

Transport 2040
Metropolitan Transportation Plan Update
Mesilla Valley Metropolitan Planning Organization





MESILLA VALLEY METROPOLITAN PLANNING ORGANIZATION

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Acknowledgements

MPO staff would like to thank former Bicycle and Pedestrian Advisory Committee member Lesley Kryder and former Technical Advisory Committee Member Larry Altamirano, as well as several former MPO staff members whose work contributed to this project: Orlando Fierro, former Planning Technician, and Chowdhury Siddiqui, former Associate Planner. Finally, MPO staff would like to thank Douglas Campion of the Las Cruces Community Enterprise Center and America Terrazas from the Del Cerro Community Center for their assistance with the public meeting process.

Photos

Document Cover Page : staff photograph from the rest area on I-10 west of Las Cruces
Chapter Cover Pages: staff photographs taken at the I-10 overpass at Avenida de Mesilla and at the I-25 overpass at Thorpe Road



Common Acronyms and Abbreviations

AADT	Annual average daily traffic
ADA	Americans with Disabilities Act of 1990
BLM	United States Department of the Interior, Bureau of Land Management
BPAC	Bicycle and Pedestrian Facilities Advisory Committee
CFR	Code of Federal Regulations
CTSP	Comprehensive Transportation Safety Plan
DOT	United States Department of Transportation
EBID	Elephant Butte Irrigation District
EPA	United States Environmental Protection Agency
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FY	Fiscal year
ISTEA	Intermodal Surface Transportation Efficiency Act (preceded TEA-21)
ITS	Intelligent transportation systems
LOS	Level of service
MAP-21	Moving Ahead for Progress in the 21st Century Act, the current federal transportation legislation and the first long-term highway authorization since 2005
MPO	Metropolitan planning organization
MTP	Metropolitan Transportation Plan
NEPA	National Environmental Policy Act of 1969
NHS	National Highway System
NMDOT	New Mexico Department of Transportation
PPP	Public Participation Plan
RTD	Regional Transit District
SCRTD	South Central Regional Transit District
SRTS	Safe Routes to School
STIP	Statewide Transportation Improvement Program
STP	Surface Transportation Program
TAC	Technical Advisory Committee
TAZ	Transportation Analysis Zone
TEA-21	Transportation Efficiency Act for the 21st Century
TIA	Traffic Impact Analysis
TIP	Transportation Improvement Program
TOD	Transit Oriented Development
Title VI	Title VI of the Civil Rights Act
UPWP	Unified Planning Work Program
USDOT	United States Department of Transportation
V/C	Volume to capacity ratio
VHT	Vehicle hours traveled
VISUM/VISSIM	A travel demand model utilized by the MPO, it provides such data as V/C and VMT
VMT	Vehicle miles traveled

MESILLA VALLEY METROPOLITAN PLANNING ORGANIZATION

RESOLUTION NO. 15-08

A RESOLUTION ADOPTING THE 2015 METROPOLITAN TRANSPORTATION PLAN (TRANSPORT 2040 UPDATE)

The Mesilla Valley Metropolitan Planning Organization (MPO) Policy Committee is informed that:

WHEREAS, the Mesilla Valley Metropolitan Planning Organization (MPO) is the transportation planning agency for the City of Las Cruces, the Town of Mesilla, and the urbanized area for Doña Ana County; and

WHEREAS, Title 23 CFR §450.322 requires that all MPO's throughout the country adopt a minimum 20-year Metropolitan Transportation Plan for their respective jurisdictions; and

WHEREAS, the Mesilla Valley MPO previously adopted a long range transportation plan in 2010 and has conducted extensive review and involved the public and other governmental agencies to prepare this 2015 Metropolitan Transportation Plan; and

WHEREAS, the 2015 Metropolitan Transportation Plan represents a continuous transportation planning effort through identified goals, objectives and policies for all modes of transportation and being financially constrained within the 25-year planning horizon; and

WHEREAS, the MPO Staff, as part of its public involvement process, held public input hearings in three phases from November 2013 to May 2015 in order to solicit input about the 2015 Metropolitan Transportation Plan; and

WHEREAS, the 2015 Metropolitan Transportation Plan was recommended for approval by the Technical Advisory Committee at their meeting of June 4, 2015; and

WHEREAS, the 2015 Metropolitan Transportation Plan was recommended for approval by the Bicycle Facilities Advisory Committee at their meeting of May 19, 2015.

NOW, THEREFORE, be it resolved by the Policy Committee of the Mesilla Valley Metropolitan Planning Organization:

(I)

THAT the Mesilla Valley Metropolitan Planning Organization hereby adopts the 2015 Metropolitan Transportation Plan, known as Transport 2040 as shown in Exhibit "A" attached to this Resolution.

(II)

THAT the Mesilla Valley MPO Staff shall maintain a file of the actual public comments received for the 2015 Metropolitan Transportation Plan in the offices of the MPO.

(III)

THAT the MPO Staff and the Committees of the MPO are hereby directed to utilize existing documents and information for the continuous implementation of transportation plans and projects, including the annual Transportation Improvement Program (TIP) and Unified Planning Work Program (UPWP) and all ongoing or new plans and projects identified within the 2015 Metropolitan Transportation Plan.

(IV)

THAT the MPO Staff is hereby authorized to administratively update the 2015 Metropolitan Transportation Plan for spelling and grammatical errors, mapping errors or updates, the removal of identified projects as they are implemented and/or completed, or to reflect the implementation of projects on various data, graphics, maps, and charts contained within the Plan.

(V)

THAT the MPO Staff is hereby authorized to do all deeds necessary in the accomplishment of the hereinabove.

DONE and APPROVED this 10th day of June, 2015.

APPROVED:



Chair

Motion By:	Mayor Barraza
Second By:	Councillor Sorg
VOTE:	
Chair Flores	Yes
Vice Chair Sorg	Yes
Mayor Barraza	Yes
Trustee Bernal	Abs
Mr. Doolittle	Yes
Commissioner Duarte-Benavidez	Abs
Commissioner Garrett	Yes
Commissioner Hancock	Abs
Councillor Pedroza	Yes
Councillor Small	Yes

ATTEST:



Recording Secretary

APPROVED AS TO FORM:




City Attorney



TRANSPORT 2040: Metropolitan Transportation Plan Update 2015

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Chapter One
MPO Introduction



A Brief History of MPOs and Transportation Legislation

The spread of development around urban centers in the United States throughout the early 20th century resulted in greater regional connectivity and a wider network of roads and highways than ever before. By the 1950's, some large cities like New York and Chicago had created organizations that focused on transit planning at a regional scale, but the landmark moment for Metropolitan Planning Organizations (MPOs) came in 1962 with the passage of the Federal Aid Highway Act. This legislation stated that metropolitan statistical areas (MSA) with populations larger than 50,000 must form organizations to review transportation needs at the regional level, rather than narrowly focusing on local issues. By the mid 1960's, there were 224 MPOs. In 1973, MPOs began receiving funds to carry out the planning activities outlined in the federal highway legislation. Due to a trend towards increasing urbanization, there are now at least 385 MPOs in the United States.

The next leap forward for MPOs came with the introduction of the Intermodal Surface Transportation Efficiency Act of 1991, or ISTEA. ISTEA created a structure that increased funding for MPOs, strengthened the metropolitan planning process, required public and stakeholder participation, and recommended multi-modal solutions.

The next step in the progression of transportation legislation occurred with the adoption of the Transportation Equity Act for the 21st Century, or TEA-21. This bill continued to guarantee levels of federal funding for highway and transit programs, built up safety programs, and invested in technology research and applications.

The current transportation measure is called the Moving Ahead for Progress in the 21st Century Act (P.L. 112-141) and known as MAP-21. It was signed into law by President Obama on July 6, 2012. Funding surface transportation programs at over \$105 billion for fiscal years (FY) 2013 and 2014, MAP-21 is the first long-term highway authorization enacted since 2005.

MAP-21 is a milestone for the U.S. economy and the

Nation's surface transportation program. By transforming the policy and programmatic framework for investments to guide the system's growth and development, MAP-21 creates a streamlined and performance-based surface transportation program and builds on many of the highway, transit, bike, and pedestrian programs and policies established in 1991.

Mesilla Valley Metropolitan Planning Organization Framework

The Mesilla Valley Metropolitan Planning Organization (MPO) is a federally-required, multi-jurisdictional planning agency responsible for transportation planning in the City of Las Cruces, the Town of Mesilla, and central Doña Ana County. While the majority of funding for MPO is provided by the federal government, the local entities are required to contribute through a monetary match. The Mesilla Valley MPO was created in 1982 by the Governor after the metropolitan area exceeded a population of 50,000 in 1980. In general, the MPO was established to:

- direct multi-modal transportation planning,
- establish regional project priorities, and
- maintain eligibility to receive federal funds for the area transportation systems.

Joint Powers Agreement (JPA) and Boundary

The State of New Mexico is divided into six NMDOT districts, each represented by a Transportation Commissioner. The Mesilla Valley MPO is located in the southeast corner of New Mexico Department of Transportation District One, which consists of Doña Ana, Sierra, Socorro, Luna, Grant, Hidalgo, and Caltron counties. The boundary of the Mesilla Valley MPO encompasses central Doña Ana County, extending from Radium Springs in the northwest to Chamberino and Berino in the south, and includes the City of Las Cruces, the Town of Mesilla, and villages in Doña Ana County such as Organ, Mesquite, and Vado. Figure 1-1 shows the current MPO boundary.

The Mesilla Valley MPO is created under a joint powers



agreement (JPA) between the New Mexico Department of Transportation (NMDOT), City of Las Cruces, Town of Mesilla, and Doña Ana County. The current JPA was adopted in July of 2013 and notable changes in it are: adding the NMDOT as a voting member of the Policy Committee, changing the name from Las Cruces MPO, and cost sharing among the member jurisdictions for local matching funds.

Mesilla Valley MPO Structure

The Mesilla Valley MPO consists of a Policy Committee comprised of a NMDOT District One Engineer and nine elected officials: three City of Las Cruces Councillors, three Doña Ana County Commissioners, and three Town of Mesilla Trustees. The chairs of each entity (Mayor of Las Cruces, Mayor of Mesilla, and County Commission Chair) appoint members from their respective boards to serve on the Policy Committee. The Policy Committee makes decisions regarding regional transportation planning and project priorities.

The Policy Committee is supported by two advisory committees: the Technical Advisory Committee (TAC) and the Bicycle and Pedestrian Facilities Advisory

Figure 1-1

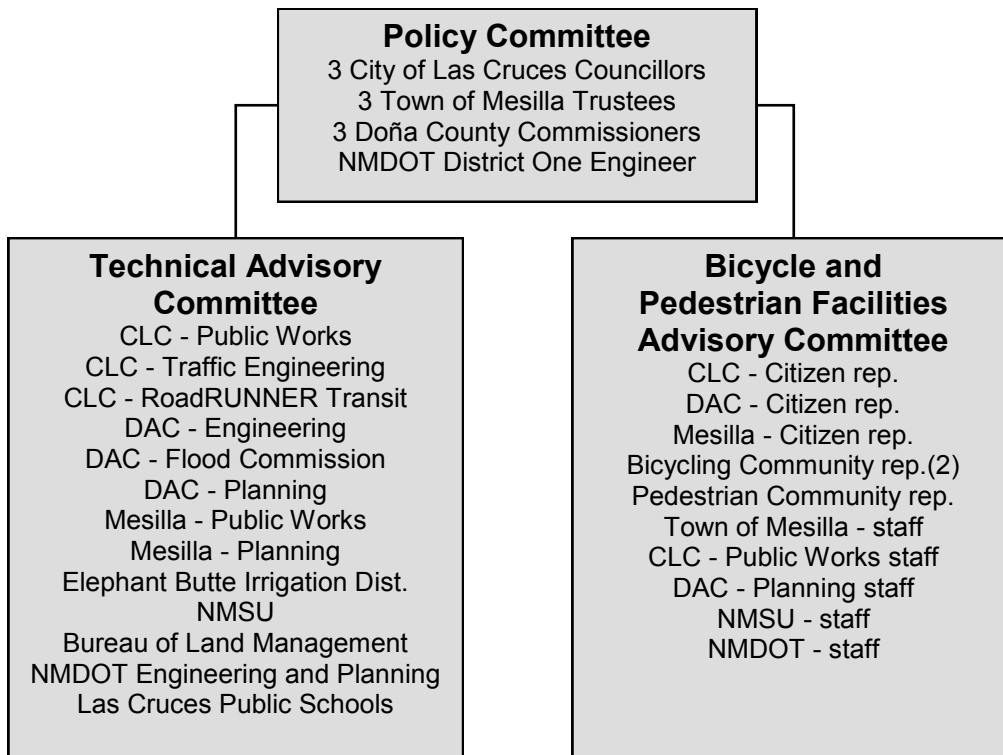
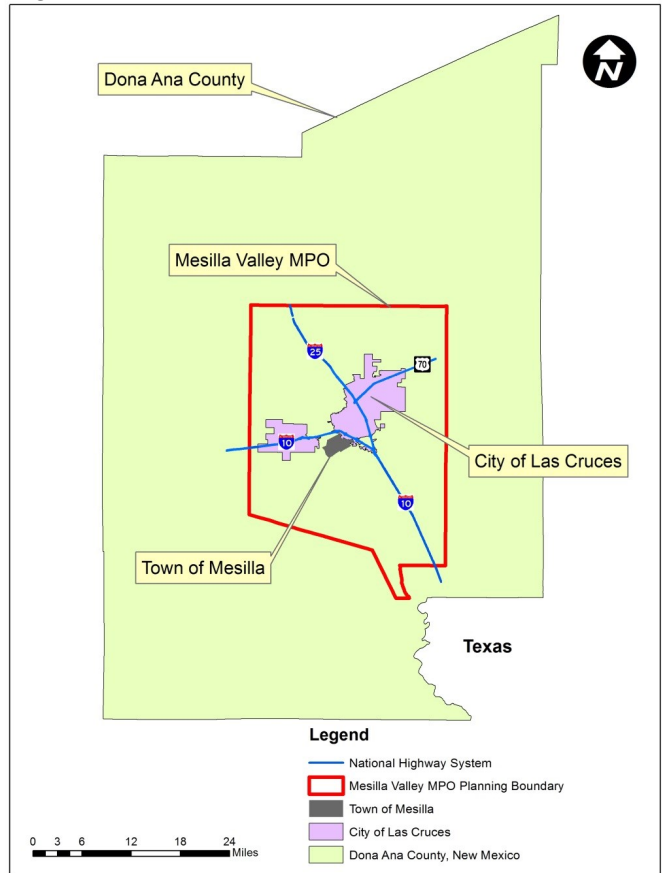


Figure 1-2
 Mesilla Valley MPO Committee Structure



Committee (BPAC). Technical Advisory Committee members are staff members from various agencies listed in Figure 1-2. Staff members are appointed by the directors of their departments. The Bicycle and Pedestrian Facilities Advisory Committee is made up of two groups: citizen representatives and staff members. Citizen representatives apply for and receive appointment through the Policy Committee. Staff members are appointed by the directors of their departments. Figure 1-2 illustrates the whole MPO Committee Structure.

The MPO is supported by a permanent full-time staff of an MPO Officer, two planners, a planning technician, and two part-time co-ops.

Core MPO Functions

There are five core functions of an MPO (The framework to carry out these core functions is detailed in the federal transportation regulations):

- **Establish a setting:** Establish and manage a fair and impartial setting for effective regional decision-making in the metropolitan area.
- **Identify and evaluate alternative transportation improvement options:** Use data and planning methods to generate and evaluate alternatives. Planning studies and evaluations are included in the Unified Planning Work Program or UPWP.
- **Prepare and maintain a Metropolitan Transportation Plan (MTP):** Develop and update a long-range transportation plan for the metropolitan area covering a planning horizon of at least twenty years that fosters (1) mobility and access for people and goods, (2) efficient system performance and preservation, and (3) good quality of life.
- **Develop a Transportation Improvement Program (TIP):** Develop a short-range (four-year) program of transportation improvements based on the long-range transportation plan; the TIP should be designed to achieve the area's goals, using regulating, operating, management, and financial tools.

- **Involve the public:** Actively engage the general public and other affected stakeholders in the four essential functions listed above.

Required MPO Documents

Federal transportation regulations outline four documents that MPOs are required to create, implement, and maintain in order to carry out the five core MPO functions. Figure 1-3 illustrates the relationships that exist between each of the documents. These are as follows:

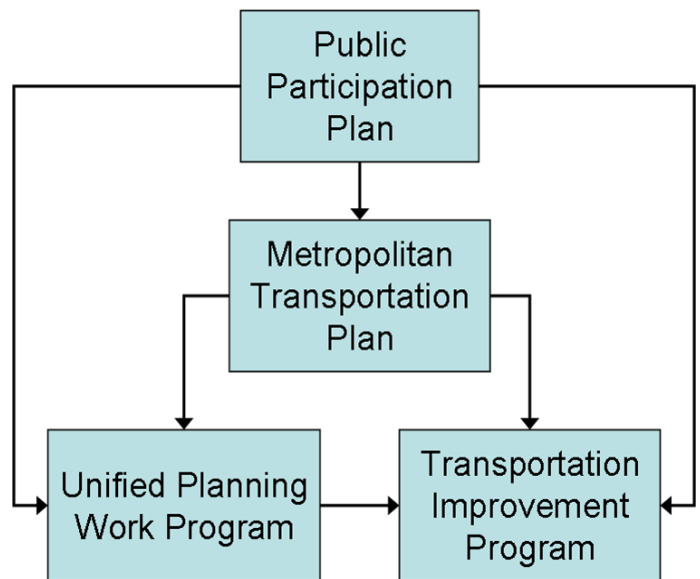
Public Participation Plan (PPP)

The Public Participation Plan (PPP) guides public involvement activities conducted by the MPO. The PPP contains the goals for public involvement, as well as specific public involvement techniques and procedures. The MPO uses the public involvement processes to develop all of the other documents listed below and carry out many of the tasks listed in the Unified Planning Work Program.

Metropolitan Transportation Plan (MTP)

The Metropolitan Transportation Plan (MTP) is the long range transportation plan that guides planning, construction, operation and maintenance of an integrated, multi-modal transportation network. The MTP sets the regional transportation vision and

Figure 1-3





priorities through a variety of principles and strategies providing a foundation for all of the tasks and projects delineated in the UPWP and TIP. MPOs that are not designated as transportation management areas, like Mesilla Valley MPO, update their MTPs every five years. This document, entitled TRANSPORT 2040, is the Mesilla Valley MPO's 2015 Metropolitan Transportation Plan and is an update of the original Transport 2040 adopted in 2010.

Unified Planning Work Program (UPWP)

The Unified Planning Work Program (UPWP) is a biannual document that outlines transportation planning activities to be conducted by MPO staff as well as processes that MPO staff will participate in, but not oversee. The UPWP also includes a budget, allocating staff time and money toward accomplishing the tasks. The UPWP must be in compliance with the MTP.

Transportation Improvement Program (TIP)

The Transportation Improvement Program (TIP) is a short-range, financially constrained list of federally funded and/or regionally significant transportation projects determined by the Policy Committee. The list of projects is created in cooperation with residents, local governments, and the New Mexico Department of Transportation (NMDOT). The TIP must be in compliance with the MTP. The Statewide Transportation Improvement Program (STIP) includes, without alteration, all of the TIPs from the MPOs and the transportation projects from the rural planning organizations throughout the State. The STIP is maintained by the NMDOT.

Metropolitan Transportation Plan Purpose and Process

One of the core MPO functions is the preparation and maintenance of a metropolitan transportation plan (MTP). The MPO is required by federal regulations to update its MTP every five years. (U.S.C. 23 §450.322.c) The need for regular updates becomes clear when analyzing the evolving conditions in our region.

As this metropolitan area continues to grow and accommodate a diverse population, it is necessary to plan accordingly. Because of the warm, dry climate in this area and the unique local community, many people choose to relocate and/or retire to this area, and Las Cruces has also been ranked by Forbes magazine as one of the best small metro areas for business and careers. In addition, Las Cruces has a university and community college which, combined, enroll over 25,000 students per year, further adding to the population growth. As the population grows, the demands placed on the transportation system and the transportation modes people choose will change significantly.

The planning and public input processes conducted by the MPO are also required to comply with Title VI of the Civil Rights Act of 1964 (U.S.C. 23 §450.334.a.3) and the Environmental Justice Orders. The goal of Title VI/Environmental Justice is to ensure that people have access to meaningful participation and equitable distribution of the benefits and burdens of transportation services. This region must support transportation options for all users. The diverse list of users includes low and moderate income populations, students, seniors, and the disabled, as well as the influx of new residents. Because the MPO area covers multiple jurisdictions, the transportation system requires examination on a regional scale, both in light of the significant growth that has occurred over the last 10 to 20 years and the expected future growth.

Figure 1-4
A meeting of the Mesilla Valley MPO Policy Committee





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Chapter Two
Existing Conditions





Introduction

According to the New Mexico State Constitution, it is the role and responsibility of government to enact laws protecting public peace, health, and safety. Transportation and land use policies, codes, and practices have a major impact on the creation of healthy, livable, and safe communities, and thus contribute to these state mandates. These overarching goals aside, transportation related issues also have a direct impact on people's daily lives, from air quality and traffic safety to economic development and mobility to jobs, services and shopping.

One of the first steps in the transportation plan development process is to gather information on existing conditions. It is imperative to understand the existing socio-economic, land use, environmental, and transportation conditions of a region before forecasting potential future conditions and deriving implementation strategies. In this chapter, current characteristics and future scenarios in the Mesilla Valley are covered as they relate to the following topics:

- Population Growth, Employment, and Location Efficiency
- Health and Safety
- Multimodal Transportation
- Regional Movement, Freight Corridors, and Security
- Natural and Cultural Resources

The discussion of the above topics will include a brief examination of national and state-wide studies and trends, and a more detailed discussion of the potential impacts of existing local and regional conditions. The identification of existing conditions and particularly future scenarios were developed together with One Valley, One Vision, a joint comprehensive planning Process approved by the City of Las Cruces and Doña Ana County.

Characteristics of the MPO Region

The MPO region is located in south-central New Mexico. The Mesilla Valley metropolitan area is among the fastest growing areas in the State of New Mexico.

The quality of life enjoyed in the area appears to be a major factor in this growth, as many people choose to relocate and/or retire to the Las Cruces region because of its sunny (average of 330 days of sunshine), dry climate and the unique local community. The Las Cruces metropolitan area has been ranked by several national organizations as one of the top places to retire and one of the top places for small metro areas for business. These rankings have been awarded by organizations such as the American Association of Retired Persons (AARP), Milken Institute, *Forbes*, and *Money Magazine*.

The Las Cruces Public School District is the second largest in the state, enrolling around 24,000 students. The Gadsden School District, located in the southern portion of Doña Ana County, has 26 schools serving more than 14,000 students. Doña Ana County is home to NASA, White Sands Missile Range, and to both New Mexico State University (NMSU) and Doña Ana Community College (DACC), which together enroll over 25,000 students a year.

The City of Las Cruces is the second largest city in the state of New Mexico in terms of both physical size and population. Many growth-related opportunities and challenges exist that require coordination among a variety of agencies and jurisdictions.

Population

Because the MPO area covers the Town of Mesilla, the City of Las Cruces, and central Doña Ana County, the transportation system must be examined on a regional level. Las Cruces experienced a 36.4% increase in population between 2000 (74,267) and 2013 (101,324). In Doña Ana County, there was a 22.2% increase in population between 2000 (174,682) and 2010 (201,603).

The Mesilla Valley MPO boundary area had a population of approximately 157,000 in 2010. The rate of population increase has slowed in recent years and projections have been revised downward. Doña Ana County lost population from 2012 (213,952) to 2013 (213,460) according to Census Bureau estimates.



Figure 2-1

County	2010	2015	2020	2025	2030	2035	2040
Doña Ana	210,536	226,855	243,164	258,887	273,513	286,818	299,088

Figure 2- 2

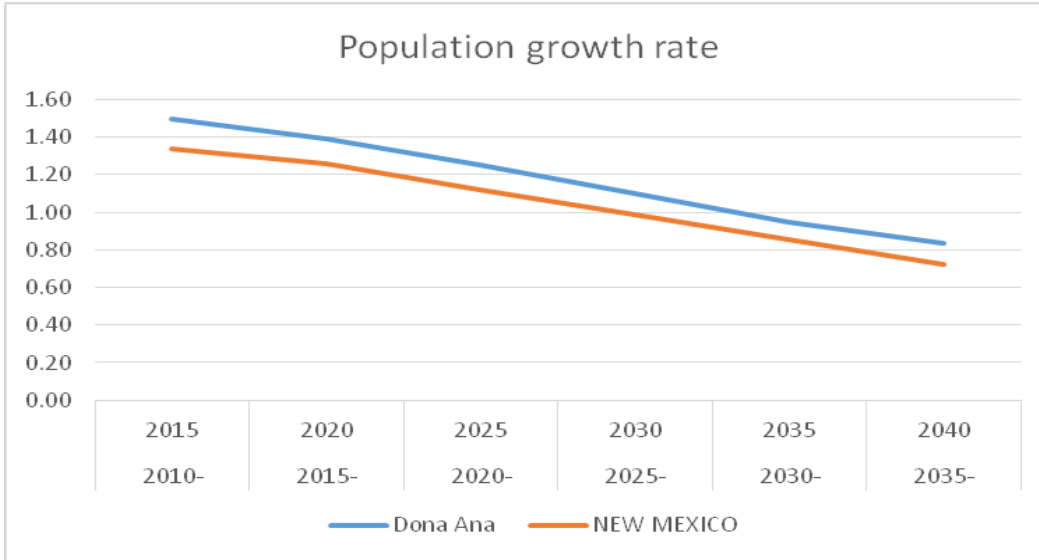


Figure 2-1 shows the projected population growth from 2010 to 2040 for Doña Ana County. Figure 2-2 shows the associated growth rate. While the Doña Ana County growth rate remains above the state average, it is still steadily declining. SOURCE: Bureau of Business and Economic Research, University of New Mexico

Senior Population Growth

In 2005, the U.S. Census Bureau released projections about which states will grow the fastest through the year 2030. A particularly striking aspect of these projections is the increasing population of people over the age of 65. In fact, beginning in 2011 this age cohort will grow at a faster rate than the total population growth rate in every single state, with the greatest increases being in southwestern states.

The same U.S. Census Bureau projections showed that, in New Mexico, the population of people over 65 years of age is expected to increase by 141% from 1995 to 2025. As a result, New Mexico ranks as having the 10th fastest growing senior population in the United States.

Households

Nationally, household trends include more single households and households without children; this is in part due to the increase in the senior population. While most national researchers agree that single-family detached housing will remain the preference for most home buyers, a dramatic change in housing demand is expected between large lot and small lot developments wherein smaller lots will be preferred.

These trends will be accompanied with an increased desire for services and public transportation located near housing. An analysis completed through the One, Valley, One Vision planning process has shown a similar trend toward smaller lots in Doña Ana County.

Income

Income levels are an important factor in transportation, since the MPO is responsible for planning a transportation system that offers mobility choices for all users. Drawing from the 2013 Viva Doña Ana publication, “Doña Ana Snapshot Report: A Comprehensive Plan for Sustainable Development,” Figure 2-3 notes several key statistics regarding income for Doña Ana County versus both the State of New Mexico and the United States as a whole. In 2011, 25.6% of the Doña Ana County population was below poverty level, higher than both the state of New Mexico as a whole, at 19%, and the U.S. at 14.3%.

When conducting transportation studies and plans, the MPO identifies and maps the locations of low to moderate income areas and evaluates the potential impacts from proposed transportation projects. Figure 2-4 shows the low to moderate income areas, slum and blight areas, and special survey areas for Las Cruces.



Figure 2-3

	% of Population Below Poverty (2011)	% of Population Below Poverty (2000)
Doña Ana County	25.6	25.4
State of New Mexico	19.0	21.5
United States	14.3	12.4

Source: U.S. Census Bureau, Doña Ana Snapshot Report: A Comprehensive Plan for Sustainable Development (2013)

For study purposes, low to moderate income areas are those which are primarily residential in character where at least 51% of the residents in a census tract, census tract block group, or other officially recognized boundary, are low and moderate-income persons. Slum and blight areas are designated by the local government as meeting the State of New Mexico definition of slum and/or blight. A slum, as defined for the New Mexico Municipal Housing Authority, is “any area where dwellings predominate, which by reason of dilapidation, overcrowding, lack of ventilation, light or sanitary facilities or any combination of these factors is detrimental to safety, health or morals.” Special survey areas, are documented through accepted survey techniques (generally door-to-door surveys), and are primarily residential in character, where at least 51% of the residents are low and moderate income persons.

Location Efficiency

Housing location and transportation options can have a significant impact on a household budget. Housing costs are the largest household expense, yet transportation costs can also dramatically impact the household budget. Transportation costs can include purchase of a vehicle or bicycle, fuel, short and long-term maintenance, registration, insurance, and other fees. The largest indicator of current and future transportation costs are urban form (particularly proximity to employment centers and regional destinations) and access to public transportation. These costs can vary considerably across a metro area depending upon development patterns and transportation system connectivity. For example, widely dispersed retail shops, employment centers, and service providers can increase the impact of

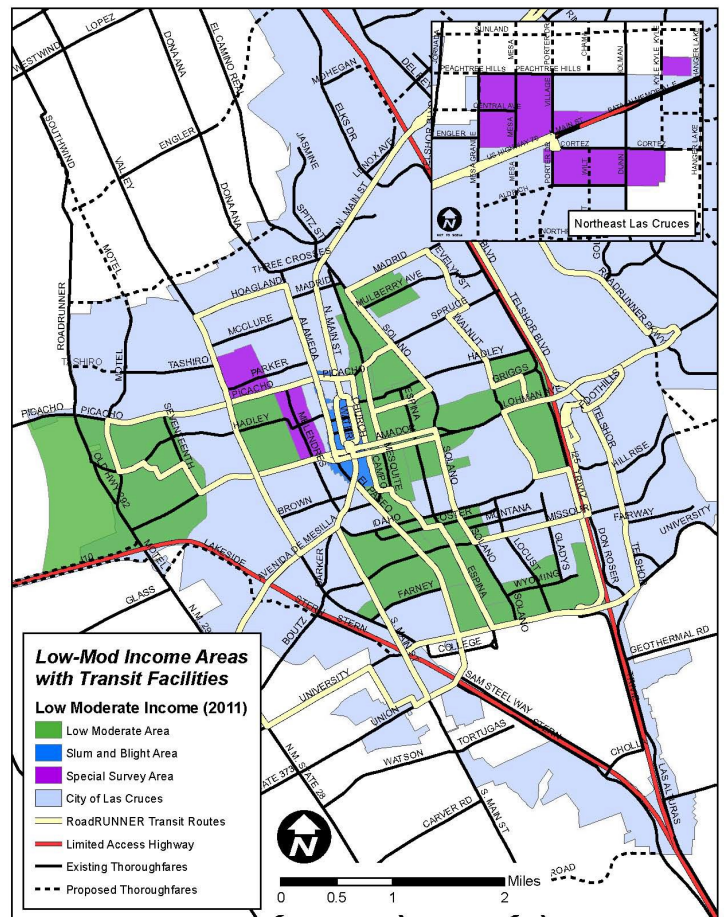
transportation costs on a household budget.

Housing and Transportation Costs

Housing and transportation costs, as a part of household expenses, are steadily increasing as the nation continues to grow horizontally. Figure 2-5 illustrates the result of a national study completed in 2013 for the year 2012 by the Bureau of Labor Statistics. According to the study, the percent of housing and transportation costs for the average

Figure 2-4

Source: 2013 Mesilla Valley MPO Public Participation Plan





American family in 2012 was 32.8% for housing and 17.5% for transportation. Since 2011, transportation expenditures have seen some of the largest percentage increases of all major expenditure items. Gasoline expenditures increased 29.6% from 2010 to 2012, mostly due to a 24.7% increase in 2011. Gasoline expenditures remained relatively stable in 2012, but transportation expenditures continued to increase. The Bureau of Labor attributes this to an increase in vehicle purchases from 2011 to 2012.

Housing and Transportation Index

The Center for Neighborhood Technology (CNT) has developed a Housing and Transportation Affordability Index based on detailed, peer-reviewed studies that correlate odometer readings and federal household transportation surveys with local factors and data such as neighborhood density, street grid complexity, availability of transit, and housing costs as a percent of the area median income. Housing costs alone are traditionally considered affordable when they make up no more than 30% of a household income. However, when including transportation costs based on the

location of the home, the true cost of housing decisions emerges.

Figure 2-6 is a map of Housing and Transportation Affordability Index in the Las Cruces area. The map on the left only displays housing prices as a percent of total income. The areas in yellow are ones where housing prices are less than 30% of income and areas in blue are 30% and greater. The map on the right displays housing prices plus transportation costs as a percent of total income. The areas in yellow are ones where the housing plus transportation costs are less than 45% of income and areas in blue are 45% or greater.

Affordable Housing

In 2009 a Las Cruces Affordable Housing Strategies report was completed by the City of Las Cruces Affordable Housing Ad Hoc Committee. Among the recommendations of this report was for the City to spread affordable housing throughout the City, proactively encourage multi-family development along transit corridors, and to create minimum density requirements to implement higher density. The

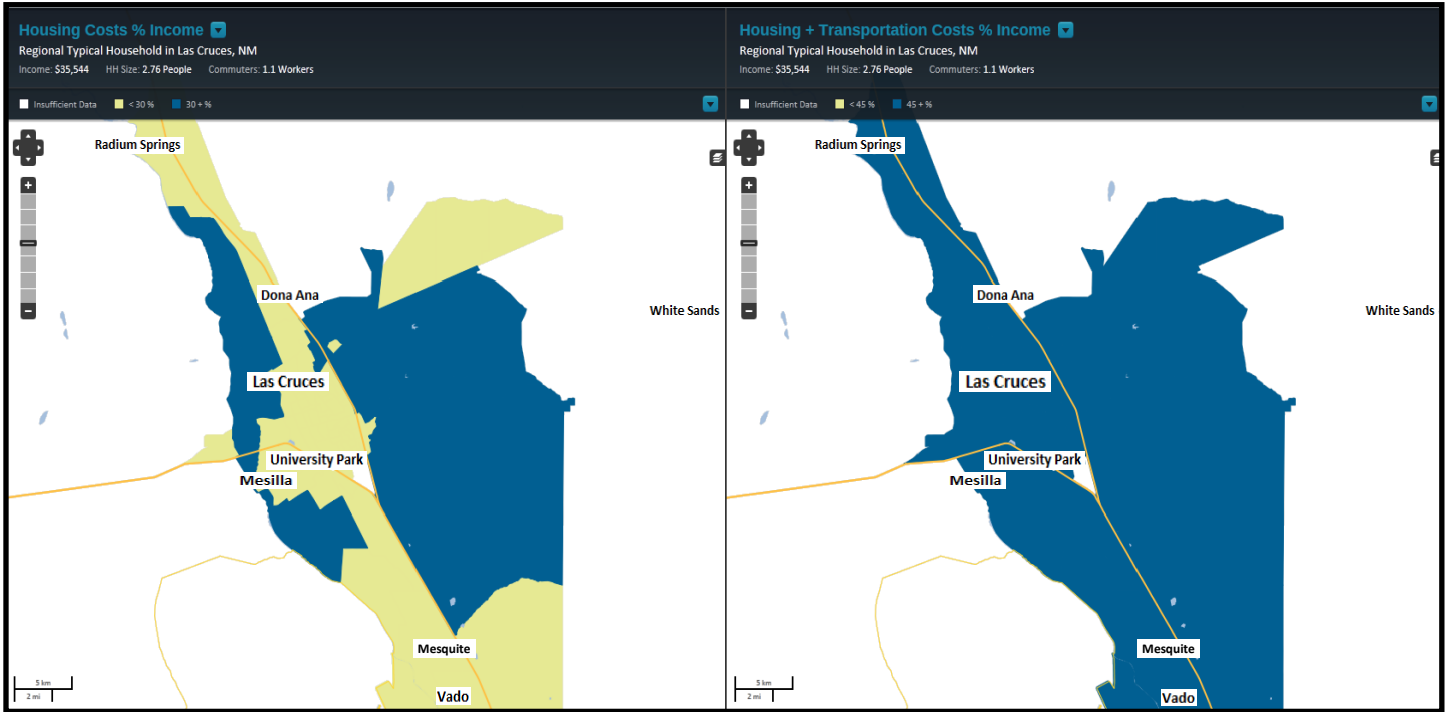
Figure 2-5

Average annual expenditures and characteristics of all consumer units and percent changes, 2010-2012

Item	2010	2011	2012	Percent change	
				2010-2011	2011-2012
Average annual expenditures:					
Total	\$48,109	\$49,705	\$51,442	3.3	3.5
Food	6,129	6,458	6,599	5.4	2.2
At home	3,624	3,838	3,921	5.9	2.2
Away from home	2,505	2,620	2,678	4.6	2.2
Housing	16,557	16,803	16,887	1.5	0.5
Apparel and services	1,700	1,740	1,736	2.4	-0.2
Transportation	7,677	8,293	8,998	8.0	8.5
Health care	3,157	3,313	3,556	4.9	7.3
Entertainment	2,504	2,572	2,605	2.7	1.3
Cash contributions	1,633	1,721	1,913	5.4	11.2
Personal insurance and pensions	5,373	5,424	5,591	0.9	3.1
All other expenditures	3,379	3,382	3,557	0.1	5.2



Figure 2-6
Housing and Transportation Affordability Index for the Las Cruces area



Mesilla Valley MPO supports affordable housing strategies, particularly appropriate density and dispersion of affordable housing along with the location of mixed-use centers that can support transit-oriented development (TOD).

Additionally, since 2013, the City of Las Cruces has been working on updating its Community Profile: Comprehensive Plan 2040. As part of this update, the profile identifies needs for context sensitivity as well as improved mixed use land use within the City.

Employment

Different employment sectors result in different transportation needs. For example, retail and hospital jobs have more dispersed and non-traditional hours than traditional 8-to-5 jobs. Therefore, identifying the distribution of jobs across employment sectors can be useful for understanding and predicting traffic congestion as well as planning service hours for public transportation. In addition, the location of employment centers, the types of employment, and the size of the work force also help to understand current transportation conditions and plan for future needs. These factors are important aspects of developing a Transportation Demand Model (TDM),

discussed further in Chapter 4. A more detailed description of future transportation needs, as projected by the Mesilla Valley MPO travel demand model, is available in the section on Multimodal Transportation. As shown in Figure 2-7, the sector that employs the greatest number of employees in Doña Ana County is Education and Health services (34%) followed by Retail Trade (11%), Public Administration (10%) and Arts/Entertainment, Food, and Recreational Services (10%).

Education and Health Services

Education and Health Services employs the highest percentage of people. The location of hospitals, clinics, and educational institutions are significant destinations that must be easily accessible. In addition to the two main community hospitals (Memorial Medical Center and Mountain View Regional Medical Center), there are a variety of retirement and assisted living centers, nursing agencies, and specialty hospitals in the region. The location of health services is important because hospitals, in particular, have a large number of employees who work different shifts throughout a 24-hour period. Finally, emergency services need uncongested and well-connected routes



to hospitals.

Large educational employment centers consist of Las Cruces Public Schools (LCPS), Gadsden Independent Schools, New Mexico State University (NMSU), and Doña Ana Community College (DACC). NMSU is a hub of activity throughout the week and on weekends because of daytime and nighttime classes and special events held at the campus.

Government

Government jobs to have a high number of people in one location. For example, there are a large number of employees working in the Doña Ana County Government Center, the Las Cruces City Hall, the Federal Court House, and White Sands Missile Range. In addition, because these jobs (not including the police and fire services) are generally day jobs, they contribute significantly to AM and PM peak hour traffic volumes.

Other Large Employment Centers

For 2012, the Mesilla Valley Economic Development Alliance (MVEDA) compiled data on the major

employers in the region and classified them by number of employees (Figure 2-8). An employer had to have at least 500 employees to be a part of this list.

Walmart and Sitel are examples of noteworthy employment centers because of the number of people that they employ. Walmart also attracts many shoppers each day to its three 24-hour shopping stores. Finally, there are several industrial centers and other activity areas that have been master planned and/or are in the process of developing into important destinations. The following provides more information on industrial parks and activity areas.

West Mesa Industrial Park

The West Mesa Industrial Park is located south of the Las Cruces International Airport and I-10. The park area consists of 1,820 acres of land. The main goal for this research park includes light industry, general manufacturing, and aviation-related technology-based industries. Eighteen companies currently exist in the park and seventeen others are in the design and marketing phase. Future development may include an aerospace business park immediately south to support

2012 EMPLOYMENT BY SECTOR IN DOÑA ANA COUNTY

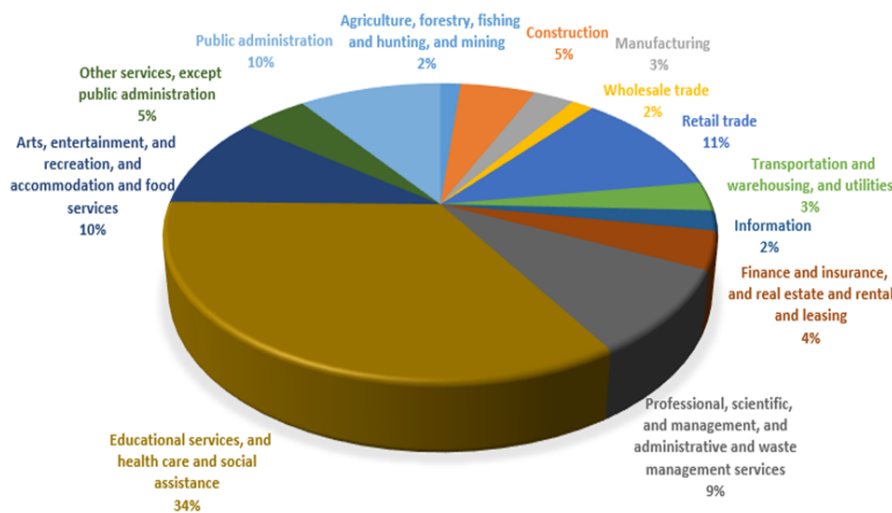


Figure 2-7 (above)
2012 Employment by Sector in Doña Ana County

Figure 2-8 (right)
Selection of largest employers in Doña Ana County

Source: 2012 American Community Survey

Largest Employers in the MPO Area	
1000-4999 Employees	
City of Las Cruces	
Gadsden Independent School District	
Memorial Medical Center	
Las Cruces Public Schools	
New Mexico State University	
White Sands Missile Range	
500-999 Employees	
Doña Ana Community College	
Doña Ana County	
Mountain View Regional Medical Center	
NASA	
Sitel/Client Logic	
Newtec LLC	
Coordinated Home Health	
Physical Sciences Lab	
Peak Behavioral Health Services	
Walmart	



businesses and suppliers for Spaceport America.

Downtown Area

Since 2004, City of Las Cruces staff has proceeded with the implementation of the strategies outlined in the Downtown Revitalization Plan. Currently, CLC staff are working on an update of that plan titled The Main Street Downtown Plan. Main Street Downtown is envisioned to be the cultural corridor of the Las Cruces city center, boasting museums, art galleries, theaters, unique shops, local restaurants, and the popular Farmer’s and Crafts Market. In November of 2012, Main Street was reopened to automobile traffic. Planning for the Downtown Plaza has continued and the Plaza is scheduled to be completed in Spring 2016.

University Area and the Arrowhead Research Park

New Mexico State University (NMSU) is located at the intersection of Interstate 10 and Interstate 25. It is therefore strategically located to impact both the state and region as it strives to expand its academic and research programs to become one of the top tier research institutions in the United States. By the year 2020, NMSU expects to be in the top quartile of its defined peer institution group and expects its student population at the Las Cruces campus to grow to 25,000 within 20 years.

The Arrowhead Research Park is located on the NMSU campus on a 257 acre parcel of land. The main goal for this research park is to enhance technology transfer and to provide private enterprises with access to academic and technical resources, including a state of the art space and high tech communication networks.

Telshor-Lohman Area

The geographic center of Las Cruces is roughly at the intersection of Lohman Avenue and Telshor Boulevard. This intersection is flanked by a variety of commercial services including the largest mall in the area, the Mesilla Valley Mall. Along with the typical stores available at a mall, the Mesilla Valley Mall includes a movie theater and a food court. In the area of the mall are other commercial services including restaurants, a grocery store, various retail outlets, office buildings, and a hotel. Lohman Avenue serves

as one of the main crossings of I-25 to the east mesa, in addition to US 70 and University Avenue. As a result, the intersection of Lohman and Telshor has the second highest volume of traffic in the metropolitan area. This area is the major destination and activity center in the MPO region.

Santa Teresa Industrial Parks

Although the Santa Teresa Industrial Park is not located in the MPO Area, the border area is important to consider because it has the potential to significantly impact the MPO region. The Santa Teresa Logistics Park is located adjacent to the border of Mexico and consists of 225 acres of industrial zoned land. The Bi-national Industrial Park at the Doña Ana County International Jetport is the site of the Southern Pacific multi-modal facility that has been relocated from downtown El Paso.

Health and Safety

Vital to the future of the Mesilla Valley region are the health and safety implications of a poorly vs. well planned region. Some of the issues affected by transportation planning include changes in air quality (respiratory health), a built environment that encourages or discourages physical activity (obesity and weight related disease), crash incidents (injuries and fatalities), and mobility and accessibility for children, the elderly, and the disabled (direct routes to school and access to services).

Figure 2-9

Health Quick Facts 1

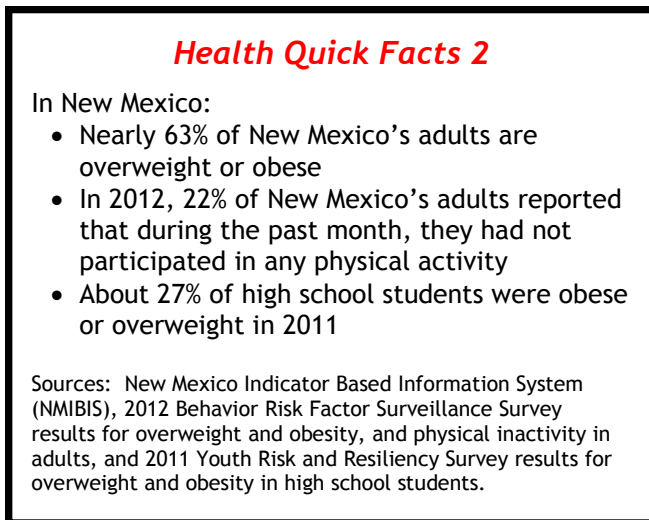
In the United States:

- About 17% of nation’s young people aged 2 to 19 years is obese, whereas more than one-third of our adults are obese
- Heart disease continue to remain the number one cause of death for all Americans (about 598,000 in 2010)
- Less than half (48%) of all adults meet the 2008 Physical Activity Guidelines (adults need at least 2.5 hours a week of physical activity)
- Americans living in the South are more likely to be less physically active than Americans living in the West, Northeast and Midwest regions of the country

Source: Centers for Disease Control and Prevention



Figure 2-10



Health

The transportation system is part of what is known as the built environment. A poorly connected transportation system, combined with widely dispersed and segregated land uses, can contribute to poor health and a decrease in physical activity. Over the past 20 years, there is evidence that the built environment has contributed to a decrease in health levels of U.S. citizens (Figure 2-9, 2-10). In the United States, obesity among adults and children is at epidemic levels and is the fastest growing public health problem. The built environment can promote a sedentary lifestyle that contributes to obesity and related health issues such as heart disease, diabetes, certain cancers, and arthritis, not to mention overall diminished quality of life and increasing health care costs. This public health problem is costly to individuals as well as to the nation as a whole.

Many experts now believe there is a connection between decreased physical activity and the design of our towns and cities. Measuring the Health Effects of Sprawl: A National Analysis of Physical Activity, Obesity, and Chronic Disease was written in September of 2003 by Barbara A. McCann and Reid Ewing, with help from Rutgers University, the Surface Transportation Policy Project, and Smart Growth America (SGA). In this publication, the authors review the many studies that have been done in the United States showing a “clear association between the type

of place people live and their activity levels, weight, and health.” This report also follows up on the study titled Relationship between Urban Sprawl and Physical Activity, Obesity, and Morbidity, which found a direct association between community form and people’s health. The study concluded that “people living in counties marked by sprawling development are likely to walk less and weigh more than people who live in less sprawling counties.” The study looked at 448 counties across the United States.

These studies signal that there is indeed a connection between land use patterns, active transportation opportunities, and growing obesity rates in the U.S. Additional studies have shown that people living in areas with increased opportunities for active transportation can experience improvements in overall health (See Figure 2-11, 2-12). Ultimately, appropriate changes to our transportation and land use policies may be necessary.

Safety

Planning, designing, and constructing safe transportation facilities and corridors is the top priority for every governmental agency responsible for public transport. This guiding priority does not guarantee that crashes, injuries, and fatalities are eliminated, but provides the impetus to identify and mitigate dangerous routes and intersections and to

Figure 2-11

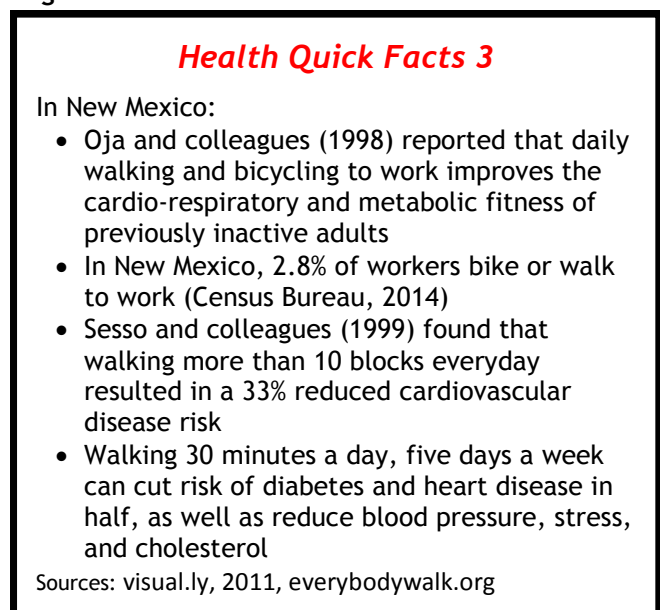




Figure 2-12

Health Quick Facts 4

In New Mexico:

- The Department of Health announced that obesity rates among 3rd graders declined 12% from 2010-2013, down from 22.6% to 19.9%.
- The Healthy Kids New Mexico (HKNM) initiative has worked to create miles of new walking and biking trails throughout nine New Mexico counties and four tribal communities.
- HKNM also works to establish Safe Routes to School Programs in its communities, which encourage children to walk or bike to schools and focuses on infrastructure improvements like sidewalks and accessibility that make such activity reasonable and safe.

Source: New Mexico Department of Health

reduce property damage and loss of life. Improving safety throughout the transportation system also reduces the economic impacts to the region by reducing the number of costly crash incidents and the associated congestion. Direct and indirect costs of traffic crashes include property damage, emergency services, medical bills, loss of time at work, and loss of life.

Motor Vehicle Crashes

Nationally, motor vehicle crashes are by far the leading cause of accidental death. Fortunately, according to the National Highway Traffic Safety Administration (NHTSA), crash incidents decreased from 43,510 in 2005 to 32,367 in 2011. In 2012 the numbers went up by 4.35% (34,080 crashes). Nevertheless, motor vehicle safety is a serious issue that needs to be addressed as a high priority in transportation planning.

NMDOT Safety Planning

On a state level, safety issues are incorporated into the New Mexico Transportation Plan 2040 and the NMDOT Strategic Highway Safety Plan (SHSP).

The New Mexico Transportation Plan addresses issues such as safety in construction zones, increasing pedestrian and bicycle safety, public awareness, and Intelligent Transportation Systems (ITS) solutions. The

plan also supports Livable Communities and Complete Streets concepts that promote designing communities to facilitate walking, biking, and using public transit as alternatives to dependence on private vehicle usage.

The 2010 edition of the SHSP is designed to address the new goal and fine tune some of the emphasis areas and strategies based on more recent events. The revised and updated goals and strategies are presented in this edition of the SHSP, initiating the next phase of the SHSP program to reduce fatalities and serious injuries on New Mexico's roadways.

In conjunction with the SHSP, NMDOT's transportation safety planning program has been retooled to orient the planning process to more effectively integrate safety. To organize NMDOT in a safety conscious manner, a Traffic Safety Management Team (TSMT) was created. It includes the Secretary of Transportation and senior leadership from NMDOT's planning, traffic safety, engineering (design, construction, operations, and maintenance), transit, rail, research, and public information divisions. The TSMT meets monthly to track implementation progress, create effective initiatives and countermeasures, and address barriers to safety program implementation.

Finally, the NMDOT Multimodal Freight Study (Phase One Final Report) specifically highlights the safety needs of trade corridors and intermodal access routes that traverse disadvantaged neighborhoods. The study

Figure 2-13

Safety Quick Facts 1

In 2011 in the Las Cruces area:

- There were 34 crashes per 1000 city residents
- Alcohol-involved crash rate was 1.52 per 1000 city residents (151 alcohol-involved crashes)
- There were two fatal crashes resulting in three fatalities.

Sources: New Mexico Traffic Crash Annual Report 2011, NMDOT, Traffic Safety Division, 2011 Community Reports; NMDOT, Traffic Safety Division, FFY12 Annual Report



Figure 2-14

Safety Quick Facts 2

In 2011 in New Mexico:

- 353 people were killed in traffic crashes. Crash related fatalities decreased by 14.5% between 2007 and 2011.
- Alcohol/drug involvement was the contributing factor in 42% of NM fatalities in 2011.
- In an average day, there were 118 crashes that involved 309 people, 51 people injured and 1 person killed
- 16.9 per 100,000 people died in crashes compared to a national rate of 10.9 per 100,000 people

Source: New Mexico Department of Transportation, 2011

also identifies the need to address health and environmental concerns. More detailed information on freight is covered in the section on Regional Movement, Freight Corridors, and Security.

MPO Region Crash Data

MPO staff tracks crash statistics in the region. The crash statistics are provided by the University of New Mexico Division of Government Research (UNM-DGR). DGR receives crash data from the NMDOT Traffic and Safety Bureau that were collected from local police and sheriff departments. Several maps have been produced by MPO staff from data collected between 2009 and 2011, including a map of the crash rates for thoroughfare intersections in the City of Las Cruces (Figure 2-16). This data, along with the information available from the NMDOT District 1 Community Reports, provides a comprehensive look at potential safety issues in the MPO area.

The highest crash densities for pedestrian-involved crashes are around the areas of NMSU, the El Paseo/Idaho intersection, and the Madrid/Solano intersection. The highest crash densities for bicycle-involved crashes are around the area of NMSU, the Solano/Idaho intersection, and the Missouri/Don Roser intersection. The highest crash densities for motorcycle-involved crashes are around the area of NMSU and along the Lohman-Amador corridor, specifically at the intersections with Telshor, Main,

and Alameda. The highest crash densities for motor vehicle-involved crashes are along the Lohman-Amador corridor, specifically between Solano and Alameda and the intersection with Telshor, and at the area near El Paseo and Idaho.

These maps indicate that there are key locations where crash rates are high and further crash analyses are needed to determine cause and potential countermeasures. These locations are mostly at intersections of thoroughfares, but sometimes entire corridors need to be evaluated.

Motor Vehicle Crash Rate Map

In the City of Las Cruces, the calculated crash rate average among all thoroughfare intersections is 11.34 per million vehicles for the years 2009 through 2011. The Motor Vehicle Crash Rate Map for the City of Las Cruces (Figure 2-16) identifies the crash rates for all thoroughfare intersections. Figure 2-17 shows the top ten intersections with the highest crash rates.

These intersections should be a top priority for future studies and funding to identify and implement safety countermeasures. Further studies should also include a more thorough examination of crash types, time of day, and other behavioral and physical crash factors.

Multimodal Transportation

A built environment that integrates all transportation modes is essential for a well-functioning system. Transportation decision makers must consider the impacts of infrastructure investments and land

Figure 2-15

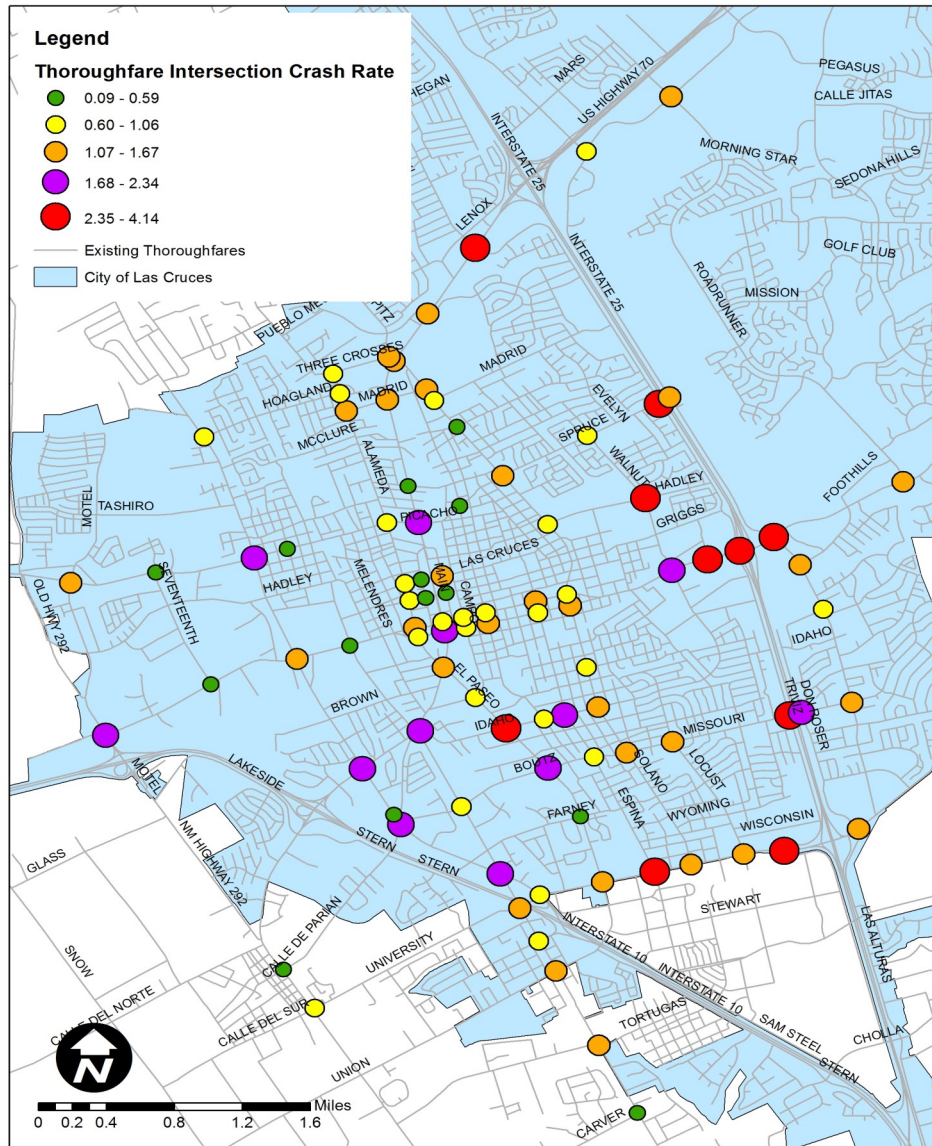
Safety Quick Facts 3

- In a medium sized metropolitan area, the average cost of crashes per person is \$1682, while the cost of congestion is \$349
- A NHTSA Study shows motor vehicle crashes have \$871 billion economic and societal impact on U.S. citizens- economic costs alone are nearly \$900 for each person living in the U.S.

Source: "Crashes vs. Congestion: What's the Cost to Society?" Cambridge Systematics for AAA, 2008; New Mexico Department of Transportation, 2011



Figure 2-16
The Motor vehicle Crash Rate Map for the City of Las Cruces



development on mobility for all modes and safe connections to a variety of destinations. In addition, the smooth transition from one mode to another (intermodal transportation), such as connections between bicycle lanes and transit stops, create a complete and healthy transportation network that is safe and accessible to people of all ages and abilities.

For community cohesiveness and safety for children, neighborhoods should be people-oriented by providing safe streets for both motorized and non-motorized transportation. Streets are public spaces in which all users should feel safe and comfortable. This section provides a discussion of transportation conditions for

all modes in the MPO region:

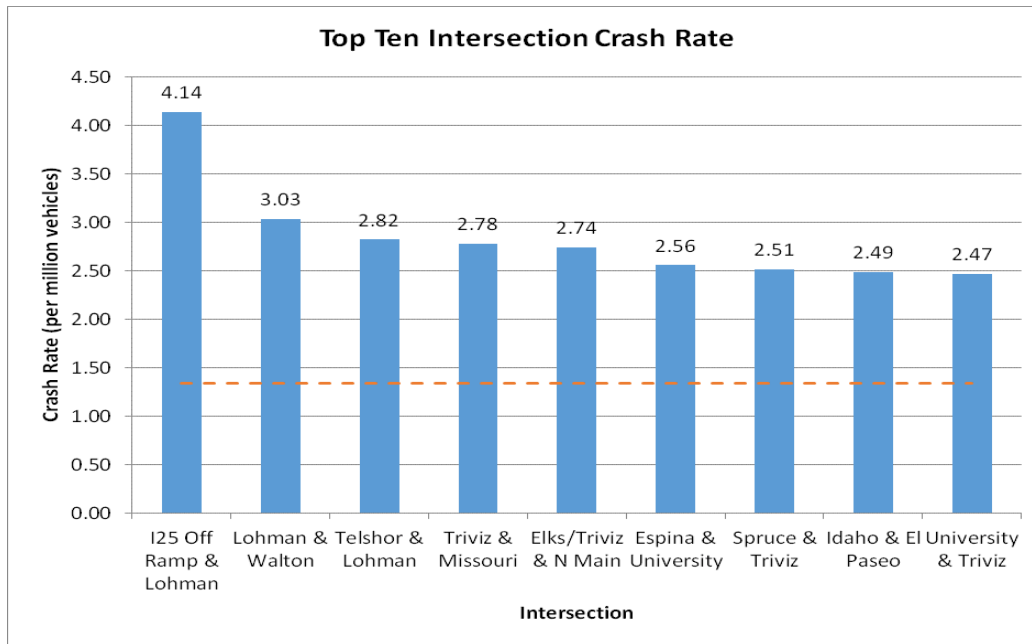
- Connectivity: Accessibility and Mobility
- Non-motorized Conditions: Pedestrian, Bicycle, and Trail
- Transit Conditions
- Automobile Traffic Conditions
- Travel Demand Modeling and Vehicle Miles Traveled

Connectivity

Connectivity is a necessary component of a well-functioning transportation system in order to provide accessibility and mobility for all users. This requires



Figure 2-17
Intersection crash rates



all transportation modes be integrated throughout the system by appropriate design and connected networks.

Accessibility

Accessibility, defined as the ability to reach a desired destination, can be improved by diverse land use development in addition to increased transportation options. Land use planning is important because land uses that are in closer proximity to residential areas can decrease the length of trips and provide more opportunity for modal choice.

Mobility

Mobility is the physical movement from one place to another and relates to the different modes or options that are available to move from point A to point B. Shifting trips to a wider variety of modes can help alleviate congestion; however, the transit, bicycle, and pedestrian systems need to be convenient and well-connected in order to reduce congestion on roadways. In some areas, particularly rural areas of Doña Ana County, the most vital mobility issues are that public transportation is not available and street system connectivity is lacking. As of 2014, the SCR TD has begun addressing some of these needs. These issues significantly impact many people's ability to get from home to work or school.

Non-motorized Conditions

Non-motorized facilities include sidewalks, bicycle lanes, trails, and multi-use paths. Due to the geographic nature of the MPO area there are many opportunities for non-traditional transportation networks, including irrigation ditches and arroyos.

Pedestrian Conditions

Developers are required to build sidewalks in all new developments within the City of Las Cruces. In Doña Ana County, in most cases the developer is required to build shoulders but not sidewalks; however, sidewalks are required in areas that have urban-type zoning. Unfortunately, there are places where the sidewalks are discontinuous and/or are not compliant with the Americans with Disabilities Act (ADA), and this has contributed to a reduction of non-motorized transportation opportunities.

In order to improve pedestrian infrastructure, it is the responsibility of local jurisdictions and the NMDOT to ensure that pedestrian facilities are constructed or upgraded as part of transportation projects. Potential improvements are contingent upon the local jurisdictions developing a comprehensive infrastructure inventory, a function served by the MPO Transportation Asset and Safety Management Plan.



Further compilation of this inventory could be assisted through initiating neighborhood assessments of the pedestrian environment. This type of data collection will help prioritize the future improvement of pedestrian facilities. Finally, another important component of improving the pedestrian environment is to establish areas or activity centers throughout the county that are of high priority for improving the walking environment.

Bicycle Conditions

Because the Mesilla Valley MPO area has a warm, sunny climate, bicycles can be ridden almost year-round. Building a comprehensive network of bicycle facilities is one of the most important needs facing a developing multimodal transportation system in the MPO region. Without a complete system of bicycle facilities, bicycle riders are either forced to take a less direct and more time consuming route to get to their destination or choose another form of transportation. Some bicyclists prefer using in-road bicycle facilities that provide movement with the flow of automobile traffic and direct access to destinations. These facilities include bicycle lanes and wide curb lanes. Bicyclists are to be treated as vehicles in the road and are expected to follow the same traffic rules as per New Mexico state law.

Since 2005, the City of Las Cruces has endeavored to become a Bicycle Friendly Community (BFC) through the League of American Bicyclists (LAB). In September 2005, the City of Las Cruces received an honorable mention from LAB. However, in 2008 when the city reapplied, no award or mention was given. In an effort to progress more rapidly toward a BFC designation, the city initiated the BFC Task Force. The City of Las Cruces applied for a designation in 2010 and was given bronze level status. This certification is due for renewal in 2015 and an application has been filed.

Since 2002 the RoadRUNNER Transit has installed bicycle racks on all buses. As buses are replaced, bicycle racks were included as standard equipment. All fixed route buses now have bike racks.

Historic and Current Miles of Bicycle Facilities

In 2000 10.7 miles of in-road bicycle facilities existed. Most of those facilities were in the jurisdiction of the City of Las Cruces. The City developed them in the late 1970s after the creation of the “Guidelines for Bridle Paths and Bicycle Lanes.” By 2004 the City developed 32.2 miles of new in-road bicycle facilities for a total of almost 50 miles. In 2010, at the time of the original adoption of Transport 2040, there were 99 miles of bikeways. In 2012 that number had been increased to 140 miles of in-road bicycle facilities

Trail Conditions

A variety of paths are available in the MPO area. These paths include both paved and unpaved surfaces. Fifteen miles of paved multi use paths include the Outfall Channel, Triviz, La Llorona, Sonoma Ranch, Union, and University (see the Trail System Priorities Plan for a map of these facilities).

Multi-use paths on independent rights-of-way can provide expansion of existing non-motorized facilities and unique connections to many destinations such as schools, parks, recreational facilities, and open spaces. However, it must be noted that the American Association of Highway Transportation Officials (AASHTO) recommends multi-use paths should be used in locations where intersecting conflicts can be minimized.

In September of 2009, the City of Las Cruces completed a Memorandum of Understanding (MOU) with Elephant Butte Irrigation District (EBID) in order to begin developing a regional trail network along EBID laterals and drains. The MOU addresses liability issues, special use permits, and maintenance and operations. The MPO encourages Doña Ana County and the Town of Mesilla to enter into similar MOUs with EBID to create a complete regional trail network. In fact, trails in the MPO area could potentially become part of the proposed state-wide Rio Grande Trail System.

Since 2012, the Mesilla Valley MPO has utilized counters on the multiuse paths in the MPO area. The



Figure 2-18
2013 Bike/Pedestrian Multipath 28-Day Counts

Path	Segment	Total	Average/ week	Average/ day	Most/hour
Outfall Channel	Beginning to Valley	1274	318.5	45.5	18
Outfall Channel	Valley to Doña Ana (RR Tracks)	2193	548.25	78.32143	38
Outfall Channel	Doña Ana to El Camino Real	1348	337	48.14	21
Outfall Channel	Triviz to End	1226	306.5	43.78571	14
Outfall Channel	Boxster to Camino del Rex	2022	505.5	72.21429	31
Triviz	University to Missouri	2334	583.5	83.35714	247
Triviz	Missouri to Entrada del Sol	3637	909.25	129.8929	325
Triviz	McClane to Spruce	3272	818	116.8571	151
Triviz	Spruce to Outfall Channel	29976	7494	1070.571	255
Sonoma Ranch	Lohman to Golf Club	623	155.75	22.25	69
Sonoma Ranch	Golf Club to Calle Jitas	1465	366.25	52.32143	30
Sonoma Ranch	Calle Jitas to End	60597	15149.25	2164.179	386
University	All	171510	42877.5	6125.357	716
Terra Verde	All	618	154.5	22.07143	8
La Llorona	Interstate 10 Overpass to Picacho	23574	5893.5	841.9286	1010
La Llorona	Picacho to End	1255	313.75	44.82	23



counts are included in Figure 2-18.

Transit Conditions

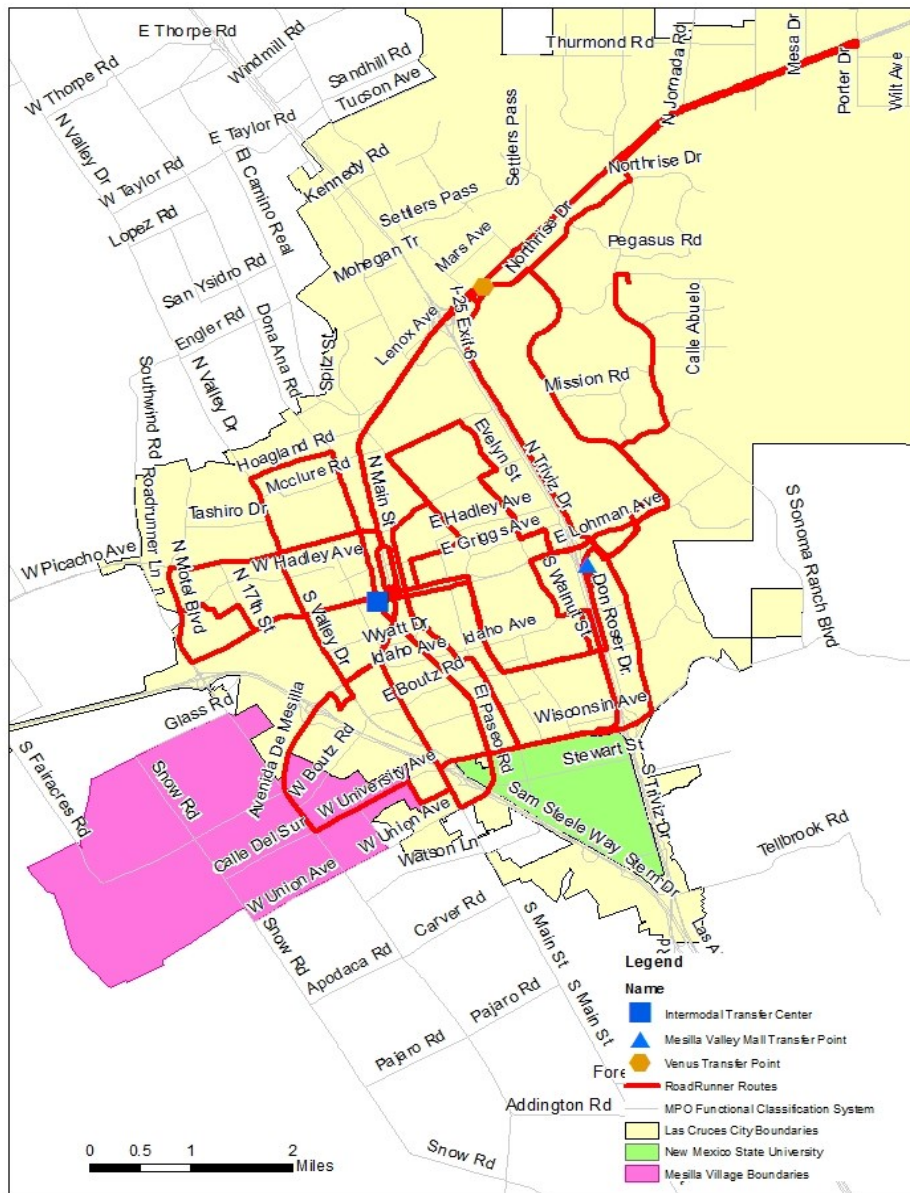
RoadRUNNER Fixed Route Service

RoadRUNNER fixed route service began operating in 1986 under the City of Las Cruces Public Services Department. Since then the system has grown from 4 routes to 8. Additional routes funded by NMSU and DACC have also been added, including 3 routes on the NMSU campus, and one route that travels from the Mesilla Valley Mall transfer point to the DACC east side campus for a total of 12 routes. The bi-directional

(two way) route network was developed and implemented in 2008. Further information on the plans for the transit system can be found in the 5-year Transit Strategic Plan. For most routes, the bi-directional network completes one direction of a route within 30 minutes, with headways currently at one hour. The system is intended to be easily scalable by adding additional vehicles. The current system connects the route at timed transfer points - Downtown, Mesilla Valley Mall, and at Venus and Northrise called the Venus Transfer Point. Figure 2-19 shows the current RoadRUNNER route system.

The number of trips made by the passengers (unlinked

Figure 2-19
RoadRUNNER
fixed route
system





trips) has been steadily increasing since 2010 for bus route system (Figure 2-20). However, in past years, trip numbers in paratransit services were steady. Figure 2-21 depicts the historical trend of operating expenses and annual vehicle revenue mile for bus route system and paratransit services in the Las Cruces area.

Paratransit Service

Curb-to-curb demand-response paratransit service (also known as Dial-a-Ride) was established along with the fixed route service in 1986. It originally operated within a ¼ mile radius of the fixed route service and was available to citizens who meet the qualifications of the Americans with Disabilities Act (ADA). This service is required by ADA in any area that offers fixed-route service. In 1994, Dial-a-Ride was expanded to include the entire City of Las Cruces. In 1997, the service was merged with senior transportation, and all seniors who registered with Senior Programs became eligible to ride. Its fares continue to be paid for by a City of Las Cruces subsidy, and as a result, this service is popular with seniors. Handling the increasing percentage of senior trips that are supplied by Dial-a-Ride service is a challenge. Dial-a-Ride service tends to be more convenient than fixed route service, because it is curb-to-curb and eliminates the need to walk to a bus stop. In 2005, the cost of providing one trip on fixed route service was \$2.93, while the cost of providing one trip on Dial-a-Ride was \$12.71. While this cost is a significant barrier to adding more vans and drivers, demand continues to rise, and seniors are often denied rides. Dial-a-Ride fares increased from \$1.00 to \$2.00 in 2008.

South Central Regional Transit District (SCRTD)

The SCRTD contracts with Rio Grande Transit and Z-Trans to provide transit service from Sierra County (Elephant Butte/Truth or Consequences) and Alamogordo respectively. SCRTD plans to resume four routes providing service into Las Cruces from Anthony/Sunland Park, and Chaparral.

NMDOT Transit Services

Other fixed route services in the MPO area that

connect to the urban transit system include the New Mexico Department of Transportation (NMDOT) Gold Route and the NMDOT Silver Route. The Silver Route provides service from New Mexico State University (NMSU) and the City of Las Cruces to White Sands Missile Range. The Gold Route provides service from Downtown City of Las Cruces, NMSU, Anthony, and El Paso, Texas.

These routes provide an economical option for commuters. According to the NMDOT Transit and Rail Bureau, riders receive a cost savings of \$0.46 to \$0.75 per mile compared to the cost of driving. Riders who have a Park and Ride monthly pass save about \$992 per month compared to the cost of driving. The service also demonstrates the potential ridership for possible future passenger rail service in this corridor. A conservative estimate of 302 passenger trips per day will result in 75,500 passenger trips per year in this corridor.

Rail

Commuter rail is a viable possibility in the future of the region, but would require considerable updates to the rail infrastructure and investment in passenger facilities. The South Central Regional Transit District completed a general feasibility study for developing a commuter line between El Paso and Las Cruces. A more detailed feasibility analysis of commuter rail in Southern New Mexico must be completed to examine the potential benefits and drawbacks. For comparison, the current ridership on the rail line between Albuquerque and Santa Fe is about 112,000 per month since the line was completed to Santa Fe in December 2009.

Statewide and Regional Public Transportation Planning Efforts

New Mexico Statewide Public Transportation Plan

The New Mexico Statewide Public Transportation Plan (SPTP) evaluates the demand and needs of rural public transportation, intercity passenger bus, and commuter rail systems throughout the State of New Mexico. The plan intends to provide clear and concise performance measures and prioritized projects to efficiently



Figure 2-20
Annual Unlinked Trips for Fixed Route and Paratransit Service

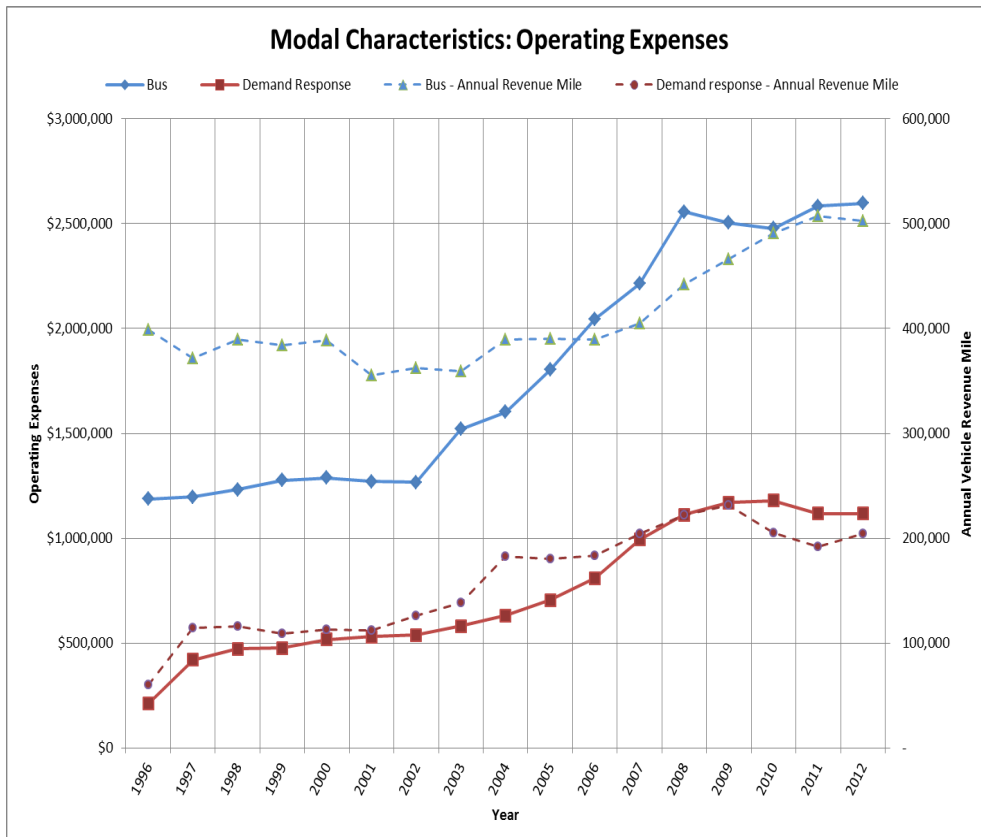
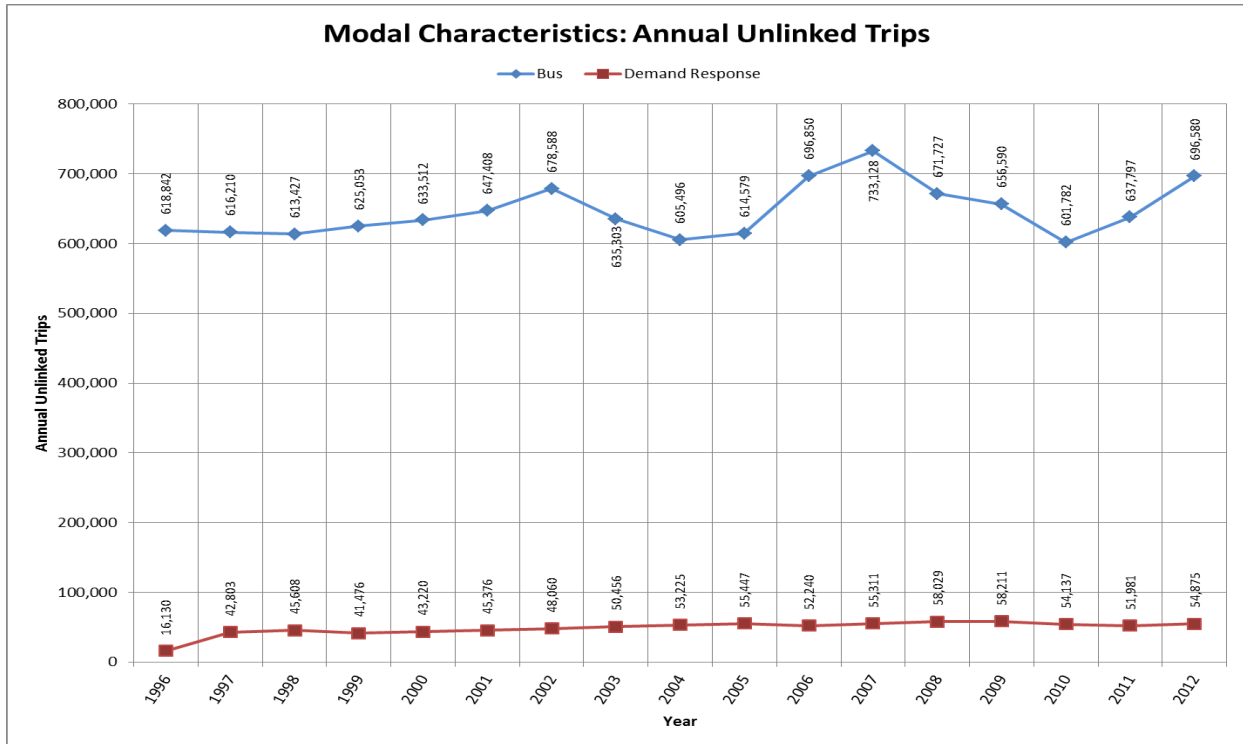


Figure 2-21
Operating Expenses and Annual Vehicle Revenue Mile for Fixed Route and Paratransit Service



allocate limited funding resources.

South Central Regional Transit District (SCRTD)

The Regional Transit District (RTD) Enabling Act allowed for the creation of a transit district between two or more jurisdictions. The SCRTD is comprised of Doña Ana and Sierra Counties. It is an autonomous governmental entity with authority to finance, plan, construct, operate, maintain, and promote a regional public transit system.

Coordinating Human Services Transportation Plan (CHSTP)

In 2008 the New Mexico Department of Transportation (NMDOT) developed a Coordinated Human Services Transportation Plan (CHSTP), providing broad recommendations for coordination efforts for the entire State, including Sierra, Socorro, and Doña Ana Counties. The Coordinated Mobility Action Plan (CMAP) developed by RoadRUNNER and the MPO expands upon the recommendations provided in the CHSTP. The CMAP document contains specific action items to increase transportation coordination in Doña Ana County. The action items were developed by a Steering Committee comprised of representatives from human service agencies and transportation providers.

Aviation Conditions

Las Cruces and Doña Ana County are served by three airports. Cargo, charter, and general aviation services are available via the Las Cruces International Airport and the Doña Ana County International Jetport at Santa Teresa. In addition, Foreign Trade Zones (FTZ) are located at both the Las Cruces and Santa Teresa airports. Commercial passenger air service for the region is provided by the El Paso International Airport.

The main airport in the MPO area is the Las Cruces International Airport, which was opened in 1942 as a military training facility. The airport is in the design process for a new traffic control tower, but does not have funding for construction yet. The current airport facilities consist of:

- Two lighted asphalt runways and one concrete runway with associated taxiways, blast pads, approach slope, end and edge lighting capable of

supporting a Boeing 737

- An FAA-owned Instrument Landing System (ILS), an Automated Weather Observation System (AWOS), a Supplemental Aviation Weather Reporting Station, and a rotating beacon
- Light aircraft paved parking aprons, 150,000 square feet of hangar space, and 24,000 square feet of covered aircraft parking
- A bulk-storage fuel farm for aviation fuels
- A public commuter airline terminal suitable for 20,000 enplanements per year; however there is currently no scheduled airline service
- Three sets of Visual Approach Slope Indicators (VASIs) for Runway 12
- A Medium Intensity Approach Lighting System (MALSR) for Runway 30
- Two fixed base operators

Spaceport

The site for the Spaceport America is north of Upham, in Sierra County. This site will have a significant impact on the Mesilla Valley MPO area because Las Cruces is the closest urbanized area. For example, a large number of Spaceport employees will probably live in the region, and aerospace engineering and construction firms may locate in and around Las Cruces to support the Spaceport activities.

Automobile Traffic Conditions

This section includes information on Traffic Counts, Volume to Capacity Ratio (V/C), Level of Service (LOS), and Vehicle Miles Traveled (VMT). Many of these conditions are measured using the MPO travel demand model called VISUM/VISSIM.

Traffic Counts

The MPO operates a traffic count program that provides data utilized by the public and a variety of stakeholders. MPO staff conducts counts for thoroughfare roadways throughout the region in 3-year cycles and does special counts for specific concerns that arise. Every year at least 1/3 of all thoroughfare segments, which are grouped by functional classification of collector or greater, will be counted. Every year the MPO provides a traffic flow map that



shows counts for the previous 3 years. Figure 2-22 shows the 2014 Traffic Flow Map produced by the MPO. The entire history of the traffic flow maps is available on the MPO website.

Travel Lanes and AADT

The following comparison provides insight into how motor vehicle traffic volumes are being handled by roadways with a certain number of travel lanes, and also offers a perspective on how many lanes might be needed, or might not be needed, to handle said traffic volumes. Figure 2-23 shows the number of automobile traffic lanes compared to the average AADT of a street corridor.

In order to provide a conservative analysis, in all cases the segment of the corridor with the highest AADT was used. These roadways comprise most of the main thoroughfares in the central city. For example, Solano and N. Telshor seem to adequately handle 14,000 to 17,000 AADT with 3 lanes. One caveat to consider is that vehicle turning movements have a great impact on how well the roadway functions. Redistributing four travel lanes into 3 provides a better opportunity for safely executing left turns. It also improves safety for bicycle and pedestrian modes of travel.

MPO staff also collect Volume by Classification data (VBC) as part of the traffic count program. This data shows the different types of vehicles that pass utilize the road network in the MPO area. This data is especially useful in monitoring freight movement.

Speed data collected indicates vehicles traveling over the speed limit by 5 or 10 mph. Figure 2-24 shows some of the major roadways and indicates different speeding patterns over certain portions.

Travel Demand Modeling

A travel demand model is useful to evaluate a variety of existing conditions and future scenarios for the transportation system and identify potential infrastructure needs. For example, land use and roadway network parameters can be changed to simulate the impact of different transportation improvements and land use assumptions on the

system.

The travel demand model, called VISUM, also provides V/C ratio and Vehicle Miles Traveled (VMT) analyses for roadways in the MPO region. The parameters for the software were developed in coordination with the NMDOT, other MPOs in New Mexico, and the El Paso MPO. The travel behavior parameters in the model are based on the 2001 Las Cruces Household Travel Survey. VISSIM is an extension of VISUM that provides traffic simulations for a particular area, corridor, or intersection.

The VISUM model uses a schematic of major roadways and land uses to predict travel. The network also contains some generalized local roadways to offer a few access points into the system. The land uses are also generalized and located in Traffic Analysis Zones (TAZ). Each TAZ in VISUM is populated with housing and jobs. The model is calibrated to historic traffic counts conducted by the MPO.

MPO Regional Scenarios

MPO staff will analyze several future scenarios for the transportation system based on different roadway build outs (based on TIP projects) and different land use patterns (developed as a part of the One Valley, One Vision process). These scenarios included:

- No-Build scenario for 2020
- Build scenario for 2020
- Land Use 1 (Current Trend) for 2040
- Land Use 2 (Activity Centers) for 2040

At this time we are seeking public input as to what those scenarios should hold. Some of the discussion thus far is as follows:

2020 No Build Scenario

The 2020 No-Build scenario utilizes projected land use growth with the existing roadway network and includes improvements that are funded in the 2014-2019 MPO TIP. New facilities for the No-Build condition are:

- the Mesquite and Vado Interchanges
- Paving of Dripping Springs/ Baylor Canyon Road



Figure 2-22: Traffic Flow Map

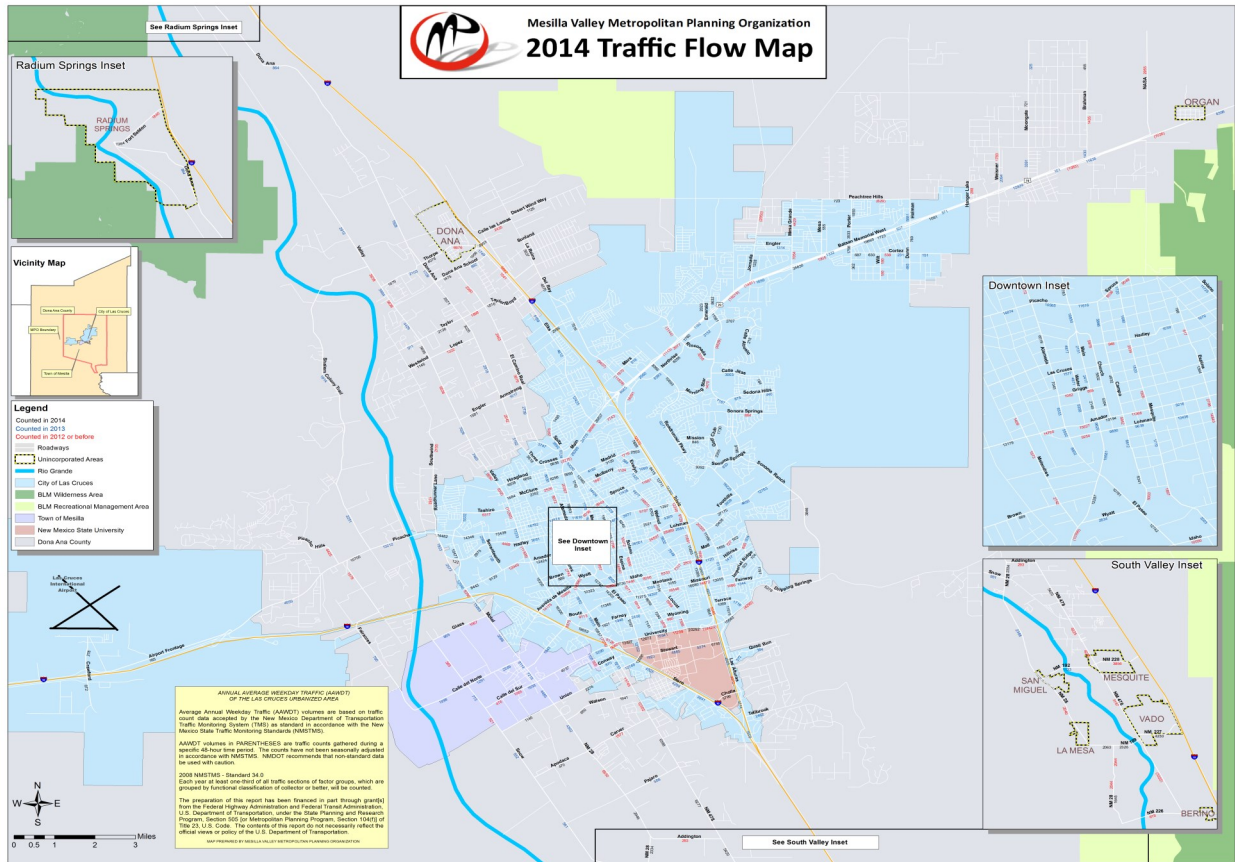


Figure 2-23: Corridor AADT Compared to Number of Roadway Lanes

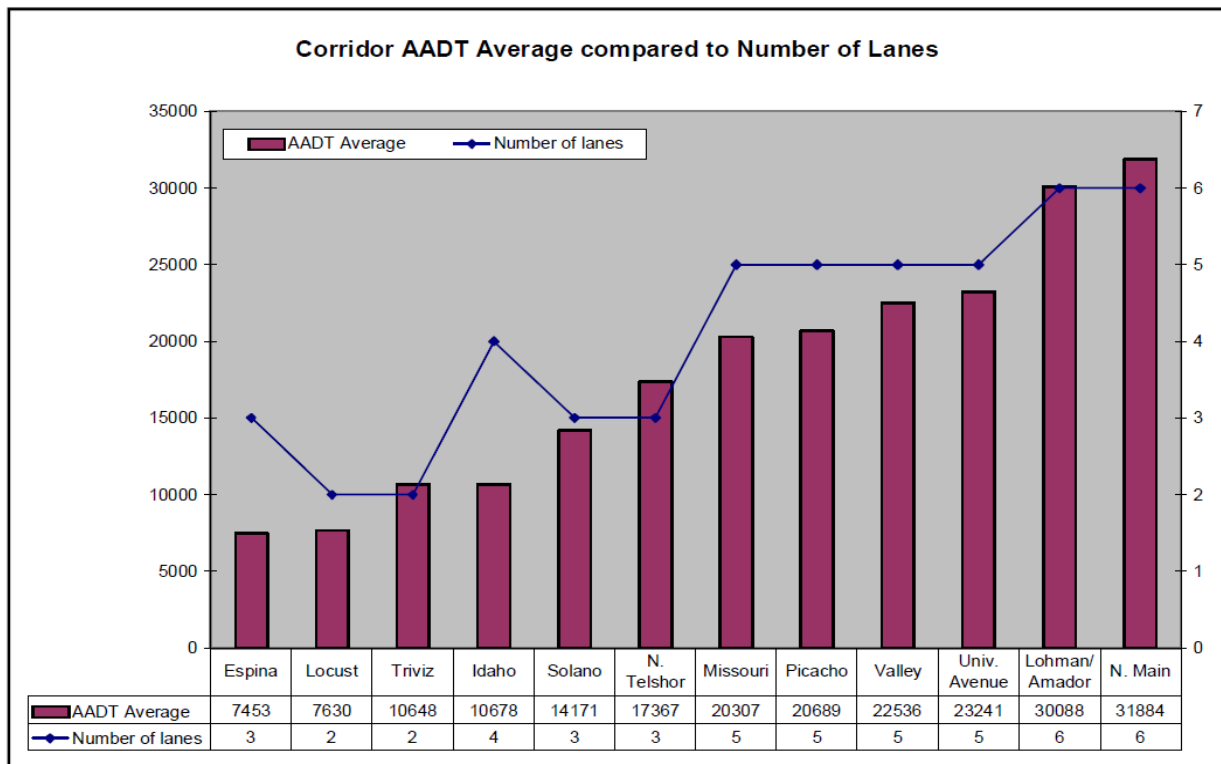




Figure 2-24
Corridor Speed

Year	Roadway	From Point	To Point	MPH	Over Speed Limit	5 or more over	10 or more over
2014	Bataan Memorial East	Dunn	Weisner	45	9.63%	8.08%	0.37%
2014	Bataan Memorial West	Del Rey	Roadrunner	35	19.71%	2.18%	0.31%
2014	Amador	Main	Campo	35	3.25%	0.64%	0.26%
2014	Amador	Motel	Westgate	40	47.58%	15.12%	2.66%
2014	Amador	Valley	Compress	40	6.05%	0.68%	0.39%
2014	Amador	Westgate	17 th Street	40	61.05%	22.95%	4.96%
2014	Main	Picacho	Chestnut	35	46.24%	12.69%	2.48%
2014	Alameda	Las Cruces	Picacho	30	58.80%	19.46%	5.01%
2014	Boutz	El Paseo	Espina	35	41.78%	9.59%	2.14%
2014	Boutz	Main	El Paseo	35	59.57%	18.08%	3.38%
2014	Mesquite	Juniper	Madrid	25	67.40%	28.15%	5.55%
2014	Mesquite	Lohman	Amador	25	11.11%	1.62%	0.69%
2014	Missouri	Don Roser	Telshor	35	42.71%	10.51%	2.17%
2014	Missouri	Gladys	Triviz	35	40.64%	8.22%	1.92%
2014	Espina	Amador	Las Cruces	25	51.65%	11.23%	1.46%
2014	Picacho	17 th	Valley	35	69.85%	30.55%	7.98%
2014	Picacho	Motel	17 th	35	75.29%	30.60%	6.12%
2014	Picacho	Picacho Hills	Shalem Colony Trail	45	65.04%	24.67%	5.92%



- Missouri Bridge
- Main/ Solano/ Three Crosses

Total travel is estimated to be 6,873,783 Vehicles Miles Traveled (VMT) for an average weekday.

2020 Build Scenarios

The 2020 Build scenario contains the improvements funded in the No-Build plus additional projects such as the construction of Engler Road from Del Rey to Sonoma Ranch, and the construction of Mesa Grande from Onate High School to Lohman Avenue. An assumption was made that these improvements will be paid for by private funds as development occurs. Total travel is estimated to be 6,620,508 VMT for an average weekday.

For the 2040 scenarios, the Land Use 1 scenario analyzed a trend outcome. Existing land consumption and distribution patterns were projected into the growth areas of the region. The second scenario, Land Use 2, used compact activity centers surrounded by

lower urban density development. Both scenarios were analyzed with a full build-out of the Future Thoroughfare Map.

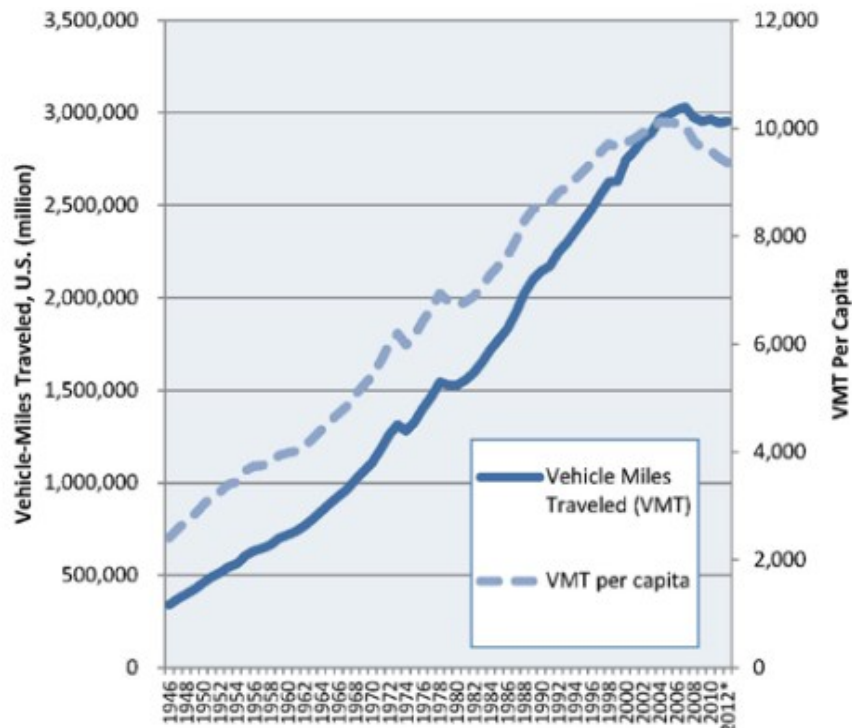
Vehicle Miles Traveled (VMT)

Nationally, VMT has decreased after 60 years of constant growth (Figure 2-25). While the precise reason for this decrease is unknown and could potentially stem from any of several factors (e.g. aging Baby Boomers, Millennials not driving, recession), it does compel us to reevaluate how we plan our transportation system.

Regional Movement, Freight Corridors, and Security

Doña Ana County is located on a vital cross country route that facilitates the movement of goods from major US seaports and international manufacturing and distribution regions. Major roadways and rail lines connect the Mesilla Valley MPO area to national and international facilities, such as the Santa Teresa Port

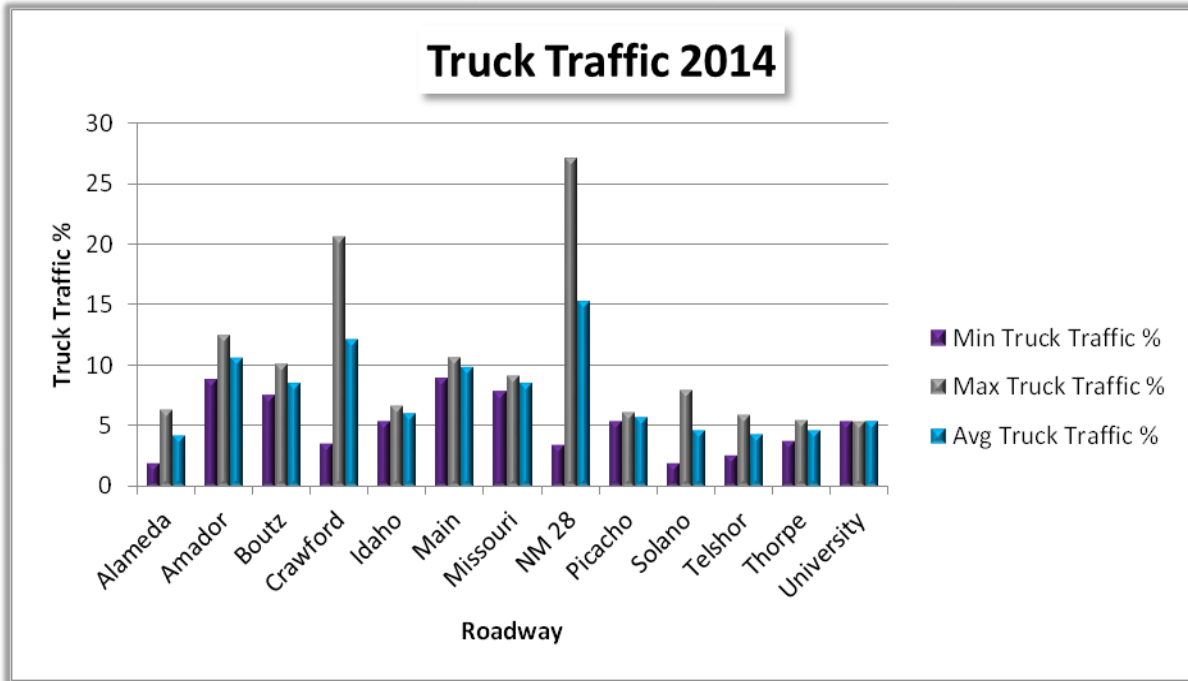
Figure 2-25
Total and Per-Capita Vehicle Miles Traveled in the U.S.



* 2012 data based on U.S. Department of Transportation's (U.S. DOT) *Traffic Volume Trends* report. Previous years based on U.S. DOT *Highway Statistics* series of reports.



Figure 2-26



of Entry, Foreign Trade Zones located at the Las Cruces and Santa Teresa Airport, White Sands Missile Range, NASA, the future Spaceport, El Paso, and Ciudad Juárez. Because of this location the Mesilla Valley MPO region has several transportation facilities that are important to regional, national, and international security. These include:

- Interstate Highway 10
- Interstate Highway 25
- U.S. Highway 70
- Las Cruces International Airport
- Burlington Northern Santa Fe (BNSF) rail line, and
- Santa Teresa Port of Entry

Interstate 10

Interstate 10 passes through the southern third of the MPO region, connecting the area to the southern tier of US states from Florida to California. I-10 traffic volume ranges from ~18,000 AADT west of Las Cruces to ~40,000 AADT south of the interchange with I-25. In addition, I-10 is the only cross continental freight corridor located in a frost free area. I-10 also has international connections to the Santa Teresa Port of Entry and Mexican Highway 2.

Interstate 25

Interstate 25 begins at the interchange with I-10 in southern Las Cruces and terminates in Montana. The average daily traffic on this facility ranges from ~16,000 AADT in the metro area to ~6,000 AADT north of Las Cruces. I-25 creates a transportation spine through the State of New Mexico, connecting Las Cruces with Albuquerque and Santa Fe.

US Highway 70

Within the MPO area, US Highway 70 diverges from I-10 at the Jackrabbit Interchange west of Las Cruces. US 70 is the only roadway that traverses the MPO area from east to west. In Las Cruces, Picacho Avenue and North Main Street make up US 70 through the city. East of I-25, the roadway becomes a controlled access highway with frontage roads. US 70 continues east to White Sands and Alamogordo. The average daily traffic on this facility ranges from ~11,000 AADT west of Las Cruces to ~37,000 AADT in the metro area, to ~24,000 east of Las Cruces.

NMDOT Freight Study

NMDOT completed a study in 2009 that examined freight movement in the State of New Mexico. The



key findings are related to both rail and truck intrastate, interstate, and through movement, as well as international shipments, freight weight and value, and key trading partners for New Mexico.

Security

Continuity of the transportation network is a critical element to any response. The NMDOT coordinates with the Strategic Highway Network (STRAHNET) system that identifies the system of public highways that provides access, continuity and emergency transportation of personnel and equipment in times of peace and war. NMDOT is also tasked with maintaining and updating the inventory of critical infrastructure, facilities, and transportation services. The NMDOT Planning Division is a member of the Anti-Terrorism Advisory Council (ATAC), which coordinates activities, develops policy, and implements strategic plans to combat terrorism. The Transit and Rail Division assisted in developing the terms and conditions under which buses used for Park and Ride services may be redeployed in response to natural and human-caused disasters.

The Mesilla Valley MPO is a coordinating member with the Doña Ana County Local Emergency Planning Committee (LEPC). The LEPC is a formal organization of agencies responsible for maintaining the safety and security of the residents of Doña Ana County.

Natural and Cultural Resources

The MPO region is in the Chihuahuan Desert and contains a unique agricultural community adjacent to the Rio Grande. The Rio Grande bisects the Mesilla Valley and currently traverses just west of the incorporated City of Las Cruces. The region has its roots dating back to civilizations from the early 1000's. El Camino Real, which runs parallel to the Rio Grande through the area, has been utilized as key transportation corridor for over 400 years.

Desert grasslands extend from the edges of the city to the lower slopes of the nearby Organ and Robledo Mountains. The desert grasslands are often separated by arroyos that carry water following rainy weather. These arroyos also serve as wildlife corridors.

Preserving the cultural heritage and aspects of the unique desert environment are integral parts of maintaining the community's natural and cultural resources. In the desert environment, water can be a scarce resource; therefore, water conservation is a high priority for the region. There is also considerable concern for the protection of the natural environment and views of the mountains in both the valley and the grassland mesas. This is evident in events such as the recent designation of the Organ Mountains-Desert Peaks National Monument. Other issues related to the natural environment include the need for shade due to the number of sunny days, and the wind's impact on health and air quality, particularly with respect to unimproved roadways. Finally, though the MPO is not currently required to address issues of air quality mitigation and climate change, the evaluation thereof may become part of future scenarios for the region.

The Mesilla Valley MPO supports the NMDOT Commitment to Environmental and Energy Action (2003):

Promote innovative planning and design that avoids adverse impacts to the natural and human environment, including effects to neighborhoods, low income and minority populations, farmlands, endangered species, wildlife habitat, wetlands, water and air quality, visual resources, cultural landscapes, and archaeological and historic sites, and implement creative mitigation program to replace, restore, and enhance these resources.

This section includes:

- Development of Thoroughfare Plan and Transportation Studies
- Air Quality and Greenhouse Gases
- Identification of areas of Cultural and Environmental Importance

Development of Thoroughfare Plan and Transportation Studies

Thoroughfare Plan

The development of the Thoroughfare Plan is an



example of a process where cultural and natural conditions need to be addressed. MPO staff and Technical Advisory Committee members considered the location of arroyo crossings and wilderness areas when establishing thoroughfare alignments.

In addition, some roadway alignments pass through fairly steep topography and near recreational areas maintained by the Bureau of Land Management (BLM). For example, the federal government recently designated the Prehistoric Trackways Park located west of the Rio Grande and north of Picacho Peak. Previously, a roadway alignment existed in that area that, if it remained, would pass through this park. As a result, the MPO, through agency and public coordination, identified a new potential alignment.

Transportation Studies: Study Areas and Corridors

When conducting transportation studies it is important to include the link between Planning level analysis and Project level analyses as they concern National Environment Protection Act (NEPA). A variety of tasks and information gathering steps are needed, including a robust public input process.

The NMDOT Location Study Procedures provide insight into what types of information may be needed to prepare for future project level analyses. These include gathering information regarding the following:

- public support
- functional classification of the roadway
- project description and justification
- statement of purpose and need
- technical information, such as number of lanes
- pavement conditions
- traffic and crash information
- environmental information such as location or occurrence of active streams, archaeological sites, wetlands, air quality issues, noise increases, underground storage tanks and other hazardous waste sites, and drainage information
- existing right-of-way and right-of-way needed for the project
- relationship to other projects

- preliminary cost estimates

Addressing all of these issues is integral to ensuring that the natural environment and potential environmental impacts of land use development and transportation system expansion are assessed prior to construction of a project.

Air Quality and Greenhouse Gases (GHG)

Transportation is a major contributor to local air pollution and smog. These outcomes in turn have a significant impact on health conditions such as asthma and cancer. The six criteria air pollutants monitored by the Environmental Protection Agency (EPA) are: nitrogen oxides, carbon monoxide, volatile organic compounds, PM10 and PM2.5, sulfur dioxide, and ammonia. National statistics regarding air quality show an overall decrease (from 1990 to 2006) of criteria air pollutants, but an increase of carbon dioxide, especially from transportation sources.

Currently, carbon dioxide, a common emission from motor vehicles and the burning of fossil fuels, is not considered one of the criteria pollutants. Transportation systems account for between 20 and 25 percent of the energy consumption and carbon dioxide emissions in the United States. In fact, Greenhouse gases (GHG) from transportation systems are increasing at a faster rate than any other energy using sector. Eighty-four percent of the United States' GHG emissions are composed of carbon dioxide (CO₂). In addition, the United States produces more than one-third (36%) of the world's CO₂ emissions (more than any other country in the world).

Doña Ana County and Air Quality

Of the six criteria pollutants monitored by the EPA, Doña Ana County faces two primary concerns: particulate matter and ozone. Particulate matter (PM) is high in our region due to the arid climate, seasonal winds, and agricultural activities throughout the valley. However, PM is also high in Doña Ana County due to a large number of unpaved roadways. Dust, particularly fine dust (PM 2.5), lifted into the air by motor vehicle traffic can remain in the atmosphere for hours at a time, especially during windy conditions.



When inhaled, this dust can contribute to health problems such as asthma.

In March 2008, the EPA revised the National Ambient Air Quality Standard (NAAQS) for the 8 hour measurement from 0.08 parts per million (PPM) to 0.075 PPM. Due to the adjusted standard, the New Mexico Environment Department recommended that the Sunland Park (0.078 PPM) area be classified as non-attainment. The decision in a subsequent law suit ruled that the EPA did not lower the standard enough based on its own scientific review. In January 2010 the EPA released a new rule for comment. The standard will be between 0.060 PPM and 0.070 PPM. Depending on the final value selected, the Las Cruces area (0.063 PPM) may be designated as non-attainment also. The MPO may be required to develop a congestion management plan that addresses air quality issues through performance measures if the Las Cruces area is designated non-attainment.

State Emission Reduction Goal

The State of New Mexico has set forth a goal to reduce GHG emissions to 75% below 2000 levels by 2050. In anticipation of this region's growth and contribution to these types of emissions, the Mesilla Valley MPO is addressing potential air quality issues by evaluating the affect that land use strategies has on the vehicle miles traveled in Doña Ana County (See Traffic Modeling and VMT).

Natural and Cultural Resources

Conclusion

The MPO transportation planning process includes the identification of natural and cultural resources, a robust public involvement process to determine potential impacts to these resources, and an evaluation of ways to eliminate or mitigate potential negative impacts. This process both protects these resources and provides for enhanced urban and rural environments.

Appropriate land use densities and planned developments that encourage the use of all modes should be given high priority. While land use decisions

are not made by the MPO, the MPO can consider land use development when making transportation decisions. In addition, the MPO should continue to facilitate better coordination among local entities and regional and state agencies to ensure wise investments are made. Finally, considerable input is needed from environmental and cultural resource agencies and economic development organizations to ensure the integration of these issues into the transportation planning process.



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Chapter Three
Planning Process and Vision



Transportation Planning Initiatives

Federal Initiatives

TRANSPORT 2040 must comply with national transportation goals and address the federal planning factors in order to be eligible to receive federal funding for prioritized projects. For this MTP update, staff researched and considered issues being proposed for the next transportation bill, and included these in the vision and goals for this plan.

The most recent federal transportation bill is the Moving Ahead for Progress in the 21st Century Act (MAP-21), which was signed into law by President Barack Obama on July 6, 2012. MAP-21 includes a broad range of issues such as climate change, enhancement of rail transportation, and land use and transportation coordination. The bill also includes recommendations to simplify funding and planning categories that need to be addressed by State departments and MPOs. One of the most important changes made by MAP-21 was the creation of the Transportation Alternatives Program, which consolidated bicycle and pedestrian funding into a single broader program. Another significant change made by MAP-21 is the emphasis the bill placed on performance measures as a means of accountability for spending. There will be multiple levels of performance measures. The United States Department of Transportation (USDOT) will produce national level performance measures, state departments of transportation will produce state level performance measures, and metropolitan planning organization will produce performance measures that reflect regional concerns. This emphasis on performance measures will be reflected in this transportation plan.

Sustainable Communities Partnership

In June 2009, the Partnership for Sustainable Communities was formed by the U.S. Department of Housing and Urban Development (HUD), the USDOT, and the U.S. Environmental Protection Agency (EPA).

The six livability principles associated with Sustainable Communities are as follows:

Provide more transportation choices: Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health.

Promote equitable, affordable housing: Expand location- and energy-efficient housing choices for people of all ages, incomes, races, and ethnicities to increase mobility and lower the combined cost of housing and transportation.

Enhance economic competitiveness: Improve economic competitiveness through reliable and timely access to employment centers, educational opportunities, services and other basic needs by workers, as well as expanded business access to markets.

Support existing communities: Target federal funding toward existing communities through strategies like transit oriented, mixed-use development, and land recycling in order to increase community revitalization and the efficiency of public works investments and safeguard rural landscapes.

Coordinate and leverage federal policies and investment: Align federal policies and funding to remove barriers to collaboration, leverage funding, and increase the accountability and effectiveness of all levels of government to plan for future growth, including making smart energy choices such as locally generated renewable energy.

Value communities and neighborhoods: Enhance the unique characteristics of all communities by investing in healthy, safe, and walkable neighborhoods—rural, urban, or suburban.

Locally, the result of the Partnership for Sustainable Communities has been the Viva Doña Ana! planning partnership. Viva Doña Ana! has done extensive research and planning work over the past several years and as a result of their work has published several draft plans. Of particular interest to this metropolitan transportation plan are:

- *Viva Doña Ana! Comprehensive Plan Growth Scenarios:* These growth scenarios emphasize



investment in existing communities and focused growth in proximity to existing facilities. This emphasis by Viva Doña Ana! places further importance on prioritizing investing in and improving the existing infrastructure in the transportation network.

- *Viva Doña Ana! Border Economic Development Plan:* Over the past decade there has been extensive growth and financial investment on the Chihuahua side of the border as well as major infrastructure projects on the U.S. side. Viva Doña Ana! has taken a proactive approach to dealing with the challenges and opportunities presented by the situation. Strategies recommended by this plan include Doña Ana County implementing an asset management program that incorporates life cycle costs, implementing a freight monitoring program, coordinating with the New Mexico Department of Transportation Border Master Plan, and investigating future regional transit infrastructure and connections.
- *Viva Doña Ana! El Camino Real Corridor Enhancement Plan:* This plan focuses on enhancing the El Camino Real Corridor through wayfinding and signage improvements, bicycle infrastructure improvements to take advantage of the flat topography and climate, promotion of agritourism, and investment in commercial revitalization. The desired result is to promote economic opportunities in the region.

Balancing Public Interest and Funding

The 2003 Surface Transportation Policy Project Poll conducted by the United States Department of Transportation asked Americans about their access to transportation and where and how to focus limited funding. The results of the poll are listed below:

- 55% of Americans want to walk more
- 84% of Americans want streets designed for slower traffic
- 74% want their children to be able to walk to school safely

- 59% of Americans support investing in transit
- 66% of Americans support innovative solutions to congestion

Funding has traditionally been available primarily to design freeways and has therefore created a well-functioning interstate system. It is time to focus more attention on community priorities and remember that roads are public space meant both for vehicle travel and community interaction. The future of our economy, our environment, and our social opportunities depend upon finding a balance between traffic flow, providing modal choice, and creating attractive, economically-thriving destinations.

Pursuing strategies that include safety first for the most vulnerable modes, increased connectivity of the street system, improved walking and bicycling conditions, enhanced employment of Intelligent Transportation Systems, and preservation of arroyos and trails can be steps towards reducing dependence on automobile travel and providing healthier more sustainable options for the community as a whole.

State Initiatives

A 2005 Executive Order from Governor Richardson created the Governor's Task Force on Our Communities, Our Future. This task force studied New Mexico communities in order to make recommendations on ways to invest in and develop the type of communities New Mexicans value. In order to do so, they travelled around New Mexico gathering input from local citizens living in cities of all sizes, including Las Cruces, about the strengths of their communities. Their findings were reported in the July 2007 Our Communities, Our Future Toolkit Series booklet, "Create More Walkable Communities and More Mobility Choice," which included five main themes related to the future of our communities in New Mexico. They are based on *querencia*, or "a place where one feels safe, a place from which one's strength of character is drawn, a place where one feels at home." The five themes that came out of the task force were:

- create more walkable communities and more mobility choices



- provide greater housing opportunities for all New Mexicans
- enhance the environment and natural resources
- preserve critical lands
- provide leadership in the livable economy of the future.

Although the State task force concluded its finding two years before the federal sustainable communities initiative, the links between statewide and national principles are evident. These links include diverse housing and transportation choices and meaningful economic development. In order to help local governments pursue some of these principles, the task force recommended forming a statewide planning office.

Local and Regional Initiatives and Projects

A variety of collaborative planning and engineering projects are being conducted throughout the MPO region. These initiatives exemplify the continued need and desire for a variety of transportation options, well-connected neighborhoods, and economic vitality. Listed below are some of the local projects and regional programs:

The Safe Routes to School (SRTS) program continues to be active in the Mesilla Valley MPO area. Las Cruces Public Schools is currently overseeing the program with coordination from the SRTS Coalition, which is composed of various interested stakeholders. The Mesilla Valley MPO maintains the SRTS Action Plan and will be updating it in the future. As of March 2015, 17 area schools had some level of participation in the SRTS program.

Doña Ana County recently finished an update of its roadway design standards that incorporated shoulders on all rural roadways—an application that increases safety for all modes—and takes into consideration land use activity when determining the best roadway design.

Healthy Kids Las Cruces, an initiative through the NM Department of Health, is a program that recognizes the interrelationships between individuals and the

environment and focuses on Educational System, Food Systems, Healthcare System, Families and Community, and Community and Regional Planning. The New Mexico Department of Health (NMDOH) recognizes that improving the walkability of the built environment can have an impact on the health of its residents and improve opportunities for physical activity for all ages.

The Prescription Trails program is a collaborative effort led by the NM Department of Health that focuses on providing a guide and prescription tablet for medical professionals to provide to their patients. This program relies upon having a good trail system in the region.

NMSU is currently working on a parking management plan. NMSU also recently finished its Master Plan which includes recommended improvements to University Avenue and expanded public transit on and off campus.

The City of Las Cruces is has developed a Pavement Management Plan, which will help streamline maintenance priorities for the City. Mesilla Valley MPO staff will assist with this process as needed as it is in line with the recently adopted Mesilla Valley MPO Asset Management Plan. Additionally, the City of Las Cruces is working on the creation of a Traffic Management Center.

The City of Las Cruces is also working on the Realizing El Paseo project as an attempt to revitalize the El Paseo corridor and make the corridor friendly to transit, bicycle, and pedestrian modes.

In addition, following the path outlined by the Downtown Master Plan, the renovations to downtown Main Street to re-open it to vehicular traffic were completed in November 2012. Furthermore, a roundabout was constructed on Main Street in 2011. Going forward, the City is working on the realignment of Water and Church to restore those to two-way thoroughfares in order to make them more bicycle and pedestrian friendly as well as more inviting for business. Additionally, the City is working on the development of a Downtown Plaza, which the City hopes to have completed in 2016.

The City of Las Cruces achieved a Bicycle Friendly



Community certification of Bronze from the League of American Bicyclists in 2010. That certification expires in 2015. The City has a Bicycle Friendly Community Task Force that has submitted an application for renewing the certification.

MPO staff will provide technical support and assistance with public participation to continue to support these and other projects and programs.

Public Participation Plan and Process

The MPO's four-step public participation process helps guide the public involvement phases used for the development of the Metropolitan Transportation Plan. The graphic below illustrates our public input process as described in our Public Participation Plan (PPP). Each step builds on the previous steps and identifies a variety of options for developing regionally significant projects. The public input process for TRANSPORT 2040 included three phases of open house style meetings and continuous work with stakeholder groups and the MPO committees. This planning process enables transportation system alternatives to be described and evaluated prior to adoption of the MTP and development of projects.

Public Input Phases

MPO staff used a phased approach to implement the public participation process outlined above. Through these phases, staff compiled input from multiple individuals and organizations to guide TRANSPORT 2040 and incorporated these ideas into the Metropolitan Transportation Plan. The first phase gathered general ideas and issues from the public and stakeholders. During the second phase, staff presented the refined transportation vision and goals as well as continuing to solicit public input. The third phase involved the release and evaluation of the draft document, maps, and implementation strategies.

Input was gathered through informational meetings, charrettes, open houses, questionnaires, emails, and continuous opportunities to provide input via the MPO website and MPO staff. The MPO invited all those who

are on our master mailing list and receive our monthly e-Newsletter, all registered neighborhood organizations, and all members of our advisory committees to set up stakeholder meetings with MPO staff. In addition, the MPO welcomed invitations to speak with individuals and groups throughout the entire process. The PPP provides more detailed information on specific types of public participation techniques.

Open House Meetings

In Phase 1, the MPO facilitated five hour to seven hour long open houses at alternate times in order to provide people with ample opportunity throughout the day to attend them. Five meetings were held in places geographically dispersed throughout the MPO planning area. Staff created storyboards with maps, information about key transportation topics, photos and other visual aids, and asked for feedback.

The storyboard topics included:

- Vision Statement and Goals
- Crash Statistics
- Thoroughfares
- MAP-21 Performance Measures
- Bicycle Facilities
- State Long Range Plan
- Pedestrian Priorities
- Emphasis Areas
- Trail Plan
- Bypass Priorities

Vision, Core Policy, Goals, and Principles

Coordinated Land Use and Transportation

Chapter 2 discussed the current transportation and land use conditions in the MPO region and outlined future scenarios based on proposed changes in land use patterns, the transportation network, and population growth. That discussion was followed, in



this chapter, by details recounting planning processes and projects underway at the federal, state, local levels. Finally, the diverse public input processes were analyzed to determine response patterns and understand the key issues, concerns, and desires of area residents.

These conditions, future scenarios, planning processes, and public comments lead to the development of a concise vision for the future of our transportation system. The associated core policy, goals, and principles provide the basis for implementing this vision as outlined in Chapters 4 and 5. It is clear that the federal, state, and local initiatives have arisen as a result of the growing desire for safer, healthier, and well connected multimodal transportation. In addition, it is necessary to plan our land use and transportation systems together so that the region grows in a smart and efficient manner that takes into account the three pillars of sustainability—people, economy, and the environment (Fig. 3-1).

The three pillars of sustainability within the context of Transport 2040 are:

People—the transportation users within the region and those who pass through the area.

Economy—the land use activities and the transportation of people, goods, and services within and through the region.

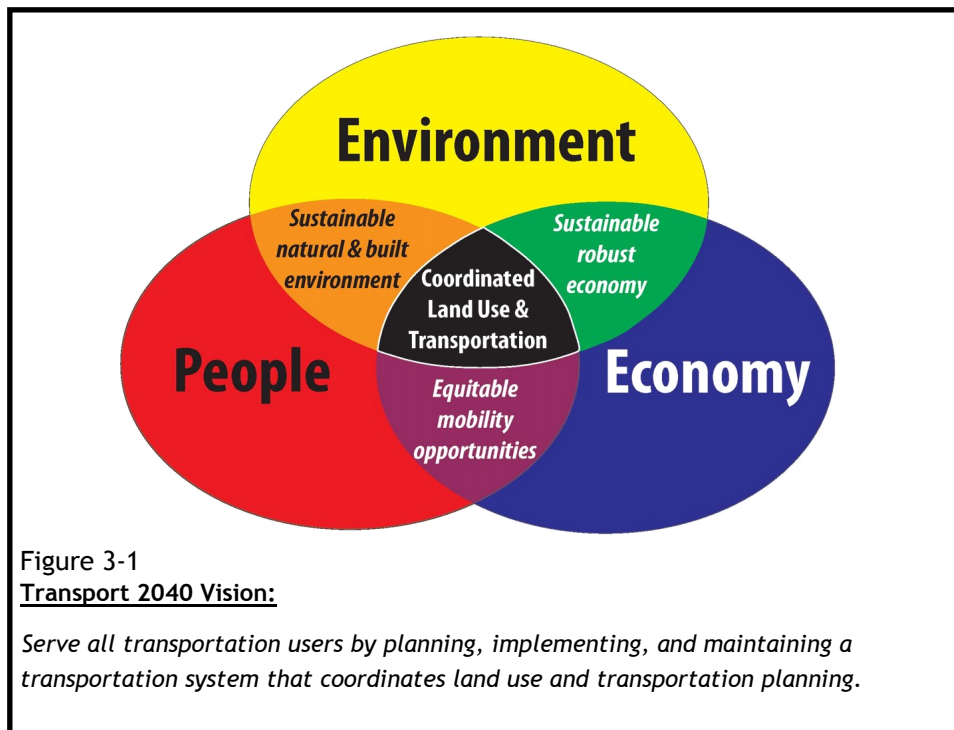
Environment—the natural and human-made forms within the region.

The three pillars of sustainability are not simply conceptual elements existing in a planning document. Creating a smart and efficient transportation system requires a balanced approach utilizing the three pillars of sustainability. Land use location and type and the transportation network and modes are the working parts of these elements. As a result, well-coordinated changes in land use patterns and/or the transportation network should result in positive impacts on these elements and their relationships to each other.

By following the Transport 2040 Vision, we are able to promote a sustainable natural and built environment, robust economy, and equitable mobility opportunities.

Core Policy

In order to keep the plan simple and active, one core policy sets the framework for the three main goals. The core policy is a statement emphasizing the necessity of coordinating land use and transportation





in order to achieve sustainable communities. It provides a direct connection between the MPO and the efforts of the City of Las Cruces and Doña Ana County's One Valley, One Vision and associated comprehensive plans. One Objective and one Action item go along with the core policy to emphasize the connection between the transportation system and the land use patterns developing in our region.

Beyond the Core Policy, three main goals will be used to achieve an appropriate balance in developing our transportation system. These main goals have accompanying principles and strategies.

Core Policy:

Achieve sustainability through coordinated Land Use-Transportation Planning

Objective:

Coordinate the expansion of the transportation system with regional land use planning

Action:

Utilize the Mobility Zones concept for short term project prioritization, analysis and improvements of system operations, and long range planning efforts

Transportation Goals

Sustainability, in the context of this plan, is the equitable convergence of environmental, economic, and community elements through coordinated land use-transportation planning and implementation. Therefore, the vision has three overlapping goals: to support a robust economy, preserve our unique environment and cultural character, and enhance our mobility opportunities through community efforts. In order to provide very clear direction and understanding of the basis on which decision making occurs, the goals for the MPO are defined below:

Sustainable Robust Economy is the convergence of the Environment and Economy elements. This goal is focused on integrating land uses with well-connected transportation systems to develop an economic environment that provides timely access to a wide-range of jobs, services, education, and recreational opportunities. This supports a strong economic base

that breeds innovation, self-sufficiency for local businesses, expanded regional trade opportunities, and conservation of natural resources.

Sustainable Natural and Built Environment is the convergence of the Environment and People elements. This goal entails a balance between built and natural environments that promote physical activity, social interaction, and the sustainable use of resources. The goal can be achieved through land use and transportation integration and design that enhance the unique characteristics of communities, and by investing in safe, healthy, and walkable neighborhoods. Application of this goal can minimize negative impacts to natural resources and help improve quality of life.

Equitable Mobility Opportunities for People is the convergence of the People and Economy elements. This goal is focused on providing a variety of transportation choices that serve all users through developing safe, reliable, and convenient transportation modes. Different areas of the region will be served with a variety of transportation options based on their range of needs while endeavoring to maintain system efficiency.

Transportation Principles

The transportation principles are listed below. Following the list is a definition for each principle. These principles are intended to be fulfilled through implementation strategies in Chapter 4. Because the implementation strategies may relate to one or more principles, in order to fulfill them appropriately the principles are first defined and demonstrated.

- Maintain and improve the existing transportation system, first and foremost
- Connect people to jobs, goods, services, education, and recreational opportunities
- Preserve natural, cultural, historical, and agricultural resources
- Promote and design healthy and livable communities
- Provide and improve multi-modal options and accessibility for all users



- Increase safety for all users starting with the most vulnerable modes

Maintain and improve the existing transportation system

Preserving the existing transportation system may consist of traditional maintenance activities such as resurfacing and reconstructing roadways, improving pedestrian access with repaired sidewalks, or rebuilding bridges. Additionally, preservation of the existing system also requires applying transportation systems management and operations to improve safety, decrease travel delays, and provide traveler information. Systems management and operations may include upgrading traffic signal systems for better coordination, applying Intelligent Transportation Systems (ITS) technology for improved transit and emergency services, and using dynamic message signs for special event and traffic incident management.

Growth in the region should be targeted where there is already existing infrastructure. However, even the new links of a growing network will not function well without maintaining the existing transportation system. The expansion of the regional transportation network must be accomplished in a cost effective manner so as to not strain needed resources from the existing system.

Connect people to jobs, goods, services, education, and recreational opportunities

Connecting people to destinations requires complete networks. These networks include corridors connecting activity centers, well connected neighborhoods, including fewer cul-de-sacs and private streets in gated communities, and well-distributed land use patterns throughout the region.

People throughout the region benefit through improved access to the opportunities they desire. Goods and services are more accessible which can aid in acquiring nutritious food, health care, and other necessities of life. Better access to educational services can lead to opportunities for upward mobility in the job market. Better connections throughout the community provide people with improved

opportunities for increasing their quality of life and supporting local programs.

Improved access to destinations increases business sustainability. Access to a well-connected network allows businesses to reduce transportation costs and expand their target audiences, thereby becoming more competitive within the region. Tourism also benefits from improved accessibility by encouraging more residents and visitors to the area to visit local and regional attractions.

Preserve natural, cultural, historical, and agricultural resources

Transportation investments impact the environment and the course of development patterns. New roadways encourage development and increased automobile use, which affect air and water quality, noise, and safety. Sometimes new roadways can segment natural assets, including important ecosystems and potential open space. Cultural and historical resources, such as structures, local events, and archeological sites, can also be adversely affected by an ever-expanding network.

Exploring new methods for addressing environmental and cultural impacts are essential. This includes consulting with state and federal land use agencies and stakeholder organizations before projects are designed and implemented. For example, well designed projects can sustainably integrate aspects of the existing natural environment with the built environment while lessening the disruption of natural habitats or existing water flows. Encouraging more sustainable and energy efficient designs and applications are important parts of preserving natural, cultural, historical, and agricultural resources.

Promote and design healthy and livable communities

Transportation infrastructure can be an integral part of supporting physical activity and social interaction and therefore improving the overall health of our communities. A livable community means the creation of sustainable urban and rural environments that



foster walking, biking, and transit, while reducing dependency on the private automobile. Developing quiet but active neighborhoods and lively activity centers with streets that are designed for pedestrians as well as automobiles, helps decrease the use of the automobile for short trips and daily commutes. This can be achieved by balancing the need for smooth automobile traffic flow with street design that fits the context of our neighborhoods and supports safety and convenience for other modes of travel.

Context sensitive design features include pedestrian-scale building placement and height, mixed land uses, and sustainable patterns of development (appropriate distribution, density, and diversity of land uses). Overcoming barriers to safer neighborhoods, such as fast vehicle traffic and wide intersections that are difficult for pedestrians to cross, allows people to walk and bike to their everyday needs, to school, and to neighborhood parks. Business areas that are more conducive to non-motorized travel can also entice visitors to stop, stroll, and shop. By providing streets that are designed for all users and that shift more trips to non-motorized modes, the overall safety of the roadway for drivers increases as well.

Provide and improve multi-modal and intermodal options and accessibility for all users

Multi-modal transportation refers to integrating multiple transportation modes through the process of planning, implementing, and maintaining transportation systems. Intermodal means a smooth transition of people and goods from one mode to another during a single trip. This approach to providing transportation addresses the mobility of all system users, including the disabled, elderly, children, students, and commuters. Promoting multimodal options also provides a more comprehensive and inclusive approach to addressing the costs of congestion, crashes, parking, and vehicle ownership.

For many people, being able to comfortably walk to your car from a business, bike to the nearest transit

station, or have access to car-sharing are critical transportation assets. Providing more options for reliable, safe, and economical travel can provide a variety of benefits such as lower household transportation costs, congestion mitigation, and a decrease in negative impacts to the environment. Ultimately, multi-modal options can offer households a better quality of life and improved personal mobility.

Increase safety for all users starting with the most vulnerable modes

Safety, in this context, is focused on reducing crashes and saving lives across all modes of transportation. Well-designed facilities are a major factor in improving safety. For example, the design of the roadway may encourage higher speeds even though the intent is to build in room for non-typical vehicles and account for driver error. Also, the fatalities and injuries from crashes along with the associated economic costs, including time lost on the job and healthcare, can quickly overburden households.

Safety is a prominent feature in transportation funding. For example, transportation investments that are funded through the MPO process are required to have a safety evaluation as a factor in their rating system. In addition, the NMDOT annually awards funding for safety projects to local jurisdictions throughout New Mexico.

Improving the safety of the system with a focus on the more vulnerable users can lead to a reduction in crashes, injuries, and fatalities for all modes. Improving transportation facilities at the more vulnerable places, such as intersections, should also be a priority and can lead to an overall decrease in traveler delay and associated economic costs. Finally, safety is not just about creating better facilities, but also includes a variety of education and outreach components that are essential to the success of creating safer transportation systems.

Achieving a Balance

Coordinated transportation and land use policies and practices can have a major impact on the creation of healthy and livable communities, traffic noise and air



pollution, affordability of housing and access to services and recreational opportunities. These issues effect people's daily lives and their mobility opportunities. Identifying natural, environmental, and cultural resources can help preserve important aspects of our environment and at the same time provide increased economic opportunities. A balance between built and natural environments that promote physical activity and the sustainable use of resources are essential to the region's overall well-being.

Coordinated Planning

Because of this symbiotic relationship between land use and transportation it is essential that, first and foremost, when planning for transportation there is a high level of coordination with the land use plans for the area. This coordination is being realized through One Valley, One Vision efforts. One Valley, One Vision is a regional visioning and comprehensive planning project between the City of Las Cruces and Doña Ana County. The Mesilla Valley MPO, as the regional transportation planning body for central Doña Ana County and City of Las Cruces is actively coordinating land use and growth management concepts in One Valley, One Vision with the existing and proposed regional transportation networks. Coordinating the planning processes for One Valley, One Vision and Transport 2040 provide an opportunity for the development of a compatible vision and goals.

In April 2010, Doña Ana County and the City of Las Cruces agreed upon the vision for the region as a part of One Valley, One Vision. The vision is as follows:

We envision a future that supports growth and quality of life. This future respects and balances the natural environment with new economic and agricultural opportunities, while addressing our unique historical and cultural connections.

The Vision Statement is guided by proactive planning that embraces the following shared and interrelated principles derived from public input:

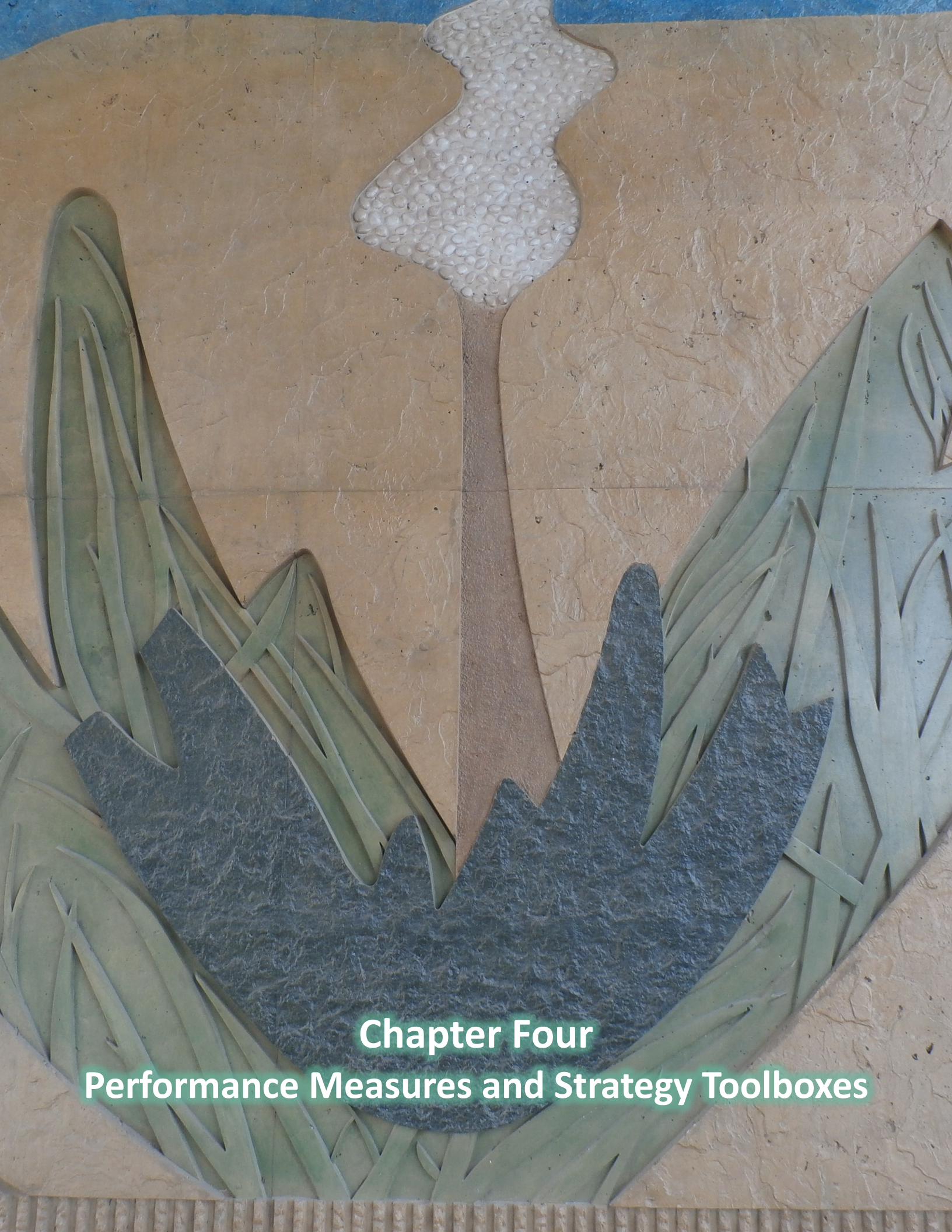
- *We respect our mountains, desert environment, and river.*
- *We believe in a future in which we live within the capacity of our land and natural resources to*

support and sustain us.

- *We embrace our community character and respect our local culture.*
- *We value bringing the unique design characteristics of our historic communities into the development of new places.*
- *We need a multimodal network that connects people with each other as well as economic, recreational, and educational opportunities.*

Sustainable Land Use and Transportation

A well-coordinated land use and transportation plan is necessary for an efficient transportation system. For example, the success or failure of public transportation depends upon diverse and compact land use patterns in key locations, with efficient spacing between those locations. This type of development does not mean all areas must become more dense and diversified. Areas with lower density, or rural areas, are able to maintain their character because they are supported by land use patterns that are more compact and diversified. This type of smart growth supports development that includes the preservation of agriculture, biking and walking opportunities, and open space and trail network.



Chapter Four
Performance Measures and Strategy Toolboxes



Introduction

In order to implement the aforementioned Vision, Core Policy, Goals, and Principles, as well as implement the performance measures required by MAP 21, various strategies have been developed for this Metropolitan Transportation Plan. The strategy toolboxes outline approaches to linking land use and transportation planning through a variety of methods that provide the means for evaluating performance and set the stage for developing future projects. Tracking performance can be a difficult challenge. Many of the activities undertaken by the MPO are qualitative in nature rather than quantifiable. Additionally, as a small MPO, Mesilla Valley is limited in its ability to impact outcomes on the ground. In order to develop accessible, connected regional networks and to maximize the impact of MPO efforts the implementation strategies and performance measures herein focus on partnerships, policies, community design, education, and outreach.

As outlined in Chapter 1, the MPO's Metropolitan Transportation Plan provides the direction for the rest of the MPO documents. The Strategy Toolboxes that follow will form the basis of the work items in the Unified Planning Work Program (UPWP) as well as providing Performance Outcomes that will measure the results of the work items. The UPWP has sections related to the daily work that the MPO does that includes short range and long range planning, administrative duties, corridor studies, and other specific tasks.

As part of the performance measures required by MAP -21, local jurisdictions are encouraged to adopt a variety of tools to compliment or replace Level of Service (LOS) as a performance measure. Below are some of the tools that cities are already using to assess conditions on their streets:

Pedestrian

- Safety: Crash Records
- Pedestrian LOS
- Public Life Surveys
- Walkability Rating

- Pedestrian Environmental Quality Index (PEQI)
- Minimal delay at crossings
- Foot traffic volume

Bicycle

- Safety: Crash Records
- Bicycle LOS
- Travel time and delay
- Bicycle Environmental Quality Index (BEQI)
- Bicycle counts

Automobile

- Safety: Crash Records
- LOS
- Travel Time
- Corridor Impact Analysis
- Automobile Counts

Transit

- On-time performance
- Average speed
- Farebox recovery ratio
- Ridership per revenue hour
- Operating cost per hour

Freight

- Freight delivered by hour
- Loading and Unloading time

Emergency Vehicles

- Response time

Sustainability

- LEED Neighborhood Development
- STARS
- GreenRoads

Multi-Modal

- Multi-Modal LOS
- Retail revenues and business growth

The strategies have been grouped into five Strategy Toolboxes. Each section within this chapter describes



a strategy toolbox and is organized as follows: definition, example, potential benefits, and associated policies and tasks. Because the elements of the Vision being addressed are overlapping, each toolbox may address several Principles at once.

- Land Use and Design Elements
- Management Plans
- Resource and Outreach Center
- Process Development
- Mobility Zones

Land Use and Design Elements

Promoting appropriate land use patterns and design is an integral part of supporting an efficient and sustainable transportation system. Transportation patterns are highly effected by land use diversity, density, and distribution (the 3 D's). Therefore, this plan examines the 3 D's of land uses in urban, suburban, and rural areas throughout the Mesilla Valley. Design elements include items such as utilizing a variety of traffic calming techniques, encouraging transit oriented development, and supporting area planning. Planned Unit Developments provide a flexible approach to applying the land use and design elements discussed in this section and achieving the transportation vision and goals.

The MPO does not have land use authority and does not enforce land use and transportation coordination. However, one of the main functions of the MPO is to provide a forum to better coordinate land use and transportation efforts, particularly long range and comprehensive planning. Therefore, the MPO worked with the City of Las Cruces and Doña Ana County in the development of One Valley, One Vision and supports the conceptual idea of growth areas along with simultaneous preservation of natural and rural environments. In comparison to continuing with existing growth patterns, these growth areas, if implemented, have shown through MPO modeling efforts to reduce the vehicle miles travelled by about 11% (see Existing Conditions and Future Scenarios).

The following are land use and design elements that support the growth area model, the 3 D's of land use,

and a well-designed transportation system:

- Land Use Diversity, Density, and Distribution
- Transit Oriented Development
- Sector Planning
- Form Based Code
- Context Sensitive Design Solutions
- Complete Streets
- Designing Thoroughfares

Land Use Diversity, Density and Distribution

Land Use diversity is a measure of the variety of land uses within a given area. Diversity is exemplified by a pattern of interspersed land uses, including a full range of activity types such as commercial, residential, and office. Diversity promotes shorter trips for daily services and results in more transportation options by making non-motorized trips more viable. Diversity promotes a better mix of employment, housing, and service activities in a given area resulting in potentially less time and money being spent on transportation needs.

Density is the measure of the average amount of units of a given land use type within a geographic area. Residential units are usually stated in dwelling units per acre and commercial and office units are described in gross floor area relative to land parcel area (commonly referred to as Floor to Area Ratio or FAR). A FAR can also be used to measure density of mixed use developments. Density should be applied at appropriate locations across a given area in order to provide a variety of housing choices, support urban and rural environments, and sustain an efficient public transportation system. Height limitations should be considered adjacent to low density residential areas, but otherwise used sensibly.

Land use distribution measures clustering and dispersion of land use patterns across a given area. Clustering is providing a mix of land uses that work well together, for example, a commercial cluster could include a bank, dry cleaners, and apartments. A neighborhood cluster could include a school, a library,



and single-family units. Dispersion, on the other hand, means that these clustered land uses are interspersed throughout a neighborhood or community providing residents with access to multiple destinations by using shorter and fewer trips. The appropriate combination of clustering and dispersion provides the best mix for mitigating congestion, providing opportunities for physical activity, and addressing air quality issues.

Applying the 3 D's of land use is a critical component of achieving better places to live. By putting uses in close proximity to one another, alternatives to driving, such as walking or biking, once again become viable. Mixed land uses also provide a more diverse and sizable population and commercial base for supporting viable public transit. The 3 D's enhance the vitality, safety, and security of an area by attracting pedestrians back onto the street and helping to revitalize community life. Public spaces and pedestrian-oriented retail again become dynamic and attractive destinations for people to gather.

Associated Policies:

- through the use of the One Valley, One Vision Growth Principles, encourage local communities to adopt active-friendly land uses and to plan for active transportation choices in their general plans
- support appropriately dispersed, compact mixed-use developments, such as low-impact development

Performance Outcome:

- continue coordination with One Valley, One Vision implementation processes

Transit Oriented Development (TOD)

Transit Oriented Development (TOD) is a compact mixed-use development, which contains a mix of uses such as housing, jobs, shops, restaurants and entertainment, designed to maximize access to public transportation. TOD brings many of the aforementioned land use and design elements together to create a pedestrian-friendly built environment that efficiently supports transit, and provides mobility and

accessibility for all users. The center of a TOD is surrounded by relatively high-density development with progressively lower-density development spreading outward from the center. TODs generally are located within a radius of one-quarter to one-half mile (0.4 to 0.8 km) from a transit stop with an integrated sidewalk network, as this is considered to be an appropriate scale for pedestrians. TOD neighborhoods increase economic value for the public and private sectors, provide for a lifestyle that's convenient, affordable, and active, and create a sense of community and place for both new and existing residents. TODs may be developed in anticipation of future transit.

Associated Policies:

- support TOD in appropriate corridors through land use and zoning decisions such as:
- efficient location of land uses (3 D's) so people can walk, bike and take transit
- a rich mix of housing, jobs, shopping and recreational choices
- economic value for the public and private sectors, and for both new and existing residents a sense of community and of place

Performance Outcome:

- assist City of Las Cruces with implementing the long range transit plan

Sector Planning

A Sector Plan is a fine-grained planning document for a relatively small geographic area that addresses, among other things, specific land use and transportation needs. Aspects of the area that the community wants to see protected or improved are determined through extensive public and stakeholder input processes and a thorough evaluation of existing conditions. The plan also includes a list of prioritized policy and project recommendations. A Sector Plan may include a distinct zoning code as part of the policy recommendations.

While plans range in scope and detail from large-scale



Comprehensive plans to Sector Plans and Overlays, all plans are intended to work together to support a desired direction for economic, environmental, and social aspects of development. This approach recognizes that planning and development issues in a growing region are numerous and complex, requiring a flexible approach designed to respond both to area-wide and neighborhood scale issues.

Associated Policies:

- support establishment of planning areas as discussed in the city’s Comprehensive Plan
- encourage local jurisdictions to develop a sector planning process

Performance Outcome:

- coordinate transportation planning with sector planning processes

Form Based Code

Form based codes apply rules to development according to criteria that are typically dependent on lot size, location, proximity, and other various site- and use-specific characteristics. Form-based codes differ from Euclidean zoning codes (like the ones currently used in Las Cruces and the ETZ) in that they focus more on the appearance of a building and its relationship to its surroundings, and less on what goes on inside the building. Therefore, form-based codes are often viewed as more flexible. This type of zoning can help relieve congestion by combining the appropriate placement of land uses with a well-connected transportation network. Ultimately, form based codes emphasize creating and restoring walkable, diverse, compact development that offers a variety of living choices (including townhomes, apartments, live-work spaces, and lofts). Form based codes also support development that include a full range of services, including entertainment and cultural activities, within a 5-10 minute walk of every residence.

Associated Policies:

- encourage local jurisdictions to develop a form based code and offer it as an option to developers

- encourage special districts to utilize a form based code

Performance Outcome:

- coordinate transportation planning with form based code zoning processes

Context Sensitive Design Solutions (CSS)

Context Sensitive Design Solutions (CSS) seek transportation solutions that improve mobility and safety while complementing and enhancing community values and objectives. CSS is considered in two scales: 1) the broad context created by the surrounding neighborhood, district, or corridor, and 2) the immediate physical context created by buildings and activities. An examination of these contexts through a robust, collaborative public input process will result in design parameters for the context, roadside, traveled way, and intersections (Figure 4-2). The examination should include maintaining safety and mobility, as well as aesthetic, social, economic, and environmental values and opportunities.

While the elements of context can combine in almost infinite varieties, the Institute of Transportation Engineers report Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities uses four context zones to define and categorize urban areas: suburban, general urban, urban center, and urban core. Much like the “rural” and “urban” classifications used in selecting design criteria in AASHTO’s A Policy on Geometric Design of Highways and Streets, context zones are an important determinant of basic design criteria.

Complete Streets

Complete Streets are defined as streets that are designed and operated to enable safe access for all users, including children, seniors, and those with disabilities. Complete Streets address both policies and design standards requiring consideration of all users in planning, design, construction, and maintenance of the traveled way and roadside. The Town of Mesilla, the City of Las Cruces, and Doña Ana County have all adopted Complete Streets resolutions.

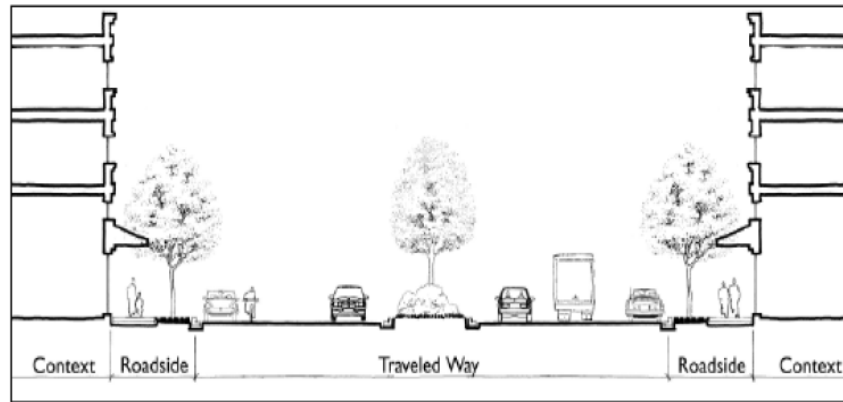


Figure 4-2
Context Sensitive Design Solutions: Corridor Scale Cross Section

Complete Streets includes design elements such as bicycle lanes, pedestrian buffers, curb extensions, narrow residential roadways, and improved signal timing. Design standards offer flexibility and enhanced safety for all users while providing minimum standards, a range of options, and an efficient development process.

Figure 4-3, below, shows a street prior to implementing Complete Streets concepts, and then the same street after a simulated Complete Streets application. The figure illustrates how the Complete Streets concept is combined with CSS through improvements to the traveled way, roadside environment, and corridor context (building setbacks and heights).

A formerly incomplete street could be “completed” by implementing a road diet. A road diet is a reduction in the number of auto lanes for a given section of roadway, where the remaining width is then

reallocated to provide multi-modal transportation that did not previously exist. An example is shown in Figure 4-4, where four lanes of through auto traffic are converted into two through auto lanes, a continuous center turn lane, and two bicycle lanes.

Designing Thoroughfares

A recent report completed by the Institute of Transportation Engineers (ITE) and the Congress for New Urbanism (sponsored by FHWA and EPA) called Designing Walkable Urban Thoroughfares: A Context Sensitive Approach gives specific guidance on street cross sections, intersection design, and design control flexibility that is practical and comprehensive. These recommended practices provide a way to balance the issues encompassing user mobility, land use diversity, community interests, and environmental concerns. This approach reduces or eliminates the need for exceptions and variances through its inherent flexibility.



Figure 4-3 : Complete Streets Applied to a Roadway Cross Section

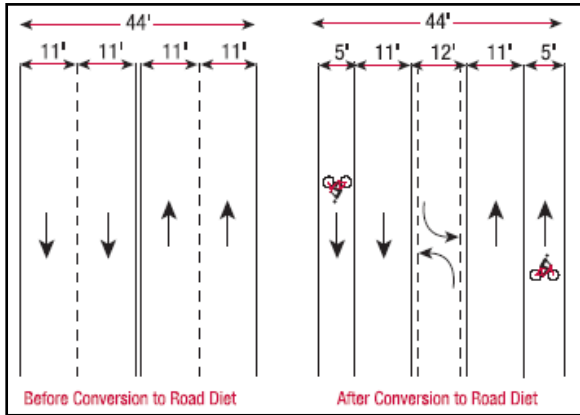


Figure 4-4 Example of Road Diet

The ITE report recommends addressing safety concerns by designing thoroughfares for speeds that are the same as or 5 miles over the target speed, instead of 10 to 15 miles over the target speed. The report also recommends special emphasis on intersection design, particularly addressing pedestrian safety. Other safety measures include traffic calming techniques such as narrowing vehicle travel lanes, widening sidewalks, and adding curb extensions and medians.

Associated Policies:

- utilize complete street designs - provide for all modes of transportation - when building or reconstructing streets
- incorporate proper signage requirements
- require adequate links to new transit as well as improved access for existing transit, including safe, convenient bicycle lanes, and pedestrian routes
- incorporate bicycle parking and storage in key transit-oriented locations
- new or improved roadways shall provide minimum 4-foot (1.2 meters) paved shoulder or bicycle lane, where feasible
- sidewalks shall provide a minimum 5-foot paved, unobstructed walking surface
- parkways shall provide a minimum 3-foot (1 meter) buffer between the roadway and the sidewalk in all urban areas
- support the use of narrow residential roadways

- require a non-motorized path at the head of all cul-de-sacs
- support pilot projects that explore innovative transportation facility design
- support Viva Doña Ana!

Performance Outcomes:

- assist City of Las Cruces in updating Design Standards
- support the utilization of Context Sensitive Design Solutions
- set modal priorities for thoroughfare corridors through CSS design practices
- develop a traffic calming toolbox
- identify appropriate locations to incorporate shared-use paths along rivers, canals, utility right-of-ways, railroad or freeway corridors, within college campuses, within or between parks and cul-de-sacs, and anywhere else natural barriers exist

Management Plans

Management plans provide a coarse-grained tool (i.e. system-wide or corridor perspective) to analyze the transportation network and its relationship with the surrounding land uses. These plans can address a wide range of policies, programs, services and products that influence how, why, when and where people travel. The intended result is that travel behaviors become more sustainable. For example, after evaluating system-wide information, such as traffic volumes, crash data, and vehicle miles traveled (VMT), measures may be applied to improve traffic management.

In the graph of average traffic volumes versus number of lanes in Chapter 2 (Figure 2-23), it is evident that two corridors handle more traffic than any others, North Main and Lohman. These corridors may benefit from countermeasures such as improving the land use diversity, additional public transportation investment, and the implementation of Intelligent Transportation Systems (ITS) to better utilize existing capacity.



Also noted in Chapter 2, there are transportation security issues in the MPO area. The MPO is an active participant with the Doña Ana County-City of Las Cruces Local Emergency Planning Committee (LEPC), particularly with the Natural Hazards Committee. The LEPC maintains the All Hazards Mitigation Plan that discusses emergency evacuations, contingency measures, and communications interoperability. The MPO will continue to participate with the LEPC and provide assistance with developing an emergency evacuation route plan. Additionally, the MPO will, through these established coordination efforts, assist with developing and implementing transportation projects, strategies, and services.

In order to minimize congestion and plan for future traffic impacts, the MPO is developing work items to assist the local jurisdictions with analyzing their traffic demand and help identify mitigation opportunities and funding. Some of the work items that need to be addressed are as follows:

- Planning and Environmental Linkages
- Parking Management Plan
- Transportation Demand Management Plan
- Safe Routes to School

Planning and Environmental Linkages

Planning and Environmental Linkages offer a coordinated approach between system level planning, project level decisions, community needs, and sensitivity to historical, cultural, and environmental concerns. The Metropolitan Transportation Plan provides system level planning for the region which may include conceptual design, identifying project locations, and analyzing land use patterns and other cultural and natural resources. Project level decisions are made through the study corridor process where community needs and historical, cultural, and environmental concerns are gathered through the MPO’s public participation process.

Associated Policies:

- support the National Environmental Protection Agency (NEPA) process through well-coordinated land use and transportation planning and the five

core MPO functions

Performance Outcomes:

- develop a map that illustrates historical, cultural, and environmental areas of importance and their relationship to the transportation system
- cooperate with One Valley, One Vision efforts on a view shed analysis

Access Management Plan

According to the Transportation Research Board (TRB), access management is the systematic control of the location, spacing, design and operation of driveways, median openings, interchanges, and street connections. It also encompasses roadway design treatments such as medians and auxiliary lanes, and the appropriate spacing of traffic signals. By managing roadway access, local governments can improve public safety, reduce traffic congestion, support multimodal transportation, and improve the appearance and quality of the built environment. In addition, access management can reduce the need and cost of widening roadways and reduce the number of conflicts between automobiles and pedestrians. In November 2012, the Mesilla Valley MPO adopted a set of Access Management Guidelines. Since that time MPO staff has been supporting access management improvements throughout the MPO area.

Associated Policies:

- encourage local entities to promote shared access for commercial development

Performance Outcomes:

- focus on implementation of the adopted Mesilla Valley MPO Access Management Guidelines
- assist local jurisdictions in developing Access Management plans
- begin inventory of traffic signal spacing

Transportation Asset and Safety Management Plan (TASM Plan)

The Mesilla Valley MPO adopted a TASM Plan in August 2014. The purpose of the TASM Plan is to prioritize allocation of resources to support cost-effective



decision-making within a framework of needed safety improvements throughout the regional network. The TASM Plan calls for an inventory of the assets relating to all modes of travel together with an assessment of the value, function, and ways to ensure maximum useful life. The TASM Plan also calls for the evaluation of safety issues and the development of countermeasures to address those issues.

Associated Policies:

- support the development of a transportation asset monitoring program
- all transportation planning and projects should improve safety for all users, with particular focus on the most vulnerable users

Performance Outcomes:

- implementation of the TASM Plan
- begin inventory of transportation assets throughout MPO area

Parking Management

A parking management plan can improve the efficiency of parking facilities and their relationship to a well-functioning transportation system. A plan begins with an inventory of a geographic area’s parking facilities

and a projection of parking needs. Then, a plan outlines policies, programs, and strategies to more efficiently use existing facilities and determine appropriate facility expansion. Some principles to address in a parking management plan are consumer choice, circulation patterns, shared parking opportunities, and peak management. Applying parking management plans can provide benefits such as reducing development costs and impervious surfaces and utilizing flexible design. Ultimately, a parking management plan should support a balance between parking needs and creating inviting business environments.

Associated Policies:

- support the development of shared parking policies

Performance Outcome:

- develop a parking management plan with local jurisdictions

Transportation Demand Management

Transportation Demand Management (TDM) is a comprehensive approach to handle travel demand issues for all modes using a set of technical tools and evaluations based on a set of locally determined

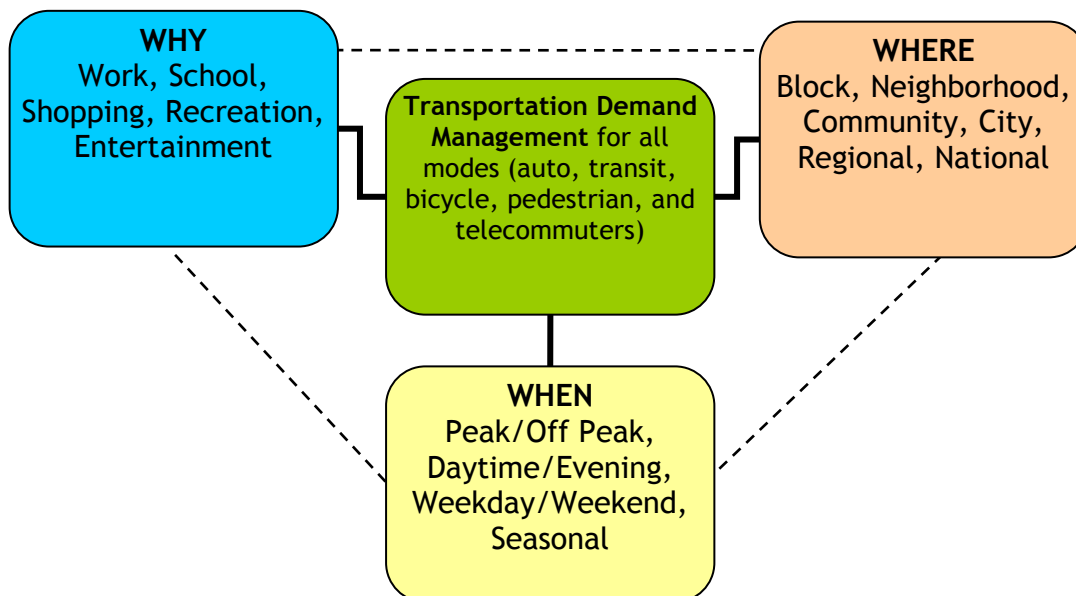


Figure 4-5
Transportation Demand Management Model



performance measures. These issues are examined through various means related to the Why, When, and Where people travel for each mode, shown in Figure 4-6. The Why addresses a person's purpose for travel; the When addresses the time of travel (particularly comparing peak and off-peak hours); and the Where addresses whether the travel destination is local or regional. Finally, considering the recent population growth in the region and the continuation of this trend despite difficult economic times, TDM offers a diverse set of solutions to manage expected growth and the resulting transportation demands.

Some solutions might include construction projects that add vehicle capacity (e.g. toll roads), adding modal or temporal variety to travel options, and diversifying land use patterns. Adding vehicular or public transportation capacity may require roadway widening, improving connectivity, or applying Intelligent Transportation Systems (ITS) technology. Innovative ITS solutions can assist agencies with responding to and clearing crashes, improving traffic signal timing, and offering traveler information. Improving connectivity by adding a short section of roadway or trail is a simple, low-cost project that can be rapidly constructed and may have broad public support.

Time management solutions could include employers offering flexible work hours or telecommuting opportunities to help decrease peak hour traffic. In smaller urban areas, like Las Cruces, key activity centers will experience a reasonable level of congestion; but congestion does not occur throughout the day. It is not possible, nor an efficient use of resources, to eliminate all congestion in all locations. Prioritizing projects through citizen and stakeholder input is vital to applying limited funds to projects that meet regional goals. In all cases, the solutions need to work together to provide an interconnected network of transportation services.

Associated Policies:

- provide a balanced and diversified approach to manage transportation
- provide solutions to change the travel time usage

patterns

- provide a variety mode choices
- support diversifying and well-distributed development patterns
- utilize technology to improve the efficiency of maintenance and operations for existing infrastructure and transportation systems
- support the improvement of existing traffic flow by applying demand management solutions before adding lane capacity
- strategically add auto and transit capacity in congested corridors

Performance Outcome:

- develop a transportation demand management plan with local jurisdictions

Safe Routes to School Program

Safe Routes to School (SRTS) programs examine conditions around schools using the "5 E's" of engineering, education, encouragement, enforcement, evaluation. The program pursues projects and activities that improve safety and reduce traffic in the vicinity of schools. As a result, these programs make bicycling and walking to school a safer and more appealing transportation choice thus encouraging a healthy and active lifestyle from an early age. Physical improvements that make it safer for kids to walk and bike benefit the community as a whole, providing opportunities for people of all ages to become more active. Safe Routes to School efforts are sustained by parents, schools, community leaders and local, state, tribal, and federal governments to improve the health and well-being of children by enabling and encouraging them to walk and bicycle to school.

Associated Policies:

- Continue to support the Safe Routes to School program

Performance Outcome:

- update the district-wide SRTS action plan



Resource and Outreach Center

In order to implement the policies and accomplish the performance outcomes outlined in this plan the MPO needs to create a Resource and Outreach Center. The MPO intends to emphasize our role as a resource for data and information related to metropolitan transportation planning and public involvement techniques. This means keeping up with the latest technology and providing a physical and electronic library for the community and local jurisdictions.

In general, the MPO will emphasize our role as a Resource and Outreach Center by providing:

- data and information on current and future transportation conditions
- clarification of the Transportation Demand Model developed for the MPO
- technical assistance with public participation planning and visualization techniques
- educational seminars and classes on land use and transportation planning
- webinars on a variety of planning and engineering related subjects
- a library of best practices in planning and engineering fields

Some of the more specific tasks that may come out of the aforementioned responsibilities include, but are not limited to, the following:

Data Collection

- safety-related data, including crashes
- neighborhood pedestrian network assessments using a walking audit
- continue traffic counts program
- use traffic counts to calibrate the travel demand model within every 5 year update
- begin including pedestrian and bicycle traffic counts
- collaborate with El Paso metropolitan area on a Travel Behavior Study
- compile population data as an affiliate of State Data Center/Business and Industry Data Center

Local Assistance

- assist RoadRUNNER transit with planning for ADA facility improvements
- assist City of Las Cruces with development of a public participation plan

Education and Outreach

- support education on traffic laws
- increase access and distribution of MPO 101 documents
- education about Transportation Improvement Program (TIP)
- provide modal-focused website pages

The Resource and Outreach Center would benefit from being physically housed together with long range planning and Geographic Information Systems (GIS) staff from Doña Ana County and the City of Las Cruces. A transportation engineer would also be an important addition to the team. With this organizational structure, the MPO and local jurisdictions would then be able to provide more comprehensive support and assistance with implementation and updates of all types of long range plans for the region, and better coordinate on land use and transportation issues that arise.

In order to assist the local jurisdictions with making informed decisions and provide continuous and effective outreach it is important to provide access to materials and planning best practices. Implementation of any plan needs to be supported by up-to-date data and a comprehensive education and outreach program. Some of the concepts introduced above require additional explanation. The following items provide more detail on documents and concepts that the MPO is exploring through our efforts in creating a more visible Resource and Outreach Center.

Visualization Techniques

Visualization techniques help facilitate the public, stakeholders, and decision makers understanding of transportation and land use planning issues. MPO staff incorporates visualization techniques into all tasks to better explain technical terms and transportation



planning concepts. For example, many different types of graphics, such as tables and charts to display data, and aerial photography and maps to illustrate planning activities, are integrated throughout MPO documents and presentations.

MPO staff uses Geographic Information Systems (GIS) and aerial photography to create maps of study corridors, trail systems, bicycle routes, and roadway classifications. All of these visualization techniques are applied liberally throughout MPO documents and the MPO website. MPO staff will expand its visualization techniques through the use of VISUM traffic demand modeling software and VISSIM simulation presentations. VISUM software assesses how well the transportation network functions based on changes in population growth and land use decisions. These assessments are visually depicted by different line widths, colors, and numerical values. VISSIM is a micro-simulation software that demonstrates how changes in transportation network can impact the travel demands on a neighborhood, community, and/or Safe Routes to School.

MPO 101 Documents

The MPO 101 publications are all available in a binder or on a CD. MPO 101 publications include documents vital to understanding MPO organization, functions, and processes. Documents include maps, Metropolitan Transportation Plan (MTP), Transportation Improvement Program (TIP), Public Participation Plan (PPP), federal regulations and other guidelines. The MPO 101 book is a constantly updated as work products are amended, new projects are brought forward for inclusion in the TIP, and new federal regulations are passed.

Traffic Count Program

Regional traffic counts are collected and analyzed through a program operated by the MPO. The traffic counts are collected for thoroughfares and randomly selected local roads on a three-year cycle. All of the automobile counts are vehicle classification counts which show how many vehicles of various types are traveling on a particular street. At the end of each

calendar year the MPO office produces a traffic count map for the previous three count cycles. Additionally, the MPO has begun a trail count program and will produce a map of those counts as well.

Process Development

Process Development includes general and step by step written procedures that provide guidance on issues such as right-of-way (ROW) preservation and Development Review. Processes can be fluid and may require amendments as they are applied and evaluated. The processes covered in this section include those that the MPO develops and maintains, and those in which the MPO participates. Most MPO processes are discussed in the MPO's Public Participation Plan and the MPO Bylaws.

Associated Policies:

- support local jurisdictions' development review processes

MPO Processes:

- ROW Preservation
- Thoroughfare Alignments
- Study Corridors
- Transportation Improvement Program (TIP) Application

Local Assistance:

- Development Review
- Multimodal Level of Service

Right of Way (ROW) Preservation

The MPO, through the development of the Future Thoroughfare Map, identifies the functional classification and alignments of arterials and collectors in the region particularly of potential future alignments. This process provides regional functionality and preserves ROW for future development. These widths pertain only to the amount of ROW preserved. Build-out of the roadway should be determined based on criteria explained in the land use and design elements section.



In most cases, right-of-way preservation will be determined by the MPO based on the City of Las Cruces and Doña Ana County Design Standards documents, and the ROW requested is measured from the centerline of the roadway. The location of the centerline of the roadway can vary and it is up to the surveyor to show the location of the centerline. In other cases, ROW may have already been acquired when the design standards called for a different width, and therefore may be narrower or wider than the current request.

There are some exceptions to the cases above. For example, the ROW request may vary based on an MPO or local jurisdiction's Study Corridor report, or a determination of constrained ROW (explained below). Also, if a parcel of land is adjacent to a water conveyance facility rather than a roadway, additional ROW is not requested. A case where this does not apply is when a proposed roadway is located on a water conveyance facility (e.g. Outfall Channel). On NMDOT roadways the MPO may request ROW, but ultimately defers to NMDOT. City of Las Cruces and Doña Ana County may ask for additional ROW at intersections to ensure better traffic flow management for all modes.

Constrained Rights of Way (ROW)

Constrained right-of-ways (ROWs) are roads that are restricted from adding through lanes to meet current or future capacity due to physical, environmental or policy constraints. A roadway may be physically constrained by immediately adjacent development, topographic constraints, or when a facility has reached the maximum motor vehicle lane per design standards. Policy constraints can also come into play when considering the impacts of roadway expansion on the environment, neighborhoods, and/or local communities. For example, MPO staff has conducted study corridor reports of which the outcome consists of a recommendation to constrain the ROW for the area based on existing conditions and community input.

Usually, constrained ROWs exist in built out areas of the City of Las Cruces and in historical centers of

unincorporated communities. However, rural areas may also have constrained ROWs due to environmental and topographic concerns. MPO will not ask for additional ROW in these cases. For constrained right-of-ways, the MPO recommends priority be given to strategies such as traffic signal optimization, access management, parking and loading restrictions, and parallel facilities improvements.

During the development review process, the following process should be used to determine if a ROW is constrained and to what extent:

- analyze entire right-of-way segment between two thoroughfare intersections to average existing ROW
- analyze entire right-of-way segment between two thoroughfare intersections to determine percentage of build out
- analyze entire right-of-way segment between two thoroughfare intersections to determine potential for future subdivision
- determine if MPO staff is conducting or has completed a study corridor report
- if 80% of the segment is built out then the average existing ROW is used to determine the amount ROW acquired
- additional ROW at the intersection could be requested regardless of the percentage of build out
- all determinations of constrained ROW should consider current and future land use context and associated traffic impacts as determined by staff

Thoroughfare Alignments

The process of identifying the location of existing thoroughfares and locating new alignments for proposed thoroughfares includes studying land uses and topography, as well as providing a well-connected roadway system. In addition, the thoroughfare alignments have certain spacing requirements as outlined in the Federal Functional Classification Guidelines. Finally, thoroughfares are placed, whenever possible, on a shared property or section line in order to evenly distribute property acquisition for public right-of-way.

Occasionally land use changes and other issues are



identified that require revisions to the alignments. Therefore, the MPO has a process to evaluate thoroughfare alignments depending on the degree of change proposed and, most importantly, the impact a change would have on affected property owners.

When an applicant is seeking to realign an MPO thoroughfare the following criteria must be included and addressed:

- description of the proposed change(s), including extent of right-of-way realignment, map of proposed realignment, and identification of applicable topographic, drainage, cultural, historical, or environmental issues
- explanation of the reasons for the proposed change(s)
- indication of whether the request does or does not shift the responsibility of right-of-way preservation on any current or new property owners
- if a shift in the responsibility of right-of-way preservation occurs, the applicant must obtain a signed, written agreement regarding the new alignment by all parties
- if the realignment is not significant (less than ~300 feet) and all parties agree on the shift of responsibility of right-of-way preservation the request will be processed administratively by MPO staff
- if the realignment is significant (~300 feet or more) and all parties do not agree on the shift of responsibility of right-of-way preservation, the request will be taken through the full amendment process which is outlined in the MPO's Public Participation Plan
- if the realignments is not significant (less than ~300 feet) and all parties do not agree on the shift of responsibility of right-of-way preservation the request will be taken through the full amendment process which is outlined in the MPO's Public Participation Plan
- MPO staff determines the intended location of the original alignment centerline

Area Plans and Study Corridors

Area plans and study corridors are undertaken in corridors or areas that are in need of intensive study to determine potential transportation needs. These

are conducted on an “as-needed” basis. Studies can be initiated by a written request if a member jurisdiction identifies a transportation issue not previously discussed in the MTP, when a proposed TIP project is not in compliance with the MTP, or if the MPO Policy Committee requests a specific study.

The process for these types of studies is outlined in the Public Participation Plan. Some of the items in this process include determining the target audience (Study area size), identifying alternative options through public input, and determining preliminary cost estimates, benefits, and potential issues to address through the National Environmental Policy Act (NEPA) process. The NMDOT Location Study Procedures provides a set of guidelines by which to analyze some of these items and are utilized in the study process.

Performance Outcomes:

- MPO staff will conduct study corridors as requested and approved by the Policy Committee

Transportation Improvement Program (TIP) Application

All Metropolitan Planning Organizations shall, in conjunction with State and effected Transit operators, develop a Transportation Improvement Program. This is a financially constrained list that includes projects for which construction and operation funds can be reasonably expected. The project application process allows local entities to request that projects be considered for addition to the TIP. All projects, funded or unfunded, must be consistent with the Metropolitan Transportation Plan. The TIP includes all regionally significant transportation projects, regardless of federal, state, or local funding. Full details about this process can be found in the Public Participation Plan and the TIP application document.

Performance Outcome:

- review and make minor amendments to TIP application to ensure its consistency with the Metropolitan Transportation Plan (MTP)

Development, Construction, and Zoning Review

City of Las Cruces, Doña Ana County, and the shared



Extraterritorial Zone (a five mile buffer around the City of Las Cruces boundaries) each have review processes for new development and redevelopment. Development reviews may include new subdivisions, infill development, and lot line adjustments. The MPO participates in the development review processes as a reviewer for all agencies listed above, and a voting member of the Design Review Committee (City of Las Cruces) and Extraterritorial Design Review Committee (Extraterritorial Zone). The City of Las Cruces and the Extraterritorial Zone each have review processes for new construction. Construction review may include new subdivisions, commercial buildings, and new roadways. City of Las Cruces, Doña Ana County, and the shared Extraterritorial Zone each have zoning review processes for new and existing land parcels. Zoning review may include zoning changes, special use permits, and planned unit developments.

Development Review:

During the development review process MPO staff may provide comments based on the following rationale:

- creating a multi-modal and well connected roadway network
- accounting for land use and transportation impacts on traffic generation and accessibility for all users
- encouraging traffic calming techniques, where applicable
- encouraging access management
- support transit oriented development

Pedestrian system

The MPO may comment on pedestrian connectivity within and between subdivisions. MPO staff may ask for pedestrian access along drainage tracts or utility easements where technically feasible. General street connectivity is encouraged.

Trail system

The MPO may comment on trail systems that provide alternate transportation routes and connect with in-road bicycle and pedestrian facilities. MPO staff may ask for these to be indicated as part of the proposed trail system. As per the direction provided by

American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities, trails along ROWs independent from arterial roadways (i.e. arroyos) are preferable.

Public Transportation system

The MPO may comment on public transportation facilities such as pull-outs, bus shelters, facilities that comply with the Americans with Disabilities Act (ADA), and lighting to serve pedestrians using the transit system. The MPO encourages direct pedestrian and bicycle connections to transit facilities.

Aviation

Las Cruces International Airport represents a significant investment of public money (local, state, and federal) to a facility that is an economic engine to the region. The MPO may comment on preservation of airport reserve areas for new passenger terminal facilities and future air cargo and/or regional airline maintenance facilities. Airports also can be impacted by incompatible surrounding land uses; tall buildings in flight paths and residential development that can limit the hours of operation for the airport. The MPO does not support zone changes that increase the opportunity for incompatible land uses in the designated Airport Overlay Zone.

Construction Review:

During the construction review process MPO staff may provide comments concerning context sensitive design solutions, roadway cross sections, parking, lighting, and signage as they relate to MPO goals and principles. The MPO also recommends designs that minimize conflict between modes and provide for all users as well as appropriate speeds. The MPO's policy calls for bicycle lanes on construction of all new thoroughfares. In constrained ROWs, the MPO recommends providing for all modes as best possible using Complete Streets principles. The MPO does not support cross sections that do not include bicycle lanes or shoulders.

Zoning Review:

During the zoning review process MPO staff may provide comments concerning the effect of proposed



land uses on the transportation system due to traffic generation. During this process, the MPO also provides information to the local jurisdiction about traffic counts, roadway function, and location of public transportation facilities.

Planned Unit Developments (PUDs) are reviewed through the zoning review process. PUDs provide public benefits in exchange for the consideration of multiple variances from the zoning code. The MPO comments on land use and transportation issues for PUDs because of the flexible nature and intent of the PUD process. The MPO may recommend public benefits. Sometimes the MPO will ask for anticipated traffic generation and connectivity measures.

Multimodal Level of Service:

Level of Service (LOS) is a traffic engineering term that describes traffic quality. Traffic quality is a measure of traffic density (or a measure of congestion) and is closely linked to transportation time (delays and interruptions). While LOS is traditionally applied to motor vehicle traffic, it can be applied to bicycling, walking, and other transportation modes (See Figure 4-6,). To distinguish its use with motor vehicle traffic, it can also be referred to as ‘level of stress,’ ‘level of quality,’ and ‘bicycle or walking suitability.’

Level of Service is different for pedestrians than it is for drivers or bicyclists. For pedestrians, Level of

Service provides a measure of a roadway segment’s performance with respect to pedestrians’ primary perception of comfort, convenience, and safety. This metric helps with designing a roadway for factors such as sidewalk width as well as separation and buffering from traffic.

Bicycling Level of Service also differs from motor vehicle LOS. For bicyclists, LOS also provides a measure of a roadway segment’s performance with respect to their primary perception of comfort, convenience, and safety. The presence of a bicycle lane or signed, shared use facility may increase the quality of service, even on a heavily traveled motor vehicle route. The MPO maintains the Mesilla Valley Bicycling Suitability Map which indicates routes that may be more or less suitable for riding based on measured, weighted criteria.

Associated Tasks:

- maintain Mesilla Valley Bicycling Suitability Map
- develop a mobility zone assessment for multimodal level of service

Performance Outcome:

- encourage local jurisdictions to include multimodal level of service performance measures in their development review processes

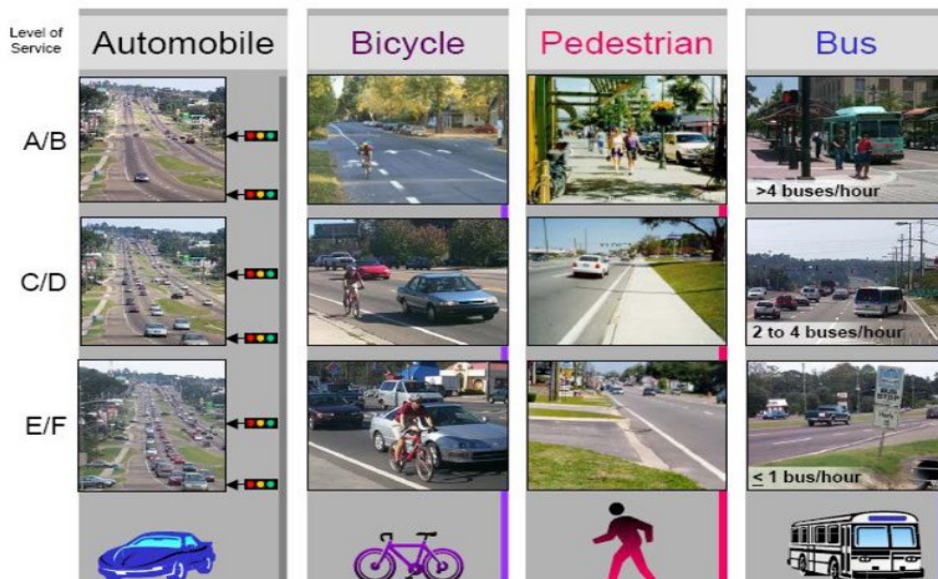


Figure 4-6 Multi-Modal Level of Service Source: FDOT Quality/Level of Service Handbook



Chapter Five
Prioritized Plans and Projects



Introduction

Through an extensive public input process, the MPO has developed priority plans to support the implementation of complete networks and a safer transportation system. The Prioritized Plans and Projects should also align with the Transportation Principles laid out in Chapter 3, restated here :

- Maintain and improve the existing transportation system, first and foremost.
- Connect people to jobs, goods, services, education, and recreational opportunities.
- Preserve natural, cultural, historical, and agricultural resources.
- Promote and design healthy and livable communities.
- Provide and improve multi-modal and intermodal options for all users.
- Increase transportation safety for all users, starting with the most vulnerable modes.

Pedestrian safety is emphasized because all modes have a pedestrian component. For example, when driving to a shopping center, one portion of the trip includes a safe and convenient walk from the parking lot. In addition, disabled persons and seniors rely on having quality pedestrian facilities connecting to public transportation in order to access goods and services on a daily basis.

The following system priority plan maps provide guidance on identifying, developing, and implementing projects, as well as a system for evaluating projects for inclusion in the Transportation Improvement Program (TIP). For example, a project will get more points if it is identified on multiple priority plans. Also, in an effort to preserve and maintain the existing transportation infrastructure, the MPO supports new and innovative funding mechanisms for implementing these priorities, and expanding the current unfunded illustrative project list.

Finally, each plan consists of a map identifying important components of the priorities plan and informational text on the sidebar. These maps are readily available on the web, and will be emailed or printed by request.

Pedestrian System Priorities Plan

The Pedestrian System Priorities Plan is a map that identifies crucial pedestrian corridors, intersections, and regional area destinations that need infrastructure. The numbered corridors, intersections, and areas were identified not only through this MTP update, but were also identified with the development of the MPO Pedestrian Plan and incorporated into this document.

Associated Tasks:

- Develop pedestrian projects task force with local jurisdictions
- Continue to support the Safe Routes to School program
- Provide a crash and proximity analysis for County areas

Public Transportation System Priorities Plan

The Public Transportation System Priorities Plan is a description of the future transit system. It is envisioned that the future transit system will be better coordinated with activity centers in order to support transit-oriented development opportunities. The future transit system should be based on establishing bi-directional express service corridors to encourage regional trips, and provide neighborhood circulator systems that feed into the stations along those express corridors. Examples of corridors that would benefit from express service are Lohman/Amador and Main Street. The Mobility Zone areas should provide the framework within which the circulator systems operate.

Expansion of public transportation should also include the introduction of new types of systems such as Bus Rapid Transit (BRT). Connecting the urban system to rural and regional systems, such as the New Mexico Department of Transportation Gold (connecting Las Cruces-Anthony-El Paso) and Silver (connecting Las Cruces-White Sands) bus routes are vital to the success of public transportation in the region. A proposed commuter rail link between Las Cruces and El Paso is being discussed by the South Central Regional Transit



District (SCRTD), the City of Las Cruces, and the City of El Paso.

Associated Tasks:

- continue to assist with implementation of the RoadRUNNER 5-Year Strategic Plan
- continue to support SCRTD
- assist the SCRTD with rail feasibility study for the Las Cruces-El Paso Corridor

On the Map:

The Public Transportation System Priorities Plan map contains the tiered priorities as well as explanations of transit oriented development and different types of public transportation systems that could be implemented in the future.

Bicycle System Priorities Plan

The Bicycle System Priorities Plan is a map that identifies current and future in-road bicycle facilities throughout the MPO area. The facilities outlined in this plan are intended to create a well-connected bicycle transportation system using the roadway network. The plan prioritizes in-road facilities into three levels, or tiers, which will create a bicycle network across the region. Tier 1 bicycle routes will be the bicycle arterial network that will connect major destinations and provide continuous routes across the region. Tier 2 bicycle routes will act as minor bicycle arterials to complete the network of intra-regional travel. Tier 3 bicycle routes will round out the network as collectors between neighborhoods and the bicycle arterial network. These tiered routes combined with a well-connected local street network will offer all transportation users a convenient, safe routes to travel.

On the Map:

The Bicycle System Priorities Plan map contains the tiered priorities as well as explanations of different types of bicycle facilities, recommended lane widths, and bicycle policies for the region.

Future Thoroughfare Map

This map combines important features of the

thoroughfare system development: Current roadway functional classification, future functional classifications in order to preserve right-of-way, and future functional classifications in order to preserve right-of-way, and preliminary roadway alignments. This map is not intended to determine right-of-way widths; final right-of-way widths will be based on local jurisdictions' design standards and the application of adopted complete streets policies. This map was developed using the Federal Highway Administration Functional Classification Guidelines.

Collectors serve specific functions within the hierarchical road system, distributing traffic between neighborhoods and arterials and providing increased access across shorter distances and at slower speeds. In order to achieve these functions, as well as to preserve the context of the neighborhoods they serve, the MPO has set parameters and templates for the build-out of collectors rather than indicating their exact alignment on the map. These parameters will provide enhanced alignment flexibility. For example, the connectivity component is more important than the roadway alignment, which may need to be altered to account for topographic and storm water velocity.

Associated Policies:

- collectors within any 1 square mile (approx.) of planned arterials shall maintain a connection to arterials in every cardinal direction and to each other
- a collector shall not directly continue for more than 1.5 miles in any given direction
- a collector should contain 2 or 3 vehicle lanes, bicycle lanes in each direction, and pedestrian facilities on both sides appropriate to the roadway context
- recommend maintaining existing routes and connections where feasible

See the MPO Access Management Plan for details on property access to major thoroughfares.

On the Map:

The Future Thoroughfare Map contains the desired functional classification for existing and proposed roadways, a summary of the functional



classification guidelines, roadway type percentages, and parameters for aligning collectors.

Functional Classification Map

This map illustrates current roadway functional classification. This map is not intended to determine right-of-way widths; final right-of-way widths will be based on local jurisdictions' design standards and the application of adopted complete streets policies. This map was developed using the Federal Highway Administration Functional Classification Guidelines.

Associated Policies:

- This map provides the basis for determining federal aid eligibility within the MPO region.
- The current functional classification may not match the classification identified on the Future Thoroughfare Map. Developing projects should consult the Future Thoroughfare Map.

On the Map:

The Functional Classification map contains the functional classification for existing roadways, a summary of the functional classification guidelines, roadway type percentages, and parameters for aligning collectors.

Trail System Priorities Plan

The Trail System Priorities Plan is a map that identifies current and potential future trail locations within the MPO area. The plan prioritizes trail facilities into three levels, or tiers that will create a trail network across the region. Tier 1 trail routes will be the trail arterial network that will connect major destinations and provide continuous routes across the region. Tier 2 trail routes will act as minor trail arterials to complete the network of intra-regional travel. Tier 3 trail routes will round out the network as collectors between neighborhoods and the trail arterial network. The trails outlined in this plan are intended to augment the roadway transportation system by providing additional networks for bicyclists and pedestrians.

The governing boards of each member jurisdiction have passed resolutions in support of a loop trail

system around central Las Cruces and extending into Mesilla and Doña Ana County. The proposed loop trail includes the following routes: Triviz Multi-use Path, the Outfall Channel, La Llorona Trail, Calle del Norte, New Mexico Highway 28, and University Avenue. Improvements needed to create this loop include paving, trail amenities, and shoulders along well-traveled roadways.

Many of these trails are located along arroyos and Elephant Butte Irrigation District (EBID) facilities. Use of EBID facilities require a Special Use permit by the local jurisdiction and a willingness to provide for liability insurance. The plan prioritizes trails that the residents and stakeholders would prefer to be improved or left unimproved. The MPO encourages the local jurisdictions to utilize these existing networks for a comprehensive regional trail system that connects important destinations for pedestrians, bicyclists, and equestrian use.

Associated Tasks:

- increase access to regional recreational activities
- protect the natural environment of Arroyos and enhance them with trail development
- support Loop Trail resolution

On the Map:

The Trail System Priorities Plan map contains text on the identified tiered network (the loop and spoke system), examples of improved and unimproved trail facilities, and a discussion of potential pavement types.

Transportation Projects Priorities Plan

The Transportation Projects Priorities Plan is a map that brings together projects for all modes that are on a list to be funded, or are on the TIP and already funded. The map illustrates the following types of projects:

- projects funded in the 2016-2021 TIP
- prioritized illustrative unfunded projects
- corridors that would benefit from Intelligent



Transportation Systems (ITS) applications

- transit projects that cannot be illustrated on the map

Transportation Projects Input

The following section is a list of projects and their associated status (measure or explanation of progress). This list of projects was derived from comments received during the first and second rounds of the public participation process for Transport 2040. The comments are from MPO committee meetings, general public open houses, and stakeholder meetings. The comments are provided as they were written or expressed. Staff addressed all these comments as best possible in this section and throughout the plan. For example, each item is listed by the location of the project, the issue or improvement that was suggested, and the status column provides information on how the comment was addressed.

Truck Traffic and Loop Roads

Truck Traffic

The discussion of freight corridors in Chapter 2 revealed that many roadways within the MPO area carry significant commercial vehicle volumes. A concern that came up often from the general public was regarding truck near existing neighborhoods near the downtown area. The perception was that the amount of through truck traffic is too large and that it should be re-routed if possible. Of particular concern was the high volume of truck traffic on US 70 (Picacho and Main Street), and its associated environmental impacts.

Redesign of the I-10/ I-25 interchange was completed in 2013. Previously, truck drivers chose not to use the I-10/I-25 interchange because the geometry led to turnovers. However, with the improvements to this interchange, it is anticipated that through traffic will remain on the interstates.

Loop Roads

MPO staff also received input on loop roads around the metropolitan area. This subject matter came up early in the planning process, so staff focused specifically on

evaluating loop roads in our public participation process. There are four quarters of the area that are being looked at and an additional southern loop road suggested by staff and the Technical Advisory Committee, shown in Figure 5-1 (not in order of priority or importance).

In the northeast, the northern-most Principal Arterial for east-west travel was reassigned from Dragonfly Avenue to Arroyo Road between Weisner and I-25. The new alignment was created to avoid negatively impacting the recreational opportunities and areas of environmental concern within the BLM land in the Doña Ana Mountains. Most of Arroyo Road will most likely be built out as development occurs. However, about two miles of the roadway are within the BLM area and other funding sources will have to be identified for construction.

The previous route for the northwest loop road was reassigned to a new route that forms an extension of Engler Road. The new route provides an additional river crossing, intersects Shalem Colony, and skirts around the south side of Picacho Hill. The new route was identified because of the new legislation designating the area north of Picacho Hill as the Prehistoric Trackways National Park.

The southwest loop road is High Mesa Road. This roadway would connect the West Mesa Industrial Park and I-10 with the Santa Teresa area, and is intended to be a limited access roadway. Projects in the Santa Teresa area such as an existing border crossing, a master planned community development, and a transportation/industrial complex will support an additional southern route. Most of the truck traffic around the City of Las Cruces travels along I-10. Therefore, High Mesa Road is most likely to have the greatest impact on relieving any future congestion on I-10 as the freight system expands and growth occurs. High Mesa can also serve as a secondary route in case of a closure on I-10. This roadway would be a prime candidate for a toll road, but tolling requires enabling state legislation.

The southeast loop road is Weisner Road. This roadway would connect to Mesquite Interchange on I-10, and is the eastern-most roadway on the



Figure 5-1

Location	Route	Status
Northeast Loop	Arroyo Road (Weisner Road to Doña Ana Interchange)	Requires build out as development occurs
Northwest Loop	Engler Road Extension (Motel Boulevard to I-10)	Requires build out as development occurs. Portion is on BLM land
Southwest Loop	High Mesa Road (West Mesa Industrial Park to Santa Teresa)	NMDOT Location Study Procedures Ongoing
Southeast Loop	Weisner Road (I-10 to US 70)	On BLM and State land - requires build out as development occurs and public funding
Southern Loop	Unnamed Road (Weisner Road to High Mesa Road)	A portion goes through BLM land and existing agricultural farms - requires build out as development occurs

Thoroughfare Plan. This roadway ultimately connects with US 70 at the Weisner Interchange, and is intended to be a limited access roadway. Weisner Road provides a more direct connection from El Paso to White Sands. Baylor Canyon Road was suggested as an alternative; however, staff do not feel this is the optimal choice. In the last MTP, Baylor Canyon was downgraded to a local road in order to be sensitive to the natural environment at the edge of the BLM recreational management area.

A southern loop road option traversing south of the City of Las Cruces across the valley was recommended during the public input process. This road would connect the southern end of Weisner Road near I-10 with High Mesa Road through the proposed Brazito Interchange. The loop road, shown on the Major Thoroughfare Plan, would provide an additional river crossing and include a portion of Snow Road.

Past modeling by the MPO has not shown any appreciable reduction in congested corridors. Loop roads contribute to inefficient land use patterns and tend to shift growth in a region rather than generate it. Additionally, construction of these would increase maintenance obligations to the public. It is not recommended that any public funds would be used to construct any portion of the loop system prior to 2020 (the next update of this plan).

Illustrative Project List

As per CFR 450.322.10.vii the items grouped together in Figure 5-2 represent an illustrative list of potential projects in the MPO area that are not currently included on the Transportation Priorities Plan (see Figure 6-6) due to funding concerns as well as design and physical constraints. Included in these projects are Complete Streets projects, bicycle boulevards, road diets, and maintenance projects. Future work on these projects will require coordination with City of Las Cruces, Doña Ana County, Town of Mesilla, NMDOT, and FHWA.

Summary and Conclusion

In most cases, projects recommended were included in the priority plans. In some cases, planning studies or further analyses are needed, and in other cases planning studies are underway that will be addressing many of the recommendations. Some of the projects recommended will also be addressed via one of the toolbox strategies. Finally, in Chapter 6, the financial plan is presented along with associated needs in the MPO area, of which these projects were incorporated.

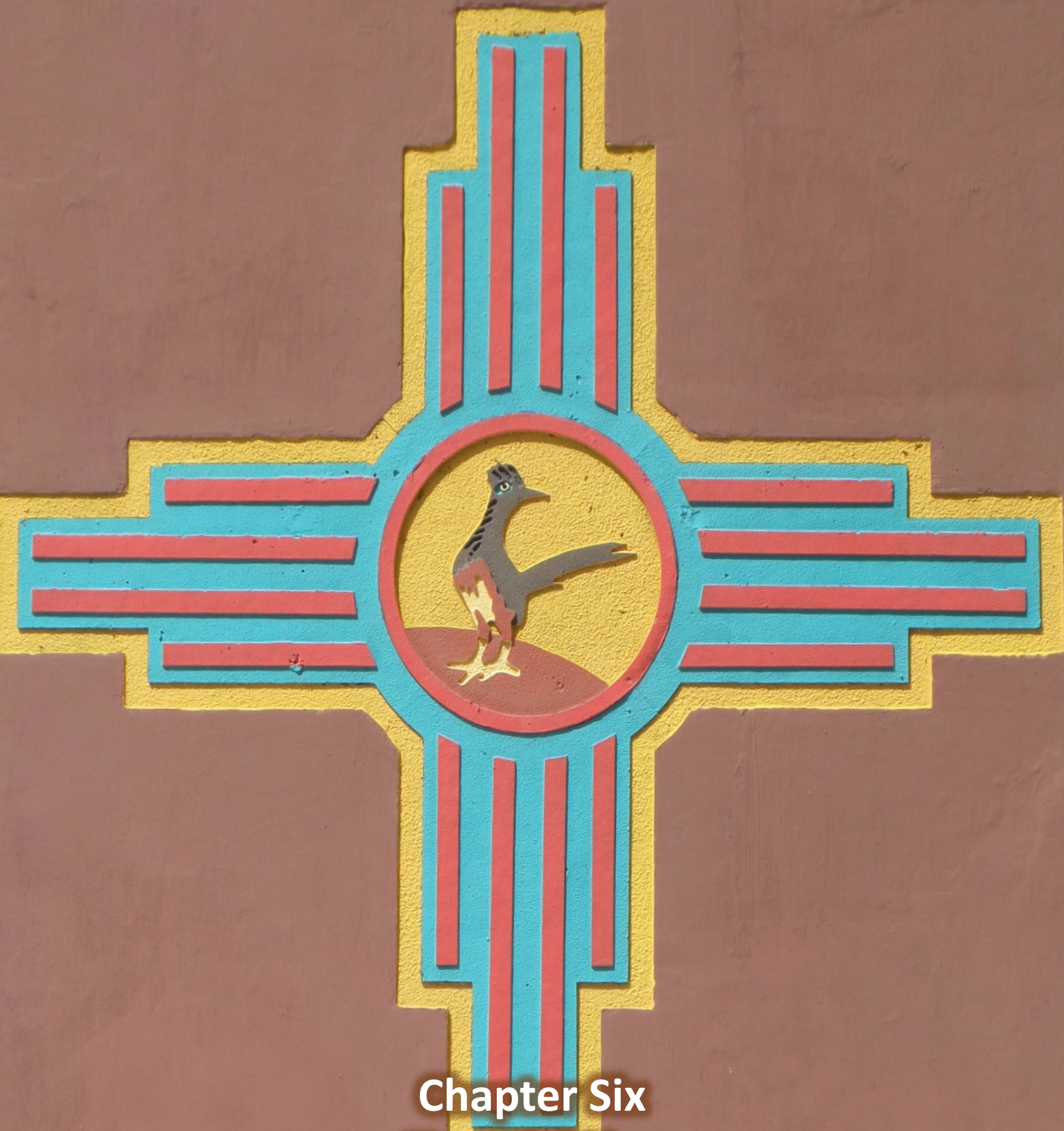


Figure 5-2: Illustrative List

Location	Issue/Improvement	Status
Roadrunner Parkway (US 70 to Lohman)	Redesign as a Complete Street	MPO coord. w/ CLC
Melendres	Bike boulevard	MPO coord. w/ CLC
Carver Road	Shoulders	MPO coord. w/ DAC
US 70/North Main bridge widening	Bridge not wide enough for bicycle lanes or pedestrians	Tier 1 Bicycle Priority
Walnut (Lohman to Griggs)	Road diet	Tier 1 Bicycle Priority
Las Alturas (University to Mesquite Interchange)	Road deterioration and bicycle lanes / shoulders	Tier 1 Bicycle Priority
Stern	Road deterioration and bicycle lanes / shoulders	Tier 1 Bicycle Priority
Griggs	Wide street needs bicycle lanes for traffic calming	Tier 1 Bicycle Priority
Spruce (Main to Triviz)	Road diet	Tier 2 Bicycle Priority
Walton (Lohman to Griggs)	Road diet	MPO coord. w/ CLC
Alameda arroyo	Designated trail	Proposed Tier 1 Trail System Priorities Plan; CLC RTP application submitted
Connection to Bosque Park	Improve Calle del Norte bridge crossing	Proposed Tier 1 Trail System Priorities Plan
Las Cruces Arroyo South Fork	Designated trail	Proposed Tier 1 Trail System Priorities Plan
South Main (Downtown to University)	Shoulder work for bicycle facility	Tier 1 Bicycle Priority
South side of Tortugas Hill (A Mountain)	Multi-use path	On BLM land



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Chapter Six
Financial Plan



Introduction

Federal transportation bills fund and regulate all federal transportation activities. One requirement found in federal transportation bills is that the Metropolitan Transportation Plan (MTP), the Transportation Improvement Program (TIP), and State Transportation Improvement Program (STIP) must be financially constrained. According to 23 U.S.C. 450.104, *financially constrained or fiscal constraint* means that, “the metropolitan transportation plan, TIP, and STIP includes sufficient financial information for demonstrating that projects in the metropolitan transportation plan, TIP, and STIP can be implemented using committed, available, or reasonably available revenue sources, with reasonable assurance that the federally supported transportation system is being adequately operated and maintained.” The purpose of this requirement is twofold: 1) to ensure that funding sources for needed investments are identified, and 2) to demonstrate a reasonably reliable means to maintain and operate the existing federally funded transportation system.

Financial Summary, Assumptions, and Available Tools

Total federal, state, and local funding revenues for the 30-year planning horizon of Transport 2040 will be provided by NMDOT. Total capital expenditures for roadways are estimated to be \$45,940,000. Capital expenditures for Roadrunner Transit are estimated to be \$3,076,209. Operation and Maintenance (O & M) expenditures are estimated to be \$833,285,031. Total capital and O & M expenditures for the 30-year planning horizon of Transport 2040 are estimated to be \$882,301,240.

Many funding tools are available to construct new transportation projects and keep the existing transportation system operating and maintained. Funding sources include federal and state programs, such as fuel and sales taxes, as well as local and private funds. This chapter documents the financial strategy used to fund regional projects, programs, and activities covered in the transportation plan. Potential

revenue sources are summarized and future revenues from these sources are estimated. Also, the expenditures to meet the projected transportation needs for the Mesilla Valley region through the year 2040 are estimated. The expenditures include those required to meet general administrative needs and the operation and maintenance of the existing transportation system.

Proposed Revenues

Federal Funding

Federal funding for transportation in New Mexico is transferred from the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) to the NMDOT. Funds are specifically allocated to various statewide programs and to the six NMDOT Districts. The Mesilla Valley MPO is within District 1, which is comprised of Doña Ana, Luna, Hidalgo, Sierra, Grant, and Socorro counties, as well as part of Caltron County.

Primary sources of revenue for the Federal Highway Trust Fund (FHTF) are:

Fuel taxes

- 18.4 cents per gallon for gasoline
- 24.4 cents per gallon for diesel

Heavy vehicle fees

- Heavy vehicle use tax for trucks over 55,000 pounds
- 12 percent sales tax on new trucks over 33,000 pounds
- Tire tax for tires over 40 pounds.

Increases to federal fuel tax rates were last authorized in 1993, and therefore the purchasing power of federal funding sources has steadily eroded over time as material and labor costs have increased. It is clear to many at the federal level that current funding levels must be reexamined and new sources of revenue for the FHTF must be explored. Ongoing discussions by the House of Representative’s Finance Committee and Transportation and Infrastructure Committee have included revenue options such an increase in fuel tax



and a user fee based on vehicle miles traveled.

The majority of monies spent in the MPO area are typically from the National Highway Performance Program (NHPP) and the Surface Transportation Program (STP). The NHPP monies are used to construct improvements on the urban and rural roads that are a part of the National Highway System (NHS), Major Highways and Principal Arterials. The STP funds provide discretionary funding used for planning, the Transportation Alternatives Program (TAP), bridge projects on public roads, transit capital projects, an intra-city and intercity bus terminals and facilities. STP funds can be used on all federal-aid-highways (Functional Classification Plan), including the National Highway System. TAP are funds for creating or improving walking and bicycling facilities, other safety improvements, or for preserving rail corridors for conversion into walking/biking trails. The Safe Routes to School program, which contributes to the improvement of walking and bicycling facilities, is funded through TAP.

Also part of STP funds are the Highway Safety Improvement Program (HSIP) funds, which are used for projects that improve safety or mitigate dangerous conditions on roadways, at intersections, or for walkers and bicyclists. The amount of STP programmed for the Las Cruces area can vary widely based on NMDOT priorities. In small to medium MPOs with a population less than 200,000 such as the Mesilla Valley MPO, the NMDOT allocates STP funds in the area based on a collaborative process between the NMDOT, MPO, and public transportation providers.

State Funding

In addition to the federal apportionment, major transportation sector funding sources in New Mexico include the state gasoline tax, special fuels tax, weight-distance tax, vehicle registration fees, motor vehicle excise tax, leased vehicle gross receipts and surcharges, trip tax, and driver's license fees other. The current state gasoline tax is 18.8 cents per gallon and the diesel fuel tax is 22.8 cents per gallon. These funds are administered by the NMDOT. The allocation of state revenues is determined by the State

Transportation Commission.

Local Funding

Funding for capital projects and street operations and maintenance for the City of Las Cruces, Doña Ana County, and the Town of Mesilla are mainly derived from each jurisdiction's share of the gross receipts tax, property tax, and gas tax. The largest source of funding is from gross receipts tax. The funds received from these taxes are fluid, since they are determined based on local economic conditions and each jurisdiction's priorities. Because each jurisdiction is required to have a balanced budget, revenue shortfalls usually manifest themselves in delayed projects.

For the purposes of Transport 2040 it is assumed that each jurisdiction will allocate general fund revenues to maintain the current level of service. The three MPO members, City of Las Cruces, Town of Mesilla, and Doña Ana County, are expected to spend \$22,721,629 on the transportation system in fiscal year 2011 and are projected to spend \$656,494,945 of local funds through the horizon year of Transport 2040.

Transit Funding

Currently, the City of Las Cruces under the Transportation Department operates a bus system called RoadRUNNER transit. Primary revenue sources for RoadRUNNER transit are federal grants, user fees (fares and passes), and a transfer from the City of Las Cruces general fund. Federal grant amounts vary year to year due to earmarks related to the fleet replacement schedule. Total funding for fiscal year 2016 is anticipated to be \$2,740,714. Projected funding through Transport 2040's horizon year is \$87,785,891.

Other Funding

Private funding is a significant source of road building in the MPO area. New local roadways are constructed as new developments are constructed. Additionally, both Doña Ana County and City of Las Cruces subdivision ordinances require that developments are responsible for building half of the improvements for adjacent thoroughfares and 100 percent of



thoroughfares within their boundaries. The location of future thoroughfares is determined by the MPO's Future Thoroughfare Map. The value of these improvements is difficult to estimate since the costs are not required to be reported. Additionally, these roadways are constructed as the real estate market can bear the cost.

New roadways also increase the maintenance obligation for public entities. The MPO recommends that the three MPO members request an analysis of life-cycle costs prior to accepting new maintenance responsibilities.

Total Revenues

Based on federal, state, and local funding, total revenues for implementation of the 25-year planning horizon of Transport 2040 will be provided by NMDOT. The breakdown of the estimate by funding source is illustrated in Figure 6-1.

Projected Expenditures

Federal regulations require the MTP to demonstrate that the region is able maintain and operate the transportation system. This section will examine the details of all costs (federal, state, local, and private) associated with building, maintaining and operating the transportation system. In order to more accurately estimate costs over a long term planning horizon, the federal regulations require the application of an inflation factor called Year of Expenditure Dollars

(YOE). The MPO has applied a 2% YOE factor to all cost projections, as determined in cooperation with the NMDOT and other New Mexico MPOs.

The MPO is continuing development of its Transportation Asset and Safety Management Plan (TASM). One of the core arguments/principle of the TASM is that streets shouldn't be allowed to deteriorate to the point where they require costly replacement. Further, timely maintenance can extend the life of a roadway (Figure 6-2). Filling potholes and periodically re-surfacing existing streets to protect the huge investment already made should always be the top priority. Unfortunately, routine maintenance is often neglected in favor of capacity expansion. Transport 2040 intends to develop a "fix it first" philosophy. New capital projects should be limited to those that improve connectivity to existing uses, aid in providing more transportation choices, or can reduce overall maintenance and operations costs.

The MPO region has already moved to a greater emphasis on maintenance for the transportation system. The City of Las Cruces has invested in a pavement management software that serves as a systematic and scientific tool to evaluate City streets to determine need, priority and appropriate pavement maintenance treatment (Figure 6-3). Using this software, the Public Works Department implemented a Pavement Management Program that focuses on keeping good streets in good conditions while providing the most efficient use of available and

Figure 6-1

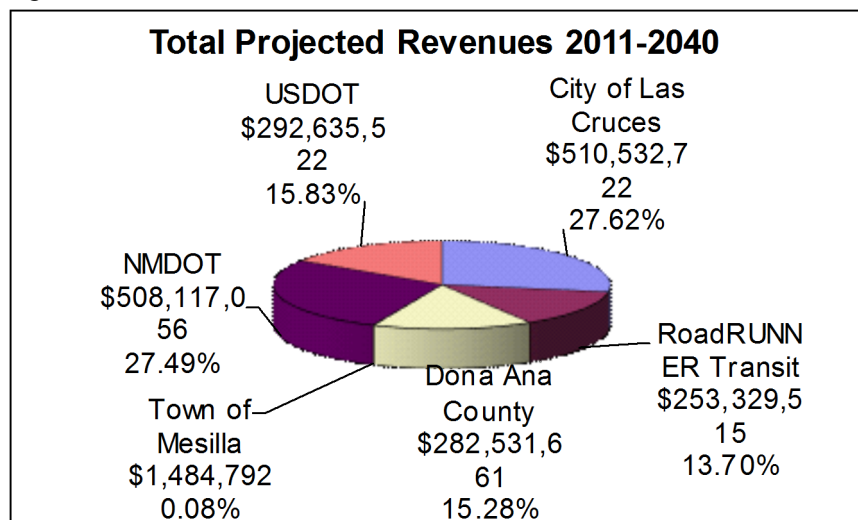




Figure 6-2

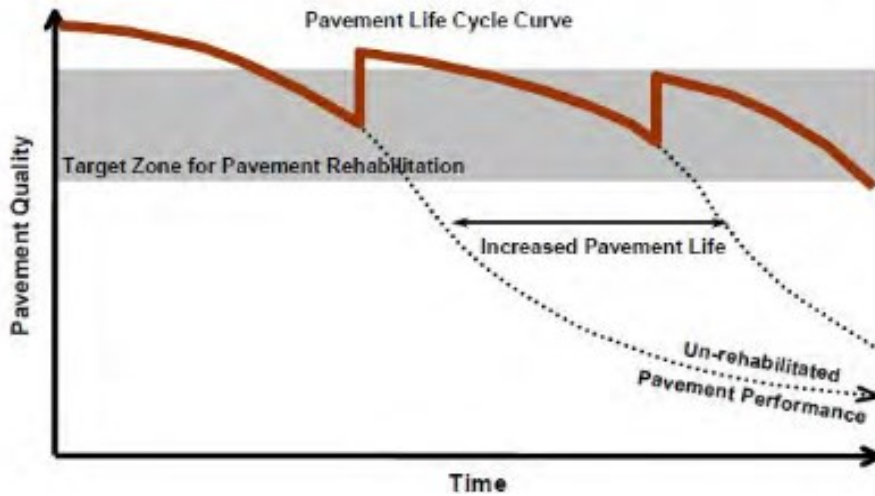


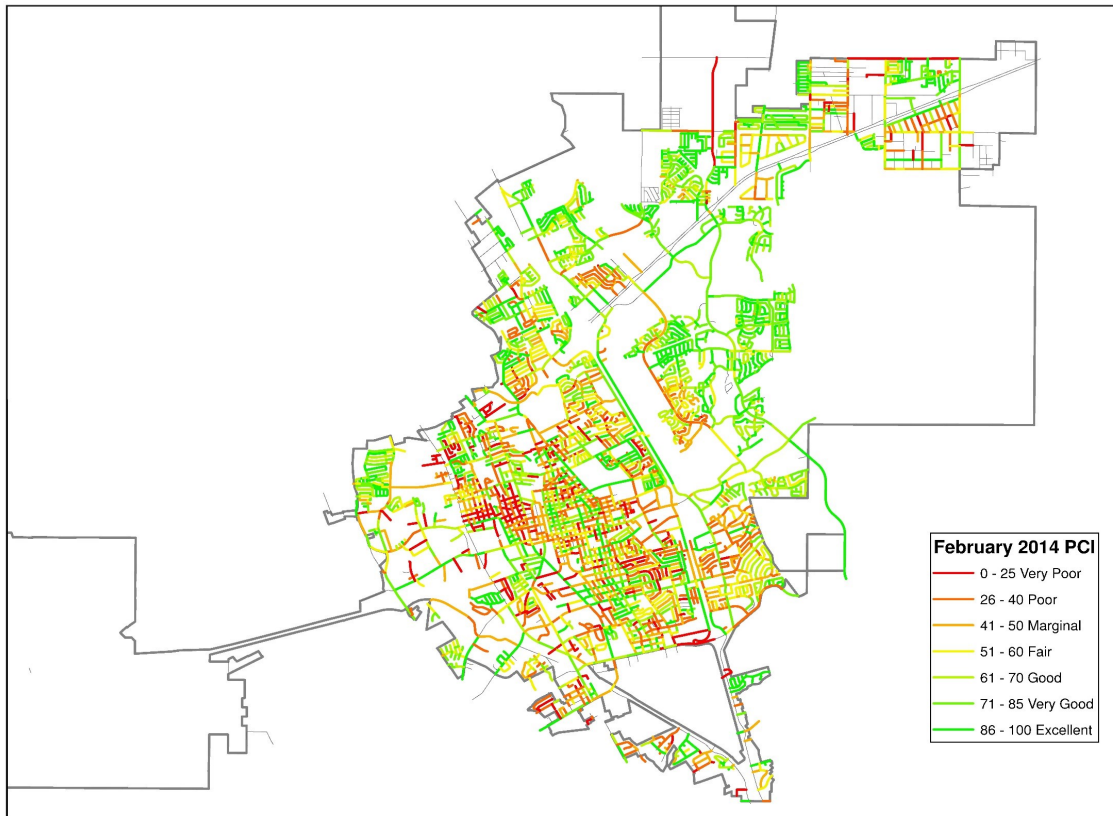
Figure 6-3: Asphalt Treatment Schedule for the City of Las Cruces

Asphalt Treatment Schedule		
Year Applied	Treatment Type	Cost per lane-mile
0	(initial Construction)	N/A
5	Crack Sealing	\$2,211
6	Microsurfacing	\$26,654
10	Crack Sealing	\$2,211
14	Mill and Resurfacing	\$220,212
14	Chip Seal	\$44,124
18	Crack Sealing	\$2,211
19	Microsurfacing	\$26,654
23	Crack Sealing	\$2,211
26	Mill and Resurfacing	\$220,212
26	Chip Seal	\$44,124
30	Crack Sealing	\$2,211
31	Microsurfacing	\$26,654
34	Crack Sealing	\$2,211
38	Mill and Resurfacing	\$220,212
38	Chip Seal	\$44,124
42	Crack Sealing	\$2,211
43	Microsurfacing	\$26,654
50	Major Rehabilitation	\$196,415
Total life cost per lane-mile		\$1,111,516
Annualized cost per lane mile		\$22,230.32

Source: Repair Priorities 2014 Transportation spending strategies to save taxpayer dollars and improve roads p. 31-32;
 Joint publication: Smart Growth America and Taxpayers for Common Sense



Figure 6-4



limited resources. The Pavement Management Program is the sum of all actions the Public Works and Transportation Departments undertake to maintain and provide functional, safe, and reliable streets for the traveling public. It consists of routine maintenance (e.g. pothole patching, localized repairs), preventive maintenance (e.g. micro-surfacing, crack sealing), rehabilitation (e.g. mill & overlay, pavement replacement), and full reconstruction. These actions increase the useful life of pavement and lower overall life-cycle costs. Figure 6-4, above, shows the range of pavement conditions throughout Las Cruces.

Capital

Capital costs for roadways were estimated by looking at current Infrastructure Capital Improvement Programs for the City of Las Cruces and Doña Ana County. At this time, most major capital projects consist of rehabilitation of existing roadways and their costs are included in the Annualized Maintenance Cost (Figure 6-4). The projects approved for Transport 2040 are in Figure 6.6. The total costs for these projects are \$45,940,000 (\$7,290,000 in 2016-2020; \$5,150,000 in

2021-2030, and \$33,500,000 in 2031-2040).

Operations and Maintenance

Operations costs were derived from evaluating mileage owned (Figure 6-5) from each entity responsible for its portion of the transportation system in the MPO area. An inflation factor of 2% was then applied yearly throughout the 25-year plan horizon. Total estimated operations and maintenance costs are \$745,499,140 in the MPO area. Annualized maintenance costs for streets is \$22,230 per lane mile (Figure 6-3). Based on the city, town, and county location, the total annual maintenance requirement in the MPO area amounts to \$23,274,810. (Figure 6-5)

Public Transportation

RoadRUNNER capital costs were estimated by utilizing the CLC RoadRUNNER Strategic Plan. The plan identified a new maintenance and operations center. The largest capital expense will be purchasing replacement vehicles through Transport 2040's horizon year. The current year operating budget for



Figure 6-5

DOÑA ANA COUNTY QUICK FACTS			
Jurisdiction	Miles Owned	Annualized Maintenance Cost	Transport 2040 Total
TOM	16	\$355,680	\$11,392,537
CLC	503	\$11,181,690	\$358,152,882
DAC	403	\$8,958,690	\$286,949,526
NMDOT	125	\$2,778,750	\$89,004,195
MVMPO (total TOM, CLC, unincorporated)	125	\$23,274,810	\$745,499,140
RoadRUNNER operating	N/A	\$2,740,714	\$87,785,891
Maintenance and Operations total			\$1,578,784,171

RoadRUNNER is \$2,778,750. This funding comes from a combination of federal operating funds, fare box revenue, and local government support. It is anticipated that this funding will remain steady and the YOE factor was applied.

South Central Regional Transit District

The South Central Regional Transit District (SCRTD) consists of Sierra and Doña Ana County and most of the municipalities within their boundaries. The SCRTD seeks to connect the communities within the district and coordinate public transit service. In 2014, a Gross Receipt Tax ballot initiative failed with the voters and the SCRTD is currently determining alternative strategies for providing this needed service.

NMDOT Gold Route

The NMDOT Transit and Rail Division provides weekday Park and Ride bus service between downtown Las Cruces and downtown El Paso. The service is funded by NMDOT public transportation funds, user fees, and a Federal Transit Administration (FTA) grant managed through El Paso County. The service, including capital and operations and maintenance costs is currently contracted out to All Aboard America. The yearly cost is \$945,000.

Total Expenditures

Capital expenditures for roadways and transit are estimated to be \$754,872,133 for Transport 2040.

Total expenditures for capital projects and system operations and maintenance for the plan horizon year, 2040, are estimated to be \$1,436,913,918.

Transportation Funding

MAP-21, the most recent federal transportation bill, expired in September 2014; however, it has been extended several times. A new transportation bill is being developed and could have a significant impact on the transportation funding. Unfortunately, at this time the proposed increases in funding cannot be expected. Therefore, in order to help fund the transportation system in New Mexico, the New Mexico Legislature commissioned a study on the status of transportation funding in the state and, through town hall meetings, evaluated a variety of potential revenue sources. Other funding mechanisms that are available include federal grants, private-public partnerships, and borrowing. The following section summarizes the House Memorial 35 and some other transportation funding mechanisms.

These additional revenue sources are:

- 1. Motor Vehicle Excise Tax (MVET).** None of the revenue from the current 3 percent MVET tax is being spent on transportation. This source generally keeps pace with inflation without the need for rate adjustments, since the tax is assessed as a share of vehicle values, which historically have increased in line with inflation. The full dedication of this source



would provide about \$136 million more revenue annually. The 19-year revenue total (2008 to 2026) would come to about \$2,448 million.

2. GRT on Transportation Construction Activities. A gross receipts tax (GRT) of 5.0 percent is currently collected for construction activities. Contractors currently pay about \$14 million annually in GRT to the State on the value of approximately \$300 million worth of state-funded transportation projects on average per year. If this source were dedicated to transportation, the 19-year revenue total (2008 to 2026) would come to about \$266 million. This amount is net of the share that GRT provides to local governments.

3. Improving compliance of weight-distance tax and trip tax. If stepped up enforcement of the weight-distance tax were to net 25 percent more revenue over the current stream, this would result in about \$19 million more revenue annually. This would generate a total of \$335 million over the next 19 years.

The study also examined potential new revenue sources. Short term revenue sources include:

1. Increase the statewide GRT. Add 0.25 cents to the existing 5.0 percent GRT and dedicate the annual \$121 million to transportation. This would generate a 19-year total of \$2.2 billion.

2. Charge a 5 percent GRT on gasoline sales. If the statewide GRT were applied to gasoline sales, it would generate about \$116 million more revenue annually and a 19-year total of \$2.1 billion.

3. Charge a 5 percent GRT on special fuel sales. If the statewide GRT were applied to diesel and other non-gasoline fuel sales, it would generate about \$78 million more revenue annually and a 19-year total of \$1.4 billion.

4. Increase vehicle registration and transaction fees. This proposal would mimic a similar proposal being studied in Colorado, where the increase is calibrated by axle weight. The average across all vehicle types would be approximately \$69. These annual registration fees would be dedicated to the maintenance and preservation costs for state highways. This increase in the flat annual fee would generate about \$122 million

annually or approximately \$2,192 million over 19 years. If this increase were indexed at 3 percent, it would generate \$160 million annually and roughly \$2.9 billion over 19 years. If indexed at 6 percent, the new annual charge would generate about \$213 million annually and \$3.8 billion over 19 years.

5. Authorizing increases in local sources. Some MPOs and RPOs have opportunities to raise their own revenues, which for most if not all MPOs and RPOs would be a GRT dedicated to transportation: The yield would vary widely from MPO to RPO. The highest grossing local option GRT would be the Mid-Regional Council of Governments (MRCOG). The yield from a one quarter-cent GRT would generate about \$40 million annually or about \$760 million over 19 years. A one-half-cent GRT would generate about \$80 million annually or about \$1.5 billion over 19 years.

6. Indexing gasoline tax. If the current 17-cent gas tax rate was indexed to inflation at 3 percent annually, the additional funds would average \$25 million annually or about \$455 million over 19 years. A 6 percent annual increase would generate approximately \$60 million more revenue annually or \$1.1 billion over 19 years. These amounts take into account projected improvements in vehicle fuel efficiencies.

7. Indexing special fuels tax. If the current 21 cent tax rate was indexed to inflation at 3 percent annually, the additional funds would average \$31 million annually or about \$565 million over 19 years. A 6 percent annual increase would generate approximately \$76 million more revenue annually or \$1.4 billion over 19 years. These amounts take into account assumed improvements in truck fuel efficiencies.

8. Index existing vehicle registration and transaction fees. The current annual registration fees range between \$21 and \$27 per vehicle. If these fees were indexed at 3 percent, this source would generate about \$19 million annually or approximately \$341 million over 19 years. If they were indexed at 6 percent, the higher fees would generate about \$46 million annually or \$819 million over 19 years.



9. Index weight-distance tax and trip tax. Even if improved enforcements yield significant increases in yield, these fees are flat and thus do not track with inflation. In order to maintain parity with raising construction and maintenance costs, indexing the fees at 3 percent annually (and maintaining the short-term improvement in compliance) could increase revenues by about \$25 million more revenue annually or \$451M over 19 years. If the rate for indexing the fees were set at 6 percent annually, we should expect an increase of about \$60 million more revenue annually or \$1.1 billion over 19 years.

Other Potential Revenue Sources

Other revenue streams beyond the traditional federal, state, and local funding programs are also important to investigate. Some options follow:

New Starts/Small Starts Discretionary Grant Program

New Starts and Small Starts have helped make possible dozens of new or extended transit fixed guideway systems across the country—heavy rail, light rail, commuter rail, bus rapid transit, and ferries. New Starts projects are typically greater than \$250 million in total project cost, requesting greater than \$75 million in New Starts funding. The Small Starts program supports fixed guideway projects smaller than the New Starts cost thresholds. Participation in the New Starts and Small Starts programs requires completion of a legislatively directed process for planning and project development.

Transit Investments for Greenhouse Gas and Energy Reduction

(TIGGER) Program:

TIGGER grants are awarded to public transit agencies for the implementation of new strategies for reducing greenhouse gas emissions or reducing energy usage from their operations. These strategies can be implemented through operational or technological enhancements or innovations.

Sustainable Communities

This is a new program that is being developed through a collaborative partnership between HUD, FHWA, and

EPA. HUD's 2010 appropriations include \$150 million for a Sustainable Communities Initiative to improve regional planning efforts that integrate housing and transportation decisions and increase the capacity to improve land use and zoning, and \$50 million for an Energy Innovation Fund to enable the Federal Housing Administration and the Office of Sustainable Housing and Communities to catalyze innovations in the residential energy efficiency sector that have promise of replicability and help create a standardized home energy efficient retrofit market.

Toll Collection/User Fees

Facilities could be constructed through the selling of bonds and be operated and maintained by toll collections. There are currently no existing toll facilities in the region due to state law that prohibits tolling. If tolling were legalized, revenue estimates would depend on traffic volumes of the roadway, trip length, and an established user fee.

Public/Private Partnerships

Public/private partnerships are another option for financing transportation facilities. These ventures could include a variety of project from roadways, bridges, right-of-way, pedestrian facilities, and signalization to parking facilities, transit improvements (including shelters), operational improvements, and providing matching funds for transportation improvement projects (including enhancement projects).

Borrowing

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

New Mexico Transportation Commission

District 1 is represented on the New Mexico Transportation Commission board. It is important that we work with our representative and the board to receive as large a portion as possible of the federal and state transportation funding allocated to New Mexico.



Figure 6-6 (A)

Transport 2040 Projects: 2016-2020

*Projects list order does not imply priority and final project selection is subject to the discretion of the Policy Committee

Project	Description	Cost (existing facility captured in Annualized Maintenance Costs)	New capital project
I-10 Mill and Overlay	MP 146 to MP 164	\$13,700,000	
Valley Drive	Repave, sidewalk, bike lanes, drainage improvements	\$11,800,000	
North Main/ Solano intersection improvements	Realign intersection	\$6,200,000	
RoadRUNNER Maintenance Facility	Maintenance and Operations Facility		\$5,040,000
Picacho/ 17th	Signal and intersection improvements	\$800,000	
Engler east of Del Rey	~1100 feet new roadway to connect existing sections		\$250,000
Roadrunner across Sandhill Arroyo	~1000 feet new roadway (including bridge to connect existing sections)		\$2,000,000
North Main ITS Corridor	Plan and deploy Adaptive Signal timing	\$250,000	
Lohman ITS Corridor	Plan and deploy Adaptive Signal timing	\$250,000	
Hadley Bike Boulevard	Sign and change speed limit to designate a bike boulevard	*	
Water and Church Streets	Convert to two way traffic	\$7,958,247	
Lohman and Amador Express Bus	Service along transit priority core	*	
Lohman Transfer Center	Relocate Mesilla Valley Mall transfer point for better operations (under study)	*	
West Mesa Corridor Study	Connect Border Crossing to I-10	\$425,000	
El Paseo Road	Complete streets implementation	\$6,000,000	
Sonoma Ranch Study Area	Evaluation of alignment and land uses	\$500,000	
Boutz Rd	Bike lanes El Paseo to Valley	*	
Idaho Ave	Road diet from El Paseo to Solano	*	
Triviz/ University Intersection Improvements	Redesign intersection to facilitate flow into campus, also I-25 ramp improvements	\$25,000,000	
Improved circulation around Las Cruces Country Club	Proposed collector, included in Park Ridge Master Plan	*	
W. University Improvements	Shoulder and pedestrian improvements from Main Street to NM 28, and traffic flow improvements in the Zia Middle School area	*	
TOTAL 2016-2020		\$72,883,247	\$7,290,000

*Precise cost estimates TBD; require Plan amendment when determined



Financial Plan Conclusion

As we update the MTP, there is a great deal of uncertainty at the financial support for the transportation system at the national level. There are several factors influencing this: changing national demographics that affect driving rates and therefore revenue collection, the continued national debate on system priorities, an increased need to focus on maintenance as much of our infrastructure embarks on its second Life Cycle, and many others. It is clear that the construction of new liabilities should not continue without a clear show of return. While the national and state dialog has focused on ways of building new revenue for the transportation system, little publicity has been given to reducing infrastructure costs. We need to:

- support ITS systems (Chap. 5) that help use roads more efficiently

- invest in public transportation that can move greater numbers of people on the same infrastructure
- invest in walking and biking facilities, low cost improvements that can increase an area's value
- reduce roadway widths so that our transportation system is safer and less expensive to upkeep.

The Mesilla Valley MPO is committed to projects that support the Livability Principles as articulated by USDOT, EPA, and HUD. Although it is true that this MPO may not have much ability to influence national transportation projects and priorities, it is able to influence which projects are built in this region. MPO staff supports reform in future transportation authorization so that capacity expansion is not the easy first choice. Indeed, emphasis should be placed on maintenance, efficiency, and treating all modes equally.

Figure 6-6 (B)
Transport 2040 Projects: 2021-2030

Project	Description	Cost (existing facility captured in Annualized Maintenance Costs)	New capital project
E. University Improvements	Pedestrian improvements from I-25 to I-10	\$9,000,000	
Idaho Ave	Pedestrian crossing at I-25		\$1,900,000
Mesa Dr.	Pedestrian crossing at US-70		\$1,500,000
Lohman Ave	extend 4 lane principal east to future Mesa Grande		\$1,000,000
Rio Grande Trail	extend La Llorona trail north and south to connect state wide	phased	
Missouri Ave Ext	extend 2 lane collector		\$750,000
TOTAL 2021-2030		\$9,000,000	\$5,150,000

Figure 6-6 (C)
Transport 2040 Projects: 2031-2040

Project	Description	Cost (existing facility captured in Annualized Maintenance Costs)	New capital project
Arrowhead Interchange	Design and construct an interchange at I-10 and Arrowhead Research Center		\$20,000,000
Mesa Grande	Construct 4 lane principal arterial		\$3,500,000
Madrid grade separation	At I-25		\$10,000,000
TOTAL 2031-2040			\$33,500,000
TOTAL 2016-2040		\$81,883,247	\$45,940,000