

2.0 Purpose and Need

As presented in Section 1, the focus of the LLCS was the evaluation of need for an additional east-west roadway that would connect to existing north-south highways and provide a second access point to I-25. Several conditions either already exist, or are projected to occur in the foreseeable future, that are relevant to the need for the proposed project. These include: (1) conditions affecting the existing transportation system serving the Los Lunas area; (2) growth and development within the study area; (3) traffic operations and congestion on NM 6; and (4) emergency access and response needs. These conditions affect the operations and safety of the existing NM 6 interchange, roadway, and river crossing. These factors and issues are summarized in this section.

2.1 Existing Transportation System

Mobility within the Los Lunas area is directly affected by the existing transportation system. Three north-south highways serve the Los Lunas area: Interstate 25, NM 314, and NM 47 (see Figure 2). Collectively, these three roadways provide 12 north-south travel lanes within and near Los Lunas. All three of these highways span the entire length of Valencia County (and beyond) and serve both local and regional travel needs. They provide access to local employment and service destinations as well as to regional employment, commercial, medical, and entertainment destinations located in the Albuquerque area, approximately 20 miles north of Los Lunas. The Manzano Expressway, a 2-lane collector roadway located on the mesa east of the Rio Grande between the Belen and Los Lunas areas, also serves north-south travel and connects the communities on the east mesa area of Valencia County to NM 309, NM 47, and NM 6.

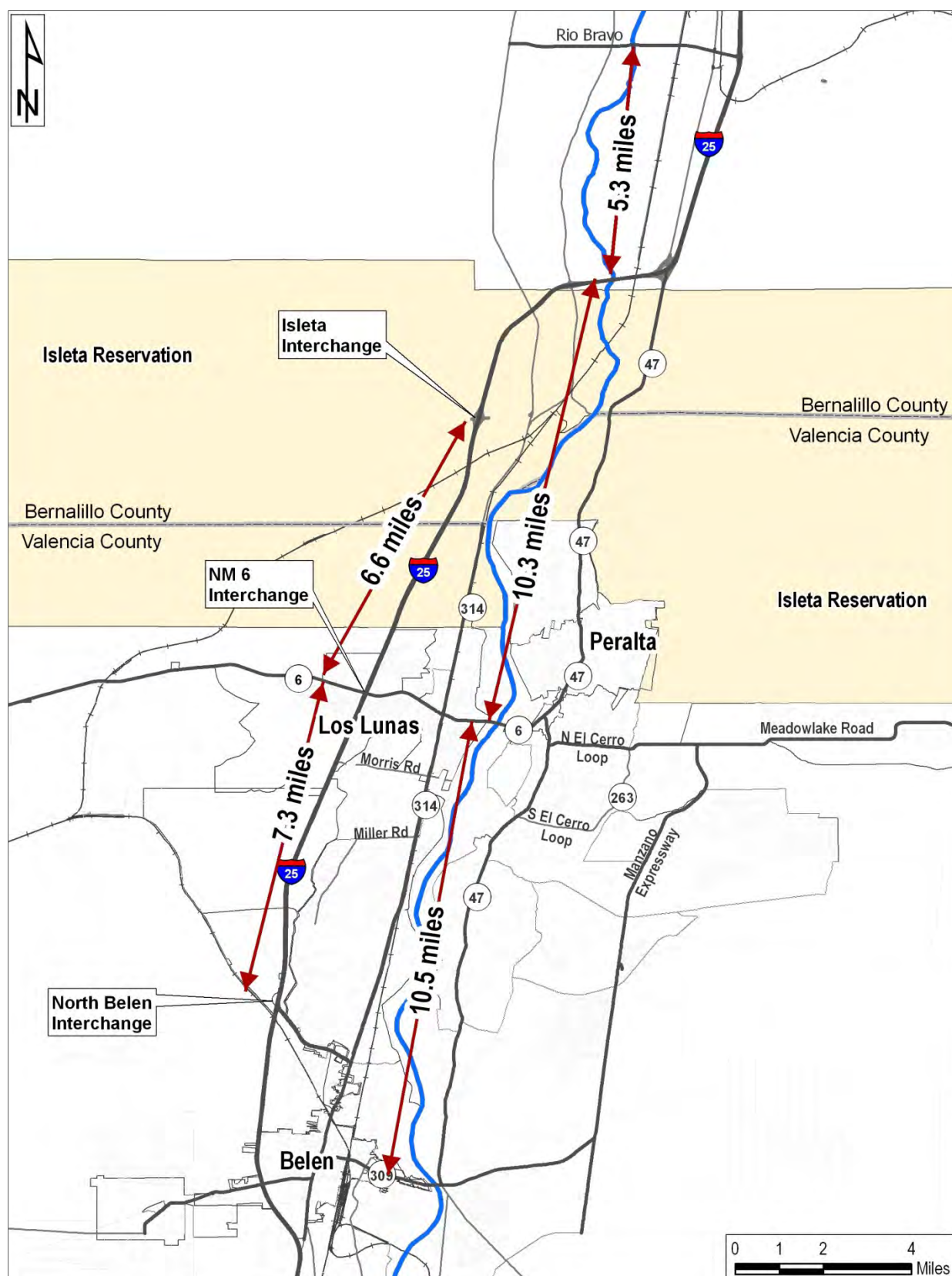
In contrast to the relatively well-developed and closely-spaced system of continuous north-south highways, the number of east-west highways that span the valley and cross the Rio Grande is limited (see Figure 2). NM 6 is the only arterial street within the Los Lunas area that spans the valley and the Rio Grande. The closest major roadways that cross the river north of NM 6 are I-25 and Rio Bravo Boulevard, located 10.3 miles and 15.6 miles away, respectively. NM 309 (Reinken Road) in Belen is the closest river crossing south of NM 6 and is approximately 10.5 miles south of Los Lunas. The lack of other east-west routes with river crossings results in the area served by the NM 6 river crossing being over 22 miles wide.

Likewise, access to I-25 within the Los Lunas area is limited to the single interchange at NM 6. I-25 is the primary connection between the communities within Valencia County and the Albuquerque area. It is heavily used by commuters as well as Valencia County residents to access services in Bernalillo County that are not available in Valencia County including, but not limited to, hospitals and emergency facilities. The closest interchanges north and south of NM 6 are the Isleta Pueblo Interchange located 6.6 miles north of NM 6 and the North Belen Interchange located 7.3 miles south of NM 6.

Traffic volumes on NM 6 currently range from approximately 26,000 to 28,000 vehicles on an average weekday (source: 2009 Traffic Flow Map for the Greater Albuquerque Area, MRCOG). Traffic count data collected for the LLCS shows typical peaking characteristics for a commuting route, although smaller but substantial peaks also occur mid-day and mid-afternoon. The mid-afternoon peak is attributed to traffic generated by several schools located along NM 6.

In addition to its street system, Valencia County has a growing public transportation system. The Village of Los Lunas operates a para-transit system that provides door-to-door services for elderly and handicapped riders. Fixed route service is under development and should be operational by mid-2012.

Figure 2: Existing Transportation System for Valencia County



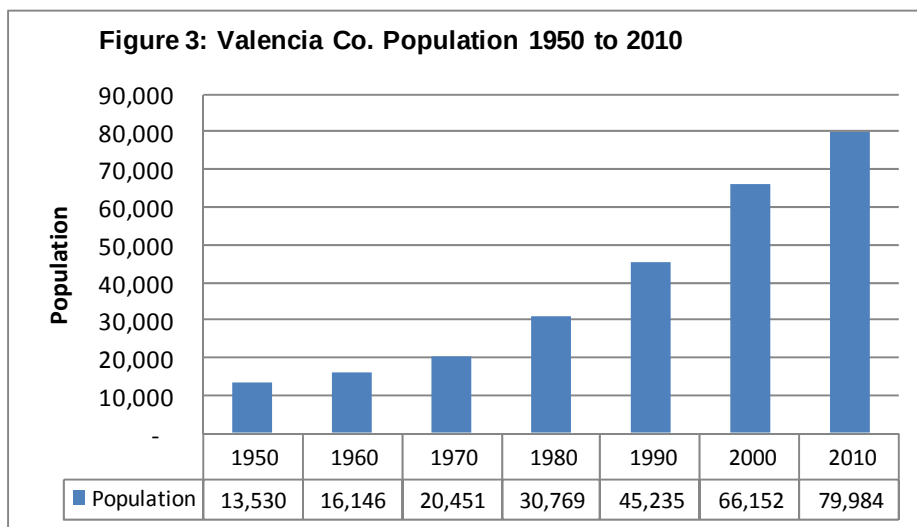
Rio Metro, the regional transit authority for the Albuquerque Region, operates commuter buses between Valencia and Bernalillo Counties. Rio Metro recently completed a Service and Financial Plan (2008) that outlines proposed improvements and expansions to transit service for Valencia County. It includes four new peak period commuter bus routes to provide access to the Rail Runner stations in Belen and Los Lunas and to the UNM Valencia Campus. Two of these proposed routes are within the study area: NM 6 west of I-25 to the Los Lunas Rail Runner station and NM 6/NM 47 to the Los Lunas Rail Runner station and UNM Valencia campus. A new park-and-ride facility is also planned for the I-25/NM 6 interchange area. Because the buses operate on NM 6, they are subject to the same congestion that affects other traffic.

Rail transportation service in the study area includes both freight and commuter trains. AMTRAK service uses the railway (parallel to NM 314 between Belen and Los Lunas) through the study area but does not stop in Los Lunas. Commuter rail service is provided by the Rail Runner Express. The Rail Runner travels between Belen and Santa Fe, primarily during commute hours, although mid-day and weekend trips are provided. Rail Runner stations are located in Belen and Los Lunas. While the Rail Runner helps reduce the number of vehicles that use the highway system, in particular on north-south routes, access to the Los Lunas station requires the use of NM 6 for riders who live east of the Rio Grande and for riders who live in the western portion of the community.

2.2 Growth and Development

Population

Growth within the urbanized areas of Valencia County has steadily increased since 1950. From a population of about 13,500 people in 1950, the population has grown to almost 80,000 people today (see Figure 3). This growth has added vehicles to the existing street system and has contributed to congestion on NM 6 and other roadways.



Population and employment projections for the urban portions of Valencia County are the result of a collaborative process involving MRCOG and the UNM Bureau of Business and Economic Research (BBER). BBRE is responsible for establishing population and employment projections for each county within New Mexico. BBRE projections are estimated at the county-level only and are not allocated to specific locations within counties. The allocation of growth within counties is performed by MRCOG using a land use

allocation model. Because the MRCOG projections cover the urbanized portions of the four counties within the metropolitan area, the projections fully consider how competition between areas and other limitations affect where growth is likely to occur. The growth projections also consider economic conditions, including the current economic recession. The down economy has affected growth and new development since 2009. However, economic cycles are part of the projection process, and the current recession is not expected to significantly affect long-range growth projections for the Los Lunas area. The Los Lunas area continues to be a competitive growth market, especially for residential development.

According to the latest projections prepared using this process, the population within Valencia County is projected to increase to approximately 160,000 people over the next 25 years — almost double the current population. Consequently, traffic growth will also be significant. The highest growth areas within Valencia County include the Village of Los Lunas, the City of Belen, and the unincorporated areas of the county between these two municipalities along both sides of the Rio Grande. Figure 4 shows the projected population growth for each of the geographic subareas within and near the LLCS study area. According to the MRCOG data, almost 90% of the total projected population for Valencia County will reside within the area between Los Lunas, Peralta, and Belen by the year 2035.

Table 1 summarizes the population growth by subareas east and west of the Rio Grande. As shown by this table, significant growth is projected for both sides of the river; however, the population is expected to be greater west of the Rio Grande. Today, the population within the vicinity of the LLCS study area is generally balanced, with about 48% of the residents living west of the river and 52% living east of the Rio Grande. By the year 2035, the balance will shift sharply to the west with almost two-thirds of the population projected to live west of the river. Even with this shift to the west, significant growth (42% above current populations) is projected for the east side of the river, resulting in over 48,000 people residing east of the Rio Grande. Because goods and services, employment areas, and the major highways and commuter rail system are located on the west side of the Rio Grande, travel demand across the river is currently, and will continue to be, a critical need.

Table 1: Geographic Distribution of Existing and Projected Population⁽¹⁾

Subarea	2008	2035	Change	% Change
West of I-25	3,018	52,194	49,176	
I-25 to Rio Grande	26,442	42,308	15,866	
West Total	31,468	94,502	63,034	200%
Rio Grande to Manzano Expressway	21,014	31,738	10,724	
East of Manzano Expressway	13,159	16,875	3,716	
East Total	34,173	48,613	14,440	42%
Valencia County Total⁽²⁾	79,984	160,000		

(1) Data is limited to the areas including and surrounding Los Lunas, Peralta, and Belen.

(2) Data includes the entire County.

The location of major growth areas is an important consideration of the LLCS. As is the case for Bernalillo County to the north, much of the new growth within Valencia County will be within large master-planned communities. Within the last decade, several large subdivisions and master plans have

Figure 4: Projected Population by Year 2035

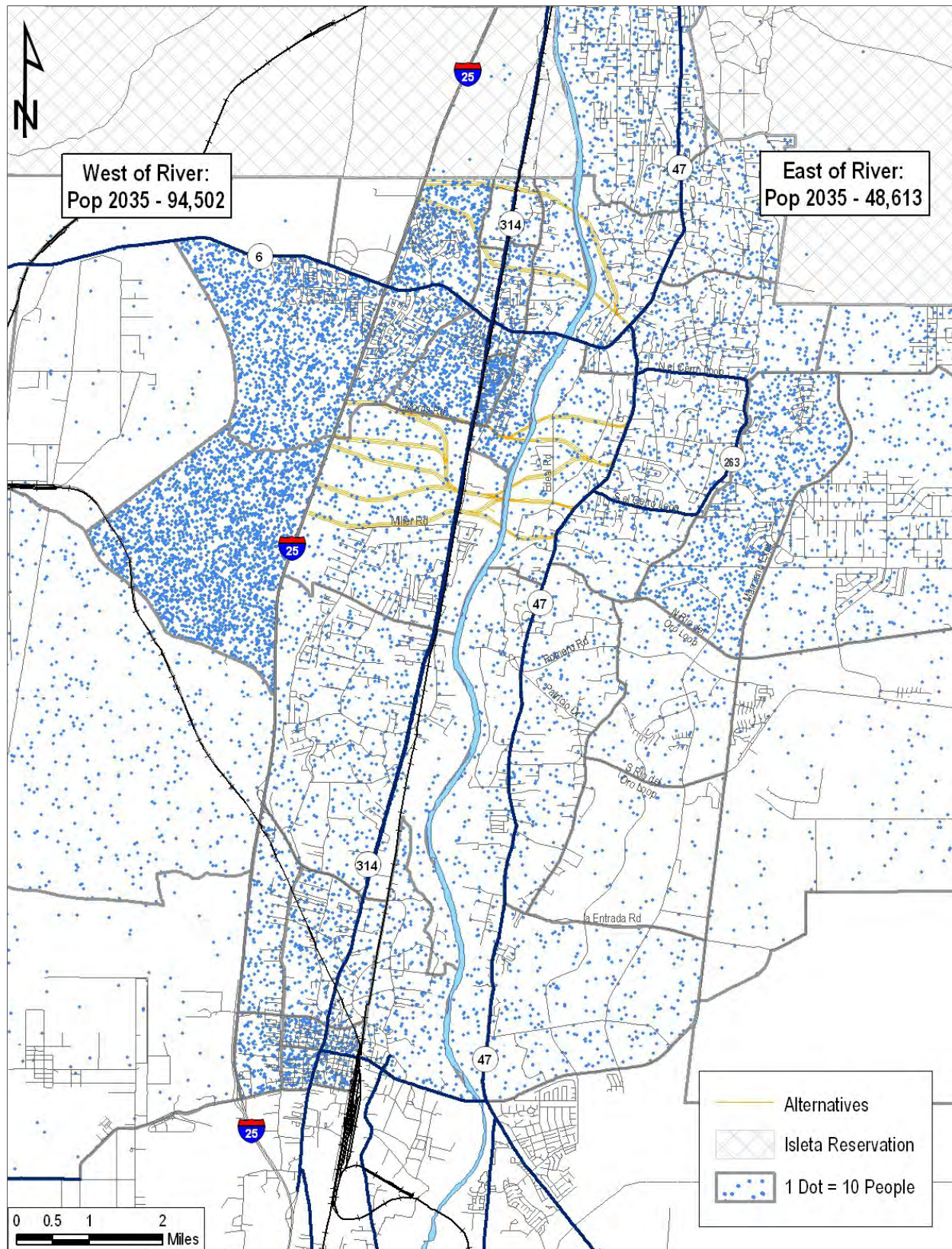
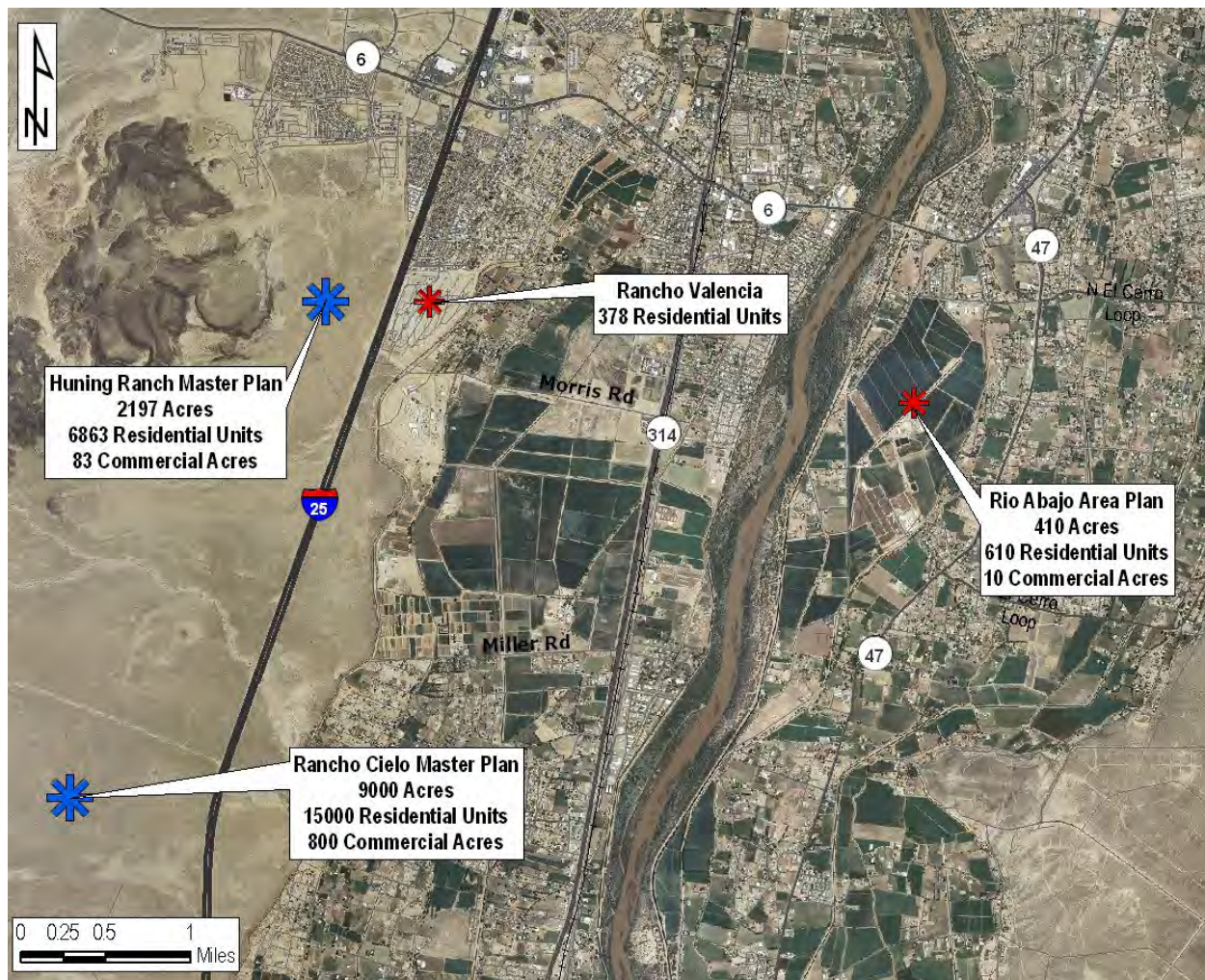


Figure 5: Major Subdivisions within the LLCS Study Area

been adopted by the Village of Los Lunas and City of Belen. The approximate locations of the most significant of these subdivisions are shown in Figure 5 and are described below.

- Huning Ranch** – The Huning Ranch Master Plan is located within the Village of Los Lunas on the west side of I-25. The Master Plan includes 6,863 residential units, of which 580 are multi-family units. It also includes approximately 83 acres of commercial, three school sites, recreational and park facilities, and open space. According to Curb South, the master developer, 1,144 lots have been sold. Total build-out for Huning Ranch is anticipated to take 20 years or more. Curb South estimates that approximately 60% of its buyers are coming from the metropolitan area and approximately 40% are coming from outside areas.
- Rancho Cielo Master Plan** – Consisting of approximately 9,000 acres located on the west side of I-25, this master plan was annexed by the City of Belen in 2006. Primary access for the southern portion of the master plan area will be from the North Belen interchange. At least one additional interchange is proposed for the northern portion of Rancho Cielo. Rancho Cielo also has rail access, making it attractive to large industrial users. Approximately 600-800 acres are designated for the development of an industrial park, which is planned to occur during phase 1 of the Master Plan.

Approximately 12,000-15,000 dwelling units are planned. Build-out is expected to take 30 years or longer. Assuming an average household size of 2.74 persons per dwelling, this equates to a population from 32,880 to 41,100 residents at full build-out.

- *Rancho Valencia Master Plan* – Rancho Valencia was annexed to the Village of Los Lunas and is located south of Main Street and adjacent to Camelot Boulevard. The project includes 378 platted lots, all of which have been fully developed. As of 2009, 44 lots have been sold and approximately 51 homes have been constructed. The developer anticipates full build-out to take another 3 to 4 four years.
- *Rio Abajo Area Plan* – Rio Abajo begins at NM 6 and Edeal Road and extends south along the east side of Edeal Road within the Village of Los Lunas. It is comprised of 410 acres. The Area Plan provides for 610 single family residential units on 296 acres. The remaining acreage is comprised of open space, recreational uses, right-of-way, and ten acres of commercial along NM 6. The master planned area is currently still used for agricultural purposes, and no construction has commenced. However, full development of this area is expected to occur within 20 years.

With the exception of Rancho Cielo, all of these subdivisions rely directly on NM 6 for access. Huning Ranch is accessed via Huning Ranch Loop Road and Sun Village Road, both of which intersect with NM 6. Plans for Huning Ranch Road include extension into the northern portion of Rancho Cielo when development in this part of the subdivision commences. Rancho Valencia is accessed via Camelot Boulevard north to NM 6. Provisions to connect Camelot Boulevard to Morris Road are planned, but this route would also add traffic to NM 6, as traffic ultimately must use NM 314 and NM 6 to access both I-25 and NM 47. Access to Rio Abajo is from Edeal Road. While access to Rancho Cielo is intended to be provided by the North Belen Interchange, Huning Ranch Road extends south and connects with a primary north-south collector included in the Rancho Cielo transportation plan. Consequently, some traffic from Rancho Cielo, especially traffic generated in the northern portion of this community, will travel north to NM 6. Development within all of these subdivisions will add more traffic to NM 6.

While west side growth is expected to be predominantly within these master planned communities, growth on the east side of the river is expected to be a mixture of master planned areas and smaller subdivisions located within the valley and on the east mesa. Collectively, the growth on the east side of the Rio Grande is substantial and is projected to total more than 14,000 new residents by year 2035. As shown in Figure 4, a significant percentage of this growth is expected to occur in the portion of Los Lunas east of the Rio Grande and the unincorporated area immediately east of the Village limits. Because other east-west roadways are not available, the traffic generated from these growth areas will rely on NM 6 to access I-25 and the local employment, commercial, and service areas located along NM 6 west of NM 314.

Employment Growth

In addition to the projected increase in population, substantial growth in employment is projected for Valencia County. The process for employment projections follows a process similar to that described for population forecasts. Like the population data, the employment projections fully consider competition for employment between counties and urban areas. According to data published by the MRCOG, approximately 11,400 jobs currently exist in the area west of the Rio Grande (see Table 2). Most of these jobs are located in the commercial areas along NM 6 and in the large employment centers surrounding the I-25/NM 6 interchange and west of I-25. Approximately 5,140 jobs exist in the area east of the Rio Grande, most of which are located along NM 6 and NM 47. Job growth for Valencia County is

projected to be significant in the coming decades with an additional 12,171 jobs projected west of the river (107% increase) by 2035 and 2,447 jobs east of the river (47% increase). Figure 6 illustrates employment growth by data analysis zones within the county.

Table 2: Geographic Distribution of Existing and Projected Employment⁽¹⁾

Subarea	2008	2035	Change	% Change
West of Interstate 25	2,006	9,990	7,984	
Interstate 25 to Rio Grande	9,367	13,554	4,187	
West Total	11,373	23,544	12,171	107%
Rio Grande to Manzano Expressway	4,437	5,771	1,334	
East of Manzano Expressway	702	1,815	1,113	
East Total	5,139	7,586	2,447	48%
Valencia County Total⁽²⁾	18,863	35,090	16,227	86%

(1) Data is limited to the areas including and surrounding Los Lunas, Peralta, and Belen.

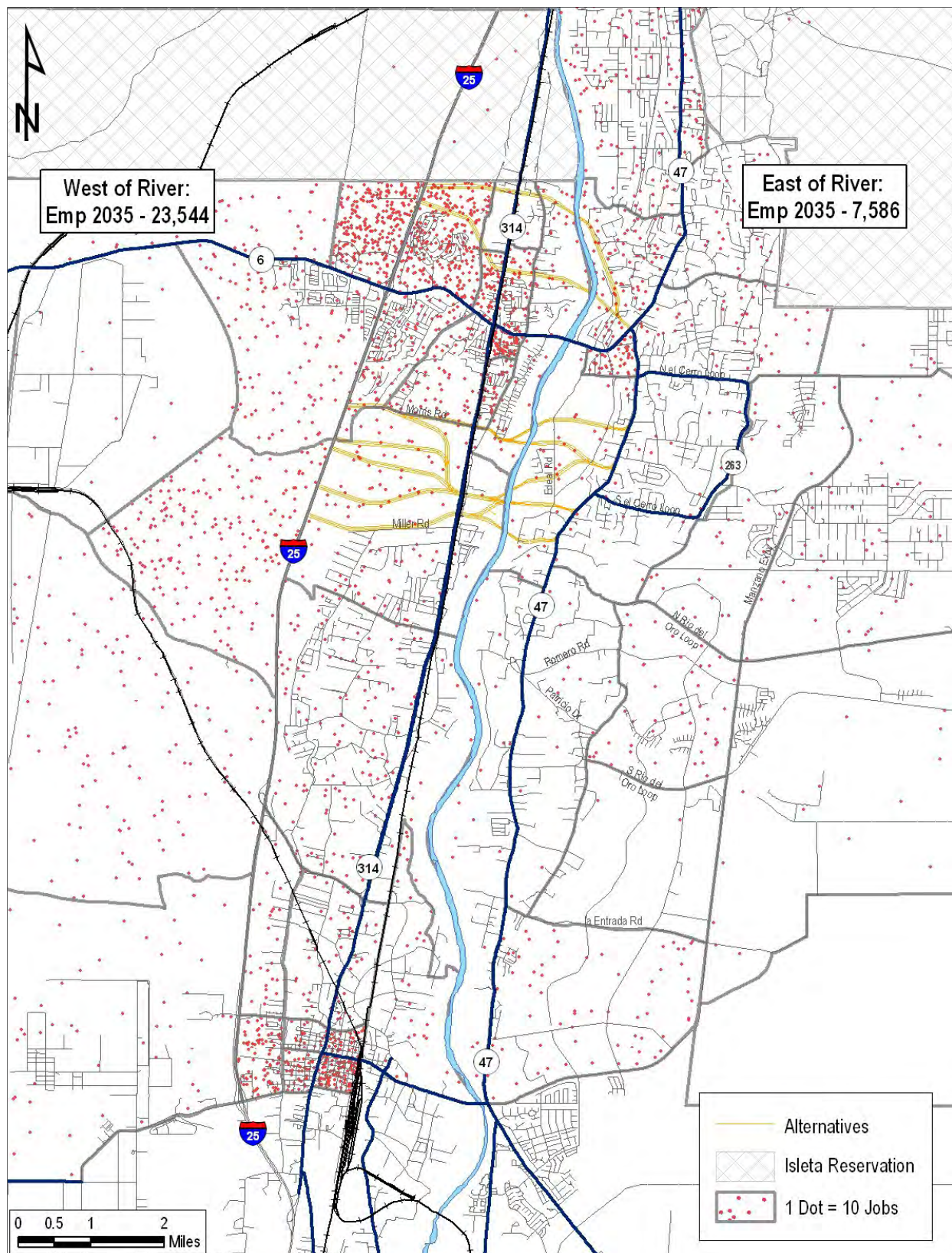
(2) Data includes the entire County.

The much stronger job growth to the west is due to the employment districts proposed as part of the large master planned communities along I-25 and continued growth along NM 6 between I-25 and NM 314, the area surrounding the I-25/NM 6 interchange, and the El Morro Industrial Park north of NM 6 and west of I-25. Considerable land remains in these areas to accommodate further development of commercial, industrial, and institutional land uses. In contrast, the lands along NM 47 are already built out, and limited space is available for new employment areas.

The stronger job growth on the west side coupled with the added population growth on the east side will increase travel demand across the valley and the river as east side residents travel to employment areas and commercial services on the west side. While it is not expected to be a strong travel pattern, some west side residents will also travel to commercial destinations and employment areas east of the Rio Grande. A comparison of the jobs/population ratio within the study area shows an existing ratio of 1 job for every 2.6 residents (a ratio of 1:2.6) for the area west of the river and 1:6.7 for the east side. By 2035, the jobs/population ratio for the west and east sides of the county is projected to be 1:4.0 and 1:6.4, respectively. The lower ratio of jobs per resident will result in greater east-west travel demand as residents living east of the Rio Grande travel to the west side of Valencia County for employment.

Regionally, the imbalance in the jobs/population ratio will force many residents of Valencia County to commute to Bernalillo County for employment. In 2008, the jobs/population ratio in Valencia County was approximately one job for every 4.1 residents (1:4.1). In contrast, the jobs/population ratio in Bernalillo County for the same year was 1:1.8. The limited number of jobs in Valencia County contributes to the strong outbound commute to Bernalillo County in the morning and the reverse commute in the evening. The jobs/population ratio is not expected to change significantly in the future. By year 2035, the ratio is projected to be 1:4.6 in Valencia County and 1:2.0 in Bernalillo County. Thus, even though the number of jobs in Valencia County is projected to increase significantly, little change is expected in the jobs/population balance, and the current reliance on employment in Bernalillo County is expected to continue. North-south commuter routes between Bernalillo County and Valencia County are limited to I-25, NM 314, and NM 47, with I-25 and NM 47 carrying the vast majority of community traffic. The ability to access north-south highways including I-25, NM 314, and NM 47 will be important and will require additional capacity on east-west routes and river crossings.

Figure 6: Project Employment Growth for Year 2035



2.3 Traffic and Congestion

As discussed in the previous section, NM 6 is the only interchange and river crossing serving the Los Lunas area. Consequently, all east-west travel demand within Los Lunas, Peralta, and the unincorporated communities to the south and east of Los Lunas rely on NM 6 to travel to work, school, shopping, and services. Within the Village limits, NM 6 serves multiple functions:

- It is only one of two highways available to residents living in the north half of the county to access commuter routes that connect Valencia County workers with jobs in Bernalillo County. As noted in Section 2.2, a large percentage of all workers within Valencia County are employed at jobs in Bernalillo County. This condition results in very high northbound traffic flows in the morning and southbound traffic flows in the evening. Of the north-south commuter routes available, all of them connect directly to NM 6.
- While commuter traffic is heavy on NM 6, this route is also used by residents on both sides of the Rio Grande to access employment, shopping, services, and government offices within the Los Lunas Main Street (NM 6) district. The vast majority of large and small commercial retail, restaurants, banks, and other similar commercial operations in Los Lunas are along NM 6.
- NM 6 is also used to access several schools and government complexes including:
 - Los Lunas High School north of NM 6 on Emilio Lopez Road, immediately east of I-25. This school has a student population of approximately 2,200 and employs 128 teachers, plus administrative and support staff.
 - Katherine Gallegos Elementary School is located on Don Pasqual just north of NM 6. This school has a student population of 479 and employs 29 teachers.
 - Los Lunas Middle School is located on Luna Avenue just south of NM 6. It has a student population of 724 and employs 42 teachers.
 - The Village of Los Lunas Village main offices and police headquarters are located on Don Pasqual just north of NM 6.
 - In addition to the Village offices, the fire department, library, and water department are located on NM 6 between Luna Avenue and Los Lentes Road (east of NM 314).

Collectively, the public schools and Village offices generate a significant number of trips on NM 6. These locally destined trips combine with shopping, commuting, and other travel to local destinations to generate significant traffic flows on NM 6. Current traffic volumes on NM 6 range from about 26,000 to 28,000 vehicles per weekday.

Traffic conditions for the segment of NM 6 within the project area were evaluated for two scenarios: (1) existing conditions (assuming a base year of 2010) and (2) the conditions projected for the 2035 planning horizon year. The population and employment projections, as described above, were used as the basis for the traffic projections. The projections were prepared using the MRCOG travel demand model with post-processing, as needed to estimate turning movements at intersections.

Daily traffic volumes for each major segment of NM 6 for 2009 and 2035 are listed in Table 3. Based on the projections, traffic volumes on NM 6 are projected to increase substantially. East of NM 314 to NM 263, including the river crossing, the net increase will range from 13,500 to 27,400 more vehicles per day. West of NM 314 to I-25, the increase will range from 16,000 to 40,000 more vehicles per day. The

Table 3: Existing and Projected Daily Traffic Volumes

<i>NM 6 Segment</i>	<i>2009⁽¹⁾</i>	<i>2035</i>	<i>Increase</i>
Huning Ranch Road to Los Morros	18,600	43,300	24,700
Los Morros to I-25	18,600	84,200	65,600
I-25 to Emilio Lopez Rd.	26,000	66,000	40,000
Emilio Lopez Rd. to Los Cerrillos Rd.	23,800	46,600	22,800
Los Cerrillos Rd. to Don Pasqual Rd.	23,800	51,900	28,100
Don Pasqual Rd. to NM 314	26,800	42,800	16,000
NM 314 to Courthouse Rd.	13,800	41,200	27,400
Courthouse Rd. to Edeal Rd.	27,900	43,300	15,400
Edeal Rd. to NM 263	26,800	40,300	13,500
NM 263 to NM 47	13,400	16,200	2,800

(1) 2009 data from 2009 Traffic Flows Map for the Greater Albuquerque Area

segments of NM 6 west of I-25 are projected to have the greatest demand with a net volume of over 84,000 vehicles per day. Note that the projected traffic volumes are based on the street improvements included in the 2035 MTP, except no additional interchanges or river crossings are included.

The traffic assessment included two levels of analysis. The first level consisted of a volume-to-capacity (v/c) analysis for each major roadway link of NM 6. The second level of analysis focused on major intersections. The v/c analysis is based on a comparison of the projected volumes for each link with the estimated capacity for that link. Capacity thresholds are based on the assumptions contained within the MRCOG model for the various types of roadways within the metropolitan area, e.g., interstates, principal and minor arterials, collectors, and local streets. NM 6 is classified and functions as a minor arterial roadway with an assumed capacity of 850 vehicles per hour per lane (vphpl).

Table 4 summarizes the v/c analysis for NM 6 for the year 2035. The v/c analysis assumes improvements to NM 6 consistent with those included in the MTP and local Capital Improvement Program. The v/c values reflected in the table are based on the following criteria:

<u>V/C Ratio</u>	<u>Link Operating Conditions</u>
0.0 to 0.89	Acceptable Traffic Flows
0.9 to 0.99	Approaching Capacity
1.0 to 1.09	Over Capacity Condition
1.10 and above	Severe Congestion

The data shown in Table 4 indicate 7 of the 10 segments along NM 6 will either approach or be over-capacity during the morning peak hour with four segments projected to be over capacity or severely congested. Conditions are worse for the evening peak hour. During this period, 8 of 10 segments of NM 6 are projected to be over capacity with 5 of these segments projected to be severely congested.

The v/c analysis provides an indicator of where congestion is expected on roadway links. To better understand traffic operating conditions, a detailed assessment of traffic conditions at major intersections was performed. The intersection analysis was performed for the existing condition using

Table 4: NM 6 v/c for Year 2035

NM 6 Segment	AM Peak Hour		PM Peak Hour	
	Westbound	Eastbound	Westbound	Eastbound
Huning Ranch Rd. to Los Morros	0.76	1.19	1.39	1.11
Los Morros to I-25	1.27	2.34	2.61	1.99
I-25 to Emilio Lopez Rd.	1.26	1.04	1.45	1.48
Emilio Lopez to Los Cerrillos Rd.	0.96	0.67	1.01	1.06
Los Cerrillos Rd. to Don Pasqual Rd.	1.07	0.74	1.10	1.16
Don Pasqual Rd. to NM 314	1.02	0.68	1.03	1.09
NM 314 to Courthouse Rd.	0.99	0.70	0.99	1.08
Courthouse Rd. to Edeal Rd.	0.93	0.68	0.98	1.04
Edeal Rd. to NM 263	0.80	0.65	0.89	0.88
NM 263 to NM 47	0.37	0.24	0.41	0.39

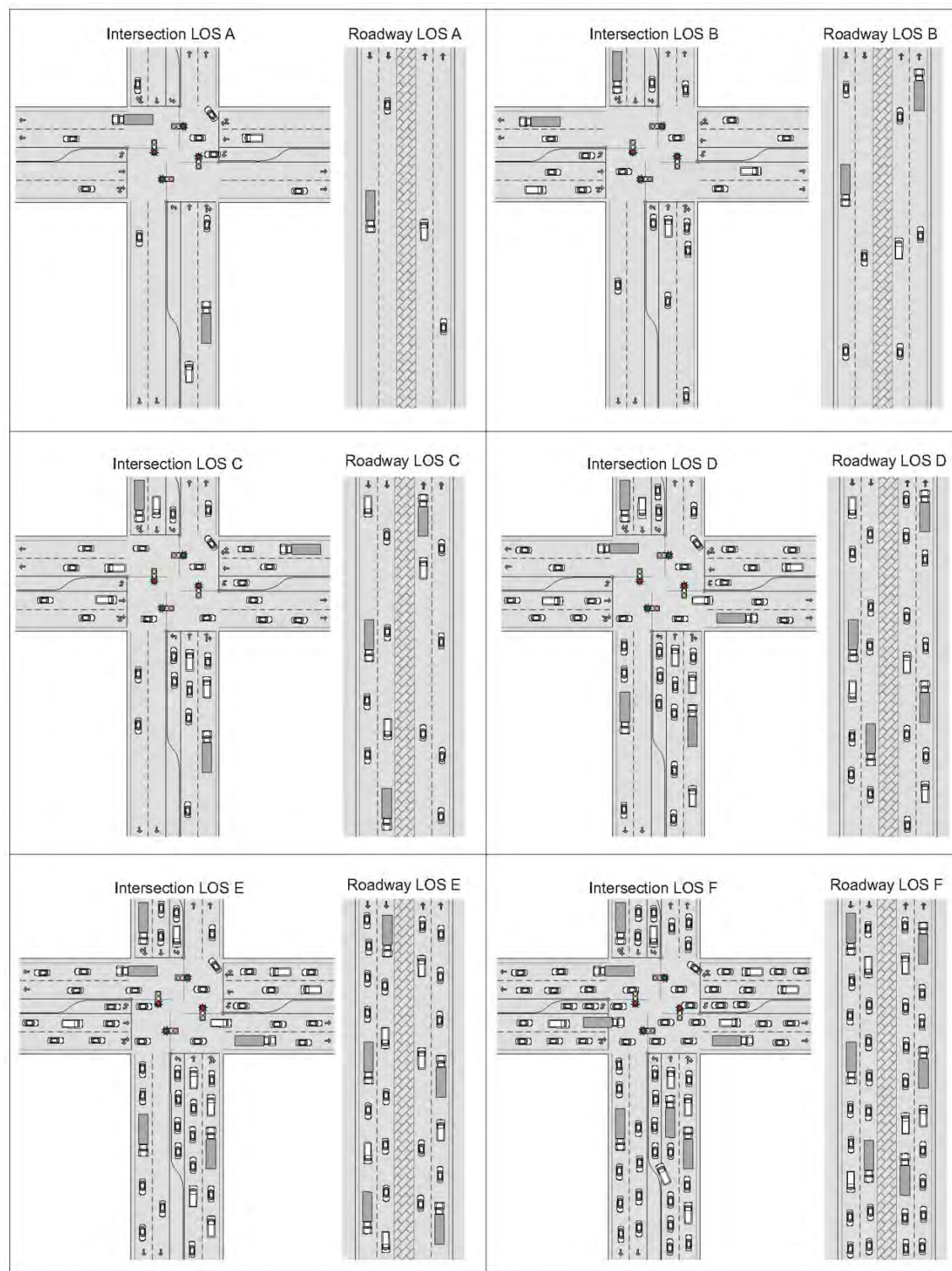
traffic count data collected in 2009 and for the future condition within the project area using projected volumes for the morning and evening peak hours. The analysis assumed local street improvements that have been planned or programmed in the 2030 MTP and local Capital Improvement Program. The roadway network improvements assumed for the future condition assessment include:

- NM 6-Huning Ranch/Los Morros Road intersection will be signalized.
- The southbound I-25 off-ramp to NM 6 will include a left, left-through, and free right-turn lane.
- The northbound I-25 off-ramp to NM 6 will include dual left, through, and right-turn lanes.
- NM 6 eastbound to I-25 will include dual left-turn lanes.
- The intersection of NM 47 and South El Cerro Loop (NM 263) will be signalized.

Traffic operating conditions are represented using “level of service” criteria. Level of service (LOS) characterizes the operating conditions of a roadway or intersection in terms of performance measures related to speed, travel time, traffic interruptions, freedom to maneuver, and driver comfort. Level of service criteria are specified for a particular time period — most often the morning and evening hours of peak traffic flow on a typical weekday — and are described using the letters A through F, with LOS A representing the best operating conditions and LOS F the worst. Figure 7 illustrates the traffic flow densities representative of each LOS category. Descriptions of each LOS category are as follows:

- LOS A means vehicles operate at free-flow speeds and are not impeded. Delay at signalized intersections is minimal.
- LOS B means vehicles are generally unimpeded and have only slight reduction in travel speed. Delays at intersections are still not significant.
- At LOS C, vehicles begin to experience restrictions in their ability to maneuver and change lanes and travel speed is affected. Delay and vehicle queues become noticeable at intersections.
- At LOS D, travel speeds are reduced and the delay at intersections is affected, although all of the vehicles arriving at a signalized intersection are accommodated during each signal cycle.

Figure 7: Illustration of Different Levels of Service



- LOS E means vehicle travel speeds are noticeably reduced and the delay at signalized intersections becomes unstable. Some vehicles will require an additional signal cycle to proceed through the intersection.
- At LOS F, traffic volumes exceed capacity and travel speed is severely impacted. Typically, several signal cycles are required to travel through signalized intersections.

Level of service C or better is typically desired to achieve reasonable traffic flows and mobility within and through developed urban areas.

The analysis of intersections was based on projected turning movement volumes at each intersection. The turning movement data were estimated from the 2035 traffic projections using industry standard methods and procedures including the Furness Model, as described in NCHRP 255, and TurnsW32. The resulting intersection turning volumes were analyzed using *Synchro 7.0* (intersection capacity analysis software used to assess the performance of intersections along a route) and included both signalized and unsignalized intersections. Figures 8 and 9 graphically illustrate the intersection operating conditions for NM 6 and other major intersections within the LLCS area. Table 5 summarizes the LOS for each intersection and the specific movements within each intersection.

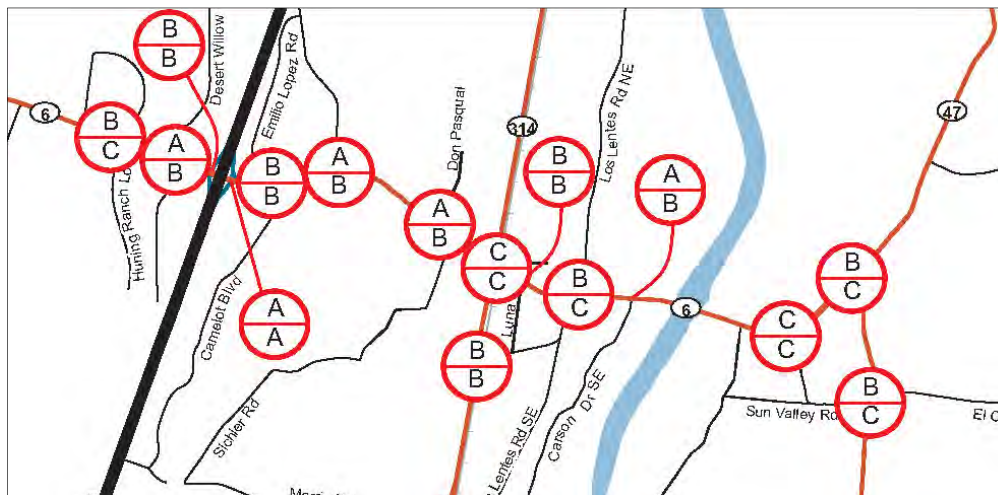


Figure 8:
Intersection LOS for
Existing Condition Traffic
Volumes

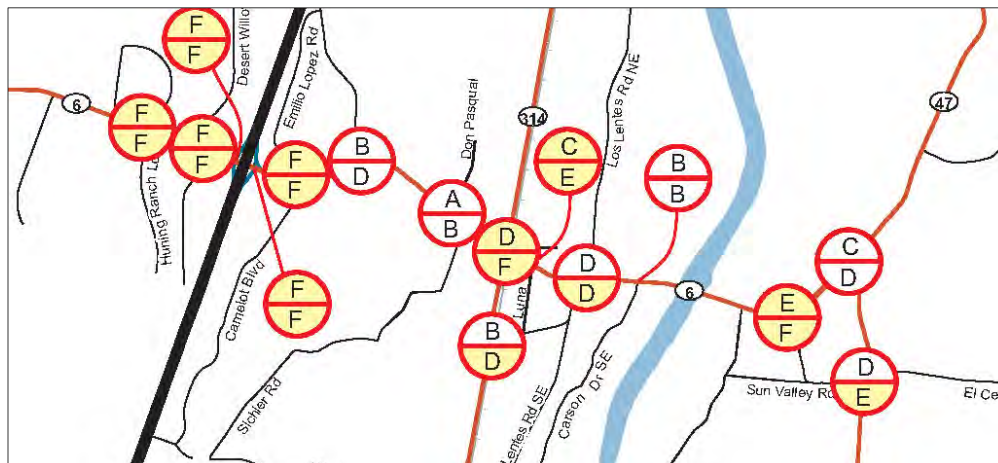


Figure 9:
Intersection LOS for Year
2035 Traffic Projections

Table 5: Intersection Level of Service for Year 2035

Intersection	Int. LOS	Eastbound			Westbound			Northbound			Southbound		
		LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT
AM Peak Hour													
Los Morros Rd	F	B	F	A	F	A	A	D	D	F	F	D	A
Desert Willow Rd	F	D	F			B	A				E		B
I-25 Southbound Ramps	F		F	A	D	B					E	E	A
I-25 Northbound Ramps	F	F	C			F	B	F	E				
Emilio Lopez/Camelot	F	F	C	A	B	F	A	F	D	A	D	E	
Los Cerritos Rd	B	E	A			B	A				D		D
Don Pasqual Rd	A	C	A			A					D		B
NM 314	D	D	C		D	D		F	D		E	D	
Luna St	C	C	B		A	B			F			C	
Los Lentes St	D	C	D		E	C			E	B	D	C	
Carson Dr	B	B	C		A	A			E	B		C	
NM 263	E	E	D		C	D		F	A			D	
NM 47	C	C	C	C	D	A		D	C	B	C	C	
PM Peak Hour													
Los Morros Rd	F	F	F	A	F	F	A	D	D	A	F	D	C
Desert Willow Rd	F	E	F			F	A				F		B
I-25 Southbound Ramps	F		F	A	F	F					F	F	F
I-25 Northbound Ramps	F	F	F			F	A	F	F				
Emilio Lopez/Camelot	F	F	F	A	F	F	A	F	D	B	C	F	
Los Cerritos Rd	D	D	C			D	A				D		D
Don Pasqual Rd	B	D	B			B					E		C
NM 314	F	D	F		F	B		F	D		F	F	
Luna St	E	D	D		C	F			F			C	
Los Lentes St	D	B	D		F	C			F	C	F	C	
Carson Dr	B	A	B		C	A			E	C		C	
NM 263	F	C	F		C	D		F	B			F	
NM 47	D	E	D	C	E	B		E	B	A	C	D	

As shown in Figure 8, existing intersection operations within the study area are generally acceptable, with all of the intersections analyzed operating at LOS C or better. In contrast, the NM 6 corridor shows significant degradation from the existing condition by the year 2035 (Figure 9). Under the projected traffic flows, LOS F is shown along NM 6 at the intersections west of I-25, the I-25 interchange ramps (even with considerable improvements assumed at the interchange), Emilio Lopez Road, NM 314, Luna Avenue, and NM 263 during the PM peak hour. The intersections west of I-25, the interchange area, and Emilio Lopez Road will also fail during the AM peak period. In addition, most of the other remaining major intersections are projected to operate at LOS D and E, indicating widespread and severe congestion along most of the NM 6 corridor from Huning Ranch Road on the west side of I-25 to NM 263 on the east side of the Rio Grande.

While all of the failing intersections will affect travel and mobility, the congestion on the roadway segments and ramp roadway intersections immediately east and west of the interstate is particularly severe. Because of the reliance on I-25 as a commuter route between Valencia County and Bernalillo County, the failing conditions at the interchange and connecting roadways will have far reaching impacts on commuter delay.

The closest interchanges to NM 6 are the North Belen Interchange located approximately 7.3 miles south of NM 6 and the Isleta Pueblo Interchange located approximately 6.6 miles north of NM 6. Consequently, motorists who rely on NM 6 to access I-25 have limited alternative routes. Traveling south to the North Belen Interchange would require considerable out-of-direction travel for commuters whose trips originate in the vicinity of Los Lunas. Traveling north to the interchange at Isleta Pueblo would route traffic onto NM 314 and through the Pueblo. Moreover, NM 314 is also projected to be over capacity in the future, which further limits the feasibility of this roadway as an alternative route.

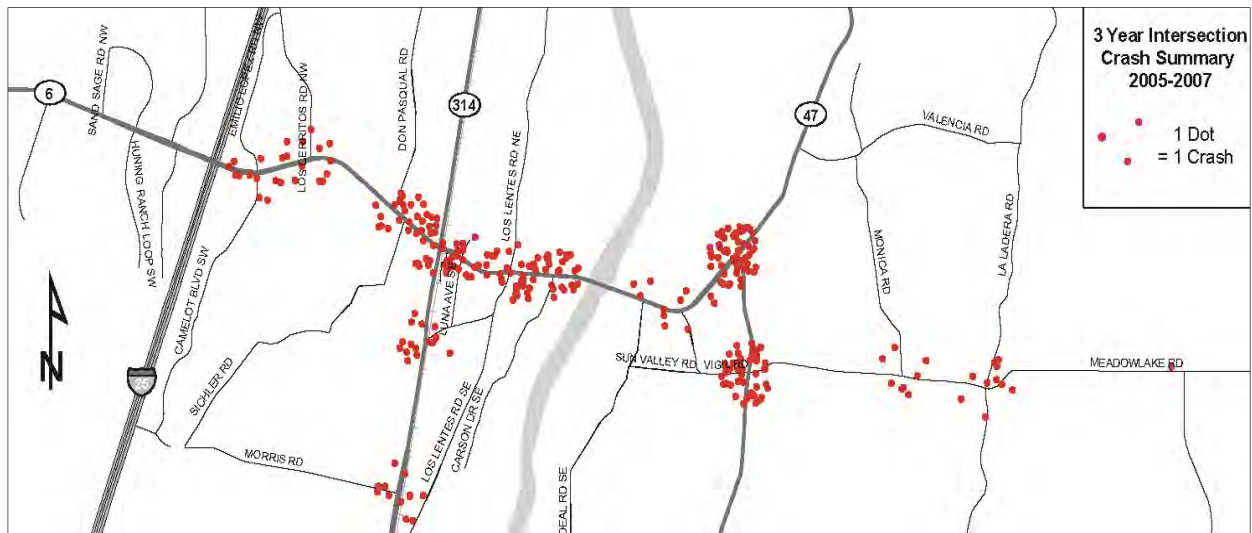
In addition to the overall operational failures of major intersections during one or both peak hours, the analysis also shows that other intersections may experience approach failures. An approach failure is the breakdown of a specific traffic movement even though the overall intersection may function adequately. For example, the overall level of service of Don Pasqual Road and NM 6 is projected to operate at LOS B. However, southbound traffic attempting to turn left onto NM 6 will be delayed due to the high east-west traffic demand that will utilize most of the green-time of the signal. These failures, symbolized by LOS F operations, will occur on many of the signalized and all unsignalized side streets that intersect the NM 6 corridor between NM 47 and I-25.

2.4 Emergency Response and Safety

Emergency response is hindered by the limited number of river crossings and continuous east-west roadways and the long distance between interchanges on I-25 within the Los Lunas area. Police, fire, and emergency medical responses are dependent upon an efficient roadway system for rapid response to emergency situations. In addition, patient transport from home emergencies or traffic crashes requires the use of I-25 or NM 47 to access regional trauma hospitals located north in Albuquerque. Because there are currently no hospitals or trauma centers within Valencia County, trauma patients must be transported to the closest trauma hospitals located in Downtown Albuquerque (approximately 22 miles north of Los Lunas). Transport from locations within the LLCS study area to the regional trauma centers in Albuquerque ultimately requires travel on NM 6 or NM 47 (or both depending on the trip origination point) for part of the transport route.

A review of crash data on NM 6 and NM 47 for the years 2005 to 2007 (the most recent complete data set available at the time of the analysis) shows a total of 331 crashes occurred on the segment of NM 6 within the Los Lunas Village limits between I-25 and NM 47 for the 3-year period evaluated. Of the 331 crashes reported, 35% resulted in injuries; no crashes with fatalities were reported. Figure 10 illustrates the general locations of reported crashes.

Vehicle crashes are a major source of congestion on roadways. Almost all crashes interfere with traffic flow to some degree. Vehicles involved in the crash, emergency response vehicles, and other traffic slowing to view the crash scene can partially or completely block travel lanes or, in severe cases, can block the entire roadway. Based on the data reviewed, an average of 111 crashes occur each year on NM 6 — an average of one crash every 3.3 days. The full or partial closure of NM 6 due to crashes can significantly increase emergency response and travel times.

Figure 10: Reported Crashes for the Years 2005 to 2007

Other events also result in short-term closures of these routes. Special events including ceremonies at Isleta Pueblo and seasonal parades in Los Lunas result in temporary closures of NM 47 and NM 6 on an annual basis. Fires within the Rio Grande bosque have resulted in the closure of the NM 6 bridge over the Rio Grande several times over the past several years. Roadway maintenance and construction projects also affect traffic flow on NM 6. While some side streets are available for use as temporary detours, the streets available are narrow and pass through residential areas. Moreover, the nearest alternative routes across the river are 10 miles to the north and south (not including NM 47 through Isleta Pueblo which is approximately 6 miles north of NM 6). Suitable routes for emergency and construction detours are limited.

Because NM 6 and NM 47 are the primary routes used to travel between Bernalillo and Valencia Counties, the closure of either of these routes increases the demand on the remaining route. Even minor delays to ground-based emergency transport vehicles can have severe consequences to patients requiring emergency treatment.

2.5 Summary of Need

As discussed in this section of the report, several factors are relevant to the purpose and need for the LLCS. These include:

- The need for a new interchange on I-25 and a new east-west roadway and river crossing between I-25 and the Manzano Expressway was identified by the Valencia County Mobility Plan Update prepared by the MRCOG in 2008. The recommendation for a new roadway and river crossing was based on analyses of projected growth and travel demand. The Valencia County Mobility Plan was adopted by all of the local governments within Valencia County.
- Projections indicate significant population growth within Valencia County. The greatest increase in growth is projected to be west of the Rio Grande. However, the population growth east of the river is projected to be significant as well and will increase by 42%. This will result in an additional 14,300 residents living east of the Rio Grande.

- Employment is also projected to grow significantly within Valencia County. The vast majority of commercial, office, industrial, and institutional development is expected along NM 6 and in the area west of the I-25/NM 6 Interchange. This development will generate a significant amount of traffic from employees traveling to and from work and by patrons accessing goods and services. These trips will originate on both sides of the Rio Grande and will rely on NM 6 for access to employment and commercial districts.
- Portions of NM 6 are already congested. By the year 2035, congestion on NM 6 is expected to be severe and widespread and will affect the interchange, the river crossing, and most of the intersections along NM 6 from Huning Ranch Road west of I-25 to NM 47 east of the river.
- The severity of congestion on NM 6 and the long distances to other river crossings will result in considerable delay for emergency response situations requiring cross-river access. The added delay will affect the safety of area residents.
- Based on the projected travel demand, the congestion on NM 6, and the need for better emergency response, the need for additional river crossing capacity and access to I-25 is indicated.