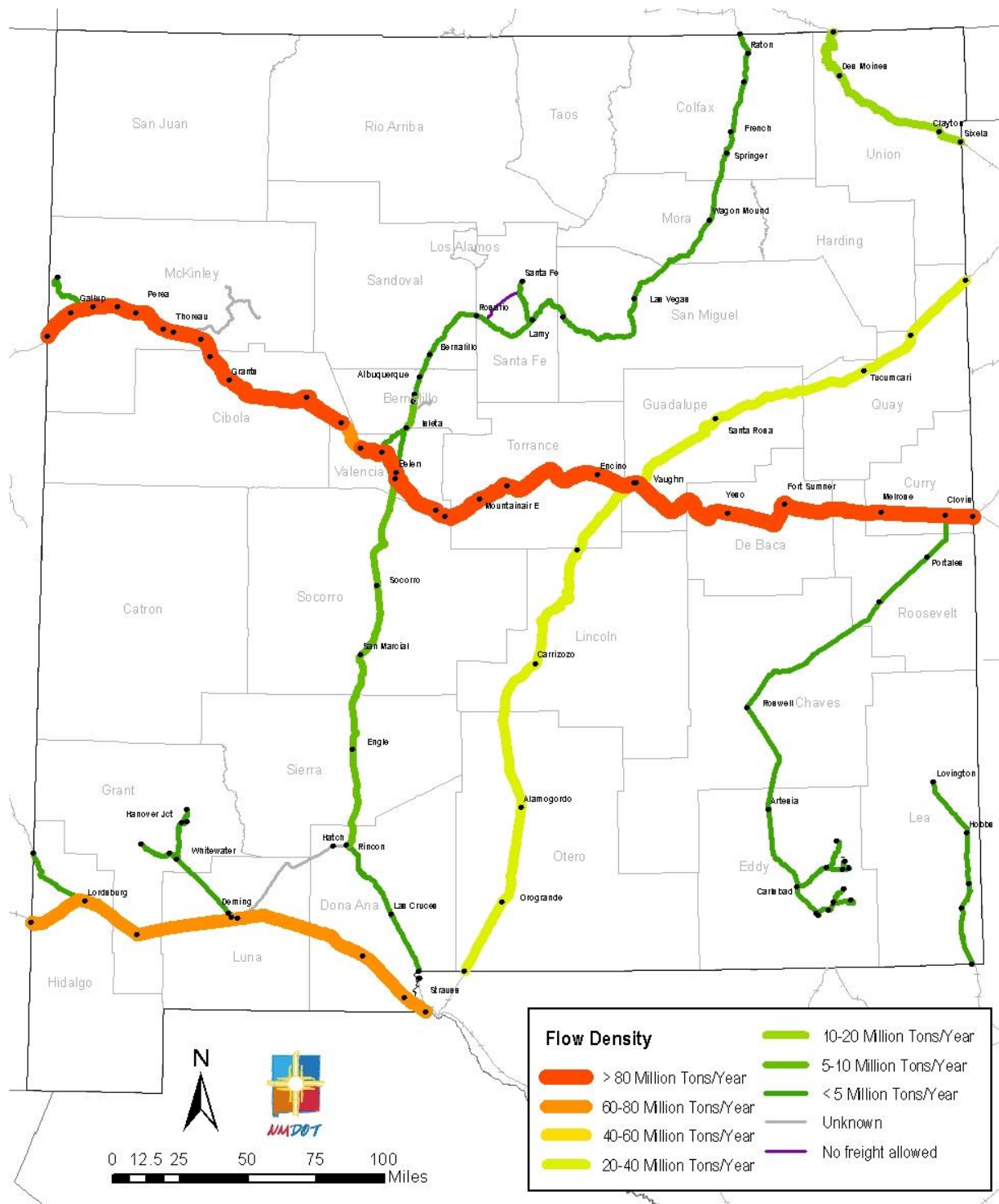


Figure 3.8 New Mexico Freight Rail System
Flow Density, 2011



Source: NMDOT State Rail Plan, 2014

3.3 Transit Systems

In the case of transit, NMDOT will prioritize investments on the basis of the *New Mexico State Management Plan for the Administration of Federal Transit Grants*. The 2040 Plan focused only on available intercity transit services, recognizing that local and regional transit is not the primary responsibility of the state.

Through the development of the 2040 Plan, levels of intercity transit service were developed for transit with the following thresholds:

- **Level 1:** Demand for >35 scheduled trips per week in each direction.
- **Level 2:** Demand for 20-34 scheduled trips per week in each direction.
- **Level 3:** Demand for 5-19 scheduled trips per week in each direction.
- **Level 4:** Demand for 1-4 trips per week in each direction.

Estimating Future Transit Demand

To support the identification of levels of current and future transit service, forecasts of transit demand were generated. This work builds on previous work conducted for NMDOT under the Multimodal Study.

The data below summarizes the current and estimated demand for intercity transit demand in New Mexico.

Bus

Future demand was estimated based on the future estimates of long-distance commuters (source: CTPP forecasts for rail analysis)

Park-and-Ride Service: Existing Condition

Park-and-ride service experienced significant growth during the first five years after it started operation. After the decline during the post economic crisis period (2008 and 2009), ridership has started to grow again, but at much slower pace. Table 3.2 shows growth among the different lines. The 2014 ridership of Green Line and Orange Line have exceeded the forecasts for 2015 in the 2006 Needs Analysis report, whereas Silver Line and Turquoise Line have seen steady decline since 2011.



Table 3.2 Park and Ride Service Average Daily Ridership by Route
2014

Line	Route	2014	2013	2011
Blue	Santa Fe to Los Alamos	301.8	278.1	255.7
Green	Espanola to Los Alamos	210.1	211.2	195.5
Red	Espanola to Santa Fe	79.8	83	80.7
Purple^a (Express)	Albuquerque-NM 599 Station-Los Alamos	130.4	127.1	153.7
Orange	Las Vegas to Santa Fe to Albuquerque	104.1	107.9	89
Silver	Las Cruces to White Sands	43.6	51.3	54.4
Turquoise (opened in 2007)	Moriarty-Edgewood-Sedillo-Albuquerque	17	23.9	33.6
Gold (opened in 2009)	Las Cruces-Anthony, TX-El Paso, Texas	246.9	244.6	148
Park and Ride fixed-route train station shuttles link with the NM Rail Runner Express and NMDOT P&R systems				
	South Capitol Station Shuttle (opened in 2008)	72.4		
	NM 599 Station Shuttle (opened in 2009)	51.9		
	Purple Shuttle	1		

Source: NMDOT.

^a On August 3, 2009, the Purple Route became an express route between the NM 599 Rail Runner Express Station and Los Alamos. The Purple route was expanded on August 29, 2011, to provide one morning run from Albuquerque.

Table 3.3 Park and Ride Service Total Trips per Year
2003 to 2014

Fiscal Year	Trips	Percent change from previous year
2003	21,251 ^a	–
2004	170,403	–
2005	230,248	35.12%
2006	289,984	25.94%
2007	302,054	4.16%
2008	370,315	22.60%
2009	316,223	-14.61%
2010	258,086	-18.38%
2011	292,476	13.33%
2012	310,128	6.04%
2013	312,320	0.71%
2014	315,738	1.09%

Source: NMDOT.

^a 2003 data consisted of only two service months.

Park-and-Ride Service: Demand Analysis

To evaluate the existing and potential future demand for intercity travel, county-to-county data and place-to-place analyses were carried out separately. This process is described below.

County Pairs

The process for evaluating demand between county pairs included:

1. Identify potential corridors (county-pairs):
 - .1.1 Select county/place pairs with at least 500 trips (number of commuters).
 - .1.2 Select county pairs of which the origins and destinations of flows are in different counties.
 - .1.3 For each qualified county pairs, check if there are city pairs within the corresponding counties that can generate over 500 trips in base year, this is to determine if demand is disbursed to some extent.
2. Identify county pairs with existing Park and Ride or rail services.
3. For those counties not being served by transit services, conduct qualitative analysis of the potential of the corridors (county pairs):



- .3.1 Evaluation criteria include demand concentration, travel time/distance, size of cities, accessibility, and minimum number of trips per day in base year.
- .3.2 For number of trips, first calculate the capture rate by taking the average of the capture rates of the 6 park and ride routes using 2011 ridership data, at 2 percent; then, calculate the potential trip per day (need to be over 50 to be viable).
- .3.3 Preliminary assessment based on the criteria.

Table 3.4 presents the qualified county pairs, as well as counties with existing transit service. Table 3.5 presents additional information and assessment of the county pairs not being served by transit. Note that there are cities that are located within different counties that are served by transit, but do not have easy access to those services.

City Pairs

The process to evaluate city to city demand was similar to that of County Pairs; however, each of the city pairs is located within the same county – the process is evaluating potential intracounty, intercity transit corridors. (*Transit services within county are usually planned by regional or local agency*). Table 3.6 presents the qualified city pairs, as well as cities with existing transit service. Table 3.7 presents additional information and an assessment of the cities pairs not being served by transit.

Further analysis is needed to assess the potential of the corridors and forecast their future performance.



Table 3.4 Demand and Services of Intercounty Transit

Residence		Workplace		Total Commuters/ Round Trips	Existing Service	Demand Concentration ^a
County	Place	County	Place			
Bernalillo County		Sandoval County		10,375	RR	
	Albuquerque City		Rio Rancho City	7,030	No direct transit to RR station (Sandoval)	
Bernalillo County		Santa Fe County		3,430	RR	
	Albuquerque City		Santa Fe City	2,295	RR	
Bernalillo County		Valencia County		2,285	RR	
	Albuquerque City		Los Lunas village	775	RR	
Chaves County		Eddy County		1,415	N/A	Disbursed
Cibola County		Bernalillo County		645	N/A	Disbursed
Cibola County		McKinley County		805	N/A	Disbursed
Curry County		Roosevelt County		955	N/A	Disbursed
Lincoln County		Otero County		525	N/A	Disbursed
Los Alamos County	Santa Fe County			710	Blue Line	Disbursed
Otero County		Doña Ana County		945	N/A	Disbursed
Rio Arriba County		Los Alamos County		3,285	Green Line	
	Espanola City		Los Alamos CDP	650	Green Line	
Rio Arriba County		Santa Fe County		3,685	Red Line	
	Espanola City		Santa Fe	930	Red Line	
Roosevelt County		Curry County		1,405	N/A	
	Portales City		Clovis City	580	N/A	



Residence		Workplace		Total Commuters/ Round Trips	Existing Service	Demand Concentration ^a
County	Place	County	Place			
San Miguel County		Santa Fe County		2,395	Orange	Disbursed
Sandoval County		Bernalillo County		27,120	RR	
	Corrales Village		Albuquerque City	1,800	No direct transit to RR station	
	Rio Rancho city		Albuquerque City	17,050	No direct transit to RR station	
	Placitas CDP		Albuquerque City	1,400	No direct transit to RR station	
	Rio Rancho city		Bernalillo town	735	No direct transit to RR station	
	Rio Rancho city		North Valley CDP	700	No direct transit to RR station	
Sandoval County		Los Alamos County		625	N/A	Disbursed
Sandoval County		Santa Fe County		2,940	RR	
	Rio Rancho city		Santa Fe City	1,345	No direct transit to RR station	
Santa Fe County		Bernalillo County		3,985	RR	
	Edgewood town		Albuquerque City	895	Turquoise Line	
Santa Fe County		Los Alamos County		3,905	Blue Line	
	Santa Fe city		Los Alamos CDP	925	Blue Line	
Santa Fe County		Rio Arriba County		1,600	Red Line	Disbursed
Torrance County		Bernalillo County		2,160	Turquoise Line	Disbursed
Valencia County		Bernalillo County		13,235	RR	

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Residence		Workplace		Total Commuters/ Round Trips	Existing Service	Demand Concentration ^a
County	Place	County	Place			
	Los Lunas village		Albuquerque City	2,510	RR	
	Peralta town		Albuquerque City	965	Local transit to RR station	
	Meadow Lake CDP		Albuquerque City	835	No transit to RR station	
	Bosque Farms village		Albuquerque City	750	Local transit to RR station	
	El Cerro Mission CDP		Albuquerque City	710	No transit to RR station	
	El Cerro CDP		Albuquerque City	635	No transit to RR station	
	Los Chaves CDP		Albuquerque City	610	No transit to RR station	

^a County pairs without city pairs indicate disbursed demand.



Table 3.6 Potential County Pairs

Criteria: 1) at least 500 trips; 2) flows with origins and destinations in different counties; and 3) without transit service.

Residence		Workplace		Total Commuters/ Round Trips	Demand Concentration ^a	Distance (Miles)	Predicted Number of One-Way Trips ^b	Assessment (Preliminary)
County	Place	County	Place					
Chaves County	Roswell	Eddy County	Carlsbad	1,415	Disbursed	77	57	Has potential, but demand is not highly concentrated.
Cibola County	Grants	Bernalillo County	Albuquerque	645	Disbursed	80	26	Low volume.
Cibola County	Grants	McKinley County	Gallup	805	Disbursed	60	32	Low volume.
Curry County	Clovis	Roosevelt County	Portales	955	Disbursed	20	38	
Lincoln County	Ruidoso	Otero County	Alamogordo	525	Disbursed	49	21	Size of origin city is likely too small (~7,000 population) to support P&R.
Otero County	Alamogordo	Doña Ana County	Las Cruces	945	Disbursed	68	38	
Roosevelt County	Portales City	Curry County	Clovis City	1,405		18	56	Primary cities too close.
Sandoval County	Rio Rancho	Los Alamos County	Los Alamos	625	Disbursed	60	25	Low volume.

^a County pairs without city pairs indicate disbursed demand; only Roosevelt-Curry has a city pair that could generate over 500 trips.

^b Capture Rate: 2 percent – Calculated based on the average capture rate of 6 P&R routes of 2011 ridership data.

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Table 3.7 Demand and Services of Intracounty
Intercity Transit

County	Residence	Workplace	Total Commuters/ Round Trips	Existing Service
Bernalillo	Albuquerque city, New Mexico	South Valley CDP, New Mexico	4,165	Metro
Bernalillo	Albuquerque city, New Mexico	North Valley CDP, New Mexico	3,845	Metro
Bernalillo	Albuquerque city, New Mexico	Los Ranchos de Albuquerque village, New Mexico	1,060	Metro
Bernalillo	Albuquerque city, New Mexico	Bernalillo town, New Mexico	820	RR
Bernalillo	Bernalillo town, New Mexico	Albuquerque city, New Mexico	1,320	RR
Bernalillo	Los Ranchos de Albuquerque village, New Mexico	Albuquerque city, New Mexico	1,770	RR
Bernalillo	North Valley CDP, New Mexico	Albuquerque city, New Mexico	3,810	Metro/RR
Bernalillo	Paradise Hills CDP, New Mexico	Albuquerque city, New Mexico	2,015	Metro
Bernalillo	Sandia Heights CDP, New Mexico	Albuquerque city, New Mexico	1,255	Metro
Bernalillo	South Valley CDP, New Mexico	Albuquerque city, New Mexico	11,490	Metro
Cibola	Milan village, New Mexico	Grants city, New Mexico	570	n/a
Curry	Clovis city, New Mexico	Cannon AFB CDP, New Mexico	1,660	n/a
Doña Ana	Doña Ana CDP, New Mexico	Las Cruces city, New Mexico	555	Indirect transit
Doña Ana	Las Cruces city, New Mexico	University Park CDP, New Mexico	1,875	Metro
Doña Ana	Mesilla town, New Mexico	Las Cruces city, New Mexico	885	Metro
Doña Ana	San Ysidro CDP, New Mexico	Las Cruces city, New Mexico	685	Metro
Doña Ana	University Park CDP, New Mexico	Las Cruces city, New Mexico	915	Metro
Lea	Lovington city, New Mexico	Hobbs city, New Mexico	945	n/a
Lea	North Hobbs CDP, New Mexico	Hobbs city, New Mexico	1,435	Same Place
Lincoln	Ruidoso Downs city, New Mexico	Ruidoso village, New Mexico	790	n/a

County	Residence	Workplace	Total Commuters/ Round Trips	Existing Service
Los Alamos	White Rock CDP, New Mexico	Los Alamos CDP, New Mexico	1,735	N/A
McKinley	Zuni Pueblo CDP, New Mexico	Gallup city, New Mexico	815	N/A
Otero	Alamogordo city, New Mexico	Holloman AFB CDP, New Mexico	2,165	N/A
Otero	Boles Acres CDP, New Mexico	Alamogordo city, New Mexico	675	N/A
San Juan	Aztec city, New Mexico	Farmington city, New Mexico	730	N/A
San Juan	Bloomfield city, New Mexico	Farmington city, New Mexico	965	Navajo Transit (nondaily)
San Juan	Farmington city, New Mexico	Bloomfield city, New Mexico	555	Navajo Transit (nondaily)
San Juan	Farmington city, New Mexico	Aztec city, New Mexico	510	N/A
San Juan	Flora Vista CDP, New Mexico	Farmington city, New Mexico	800	N/A
San Juan	Kirtland CDP, New Mexico	Farmington city, New Mexico	1,245	N/A
San Juan	Lee Acres CDP, New Mexico	Farmington city, New Mexico	1,315	N/A
San Juan	Shiprock CDP, New Mexico	Farmington city, New Mexico	805	Navajo Transit (nondaily)
San Juan	West Hammond CDP, New Mexico	Farmington city, New Mexico	830	N/A
Santa Fe	Agua Fria CDP, New Mexico	Santa Fe city, New Mexico	1,015	Metro
Santa Fe	Eldorado at Santa Fe CDP, New Mexico	Santa Fe city, New Mexico	1,680	Indirect transit
Santa Fe	La Cienega CDP, New Mexico	Santa Fe city, New Mexico	1,140	RR
Taos	Ranchos de Taos CDP, New Mexico	Taos town, New Mexico	895	N/A
Valencia	Rio Communities CDP, New Mexico	Belen city, New Mexico	515	Metro

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Table 3.8 Potential City Pairs

County	RESIDENCE	WORKPLACE	Total Commuters/ Round Trips	Distance (Miles)	Predicted Number of One-Way Trips ^a	Assessment (Preliminary)
Cibola	Milan village, New Mexico	Grants city, New Mexico	570	3	23	Too close, and low volume.
Curry	Clovis city, New Mexico	Cannon AFB CDP, New Mexico	1,660	8	66	Potential.
Doña Ana	Doña Ana CDP, New Mexico	Las Cruces city, New Mexico	555	7	22	Low volume.
Lea	Lovington city, New Mexico	Hobbs city, New Mexico	945	21	38	
Lincoln	Ruidoso Downs city, New Mexico	Ruidoso village, New Mexico	790	4	32	Too close.
Los Alamos	White Rock CDP, New Mexico	Los Alamos CDP, New Mexico	1,735	10	69	Potential.
McKinley	Zuni Pueblo CDP, New Mexico	Gallup city, New Mexico	815	37	33	Low volume.
Otero	Alamogordo city, New Mexico	Holloman AFB CDP, New Mexico	2,165	12	87	Potential.
Otero	Boles Acres CDP, New Mexico	Alamogordo city, New Mexico	675	8	27	Too close.
San Juan	Aztec city, New Mexico	Farmington city, New Mexico	730	15	29	Low volume.
San Juan	Farmington city, New Mexico	Aztec city, New Mexico	510	15	20	Low volume.
San Juan	Flora Vista CDP, New Mexico	Farmington city, New Mexico	800	11	32	Low volume.
San Juan	Kirtland CDP, New Mexico	Farmington city, New Mexico	1,245	9	50	Potential.

County	RESIDENCE	WORKPLACE	Total Commuters/ Round Trips	Distance (Miles)	Predicted Number of One-Way Trips ^a	Assessment (Preliminary)
San Juan	Lee Acres CDP, New Mexico	Farmington city, New Mexico	1,315	8	53	Potential.
San Juan	West Hammond CDP, New Mexico	Farmington city, New Mexico	830	12	33	Low volume.
Santa Fe	Eldorado at Santa Fe CDP, New Mexico	Santa Fe city, New Mexico	1,680	15	67	Potential.
Taos	Ranchos de Taos CDP, New Mexico	Taos town, New Mexico	895	4	36	Too close.

^a Capture Rate is 2 percent. Calculated based on the average capture rate of 6 P&R routes of 2011 ridership data.

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Rail

Amtrak

Future demand for passenger rail was estimated based on the relationship between population and ridership. Forecasts are assumed to be independent of employment, since most passengers are noncommuters.

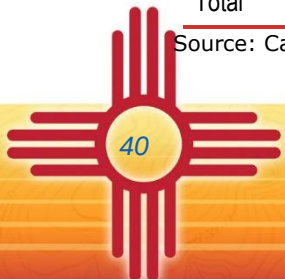
Table 3.9 Amtrak Ridership in New Mexico by Station
2004 to 2014

Station	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	CAGR
Southwest Chief												
Albuquerque	58,614	61,907	62,240	66,946	72,434	67,751	71,848	75,779	78,324	78,126	77,021	2.77%
Gallup	8,443	10,425	10,860	10,965	12,517	12,340	13,431	14,433	16,446	15,647	16,140	6.69%
Lamy (Santa Fe)	13,264	13,206	12,396	12,506	13,976	13,012	13,056	12,579	12,589	12,551	11,655	-1.28%
Las Vegas	2,717	3,618	3,809	4,290	4,280	4,456	4,491	4,952	5,653	5,376	5,047	6.39%
Raton	18,996	20,200	18,177	18,245	15,037	15,066	18,025	16,794	16,292	15,733	15,875	-1.78%
Sunset Limited												
Lordsburg	304	251	305	397	393	404	472	510	483	736	729	9.14%
Deming	704	608	580	722	812	844	869	1,047	1,170	1,382	1,338	6.63%
Total												
Total Ridership	103,042	110,215	108,367	114,071	119,449	113,873	122,192	126,094	130,957	129,551	127,805	2.18%

Table 3.10 Amtrak Ridership Forecast
In the 2006 Need Analysis

County (Station)	2005	2015	2025	Average Annual Growth (percent)
Bernalillo (Albuquerque)	61,907	69,195	75,806	1.0%
Colfax (Raton)	20,200	23,282	26,166	1.3%
Hidalgo (Lordsburg)	251	244	236	-0.3%
Luna (Deming)	608	762	912	2.0%
McKinley (Gallup)	10,425	12,160	13,858	1.4%
San Miguel (Las Vegas)	3,618	4,104	4,519	1.1%
Santa Fe (Lamy)	13,206	15,995	19,151	1.9%
Total	110,215	125,742	140,647	1.2%

Source: Cambridge Systematics, 2006.



The actual average annual ridership growth rate is higher than forecasted in the 2006 Needs Analysis. Additionally, the contributions of stations/counties to the growth are different than the forecasts. Raton and Lamy, which were estimated to account for the second highest shares of ridership in New Mexico after Albuquerque, experienced decline in ridership. Steady growth was seen at Gallup (McKinley County) as well as the two stations on the Sunset Limited.

Rail Runner Commuter Rail

Future demand was estimated by 1) estimating future demand for Rail Runner – future commute flows between counties with Rail Runner service (county-to-county corridors); and 2) identifying the likely mode share of Rail Runner for these corridors.

Table 3.11 County-to-County Commute Flows
2006 to 2010, 5-year estimates

Origin County	Destination County			
	Valencia	Bernalillo	Sandoval	Santa Fe
Valencia	14,099	13,236	354	158
Bernalillo	2,283	287,337	10,373	3,432
Sandoval	324	27,121	23,304	2,942
Santa Fe	38 ^a	3,984	94 ^a	58,396

Source: Census 2006-2010 ACS.

^a Estimates have a high margin of error.

Table 3.12 Percent Change of Commute Flows
2006 to 2010 estimates versus 2000

Origin County	Destination County			
	Valencia	Bernalillo	Sandoval	Santa Fe
Valencia	14.6%	1.8%	-29.5%	-20.6%
Bernalillo	25.6%	17.8%	11.8%	33.7%
Sandoval	134.8%	36.5%	49.4%	116.8%
Santa Fe	-15.6%	7.7%	-37.7%	10.3%

Table 3.13 Rail Runner Average Weekday Ridership
2009 to 2012

County	Station	2009	2010	2011	2012	CAGR
Valencia	Belen	308	257	309	280	-3.1%
Valencia	Los Lunas	322	261	317	282	-4.3%
Bernalillo	Isleta	32	38	45	48	14.5%
Bernalillo	Sunport (Bernalillo County)	112	97	102	93	-6.0%
Bernalillo	Albuquerque	1,006	882	959	819	-6.6%
Bernalillo	Los Ranchos	597	533	549	450	-9.0%
Bernalillo	Sandia	–	–	23	73	217.4%
Bernalillo	Bernalillo	57	48	54	52	-3.0%
Sandoval	Sandoval	504	438	483	415	-6.3%
Sandoval	Kewa		65	107	103	25.9%
Santa Fe	NM 599	249	283	310	282	4.2%
Santa Fe	South Capitol	512	349	408	426	-5.9%
Santa Fe	Santa Fe Depot	670	601	532	466	-11.4%

Source: New Mexico State Rail Plan by CS, 2013.

New station added: Montañito.

3.4 Bicycle/Pedestrian Systems

Bicycle and Pedestrian priority tiers will be established through the Bicycle, Pedestrian, and Equestrian Plan (BPE). For the 2040 Plan, the project team identified potential approaches that state and regional agencies have used to quantify bicycle comfort levels on public roadways. This will serve as an input into the BPE and any future tiering of bicycle and pedestrian tiers.

Bicycle Compatibility Index and Bicycle Level of Service

The Bicycle Compatibility Index (BCI) and Bicycle Level of Service (BLOS) concepts were first developed in 1997-98 as a way of quantifying the friendliness of roadways to bicyclists. BLOS relied on cyclists riding a course whereas BCI relied on survey respondents who observed situations on videos (not actual cyclists).

The BLOS/BCI is a score for a roadway based on a regression analysis. The BLOS and BCI used slightly different approaches, but their results were similar. The regression variables are: Bike lane, Bike lane width, Curb lane width, Curb lane volume, Other lane volume, Speed (85 percent), Parking lane with more than 30 percent occupied, Residential versus other, heavy truck volume, and right turn volume. BLOS version 2.0 includes pavement condition.



$$\text{BLOS version 2.0} = 0.507 \times \ln (\text{Vol15/Ln}) + 0.199 \times \text{SPt} (1+10.38\text{HV})^2 + 7.066 \times (1/\text{PR5})^2 - 0.005 \times (\text{We})^2 + 0.76$$

Where Vol15 = volume calculation
 LN = lanes
 SPt = effective speed calculation
 HV = percent heavy vehicles
 PR = pavement condition, and
 We = average width of the outside lane

BCI is converted to LOS in this table:

LOS	BCI Range
A	≤ 1.50
B	1.51-2.30
C	2.31-3.40
D	3.41-4.40
E	4.41-5.30

The BLOS has been applied in the following jurisdictions:

- Cities: Baltimore, Maryland; Birmingham, Alabama; Philadelphia, Pennsylvania; San Antonio Texas; Houston Texas; Buffalo New York; Anchorage Alaska; Lexington Kentucky; and Tampa Florida.
- States: Delaware, New York, and Maine departments of transportation.

Rural BCI

Practitioners thought the BCI was not as appropriate for rural roadways, so a Rural BCI (RBCI) was developed in 2004 using a similar methodology to the BCI but calibrated for rural roadways. They analyzed these four factors:

- Overall volume on the roadway;
- Heavy vehicle volume on the roadway;
- With shoulder:
 1. Less than 4 feet shoulder; and
 2. Greater or equal to 4 feet shoulder.
- Without shoulder:



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1. Lane less than 12 feet; and
2. Lane greater than 12 feet.

Final RBCI model only included two variables, heavy vehicle volume, and shoulder width:

$$\text{RBCI} = 2.6830 - 0.1340\text{SW (shoulder width)} + 0.0154\text{WHV (heavy vehicles volume/hr.)}$$

Criticisms of BCI/BLOS

Some of the most significant challenges implementing a bicycle level of service include:

- Perception based on video only – no actual riding with live traffic;
- Traffic volume and lane-width data that is generally sampled, so potentially limited for some issues. Lane-width data in New Mexico currently are not available as comprehensively as desired.
- Additional work is needed to develop a correspondence between BLOS and user tolerance. The method makes no attempt to establish a particular level of service as the minimum required to serve the mainstream population.
- Does not include grade of roadway.

Other Approaches

Some other example approaches include:

- **Geelong Bike Plan Bicycle Stress Level.** From the Geelong Bike Plan in Australia – one of the oldest approaches incorporates curb lane width, motor vehicle speed, and traffic volume when as indicators of bike friendliness.
- **Davis Bicycle Safety Index Rating (BSIR).** Made up of two submodels – one for roadway segments and one for intersections: Roadway Segment Index (RSI), which was a number that represented the combined factors of average daily traffic (ADT), number of traffic lanes, speed limit, width of the outside traffic lane, sum of pavement factors, and the sum of location factors and Intersection Evaluation Index (IEI) to analyze riding conditions through intersections.
- **Mineta Transportation Institute (SJSU) – Low-Stress Bicycling.** Developed a new scheme for analyzing stress of roadways based on a 4-level scale intended to mimic actual riders. They used Portland's bicycle coordinator's (Roger Geller) classification of the population of riders: strong and fearless, enthused and confident, interested but concerned, and no way/no how, and developed 1-4 stress levels for a variety of roadway situations. Primary variables included speed, lane numbers, volume, and parking.



4.0 State of Good Repair

This section provides additional information generated in the plan development process to identify statewide preservation and maintenance needs.

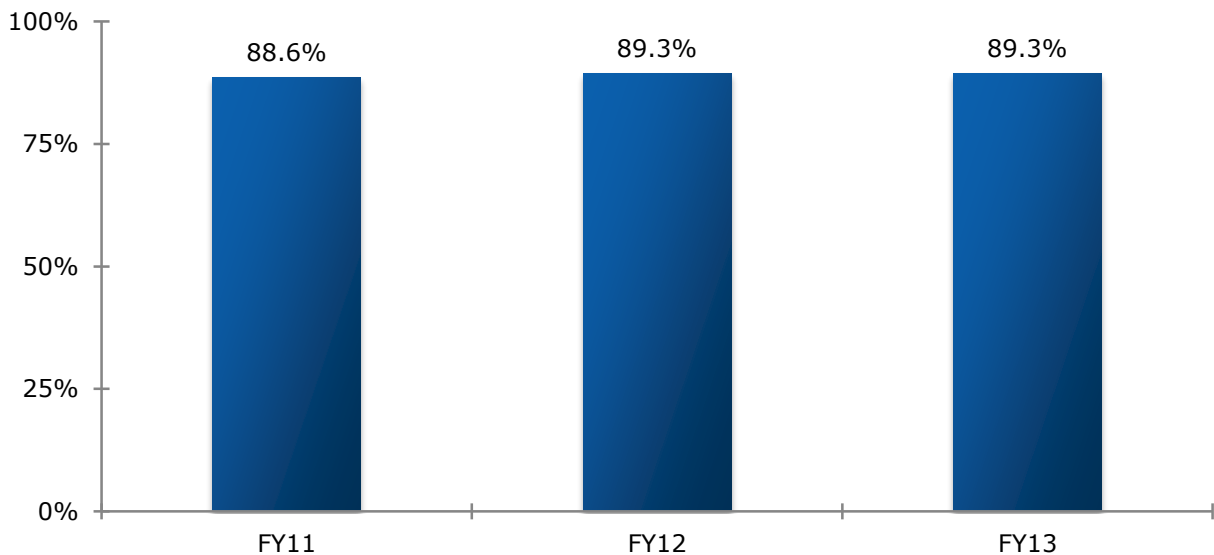
4.1 Bridge and Pavement Preservation

Current Bridge Conditions

Current bridge network conditions in New Mexico were determined from the 2013 National Bridge Inventory (NBI) data submitted by NMDOT to FHWA as part of the national bridge inspection program. The NBI database is a collection of information covering all the nation's bridges over 20 feet in length, located on public roads, including Interstate Highways, U.S. Highways, state and county roads, as well as publicly accessible bridges on Federal lands. States are required to annually submit a summary analysis of the number, location, and general condition of the bridges in their states.

Figure 4.1 NMDOT Bridge Condition

Percentage of State-Owned Bridges in Fair or Better Condition



Source: NMDOT 2013 Annual Report.

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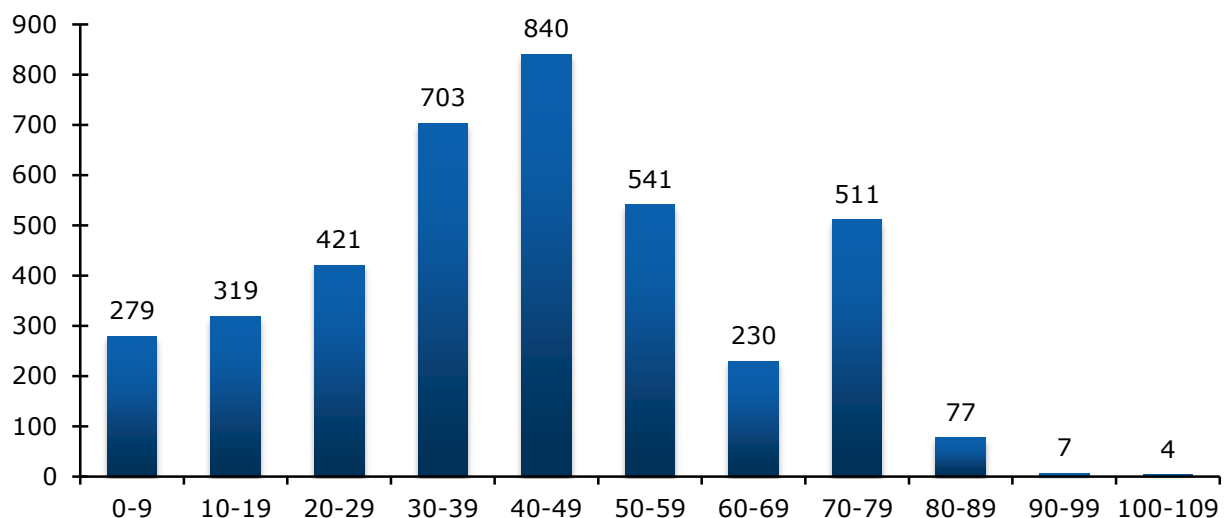
Bridges are classified with a deficiency status, which represents the general condition of the structure. Structural assessments, together with ratings of the physical condition of key bridge components, determine whether a bridge is classified as “structurally deficient” or “functionally obsolete”:

- **Functionally Obsolete** – Describes a bridge that is no longer by design functionally adequate for its purposes.
- **Structurally Deficient** – Deficiency based on bridge elements condition. The classification of a bridge as structurally deficient does not imply that it is unsafe for travel; it refers to bridges that require significant maintenance and repairs to remain in service.

Currently, 86 percent of the deck area of the bridges in New Mexico are in good condition; 7 percent of the deck area is functionally obsolete; and 7 percent of the deck area is structurally deficient.

Figure 4.2 NM Bridge Age

Number of Bridges by Age

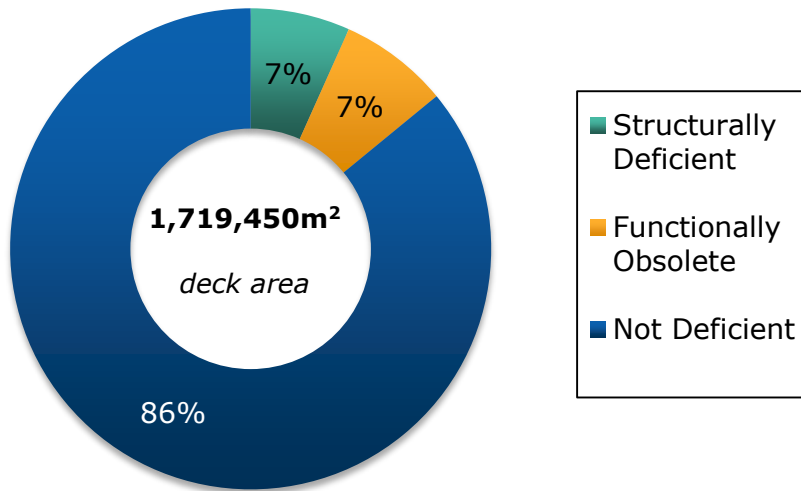


Source: National Bridge Inventory Data.



Bridge Investment Needs

Figure 4.3 Current New Mexico Bridge Network Condition



Future Bridge Funding Needs

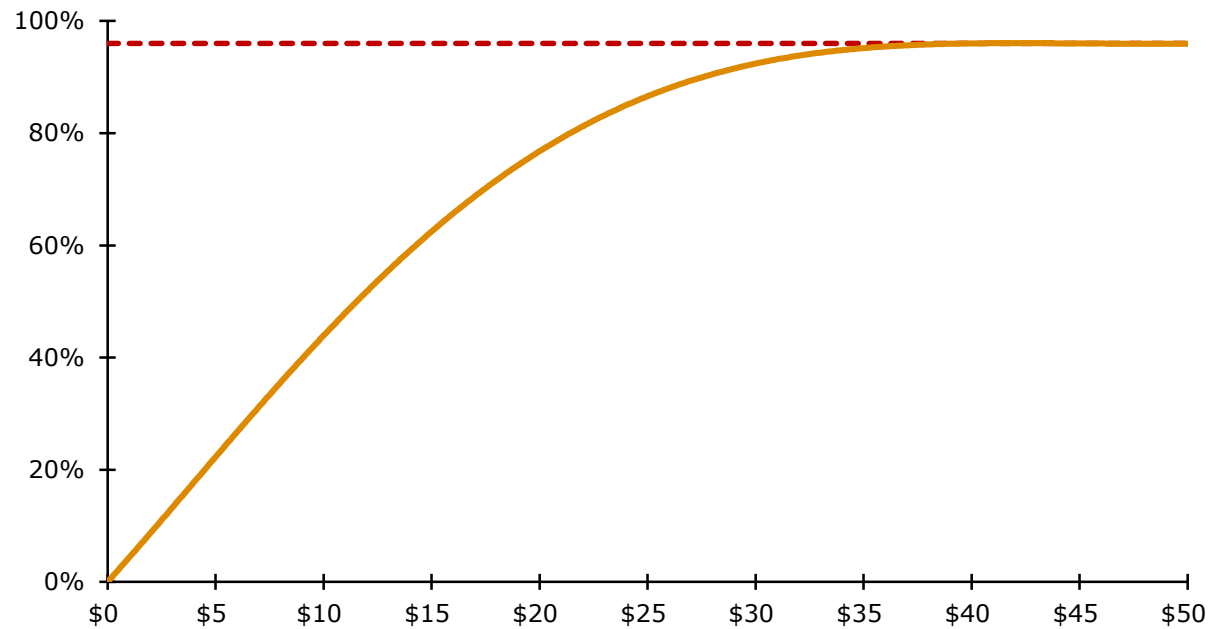
Future bridge network condition was forecast using the FHWA's National Bridge Investment Allocation System (NBIAS) tool under different annual budget levels. NBIAS is designed to minimize maintenance costs by generating an optimal set of preservation actions for bridge elements based on life-cycle user and agency costs, and engineering standards of bridge maintenance needs. The 2013 NM NBI database was processed to separate the bridges into two groups:

- Bridges on the National Highway System (NHS); and
- Non-NHS bridges.

The performance measure selected was "Percentage of Bridge Deck that is Not Structurally Deficient (SD)." The FHWA has adopted this measure for use in agency performance planning and is the most common measure among state DOT's.

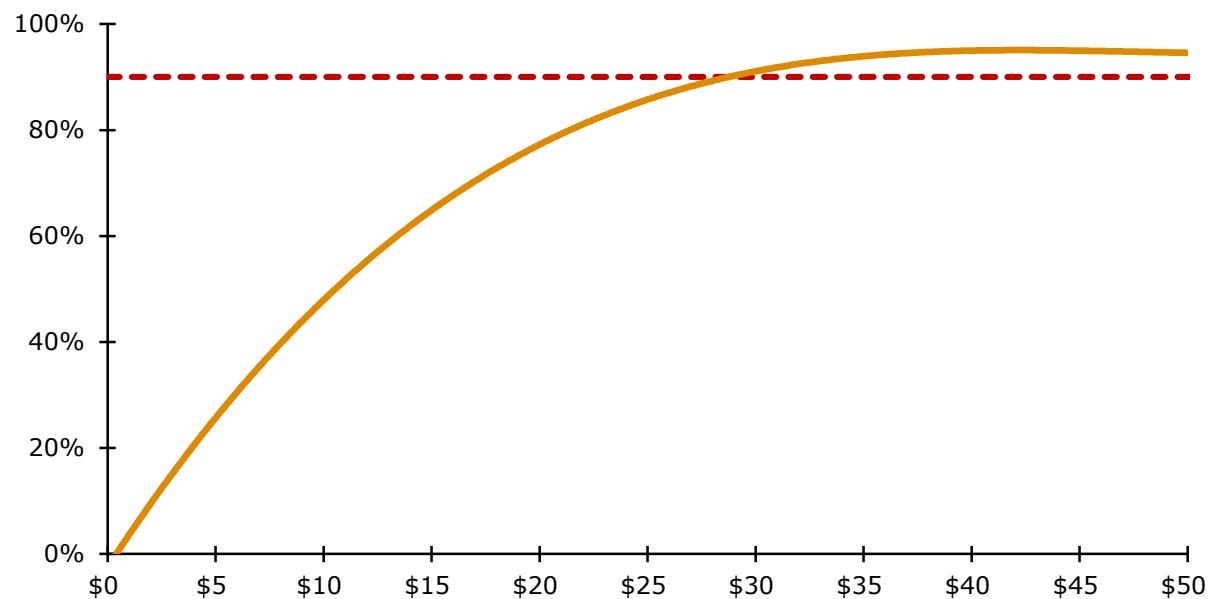
Figure 2 shows that approximately \$38 million per year (in 2014 dollars) is needed through 2040 to maximize existing conditions on the NHS (i.e., the point in the curve where performance flattens with additional investment reflects a maximum funding level at which investment needs are effectively addressed). Figure 3 shows that approximately \$29 million per year (in 2014 dollars) is needed through 2040 to maintain the current network condition of non-NHS bridges. However, nearly \$40 million per year is needed to maintain 95 percent of non-NHS bridges in good condition. **In total, about \$80 million per year (2014 dollars) is needed to maximize the performance of the bridge network in New Mexico.**

Figure 4.4 Percent Deck Area of NHS Bridges NOT Structurally Deficient 2040



Annual Budget (millions, 2014 dollars).

Figure 4.5 Percent Deck Area of Non-NHS Bridges NOT Structurally Deficient Projected Condition in 2040

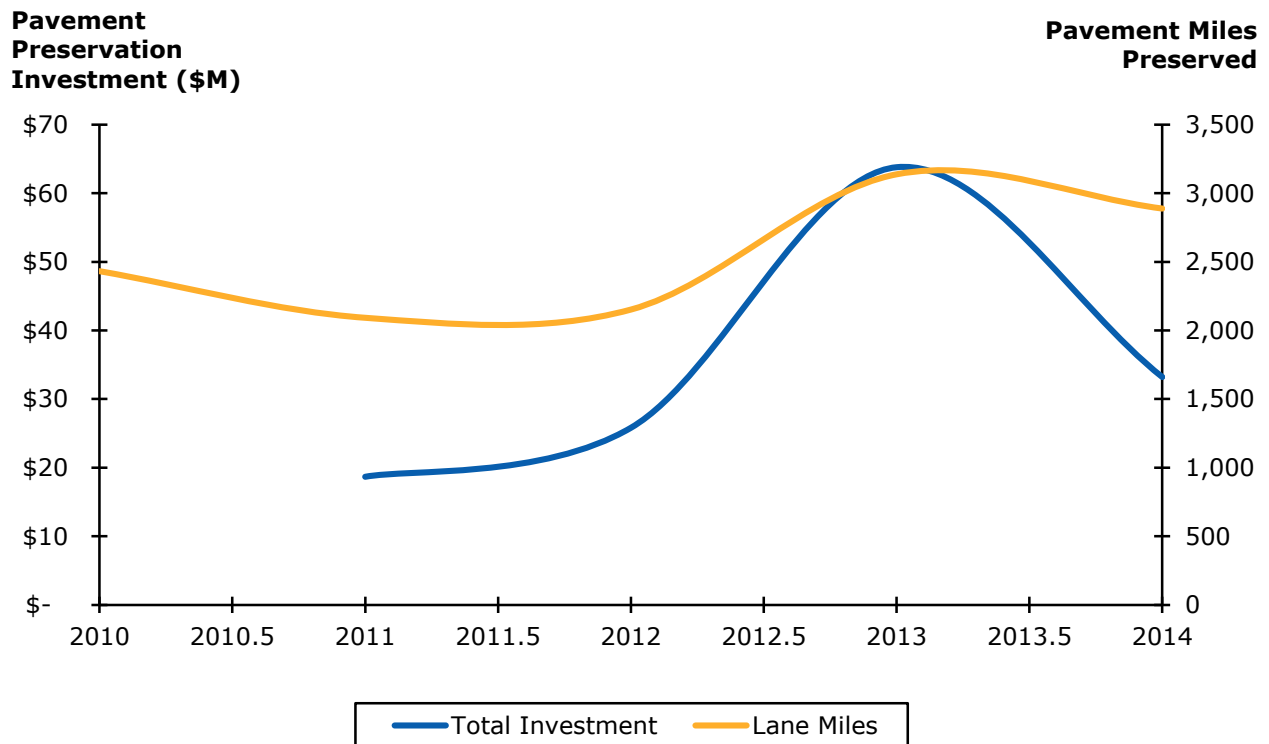


Annual Budget (millions, 2014 dollars).

Pavement Preservation

Data on pavement quality on New Mexico’s public roads is limited due to a recent switch to new data collection process. However, the NMDOT Annual Report highlights the State’s preservation needs, including preservation. During the course of the plan, the NMDOT was in the middle of collecting new, more robust pavement condition data. As such, these data are not included directly in this plan. After several years of data are collected, there will be an opportunity to generate information similar to the above information developed for bridges. The New Mexico Transportation Asset Management Plan (TAMP), will also help identify and prioritize pavement needs.

Figure 4.6 NMDOT Investment in Pavement Preservation
2010-2014



Source: NMDOT Annual Report.

4.2 Transit State-of-Good-Repair Needs

A preliminary examination of transit state-of-good-repair needs was begun under the 2040 Plan. The objective of this analysis was to begin to consider how different levels of transit demand and deployment would impact future needs. These analyses considered:

- Urban transit costs;

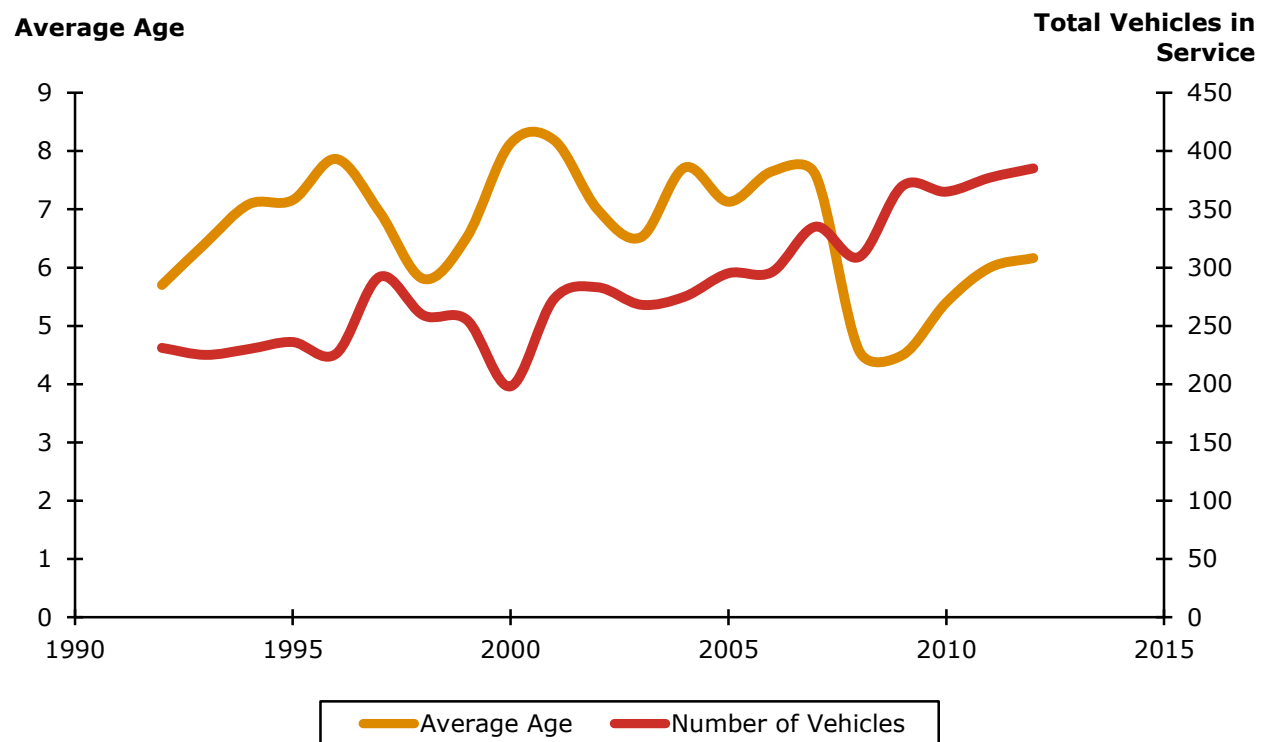
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- Rural bus costs;
- Elderly/disabled program costs; and
- Intercity rail and bus cost.

Figure 4.7 presents a summary of the number and age of transit vehicles in use in New Mexico over time.

Figure 4.7 New Mexico Transit Vehicles Quantity and Age



Source: National Transit Database.

The following figures present potential needs based on simplified growth assumptions for transit use in New Mexico. Figure 4.8 presents current and future transit trips in 2025 and 2040, assuming that transit ridership grows at the same rate as expected population growth.

Figure 4.9 presents several scenarios for future vehicle needs:

- Scenario 1 assumes the same ratio between current ridership and number of vehicles;
- Scenario 2 assumes 25 percent efficiency of vehicles (i.e., vehicles can accommodate 25 percent more than they appear to today);
- Scenario 3 assumes 50 percent efficiency; and
- Scenario 4 assumes 75 percent efficiency.



Table 4.1 presents a summary of total maintenance needs for each of these scenarios.

Figure 4.8 New Mexico Urban Transit Trips
Population-Based Estimates

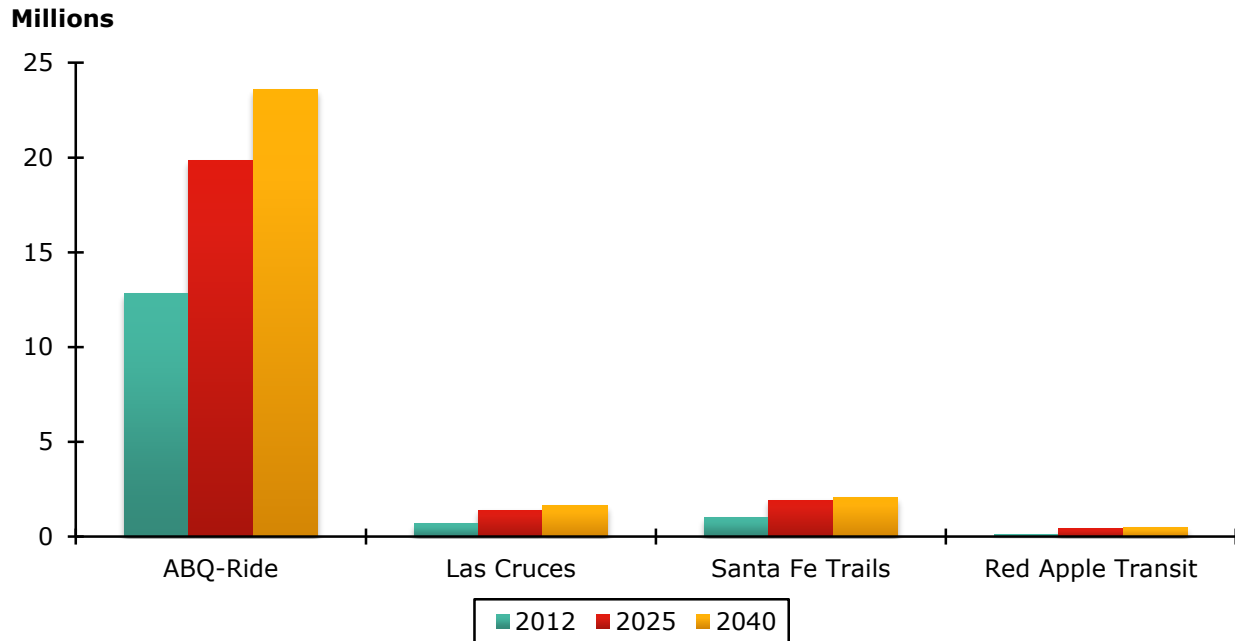
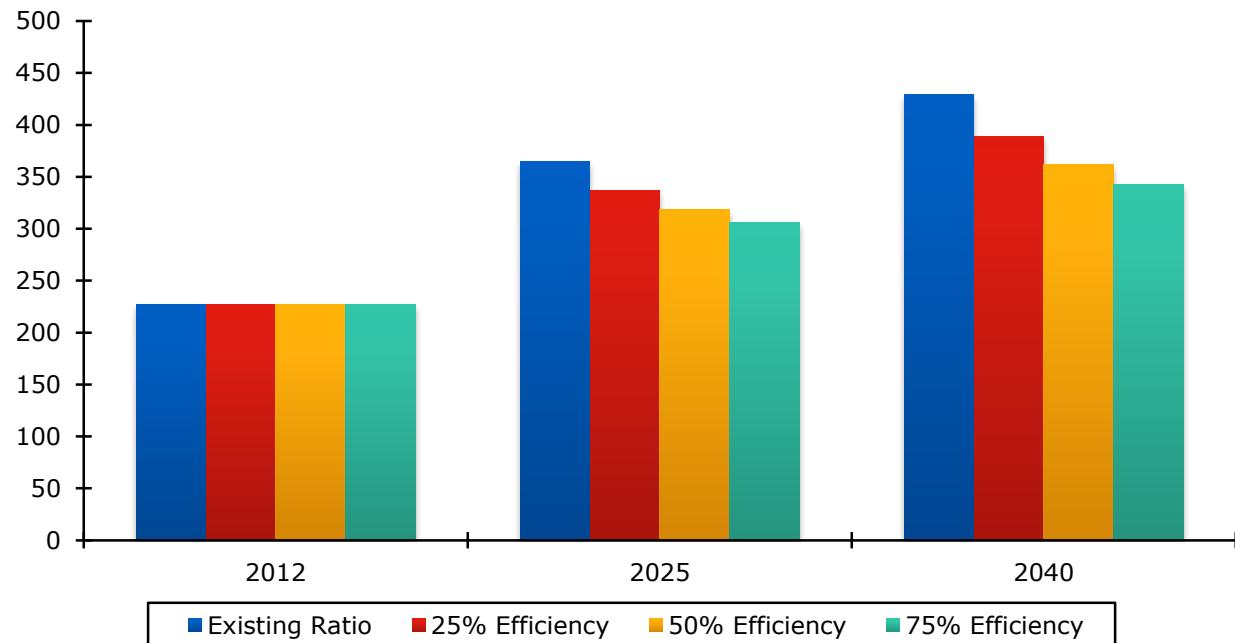


Figure 4.9 Total Transit Vehicles by Scenario



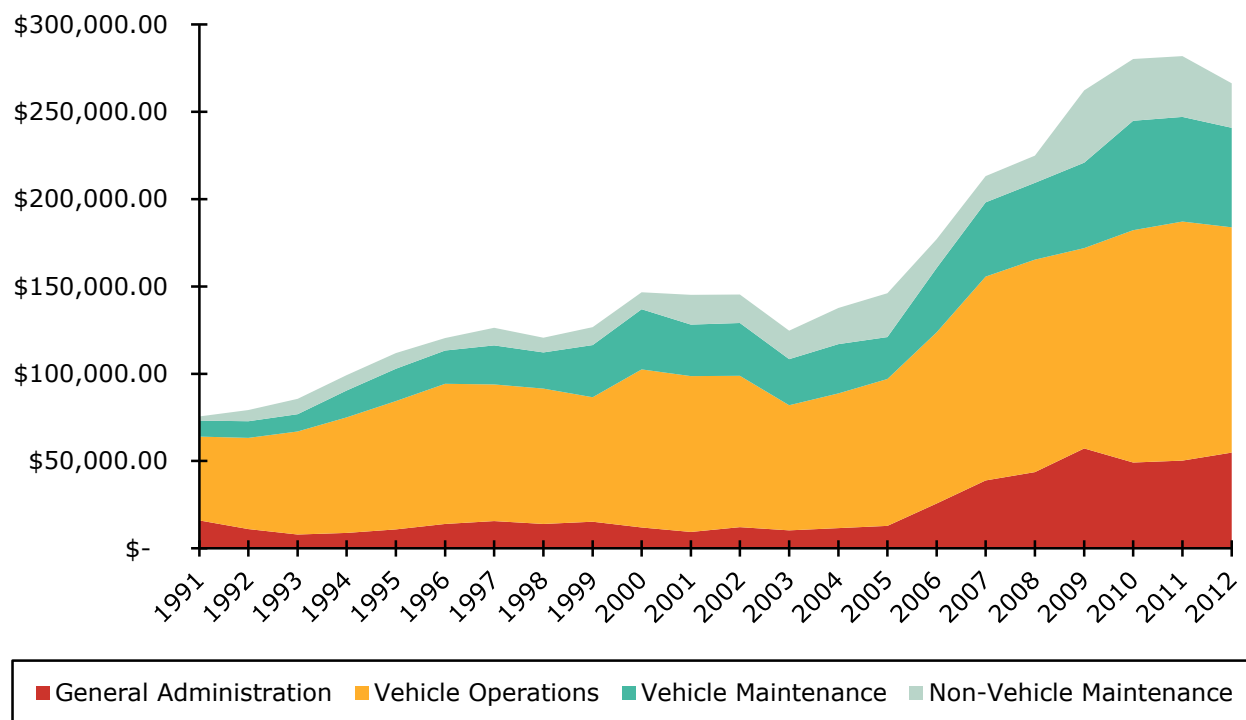
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Table 4.1 Potential Future Maintenance Cost

Scenario	2025	2040
25% Efficiency	\$18,169,173	\$21,378,432
50% Efficiency	\$16,796,425	\$19,363,833
75% Efficiency	\$15,881,261	\$18,020,767

Figure 4.11 presents the growth in total operating expenses by New Mexico transit providers.

Figure 4.11 New Mexico Transit Agencies: Operating Expenses by Vehicles Operated in Maximum Service



Source: National Transit Database.



5.0 NMDOT Construction Costs

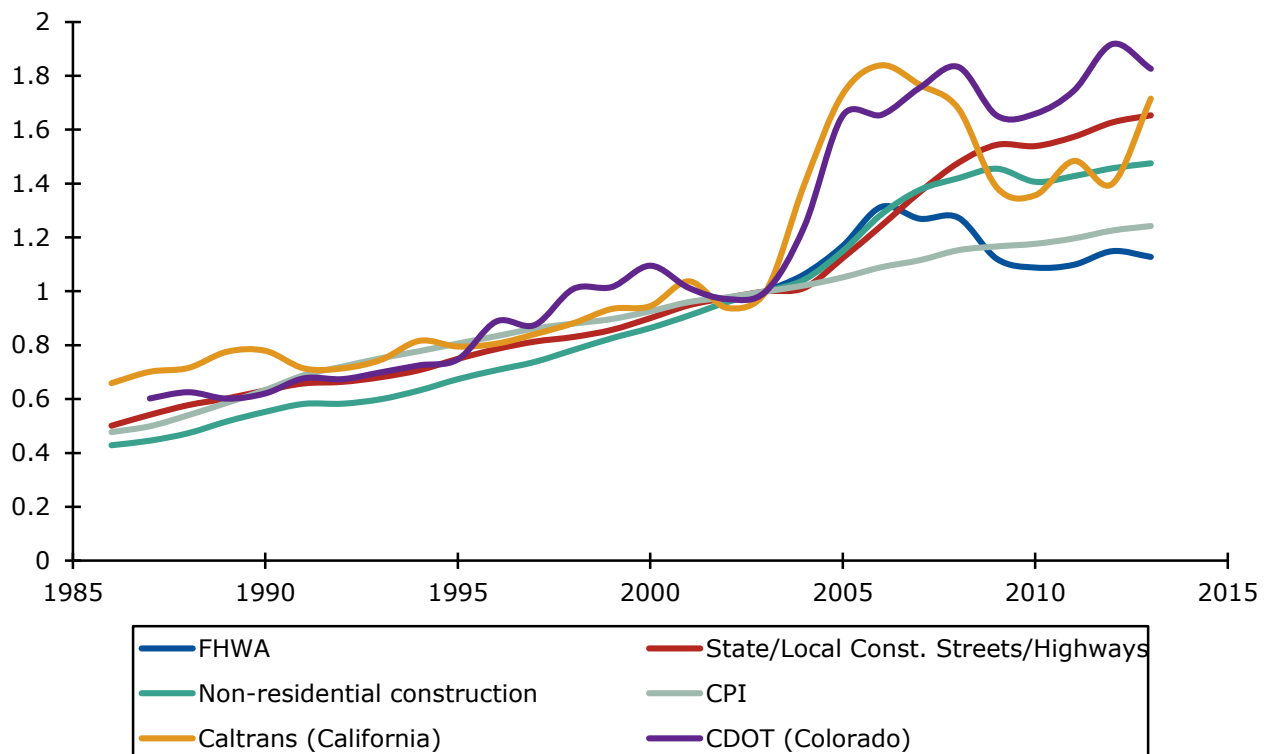
This section details the methodology for escalating construction costs from current year to 2040. For the 2040 Plan, NMDOT has chosen to use the nonresidential construction index from the U.S. Bureau of Economic Analysis.

To adjust for future inflation, historical Consumer Price Index (CPI) rates are often used to predict future prices. However, construction costs tend to change at different rates than the consumer goods included in the CPI, especially in recent years. Therefore, a different index was chosen for cost escalation for the 2040 Plan. Data was gathered from six existing price indices to help determine the appropriate cost index for the 2040 Plan:

- U.S. Bureau of Labor Statistics: Consumer Price Index (CPI);
- Federal Highway Administration (FHWA): Construction spending (only available after 2003);
- California Department of Transportation construction cost index;
- Colorado Department of Transportation construction cost index;
- U.S. Bureau of Economic Analysis (BEA): Nonresidential construction; and
- U.S. BEA: State and Local Construction on Streets and Highways.

The last of these indices would have been a natural fit, but is no longer forecast by BEA. Figure 5.1 shows the change in each of these six indices since 2003.

Figure 5.1 Comparison of Growth Rates for Selected Cost Indices
 1985-2013



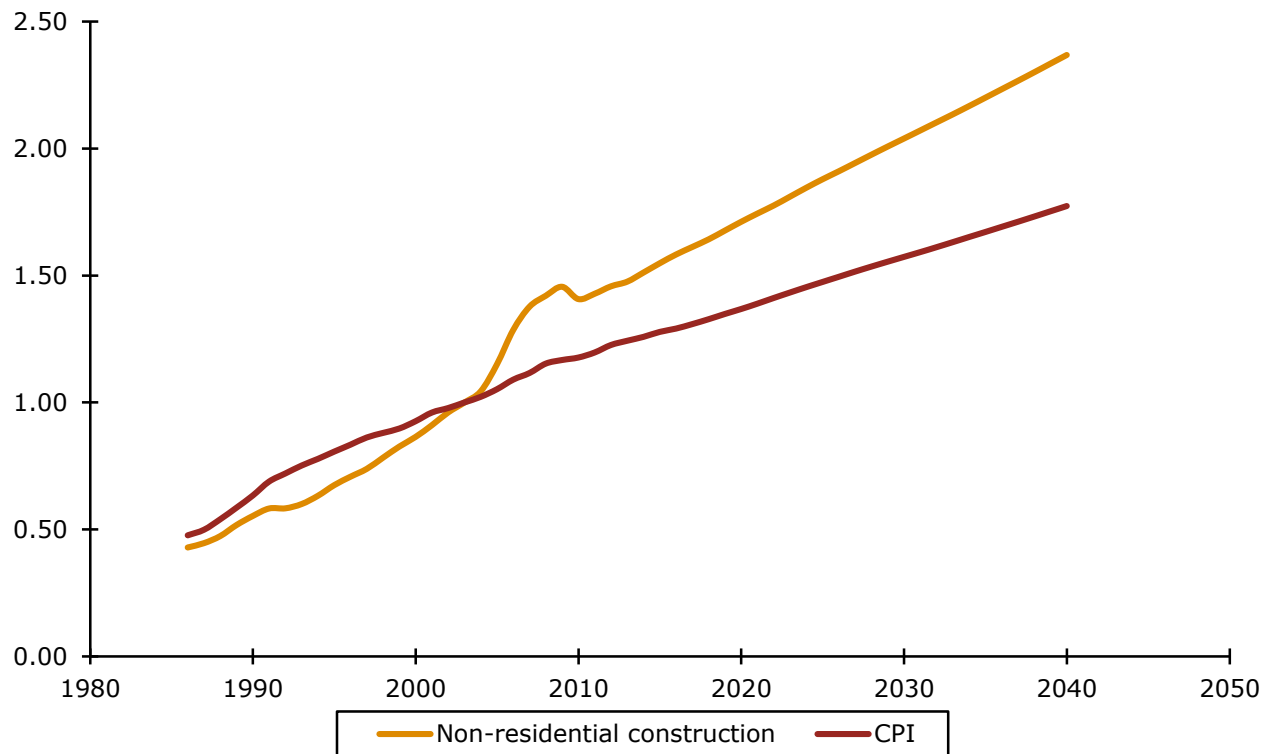
With the exception of the FHWA index, each construction cost index has exceeded the CPI in the last several years. The sharp differences in the price indices from 2003 to 2013 demonstrate that using the CPI for estimating construction costs may lead to an underestimation of future costs.

5.1 BEA Nonresidential Construction

NMDOT has selected the Nonresidential Construction index from the Bureau of Economic Analysis for escalating construction costs in the 2040 Plan. This index is somewhat less than the Colorado and California indices (and less volatile) but both of those states have higher wages and are more urban. The nonresidential construction index is close to, but somewhat lower in recent years than, the local and state streets and highways spending, but that index is not available as a forecast and, in recent years, the two indices have tracked closely.

Figure 5.2 below illustrates the implications of using the Nonresidential Construction index compared to the CPI for cost escalation.

Figure 5.2 Consumer Price Index versus the Nonresidential Construction Index
1985-2040



6.0 Health Impact Assessment

The built environment and the transportation network in particular – roadways, sidewalks, bicycle paths/lanes, and public transportation – can enable healthy environments. The quality of life for New Mexico’s residents can be enhanced by integrating health considerations into the transportation planning process and final 2040 Plan. In addition to considering transportation health in the Plan, a number of opportunities exist to institutionalize health in New Mexico’s culture. The following outlines efforts to include health in the current 2040 Plan and ideas for making it an implementation priority moving forward.

6.1 Goals and Policies

Key criteria for any transportation planning document are goals and policies, which describe what an agency is dedicated to achieving and guide program and project decisions. For transportation health programs and projects to be identified, related goals and policies need to be developed or emphasized in other goal areas to ensure it is a factor in the decision-making process. The goals and policies for the 2040 Plan were developed through public and stakeholder input and health was immediately recognized as a priority for New Mexico, specifically safety and active transportation improvements. A specific health goal and supporting policies have been developed, but it also is a key component of two other 2040 Plan goals, “Provide multimodal connectivity, and accessibility to support economic development in New Mexico,” and “Respect New Mexico’s culture, history, environment, and quality of life.” By identifying specific statewide health goals and weaving it into other goals, it demonstrates that health is a priority in New Mexico and encourages planners to identify programs and projects to meet these goals.

In addition to identifying health goals for the 2040 Plan, the opportunity exists to share and coordinate this information with other entities in the State so they also see it as a priority. For example, MPOs and RTPOs in New Mexico also could address health in their transportation planning documents. NMDOT can assist planning agencies with the development of regional health goals and policies. A basic approach is to attend an MPO/RTPO committee meeting to make a presentation on the statewide health priorities in the 2040 Plan. The purpose would be to inform and encourage agencies to consider and adopt these in their regional documents. For agencies wanting or able to do more in the health arena, providing health-related data sources will allow them to better understand the regional health issues and develop unique goals and policies. Some of the known health issues in New Mexico that agencies may want to explore include:

New Mexico Health Goal and Policies

Goal: Improve safety and public health for all system users.

Policies: Use traditional and innovative methods to reduce the number and severity of traffic-related crashes.

Consider the health impacts of all transportation investments and programs.

Improve the safety of “active” travel modes to promote walking and bicycling.

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- **Safety** – The fatality rate in New Mexico continues to remain higher than the national average, but all agencies in New Mexico can play a role in reducing fatalities and serious injuries by reviewing crash data to identify contributing factors and hot spots. Key data sources: Fatality Analysis Reporting System, <http://www.nhtsa.gov/FARS>; University of New Mexico crash portal, http://www.unm.edu/~dgrint/reports_documentation.html; or by emailing a data request to NMDOT Traffic Safety Division at crash.records@state.nm.us.
- **Health** – According to America’s Health Rankings, physical inactivity among New Mexico adults decreased from 25.3 percent to 21.8 percent in the past year, but more than 330,000 adults are still physically inactive. According to the Centers for Disease Control and Prevention, 27.1 percent of adults, 13 percent of high school students, and 12 percent of low-income children (ages 2-5) in New Mexico deal with obesity issues. While New Mexico’s percentages are generally consistent with national averages, the number of adults who are obese has doubled since 1990 in both New Mexico and nationwide. Agencies in New Mexico can play a role in addressing these issues in their region by planning for transportation improvements that increase physical activity and encourage walking, biking, or taking transit, preventing weight gain and lowering the risks of obesity, diabetes, and heart disease. Key data sources: New Mexico Department of Health data portal, <http://nmhealth.org/publication/data/>.
- **Air Quality** – Air pollution has been linked to a number of health problems, including asthma, heart disease, and breathing problems. There are five nonattainment or maintenance areas located in New Mexico, which are attributed to emissions from cars, trucks, industries, and manufacturing activities and natural causes, such as dust storms from high winds and wildfires. The U.S. EPA is in the process of establishing more stringent air quality standards that could impact the nonattainment status of several areas throughout New Mexico. Agencies in New Mexico can play a role in air quality through investments in alternative transportation, ride-share programs, and through air quality monitoring. Key data source: New Mexico Air Quality Bureau, <http://www.nmenv.state.nm.us/aqb/>.

6.2 Leadership

New Mexico is confronted with a range of competing transportation priorities and funding realities that could limit the number or scope of projects. Identifying health as a goal in the 2040 Plan is an important step, but transportation health priorities and outcomes need to be supported by agency and executive leaders to increase the chances that funding and other resources are dedicated to this area. Active involvement of strong leaders can draw attention to the health priorities and establish a statewide culture that promotes active living, turning ideas in the 2040 Plan into reality. Educating leaders in New Mexico, including members of the Transportation Commission and department heads at NMDOT, is the first step. This can be done by making a presentation to state leaders or developing an information piece on health trends and data in New Mexico, goals and policies in the 2040 Plan, current transportation health activities, and priorities moving forward. This initial step will help leaders understand and buy-in to health.



Once leaders understand the issue and its importance, they can play a number of roles to advance a healthy transportation system. Transportation Commission leaders are well-suited to champion specific transportation health policies or programs, or host a press conference on the topic. Agency leaders are positioned to meet with other transportation or health partners to encourage buy-in and engagement in New Mexico's health goals, identify revenue sources, available personnel, and technical resources for statewide health initiatives, and remove institutional boundaries within and between agencies and organizations.

6.3 Agency and Stakeholder Partnerships

Coordination and stakeholder engagement are key components to the transportation planning process. NMDOT works regularly with traditional transportation partners at the NM Federal Highway Administration Division, the four MPOs, seven RTPOs, and other stakeholder organizations. Planners and engineers within NMDOT and at partner organizations have expertise in air quality, active transportation, and other health-related issues. Leveraging the knowledge of these individuals during the statewide transportation plan update and other planning processes (i.e., bicycle and pedestrian plans, transit plans, corridor plans) enhances the conversation about how health can be integrated into the plan.

For the 2040 Plan, a number of individuals with health expertise from within NMDOT and the MPOs participated in the Public Health, Safety, and Security Working Group. However, nontraditional partners, such as the New Mexico Department of Health (NMDOH), county departments of health, health-focused foundations, and others work in this arena every day and can bring tremendous expertise to the topic, to complement the transportation knowledge of planners and engineers. A number of health partners were invited to participate in the 2040 Plan Public Health, Safety, and Security Working Group.

Partnerships in North Carolina

The Healthy Environments Collaborative (HEC) is an interagency Collaboration in North Carolina between the North Carolina Department of Transportation, the North Carolina Department of Health and Human Services, the North Carolina Department of Commerce, and the North Carolina Department of Environment and Natural Resources. The goal of the interagency partnership is to integrate and align departmental efforts to improve the health of North Carolina's people, economy, and environments.

Meetings of the HEC have evolved over time. Initially partners focused on gaining an increased understanding of the work of each agency and where there were potential opportunities to work together to achieve common goals. Over time, the group developed a strategic plan to guide physical activity policies and programs across the state. Most recently, the group conducted a strategic planning session to identified key areas where all four departments could work together for mutual benefit: data, comprehensive planning and research. See: http://healthyamericans.org/health-issues/prevention_story/north-carolina-transportation-commerce-and-environment-are-integral-in-building-healthy-communities.

The New Mexico Department of Health (NMDOH) and the New Mexico Department of Transportation (NMDOT) have initiated a partnership through the 2040 Plan process, so moving forward, further collaboration on planning efforts is conceivable. This could include providing input on each other's planning documents, jointly leveraging state and Federal funds, sharing data, or jointly developing policies. Examples of the following coordination include:

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- **Input on Planning Documents:** The NMDOH already is an active participant in the 2040 Plan, but NMDOH has a strategic plan, which outline goals, objectives, and strategies for New Mexico to have an effective health system today and into the future. A number of the objectives and strategies in the current *2014-2016 Strategic Plan* dovetail with transportation interests. NMDOT could participate in NMDOH's strategic planning process to ensure health and transportation goals are coordinated between the two plans. An example of this in practice is in Iowa. The Iowa DOT participated in their states health plan update, participating in meetings and providing input into the goals and objectives. The Iowa Department of Health (DOH) and DOT also jointly created a brochure to educate health professionals about transit options that can assist their patients in traveling to appointments.
- **Leverage Funding:** A number of funding sources can support both health and transportation goals (outlined in the Leveraging Funding Opportunities section). NMDOH and NMDOT would need to identify opportunities to leverage funding that meets both their needs. For example, in Massachusetts, the DOH receives funding from the CDC to help communities identify active living strategies, which include complete streets or safe routes to school. Massachusetts DOT then helps these communities address complete streets and Safe Routes to School in their planning documents and through programs and projects.
- **Sharing Data:** DOTs and DOHs typically have different data sets. Data collected and used by DOTs may include crash data, household travel surveys, roadway characteristic data, air quality, and vehicle miles traveled. DOHs on the other hand will have data related to insurance costs, medical information, obesity, health equity, and racial profiles and demographics. Some combination of this information is often needed to identify transportation programs and projects that will contribute to health outcomes. For instance, a specific jurisdiction or region with high obesity numbers would likely be a good candidate for an active transportation study.
- **Developing Policies:** To date, no statewide health-related policies in NM exist. NMDOT and NMDOH could jointly develop and champion a healthy transportation policy. This would likely take coordination meetings between the two agencies to discuss the specific transportation health goals and decide what type of policy to develop. Sample policies are included in the Statewide Programs and Policies section.

In addition to building relationships with health agencies, seeking out cross-departmental collaboration amongst NMDOT Divisions can be beneficial. For example, at Iowa DOT, the Office of Public Transit and the Office of Systems Planning are collaborating on healthcare access and active transportation, the health objectives most relevant to each office's role in the statewide multimodal system. In California, Caltrans emphasizes how health is a responsibility for many of its divisions; especially air quality, active transportation, and safety. Each division is asked to consider health in their planning documents and projects.



At the regional level, MPOs and RTPOs should be encouraged to identify local health organizations to partner with during planning efforts (i.e., long-range planning, modal plans, corridor plans). These partnerships are even more important at this level because with limited staff and resources, local transportation partners can plan transportation projects that advances health outcomes without having to become public health experts themselves. Collaborating with the NMDOT or NMDOH to identify a list of stakeholders could provide a starting point to bring the perspectives of health practitioners into regional planning efforts.

6.4 Statewide Programs and Policies

NMDOT could decide to expand the health goals and policies outlined in the 2040 Plan, developing full health directives or policies, which provide guidance and support to the State, but also regional and local agencies. NMDOT currently does not have any policies in place, but common transportation health-related policies at state DOTs include Complete Streets, Sustainability (i.e., greenhouse gas emissions, active transportation, smart growth), and/or Design Guidelines to create safer, user-friendly environments for all modes. In 2010, Massachusetts DOT (MassDOT) launched GreenDOT, a statewide sustainability initiative in response to increased greenhouse gas (GHG) emissions, sprawling development patterns, automobile dependence, physical inactivity, and motor vehicle pollution. To address these issues, MassDOT decided to incorporate sustainability into all of its activities, including strategic planning, project design, construction, and system operation. Now, all transportation plans and improvements are guided by three goals: reducing greenhouse gas (GHG) emissions; promoting healthy transportation options of walking, bicycling, and public transit; and supporting smart growth development. To remain accountable, MassDOT developed performance measures and targets to track progress towards the goals and recently released a 2014 Status Report on the initiative.³

6.5 Leveraging Funding Opportunities

With funding constrained in New Mexico, looking for creative approaches to address transportation health needs is critical. NMDOT, the NMDOH, and other agencies in the State, may have the ability to combine or leverage Federal or State funds for projects that support the consideration of health. Federal programs, such as the Transportation Alternatives Program (TA), the Surface Transportation Program (STP), State Planning and Research Program, the Highway Safety Improvement Program (HSIP), the Congestion Mitigation and Air Quality program (CMAQ), and FTA Section 5307 (Urbanized Area Formula Grants and Job Access and Reverse Commute (JARC) Program grants), Section 5310 (Enhanced Mobility of Seniors and Individuals with Disabilities), and Section 5311 (Rural Area Formula Grants) all have the flexibility to cover health-supportive transportation activities. In particular STP and TA funds can support improvements for nonmotorized transportation, health impact assessments, and Safe Routes to School (which no longer has dedicated Federal funding).

³ http://www.massdot.state.ma.us/Portals/0/docs/GreenDOT/GreenDOT_Report2014/statusReport_GreenDOT2014.pdf.



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In addition to dedicated funding sources, one-time funding or grant opportunities often arise and could fund health programs and projects. Examples included the American Recovery and Reinvestment Act and Community Transformation Grants. A number of states, including Massachusetts, Minnesota, and North Carolina, coordinated with their Departments of Health to apply for Community Transformation Grants (CTG), which support community-level efforts to reduce chronic disease. For instance, in Minnesota, they were awarded CTG funds in the amount of \$3.6 million a year for up to five years. A portion of the CTG funding supports statewide and regional initiatives, but the main focus is on local efforts, some of which increase active transportation. Accomplishments in 2013 included the completion of four regional active transportation plans; completion and printing of the “Bike! Walk! Fun!” pedestrian and bicycling curriculum; and the development of the Active Schools Minnesota Tool Kit called “Moving Matters,” which describes to schools, parents, and communities the vital importance of physical activity for children. Reviewing opportunities with partners when they arise can leverage funding for transportation health in New Mexico.

Another opportunity is to identify agencies that regularly offer health-related grants to fund transportation projects. The Center for Disease Control (CDC) provides a number of funding opportunities each year (i.e., this report reviews recent transportation and health funds provided by the CDC: <http://www.advocacyadvance.org/docs/LeveragingHealth.pdf>). Recently, the CDC awarded 193 awards, totalling \$212 million for projects that address prevention and wellness through transportation improvements. Specifically, the funding programs aimed to reduce the prevalence of obesity and to reduce the rates of death and disability due to diabetes, heart disease, and stroke (<http://www.cdc.gov/chronicdisease/about/2014-foa-awards.htm#stateLocal>). The awards were disseminated in six categories, including:

- **State and Local Public Health Actions to Prevent Obesity, Diabetes, and Heart Disease** – 21 awards totaling \$69.5 million to support work in state and large city health departments to prevent obesity, diabetes, heart disease, and stroke and reduce health disparities through community and health system interventions.
- **Partnerships to Improve Community Health** – Thirty-nine awards totaling \$49.3 million to support agencies who use public health strategies to reduce tobacco use and exposure, improve nutrition, increase physical activity, and improve access to chronic disease prevention, risk reduction, and management opportunities.
- **Racial and Ethnic Approaches to Community Health** – Forty-nine awards totaling \$34.9 million to support agencies who implement public health strategies for racial and ethnic communities experiencing health disparities. The Presbyterian Healthcare Services (\$981,023) in New Mexico received funding.
- **National Implementation and Dissemination for Chronic Disease Prevention** – Five awards totaling \$9.4 million for national organizations and their chapters/affiliates to increase their capacity to improve the health of the communities they serve.
- **A Comprehensive Approach to Good Health and Wellness in Indian Country** – Twenty-two awards totaling \$11.3 million-funded American Indian tribes and Alaska Native villages, encouraging them to adapt public health interventions, such as improving



nutrition and physical activity. The Albuquerque Area Indian Health Board, Inc. (\$850,000) and Santa Ana, Pueblo (\$120,651) received funding.

- **Programs to Reduce Obesity in High-Obesity Areas** – Six awards totaling \$4.2 million-funded land grant universities in states with counties that have more than 40 percent prevalence of adult obesity.

Health impact assessments can be funded with transportation or planning dollars, but alternative funding for these may be available. For example, the health impact assessment (HIA) conducted in Cuba, New Mexico to evaluate the impact of U.S. Five-hundred and fifty highway design on the health and safety of community residents was supported in part by the CDC Prevention Research Centers Program.

New Mexico also has the Regional Transit District Act of 2003, which allows for the creation of Regional Transit Districts (RTD). In addition to being eligible to receive Federal funds, the districts are able to levy taxes to generate revenue. An RTD is an authority that operates public transit services for multiple jurisdictions in a region. For example, the Rio Metro RTD operates transit services (Rail Runner Express and bus) for Bernalillo, Sandoval, and Valencia counties in New Mexico.

Part of the transportation planning process for NMDOT and the MPOs and RTPOs is coordinating with transit agencies to identify issues and needs related to public and active transportation. Key issues that often arise include moving transit-dependent groups such as seniors, youth, low-income, and mobility-impaired residents as well as providing residents with better access to education, grocery stores, jobs, and social activities. A benefit in New Mexico: planners can collaborate with the RTDs to identify transit options that enable customers to access regional destinations and then identify opportunities to fund these services. For example, the Rio Metro RTD currently provides or funds, wholly or partially, a variety of bus services to meet existing transportation needs in a three-county area. Encouraging planners to partner with transit agencies and existing RTDs to plan for access to health care, multimodal options near and around transit, and other related issues can provide beneficial outcomes for health.

6.6 Providing Technical Assistance to Agencies

NMDOT is in a position to offer funding incentives, technical assistance, and/or guidance to MPOs RTPOs, and transit agencies to encourage the connection between health and transportation in their plans, programs, and projects. As mentioned in the “Leveraging Funding Opportunities” section, there are a number of funding sources that could be utilized to promote active transportation – sharing this information with regional partners will provide a greater understanding of what funds are available and how they can be used. Technical assistance can be provided in the form of workshops or through data and analysis. A workshop may cover a number of topics, including: an overview of the statewide health priorities and policies in the 2040 Plan, a framework for integrating health into regional transportation or transit plans, and a list of funding resources, statewide (health impact

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assessments), and national (World Health Organization's Health Economic Assessment Tool (HEAT)) tools that can be used to facilitate transportation health planning. Workshops also could be focused on a single topic, educating planners on how to conduct health impact assessments or working with transit agencies to make access to health destinations a priority. Technical assistance also could be provided through data collection and analysis and ranges from assisting regional entities with health impact assessments, providing data sets, such as bicycle and pedestrian crash data, or educating planners on what data are available in the State, how to access it,

and opportunities for analysis. For instance, the NMDOT Traffic Safety Division has established an e-mail address so planners can request crash data and the University of New Mexico has created a user-friendly crash data documentation web site.⁴ An initial step would be to educate planners on transportation and health data resources in New Mexico.

DOT – Technical Assistance

The Massachusetts DOT hosted Complete Streets and Health Impact Assessment workshops for local transportation planners to inform them of available DOT resources and equip them with the tools to conduct their own analyses and programs.

In response to increased demand from local and regional planners and engineers, the Iowa DOT Office of Design, Federal Highway Administration Iowa Division, and Iowa State University Local Technical Assistance Program (LTAP) offer workshops on designing safe and accessible pedestrian environments.

⁴ http://www.unm.edu/~dgrint/reports_documentation.html.



7.0 Strategy Database



For the Alternatives Analysis (Section 2), strategies were identified by regional and statewide working groups and from completed plans. The strategy database includes a source based on the group number (Table 7.1) or the document number (Table 7.2).

Table 7.1 Statewide and Regional Working Groups

Statewide Working Groups		Regional Working Groups	
SWG-1	Public Health, Safety and Security	RWG-1	Mid-Region RTPO
SWG-2	State of Good Repair	RWG-2	Northeast RTPO
SWG-3	Access, Mobility, and Connectivity	RWG-3	Northern Pueblos RTPO
SWG-4	Economic Vitality – Freight Movement	RWG-4	Northwest RTPO
SWG-5	Economic Vitality – Regional Development, Border Considerations, Rural/Urban Equity, and Environmental Justice	RWG-5	South Central RTPO
SWG-6	Visitor Travel, Recreation, and Tourism	RWG-6	Southeast RTPO
SWG-7	Federal, State, and Tribal Lands	RWG-7	Southwest RTPO
SWG-8	Cultural Resources, Historic Resources, Landscapes, and the Natural Environment		
SWG-9	Plan Implementation and Project Delivery		

Table 7.2 Documents with Strategies Included in Database

ID	Title	Agency/ Organization
P1	New Mexico State Rail Plan	NMDOT
P2	New Mexico Statewide Public Transportation Plan	NMDOT
P3	Northwest RTPO Long-Range Transportation Plan, 2002-2022	Northwest RTPO
P4	Farmington Metropolitan Transportation Plan, 2010-2035	Farmington MPO
P5	Navajo Nation Long-Range Transportation Plan	Navajo Nation
P6	Mid-Region RTPO Long-Range Transportation Plan	Mid-Region RTPO
P7	Mid-Region Metropolitan Transportation Plan 2035	Mid-Region MPO
P8	Northeastern RTPO Long-Range Transportation Plan	Northeast RTPO
P9	Northern Pueblos RTPO Long-Range Transportation Plan	Northern Pueblos RTPO
P10	Santa Fe Metropolitan Transportation Plan 2010-2035	Santa Fe MPO
P11	Pueblo de Cochiti Long-Range Transportation Plan and Road Inventory Update	Pueblo de Cochiti
P12	Transport 2040 (Las Cruces MPO)	Las Cruces MPO
P13	Southeastern New Mexico Economic Development Strategy 2011-2015	Southeastern New Mexico EDD/COG
P14	Southwest RTPO Long-Range Transportation Plan	Southwest RTPO

Table 7.3 Complete List of Strategies Identified

Type	Description	Mode	Region	Scale	Time Horizon	Goal Area	Source(s)
Policy	Ensure NMDOT transportation plans and processes support the NM MainStreet program; provide greater funding for MainStreet investments.	Multimodal	Statewide	Within community	Short-term (1 - 5 years)	All	RWG 1, RWG 7, SWG 1, SWG 5
Program	Provide and enhance the range of transportation options for travel from rural to urban areas (e.g., "people shuttles"; regional transit; faster, non-stop service, "last mile" connectivity, connection between services, etc.)	Multimodal	Statewide	Within region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	RWG 1, RWG 3, RWG 5, RWG 7, SWG 1, SWG 5, P8, P9
Policy	Require funding be in place to complete entire project from start to finish prior to implementation; or, if phased, phases should be stand-alone projects.	Multimodal	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Transparency & Accountability	RWG 1, RWG 2, RWG 3
Policy	Emphasize or prioritize "active transportation" in project designs.	Bicycle/Pedestrian	Statewide	Within community	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	RWG 1, SWG 1, SWG 3, SWG 6, P10
Policy	Link transportation and land use by focusing high-density development and public services (healthcare clinics, senior centers, libraries, etc.) around public transportation.	Transit	Statewide	Within community	Long-term (15+ years)	Multimodal Mobility & Connectivity	RWG 1, RWG 4, RWG 6, RWG 7, SWG 4, SWG 5, P7, P8, P10
Study	Develop statewide public transportation plan that integrates all regional plans and creates a statewide grid.	Transit	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	RWG 1
Policy	Establish dedicated, sustainable transportation revenue stream (ideas to consider include mileage-based user fees, toll roads, vehicle inspections, private sector impact fees, increase fuel taxes, index fuel taxes to inflation, restore vehicle excise tax to transportation, northbound fees at border crossings, greater permit enforcement, road impact agreements, caravan tax, etc.). Establish dedicated funding sources for transit, rail, Scenic Byways,	Multimodal	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	All	RWG 1, RWG 2, RWG 3, RWG 4, RWG 5, RWG 6, SWG 4, SWG 5, SWG 6, P4, P8, P14
Policy	Allocate or require a percentage of project funding for local institutional capacity building and/or knowledge sharing among project leads (i.e., engineers, planners, maintenance, local community, etc.)	Multimodal	Statewide	Within region	Short-term (1 - 5 years)	All	RWG 1, SWG 3
Policy	Require engagement of local communities on every project, reaching out to all user types. Includes collaboration with individual pueblo communities as well.	Multimodal	Statewide	Within community	Short-term (1 - 5 years)	Transparency & Accountability	RWG 1, RWG 3, RWG 4, RWG 7, SWG 1, SWG 8, P8
Policy	Require that roadway design reflect local context and support local economic vitality while balancing user needs on the highways (i.e., context-sensitive, community-supportive design).	Highway	Statewide	Within community	Short-term (1 - 5 years)	Culture & Environment	RWG 1, RWG 3, RWG 6, RWG 7, SWG 1, SWG 3, SWG 4, P6, P8
Policy	Adopt Complete Streets as a statewide policy, making it flexible/adaptable to different communities (i.e., context-sensitive solutions), including incentives and funding mechanisms to implement these projects.	Multimodal	Statewide	Within community	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	RWG 1, RWG 3, RWG 4, RWG 6, RWG 7, SWG 1, SWG 3, SWG 5, SWG 6, P4, P10
Policy	Prioritize investments in alternative transportation over highway spending; Develop statewide transit funding policy.	Transit	Statewide	Within region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	RWG 1, RWG 3, SWG 3, P7
Program	Provide funding and guidance to improve traveler information and directional signage on critical corridors to support tourism and economic development (including Forest Service Lands, Spaceport, etc.).	Highway	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	RWG 1, RWG 7, SWG 3, SWG 6, P4
Policy	Use Council of Government (COG) as clearinghouse for project proposals and funding requests to avoid duplication of applications. COGs could oversee process and research funding options available and not depend on NMDOT (e.g., the "Fund It Program" provides feasibility review of project funding requests from communities).	Multimodal	Statewide	Within region	Short-term (1 - 5 years)	Transparency & Accountability	RWG 1
Project	Focus investments in the US 550 corridor between Bernalillo, Farmington, and Montrose, CO to spur economic development (e.g., opportunity for hikers, county fair, tourism, integrated partners, Scenic Byway, etc.).	Highway	Mid-Region, Northwest	Statewide/Region to region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	RWG 1
Project	Improve connection between Albuquerque International Sunport and Rail Runner.	Multimodal	Mid-Region	Within community	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	RWG 1, SWG 6

Type	Description	Mode	Region	Scale	Time Horizon	Goal Area	Source(s)
Study	Identify alternative funding sources for local match, particularly for rural communities. Restructure "top-down" approach to transportation funding by establishing local funding streams that can go toward significant local projects benefitting the community directly. Encourage and facilitate peer-to-peer sharing of local funding strategies at the local/regional level. Understand how changing demographics may affect funding match in local communities.	Multimodal	Statewide	Within community	Short-term (1 - 5 years)	All	RWG 1, RWG 7, SWG 1, P9
Program	Continue to invest in pedestrian friendly programs (e.g., Safe Routes to School, etc.)	Bicycle/Pedestrian	Mid-Region	Within community	Short-term (1 - 5 years)	Safety & Public Health	RWG 1, SWG 1, SWG 5, P10
Program	Allocate necessary funds to repair and replace the state's aging bridges; Implement more detailed bridge inspection program; Improve data collection.	Highway	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Preservation & Maintenance	RWG 2, RWG 4, SWG 2
Policy	Reduce the burden of regulations and/or project development requirements to be less cumbersome on small communities/ governments who do not have many resources (e.g., some communities cannot pursue grants because the cost of writing the proposal/request requirements is too high).	Multimodal	Statewide	Within community	Short-term (1 - 5 years)	Transparency & Accountability	RWG 2, RWG 4, SWG 4, SWG 6, P8
Policy	Emphasize interagency collaboration and coordination for future infrastructure planning and funding (e.g., water, transportation, energy, communications, tourism, education, emergency management/services, Jobs Council, Health Councils, Forest Service, BIA, etc.)	Multimodal	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Transparency & Accountability	RWG 2, RWG 4, RWG 5, SWG 1, SWG 5, SWG 8
Study	Conduct feasibility studies to extend/expand passenger rail in the state (e.g., Glorieta, Las Vegas)	Rail	Statewide	Statewide/Region to region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	RWG 2
Project	Widen US 54 to four lanes south of Santa Rosa to address crashes and increased truck traffic. US 54 is a designated state truck route.	Highway	Northeast, Southeast	Statewide/Region to region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	RWG 2, SWG 4, P8
Program	Continue funding to small airports for improvements, development, and expansion (more service as well as capital improvements).	Air	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	RWG 2, RWG 3, SWG 4, P9, P14
Program	Evaluate and address the unique transportation needs of seniors, mobility impaired, and other special needs users, (e.g., access to public transportation, one-call/one-click coordinated transit and healthcare)	Multimodal	Statewide	Within community	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	RWG 2, RWG 3, RWG 6, RWG 7, SWG 1, SWG 3, P8, P14
Program	Establish Enchanted Circle Regional Transit District (RTD); create Enchanted Circle Transit Loop.	Transit	Northern Pueblos	Within region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	RWG 2
Program	Develop statewide Scenic Byway standards, including aesthetics, design, signage, etc. and promote and maintain tourist routes statewide.	Highway	Statewide	Within region	Short-term (1 - 5 years)	All	RWG 2, RWG 4, SWG 5, SWG 6
Project	Pave NM 120 (Ocate Pass) for easier travel for tourists from Texas and Oklahoma. Ocate pass is a poor road with very limited services; however, it is the most direct route from Texas, and GPS users are directed to use this route giving a poor image of New Mexico.	Highway	Northeast	Within region	Long-term (15+ years)	Multimodal Mobility & Connectivity	RWG 2
Program	Share resources (buses, drivers, etc.) to accommodate seasonal variations in tourism-based transportation needs and services (e.g., Eagle Nest is busier during the summer and Angel Fire is busier during the winter, so these transportation resources can be combined).	Transit	Northeast	Within region	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	RWG 2
Program	Expand availability, reliability, and speed of broadband communication to rural areas.			Statewide/Region to region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	RWG 2, RWG 3, RWG 7
Program	Develop, designate, and/or expand regional bicycle routes (e.g. US 66, US 90)	Bicycle/Pedestrian	Statewide	Within region	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	RWG 2, RWG 7, SWG 6, P8, P10
Program	Extend NMDOT Park-and-Ride System north from Las Vegas	Transit	Northeast	Statewide/Region to region	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	RWG 2
Policy	Create utility corridors using transportation right-of-way for water, natural gas, electric, and other utilities, etc.	Multimodal	Statewide	Statewide/Region to region	Long-term (15+ years)	Multimodal Mobility & Connectivity	RWG 2
Project	Expand trail system that connects Eagle Nest to Angel Fire, continuing on to Mora	Bicycle/Pedestrian	Northeast	Within region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	RWG 2



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Type	Description	Mode	Region	Scale	Time Horizon	Goal Area	Source(s)
Policy	Promote non-motorized travel by requiring projects to include ADA-compliant sidewalks, bulb outs, lighting, signage, shelter, etc.	Bicycle/Pedestrian	Statewide	Within community	Short-term (1 - 5 years)	Safety & Public Health	RWG 3, RWG 6
Project	Invest in Chile Line Trail to generate economic development.	Bicycle/Pedestrian	Northern Pueblos	Within region	Long-term (15+ years)	Multimodal Mobility & Connectivity	RWG 3
Program	Repurpose abandoned roadways for "roads to trails" program.	Bicycle/Pedestrian	Northern Pueblos	Within region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	RWG 3, SWG 6
Project	Establish Scenic Byway on the old railroad alignment from Chama to the west. Most of the land is tribal owned.	Highway	Northern Pueblos	Within region	Medium-term (6 - 15 years)	Culture & Environment	RWG 3
Study	Develop a long-range transit plan for the North Central RTD (e.g., increase frequency and speed of public transportation connections from Albuquerque to northern New Mexico and communities in-between, directly connect regional public transit to Santa Fe).	Transit	Northern Pueblos	Within region	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	RWG 3
Project	Update NM 68 roadway profile to address safety issues, incorporate bus routes, and encourage bicycle use.	Multimodal	Northern Pueblos	Within region	Medium-term (6 - 15 years)	Safety & Public Health	RWG 3
Program	Educate the public about the rules of the road to improve safety for bicyclists, pedestrians, vehicles, and trains. Railroad-roadway crossing safety.	Multimodal	Statewide	Within community	Short-term (1 - 5 years)	Safety & Public Health	RWG 3, RWG 4, SWG 3, SWG 4, P10
Program	Promote trail safety and availability to encourage use (targeting community residents, people making pilgrimages, Continental Divide Rail hikers, etc.)	Bicycle/Pedestrian	Statewide	Within region	Short-term (1 - 5 years)	Safety & Public Health	RWG 1, RWG 3, SWG 5
Project	Expand trail system to connect or merge communities (e.g., Santa Clara to San Ildefonso).	Bicycle/Pedestrian	Northern Pueblos	Within region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	RWG 3
Program	Promote physical activity through transportation infrastructure and policy to proactively improve health (e.g., health impact assessments)	Bicycle/Pedestrian	Statewide	Within community	Short-term (1 - 5 years)	Safety & Public Health	RWG 3, SWG 1, P10
Program	Improve local non-motorized travel options such as hiking trails, bicycle paths, horse trails (options are especially limited in Taos).	Multimodal	Northern Pueblos	Within community	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	RWG 3, SWG 6
Project	Implement strategic improvements on I-40 to address safety and increased truck traffic (e.g., Continental Divide)	Highway	Northwest	International/National	Short-term (1 - 5 years)	Safety & Public Health	RWG 4, P3
Program	Integrate and leverage new technology into transportation programs and projects (e.g. solar lighting). Initiate state "Innovation Program" to generate new and better ideas (look at out of state projects as a model).	Highway	Statewide	Statewide/Region to region	Medium-term (6 - 15 years)	All	RWG 4, SWG 1, SWG 2, SWG 3
Program	Increase public transportation service between Gallup, Shiprock, Farmington, Crownpoint, Thoreau, and Durango by 2020 on US 491 and NM 371.	Transit	Northwest	Within region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	RWG 4, P5
Study	Evaluate the feasibility of a railroad spur (NAPI to I-40) and intermodal facility/inland port to support both local and interstate needs. Consider opportunities for both freight and commuter rail.	Rail	Northwest	Within region	Long-term (15+ years)	Multimodal Mobility & Connectivity	RWG 4, SWG 4, SWG 5
Project	Improve street lighting at major intersections (e.g., along US 491 and NM 371).	Highway	Northwest	Within region	Short-term (1 - 5 years)	Safety & Public Health	RWG 4
Program	Support implementation and management of Corridor Management Plan for Trail of the Ancients Byway.	Highway	Northwest	Within region	Short-term (1 - 5 years)	Culture & Environment	RWG 4, P5
Program	Consider the development of a Northwest Regional Transit District (RTD) to support the development of feasibility studies, generate/share funding for local projects, increase the availability of public transportation in smaller communities, develop 20-year transit plan, etc.	Transit	Northwest	Within region	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	RWG 4, P5
Program	Improve scheduling coordination between different public transportation providers.	Transit	Northwest	Within region	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	RWG 4, SWG 5, P10
Program	Invest in Zuni Mountain Trail System for both motorized ad non-motorized traffic (planning, construction, and expansion).	Multimodal	Northwest	Within region	Long-term (15+ years)	Multimodal Mobility & Connectivity	RWG 4
Project	Reconstruct NM 53 and NM 602 (Zuni segments).	Highway	Northwest	Within region	Medium-term (6 - 15 years)	Preservation & Maintenance	RWG 4
Program	Develop local system of walking and biking trails on Navajo land.	Bicycle/Pedestrian	Northwest	Within community	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	RWG 4, P3

Type	Description	Mode	Region	Scale	Time Horizon	Goal Area	Source(s)
Study	Evaluate future travel demand on US 491 to plan for growth in truck traffic, tourism/recreation, and multimodal needs.	Highway	Northwest	Within region	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	RWG 4
Policy	Incorporate technology into NMDOT operations (e.g., expanded use of Go-To-Meeting applications instead of driving all over the state for meetings.)		Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Transparency & Accountability	RWG 5
Program	Provide funding support or tax incentive for DUI drive home programs (many restaurant/bar owners will provide these services free of charge or at minimal cost, but the burden is on the business owner).	Highway	Statewide	Within community	Short-term (1 - 5 years)	Safety & Public Health	RWG 5
Program	Implement wildlife collision mitigation strategies (e.g., improved wildlife fencing and corridors, install flashing motion sensor technology, manage roadside vegetation to discourage wildlife from foraging too close to the roadways). Be creative about the investments made.	Highway	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Safety & Public Health	RWG 5
Program	Develop strong guidelines/performance measures that lead to safety improvements in the design and maintenance of roadways, especially for walking and bicycling.	Multimodal	Statewide	Within region	Short-term (1 - 5 years)	Safety & Public Health	RWG 5, RWG 7, SWG 6, P10
Project	Manage foliage to mitigate line-of-sight issues at I-25 Exit 89 (Truth or Consequences)	Highway	South Central	Within community	Short-term (1 - 5 years)	Safety & Public Health	RWG 5
Program	Expand programs, provide stronger enforcement, and/or change laws that have a known safety benefit (e.g., distracted driving, DWI, motorcycle helmet requirement, motorcycle endorsed license, commercial drivers license for lower weight vehicles (less than 26,000 pounds)).	Highway	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Safety & Public Health	RWG 5, SWG 1, SWG 4
Program	Provide incentives for locally-based transportation companies/entrepreneurs to provide transit services in rural areas (e.g., managed care organizations are providing stipends to rural areas which could provide an opportunity for funding transit or other types of partnerships).	Transit	South Central	Within community	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	RWG 5
Program	Develop social marketing campaign to educate the public on using the public transportation system and change the perception of potential users.	Transit	Statewide	Within region	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	RWG 5, SWG 1, SWG 3, SWG 6
Study	Evaluate the need/potential for a series of transportation hubs and infrastructure improvements in the region to support existing industry (i.e., agriculture in Hatch/Dona Ana County), attract new industry, and support economic development.	Multimodal	South Central	Within region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	RWG 5
Study	Conduct comparative assessment of speeding penalties, registration fees, weigh stations, etc. in New Mexico versus neighboring states to identify opportunities to additional revenue.	Highway	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Transparency & Accountability	RWG 5, RWG 6
Program	Increase Department of Public Safety (DPS) and NMDOT personnel to help with enforcement; Provide competitive pay for critical personnel (DPS, etc.)	Highway	South Central	Statewide/Region to region	Short-term (1 - 5 years)	Safety & Public Health	RWG 6
Study	Designate statewide and regional freight hubs, freight corridors, hazardous waste routes, and oversize/overweight routes; Improve connections between them; Design to handle heavy truck traffic.	Multimodal	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	RWG 2, RWG 6, RWG 7, SWG 3, SWG 4
Policy	Reform state policy to allow public-private partnerships.	Multimodal	Statewide	Statewide/Region to region	Medium-term (6 - 15 years)	All	RWG 4, SWG 1, SWG 4, SWG 5
Program	Implement a Regional Transit District (RTD) in the Southeast Region.	Transit	Southeast	Within region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	RWG 6
Program	Maintain and rehabilitate existing highway infrastructure (e.g., construct shoulders, widen roads, repair pavements, etc.), especially on heavily-traveled roads and key truck routes.	Highway	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Preservation & Maintenance	RWG 2, RWG 4, RWG 6, SWG 2, SWG 4, P4, P8, P11, P14
Project	Construct new and/or improved roads in the Southeast region (Lea and Eddy Counties, etc.) to accommodate demand; Identify low cost solutions.	Highway	Southeast	Within region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	RWG 6
Project	Construct a Carlsbad South bypass.	Highway	Southeast	Within community	Long-term (15+ years)	Multimodal Mobility & Connectivity	RWG 6
Policy	Establish an objective decision-making and project prioritization process that involves community input.	Multimodal	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Transparency & Accountability	RWG 7, P8

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Type	Description	Mode	Region	Scale	Time Horizon	Goal Area	Source(s)
Program	Expand Intelligent Transportation Systems (ITS) throughout the state to provide roadway conditions, location of services conditions/detours, border crossing information, and resources for additional information; Coordinate roadway information and data via Geographic Information Systems (GIS) software to share among all entities; Expand capabilities of NMRoads.com to include county roads that impact smaller communities.	Highway	Statewide	Statewide/Region to region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	RWG 7, SWG 6, P4
Policy	Establish process for allocating resources among the state's highways based on usage or life cycle cost rather than functional classification. Process could lead to implementation of "road diets."	Highway	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Transparency & Accountability	RWG 7, SWG 1, SWG 2, SWG 4, P4
Study	Re-think the rationale behind roadway ownership and maintenance responsibilities among the Forest Service, county, and NMDOT roads (i.e., rationalize ownership to reflect use and condition of the roads.	Highway	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Transparency & Accountability	RWG 7
Program	Improve utilization of the Columbus and Antelope Wells ports of entry in the region for tourism and trade.	Highway	Southwest	Within region	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	RWG 7, SWG 5
Project	Develop Copper Trail multi-use path along Highway 180 from Ft. Bayard to Bayard.	Bicycle/Pedestrian	Southwest	Within community	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	RWG 7
Study	Identify vulnerable communities, considering fire danger, bridge crossings, specific health outcomes, etc., and plan infrastructure accordingly.	Multimodal	Statewide	Within community	Short-term (1 - 5 years)	Safety & Public Health	SWG 1
Study	Conduct regional safety assessments or road safety audits to identify hotspots for additional study.	Highway	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Safety & Public Health	SWG 1, SWG 4
Program	Invest resources to improve data collection and information sharing to support asset management decisions.	Multimodal	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Preservation & Maintenance	SWG 1, SWG 2, SWG 5
Program	Continue existing NMDOT safety programs, safety plans, and measures.	Highway	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Safety & Public Health	SWG 1
Study	Assess seasonal travel demand and the impacts of seasonal travelers.	Multimodal	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	SWG 1
Policy	Move away from "traffic" demand focus and implement "travel" demand policies based on the multimodal movement of people and goods; Shift vocabulary of planning and engineering away from traffic and towards person travel.	Multimodal	Statewide	Statewide/Region to region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	SWG 3
Program	Streamline project delivery process to shorten the length of time between a study and project implementation. A collaborative Section 404/NEPA integration effort between USACE and NMDOT is a good model of how process changes can increase efficiency and avoid pitfalls later in the process.	Highway	Statewide	Statewide/Region to region	Medium-term (6 - 15 years)	Transparency & Accountability	SWG 3, SWG 8
Program	Establish travel demand management policies and programs.	Multimodal	Statewide	Within region	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	SWG 3
Program	Develop strategic highway shoulder investment plan to accommodate bicycle tourism and passing vehicles.	Multimodal	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	SWG 3, SWG 4, SWG 6
Project	Double track Rail Runner and expand the express and local services.	Rail	Mid-Region, Northern Pueblos	Statewide/Region to region	Long-term (15+ years)	Multimodal Mobility & Connectivity	SWG 3, P7
Study	Coordinate across state and national borders to expand rail through New Mexico, between Denver and Chihuahua, Mexico and beyond.	Rail	Statewide	International/National	Long-term (15+ years)	Multimodal Mobility & Connectivity	SWG 5, P8
Program	Enhance transit connectivity from Alamogordo to Sunland Park (transit is currently serving 23 of 25 colonias.	Multimodal	Southeast	Within region	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	SWG 5
Study	Evaluate feasibility of commuter rail between El Paso and Las Cruces.	Rail	South Central	Within region	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	SWG 5, P1

Type	Description	Mode	Region	Scale	Time Horizon	Goal Area	Source(s)
Study	Evaluate freight and passenger rail connection between Albuquerque, Las Cruces, and El Paso. Increase the viability of freight by rail.	Rail	Statewide	Statewide/Region to region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	SWG 5
Project	Construct four-lane road on US 180 between Silver City and Deming. This was a GRIP project that ran out of funding.	Highway	Southwest	Within region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	SWG 5
Study	Evaluate need/opportunities for bypass routes due to high truck volumes (e.g., Aircraft/I-10, 273/McNutt, West Mesa Corridor, Chaparral).	Highway	South Central	Within region	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	SWG 4
Study	Improve traffic operations through traffic signal coordination.	Highway	Statewide	Within community	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	SWG 4
Project	Upgrade US 60/84 in Clovis/Ft. Sumner to Super 2 or four lanes to address safety and capacity issues.	Highway	Southeast	Within region	Medium-term (6 - 15 years)	Safety & Public Health	SWG 4
Program	Establish design standards for rest stops. Encourage commercialization and/or public-private partnerships at rest areas (i.e., allow for vending businesses). Develop rest areas as recreational hubs that provide access to trails, amenities for cyclists, and other user needs. Expand rest area maintenance program.	Highway	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Safety & Public Health	SWG 6
Policy	Initiate "soundscape" policy to protect residential, Scenic Byways, and attractions from loud truck and motorcycle noise.	Highway	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Culture & Environment	SWG 6
Project	Plan and implement 30-mile Los Alamos hike and bike trail project.	Bicycle/Pedestrian	Northern Pueblos	Within region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	SWG 6
Policy	Provide truck bypasses to avoid roundabouts (e.g., NM 404 in Chaparral).	Highway	Statewide	Within community	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	SWG 4
Policy	Allow construction of railroads in existing highway rights-of-way.	Rail	Statewide	Within region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	SWG 4
Policy	Preserve or recover abandoned railroad alignments for potential future re-use as rail corridors.	Rail	Statewide	Within region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	SWG 4
Policy	Increase communication with/between freight stakeholders.	Multimodal	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Transparency & Accountability	SWG 4
Program	Provide incentives and/or interest-free loans to the private sector for the construction of rail lines to their distribution and manufacturing facilities.	Rail	Statewide	Within region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	SWG 4
Project	Improve NM 371 for heavy truck use.	Highway	Northwest	Within region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	SWG 4
Project	Develop intermodal hubs in Thoreah and Gallup.	Multimodal	Northwest	Within community	Long-term (15+ years)	Multimodal Mobility & Connectivity	SWG 4
Study	Evaluate Fort Wingate as a brownfield project for potential redevelopment as an intermodal facility.	Multimodal	Northwest	Within community	Long-term (15+ years)	Multimodal Mobility & Connectivity	SWG 4
Project	Implement Pinon Hills bridge and extension project in Farmington.	Highway	Northwest	Within region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	SWG 4
Policy	Regulate and control facilities for loading crude oil into rail cars.	Rail	Northwest, Southeast	Within region	Short-term (1 - 5 years)	Safety & Public Health	SWG 4
Project	Install more signage, lights, and warning gates at existing railroad crossings.	Rail	Statewide	Within community	Medium-term (6 - 15 years)	Safety & Public Health	SWG 4
Study	Revisit Tucumcari switching agreement with UP to address minimum 100-car off-loading requirement, capture goods movement, and promote regional business opportunities.	Rail	Southeast, Northeast	Statewide/Region to region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	SWG 4
Program	Provide more truck parking. Potential locations include vacant land at freeway exits in proximity to rest stops and existing truck stops.	Highway	Statewide	Statewide/Region to region	Medium-term (6 - 15 years)	Safety & Public Health	SWG 4
Policy	Respect tribal sovereignty, the Nation-to-Nation relationship, tribal government deadlines, holidays, processes, etc. Strong support needed at both the state and District levels.		Statewide	Within community	Short-term (1 - 5 years)	Culture & Environment	SWG 8
Project	Implement Positive Train Control (PTC) on Rail Runner alignment per Federal mandate. NMDOT must equip the Rail Runner alignment, locomotives, and cab cars with PTC by December 31, 2015.	Rail	Mid-Region, Northern Pueblos	Statewide/Region to region	Short-term (1 - 5 years)	Safety & Public Health	P1

New Mexico 2040 Plan
Appendix B – Technical Analysis Report

Type	Description	Mode	Region	Scale	Time Horizon	Goal Area	Source(s)
Program	Implement ongoing capital maintenance needs of New Mexico Rail Runner Express (NMRX) facilities, structures, and rolling stock necessary to maintain assets in a state of good repair.	Rail	Mid-Region, Northern Pueblos	Statewide/Region to region	Short-term (1 - 5 years)	Preservation & Maintenance	P1
Program	Implement New Mexico Rail Runner Express (NMRX) bridge management plan to replace/repair the bridges and trestles on the Albuquerque Subdivision to address capacity issues or other structural deficiencies.	Rail	Mid-Region, Northern Pueblos	Statewide/Region to region	Short-term (1 - 5 years)	Preservation & Maintenance	P1
Study	Continue planning studies to consider a new international rail border crossing at Santa Teresa to improve cross-border capacity in the Ciudad Juarez-El Paso are. The proposed crossing would connect with the UP Sunset Route near Strauss. A new rail line could also cross the Sunset Route via bridge and connect with the BNSF El Paso subdivision near Vado. New rail lines would be constructed in Mexico to connect the border crossing with the Mexican rail network.	Rail	South Central	International/National	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	P1
Project	Implement New Mexico Rail Runner Express (NMRX) track and signal improvements identified in the New Mexico State Rail Plan. Projects include Centralized Traffic Control (CTC) from Abajo to Hahn, double tracking Hahn to El Pueblo, replacing ties from Hahn to Waldo, constructing/rehabilitating sidings, adding continuous welded rail between Hahn and Bernalillo, adding train storage capacity at the Santa Fe Railyard, etc.	Rail	Mid-Region, Northern Pueblos	Statewide/Region to region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	P1
Project	Implement New Mexico Rail Runner Express (NMRX) station improvements identified in the New Mexico State Rail Plan. Projects include extending Rail Runner platforms to accommodate 5-car trains and increasing parking capacity where needed.	Rail	Mid-Region, Northern Pueblos	Statewide/Region to region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	P1
Project	Maintain and improve county and primary roads and bridges for school bus routes and emergency vehicles.	Highway	Northwest	Within region	Short-term (1 - 5 years)	Preservation & Maintenance	P3
Program	Increase air cargo capacity and service connections from Farmington Airport to major cities.	Air	Northwest	Statewide/Region to region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	P3
Policy	Implement access management strategies to maintain functionality of road classifications.	Highway	Statewide	Within community	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	P4
Project	Improve mobility for primary growth centers: Shiprock and Crownpoint.	Multimodal	Northwest	Within region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	P5
Program	Address the security of the transportation network, including regional emergencies.	Multimodal	Statewide	Statewide/Region to region	Short-term (1 - 5 years)	Safety & Public Health	P6
Policy	Develop policies and strategies to reduce greenhouse gases.	Highway	Statewide	Statewide/Region to region	Long-term (15+ years)	Safety & Public Health	P7
Study	Evaluate and prioritize potential Bus Rapid Transit (BRT) service along critical corridors and river crossings.	Transit	Mid-Region	Within community	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	P7
Study	Establish "best practices" approach for establishing community bicycle and pedestrian needs in rural communities.	Bicycle/Pedestrian	Statewide	Within community	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	P8
Policy	Integrate tribal transportation plans with city, county, and State plans and programs.	Multimodal	Northern Pueblos	Within region	Short-term (1 - 5 years)	Transparency & Accountability	P9
Policy	Consider roundabouts for all new or reconstructed intersections	Highway	Northern Pueblos	Within community	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	P10
Program	Expand bike-on-bus and wheelchair accessible bus fleet.	Transit	Northern Pueblos	Within community	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	P10
Project	Implement construction projects on BIA Routes 399 and 300; Implement reconstruction and/or maintenance projects on BIA routes.	Highway	Northern Pueblos	Within region	Long-term (15+ years)	Preservation & Maintenance	P11
Study	Develop Pedestrian System Priorities Plan.	Bicycle/Pedestrian	South Central	Within community	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	P12
Study	Develop Public Transportation System Priorities Plan.	Transit	South Central	Within community	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	P12
Study	Develop Bicycle System Priorities Plan.	Bicycle/Pedestrian	South Central	Within community	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	P12

Type	Description	Mode	Region	Scale	Time Horizon	Goal Area	Source(s)
Study	Develop Trail System Priorities Plan.	Bicycle/Pedestrian	South Central	Within community	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	P12
Program	Expand Southwest Regional Transit District (RTD)	Transit	Southwest	Within region	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	P14
Project	Improve roads between Deming and Columbus and re-route traffic around residential areas.	Highway	Southwest	Within region	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	P14
Program	Seek Community Development Block Grants (CDBG) when eligible to enhance and improve community infrastructure.	Multimodal	Southwest	Within region	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	P14
Program	Enhance bicycle-friendly atmosphere in Silver City and promote bicycle use as a healthy, viable transportation alternative.	Bicycle/Pedestrian	Southwest	Within community	Short-term (1 - 5 years)	Safety & Public Health	P14
Program	Provide incentives and/or interest-free loans to the private sector for the construction of rail lines to their distribution and manufacturing facilities.	Rail	Statewide	Within region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	SWG 4
Project	Improve NM 371 for heavy truck use.	Highway	Northwest	Within region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	SWG 4
Project	Develop intermodal hubs in Thoreah and Gallup.	Multimodal	Northwest	Within community	Long-term (15+ years)	Multimodal Mobility & Connectivity	SWG 4
Study	Evaluate Fort Wingate as a brownfield project for potential redevelopment as an intermodal facility.	Multimodal	Northwest	Within community	Long-term (15+ years)	Multimodal Mobility & Connectivity	SWG 4
Project	Implement Pinon Hills bridge and extension project in Farmington.	Highway	Northwest	Within region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	SWG 4
Policy	Regulate and control facilities for loading crude oil into rail cars.	Rail	Northwest, Southeast	Within region	Short-term (1 - 5 years)	Safety & Public Health	SWG 4
Project	Install more signage, lights, and warning gates at existing railroad crossings.	Rail	Statewide	Within community	Medium-term (6 - 15 years)	Safety & Public Health	SWG 4
Study	Revisit Tucumcari switching agreement with UP to address minimum 100-car off-loading requirement, capture goods movement, and promote regional business opportunities.	Rail	Southeast, Northeast	Statewide/Region to region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	SWG 4
Program	Provide more truck parking. Potential locations include vacant land at freeway exits in proximity to rest stops and existing truck stops.	Highway	Statewide	Statewide/Region to region	Medium-term (6 - 15 years)	Safety & Public Health	SWG 4
Policy	Respect tribal sovereignty, the Nation-to-Nation relationship, tribal government deadlines, holidays, processes, etc. Strong support needed at both the state and District levels.		Statewide	Within community	Short-term (1 - 5 years)	Culture & Environment	SWG 8
Project	Implement Positive Train Control (PTC) on Rail Runner alignment per Federal mandate. NMDOT must equip the Rail Runner alignment, locomotives, and cab cars with PTC by December 31, 2015.	Rail	Mid-Region, Northern Pueblos	Statewide/Region to region	Short-term (1 - 5 years)	Safety & Public Health	P1
Program	Implement ongoing capital maintenance needs of New Mexico Rail Runner Express (NMRX) facilities, structures, and rolling stock necessary to maintain assets in a state of good repair.	Rail	Mid-Region, Northern Pueblos	Statewide/Region to region	Short-term (1 - 5 years)	Preservation & Maintenance	P1
Program	Implement New Mexico Rail Runner Express (NMRX) bridge management plan to replace/repair the bridges and trestles on the Albuquerque Subdivision to address capacity issues or other structural deficiencies.	Rail	Mid-Region, Northern Pueblos	Statewide/Region to region	Short-term (1 - 5 years)	Preservation & Maintenance	P1
Study	Continue planning studies to consider a new international rail border crossing at Santa Teresa to improve cross-border capacity in the Ciudad Juarez-El Paso are. The proposed crossing would connect with the UP Sunset Route near Strauss. A new rail line could also cross the Sunset Route via bridge and connect with the BNSF El Paso subdivision near Vado. New rail lines would be constructed in Mexico to connect the border crossing with the Mexican rail network.	Rail	South Central	International/National	Short-term (1 - 5 years)	Multimodal Mobility & Connectivity	P1
Project	Implement New Mexico Rail Runner Express (NMRX) track and signal improvements identified in the New Mexico State Rail Plan. Projects include Centralized Traffic Control (CTC) from Abajo to Hahn, double tracking Hahn to El Pueblo, replacing ties from Hahn to Waldo, constructing/rehabilitating sidings, adding continuous welded rail between Hahn and Bernalillo, adding train storage capacity at the Santa Fe Railyard, etc.	Rail	Mid-Region, Northern Pueblos	Statewide/Region to region	Medium-term (6 - 15 years)	Multimodal Mobility & Connectivity	P1

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