ENVIRONMENTAL ASSESSMENT

NM 30 IMPROVEMENT PROJECT
NM 502 TO US 84/285

SANTA FE AND RIO ARRIBA COUNTY, NEW MEXICO
NM 30 IMPROVEMENT PROJECT
NM 502 TO US 84/285

CN 5100440 (Formerly CN 3980)
Santa Fe County and Rio Arriba County, New Mexico

ENVIRONMENTAL ASSESSMENT

Submitted pursuant to 42 U.S.C. 4332(2) (c)

U.S. Department of Transportation
Federal Highway Administration (FHWA)
New Mexico Division

and

New Mexico Department of Transportation (NMDOT)

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2/21/13
Date of Approval

2-21-13
Date of Approval

21FEB13
Date of Approval

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The signatory agencies concur that the information discussed in this document accurately summarizes the current conditions pertinent to the proposed project.

Comments on this Environmental Assessment should be received within 30 days from the date of FHWA's approval of this EA. Comments should be sent to Eric Johnson, Marron and Associates, 7511 Fourth Street, NW, Albuquerque, NM 87107, telephone (505) 898-8848, FAX (505) 897-7847, or e-mail eric@marroninc.com.
1.0 EXECUTIVE SUMMARY

This Environmental Assessment (EA) evaluates improvements to NM 30 from the NM 502 Interchange [Milepost (MP) 0.0] in Santa Fe County, New Mexico to the US 84/285 intersection (MP 8.5) in Española, Rio Arriba County, New Mexico (Figure 1). The New Mexico Department of Transportation (NMDOT) and the Federal Highway Administration (FHWA) propose to improve this roadway. The NM 30 Improvement Project EA was developed in accordance with the National Environmental Policy Act (NEPA) of 1969, the Code of Federal Regulations (Title 23 CFR Part 771 and 772), the NMDOT Location Study Procedures (NMDOT, 2000a), FHWA Guidance Letter dated February 28, 2006, FHWA Technical Advisory T 6640.8A, and other applicable guidelines and regulations.

The purpose of the proposed improvements is to widen the highway and provide physical, operational, and safety improvements to help ensure that travel on this segment of NM 30 is safe and efficient and meets the needs of current and future users. The improvements are needed to address the following:

- physical deficiencies,
- travel demand and congestion issues,
- safety issues, and
- access and mobility issues.

Based on the technical investigations, analyses, and input received from the public and stakeholder agencies, the NMDOT recommends that the following alternatives from the Phase B analysis be combined, according to the termini described below, to form the Preferred Build Alternative (Figure 2):
  - Alternative 5 [4-lanes with a paved flush median (southern portion of the corridor from the Beginning of Project [BOP] at the NM 502 interchange [MP 0] north along NM 30 to north of the Santa Clara Pueblo / San Ildefonso Pueblo boundary at MP 5.1)];
  - Alternative 10 [4-lane urban section (from north of the Santa Clara Pueblo / San Ildefonso Pueblo boundary at MP 5.1 to the Santa Clara Clinic at MP 6.6)]; and
  - Santa Clara Working Group Option 4A [2-lane urban section with a 16-foot raised median (northern portion of the corridor from the Santa Clara Clinic at MP 6.6 to the End of Project [EOP] in Española at the US 84/285 intersection [MP 8.5]).

The preliminary cost estimate for the Preferred Build Alternative is $22,124,000. Actual costs are subject to change as design refinements occur during final project design. This project is included in the NMDOT Fiscal Year 2012-2015, Amendment 6, Statewide Transportation Improvement Program and is programmed as follows: $750,000 in 2013 for Final Design, $2,141,269 in 2013 for Construction of Phase I (Thamu Street intersection), $8,110,683 in 2015 for Construction of Phase II (NM 30 through Santa Clara Pueblo), and $5,500,000.00 for Construction of Phase III (NM 30 through San Ildefonso Pueblo to NM 502 including the Battleship intersection). It is anticipated that the District will place additional funding for Final Design and Phase III Construction in order to complete the entire corridor.

Public involvement has been accomplished through individual contact, correspondence, and four public meetings. Agency coordination was initiated through written correspondence. Several other meetings with stakeholders and potentially affected individuals have been held. Major stakeholders include Santa Clara Pueblo and San Ildefonso Pueblo. The public had a direct role in the evaluation of alternatives.

This EA concludes that the Preferred Build Alternative meets the purpose and need of the proposed project and is not expected to have significant adverse social, economic, or environmental impacts that will warrant an Environmental Impact Statement. Unless significant impacts are identified during public review and public hearing of this EA, a Finding of No Significant Impact (FONSI) will be requested from the FHWA. If a FONSI is issued, it will provide approval for final design, right-of-way acquisition, and construction of Phase I (Thamu Street intersection), Phase II (NM 30 through Santa Clara Pueblo), and Phase III (NM 30 through San Ildefonso Pueblo to NM 502 including the Battleship intersection).
FIGURE 1
NM 30 Improvement Project
PROJECT VICINITY MAP

Environmental Assessment
NM 30 Improvement Project
2.0 PROJECT PURPOSE AND NEED AND EXISTING CONDITIONS

2.1 Project Purpose and Need

The purpose of the proposed improvements is to provide physical, operational, and safety improvements to help ensure that travel on this segment of NM 30 is safe and efficient and meets the needs of current and future users.

The improvements are needed for the following reasons:

• **Physical Deficiencies** – Improvements are needed to address existing pavement distress and silting and scouring at existing drainage structures. Narrow shoulders created as a result of spot improvements have resulted in insufficient shoulder width at some locations.

• **Travel Demand and Congestion** – Traffic volumes are projected to increase within the 20 year timeframe, and during the AM and PM peak hours the roadway is expected to operate at a Level of Service F (LOS F) by the Year 2026. Level of Service or LOS is an evaluation of traffic flow, delay and traffic conditions ranging from LOS A with unrestricted traffic flow to LOS F with forced or breakdown of traffic flow (see Appendix A for a comparison of LOS ratings).

• **Safety** – Additional roadway capacity is needed to improve traffic flow and provide for passing opportunities. Protected left-turn lanes are needed to provide a refuge area for vehicles wanting to make a left turn. Improvements are needed to provide enhancements to address safety issues associated with pedestrians and bicyclists, including: a continuous width roadway shoulder, marked cross-walks, and improved signing and pavement delineation. NM 30 experienced an average of twenty eight crashes per year between 2001 and 2004, which included two fatalities.

• **Access and Mobility** – Improvements are needed to increase the efficiency of travel and improve regional mobility for the communities served by the highway. Access is provided at driveways or at intersecting streets, roads, or highways. Where two public roads connect, the secondary road is considered access. Mobility is the capability of being able to move or get around. During peak hour traffic mobility and access is hampered due to long lines of traffic. During peak hour traffic, there is a steady flow of traffic that makes it difficult for drivers to access NM 30 from side streets, secondary roads, and driveways.

The current traffic volumes on NM 30 between NM 502 and US 84/285 average approximately 14,000 vehicles per day. The traffic volumes for the Year 2026 are projected to increase to 16,900 vehicles/day based on the growth rates provided by the NMDOT. NM 30 is currently operating at a LOS D to F during the peak hour periods, and is expected to operate at a LOS F during the AM and PM peak hour periods by the Year 2026, based on the projected volumes. During the AM and PM peak hours, NM 30 is predominantly a commuter route serving Los Alamos National Laboratory, which is located approximately 10 miles to the west along NM 502. A significant number of commuters are residents of the Española Valley and other communities located to the north and east. Transit services are currently operating between Española and Los Alamos. Based on the most recent traffic count information, the southbound AM peak hour directional split is as high as 98/2 just north of the NM 502 interchange and 83/17 near the Guachupange area. The traffic data shows that the northbound PM directional split is approximately 70/30 north of the NM 502 interchange and 57/43 near the Guachupange area. During the peak hours, passing is virtually impossible. The presence of slower vehicles and other traffic disruptions creates “platooning” situations. The build-up of traffic during the peak hour periods along the NM 30 mainline also results in extreme difficulties for vehicles to safely enter the traffic stream from the intersecting streets along the corridor.
The preliminary cost estimate for the Preferred Build Alternative is $22,124,000. Actual costs are subject to change as design refinements occur during final project design. This project is included in the NMDOT Fiscal Year 2012-2015, Amendment 6, Statewide Transportation Improvement Program and is programmed as follows: $750,000 in 2013 for Final Design, $2,141,269 in 2013 for Construction of Phase I (Thamu Street intersection), $8,110,683 in 2015 for Construction of Phase II (NM 30 through Santa Clara Pueblo), and $5,500,000.00 for Construction of Phase III (NM 30 through San Ildefonso Pueblo to NM 502 including the Battleship intersection). It is anticipated that the District will place additional funding for Final Design and Phase III Construction in order to complete the entire corridor.

2.2 General Project Setting

NM 30 is located in north-central New Mexico in Santa Fe and Rio Arriba Counties approximately 23 miles north of Santa Fe, New Mexico. NM 30 is functionally classified as a Minor Rural Arterial.

2.3 Existing Roadway Conditions

The existing typical roadway section in the majority of the NM 30 corridor from the NM 502 interchange (MP 0) to the US 84/285 intersection (MP 8.5) consists of a rural cross-section with one 12-foot driving lane in each direction, 10-foot outside shoulders, and surfacing tapers. The roadway transitions from a two-lane to a four-lane section through the existing horizontal curve at MP 8.2 approaching the city of Española. This four lane section consists of an urban-type cross-section with two 12-foot driving lanes in each direction, 7-foot outside shoulders, a 20-foot paved median, and 2.5-foot curb and gutters.

The roadway has been re-striped at three major intersection locations within the Santa Clara pueblo lands to provide for a protected left-turn lane, with a through lane that utilizes the existing shoulder area.

At the intersection of the Puye Cliffs turn-off (Santa Clara Canyon Road at MP 4.8, for approximately 0.20 miles to MP 5.0) the cross-section consists of two 12-foot driving lanes in each direction, 6-foot outside shoulders, a 16-foot raised median, and surfacing tapers. The roadway was widened through this area as a part of signalization improvements at this intersection. Three other major intersections at MPs 5.5, 6.6, and 7.6 were restriped, but not widened, leaving a minimal shoulder width.

Traffic volumes on NM 30 create flow problems. During the peak hours, passing is virtually impossible. The presence of slower vehicles and other traffic disruptions creates “platooning” situations. The build-up of traffic during the peak hour periods along the NM 30 mainline also results in extreme difficulties for vehicles to safely enter the traffic stream from the intersecting streets along the corridor.

NM 30 experienced an average of 28 crashes per year between 2001 and 2004, which included two fatalities. An analysis of the crash data has revealed that NM 30 has a crash rate that is lower than the state-wide average; however, has a higher fatality rate than the state-wide average for facilities of this type, for two of the years analyzed. The most common types of crashes have been: improper driving, improper turning, and rear-end collisions. Crashes have occurred throughout the corridor and have included a number of occurrences that can be correlated to a two-lane high-speed facility operating under traffic demand approaching capacity (see Figure 3).
A traffic signal with pedestrian crosswalks is located at Santa Clara Canyon Road (MP 4.8). An un-signalized pedestrian crossing is located in the vicinity of Thamu Street. Bicyclists currently use the existing paved shoulder throughout the corridor.

The physical deficiencies of the roadway include existing pavement distress, silting and scouring at drainage structures, and areas with insufficient shoulder width.

3.0 PROJECT ALTERNATIVES

An Alignment Study Report (Gannett Fleming West, 2010a) has been prepared for the project. Additional information on the following alternatives can be found in the report.

3.1 Alternatives Considered but Eliminated

Multiple alternatives were originally considered for the project area. Typical sections of all of the alternatives that were considered are included in Appendix B. The following were eliminated.

3.1.1 Alternative 1A – Alternating Passing Lanes (2+1) With No Widening

Alternative 1A would provide for a continuous three-lane cross-section with alternating passing lanes through the limits of the project. Under this concept, the roadway is striped in a manner which provides for passing lanes in alternating directions through the length of the roadway segment. The typical section would consist of one 12-foot lane in one direction, two 12-foot lanes in the passing lane direction, 4-foot outside shoulders, and surfacing tapers sloped at a minimum of 6:1. The two directions of travel would be separated by pavement markings. This alternative was eliminated due to the lack of capacity and safety concerns at the end of the lane transitions.

3.1.2 Alternatives 1B – Reversible Lanes With No Widening

Alternative 1B would provide for two travel lanes southbound during the AM Peak Hour period, and by reversing the center lane traffic flow, would provide for two travel lanes northbound during the PM Peak Hour period. The typical section would consist of one 12-foot lane in one direction, two 12-foot lanes in Peak Hour direction, 4-foot outside shoulders, and surfacing tapers sloped at a minimum of 6:1. This alternative was eliminated due to the lack of capacity, safety concerns at the end of the lane transitions, and lack of documented evaluations of this type of facility.

3.1.3 Alternatives 2A – Alternating Passing Lanes (2+1) with Minor Widening

Alternative 2A would be very similar to Alternative 1A, with the exception that the existing roadway would be widened to provide for 8-foot wide shoulders. The roadway cross-section would need to be widened to provide for a widened paved median at the intersection of major intersecting streets and major turnouts. This alternative was eliminated due to the lack of capacity and safety concerns at the end of the lane transitions.

3.1.4 Alternatives 2B – Reversible Lanes with Minor Widening

Alternative 2B would be very similar to Alternative 1B, with the exception that the existing roadway would be widened to provide for 8-foot wide shoulders. The roadway cross-section would need to be
widened to provide for a widened paved median at the intersection of major intersecting streets and major
turnouts. This alternative was eliminated due to the lack of capacity and safety concerns at the end
of the lane transitions.

3.1.5 Alternatives 3 – 4-Lanes with Striped Median and Narrow Shoulders

Alternative 3 would provide for a four-lane facility by widening the existing roadway to both sides. The
opposing lanes of traffic would be separated by double yellow striping. The existing two-lane road and
shoulders would be salvaged and rehabilitated (mill and overlay). The proposed typical section for this
alternative consists of four 12-foot driving lanes, 4-foot outside shoulders, and surfacing tapers sloped at a
minimum of 6:1. This alternative would provide for a paved median at the intersection of major roads
and turnouts. This alternative was eliminated because of the reduced shoulder width and lack of
separation between opposing lanes of traffic.

3.1.6 Alternatives 4 – 4-Lanes with Striped Median and Widened Shoulders

Alternative 4 would be very similar to Alternative 3, with the exception that the existing roadway would
be widened to provide for 8-foot wide shoulders. This alternative would provide for a paved median at
the intersection of major roads and turnouts. This alternative was eliminated because of a lack of
separation between opposing lanes of traffic.

3.1.7 Alternatives 6 – 4-Lanes with Continuous Left-Turn Lane

Alternative 6 would provide for a four-lane facility by widening the existing roadway to both sides. The
opposing lanes would be separated by a paved continuous left-turn median. The existing two-lane road
and shoulders would be salvaged and rehabilitated (mill and overlay). The proposed typical section for
this alternative consists of four 12-foot driving lanes, 8-foot outside shoulders, a 12-foot continuous left-
turn paved median, and surfacing tapers sloped at a minimum of 6:1. The continuous left-turn lane would
provide for a protected left-turn lane for all the existing intersecting roads and turnouts. This alternative
was eliminated because it does not address access control issues and pedestrian needs in the northern part
of the corridor and due to concerns about the usage of the continuous left-turn lane as a passing lane.

3.1.8 Alternatives 7 – 4-Lanes with Raised Median

Alternative 7 would provide for a four-lane facility by widening the existing roadway to both sides. The
opposing lanes would be separated by a raised median. The existing two-lane road and shoulders would
be salvaged and rehabilitated (mill and overlay). The proposed typical section for this alternative consists
of four 12-foot driving lanes, 8-foot outside shoulders, a 16-foot raised median, and surfacing tapers
sloped at a minimum of 6:1. The raised median would accommodate a protected left-turn lane for the
existing intersecting roads and turnouts. This alternative was eliminated because it would require more
right-of-way than the Preferred Build Alternative and would be the most costly to implement.

3.1.9 Alternatives 8 – 2-Lanes with Passing Lanes at Select Locations

Alternative 8 would provide for a two-lane facility with passing lanes at selected locations in both the
northbound and southbound directions. Appropriate transitions in and out of the passing lane areas would
be provided. The typical section would consist of one 12-foot lane in each direction, 8-foot outside
shoulders, and surfacing tapers sloped at a minimum of 6:1. At the locations of the “passing” zones, an
additional 12-foot lane would be provided to allow for passing. The existing two-lane road and shoulders
would be salvaged and rehabilitated (mill and overlay). This alternative was eliminated due to the lack of capacity and safety concerns at the end of the lane transitions.

3.1.10 Alternatives 9 – 4-Lanes with Concrete Wall Barrier Median

Alternative 9 would provide for a four-lane facility by widening the existing roadway to both sides. The opposing lanes would be separated by a Median Concrete Wall Barrier (CWB). The existing two-lane road and shoulders would be salvaged and rehabilitated (mill and overlay). The proposed typical section for this alternative consists of four 12-foot driving lanes, 8-foot outside shoulders, a Median CWB with a 2-foot distance between the edge of driving lanes and the CWB, and surfacing tapers sloped at a minimum of 6:1. This alternative was eliminated because of access restrictions, visual impacts, and cost.

Santa Clara Pueblo Working Group Alternatives

As the result of Santa Clara Pueblo Working Group meetings, additional alternative cross-sections, as shown in Appendix B, were evaluated through the Santa Clara Pueblo Village. The following alternatives were eliminated.

3.1.11 Santa Clara Pueblo Working Group Option 1

This alternative would provide for limited 4-lane improvements through the Pueblo village with 4 to 2 lane transitions in and out of the proposed signalized intersection at Kee Street. A frontage road system from the Convenience Store continuing north through the Pueblo village area would also be included. Besides the traffic signal, this alternative would also include pedestrian and underpass improvements. The 4-lane improvements cross-section would be similar to Alternative 10, as described in Section 3.2.4. This alternative was eliminated because it does not provide for system connectivity, has the potential to impact cultural resources, and is not favored by Santa Clara Pueblo.

3.1.12 Santa Clara Pueblo Working Group Option 2

This alternative would provide for 4-lane improvements through Santa Clara Pueblo with a frontage road system between the Convenience Store continuing north through the Pueblo village area. This alternative was eliminated because it could result in potential impacts to cultural resources and is not favored by Santa Clara Pueblo.

3.1.13 Santa Clara Pueblo Working Group Option 3

This alternative would be similar to Santa Clara Pueblo Working Group Option 2; however, the frontage road improvements would only extend from the Convenience Store to the Pueblo Courthouse. This alternative was eliminated because it could result in potential impacts to cultural resources and is not favored by Santa Clara Pueblo.

3.1.14 Santa Clara Pueblo Working Group Option 4B

This alternative would provide for a 2-lane facility through the main Pueblo village area. It would include a 16-foot raised median with protected left-turn lanes at the major intersections. This alternative was eliminated because it does not provide for bicycle and pedestrian facilities.
3.2 Alternatives Carried Forward for Further Consideration

The alternatives listed below are evaluated in this EA.

3.2.1 No-Build Alternative

The No-Build alternative assumes that improvements to address the transportation needs identified in this report will not be undertaken. In accordance with the NMDOT Location Study Procedures (NMDOT 2000a) and NEPA, the No-Build Alternative must always be considered as a baseline for comparison with other alternatives. The No-Build Alternative does not meet the purpose and need for the project. Under the No-Build Alternative, NMDOT would continue to perform routine maintenance activities such as pavement repair, resurfacing, and cleaning out drainage structures. NMDOT would continue to incur cost for maintenance activities.

3.2.2 Preferred Build Alternative

As a result of Phase B, the Preferred Build Alternative is composed of the following three alternatives according to the listed termini.

3.2.3 Alternative 5 – 4-Lanes with Separated Paved Median – (Southern Portion of the NM 30 Corridor from the BOP at the NM 502 interchange at MP 0 to North of the Santa Clara Pueblo / San Ildefonso Pueblo Boundary at MP 5.1)

Alternative 5 would provide for a four-lane facility by widening the existing roadway to both sides. The opposing lanes would be separated by a 4-foot to 6-foot flush paved median. The existing two-lane road and shoulders would be salvaged and rehabilitated (mill and overlay). The proposed typical section for this alternative consists of four 12-foot driving lanes, 8-foot outside shoulders, a 4 foot to 6 foot paved median, and surfacing tapers sloped at a minimum of 6:1. This alternative would provide for a paved median at the intersection of major roads and turnouts. The typical section for this alternative is illustrated in Figure 2.

3.2.4 Alternative 10 – 4 Lane Urban Section (North of the Santa Clara Pueblo / San Ildefonso Pueblo Boundary at MP 5.1 to Santa Clara Clinic at MP 6.6)

The proposed typical section for Alternative 10 consists of four 12-foot driving lanes, 4- to 8-foot outside shoulders, a 16-foot raised median, 2.5-foot curb and gutter at the edge of the outside shoulders, and a sidewalk on both sides. The raised median would accommodate a protected left-turn lane for the existing intersecting roads and turnouts. A determination will be made as to whether or not access would be provided at certain intersecting streets and turnouts. The typical section for this alternative is illustrated in Figure 2.

3.2.5 Santa Clara Pueblo Working Group Option 4A [Northern Portion of the NM 30 Corridor from Santa Clara Clinic (MP 6.6) to EOP in Española at the US 84/285 intersection at MP 8.5.]

This alternative would provide for 2 12 foot lanes with 6- to 8-foot shoulders through the main village area. It would include a 16-foot raised median with protected left-turn lanes at the major intersections. Curb and gutter and sidewalks would be constructed. This alternative would include a Kee Street intersection realignment with the addition of a traffic signal with pedestrian buttons. The typical section for this alternative is illustrated in Figure 2. Because of right-of-way and cultural resources concerns, the decision was made to signalize the Thamu Street intersection instead of Kee Street in consultation with
Santa Clara Pueblo. Overpass and underpass options were considered in response to Santa Clara Pueblo requesting a grade separated structure for a safe pedestrian crossing. The overpass option was eliminated because it would require significant right-of-way (ROW), a fence may have been required along NM 30 in the vicinity of the crossing to encourage pedestrians to use the overpass structure, and it would result in significant visual impacts. A concrete box culvert (CBC) may be added at Santa Clara Creek for an underpass crossing (see Figure 4). This decision will also be made during final design through further discussions with Santa Clara Pueblo.

![Figure 4 Photograph of concrete box culverts (CBC).](image)

### 3.3 Right-of-Way

Nearly the entire length of NM 30 lies within Pueblo lands, with the southern half of NM 30 on San Ildefonso Pueblo lands and the northern half within lands belonging to Santa Clara Pueblo. Property ownership adjacent to the northern part of the corridor is “checkerboard”, with a mix of Pueblo and private lands. The NMDOT maintains a right-of-way (ROW) easement for NM 30 on Pueblo lands and owns the NM 30 ROW on those portions through private lands.

The existing ROW width along the majority of the corridor is 150 feet wide. The ROW narrows to 100 feet just north of the Santa Clara Courthouse, at approximately MP 6.8. The existing ROW increases to 125 feet for a short segment through the Guachupange area, and decreases back to 100 feet just north of Guachupange, into the city of Española. The majority of the existing road is centered within the existing ROW.
The need for additional ROW will be minimized by warping of slopes and use of retaining walls. Some small areas of ROW, totaling less than 1 acre, will be required for slopes, driveways, and drainage improvements. These areas are scattered throughout the corridor. Potential ROW areas are shown in the Alignment Study Report Appendices, Plan and Profile Sheets. (Gannett Fleming West, 2010b). Exact ROW requirements, including the area for the possible CBC pedestrian crossing at Santa Clara Creek, will be determined during preliminary design. Slope and drainage work is anticipated to be done with construction maintenance easements (CMEs). The work for the CBC at Santa Clara Creek is anticipated to be done with a Temporary Work Permit (TCP) or work permit. Right-of-way easements, in amounts to be determined, will be required for the Kee Street and Thamu Street intersections.

4.0 AFFECTED ENVIRONMENT

This section evaluates effects to the existing environmental conditions in the NM 30 corridor, impacts of the Preferred Build Alternative described in Sections 3.2.3, 3.2.4 and 3.2.5. The No-Build Alternative is included as a baseline for assessing potential effects.

4.1 Landforms and Geology

The project corridor lies in the Española Basin on the Rio Grande Floodplain and Channel. Geologically, the Española Basin consists of middle to late Tertiary deposits of sand, silt, and gravel of the Ancha Formation, a member of the Santa Fe Group. Elevation of the project area is approximately 5,600 feet above mean-sea-level. The average annual precipitation is 9.8 inches with the most rainfall received from July through September. The temperatures range from an average maximum of 90.5 degrees Fahrenheit (°F) in July to an average minimum of 15.0°F in January (Western Regional Climate Center, 2012).

Potential Impacts and Mitigation Measures

Neither the Preferred Build Alternative nor the No-Build Alternative will have an impact on area landforms or geology.

4.2 Soils

Project area soils consist of various sandy clay loams, sands, and gravels and are typical of high erosion areas. (Marron and Associates, 2007). Soil mapping units that most commonly occur within the project area are Yarts sandy loam (1 to 4 percent slopes), Razito-Fruitland complex (1 to 5 percent slopes), Koshare very fine sandy loam (2 to 8 percent slopes), Fruitland sandy loam (0 to 3 percent slopes), Florita-Rock outcrop complex (15 to 45 percent slopes), and Werlog clay loam (0 to 1 percent slopes).

Potential Impacts and Mitigation Measures

The Preferred Build Alternative will permanently disturb approximately 34 acres of land adjacent to the existing roadway. Approximately 49 acres will be temporarily impacted by construction activities. Exposed soils will be vulnerable to erosion. A Storm Water Pollution Prevention Plan (SWPPP) outlining erosion control measures such as stabilization practices, storm water management measures, structural controls, and best management practices (BMPs) to mitigate soil erosion will be required. The regulatory requirement for the SWPPP is discussed further in Section 4.3.1 below. Disturbed areas will be revegetated after construction.

The No-Build Alternative will have no impact on area soils.
4.3 Water Resources

4.3.1 Surface Water

Section 404 of the Clean Water Act (33 USC 1344) and associated regulations (33 CFR Part 328.3[b]) define and protect jurisdictional waters of the United States (U.S.). Dredge and fill activities within waters of the U.S. are regulated, and the U.S. Army Corps of Engineers (COE) is granted the authority to issue permits and regulatory guidance governing these activities. Section 401 of the Clean Water Act requires water quality certifications for actions permitted under Section 404. The New Mexico Environment Department (NMED) issues water quality certifications as the agent for the Environmental Protection Agency (EPA) on non tribal lands. The 401 water quality certification for the project segments on Santa Clara Pueblo lands will be obtained from the Pueblo. The 401 water quality certification for the project segments on San Ildefonso Pueblo lands will be obtained from NMED. The EPA administers and enforces water quality protection. Section 402 of the Clean Water Act establishes the National Pollutant and Discharge Elimination System (NPDES) permit program that protects surface water quality by regulating point source discharges of pollutants to surface watercourses. For construction activities greater than one acre of surface disturbance, a NPDES permit must be obtained and a SWPPP developed.

One perennial waterway, Santa Clara Creek, crosses the NM 30 project area at MP 7.3 and is a tributary to the Rio Grande. Over 30 ephemeral drainages occur in the project area. These drainages flow from the uplands located west of NM 30 eastward under the roadway, and are tributaries to the Rio Grande. Three irrigation ditches are located within the project area. Vigiles Ditch, crosses NM 30 at MP 8.5. The Indios Acequia crosses NM 30 in three places and has one lateral ditch channel in the NM 30 right-of-way between MP 6.6 and 7.2. The Guachupange Ditch crosses NM 30 in five places between NM 30 MP 7.4 and MP 8.1 and has one lateral in the NM 30 right-of-way bar ditch. Santa Clara Creek and the ephemeral drainages are considered waters of the United States and will fall under jurisdiction of the COE. The irrigation ditches are assumed to fall under the jurisdiction of the COE; however, because of the foliar cover on aerial photographs that were reviewed it is not possible to determine which ditches are jurisdictional. The COE will make this determination. Any abandoned ditch segments are unlikely to be jurisdictional as they no longer convey water.

Potential Impacts and Mitigation Measures

The Preferred Build Alternative involves placement of fills into waters of the U.S; therefore, a Section 404 permit and a Section 401 water quality certification will be required. Preliminary engineering indicates that less than 0.5 acres of fill will be placed at any one drainage; therefore, the project will fall under the COE Nationwide Permit No. 14. A Preconstruction Notification Application will need to be submitted to the COE once specific fill quantities are developed as design continues. Because one or more acres of land will be disturbed, a NPDES permit and SWPPP will be required. The project will also require that BMPs be employed both during and after construction. Complying with the conditions of the Section 404 and 402 permits and the 401 water quality certification will mitigate fills placed by the Preferred Build Alternative into waters of the U.S. and will mitigate against potential pollution to surface waters from stormwater runoff.

The No-Build Alternative will have no impact to waterways, drainages, or the irrigation ditches.

4.3.2 Groundwater

The project area is situated within the Española Basin in the Rio Grande aquifer system. According to the New Mexico Office of the State Engineer’s database (www.ose.state.nm.us), 206 wells are located within
the ten townships, ranges, and sections encompassing the project corridor (Shaw Environmental, Inc., 2007). Depth to groundwater in these wells ranges from 3 to 90 feet below ground surface (bgs), averages approximately 34 feet bgs, and may be as shallow as 4 feet near the EOP. Groundwater is assumed to flow east toward the Rio Grande, though the gradient could be affected locally by private wells.

Potential Impacts and Mitigation Measures

The Preferred Build Alternative will not create any sub-surface conduits for contamination to reach groundwater and therefore will not have impacts to groundwater.

The No-Build Alternative will have no impact to groundwater.

4.3.3 Floodplains

Executive Order 11988, Flood Plain Management, requires federal agencies to take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains. The project area has been mapped by the Federal Emergency Management Agency on Federal Insurance Rate Map Community-Panel Numbers 350069 0075 B, 350049 1270 C, 350049 1280 C, and 350049 1290 C. NM 30 crosses or is adjacent to a number of 100-year flood areas, including the Rio Grande floodplain located east of NM 30.

Potential Effects and Mitigation Measures

The Preferred Build Alternative design of the roadway and structures will be compatible with the 100 year flood floodplain and will not change existing drainage patterns. Project design will ensure that construction is compatible with Executive Order 11988.

The No-Build Alternative will have no impact on floodplains.

4.4 Wetlands and Riparian Habitat

Wetlands are transitional areas between aquatic and terrestrial systems where the water table is usually near or at the surface of the ground or where land is covered by shallow water. Wetlands are identified by the presence of wetland vegetation, hydric soils, and hydrologic indicators. Executive Order 11990, Protection of Wetlands, requires federal agencies to take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency’s responsibilities. The COE regulates activities that disturb wetlands within waters of the U.S. (33 CFR Parts 320 to 330). Wetlands are identified by vegetation, soil, and hydrologic indicators as defined by the 1987 Corps of Engineers Wetland Delineation Manual and regional supplements (COE 1987, 2008). Wetlands are present at three locations within the project area (Marron and Associates 2007a and Marron and Associates 2010):

- Santa Clara Creek on both sides of NM 30 at MP 7.3
- Lower Canyon Road just outside of the existing right-of-way on the west side of NM 30 at MP 7.6.
- Vigiles irrigation ditch on both sides of NM 30 at MP 8.5
Potential Effects and Mitigation Measures

Preliminary engineering indicates that the Preferred Build Alternative fill slopes will permanently impact approximately 0.034 acres of wetland at Santa Clara Creek. Temporary wetland impacts from construction activities will affect approximately 0.05 acres of wetlands within the ROW. Fill slopes at MP 7.6 and 8.5 are anticipated to remain within the existing ROW; therefore, no impacts to the wetlands at MP 7.6 and 8.5 are anticipated at this time. As the design progresses, the NMDOT will work to minimize impacts to wetlands and will develop a conceptual and final wetland mitigation plan in consultation with the COE.

The No-Build Alternative will have no impact on wetlands.

4.5 Vegetation and Noxious Weeds

Vegetation within the project area varies from lower Coniferous Woodland at the southern terminus of the project, transitioning into Juniper Savanna and Plains-Mesa Grassland in the central and northern portion of the alignment. The woodland and savanna areas were dominated by one-seed juniper and grama grass mix while the grassland was dominated by a grama grass mix. Common plants observed during the biological survey were snakeweed, blue grama, side oats grama, cane cholla, rubber rabbitbrush, galleta grass, purple three awn, dropseed, and cheat grass. Arroyo Riparian vegetation occurs along the edges of most of the ephemeral waterways in the project area with larger arroyos dominated by upland shrubs of Apache plume and rabbit brush, and smaller arroyos dominated by amaranth, mullen, squirrel tail, or sweet clover. Weedy species were also prevalent in the portions of the project area that are flanked by rural residential housing and along the edge of the roadway and include Siberian elm, fingergrass, tumble windmill grass, gum weed, kochia, and narrow leaf plantain. No rare plant species were identified within the project area.

Noxious weed invasions pose a threat to native species, decrease the available forage for livestock and wildlife, and negatively impact biological diversity. Federal and state laws and guidelines pertaining to invasive and noxious weeds include Executive Order 13112, Invasive Species, February 3, 1999; 7 USC Chapter 61 Sections 2801-2814; 7 CFR Part 360 Sections 100-300; FHWA Guidance on Invasive Species, August 10, 1999; NM Noxious Weed Management Act of 1998 (76-7D-1 to 76-7D-6 NMSA 1978); and Executive Order 00-22, Governor of New Mexico, June 8, 2000. The New Mexico Department of Agriculture maintains and updates the New Mexico Noxious Weed List. Class A species have a limited distribution in NM and preventing new infestations and eradicating existing infestations is the highest priority. Class B species are limited to portions of NM, and in areas with severe infestations, management should be designed to contain the infestation and stop any further spread. Class C species are wide-spread in the state and management decisions for these species should be determined at the local level, based on feasibility of control and level of infestation. The NMDOT maintains guidelines concerning the control of noxious weeds.

Tree-of-heaven, a Class B New Mexico noxious weed species was located just south of Santa Clara Creek and appeared in scattered patches in the project area between MPs 7.0-7.25. The Class C New Mexico noxious weed species of salt cedar, Russian olive, jointed goat grass and bindweed are present within the project area. Siberian elm and bindweed were widespread within the project area. Russian olives were less common, and most present within the project limits were small saplings. Salt cedar was present near drainages and ditches in the northern portion of the project area. Jointed goat grass was found scattered from the northern terminus of the project area to just south of Santa Clara Creek.
Potential Effects and Mitigation Measures

The Preferred Build Alternative is not expected to significantly impact vegetation within the corridor. The plant species affected are common and widespread throughout the corridor. Approximately 34 acres adjacent to the existing NM 30 roadway will be permanently disturbed by the construction of the Preferred Build Alternative. Approximately 49 acres will be temporarily impacted by construction activities and will be reseeded with native plant species. The invasive Class B species, tree-of-heaven should be removed from the project area to keep it from spreading. Removal of Class C species may be handled at the discretion of the NMDOT. Implementation of BMPs during construction is recommended to reduce the spread of noxious weeds such as cleaning construction equipment.

The No-Build Alternative will have no impact on vegetation.

4.6 Wildlife

The juniper and grassland vegetation within the NM 30 corridor provides habitat for wildlife species, while developed portions in Española and Santa Clara Pueblo provides less habitat. Wildlife studies of the NM 30 project area were completed in September of 2006, April of 2007, and July of 2010. Species or their sign observed included mule deer, coyote, Botta’s pocket gopher, desert cottontail, Ord’s kangaroo rat, raccoon, rock squirrels, and lizards. Bat night roosts were present in culverts or under bridges at MPs 1.51, 2.3, 3.45, 4.8, 5.15, 6.3, 6.85, and 7.25. No day roosts or maternal bat colonies were present anywhere in the project area.

The Migratory Bird Treaty Act of 1918 [Title 16, US Code Section 703-712] protects against the ‘taking’ of migratory birds, their nests, and their eggs, except as permitted by the U.S Fish and Wildlife Service (USFWS). The Bald and Golden Eagle Protection Act of 1940 [Title 16, US Code Section 668] provides additional protection to these raptors. Birds species observed in the project area included the American crow, common raven, western meadowlark, mourning dove, rock dove, house finch, common grackle, and black billed magpie. Barn swallow nests were present at Santa Clara Creek. A cup nest was found under the bridge at MP 3.45. Two cup nests were found in Siberian elms at approximate MP 0.65 and one cup nest was found in a salt cedar tree at approximate MP 0.65. No raptors were observed and no raptor nests were present in and immediately adjacent to the project area. However, raptors including hawks, eagles, and owls could potentially nest on Black Mesa located approximately 0.6 miles east of NM 30 near MP 3.5.

Potential Impacts and Mitigation Measures

The Preferred Build Alternative will not significantly impact wildlife habitat in the area. Short-term effects include temporary habitat loss during construction and disruption of habitat use from the noise and activity associated with construction. Permanent habitat loss could affect resident populations of small mammals, reptiles, and invertebrates. Potential impacts to wildlife species will be minimal due to their ability to move to adjacent habitat. No direct losses of mammals are expected. The proposed culvert extensions will not impede their use by bats, and may increase habitat. The installation of bat boxes is recommended in several of the larger culverts to provide day roost habitat for bat populations in the project area.
The following measure will prevent effects to migratory birds as a result the Preferred Build Alternative:

- Remove trees and vegetation between September 1 and December 31, or conduct a preconstruction bird and nest survey if this activity or if construction commences between March 1 and August 31. A permit must be obtained from the USFWS for active nests that require relocation as allowed.

The No-Build Alternative will have no impact on wildlife or on migratory birds.

### 4.7 Threatened and Endangered Species

The Federal Endangered Species Act of 1973 [Title 16, US Code Section 1531] provides protection for threatened and endangered species and their critical habitat. The State of NM provides protection for state listed threatened and endangered species [19 NMAC 33.1]. Marron and Associates, Inc. performed surveys in 2006, 2007, and 2010 and prepared a biological reevaluation in August 2010 to determine potential impacts to federal and state listed species. Potential habitat for the following species occurs within or adjacent to the project area; however, none of these species were observed during the surveys: Baird’s sparrow, mountain plover, southwestern willow flycatcher, peregrine falcons, yellow-billed cuckoo, bald eagle, gray vireo, western burrowing owl, Townsend’s big-eared bat, black-footed ferret, New Mexico meadow jumping mouse, Rio Grande Sucker, Santa Fe cholla, and dwarf milkweed.

**Potential Impacts and Mitigation Measures**

The following determinations are only for federally listed endangered, threatened, or candidate species. The Preferred Build Alternative will have no effect on the southwestern willow flycatcher (federal endangered), black-footed ferret (federal endangered), and New Mexico meadow jumping mouse (federal candidate). The Preferred Build Alternative will have no effect on the yellow-billed cuckoo (federal candidate) with the implementation of the following measure: if construction commences during the yellow-billed cuckoo nesting season (May 1 to September 30), a preconstruction survey will be conducted following the required protocol. No consultation with the U.S. Fish and Wildlife Service will be required unless yellow-billed cuckoos are observed during the preconstruction survey.

The rest of this section discusses additional species protected under state law or the Bald and Golden Eagle Protection Act. The Preferred Build Alternative will have no effect on the Baird’s sparrow (state threatened) and Santa Fe cholla (state endangered). The Preferred Build Alternative will have no effect on the following protected species with implementation of the measures listed below:

- If construction commences during the golden eagle (Bald and Golden Eagle Protection Act) breeding season (February 1 to August 31), a preconstruction survey for golden eagles will be conducted.
- If construction begins during the raptor breeding season (January 1 to February 28), including peregrine falcon (state threatened), a preconstruction survey for raptors will be conducted.
- If construction commences during the gray vireo (state threatened) nesting season (May 1 to August 31), a preconstruction survey will be conducted following the required protocol.

The No-Build Alternative will have no impact to federal or state listed species.
4.8 Cultural Resources

Existing Conditions

A cultural resources survey was conducted for the project in October 2007. Five archaeological sites were recorded (LA 157689, LA 157690, LA 157691, LA 157692, and LA 157693), along with three acequia systems, a historic marker, 14 historic buildings, and 18 isolated occurrences.

LA 157689 is a historic artifact scatter dating between 1880 and 1955, located in the west ROW of NM 30 on Santa Clara Pueblo lands (Guachupangue area). LA 157689 is recommended eligible for the National Register of Historic Places (NRHP) under Criterion D, for information potential about the early twentieth century use of the Guachupangue area.

LA 157690 consists of terrace and rock alignments and historic artifacts dating between 1880 and 1920, located in the NM 30 west right-of-way on Pueblo of Santa Clara lands. LA 157690 is recommended eligible for the NRHP under Criterion D, for information potential about the late US Territorial period occupation of the Santa Clara Pueblo area.

LA 157691 is the remains of a cobble mulch garden plot dating between AD 1300 and 1600, located in the NM 30 east ROW on Santa Clara Pueblo lands. LA 157691 is recommended eligible for the NRHP under Criterion D, for information potential about prehistoric agricultural practices in the Santa Clara Pueblo area.

LA 157692 is a prehistoric artifact scatter with the high potential for subsurface features, dating between AD 1175 and 1300, located in the NM 30 east right-of-way on Santa Clara Pueblo lands. LA 157692 is recommended eligible for the NRHP under Criterion D, for information potential about the Pueblo III period occupation of the Santa Clara Pueblo area.

LA 157693 is a prehistoric artifact scatter and rock alignment of undetermined affiliation, dating between 9500BC and AD1800, located in the NM 30 west right-of-way on San Ildefonso Pueblo lands. LA 157693 is recommended eligible for the NRHP under Criterion D, for information potential about the early prehistoric occupation of the San Ildefonso Pueblo area.

The Vigiles Ditch (LA 109296/114355) crosses the project footprint at the intersection of NM 30 and US 84/285 (NM 30, at MP 8.5). The Vigiles Ditch dates from AD1539-1680 to the present, and was determined eligible to the NRHP under Criterion A for its association with early agriculture in the Española Valley (HPD Log 47214), and is also recommended eligible under Criteria C and D (engineering design and information potential).

The Indios Acequia (LA 132129) crosses the NM 30 project area in three places, including one lateral ditch channel, between MP 6.6 and MP 7.2 on NM 30. The Indios Acequia dates from AD1539-1680 to the present, and is recommended eligible to the NRHP under Criteria A and C for its association with early agriculture in the Santa Clara Pueblo area and for its engineering and design.

The Guachupangue Ditch crosses beneath NM 30 in five places between NM 30 MP 7.4 and MP 8.1, near the town of Guachupangue. The Guachupangue Ditch is recommended eligible to the NRHP under Criteria A and C for its association with early agriculture in the Santa Clara Pueblo area and for its engineering and design.
A New Mexico historic marker, with text on the history of Santa Clara Pueblo, is located in the NM 30 east ROW. Historic markers in New Mexico are protected by state statute (NM 4.10.6.L), and changes of location must be approved by the New Mexico Cultural Properties Review Committee.

Fourteen historic buildings were recorded adjacent to the project area. None of the 14 buildings are recommended eligible to state or national registers. Thirteen of the 14 buildings are adobe and will be subject to potential vibration from construction activities.

Eighteen isolated occurrences were recorded in the NM 30 project area; nearly all of these were descansos. Descansos are not officially protected by law, but tradition in New Mexico allows for removal and replacement of descansos during NMDOT projects.

**Potential Impacts and Mitigation Measures**

Because the project will be designed and constructed in phases, impacts to cultural resources within the project corridor are not specifically known. In order to complete NHPA Section 106 consultation, the NMDOT has prepared a Programmatic Agreement, which has been provided to Santa Clara and San Ildefonso pueblos, FHWA, NMDOT, Advisory Council on Historic Preservation (ACHP) and NM SHPO for review and concurrence. The Programmatic Agreement outlines a consultation process regarding potential impacts to cultural resources as individual construction projects are designed and effects to resources are clarified (see Appendix J). If necessary, mitigation plans will be developed for resources that will be adversely affected by the project. If new discoveries or buried cultural deposits are found during construction or other NMDOT project activities, work will cease immediately and the NMDOT Cultural Resources Bureau will be contacted immediately. Low vibratory equipment should be used in the portions of the project area where historic buildings are located.

The No-Build Alternative will have no effect on cultural resources.

**4.9 Air Quality and Climate**

**Existing Conditions**

The Clean Air Act of 1970, as amended, establishes National Ambient Air Quality Standards (NAAQS) to protect the public health from exposure to dangerous levels of six air pollutants (ozone, airborne particulates, carbon monoxide, sulfur dioxide, nitrogen dioxide, and lead) (EPA 2010). Santa Fe and Rio Arriba counties are in attainment for all NAAQS. Even though the project area is located in an attainment area, the NMDOT agreed to a request by Santa Clara Pueblo for an analysis of carbon monoxide. An air quality analysis was conducted in October 2010 to determine air pollutant emissions and impacts to ambient air quality resulting from the NM 30 Improvement Project (Serafina 2010a). The study was conducted in accordance with the policies and procedures described by the FHWA, NMDOT, and the New Mexico Environment Department (NMED) Air Quality Bureau (NMAQB).

The EPA and FHWA have developed models to calculate mobile source related emissions and to determine ambient impact. The mobile source model currently valid is MOBILE 6.2. For this study, MOBILE 6.2 was used to calculate emission rates of transportation related air pollutants. The modeling was conducted for the Preferred Build Alternative for the 2010 existing traffic composition and 2026 projected traffic. This study shows that the NM 30 Improvement Project will not cause exceedences and will comply with the existing NAAQS.
Potential Impacts and Mitigation Measure

The Preferred Build Alternative will not have an impact on air quality and the climate. Short term dust impacts are expected during construction, due to the operation of construction equipment combined with the slower traffic speeds that are associated with a construction zone. This will be a localized condition that will be discontinued when the project is completed.

The No-Build Alternative will not impact air quality or the climate.

4.10 Noise

Existing Conditions

A comprehensive evaluation of potential noise impacts for the NM 30 Improvement Project was completed in October 2010 (Serafina 2010b). Traffic noise impacts, as defined in the 23 CFR 772 and the NMDOT Procedures for Abatement of Highway Traffic and Construction Noise (IDD-2011-02), occur when predicted traffic noise levels resulting from a transportation project either:

- approach or exceed the FHWA noise abatement criteria (NAC) shown in Appendix D or
- are greater than 57 A-weighted decibels (dBA) at average hourly levels (Leq) and exceed existing ambient noise levels by 10 dBa (Leq). The FHWA Traffic Noise Model (TNM) was used to predict potential noise impacts associated with the Preferred Build Alternative at 49 noise receptors located along the south and northbound lanes outside the right-of-way and close to buildings, residences, community center, offices and clinic along the corridor.

Existing traffic noise impacts were determined for three periods: existing AM peak traffic, existing PM peak traffic, and existing average hourly traffic. Future noise levels for 2026 were determined for the same three periods: 2026 AM peak traffic, 2026 PM peak traffic, and 2026 average hourly traffic.

These results show that the existing noise levels approach or exceed the 67 dBA noise abatement threshold at four receptors placed close to residences identified as R-3, R-5, R-8 and R-37 in Figures A4, A5 and A7 in Appendix D of this EA.

The traffic noise level modeled at all receptors for projected 2026 traffic is 1-2 dBA higher than the existing noise levels. The projected 2026 traffic may result in noise impacts approaching or exceeding 67 dBA at 11 receptors identified in Figures A4-A7 in Appendix D as R-3, R-4, R-5, R-6, R-8, R-12, R-14, R-21, R-22, R-26 and R-27. Typically, noise level must increase at least by 3 dBA for the human ear to distinguish the difference. The NMDOT is required to consider mitigation for noise impacts that exceed the NAC.

State and federal policy requires an assessment of abatement measures to provide reasonable and feasible reductions in noise levels at the impacted locations, based on factors such as:

- a noise reduction of at least 5 dBA is achieved,
- costs are less than $40,000 per benefited receptor,
- noise abatement is limited to existing development, and
- commercial land uses (Category C, Appendix D) or isolated residences are generally excluded from noise abatement or mitigation.
Potential Impacts and Mitigation Measures

Predicted future noise levels for the Preferred Build Alternative will approach or exceed the NAC at certain locations. An evaluation of mitigation found that mitigation is not reasonable or feasible since a noise barrier wall will include many breaks to accommodate driveway entries, may cause impairment of line of sight, and will not be effective in controlling noise to the required 5 dBA reduction per NMDOT policy. Short term construction noise impacts are expected from truck and construction equipment.

Under the No-Build Alternative, noise will continue to approach or exceed the NAC.

4.11 Communities and Land Use

San Ildefonso Pueblo

The Tewa Indians of San Ildefonso settled near the site of the present-day pueblo around 1300, occupying villages known today as the ruins of Bandelier Sankewi, Otowi, and Potsuwi. Changing climate, droughts and advances in agrarian techniques allowed the people to move to more productive agricultural lands and water resources near the Rio Grande and the current day village areas. Today the people of San Ildefonso live on over 36,000 acres that extend from the Rio Grande valley to the upper plateaus of the Jemez Mountain range near Los Alamos, New Mexico. San Ildefonso Pueblo lands in the project area include isolated residential neighborhoods in the middle portion of the corridor (San Ildefonso tribal lands) and Undeveloped rangeland in the southern portion of the corridor (San Ildefonso tribal lands).

Santa Clara Pueblo

The Ancestors of the current day Santa Clara Pueblo people built cliff dwellings in the nearby Puye Cliffs and mesas, and later, forced by severe drought conditions, established the current village near the confluence of the Santa Clara Canyon Creek and the Rio Grande sometime in the 1300’s. The Santa Clara includes residential properties, neighborhoods, and sports fields. NM 30 provides access to these areas.

City of Española

Residential areas and community services are located primarily on the northern end of the corridor, located on both sides of NM 30. NM 30 is used by both pedestrians and bicyclists, either along the existing paved shoulder or as a crossing. Pedestrian connections between the residential areas and community facilities are not complete and are not continuous. Urban development with industrial, commercial, offices and a few residences are located near NM 30 in southern Española.

Community Services

Police protection within the study area is provided by the Bureau of Indian Affairs and the New Mexico State Police Department. The Pojoaque Fire Department and Española Fire Department provide fire protection and ambulance services to the study area. NM 30 is a designated bicycle route. Bus services are currently provided by Santa Clara Pueblo to transport school children from one side of NM 30 to other. Based on input from San Ildefonso and Santa Clara Pueblos, there is no equestrian activity within the area.
Potential Effects and Mitigation Measures

The Preferred Build Alternative includes shoulders throughout the NM 30 corridor for use by bicyclists. The northern portion of the corridor from Santa Clara Clinic at MP 6.6 to the EOP in Española at the intersection of NM 30 and US 84/285 includes curb and gutter and sidewalk and a new signalized crossing at Thamu Street, enhancing pedestrian safety and connectivity between the west and east sides of NM 30 within Santa Clara Pueblo. The central portion of the corridor from north of the Santa Clara Pueblo / San Ildefonso Pueblo Boundary at MP 5.1 to Santa Clara Clinic at MP 6.6 will include sidewalks through the more developed areas of the project to enhance pedestrian safety. Construction of a grade-separated pedestrian structure within Santa Clara Pueblo will be determined during the final design phase.

The No-Build Alternative will not change current conditions.

4.12 Socioeconomics and Environmental Justice

Title VI of the Civil Rights Act of 1964 and related statutes assure that individuals are not excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving federal financial assistance on the basis of Race, Color, National Origin, Age, Sex, and Disability. Executive Order 12898 on Environmental Justice directs that federal programs, policies, and activities not have a disproportionately high and adverse human health and environmental effect on minority and low-income populations.

Census data compiled by the US Census Bureau, were evaluated to assess the demographic makeup of the study area (Appendix E). The proposed improvements are located in an area with high percentages of minorities as compared to statewide percentages. There are also low-income groups within the study area. These groups are located throughout the corridor and project impacts will not be distributed differentially.

Both San Ildefonso Pueblo and Santa Clara Pueblo have signed resolutions in support and agreement for improvements to NM 30 (Appendix G).

The resolution signed by Santa Clara Pueblo includes the following statements:

• Santa Clara Pueblo staff have worked with NMDOT staff to arrive at an agreed upon roadway design concept from the Santa Clara Pueblo / San Ildefonso Pueblo boundary and through the Santa Clara Pueblo Village area that is acceptable to all parties, and Santa Clara Pueblo believes that the NMDOT project will greatly benefit the Pueblo by increasing traffic operations and safety along the NM 30 corridor, including the Village area once the project is completed;
• The Tribal Council considers this project to be of significant safety improvement of economic value to the Pueblo; and
• The Tribal Council hereby supports the proposed improvements to NM 30 through Santa Clara Pueblo lands. The Pueblo supports Roadway Concept Alternative 10 (4-lanes with raised median) between the Santa Clara Pueblo / San Ildefonso Pueblo boundary to the Santa Clara Pueblo Clinic) and supports Roadway Concept Alternate 4A (2-lanes with raised median) from the Santa Clara Clinic through the Santa Clara Village area.

The resolution signed by San Ildefonso Pueblo includes the following statements:
The Pueblo is in support of the State Transportation Improvement Plan funding of NM 30 design and construction alternatives as presented.

The Tribal Council hereby supports the New Mexico Department of Transportation District 5 efforts and presentation of NM 30.

Potential Effects and Mitigation Measures

The Preferred Build Alternative has been developed with input from the public and has received support from both Santa Clara and San Ildefonso Pueblos. The proposed improvements throughout the NM 30 corridor will not disproportionately adversely impact minority or low-income population groups and is consistent with FHWA’s policy on environmental justice. The project will benefit area communities and minority and low-income groups by providing safer access to the highway, improving LOS and safety, and improving interaction between through traffic and local traffic.

The No-Build Alternative will not disproportionately adversely impact minority or low-income populations.

4.13 Section 4(f)

Section 4(f) of the U.S. Department of Transportation Act of 1966 states that the FHWA “may approve a transportation program or project requiring publicly-owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state or local significance, or land of a historic site of national, state, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if there is no prudent or feasible alternative to using that land and the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use” [49 United States Code (USC) 303].

There are no parks, recreation areas, or wildlife and waterfowl refuges within or in the immediate area surrounding the project area. A baseball field is located on Santa Clara lands west of NM 30 but will not be impacted by the Preferred Build Alternative. As discussed in Section 4.8, Cultural Resources, there are five archaeological sites and three acequias in the APE eligible to the NRHP.

Potential Effects and Mitigation Measures

Under the Preferred Build Alternative, the archaeological sites and two acequias will be avoided or impacts mitigated. There will be no constructive use of these cultural resource sites. No 4(f) evaluations will be needed.

The No-Build Alternative will have no impact to 4(f) resources.

4.14 Farmland

Prime farmland is land that has the best combination of physical and chemical characteristics to produce food, feed, fiber, forage, and other agricultural crops. Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops. Designation of prime or unique farmland is made by the U.S. Department of Agriculture. No prime or unique farmlands, or farmlands of statewide importance are located within or adjoining the project area.
Potential Impacts and Mitigation Measures

Neither the Preferred Build Alternative nor the No-Build Alternative will have an impact on prime or unique farmland or other farmland of statewide or local importance.

4.15 Visual Resources

The amount of development increases as one travels north along the NM 30 corridor. The project area occurs along the piedmont and bajada of the Jemez Mountains. The southern end of the project area is dominated by eroded ridges and hills occupied by open coniferous woodland. The central and northern portions of the project area are flatter and are occupied by rural residential housing. Although there are some distinct physiographic features in the general area such as Black Mesa located just to the east of NM 30, there are no pronounced physiographic features within the project limits. Long range views include the Jemez Mountains to the west. The only area with existing street lighting is the Santa Clara Canyon Road intersection at MP 4.8.

Potential Impacts and Proposed Mitigation Measures

Since NM 30 is already a paved highway, the capacity increase under the Preferred Build Alternative will be consistent with the existing visual character of this corridor. New street lighting will be installed at the Thamu Street Intersection as part of the signalization. Additional areas through Santa Clara Pueblo will be considered for lighting in the design phase. All lighting will be compliant with the New Mexico Night Sky Protection Act.

The No-Build Alternative will have no impact to visual resources.

4.16 Utilities

Utilities in the project area or adjacent to the project area include water, telephone, electric, gas, cable, and sewer.

Potential Effects and Mitigation Measures

Additional investigation (utility designating) will be conducted throughout design consistent with existing practices. Any required utility relocations will be coordinated with utility owners. Possible short term utility outages may occur during construction due to required adjustments and/or relocations.

The No-Build Alternative will have no impact to utilities.

4.17 Hazardous Materials

An Initial Site Assessment prepared for the NMDOT in 2007 (Shaw Environmental Inc., 2007) revealed eight sites with evidence of recognized environmental conditions (see map in Appendix H). At this time it does not appear that any of these properties will be acquired through easement or purchase or that excavation work will be completed adjacent to any of these sites.
Potential Effects and Mitigation Measures

Further investigations shall be performed if any of the eight properties identified in the ISA with recognized environmental conditions are acquired through easement or purchase or if excavation work will be completed adjacent to any of these sites.

The No-Build Alternative will have no impacts to the eight properties identified in the ISA.

4.18 Construction Activities

Construction activity impacts from the Preferred Build Alternative are discussed in pertinent areas throughout Section 4 in this EA. The No-Build Alternative will have no construction impacts.

4.19 Indirect Impacts

Indirect impacts are the effects of an action that occur either later in time or are removed in distance from a particular action being evaluated, but that are still reasonably foreseeable. Indirect effects “may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.” (40 CFR 1508.8). The Preferred Build Alternative is not expected to result in significant changes to regional land use, population density, growth rate, or the natural environment.

The Preferred Build Alternative will provide additional capacity, consolidate access within Santa Clara Pueblo, and reduce regional travel times. Residences located in areas with raised medians may no longer have left-in/left-out access, but will still be provided with right-in/right-out access. The project will provide improved mobility and traffic flow for residents and commuters in the study area. The project will provide improved safety for the users of NM 30 including commuters, residents, pedestrians, and school children.

Under the No-Build Alternative, existing conditions will continue with mobility impaired as traffic increases.

4.20 Cumulative Impacts

Cumulative impacts are “the impact on the environment which results from incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” (40 CFR 1508.7).

Past actions along this corridor included the construction of NM 30 in the 1920s. NM 30 was widened in the 1970s to add shoulders and tapers. The roadway was re-striped at three major intersection locations within the Santa Clara pueblo lands in 2006 to provide for a protected left-turn lane, with a through lane that utilizes the existing shoulder area.

Loss of habitat and vegetation will occur from areas converted by the Preferred Build Alternative to roadway use. The affected habitats and vegetation are part of much larger ecosystems and the conversion
of this land to a transportation use will not adversely impact the broader distribution of wildlife or plant populations.

San Ildefonso Pueblo and Santa Clara Pueblo are implementing development plans for their Pueblos. The development is already planned and not a result of the Preferred Build Alternative. The Preferred Build Alternative will provide safer access to the highway.

The construction of the NM 30 Improvement Project will have beneficial effects by improving mobility and safety and enhancing regional and local travel.

5.0 ENVIRONMENTAL COMMITMENTS

- Because 1 acre or more of land will be disturbed, a NPDES permit shall be required, including a SWPPP.
- Best Management Practices shall be installed and maintained both during and after construction to prevent, to the extent practicable, pollutants in storm water runoff from entering waters of the U.S.
- Section 404 and 401 permitting, pursuant to the CWA will be required. The appropriate permitting from the COE, NMED, Pueblos and EPA shall be obtained prior to project authorization. Preliminary engineering indicates that less than 0.5 acres of fill will be placed at any one drainage; therefore, the project will fall under the COE Nationwide Permit No. 14. A Preconstruction Notification Application shall be submitted to the COE once specific fill quantities are developed as design continues.
- Impacts to wetlands shall be minimized during final design and a conceptual and final wetland mitigation plan shall be developed in consultation with the COE for impacts to wetlands.
- Project planning shall ensure that construction is compatible with the floodplains management Executive Order 11988.
- To avoid the spread and/or introduction of noxious weeds to the project area, the contractor shall implement best management practices including thoroughly washing all construction equipment prior to use at the project area and prior to leaving the project area.
- The invasive Class B Species, tree-of-heaven, shall be removed from the project corridor. Removal of Class C species (salt cedar, Russian olive, jointed goat grass, and bindweed) may be handled at the discretion of the NMDOT and in accordance with local requirements.
- The installation of bat boxes is recommended in several of the larger culverts in the area, as this will provide day roost habitat for bat populations in the project area. Final design plans shall include bat boxes at appropriate locations.
- Upon completion of construction, disturbed areas shall be seeded with native plant species.
- Trees and vegetation shall be removed between September 1 and December 31, or a preconstruction bird and nest survey shall be performed if this activity or if construction commences between March 1 and August 31. If nesting birds are found within or adjacent to the project area, the NMDOT Environmental Bureau shall be consulted to determine any limitations that will be placed on construction. A permit shall be obtained from the USFWS for nests that require relocation as allowed.
- If construction commences during the golden eagle (Bald and Golden Eagle Protection Act) breeding season (February 1 to August 31), a preconstruction survey for golden eagles will be conducted. If eagles are found nesting within 1 mile of the project area, the NMDOT Environmental Bureau shall be consulted to determine any limitations that will be placed on construction.
- If construction commences during the raptor breeding season (January 1 to February 28), including peregrine falcon (state threatened), a preconstruction survey for raptors will be conducted. If raptors
are found nesting within 1 mile of the project area, the NMDOT Environmental Bureau shall be consulted to determine any limitations that will be placed on construction.

- If construction commences during the yellow-billed cuckoo (federal candidate) nesting season (May 1 to September 30), a preconstruction survey will be conducted following the required protocol. Since this a federal candidate species, consultation with the U.S. Fish and Wildlife Service will be required if yellow-billed cuckoo are observed during the preconstruction survey.
- Measures shall be implemented to ensure that hazardous materials such as fuel are not stored within or adjacent to arroyos or creeks, or that equipment working in arroyos or creeks be free of fuel or hydraulic leaks. Additionally vehicles shall be refueled in designated areas that are at least 100 feet from waterways.
- In compliance with Section 106 of NHPA, a programmatic agreement was developed in consultation with SHPO, the ACHP, Santa Clara Pueblo, San Ildefonso Pueblo, and other land managing agencies in order to make decisions regarding mitigation efforts as each phase of construction is developed.
- The descansos in the project area shall be avoided, or appropriately relocated.
- If buried cultural deposits are discovered during project activities, work shall cease immediately and the FHWA, NMDOT Cultural Resources Bureau, and the New Mexico State Historic Preservation Officer (SHPO) shall be notified.
- Further investigations shall be performed if any of the eight properties identified in the ISA with recognized environmental conditions are acquired through easement or purchase or if excavation work will be completed adjacent to any of these sites.
- New street lighting shall be compliant with the New Mexico Night Sky Protection Act.

6.0 PUBLIC INVOLVEMENT AND AGENCY COORDINATION

The action proposed in this EA was developed and coordinated with input from federal, state, tribal and local agencies, and the general public. Stakeholders for this project include, but are not limited to, federal and state resource agencies having jurisdiction over the resources within the project area; San Ildefonso Pueblo; Santa Clara Pueblo; local and county government agencies; residents; businesses; and other landowners that use and are served by the roadway. Issues of potential importance to these groups was given full consideration in the development of project alternatives, the identification and evaluation of critical issues, and the development of measures to mitigate substantive and adverse impacts.

The methods used to coordinate with stakeholder agencies and to obtain input from the public included written and e-mail correspondence, stakeholder meetings, working group meetings, presentations at tribal council meetings, and public involvement meetings. Agency coordination letters are included in Appendix F. Agency response letters are included in Appendix G. Information on the stakeholder and public outreach in included in Appendix I.

6.1 Public Hearing

Following the circulation of the EA, a public hearing will be held. The purpose of the hearing will be to provide a formal opportunity for the public to respond to the contents of the EA. Written comments will be solicited as part of the project record, and a court reporter will be made available for recording verbal comments.

Following the public hearing and public comment period, an input synopsis will be prepared. The input synopsis will include a summary of the project need and alternatives, a summary of the public hearing and public information activities, copies of handouts, written comments, responses to comments, the EA
circulation list, the public involvement summary and transcript, a summary of project commitments, recommendations, and any unresolved issues.

7.0 CONCLUSIONS

The proposed project is not expected to have significant adverse social, economic, or environmental impacts that will warrant an environmental impact statement. Unless significant impacts are identified as a result of public review or at the public hearing, a Finding of No Significant Impact (FONSI) will be prepared for the proposed action in accordance with FHWA and NMDOT procedures. The FONSI will address any concerns raised during the circulation of the EA, public hearing comment period, or coordination of the project with the appropriate agencies. The FONSI will be used as a basis for federal-aid authorization, final design, ROW acquisition, and construction of Phase I (Thamu Street intersection); Phase II, NM 30 through Santa Clara Pueblo (MP 4.9 to MP 8.5); and Phase III, NM 30 through San Idefonso Pueblo to NM 502 (MP 0.0 to MP 4.9 including the Battleship intersection at MP 1.9). This project is included in the NMDOT Fiscal Year 2012-2015, Amendment 6, Statewide Transportation Improvement Program and is programmed as follows: $750,000 in 2013 for Final Design, $2,141,269 in 2013 for Construction of Phase I, $8,110,683 in 2015 for Construction of Phase II, and $5,500,000.00 for Construction of Phase III. It is anticipated that the District will place additional funding for Final Design and Phase III Construction in order to complete the entire corridor.

8.0 REFERENCES

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2000b Noxious Weed Management Guidelines
2000c Tribal/Local Government Agency Handbook
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APPENDIX A
TRAFFIC DATA
<table>
<thead>
<tr>
<th>LOS</th>
<th>Travel Time</th>
<th>Traffic Flow</th>
<th>Delays</th>
<th>Travel Conditions</th>
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<tbody>
<tr>
<td>A</td>
<td>Efficient</td>
<td>Unrestricted</td>
<td>None</td>
<td>Travels Freely</td>
</tr>
<tr>
<td>B</td>
<td>Efficient</td>
<td>High Degree of freedom to select speed and operating conditions</td>
<td>Slight influence by other road users</td>
<td>Travels Freely</td>
</tr>
<tr>
<td>C</td>
<td>Efficiency Reduced</td>
<td>More Restricted – interaction with other road users</td>
<td>Delays are well within reasonable limits</td>
<td>Steady Travel</td>
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<tr>
<td>D</td>
<td>Continues to Increase</td>
<td>Can travel at designated speeds, but freedom to maneuver is restricted</td>
<td>Increased delays, but still within reasonable limits</td>
<td>Unsteady Travel</td>
</tr>
<tr>
<td>E</td>
<td>Substantially affected</td>
<td>Capacity of the facility is fully utilized</td>
<td>Have reached or may exceed reasonable limits</td>
<td>Unsteady Travel</td>
</tr>
<tr>
<td>F</td>
<td>Very inefficient</td>
<td>Forced - amount of traffic approaching a point that exceeds the amount that can be served</td>
<td>Beyond reasonable limits</td>
<td>Travel in unsuccessful manner with many interruptions</td>
</tr>
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</table>