

FINAL PROJECT PRIORITIZATION PLAN FOR THE NM 599 CORRIDOR

PROJECT No. WIP-599-1(102)

CONTROL No. D5SF2

APRIL 2010

Prepared for:

New Mexico Department of Transportation
Northern Design Bureau
P.O. Box 1149
Santa Fe, NM 87504-1149

Prepared by:



Bohannon ▲ **Huston** INC.

ENGINEERING ▲
SPATIAL DATA ▲
ADVANCED TECHNOLOGIES ▲



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I. EXECUTIVE SUMMARY

NM 599 serves as a North/South by-pass for vehicles traveling through Santa Fe and a WIPP route for low level nuclear waste traveling to the Waste Isolation Pilot Project near Carlsbad. As a high-speed limited access bypass through Santa Fe NM 599 provides local Santa Fe traffic an additional North South travel corridor and alleviates traffic congestion along Cerrillos Road and St. Francis Drive.

NM 599 was designed as a controlled access facility with interchanges at all access points. Currently, it is a limited access facility with 12 allowable access points. There are five interim at-grade intersections along the corridor where right-of-way has been preserved for future interchanges. Two additional access points at Jaguar Road and Caja del Rio have not been constructed. Changes in regional traffic demand and issues related to the alignments of the intersections of other roads with NM 599 have necessitated the need for reanalysis of the corridor.

This study has been coordinated with two concurrent studies sponsored by the New Mexico Department of Transportation: the Interstate 25 Corridor Study (from NM 550 to Old Pecos Trail) and the St. Francis Drive Corridor Study (from I-25 to NM 599). Each of these facilities provides different levels of transportation service and addresses different needs, but the three corridors also accommodate similar and overlapping travel demands. St. Francis Drive and NM 599 both serve north-south through travel. St. Francis provides greater accessibility to property, while NM 599 provides higher mobility. The Interstate 25 corridor provides interstate access to NM 599 and St Francis Drive, but has the potential to interconnect with other major streets, which could influence the operation of both NM 599 and St. Francis Drive. The executive summaries of the I-25 Corridor Study and the St. Francis Drive Corridor Study can be found in Appendix A.

Purpose and Need

The crash rates on NM 599 for the period from 2003 through 2007 were below the statewide average; however, the crashes have a high severity at the unsignalized intersections with most of the crashes having injuries. Fatal crashes within the five year period were all single car crashes mostly occurring at horizontal curves. The fatality rate in 2006 was much higher than the statewide rate because there were four fatalities in one crash. The lack of gaps in NM 599 traffic during the peak hours causes drivers to take risks to cross or access NM 599 which leads to a public concern about safety at the existing intersections.

NM 599 is used for local circulation in the area; however, the unsignalized intersections have failing levels of service during the peak hours. The NM 599 frontage roads are discontinuous along the corridor causing traffic to back track in order to reach their destinations. In addition, the local area roadway network is lacking in links between NM 599 and central Santa Fe which is a problem that must be addressed by local government.

This area of Santa Fe has many approved and proposed plans for the development of both housing and business. This economic development is important to Santa Fe to provide the opportunity for Santa Fe's population to live and work in the community. Improved access to NM 599 would support this development by improving the flow of traffic onto and across NM599 from the local area.

Access at the unsignalized intersections, CR 62, CR 70 Connection (Via Veteranos) and Camino de los Montoyas, is very poor with the level of service on the cross streets failing during the peak hours. Improved access to or across NM 599 is needed for local multimodal transportation on the north side of Santa Fe including vehicles, future transit, pedestrians and bicycles.

NM 599 must continue to function as a relief route for the City of Santa Fe and as an alternative for hazardous waste transport from Los Alamos around the populated areas of Santa Fe. Improved access to or across NM 599 is needed for the all modes of travel as the area continues to develop. There is public perception that improvements are needed to address safety concerns, particularly at existing at-grade intersections.

The purpose of the study is to develop a prioritization plan for public funding that addresses the access issues and supports economic development, regional transportation and long range planning goals.

Detailed Evaluation of Alternatives

Viable alternatives for improvement were developed at all of the access points in between Interstate 25 and US 84/285. The Interstate 25 Interchange was analyzed as part of the I-25 Corridor Study. The US 84/285 Interchange was analyzed as part of the St. Francis Corridor Study.

- 1. No Build** – The No Build Alternative would mean not making any physical changes to NM 599. No right-of-way would be required and no costs would be associated with this alternative. The No Build does not meet the project need of providing improved access to or across NM 599 for the all modes of travel as the area continues to develop. In addition, the No Build does not continue the development of an access controlled facility by removing at-grade intersections as was originally planned.
- 2. Interstate 25** – The I-25 Corridor Study recommends that the entrance and exit ramps be improved to improve the merge and diverge areas of the ramps and I-25 mainlines. Auxiliary lanes are recommended on I-25 between the interchanges. Acceleration and deceleration lanes are recommended on NM 599 for the southbound ramps.
- 3. I-25 N. Frontage Road** - This alternative is shown in Figure 3, on page 23. Through traffic on the I-25 N. Frontage Road would use an overpass to cross NM 599. The existing intersection would be converted to a right-in, right-out so that frontage road traffic could access NM 599. The preferred alternative at the I-25 Frontage Road Intersection with NM 599 is to install an overpass. The overpass would improve the safety at the existing intersection and meet the purpose and need of eventually making NM 599 an access controlled facility. It is recommended that the I-25 Frontage Road Overpass be prioritized with the other alternatives.

- 4. Jaguar Road** – The preferred alternative at the Jaguar location is to construct an interchange as shown in Figure 5 on page 29. The interchange meets the purpose and need of eventually making NM 599 an access controlled facility, it improves safety at the Airport Road Intersection, and it would provide improved access to Tierra Contenta, the Santa Fe Airport and undeveloped areas east and west of NM 599. It is recommended that the Jaguar Interchange be prioritized with the other alternatives.
- 5. The W. Frontage Road from I-25 to Jaguar Road**, shown in Figures 7 and 8, on pages 35 and 40, would improve access to undeveloped lands west of NM 599. However, the owner of the land has plans to develop a north-south circulation road further away from NM 599 which would serve the same purpose. It is recommended that the alternative be eliminated.
- 6. The E. Frontage Road from I-25 to Jaguar** shown in Figures 7 and 8, on pages 35 and 40, meets the purpose and need of improving circulation around NM 599. It would provide improved access to undeveloped areas east of NM 599. It is recommended that the frontage road be prioritized with the other alternatives.
- 7. The W. Frontage Road from Jaguar Road to Airport** shown in Figure 9 on page 45 would improve access to undeveloped lands west of NM 599. However, the land is already master planned with an access road further to the west. This access road would provide better access given the grades of the proposed frontage road. It is recommended that the alternative be eliminated.
- 8. The E. Frontage Road from Jaguar Road to Airport** shown in Figure 9 on page 45 would improve access to Tierra Contenta and undeveloped lands east of NM 599. Tierra Contenta is already master planned with an access road further to the west. The Tierra Contenta access road provides access to the remaining undeveloped land in the area. The Tierra Contenta Corporation has asked that the alternative be eliminated since it requires right-of-way from their property that is already platted for commercial and community development. It is recommended that the alternative be eliminated.
- 9. Airport Road** - The preferred alternative at the Airport Intersection is to construct an interchange as shown in Figure 10 on page 54. The interchange meets the purpose and need of eventually making NM 599 an access controlled facility, and it improves safety at the Airport Road Intersection. It is recommended that the Airport Interchange be prioritized with the other alternatives.
- 10. Extension of Frontage Road across Santa Fe River** - The extension of the frontage road across the Santa Fe River as shown in Figure 12 on page 59 meets the purpose and need of improving circulation in the area of NM 599. This alternative would take traffic off of the existing CR 62 intersection which would improve the safety at that location. In addition it improves the traffic flow from the Caja del Rio intersection with the NM 599 frontage road that currently has to go out of direction by approximately three miles in order to go southbound. It is recommended that the alternative be prioritized with the other alternatives.

- 11. Caja del Rio** - The preferred alternative for the Caja del Rio Location is to construct an interchange as shown in Figure 13 on page 65. An interchange meets the purpose and need of eventually making NM 599 and access controlled facility. This alternative would take traffic off of the existing CR 62 intersection which would improve the safety at that location. In addition it improves the traffic flow from the Caja del Rio intersection with the NM 599 frontage road that currently has to go out of direction by approximately three miles in order to go southbound. The estimated construction cost for the interchange is approximately the same as the cost for the south frontage road but it provides improved access both north and south. The frontage road only provides access to the south side of NM 599. It is recommended that the alternative be prioritized with the other alternatives.
- 12. County Road 62** - The preferred alternative for the CR 62 Intersection is to construct an interchange as shown in Figure 15 on page 74. An interchange meets the purpose and need of eventually making NM 599 and access controlled facility. It would improve the safety at the existing intersection which has a high injury rate. It would also improve the existing level of service which is failing. It is recommended that the alternative be prioritized with the other alternatives. In the interim before funding is available for an interchange the NMDOT is considering other options such as a signal or flashers.
- 13. County Road 70 Connection (Via Veteranos)** - The preferred alternative for the CR 70 Connection (Via Veteranos) Intersection is to construct an interchange as shown in Figure 16. An interchange meets the purpose and need of eventually making NM 599 and access controlled facility. It would improve the safety at the existing intersection which has a high injury rate. It would also improve the existing level of service which is failing. It is recommended that the alternative be prioritized with the other alternatives. In the interim before funding is available for an interchange the NMDOT is considering other options such as a signal or flashers.
- 14. Ephriam Road** - The preferred alternative for the Ephriam Intersection is to construct an interchange as shown in Figure 17 on page 83. An interchange meets the purpose and need of eventually making NM 599 and access controlled facility. The frontage road alternative is the least expensive alternative; however, the interchange alternative provides access to the existing private land on the north side of NM 599 and to City of Santa Fe owned land on the south side of NM 599. It is recommended that the alternative be prioritized with the other alternatives.
- 15. Camino de los Montoyas** - The preferred alternative for the Camino de los Montoyas Intersection is to construct an interchange with a frontage road to provide access on the south side as shown in Figure 20 on page 96. An interchange meets the purpose and need of eventually making NM 599 and access controlled facility. The frontage road alternative is less expensive than the overpass alternative. The interchange also provides better access to the area than the alternative to use the overpass with a frontage road back to the Ephriam Interchange. It is recommended that the alternative be prioritized with the other alternatives.

- 16. The W. Frontage Road from Camino de los Montoyas to Ridgetop** shown in Figures 23 and 24 would meet the purpose and need of providing improved circulation in the NM 599 corridor. However, the undeveloped area is mainly City of Santa Fe open space. The city does not have a need for improved access. There is a private development parcel on the northwest corner of the Ridgetop Road Interchange. The developer of that parcel has plans to access Ridgetop Road. For these reasons it is recommended that the alternative be eliminated.
- 17. The E. Frontage Road from Camino de los Montoyas to Ridgetop Road** shown in Figures 23 and 24 would provide improved circulation in the NM 599 corridor. However, the existing development plan for the Northwest Quadrant is approved without access at Camino de los Montoyas. There is no way to provide a frontage road in this area without providing a connection from Camino de los Montoyas to the Northwest Quadrant development which is currently not allowed by the approved development plan. In addition, the Northwest Quadrant Development has a circulation road in the plan further away from NM 599 that serves the same purpose. For these reasons, it is recommended that the frontage road alternative be eliminated.
- 18. US 84/285 Interchange** – The St. Francis Corridor study recommends that an auxiliary lane be added between the eastbound NM 599 ramp and southbound US 84/285. The lanes would be restriped lanes so that the outside southbound lane drops at the Guadalupe interchange. This is to improve merge operations from NM 599 onto US 84/285.

Project Priority Plan

The NM 599 projects in order of priority for public funding are shown in Table 1. Projects were prioritized based on their ability to satisfy the purpose and need, public input, and cost. The total cost of all projects is \$85,625,000.

Table 1 – NM 599 Priority for Public Funding		
Location	Priority	Total Cost
CR 62 Interchange	1	\$6,500,000
CR 70 Connection Interchange	2	\$8,000,000
Airport Road Interchange	3	\$11,000,000
I-25 Frontage Road Overpass	4	\$6,000,000
Extend NM 599 Frontage Road across SF River	5	\$4,300,000
Caja del Rio Interchange	6	\$12,650,000
Ephriam Rd Interchange	6	\$8,000,000
Camino de los Montoyas Interchange w/ Frt Rd	8	\$11,050,000
Jaguar Rd Interchange	8	\$8,000,000
NM 599 E. Frt Rd to I-25	10	\$10,125,000
Total Cost		\$85,625,000

If private funding becomes available then any of these projects could be constructed. The projects with the least priority do not require an interchange or frontage road unless necessitated by development in which case they should be privately funded.

II. INTRODUCTION

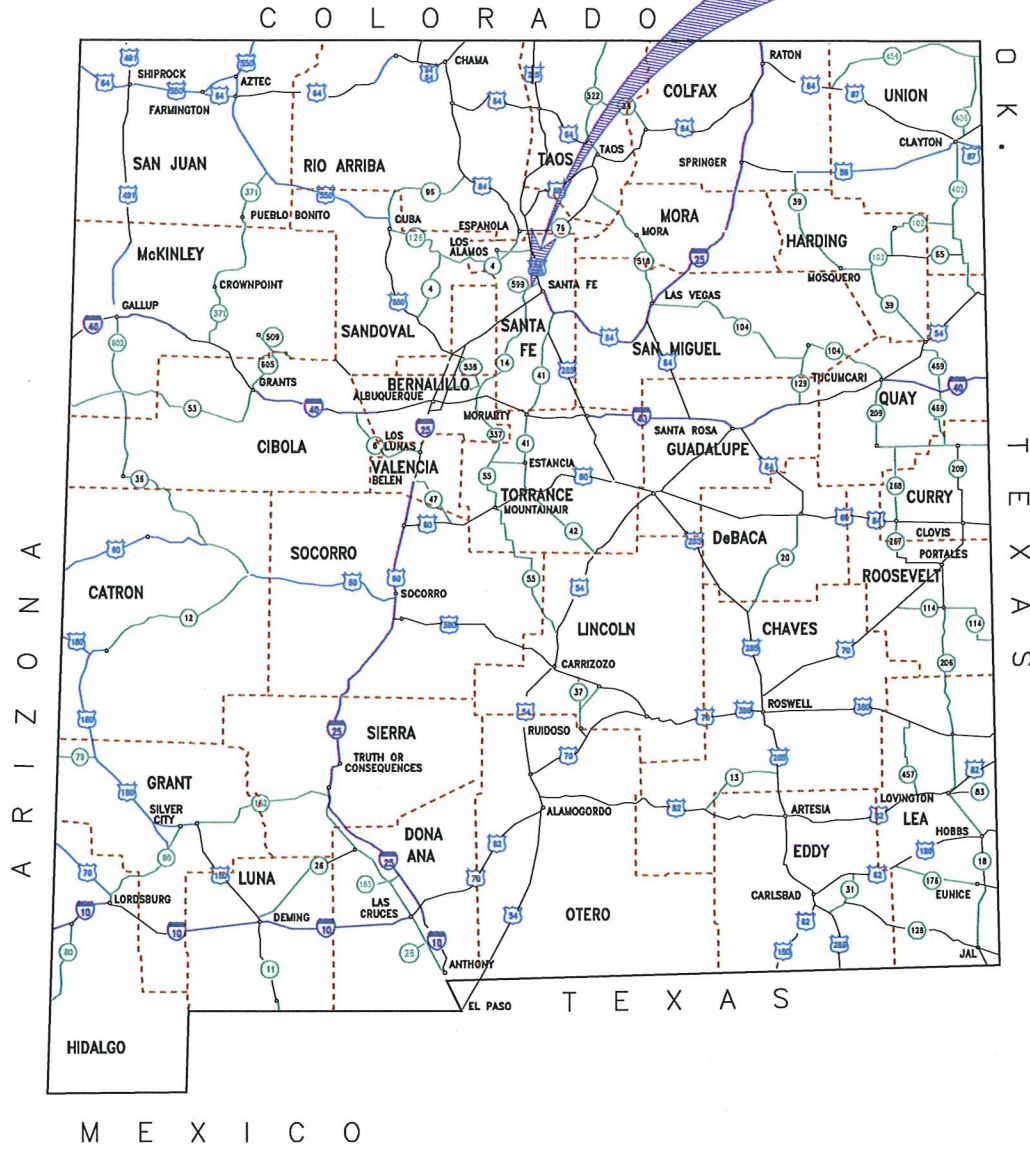
The NM 599 Corridor also referred to as the Santa Fe Bypass and the Veterans Memorial Highway, is located on the west and north sides of the City of Santa Fe beginning at NM 14 east of Interstate 25. The location map is shown in Figure 1. The corridor connects I-25 southwest of Santa Fe to US 84/285 North of Santa Fe as shown in Figure 2. The roadway facility serves as a North/South by-pass for vehicles traveling through Santa Fe and a WIPP route for low level nuclear waste traveling to the Waste Isolation Pilot Project near Carlsbad. As a high-speed limited access bypass through Santa Fe NM 599 provides local Santa Fe traffic an additional North South travel corridor and alleviates traffic congestion along Cerrillos Road and St. Francis Drive. However, there is public perception that improvements are needed to increase safety, particularly at intersections. Changes in regional traffic demand and issues related to the alignments of the intersections of other roads with NM 599 have also necessitated the need for additional analysis of the corridor in accordance with the New Mexico Department of Transportation (NMDOT) Location Study Procedures Manual.

The study team for this corridor included representatives of the NMDOT, the City of Santa Fe, Santa Fe County, the Santa Fe Metropolitan Planning Organization, and the Federal Highway Administration.

A Phase A Study for Initial Evaluation of Alternatives was completed in September 2009. All viable alternatives for meeting the needs in the corridor were identified. This study will perform a more detailed analysis of the alternatives and identify a preferred alternative in each location.

This study has been coordinated with two concurrent studies conducted by the NMDOT: the Interstate 25 Corridor Study and the St. Francis Drive Corridor Study. I-25 (from NM 550 to Old Pecos Trail) is a high mobility interstate corridor with interchange connections accessing major arterial streets. St. Francis Drive (US 84/285) (from I-25 to NM 599) is one of the main north-south urban arterials in Santa Fe, providing vehicular and pedestrian access to businesses and institutions, as well as accommodating through travel for north and south destinations. Each of these facilities provides different levels of transportation service and addresses different needs, but the three corridors also accommodate similar and overlapping travel demands. St. Francis Drive and NM 599 both serve north-south through travel. St. Francis provides greater accessibility to property, while NM 599 provides higher mobility. The Interstate 25 corridor provides interstate access to NM 599 and St. Francis Drive, but has the potential to interconnect with other major streets, which could influence the operation of both NM 599 and St. Francis Drive. The executive summaries of the I-25 Corridor Study and the St. Francis Drive Corridor Study can be found in Appendix A.

CN D5SF2
STUDY
LOCATION



Bohannon ▲ Huston

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ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

NM 599 INTERCHANGE STUDY

**FIGURE 1
LOCATION MAP**



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NM 599 INTERCHANGE STUDY

**FIGURE 2
VICINITY MAP**

III. PURPOSE AND NEED

A. Project Need

Improvements to the NM 599 intersections that were planned but not constructed are being re-evaluated. NM 599 was planned to be a future access controlled facility with interchanges at all locations except at NM 14 at the beginning of the route. The original environmental assessment, dated July 1987, identified three needs for the construction of NM 599 which should be considered in the re-evaluation:

- A north south relief route for through traffic traveling from I-25 to the communities north of Santa Fe on US 84/285.
- A WIPP route, carrying hazardous waste from Los Alamos National Laboratory to the Waste Isolation Pilot Project near Carlsbad.
- Congestion relief for the Santa Fe local street network.

In addition to the original purpose and need, the current conditions were evaluated. The NMDOT Location Study Procedures Guidelines lists seven factors that can be the basis for the need of a transportation improvement. These factors are listed below along with their applicability to NM 599.

1. Physical Deficiencies

No physical deficiencies have been identified for NM 599 with respect to the design speed of 65 miles per hour (mph) south of Airport Road and 60 mph from Airport Road through the Ridgetop Road Interchange. The horizontal and vertical curvature is adequate for the design speed. The bridges along the route are all in good condition. The lane and shoulder widths meet the recommendations of *A Policy on Geometric Design of Highways and Streets* by the American Association of State Highway and Transportation Officials for the design speed. One issue brought up by the public is that the existing 2 foot wide frontage road shoulders are inadequate for bicycles. The pavement will require maintenance based on its age but it is in good condition.

Physical deficiencies do not contribute to project need.

2. Travel Demand and Congestion

One of the original project needs for the construction of NM 599 was to relieve traffic congestion on the Santa Fe street system. The maintenance of NM 599 as a relief route should be considered when assessing projects. The existing roadway operates at a level of service of B during the peak hours indicating that there is no congestion on NM 599. Travel demand will increase as the area surrounding NM 599 continues to develop. Travel demand and congestion do not contribute to the need for a new project on NM 599.

3. Safety

The crash rates on NM 599 for the period from 2003 through 2007 were below the statewide average. Fatal crashes on the roadway were all single car crashes mostly occurring at horizontal curves. The fatality rate in 2006 was much higher than the statewide rate because there were four fatalities in one crash.

The lack of gaps in NM 599 traffic during the peak hours causes drivers to take risks to cross or access NM 599 which leads to a public concern about safety at the existing intersections. Addressing the safety concerns is a secondary need for the project.

4. System Connectivity

NM 599 serves as a north south relief route for through traffic traveling from I-25 to the communities north of Santa Fe on US 84/285. NM 599 also serves as a WIPP route, carrying low level nuclear waste from Los Alamos National Laboratory to the Waste Isolation Pilot Project near Carlsbad. NM 599 was designed as an access controlled facility with interchanges. There are five interim at-grade intersections along the corridor where right-of-way has been preserved for a future interchange. Two additional access points at Jaguar Road and Caja del Rio have not been constructed.

NM 599 is also used for local circulation, however, the unsignalized intersections are difficult to use during the peak hours. The frontage roads are discontinuous causing traffic to back track in order to reach their destinations. In addition, the local area roadway network is lacking in links between NM 599 and central Santa Fe which is a problem that must be addressed by local government.

Maintaining NM 599 as a relief route is a primary need for the road and must be considered during any project analysis.

5. Access

NM 599 is a limited access facility with 12 allowable access points. Thirteen access points were originally included but one was deleted after the public hearing. Two allowable access points at Jaguar Road and Caja del Rio have not been constructed. Access at the unsignalized intersections; CR 62, CR 70 Connection (Via Veteranos) and Camino de los Montoyas, is very poor with the level of service on the cross streets failing during the peak hours. Improved access to or across NM 599 is needed for local multimodal transportation on the north side of Santa Fe including vehicles, future transit, pedestrians and bicycles.

Continued development along the corridor will require improved access to NM 599.

Addressing the access issues is a primary need for a project on NM 599.

6. Economic Development

This area of Santa Fe has many approved and proposed plans for the development of both housing and business. Tierra Contenta is an affordable housing development. This economic development is important to Santa Fe to provide the opportunity for Santa Fe's population to live and work in the community. Improved access to NM 599 would support this development by improving the flow of traffic onto and across NM599 from the local area.

Addressing the transportation needs of economic development is a primary need for a project on NM 599.

7. Legislation

There have been several legislative actions in response to access issues on NM 599. House Joint Memorial #6 from the Year 2000 2nd special session requested that the New Mexico Department of Transportation (NMDOT), "install traffic signals to provide safe crossings, ingress and egress to the bypass intersections with county roads 62 and 70 and with Camino de los Montoyas and Ephriam Street." The house memorial also requested the NMDOT, "to work with federal and local highway agencies and local communities to improve the safety of the bypass and ensure that future connections are safe and that input and comments from the affected communities are addressed."

In 2002, with House Bill 88, the New Mexico State Legislature appropriated money for planning and preliminary design of the Caja del Rio Road intersection with NM 599 in response to requests from the community and the development of multiple state and municipal facilities on Caja del Rio Road. The NMDOT initiated a location study of the intersection. The project was protested during the public meeting process because members of the public felt that another intersection on NM 599 should not be constructed until the existing intersections were improved. The project was dropped because the Santa Fe Metropolitan Planning Organization decided not to add it to the Transportation Improvement Program. NMDOT made a commitment to perform a study and a project prioritization for the entire corridor. This study is being completed in response to that NMDOT commitment.

B. Statement of Purpose and Need

NM 599 must continue to function as a relief route for the City of Santa Fe and as an alternative for hazardous waste transport from Los Alamos around the populated areas of Santa Fe. Improved access to or across NM 599 is needed for the all modes of travel as the area continues to develop. There is public perception that improvements are needed to address safety concerns, particularly at existing at-grade intersections.

The purpose of the study is to develop a prioritization plan that addresses the access issues and supports economic development, regional transportation and long range planning goals.

Specific to each intersection location or segment of the corridor the following project purpose and need apply:

An overpass is needed at the I-25 N. Frontage Road intersection to improve safety in the corridor and to provide improved access to the planned development on both sides of the corridor. The purpose of the overpass alternative is to meet the need of eventually making NM 599 from I-25 to US 84/285 an access controlled facility.

Construction of the Jaguar Road Interchange is needed to provide direct access to or from Tierra Contenta from NM 599 and to remove traffic from Airport Road. The purpose of the interchange is to provide improved access to Tierra Contenta, the Santa Fe Airport and to private development property on the west side of NM 599.

Construction of the Airport Road Interchange is needed to improve the safety of the corridor at the highest crash location. The purpose of the interchange is to eliminate an at-grade access point to achieve the goal of an access controlled facility.

Construction of the Caja del Rio Interchange is needed to provide direct access to the public facilities on Caja del Rio. The purpose of the interchange is to provide improved access to Caja del Rio, to provide access to undeveloped property on the south side of NM 599, and to remove traffic from the CR 62 intersection.

Construction of the CR 62 interchange is needed to improve the safety of the corridor, to improve access to and across NM 599 at an existing failing intersection, and to serve the increase in traffic that will occur with the South Meadows Extension. The purpose of the interchange is to provide improved access to the Agua Fria Community, the fire station, the medical center, the community park and to proposed development in the area and to eliminate an at-grade access point to achieve the goal of an access controlled facility.

Construction of the CR 70 Connection (Via Veteranos) interchange is needed to improve access to and across NM 599 at an existing failing intersection and to serve the increase in traffic that will occur with the Siler Road Crossing. The purpose of the interchange is to provide improved access and to eliminate an at-grade access point to achieve the goal of an access controlled facility.

Improvements at the Ephriam intersection are needed to provide access to proposed development in the area. The purpose of the improvement is to eliminate an at-grade access point to achieve the goal of an access controlled facility.

Construction of improvements at the Camino de los Montoyas intersection is needed to improve access to and across NM 599 at an existing failing intersection. The purpose of the improvements is to provide better access to existing and proposed development in the area and to eliminate an at-grade access point to achieve the goal of an access controlled facility.

IV. PUBLIC INVOLVEMENT AND AGENCY COORDINATION

A. Public Involvement

During Phase A of the NM 599 Corridor Study there were two public open houses and a stakeholder's workshop. The public input from the Phase A study is contained in Appendix B.

During Phase B of the study there were two public meetings that are described in the following paragraphs.

1. Public Open Houses and Public Information Meetings

A public information meeting was held on October 6, 2009 at the Genoveva Chavez Community Center in Santa Fe to solicit public input on the Phase A Report and the viable alternatives identified. Approximately 60 members of the public, city, county, and state officials and project study team representatives were present. Prior to the meeting, the Phase A Report was posted on the Santa Fe MPO web site and copies were placed in the three libraries in Santa Fe.

A public information meeting was held March 3, 2010 at the Genoveva Chavez Community Center in Santa Fe to solicit input on the preferred alternatives recommended by the Draft Phase B Detailed Evaluation of Alternatives and the Project Priority Plan. Approximately 48 people attended the meeting. The executive summary and preferred alternative figures were posted on the SF MPO Website prior to the meeting.

Many of the comments at both meetings were clarifying the criteria used to evaluate and prioritize the interchanges. There were concerns regarding travel patterns, land use development plans, and safety. All input has been documented and considered as part of the Location Study Process.

A summary of comments from the public is included in Appendix B.

2. Web Site

A web site was used to keep the public informed. The web site was located on the NMDOT web site at <http://nmshtd.state.nm.us> and is listed on the site index. The web site contains general corridor information, a list of the study team, the management structure, project status, and a comment form. The Phase A Report for the corridor was posted on the Santa Fe MPO web site for review by the public prior to the October 6, 2009 stakeholder meeting. The executive summary and figures of the preferred alternatives from the Phase B Report were posted to the Santa Fe MPO web site prior to the March 3, 2010 public information meeting.

B. Agency Coordination

1. Santa Fe MPO Committees

The preferred alternatives were presented to the Santa Fe MPO Technical Coordinating Committee on December 7, 2009 and to the Transportation Policy Board on December 10, 2009.

The project priority plan was presented to the Technical Coordinating Committee on January 25, 2010 and to the Transportation Policy Board on February 11, 2010.

V. TRAFFIC FORECASTS

In order to create the traffic forecasts, the Future Forecast VISUM model maintained by the Santa Fe Metropolitan Planning Organization (MPO) was adjusted to create an NMDOT Base model. The MPO model includes S. Meadows Road from Agua Fria Street to the CR 62 / NM 599 Intersection and the Siler Road Extension from Agua Fria Street north to Alameda Street. The South Meadows Extension is in the 2010 – 2013 Transportation Improvement Program. The Siler Road project will be substantially complete in July 2010. The model demographics reflect growth over the next 30 years or more, reflecting more of a build out of the modeled area.

The Santa Fe MPO model was adjusted before the forecasting to create the NMDOT Base model which included the following:

- The Las Soleras socioeconomic data and roadway network from their VISUM runs. Las Soleras is an approved development located on the W. I-25 Frontage Road between Cerrillos Road and Richards Road.
- The Jaguar Interchange with NM 599. A developer is currently negotiating with the New Mexico Department of Transportation to design and construct the Jaguar Interchange using private funding.
- Four lanes on Richards Avenue from Avenida del Sur to Rodeo Road.

The six scenarios that were modeled are described below:

1. Scenario 1 – Full Regional System includes:

- Richards Interchange with Frontage Roads, Camino Carlos Rey Extension, Dinosaur Loop (West)
- Eldorado connection to College District
- All NM 599 access points as interchanges
- Auxiliary lanes on US 84/285 from NM 599 to Guadalupe
- I-25 Auxiliary Lanes and Interchange Improvements
- Includes Governor Miles extended to Rodeo Park with connections to Yucca and Galisteo
- Reduce speed limit on I-25 to 65 MPH
- Increase speed limit on NM 599 to 65 MPH

Scenario 1 is the future full build out of all of the system improvements including all interchanges on NM 599.

2. **Scenario 2 –Intermediate Regional System includes:**

- Same as Scenario 1 without the Richards Interchange

Scenario 2 was run for the I-25 Corridor Study and will not be analyzed for impacts to NM 599.

3. **Scenario 3 – Near Term Regional System Improvements includes:**

- I-25 Auxiliary Lanes and Interchange Improvements
- Eldorado connection to College District
- Auxiliary lanes on US 84/285 from NM 599 to Guadalupe

Scenario 3 was run for the I-25 Corridor Study and will not be analyzed for impacts to NM 599.

4. **Scenario 4 – Auxiliary lanes I-25 and US 84/285 - Federal and State improvements only includes:**

- I-25 Auxiliary Lanes and Interchange Improvements
- Auxiliary lanes on US 84/285 from NM 599 to Guadalupe
- All NM 599 at-grade access points and the Caja del Rio access point as signals
- Reduce speed limit on NM 599 to 45 mph
- No Eldorado connection to College District

Scenario 4 included all signals on NM 599. Presumably all signals at the at-grade intersections will impact the ability of NM 599 to function as a bypass road for Santa Fe because of added delays introduced to NM 599 through traffic and as a result it would cause more traffic to use through streets in Santa Fe such as St. Francis Drive and Cerrillos Road.

5. **Scenario 5 – CR 62 and I-25 Frontage Road Interchanges**

The only improvements in Scenario 5 were interchanges on NM 599 at CR 62 and the I-25 Frontage Roads. The two interchange locations are far enough apart that they should not impact each other so they were able to be included in the same model run.

6. **Scenario 6 – Airport Road and CR 70 Interchange**

The only improvements in Scenario 6 were interchanges on NM 599 at Airport Road and the CR 70 Connection (Via Veteranos). Again the two interchange locations are far enough apart that they should not impact each other.

Plots of the model output that will be used for this study analysis can be found in Appendix C.

VI. TRAFFIC ANALYSIS

A. Warrant Analysis at Existing Unsignalized Intersection

There are three existing unsignalized intersections in the NM 599 corridor. A signal warrant analysis was performed during the *Phase A – NM 599 Interchange Corridor Study Initial Evaluation of Alternatives*. Based on criteria from the *Manual on Uniform Traffic Control Devices, 2003 Edition*, signals are warranted at County Road 62 in both the a.m. and p.m. peak hours and at CR 70 Connection (Via Veteranos) in the p.m. peak hour. Experience shows that intersection crash rates frequently increase with signal installation, although the crashes may be less severe. Signalization usually leads to a shift in crash types, with fewer angle and turning collisions and more rear-end collisions.

B. System Impacts of Scenarios

Scenarios 1 and 4 were compared to the DOT Base model to determine their overall impact to the system. The changes in traffic are summarized in Table 2 below.

Table 2 – Scenario 1 and 4 Impacts		
Location	Scenario 1 Impact	Scenario 4 Impact
NM 599	7 to 43% increase	4 to 40% decrease
Northbound I-25 north of NM 599	7 to 15% decrease	13 to 15% increase
St. Francis Drive	5 to 7% decrease	5 to 10% increase
Cerrillos Road north of I-25	2 to 5% decrease	No significant change

In Scenario 1, the scenario in which NM 599 intersection / access points are all interchanges and the corridor speed is increased to 65 mph, there is an increase in traffic on NM 599 of up to 43%, a decrease in traffic on northbound I-25 north of NM 599 of 7 to 15%, and a slight decrease on Cerrillos Road and St. Francis Drive away from NM 599 and I-25 of 2 to 7%.

Scenario 4 is the scenario in which all of the existing at-grade intersections and a new at-grade intersection at Caja del Rio on NM 599 are signalized and the corridor speed limit is reduced to 45 mph. In this scenario there is a large decrease in traffic on NM 599 of up to 40%. The area of the largest decrease is between CR 62 and the CR 70 Connection (Via Veteranos). There is an increase in traffic on northbound I-25 north of NM 599 of up to 15%. There is an increase in traffic on St. Francis of 5% to 10%. There is no significant change on Cerrillos Road.

The comparison of the traffic in Scenarios 1 and 4 shows that if NM 599 is going to function efficiently as a relief route for the City of Santa Fe then it needs to have interchanges instead of at-grade signalized intersections.

C. Weave Analysis

Level of service for a weaving segment of a multilane highway is calculated as a density in passenger car per mile per lane. The delay for each level of service is shown in Table 3.

Table 3 – Level of Service Criteria for Weaving Segments	
Level of Service	Delay for Multilane Weaving Segments
A	≤ 12.0
B	>12.0 – 24.0
C	>24.0 – 32.0
D	>32.0 – 36.0
E	>36.0 – 40.0
F	>40.0

Concern was expressed during the public open houses and information meetings about the weave on NM 599 between the Ridgetop Road and US 84/285 Interchanges. A weaving analysis was completed for the northbound and southbound directions of NM 599 between the Ridgetop Rd interchange and the junction with US 84/285 using the DOT Base Model Traffic Forecasts and the Scenario 1 Traffic Forecasts. Northbound the ramp junctions are 1270 feet apart. In the northbound direction there is a standard weaving movement with a ramp entering and exiting on the right hand side. HICAP version 2 was used for the analysis. Southbound the ramp junctions are 1215 feet apart. The US 84/285 southbound on-ramp joins with the US 84/285 northbound on-ramp to form a two lane road. It was assumed for the purpose of this analysis that 2/3 of the traffic exiting at Ridgetop Road is coming from Santa Fe. This traffic must weave across the lane formed by the US 84/285 southbound on-ramp to exit at Ridgetop on the right hand side. This analysis was done by hand using the equations in the 2000 version of the Highway Capacity Manual.

The traffic forecast model is calibrated to the PM Peak Hour so only the PM Peak was analyzed. The results of the analysis are shown in the following table. The calculations can be found in Appendix D.

Table 4 – Future Weave Capacity Analysis Results				
Ramp	PM Peak – DOT Base Volumes		PM Peak – Scenario 1 Volumes	
	Delay (pc/mi/ln)	LOS	Delay (pc/mi/ln)	LOS
NB NM 599 Ridgetop Rd to US 84/285	13.4	B	23.3	C
SB NM 599 US 84/285 to Ridgetop Rd	29.44	C	34.8	D

The analysis shows that the weave operates at an acceptable level of service with the forecast volumes. It is recommended that the New Mexico Department of Transportation periodically reexamine this weave to determine if it remains at an acceptable level of service.