Phase I-A/B Report:
Initial and Detailed Evaluation of Alternatives

CN 1102060

I-25/US 380 (San Antonio)
Interchange Study

Socorro County, NM

July 10, 2023

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I-25/US 380 (San Antonio) Interchange Study

Prepared for:

NMDOT

Prepared by:

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July 10, 2023

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Abbreviations and Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ADT	average daily traffic
AM	morning
CBC	concrete box culvert
CMP	corrugated metal pipe
ERT	Environmental Review Tool
ft.	foot, feet
HCS	Highway Capacity Software
I-25	Interstate 25
in.	inch
IPaC	Information for Planning and Consultation
LOS	level of service
mph	miles per hour
NM	New Mexico
NMCRIS	New Mexico Cultural Resource Information System
NMDOT	New Mexico Department of Transportation
NRHP	National Register of Historic Places
PM	afternoon
ROW	right-of-way
US 380	U.S. Route 380

Executive Summary

Project Background and Limits

This Phase I-A/B Detailed Evaluation of Alternatives is prepared for the I-25/US 380 interchange, which is located near the community of San Antonio, New Mexico in Socorro County between milepost 139 to 140 on I-25 and milepost 0.0 to 0.5 on US 380. US 380 is classified as a Minor Arterial and not part of the National Highway System. I-25 is classified as an Interstate and part of the National Highway System.

The New Mexico Department of Transportation (NMDOT) with federal funds is evaluating potential improvements to the interchange. NMDOT desires to improve safety in the study area by upgrading the roadway, traffic, drainage, and bridge elements to meet current design standards.

Purpose and Need

The purpose and need statement is essential in establishing a basis for the development of alternatives. The purpose and need assists with the identification and eventual selection of a preferred alternative. The statement demonstrates why the proposed action, with its cost and associated environmental impacts, is being pursued. The purpose and need also demonstrates the problems that will persist if project improvements are not implemented.

The existing deficiencies and issues within the study area and are described in detail throughout this report. Through public input and the study team evaluation, the following deficiencies and issues have been identified in the study area:

- Northbound and southbound on ramp geometry is deficient, with inadequate auxiliary lane length for acceleration and merging.
- I-25 horizontal geometry is deficient, with inadequate superelevation for the design speed.
- Northbound off ramp geometry at the connection to eastbound US 380 is deficient, with inadequate merge geometry.
- Walnut Creek channel width at the I-25 crossing is a restriction point that accelerates flow speeds, causing erosion and scour.
- Bridge structures have reached the end of their design life.

The purpose of the I-25/US 380 (San Antonio) Interchange Study is to correct geometric roadway deficiencies, enhance drainage structures and protections to diminish scour and erosion, and to provide a safe and efficient interchange that meets user expectations.

Alternatives Evaluated

The study team has developed three build alternatives along with the “No-Build” alternative. The alternatives were analyzed and evaluated as part of this Study.

- Alternative No. 1 – Enhance the Existing Interchange Geometry: The interchange layout remains the same and is enhanced to correct deficiencies, expand entrance ramp geometry, replace the I-25/US 380 and I-25/Walnut Creek Bridges and adds drainage features to decrease erosion and scour.
- Alternative No. 2 – Tight Diamond Interchange on Existing US 380 Alignment: The interchange layout is modified to a tight diamond configuration with the US 380 alignment being maintained on the current alignment. The improvements correct the I-25 horizontal geometry, incorporate exit and entrance ramps that meet standards, replace the I-25/US 380 and I-25/Walnut Creek Bridges and add drainage features to decrease erosion and scour.
- Alternative No. 3 – Tight Diamond Interchange with Adjustment to US 380 Alignment: The interchange layout is modified to a tight diamond configuration with an adjustment of the US 380 alignment to the south to provide additional distance between the US 380 and Walnut Creek crossings. The improvements correct the I-25 horizontal geometry, incorporate exit and entrance ramps that meet standards, replace the I-25/US 380 and I-25/Walnut Creek Bridges and add drainage features to decrease erosion and scour.

Alternative Evaluation and Ranking

Each alternative has been developed and evaluated against the Purpose and Need, Cost, and engineering and environmental criteria. The evaluation process will assign a factor value to the different criteria for each alternative. The factors are as follows:

++ = very positive effects
+ = positive effects
0 = negligible or no effects
- = negative effects
-- = very negative effects

Alternative No. 1 was not recommended on account of two main issues. First, the construction would require ramp closures and traffic detours along alternative routes—adding to travel times and causing disruptions to the public. Second, the existing traffic interchange (trumpet interchange) type would not meet the current driver expectations. A tight diamond interchange is a more modern configuration that meets driver expectations.

Alternatives No. 2 and No. 3 are similar in their layouts and advantages. Both alternatives are tight diamond interchanges, which are familiar to drivers. Alternative No. 2 has the advantage that changes to US 380 would be minimized and the estimated construction cost would be less than Alternative No. 3. However, Alternative No. 2 would involve short-term closures of US 380 (southbound interchange movements) during bridge demolition, girder placement, and deck pours. Traffic movements from/to US 380 would be detoured to alternative routes, which would cause disruptions to the traveling public.

Preferred Alternative

Based on the evaluation discussed in this report, Alternative No. 3 is recommended to be advanced for further development. This alternative would upgrade the interchange configuration to a more modern layout (diamond interchange) that meets user expectations, reduces temporary closures of US 380 during construction, and fulfills the purpose and need for the study by improving safety. The engineer's opinion of possible construction cost for this alternative is $75,400,000. Right-of-way needs are expected for the improvements.

Agency Coordination and Public Involvement

The development of the study has involved participation of a Study Team comprised of the the New Mexico Department of Transportation (NMDOT), HDR and the Federal Highway Administration (FHWA).

The policy document followed by the NMDOT to comply with federal transportation planning and environmental impact assessment rules and regulations, included NEPA and the Location Study Procedures (NMDOT 2015). A combined Public Involvement and Context Sensitive Solutions Plan was developed for this study in order to layout the approach to engage the public involvement in the study.

This effort involved two (2) public information meetings, coordination with community stakeholders and agencies. Public meetings were informational and held virtually.

- Public Meeting No. 1 (November 9, 2022): Presented the project needs and deficiencies and requested input on other needs in the study area. Presented proposed alternatives.
- Public Meeting No. 2 (May 18, 2023): Reviewed project needs, deficiencies and presented alternatives. Presented proposed evaluation of alternatives and requested input on the evaluation.

Environmental Investigation and Recommendations

The environmental investigations and surveys of the study area have not been conducted yet. They will be completed as part of Phase I-C of the project development. The environmental document is expected to be a categorical exclusion level of action.

The study area is surrounded by Bureau of Land Management property and is primarily undisturbed land. There are no known hazardous materials within the study area. There are no known endangered species in the study area.

Next Phase

With the conclusion and acceptance of the findings in this report, the development of this project will be continued through the Environmental Phase I-C, Phase I-D preliminary and Phase II Final design.

1. Introduction

The New Mexico Department of Transportation (NMDOT) is evaluating potential improvements to the Interstate 25 (I-25) and U.S. Highway 380 (US 380) interchange. The interchange is located in Socorro County adjacent to the community of San Antonio, New Mexico. See Figure 1 for the location of the study area. The study has been assigned NMDOT Control Number (CN) 1102060. The study area limits are milepost (MP) 139 to 140 on I-25 and MP 0.0 to 0.5 on US 380. Included in the study area is the crossing of the Walnut Creek waterway.

I-25 is a major north-to-south Interstate highway in the western U.S. The route stretches from Interstate 10 at Las Cruces, New Mexico, to Interstate 90 in Buffalo, Wyoming. It passes through New Mexico, Colorado, and Wyoming. In the study area, I-25 is a rural, divided four-lane roadway. It consists of two 12-foot (ft.) lanes in the northbound and southbound directions with 10-ft. outside shoulders and 4-ft. inside shoulders. The posted speed limit is 75 miles per hour (mph).

US 380 is an east-to-west U.S. highway. It begins at the I-25 interchange and ends in Greenville, Texas, at an intersection with Interstate 30.

The existing I-25/San Antonio interchange configuration consists of a northbound exit ramp that connects directly to US 380 and a northbound entrance ramp from US 380 that connects directly to I-25. The southbound entrance ramp from US 380 is a cloverleaf shape that connects directly to I-25, and the southbound exit ramp connects directly to US 380 (Figure 2).

The study involved a detailed analysis of all identified roadway constraints and an operational safety analysis to determine the recommended improvements in the study area. The following areas were assessed in the Phase I-A/B study:

- existing roadway typical sections, including pavement conditions
- realignment and/or reconfiguration of existing interchange to include the main line and entrance and exit ramps.
- acceleration/deceleration lanes for all interchange ramps
- rehabilitation or replacement of existing Bridge Nos. 3168, 6454, 6455, 6456, and 6457
- drainage at existing culverts and bridge structures
- proposed culverts and bridges for interchange improvements
- maintenance of traffic during construction

The overall purpose of the study was to evaluate the condition of the roadway, bridge, traffic, and drainage features in the study area and to assess the features against current standards to determine whether improvements are needed to enhance safety and maintain the functionality of the system.

Figure 1. Study Location

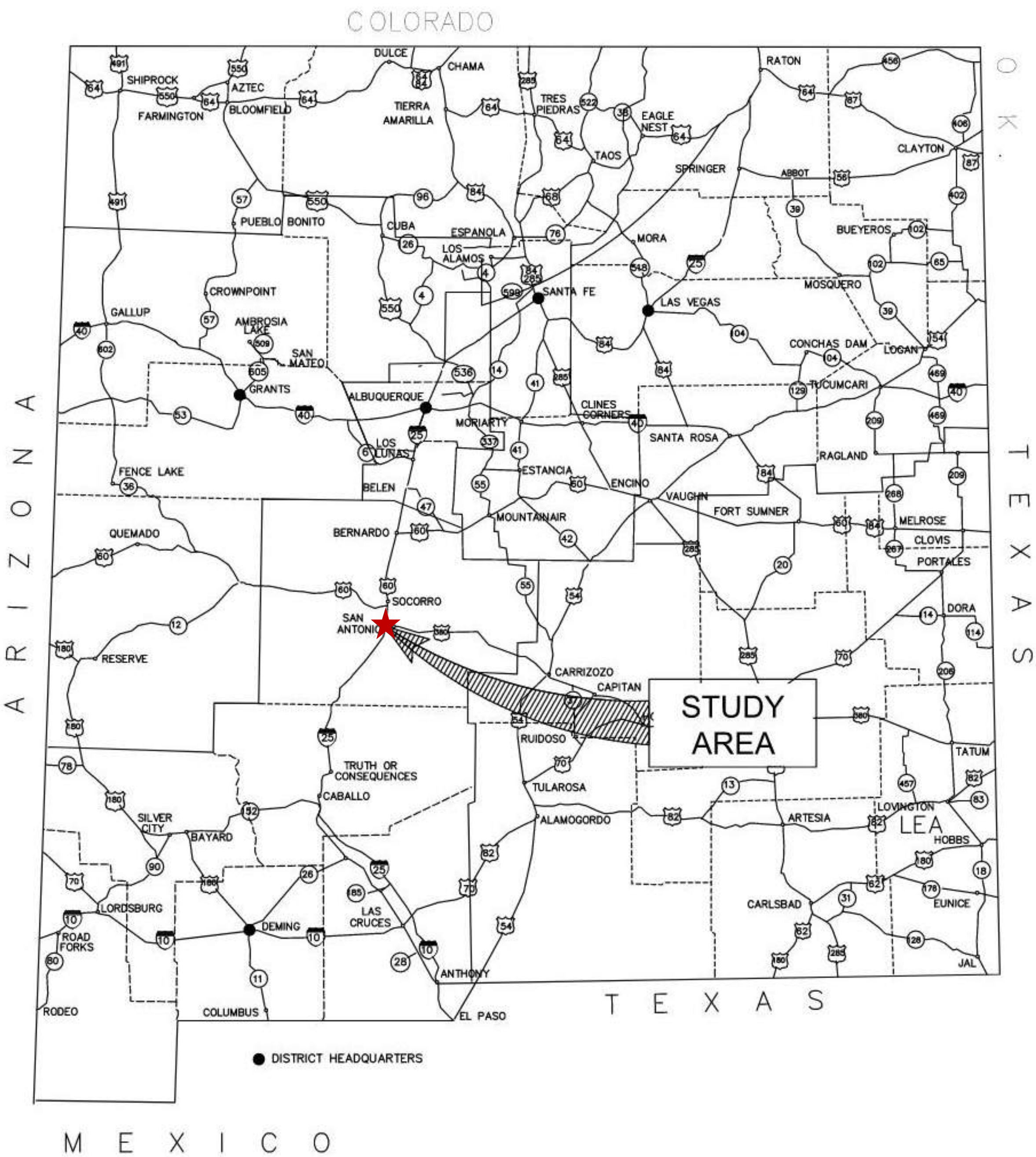
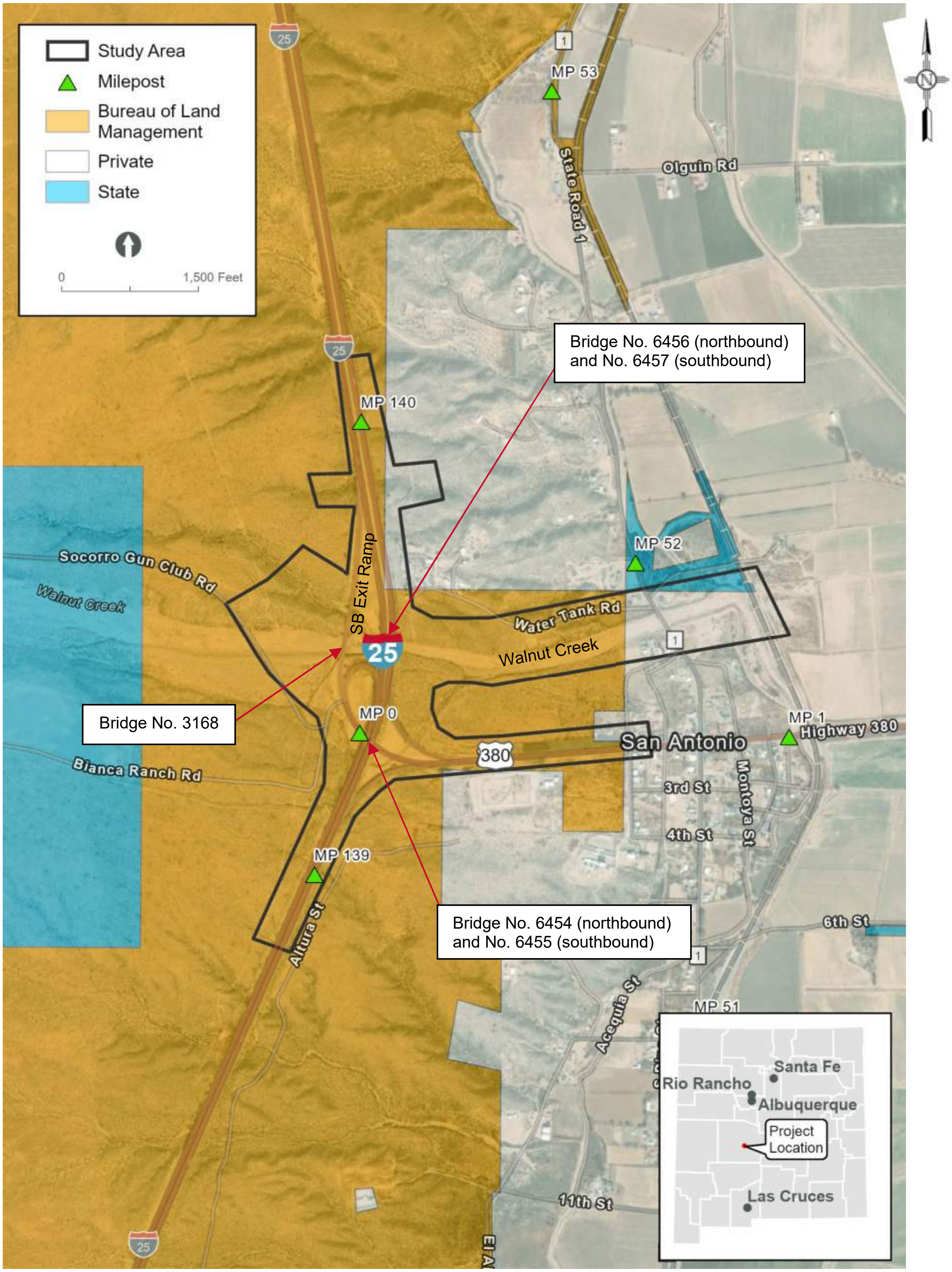


Figure 2. Study Vicinity



2. Agency Coordination

2.1 First Agency Meeting

A virtual agency meeting was held via Webex on November 9, 2022. The meeting invitation was sent to 36 organizations and invitees, including representatives from NMDOT, New Mexico Institute of Mining and Technology, Middle Rio Grande Conservancy District, NM State Police, NM State Land Office, NM Department of Game and Fish, NM Historic Preservation Division, San Antonio Fire District, Socorro Consolidated Schools, Socorro County, U.S. Army Corps of Engineers, U.S. Army White Sands Missile Range, BNSF, and South-Central Council of Governments.

The design team presented the study area, purpose of the meeting, purpose of the study, existing conditions, issues in the area, proposed alternatives, and future schedule.

The attendees list consisted of the fourteen members of the study team and two members of the invited agencies, Jenny Castro, Socorro School District, and Vance Wolf, U.S. Fish and Wildlife Service. The attendees had no questions for the presenters and study team.

2.2 First Public Meeting

A virtual public meeting was held via Webex on November 16, 2022. Thirty-five participants attended the virtual meeting. The meeting focused on purpose of the study, existing conditions, issues in the area, proposed alternatives, and future schedule. Comments and questions were accepted live, following the presentation. All questions and comments provided at the virtual meeting and received by staff later are included in the meeting summary in Appendix A.

Public comments were accepted from November 3 – December 15 in the following ways:

- Live at the virtual public meeting
- Study webpage: www.dot.nm.gov/i25-san-antonio-study/
- Email: I25SanAntonio@hdrinc.com
- Phone: 602.245.6330
- Mail: I-25 San Antonio Study C/O HDR Engineering
  20 E. Thomas Road, Ste 2500, Phoenix, AZ 85012

In total, 40 comments were received throughout the study period which focused on safety, construction timelines, drainage, potential road closures, flooding, and business impacts. Of the 39 comments received, 39 were study-specific and one was unrelated to the current study.

Twelve (12) questions/comments were submitted by attendees during the virtual public meeting and were responded to by the study team on November 16, 2022 during the meeting. These comments focused on the dangers of the current on-ramps,proposed safety improvements and flood protection.

Twenty-eight (28) questions/comments were submitted by the public by email (23) and voicemail (5). Twenty (20) comments were submitted before the public meeting and eight (8) after the meeting.

2.3 Second Agency Meeting

A virtual agency meeting was held via Zoom on May 11, 2023. The meeting invitation was sent to 36 organizations and invitees, including representatives from NMDOT, New Mexico Institute of Mining and Technology, Middle Rio Grande Conservancy District, NM State Police, NM State Land Office, NM Department of Game and Fish, NM Historic Preservation Division, San Antonio Fire District, Socorro Consolidated Schools, Socorro County, U.S. Army Corps of Engineers, U.S. Army White Sands Missile Range, BNSF, and South-Central Council of Governments.

The design team presented the study area, purpose of the meeting, purpose of the study, existing conditions, issues in the area, proposed alternatives, evaluation of alternatives, and future schedule.

The attendees list consisted of the fifteen members of the study team and seven members of the invited agencies including Virginia Alguire, BLM; Carol Harris, BLM; Rafer Nichols, BNSF; Rob Estes, NM Historic Preservation; Spencer Sanders; M. Padilla, and Ernesto. Virginia Alguire asked if the presentation could be shared within their organization and if there was a draft NEPA document. The recorded presentation was provided to Virginia after the meeting. A NEPA document has not been prepared yet for the project. Virginia also notified the team that BLM is working with Socorro County in the development of drainage improvements that affect the southeast quadrant of the study area. The team met with BLM and County following the agency meeting to coordinate on efforts.

2.4 Second Public Meeting

A virtual public meeting was held via Zoom on May 18, 2023. 19 participants attended the virtual meeting. The meeting focused on purpose of the study, existing conditions, issues in the area, proposed alternatives, evaluation of alternatives and future schedule. Comments and questions were accepted live, following the presentation. All questions and comments provided at the virtual meeting and received by staff later are included in the meeting summary in Appendix A.

Public comments were accepted from May 4 – June 17, 2023, in the following ways:

- Live at the virtual public meeting
- Study webpage: www.dot.nm.gov/i25-san-antonio-study/
- Email: I25SanAntonio@hdrinc.com
- Phone: 602.245.6330
- Mail: I-25 San Antonio Study C/O HDR Engineering

20 E. Thomas Road, Ste 2500, Phoenix, AZ 85012

In total, 28 comments were received and focused on safety, drainage, flooding and potential road closures.

4 questions/comments were submitted by attendees during the virtual public meeting and were responded to by the study team on May 18, 2023, during the meeting. These comments focused on delivery of the project and construction specific questions.

24 questions/comments were submitted by the public by email (23) and voicemail (1). 14 comments were submitted before the public meeting and 10 after the meeting.

3. Existing Transportation System Description

I-25 is a four-lane divided highway that runs north-to-south across New Mexico. US 380 is a two-lane rural highway that runs east-to-west with a terminus at the intersection with I-25. The I-25 and US 380 interchange is near the town of San Antonio, which is approximately 87 miles south of Albuquerque. See Figures 1 and 2 for the study location and study vicinity, respectively.

The following sections describe the existing system by discipline. Information on the existing system was obtained from record drawings, survey, field visits, and existing reports.

3.1 Roadway

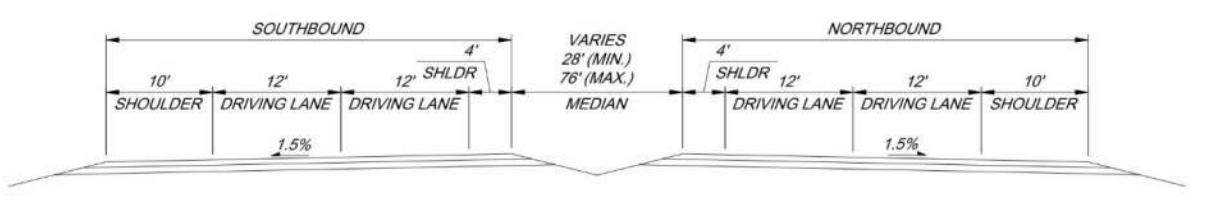
The existing typical sections for the I-25/US 380 interchange was obtained from As-Built Construction Drawings I-025-2(7)119. See figures below for the existing roadway typical sections for I-25, US 380 and the associated ramps. The typical sections depict the following roadway characteristics:

3.1.1 Interstate 25

I-25 has the following characteristics, illustrated in Figure 3:

- two 12-ft. general purpose driving lanes (northbound and southbound)
- 4-ft. inside paved shoulder (northbound and southbound)
- 10-ft. outside paved shoulder (northbound and southbound)
- unpaved median with variable width (28 to 76 ft.)
- guardrail along the approach and departure side of the bridges

Figure 3. I-25 Existing Typical Section

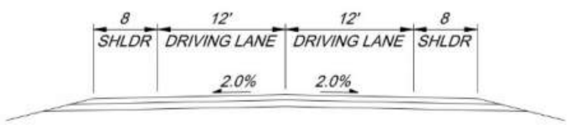


3.1.2 U.S. Route 380

US 380 has the following characteristics, illustrated in Figure 4:

- two 12-ft. general purpose driving lanes
- 8-ft. paved shoulders

Figure 4. US 380 Existing Typical Section

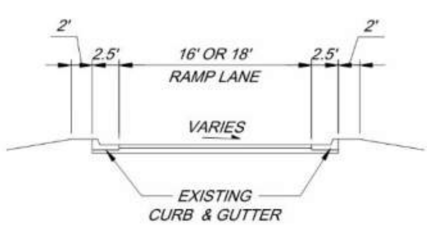


3.1.3 Ramps (Southbound On Ramp and Northbound On and Off Ramps)

The southbound on ramp and northbound on and off ramps have the following characteristics, illustrated in Figure 5:

- 16 or 18-ft. driving lane
- Curb and gutter (2.5-ft. gutter pan)
- 20 or 22-ft. roadway width

Figure 5. Ramp Existing Typical Section

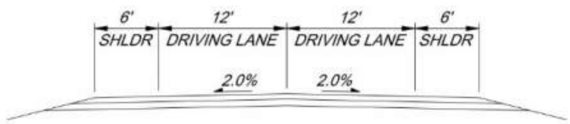


3.1.4 Ramp (Southbound Off Ramp Section 1, from Northbound Exit Ramp Gore to Southbound Entrance Gore)

The southbound off ramp section 1, from the northbound exit ramp gore to the southbound entrance gore, has the following characteristics, illustrated in Figure 6:

- two 12-ft. driving lanes
- 6-ft. paved shoulders
- guardrail along the approach and departure sides of bridge piers

Figure 6. Southbound Off Ramp (Section 1) Existing Typical Section

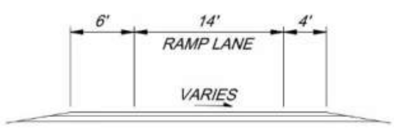


3.1.5 Ramp (Southbound Off Ramp Section 2, from I-25 Southbound On Ramp Gore to Off Ramp Gore)

The southbound off ramp section 2, from the I-25 southbound entrance gore to the exit gore, has the following characteristics, illustrated in Figure 7:

- 14-ft. driving lane
- 6-ft. paved outside shoulder
- 4-ft. paved inside shoulder
- guardrail within the limits of the Walnut Creek crossing

Figure 7. Southbound Off Ramp (Section 2) Existing Typical Section



3.1.6 Geometry

HORIZONTAL ALIGNMENT

The existing horizontal alignment data for the I-25 and US 380 interchange were obtained from as-built construction drawings I-025-2(7)119. The existing I-25 alignment within the study limits consists of two tangents and a horizontal curve (see Table 1 for horizontal curve data). Northbound and southbound I-25 cross over US 380 and Walnut Creek on bridge structures. The southbound entrance connects US 380 westbound to I-25 southbound and consists of a series of compound curves. The northbound entrance ramp connects US 380 westbound to I-25 northbound; the northbound entrance ramp consists of one compound curve and is yield-controlled at the entrance to I-25. The northbound exit ramp connects I-25 northbound to US

380 eastbound and consists of a series of compound curves. The southbound exit ramp consists of two sections. Section 1 has one travel lane in each direction, passing under I-25 and connecting with the southbound entrance ramp. Section 2 connects I-25 southbound to US 380 eastbound and crosses Walnut Creek on a 20-barrel concrete box culvert (CBC). An unpaved frontage road also intersects with the southbound exit ramp near the gore point with the southbound entrance ramp. See Table 1 for the inventory of horizontal curve data, superelevation rates, and design speed for the facility.

Table 1. Horizontal Curves

Curve (HPI Station)	Radius (ft.)	Length (ft.)	Superelevation (ft./ft.)	Posted Speed (mph)
I-25 (Northbound and Southbound)				
924+91.92	3,370.34	1,981.75	0.050	75
Ramp A (Southbound Entrance Ramp)				
A1 (1+17.78)	1,362.21	234.98	0.050	25
A2 (2+80.62)	301.56	90.60	0.050-0.080	25
A3 (6+65.26)	168.52	374.20	0.080	25
A4 (8+20.75)	337.03	232.30	0.080-0.060	25
A5 (11+00.45)	674.07	330.00	0.060	25
Ramp B (Northbound Entrance Ramp)				
B1 (11+25.32)	1,432.39	250.00	0.020-0.080	40
B2 (10+20.79)	716.20	1,117.56	0.080-0.050	40
Ramp C (Northbound Exit Ramp)				
C1 (1+62.27)	2,291.83	324.00	0.015-0.080	45
C2 (5+39.21)	1,432.39	421.22	0.080	45
C3 (9+50.65)	710.20	389.00	0.080	45
C4 (11+95.76)	1432.39	111.03	0.080-0.020	45
Ramp D (Southbound Exit Ramp)				
D1 (30+07.66)	954.93	1760.19	0.060	45
D2 (45+93.13)	6,366.20	1,366.67	0.060	45
D3 (55+34.61)	2,291.83	310.03	0.060	45

VERTICAL ALIGNMENT

The existing vertical alignment data for the I-25/US 380 interchange were obtained from as-built construction drawings I-025-2(7)119. Stopping sight distance and speed available values were calculated using methods from the 2018 American Association of State and Highway Transportation Officials (AASHTO) Green Book. See Table 2 for the inventory of vertical curve data, grades, sight distance, and design speed for the facility.

Table 2. Vertical Curves

Vertical Curve (VPI Station)	Entrance Grade	Exit Grade	Length (ft.)	Stopping Sight Distance (ft.)	Speed Available (mph)
I-25 (Southbound)					
912+00 (VC 1)	+0.46%	-1.14%	600	974	82
926+00 (VC 2)	-1.14%	+1.62%	800	1,291	97
946+00 (VC 3)	+1.62%	-1.81%	1,000	793	72
I-25 (Northbound)					
911+00 (VC 1)	+0.46%	-1.20%	800	1,050	86
925+00 (VC 2)	-1.20%	+1.57%	800	1,282	97
946+00 (VC 3)	+1.57%	-1.82%	1,000	798	72
Ramp A					
15+00 (VA 1)	-1.6%	+0.23%	400	7,075	100+
11+00 (VA 2)	+0.23%	-2.39%	300	561	60
Ramp B					
1+00 (VB 1)	+1.82%	+1.50%	200	3,472	100+
4+00 (VB 2)	+1.50%	+5.16%	400	488	56
8+00 (VB 3)	+5.16%	+4.00%	400	1,130	95
12+00 (VB 4)	+4.00%	-0.60%	400	435	51
Ramp C					
3+00 (VC 1)	+0.46%	-0.50%	500	1,374	100+
7+00 (VC 2)	-0.50%	-5.90%	300	350	41
13+75 (VC 3)	-5.90%	-1.88%	100	177	26
Ramp D					
19+00 (VD 1)	+1.82%	+2.39%	100	9,999+	100+

3.1.7 Pavement

The as-built drawings indicate that the existing pavement section consists of asphalt pavement over base course on a prepared subgrade. The I-25 main line consists of 4 inches (in.) of asphalt pavement over 6 in. of base course. The ramp pavement section consists of 4 in. of asphalt pavement over 6 in. of base course. The US 380 pavement section consists of 4 in. of asphalt pavement over 6 in. of base course.

The pavement section thicknesses and material have been modified from its original construction with preservation and maintenance projects. The current pavement thicknesses will be investigated in the future phases of the project development as the geotechnical investigation field work is performed.

3.1.8 Signs

There are appropriate traffic signs on both the main line and ramps. Supplementary/informative signs are also present at critical locations such as ramp splits. Wrong way signs are also present on the ramps to warn drivers entering ramps from the wrong travel direction. Figure 8 shows sample traffic signs in the study area. Object markers also present, as necessary.

Figure 8. Sample Traffic Sign (Wrong Way) in Study Area

3.1.9 Pavement Marking

There are appropriate pavement markings on both the main line and ramps. Figure 9 shows sample pavement marking in study area.

Figure 9. Sample Pavement Markings in Study Area

3.2 Traffic

Existing traffic data were collected at several locations around the I-25 San Antonio interchange. The 24-hour traffic volume, vehicle classification, and speed data at the locations were collected on a typical weekday, that is, Wednesday, May 4, 2022. Turning movement counts (TMCs) at two intersections were collected for both the morning (AM) and afternoon (PM) peak hours on Wednesday, May 4, 2022, from 6 to 9 AM and from 4 to 7 PM, respectively. The data were collected by All Traffic Data, Inc.

The traffic volume data were reviewed and analyzed by time of day. Figure 10 shows the average daily traffic (ADT) and peak hour directional traffic for both the AM and PM peak periods. A 2 percent annual growth factor, that is, a combined factor of 1.48595 for 20 years, was used while projecting future year traffic on the corridor and at the intersections.

The heavy vehicle percentages on the study corridor were identified from the classification data. The heavy vehicle percentages include 2 axle long buses and trucks with 2 axle 6 tire, 3 axle single, 4 axle single, less than 5 axle double, 5 axle double, more than 6 axle double, less than 6 axle multi, 6 axle multi, and more than 6 axle multi. The heavy vehicle percentage along the corridor is high, with the following percentages:

- southbound I-25 off ramp to US 380: 41.91 percent heavy vehicles
- northbound I-25 off ramp to US 380: 40.46 percent heavy vehicles
- westbound US 380 on ramp to northbound I-25: 37.02 percent heavy vehicles
- I-25 main line: 52.71 percent heavy vehicles

Refer to Figure 11 for detailed information on heavy vehicles traveling on the corridor.

The operational performance of an intersection or a highway facility is based on level of service (LOS) criteria based on the *Highway Capacity Manual*. LOS is a term used to qualitatively describe roadway and intersection traffic operations. LOS is expressed in letter grade format from A to F, with LOS A representing the best operating conditions and LOS F representing the worst. According to the NMDOT *State Access Management Manual*, LOS C for rural conditions and LOS D for urban conditions are acceptable measures.

To efficiently analyze traffic operations, two traffic analysis software packages are required. These software programs were developed using the *Highway Capacity Manual*. HCS7 software was used to analyze roadway segments. HCS software was used to analyze the segment LOS. Both directions of all roadway segments on the study corridor are expected to operate at LOS A or better for existing conditions for both the AM and PM peak hours.

See the *Transportation Needs Analysis Report* in Appendix B for a complete description of the traffic data and analysis.

Figure 10. Traffic Volumes

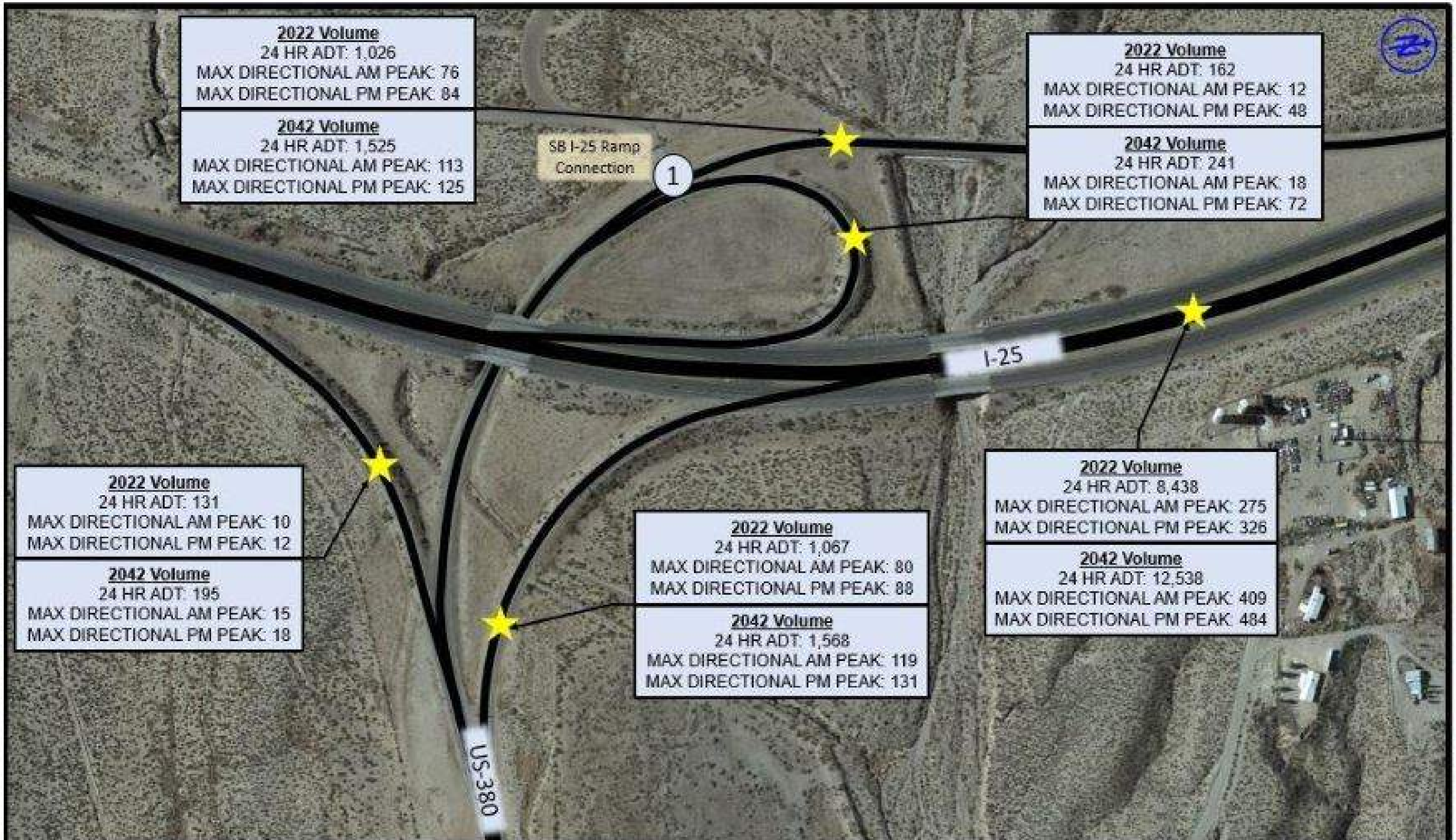
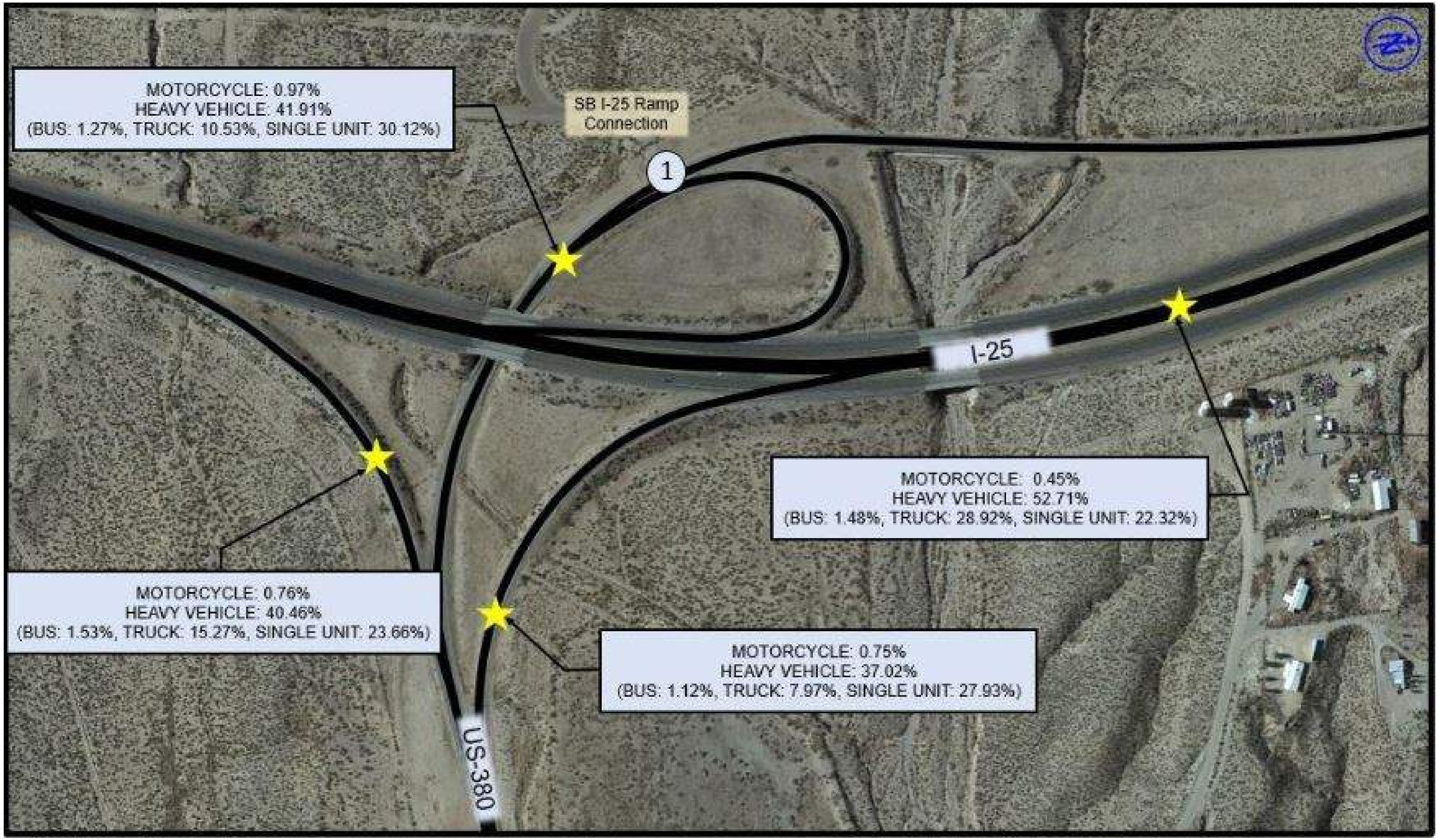


Figure 11. Heavy Vehicle Presence



3.3 Bridge

There are five bridge structures in the area of the interchange. Bridge No. 3168 is a CBC structure that carries the southbound I-25 exit ramp traffic over Walnut Creek. Bridge No. 6454 and No. 6455 are twin steel-girder bridge structures that carry northbound and southbound I-25 traffic over US 380. Bridge No. 6456 and No. 6457 are twin steel-girder structures that carry northbound and southbound I-25 traffic over Walnut Creek.

3.3.1 Bridge No. 3168

Bridge No. 3168 was constructed in 1939 and is a 20-barrel 9 ft. x 8 ft. CBC. The 20-barrel structure consists of 5 units of 4 barrels each. The structure's total length is approximately 200 ft. and the fill cover is approximately 2 ft. See Figure 12 for the bridge inlet view. The structure carries the southbound I-25 exit ramp over Walnut Creek. See Figure 13 for the roadway view over the bridge. See Figure 14 for the outlet view of the bridge.

Figure 12. Bridge No. 3168 Inlet View

Figure 13. Roadway View over Bridge

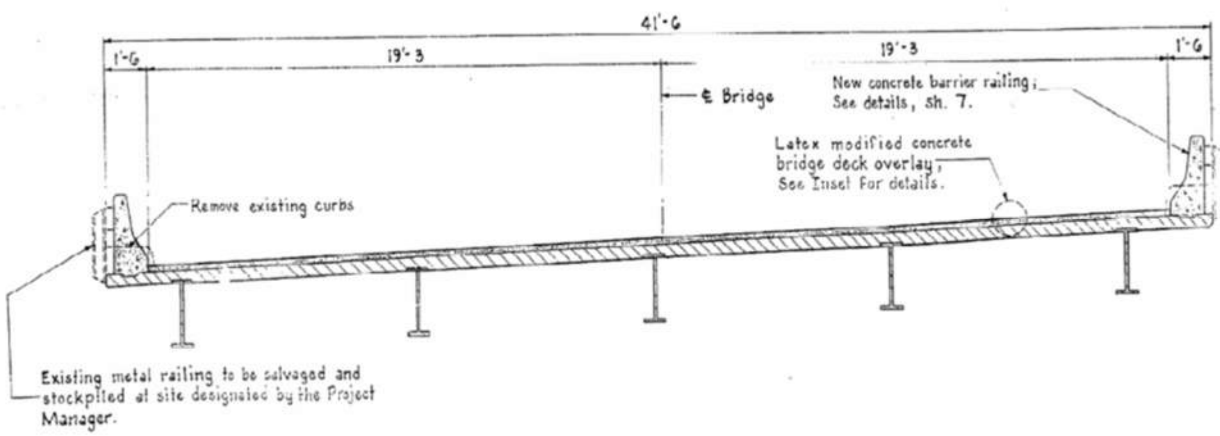
Figure 14. Bridge No. 3168 Outlet View

3.3.2 Bridge No. 6454 and No. 6455

Bridge No. 6454 and No. 6455 are located in the interchange of I-25 and US 380. The inspection report indicates that the bridges were constructed in 1964 and rehabilitated in 1988. The rehabilitation effort included the replacement of the railing system, deck repair, and a latex modified concrete bridge deck overlay.

The bridges are three-span structures that are continuous for live load with span lengths of 39 ft.-9 in., 50 ft.-6 in., and 39 ft.-9 in. Each bridge has a total width of 41 ft.-6 in. with two 12 ft.-0 in. driving lanes, 10 ft.-0 in. outside shoulders, 4 ft.-6 in. inside shoulders, and two 1 ft.-6 in. concrete barrier railing. Each bridge has five steel girders (27WF94) with a spacing of 8 ft.-10.5 in. The record drawings indicate that the deck is 7.5 in. thick. The bridge deck is on a 5 percent cross slope. The typical section is shown in Figure 15.

Figure 15. Bridge No. 6454 and No. 6455 Typical Section



The bridge deck and barrier railing are shown in Figure 16. The top of the deck is grooved transversely to the roadway.

Figure 16. Bridge Deck and Barrier Railing

The bridge elevation view is shown in Figure 17.

Figure 17. Bridge Elevation View

The bearing system for the girders consists of steel rocker bearings (Figure 18). The bearing system at Abutment No. 1 is fixed and the remaining reactions are expansion bearings. The fixed bearing is 10 in. tall and the expansion bearings are 11.5 in. tall.

Figure 18. Steel Rocker Bearings

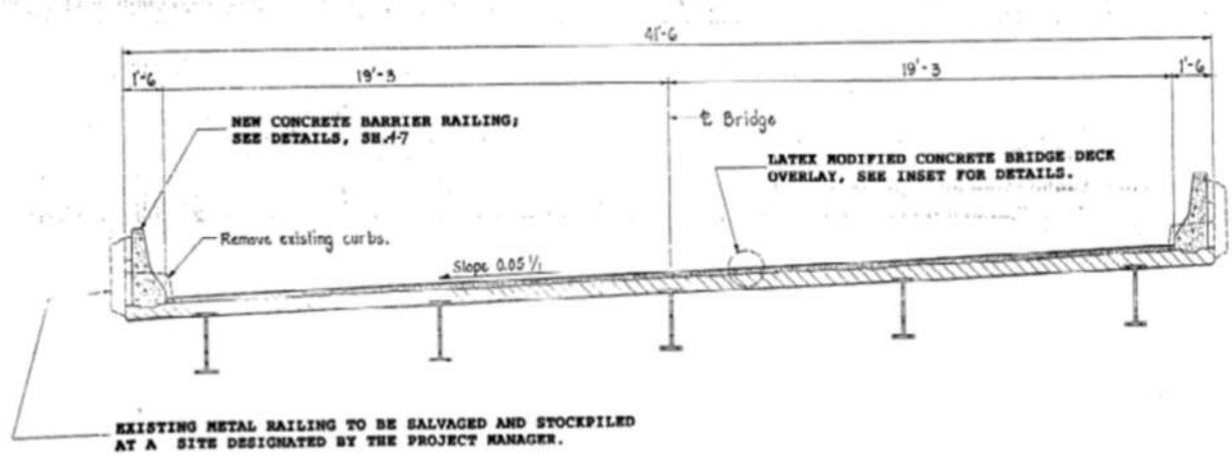
The abutments are founded upon 12 treated timber piles with lengths of 30 ft.-0 in. The piers are founded upon shallow concrete spread footings.

3.3.3 Bridge No. 6456 and No. 6457

Bridge No. 6456 and No. 6457 are located approximately 0.2 mile north of the I-25 and US 380 interchange bridges. The inspection report indicates that the bridges were constructed in 1964 and rehabilitated in 1988. The rehabilitation effort included the replacement of the railing system, repair of the deck, and a latex modified concrete bridge deck overlay.

The bridges are three-span structures that are continuous for live load with span lengths of 39 ft.-9 in., 50 ft.-6 in., and 39 ft.-9 in. Each bridge has a total width of 41 ft.-6 in. with two 12 ft.-0 in. driving lanes, 10 ft.-0 in. outside shoulders, 4 ft.-6 in. inside shoulders, and two 1 ft.-6 in. concrete barrier railings. Each bridge has five steel girders (27WF94) with a spacing of 8 ft.-10.5 in. The record drawings indicate that the deck is 7.5 in. thick. The bridge deck is on a 5 percent cross slope. The typical section is shown in Figure 19.

Figure 19. Bridge No. 6456 and No. 6457 Typical Section



The bridge deck and barrier railing are shown in Figure 20. The top of the deck is grooved transversely to the roadway.

Figure 20. Bridge Deck and Barrier Railing

The bridge elevation view is shown in Figure 21.

Figure 21. Bridge Elevation View

The bearing system for the girders consists of steel rocker bearings (Figure 22). The bearing system at Abutment No. 1 is fixed and the remaining reactions are expansion bearings. The fixed bearing is 10 in. tall and the expansion bearings are 11.5 in. tall.

Figure 22. Steel Rocker Bearing

The abutments are founded upon eight steel 10BP57 piles with a length of 50 ft. The piers are founded upon eight steel 10BP57 piles with a length of 60 ft.

3.4 Drainage

The general drainage flow direction for the study area is from the Chupadera and Magdalena Mountain ranges in the west toward the Rio Grande in the east. As water crosses the study area it is conveyed under I-25 by structures of varying type and size, including culverts, drop inlets, and bridges that allow stream flow.

Twenty-nine structures were identified in this study area, 21 of which are culverts that are either made up of corrugated metal pipe (CMP) or a CBC. These culverts vary in size along the study area. In addition to culvert crossings, five drop inlets convey water from the interchange and the medians of I-25.

The most notable drainage structures in the study limits are the bridges that convey Walnut Creek under the I-25 San Antonio interchange. Bridge Nos. 6457, 6456, and 3168 are all in series and allow the passage of Walnut Creek to the Rio Grande. Bridge No. 3168 is 20 box culverts, each with a height of 9 ft. and a span of 8 ft. It conveys Walnut Creek under the interchange's southbound off ramp. Bridge No. 6457 carries the southbound I-25 lanes and Bridge No. 6456 carries the northbound I-25 lanes over Walnut Creek. They are both three-span bridges built in 1960.

4. Existing Transportation System Condition

The following discussion describes and documents the condition of the interchange features in the study area. The features are discussed by discipline and include the physical condition and a comparison of the feature to current design standards. Elements of the different features that do not meet current standards are noted as deficient.

4.1 Roadway

The roadway discussion considers the existing roadway geometry and the condition of the pavement, signs, pavement markings, and lighting.

4.1.1 Geometry

The horizontal and vertical geometry for I-25 generally meets design criteria, with the exception of vertical curve 3. The calculated stopping sight distance on this vertical curve supports a speed of only 72 mph, which falls short of the design speed of 80 mph.

Analysis of Ramp A's geometry indicates multiple deficiencies. Ramp A has an advisory speed of 25 mph and merges directly into I-25 southbound with limited space to accelerate to the main line posted speed of 75 mph. According to Table 10-4 in the 2018 AASHTO Green Book, a minimum acceleration lane length of 1,580 ft. should be provided. However, existing conditions provides 150 ft of acceleration lane length, which is not in compliance with current standards. Additionally, Ramp A consists of five consecutive compounded curves of varying radii. This arrangement of curves is undesirable and does not meet current design standards.

Similar to Ramp A, Ramp B merges into I-25 northbound with a deficient acceleration lane. Ramp B has an advisory speed of 40 mph and is yield-controlled at the entrance to I-25. Assuming the advisory speed of 40 mph at Ramp B's entrance to the main line, a minimum acceleration length of at least 1,160 ft. should be provided. However, similar to Ramp A, existing condition provides 150 ft. of acceleration lane length. Additionally, Ramp B and I-25 northbound are superelevated in opposite directions at the entrance to the main line. This creates an excessive grade breakover at the gore.

Ramp C has two vertical curves that do not meet minimum sight distance criteria. The calculated stopping sight distances on curves VC2 and VC3 support speeds of only 41 mph and 26 mph, respectively, which is below the advisory speed of 45 mph. Additionally, Ramp C consists of four consecutive compounded curves, which is undesirable and does not meet current design standards. Ramp C is yield-controlled at the merge point with US 380.

Ramp D does not have any horizontal or vertical geometric deficiencies. However, an unpaved frontage road intersects Ramp D within the ramp body at the gore area with Ramp A, which is undesirable from a safety and operational standpoint.

4.1.2 Pavement

The pavement condition throughout all sections for the study area is poor and needs improvement. From visual observation, the team found the pavement surfaces with severe distresses including alligator, block, transverse, and longitudinal cracking. Refer to Figure 23, Figure 24, and Figure 25 for sample pavement distresses.

Figure 23. Pavement Condition on I-25

Figure 24. Pavement Condition on Sample Ramp

Figure 25. Pavement Condition on US 380 under I-25 Bridges

4.1.3 Signs

On May 5, 2022, HDR's traffic team performed a field review to assess the existing traffic sign conditions. The team's observation confirmed that the existing traffic signs within the study vicinity are in good condition and can be relocated as needed based on the new design. Figure 26 shows the condition of sample existing traffic signs. However, several new signs would be needed at several locations.

Figure 26. Existing Condition of Sample Traffic Signs

4.1.4 Pavement Marking

On May 5, 2022, HDR's traffic team performed a field review to assess the existing pavement markings' conditions. The team's observations confirmed that the pavement has different types of distresses including block, longitudinal, and transvers cracking. Some places have drops along the pavement edge. Given the poor pavement condition on ramps and durations of existing pavement markings in place, the condition appears to be deteriorated. The pavement markings on the bridge need to be restriped as well. The team's suggestion is to restripe and/or install new pavement markings as part of the new design. Figure 27 shows the condition of a sample existing pavement marking.

Figure 27. Existing Condition of Sample Pavement Marking

4.1.5 Lighting

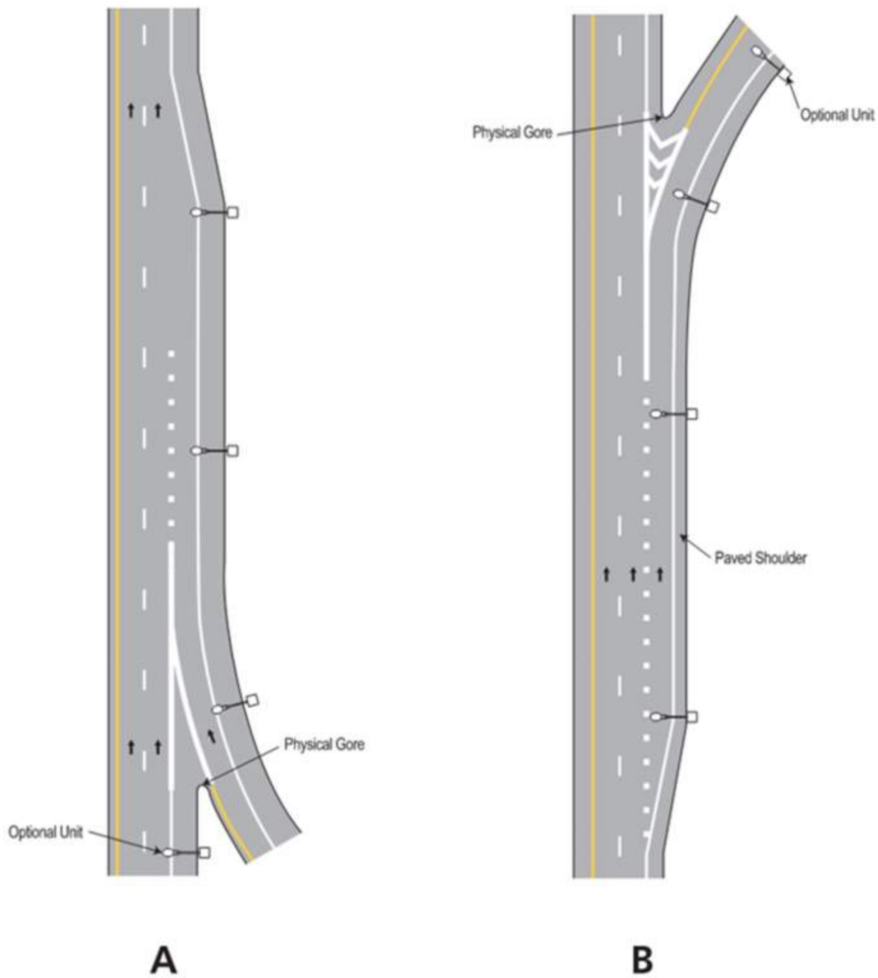
Currently, there is no lighting in the interchange to illuminate the roadway surface areas. A detailed lighting warrant analyses was performed based on AASHTO's *Lighting Guidelines*. Refer to Table 3 for the AASHTO criteria. The team identified that the gore areas near southbound exit ramp and northbound entrance ramps on I-25 meet the partial lighting requirements. Refer to Figure 28 for the lighting layouts.

Table 3. AASHTO Partial Interchange Lighting

Case	Warranting Conditions
PIL-1	Where the total current ADT ramp traffic entereing and leaving the freeway within the interchange area exceeds 5,000 for urban conditions, 3,000 for suburban conditions, or 1,000 for rural conditions.
PIL-2	Where the current ADT on the freeway through traffic lanes exceeds 25,000 for urban conditions, 20,000 for suburban conditions, or 10,000 for rural conditions.
PIL-3	Where the ratio of nighttime to daytime crash rate within the interchange area is at least 1.25 times the statewide average for all unlighted similar sections, and a study indicates that the lighting may be expected to result in a significant reduction in the night crash rate. Where crash data are not available, rate comparison may be used as a general guideline for crash severity.

Source: AASHTO *Lighting Guidelines*

Figure 28. Typical Luminaire Locations at (A) Entrance Ramp and (B) Exit Ramp



4.2 Bridge

4.2.1 Bridge No. 3168

The latest routine bridge inspection reports, documenting an inspection conducted on February 8, 2021, indicate that the culvert is rated as 6 (Satisfactory Condition). The Health Index and Sufficiency Ratings were 82.61 and 92.80, respectively.

On June 15, 2022, HDR completed a field observation visit. In attendance for HDR were Danton Bean and Edgar Hernandez.

TOP SLAB

The top side of the top slab is unobservable because of the asphalt overlay and the fill material. The underside of the top slab has transverse, longitudinal, and map cracks. The cracks range in size up to 1/32 in. with minor leaching and honeycombing.

BOTTOM SLAB

The bottom slab has transverse, longitudinal, and map cracks with heavy abrasion. Sediment has accumulated in the areas of the box structure to a maximum depth of 12 in.

INTERIOR WALLS

The box walls have vertical, diagonal, horizontal, and map cracks up to 1/16 in. Barrel wall cracks have been sealed with epoxy throughout and have been covered with a concrete rub.

WINGWALLS

The concrete wingwalls at the inlet have vertical, horizontal, diagonal, and map cracks up to 1/32 in. with leaching. The wingwall at the northwestern corner of the structure has delamination up to 5 in. x 16 in. The wingwalls at the outlet have vertical and map cracks up to 1/32 in. with small spalls.

RIPRAP AND GABION BASKETS

The wire-enclosed riprap apron and gabion baskets at the outlet side of the structure have mostly been washed away (Figure 29). There is an approximately 6-ft. drop at the outlet end of the box to the channel floor. The gabion baskets are currently protecting the structure from scour and erosion.

Figure 29. Outlet End of Box with Gabion Baskets

4.2.2 Bridge No. 6454 and No. 6455

The latest routine bridge inspection reports, documenting an inspection conducted on July 28, 2020, indicate that the deck, superstructure, and substructure were rated as 5 (Fair Condition). The Health Index and Sufficiency Ratings for Bridge No. 6454 were 91.98 and 85.0, respectively, and for Bridge No. 6455 were 80.76 and 85.0, respectively.

On June 15, 2022, HDR completed a field observation visit. In attendance for HDR were Danton Bean and Edgar Hernandez.

DECK

The top of the concrete decks has longitudinal, transverse, and map cracks and delamination (Figure 30). The underside of the decks has insignificant transverse, map, and longitudinal cracks, with isolated patches and isolated spalls, with major leaching and isolated areas of major deterioration. The deck edges have wide vertical and horizontal cracks, with a spall and exposed rebar up to 1 in., with delamination and a patch.

Figure 30. Deck Surface with Spalls, Patches, and Cracks

SUPERSTRUCTURE

The steel girders show signs of corrosion with minor section loss. Holes have been drilled through the webs to stop the propagation of fatigue cracks at the top and bottom corners of the diaphragm connections.

BEARINGS

Most of the rocker bearings are clean and in good condition and are functioning properly. Several bearings show signs of rust and corrosion (Figure 31).

Figure 31. Rocker Bearing

SUBSTRUCTURE

The abutments have moderate to wide transverse, map, vertical, and horizontal cracks (Figure 32). Some of the cracks have been sealed with epoxy. Some of the sealed cracks have continued to propagate with additional delamination and leaching.

Figure 32. Abutment Pedestal with Cracks

The columns have moderate vertical, horizontal, and map cracks (Figure 33), with isolated spalls and delamination at pier 2 column 3, with up to 2 in. of exposed rebar, and pier 1 column 3 has delamination. Pier 2 column 1 has a diagonal crack full width. Pier 1 column 3 has 8 in. of exposed rebar.

Figure 33. Column with Crack, Spall, and Exposed Rebar

RATING

A bridge's load rating model provides bridge capacity information for normal operations and overload permit vehicles. The NMDOT *Bridge Design Procedures and Guide* requires that all new designs have a minimum AASHTOWare Bridge Rating inventory rating of HS25 and an operating rating of HS42. NMDOT provided an AASHTOWare rating file for the bridge structures. The rating results from the file indicate that the bridge's LFR rating is HS16.9 (Inventory) and HS28.3 (Operating). The LRFR rating values are 0.87 (Inventory) and 1.13 (Operating). The rating values are less than the desired value for new bridges using current design standards.

4.2.3 Bridge No. 6456 and No. 6457

The latest routine bridge inspection reports, documenting an inspection conducted on July 21, 2020, indicate that the deck was rated 5 (Fair Condition), the superstructure was rated 6 (Satisfactory Condition), and the substructure for was rated 4 (Poor Condition). The Health Index and Sufficiency Ratings for bridge No. 6456 were 81.59 and 70.0, respectively, and for Bridge No. 6457 were 71.37 and 70.0, respectively.

On June 15, 2022, HDR completed a field observation visit. In attendance for HDR were Danton Bean and Edgar Hernandez.

DECK

The top of the concrete decks has longitudinal, transverse, and map cracks and delamination (Figure 34). The underside of the decks has transverse, map, and longitudinal cracks, with isolated patches and isolated spalls, with leaching and isolated areas of major deterioration. The deck edges have vertical and horizontal cracks, with spalls and exposed rebar, delamination, and a patch.

Figure 34. Deck Surface with Spalls, Patches, and Cracks

SUPERSTRUCTURE

The steel girders show signs of corrosion with minor section loss. Holes have been drilled through the webs to stop the propagation of fatigue cracks at the top and bottom corners of the diaphragm connections.

BEARINGS

Most of the rocker bearings are clean and in good condition functioning properly. Several bearings do show signs of rust and corrosion (Figure 35).

Figure 35. Rocker Bearing

SUBSTRUCTURE

The abutments have moderate to wide transverse, map, vertical, and horizontal cracks (Figure 36). Some of the cracks have been sealed with epoxy. Some of the sealed cracks have continued to propagate with additional delamination and leaching.

Figure 36. Abutment Seat with Cracks

The pier caps have moderate vertical, longitudinal, and transverse cracks. Minor delamination and some evidence of repair with signs of patching are evident.

ABUTMENT SLOPES

Significant erosion at the bottom of the abutment slopes has cut the embankment (Figure 37). The riprap and gabion baskets protecting the abutment slopes have been washed away or have been undercut, causing failure of the protection elements.

Figure 37. Erosion of Abutment Slopes

RATING

A bridge's load rating model provides bridge capacity information for normal operations and overload permit vehicles. The NMDOT *Bridge Design Procedures and Guide* requires that all new designs have a minimum AASHTOWare Bridge Rating inventory rating of HS25 and operating rating of HS42. NMDOT provided an AASHTOWare rating file for the bridge structures. The rating results from the file indicate that the bridge's LFR rating is HS16.9 (Inventory) and HS28.3 (Operating). The LRFR rating values are 0.87 (Inventory) and 1.13 (Operating). The rating values are less than the desired value for new bridges using current design standards.

4.3 Drainage

Most of the drainage structures appear to be in good condition. Some of the structures have significant sediment and debris building up around most of the CMPs, as seen in Figure 38.

Figure 38. Sediment and Brush Build Up

Based on the preliminary hydrologic and hydraulic analyses, most of the culvert crossings have sufficient capacity. However, a few crossings as noted below, if they are not eliminated by the proposed improvements, will need to be modified or expanded. Specifically, the two, 6’x 4’ concrete box culverts on the southbound off ramp (north of the Walnut Creek crossing) have a combined capacity of 343 cubic feet per second (cfs), while the demand for this crossing is 730 cfs for the 100-year storm. This insufficiency causes water to pond at the inlet of the culverts and flow south before eventually overtopping the off ramp. This crossing will need to be modified if not eradicated by the reconfiguration of the interchange.

Bridge No. 3168, consisting of 20 9 ft. by 8 ft. box culverts, is one of the most notable structures exhibiting capacity issues and excess debris build up, resulting in reported flooding. Severe undercutting on the downstream side of the bridge is also a major issue and has been temporarily mitigated using gabion baskets. A potential goal for the reconstruction of the interchange and its various drainage structures is to possibly eliminate this undercutting altogether.

The I-25 bridges over Walnut Creek have sufficient capacity based on the preliminary hydrologic and hydraulic analyses. However, the constriction of the channel at the bridges generates greater depths and velocities than the rest of the channel. This results in high scour depth at the piers and abutments. As seen in Figure 39 and Figure 40, field conditions indicate that significant scour has occurred at the bridges that could threaten the structural integrity if left unmitigated.

Figure 39. Walnut Creek, Looking East

Figure 40. Walnut Creek, Looking West

As previously mentioned, this segment of I-25 experiences high volumes of water in severe weather events. Most of the culverts in the area operate at sufficient capacity, with the exception of certain culverts needing modification. Most culverts do require maintenance to ensure their efficiency. The structures that require the most modifications are the bridges that convey Walnut Creek. Capacity and scour issues prompt a more in-depth analysis for the modification of the 20-box culvert bridge and redesign of the span bridges.

4.4 Environmental

4.4.1 General Environmental Setting

The study is located in a rural, largely undeveloped setting at approximately 4,660 ft. in elevation. Land adjacent to I-25 is vegetated with native shrubs, grasses, and forbs with few trees in the study area. The landscape through the study area is hilly, with a flat valley located to the east along the Rio Grande and outside of the study area. The Magdalena Mountains in the Cibola National Forest occur approximately 4 miles to the west of the study area.

4.4.2 Natural Resources

VEGETATION

The study area adjacent to the roadway is rural and undeveloped, which allows vegetation to grow throughout the study area. The study is located within the Chihuahuan Desertscrub biotic community and primarily consists of shrubs, forbs, and grasses, with minimal trees (Brown 1994). The dominant plant species is creosotebush *(Larrea tridentata)*, with mesquite trees (*Prosopis* spp.), broom snakeweed *(Gutierrezia sarothrae)*, fishhook barrel cactus *(Ferocactus wislizeni)*, and prickly pear *(Opuntia* spp.) occurring sporadically.

WILDLIFE

The study area is not particularly valuable to many wildlife species because it primarily consists of the roadway; however, the adjacent undeveloped land likely provides some marginal habitat to smaller, common wildlife species, such as lizards, reptiles, rodents, birds, and insects. Because the study includes the removal and replacement of a bridge, during future planning and design phases, the structures to be replaced would be evaluated for the presence of bats and birds. Additionally, if tree removal would be necessary as part of the study, measures should be taken to avoid impacts on nesting or migratory birds.

THREATENED, ENDANGERED, AND SENSITIVE SPECIES

The U.S. Fish and Wildlife Service Information for Planning and Consultation (IPaC) online tool and New Mexico Department of Game and Fish Environmental Review Tool (ERT) were accessed to determine whether threatened or endangered species may occur in the study area. The IPaC list included a total of 13 threatened, endangered, or candidate species that may occur in the study area (Table 4). Table 4 also includes the status of these species per the BLM. The ERT identified three threatened or endangered species that have been documented within

1 mile of the study area: yellow-billed cuckoo (*Coccyzus americanus*), Southwestern willow flycatcher (*Empidonax traillii extimus*), and Rio Grande silvery minnow (*Hybognathus amarus*).

Table 4. Threatened, Endangered, and Candidate Species That May Occur in the Study Area, According to the IPaC

Common Name	Scientific Name	USFWS Status	BLM Status
New Mexico meadow jumping mouse	*Zapus hudsonius luteus*	Endangered	No BLM special status
Mexican spotted owl	*Strix occidentalis lucida*	Threatened	No BLM special status
Northern aplomado falcon	*Falco femoralis septentrionalis*	Experimental population, non-essential	No BLM special status
Piping plover	*Charadrius melodus*	Threatened	No BLM special status
Southwestern willow flycatcher	*Empidonax traillii extimus*	Endangered	No BLM special status
Yellow-billed cuckoo	*Coccyzus americanus*	Threatened	No BLM special status
Chiricahua leopard frog	*Rana chiricahuensis*	Threatened	No BLM special status
Rio Grande silvery minnow	*Hybognathus amarus*	Endangered	No BLM special status
Chupadera springsnail	*Pyrgulopsis chupaderae*	Endangered	No BLM special status
Socorro springsnail	*Pyrgulopsis neomexicana*	Endangered	No BLM special status
Monarch butterfly	*Danaus plexippus*	Candidate	BLM Sensitive
Pecos sunflower	*Helianthus paradoxus*	Threatened	No BLM special status
Wright's marsh thistle	*Cirsium wrightii*	Proposed Threatened	BLM Sensitive

Critical habitat for the yellow-billed cuckoo, Southwestern willow flycatcher, and Rio Grande silvery minnow occurs approximately 1.3 miles to the east at the Rio Grande. There is no suitable habitat for any of the threatened or endangered species found on the IPaC within the study area.

WATER RESOURCES

Surface Water

Within the study area, there is no perennially flowing surface water. Although Walnut Creek occurs underneath the I-25 bridge in the study area, Walnut Creek is an ephemeral drainage and flows only in response to precipitation events.

Ground Water

The study is located in the Rio Grande Basin. The nearest and most recent groundwater well found on the U.S. Geological Survey National Water Information System is located just under 1 mile to the northeast of the I-25 interchange near the intersection of Sunnyside Drive and NM 1 (Site Number 335640106520901). The water level reading from February 2022, which is the most recent reading, was 17.75 ft. below land surface.

Wetlands

The National Wetlands Inventory classifies Walnut Creek as a riverine habitat. However, based on aerial photography and field visits, there is no wetland habitat or wetland vegetation in the study area.

4.4.3 Historic and Cultural Resources

The New Mexico Cultural Resource Information System (NMCRIS) online cultural resources database was consulted, along with archival U.S. Geological Survey topographic quadrangle maps, to determine the number and types of cultural resource investigations and historic and cultural resources present in the study area. At least nine cultural resource surveys have been conducted in the study area between the early 1980s and 2021 (Table 5), and the study area intersects 10 previously documented cultural resources (Table 6). Relatively recent surveys (that is, those conducted within the last 10 years) in the study area covered portions of the I-25 right-of-way (ROW) and areas immediately south of US 380. It is likely that additional survey will be required, which would require permitting from BLM.

There are likely to be few, if any, historic buildings in the study area. Of the historic buildings along US 380 within the study area, one has been documented with a Historic Cultural Property Inventory Form. As a component of one historic habitation site, this building, which was constructed between 1963 and 1972, has been individually evaluated as not eligible to the National Register of Historic Places (NRHP). Finally, an Official Scenic Historic Marker is located along US 380 at milepost 0.4; the marker commemorates the mission of San Antonio de Senecú, which was established in the mid 1600's.

There are three previously documented sites within the I-25 ROW, all of which have been previously recommended as not eligible to the NRHP.

Table 5. Previously Conducted Cultural Resource Investigations Conducted in the Study Area

NMCRIS Activity Number	Project Name	Type of Investigation[1]	Year of Investigation	Reference
8796	Red Canyon Mine Road Improvement	Class III Survey/Inventory	1985	Etchieson (1985)
11695	Powerline between Elephant Butte and Socorro	Class III Survey/Inventory	1985–1986	Gossett and Gossett (1986)

NMCRIS Activity Number	Project Name	Type of Investigation[1]	Year of Investigation	Reference
39373	E. Padilla Fence	Class III Survey/Inventory	1982	Baratti-Sallani (1982)
41461	San Antonio Mutual Domestic Water Consumers Association System Improvements	Class III Survey/Inventory	1992	Gossett (1992)
99117	East Socorro Grazing EIS	Class II Survey/Inventory	1976	No formal report written
113737	Proposed Fence Line Replacement along I-25	Class III Survey/Inventory	2009	Gibbs and Ernst (2009)
114354	Proposed Fiber Optic Line for Western New Mexico Telephone Company	Class III Survey/Inventory	2008	Doak (2009)
143899	San Antonio Water Detention Pond	Class III Survey/Inventory	2019	Weaver et al. (2019)
148495	Fence Replacements along Multiple Highways	Class III Survey/Inventory	2021	Trowbridge et al. (2021)

[1] Class III surveys are intensive (full coverage); Class II surveys are less than intensive.

Table 6. Previously Documented Cultural Resources within the Study Area

Site Name	Type	Land Jurisdiction	NRHP Eligibility	Comment
Village of San Antonio	Historic townsite	Private, Bureau of Land Management (BLM), State	Eligible (A, D)	—
San Antonio Ditch	Irrigation ditch/system	Middle Rio Grande Conservancy District	Eligible (A)[1]	—
None[2]	Historic road	BLM	Unevaluated	—
None	Historic unknown[3]	BLM	Not eligible	—
None	Historic unknown[3]	BLM	Not eligible	—
None	Historic habitation	BLM, private	Not eligible	—
None	Historic artifacts	BLM	Not eligible	—
None	Historic artifacts	BLM	Not eligible	Roadside trash dump
None	Historic artifacts	BLM	Not eligible	Roadside trash dump
Atchison, Topeka, and Santa Fe Railway[4]	Historic railroad	Private	Eligible (A)[1]	

[1] Eligible to the NRHP as a whole; undocumented and unevaluated within the study area.

[2] While not noted in the NMCRIS data, this appears to be a portion of the original alignment of Bianca Ranch Road.
[3] data incomplete in NMCRIS
[4] currently the BNSF Railway

4.4.4 Section 4(f)

Aerial maps and databases were examined to locate any Section 4(f) properties in the study area; however, recreation areas, or wildlife or waterfowl refuges were found in the study area. One informal park space is located south of US 380 and west of the San Antonio Fire Department, however, it is located outside of the right-of-way. Three NRHP-eligible sites were found within or near the study area, as listed in Table 6. It is not expected that there will be a use of eligible sites. Bosque del Apache National Wildlife Refuge is located approximately 3.3 miles to the south of the interchange.

4.4.5 Noise

A bridge replacement study could qualify as a Type I project under 23 Code of Federal regulations 772 – Procedures for Abatement of Highway Traffic Noise and Construction Noise. This type of project would require an analysis of potential traffic noise impacts. This detailed noise analysis would be completed at a later environmental documentation phase.

Land use in the study area include transportation and vacant lands. Vacant or undeveloped land in the study area is largely comprised of BLM land, which has recreation opportunities including off-highway vehicle (OHV) usage on designated routes. Additionally, one business and residence abuts the study area approximately ½ mile to the northeast of the interchange, less than ½ mile north of the interchange. There are a few residences at the eastern extent of the study area; however, they are far removed from where work is expected to occur. The only noise receptors within ½ mile of the I-25 interchange are the San Antonio Fire District and an auto salvage business and associated residences.

4.4.6 Air Quality

The Clean Air Act is a federal law that prevents air quality impacts that cause or contribute to violations of the National Ambient Air Quality Standards. Air Quality Control Regions are areas designated by the U.S. Environmental Protection Agency for the attainment and maintenance of the National Ambient Air Quality Standards. The study is located in the Southwestern Mountains-Augustine Plains Intrastate Air Quality Control Region 156. Socorro County is in attainment of all current air quality standards.

4.4.7 Visual Resources

The viewshed in the study area includes the roadway, associated signs along the roadway, the surrounding vegetation and topographic features, and overhead power lines and utility poles. The Magdalena Mountains are seen in the distance to the west, the Sierra Largas are located far off to the northeast, and Socorro Peak can be seen to the northwest of the study area. The surrounding BLM land is located within Visual Resource Management Class II. Management activities in BLM in this VRM Class should try to “retain the existing character of the landscape.” The El Camino Real National Scenic Byway is located along Old US Highway 85 through San Antonio, outside of the study area.

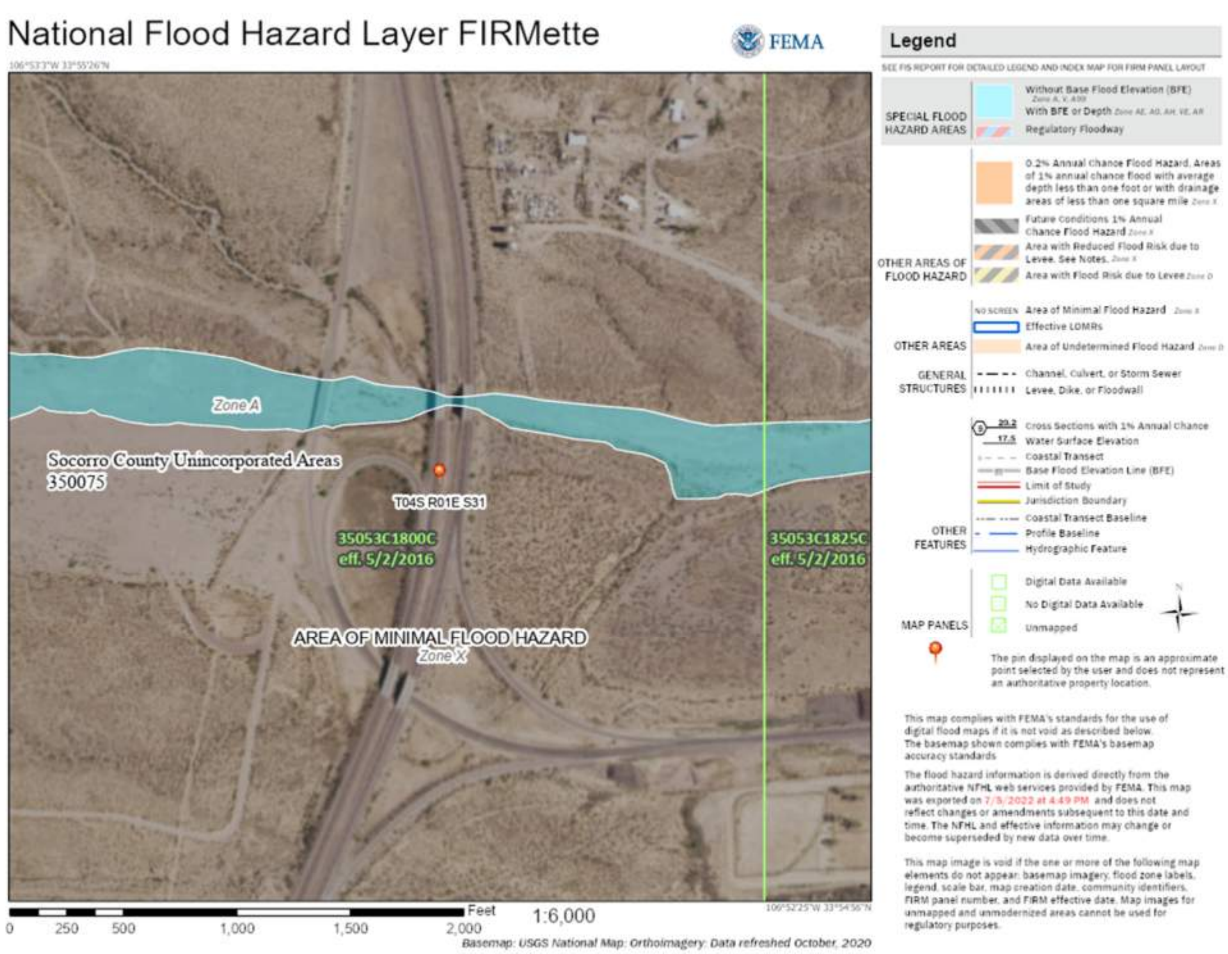
4.4.8 Farmlands

According to the Natural Resources Conservation Service (2022), there is no prime farmland or farmland of importance in the study area.

4.4.9 Floodplains

According to the Federal Emergency Management Agency Flood Insurance Rate Map 35053C1800C, effective date 05/02/2016, Walnut Creek is within a Zone A flood zone, which is an area with a 1 percent annual chance of flooding (Figure 41).

Figure 41. Federal Emergency Management Agency Flood Insurance Rate Map



4.4.10 Social Resources

COMMUNITY RESOURCES

The largest industry in Socorro County is educational services, followed by health care and social assistance, then professional, scientific, and technical services. Residents may work at the New Mexico Institute of Mining and Technology (located to the north in Socorro) or at the White Sands Missile Range. Additionally, given the land use and lack of urban development in the area, it is likely that a number of the nearby residents are farmers or ranchers, and provide local support services.

DEMOGRAPHICS AND ENVIRONMENTAL JUSTICE

The study area surrounding the I-25 interchange has a population of 346 with Hispanic residents accounting for 52 percent of the population (Table 7). Within the study area, 56 percent of adults over the age of 25 are high school graduates or less, in addition, 12 percent of the population speaks English less than very well. Accordingly, interpretation and translation accommodations can be provided upon request for study-related information.

Table 7. Study Area Demographics

	Number of Persons	Percentage of Total
Total population	346	100
Race and Ethnicity		
Hispanic	181	52
White	125	36
Other	7	2
Asian	6	2
Education		
High school diploma or less	133	57
Ability to Speak English		
Speak non-English at home	134	39
Speak English “less than very well”	39	12

In the San Antonio census-designated place, 45 percent of the population is considered low-income, whereas, in Socorro County, 43 percent of people are considered low-income (income below 150 percent of the poverty level, according to the U.S. Census Bureau, 2020).

ECONOMIC AND LAND USE ISSUES (LAND OWNERSHIP)

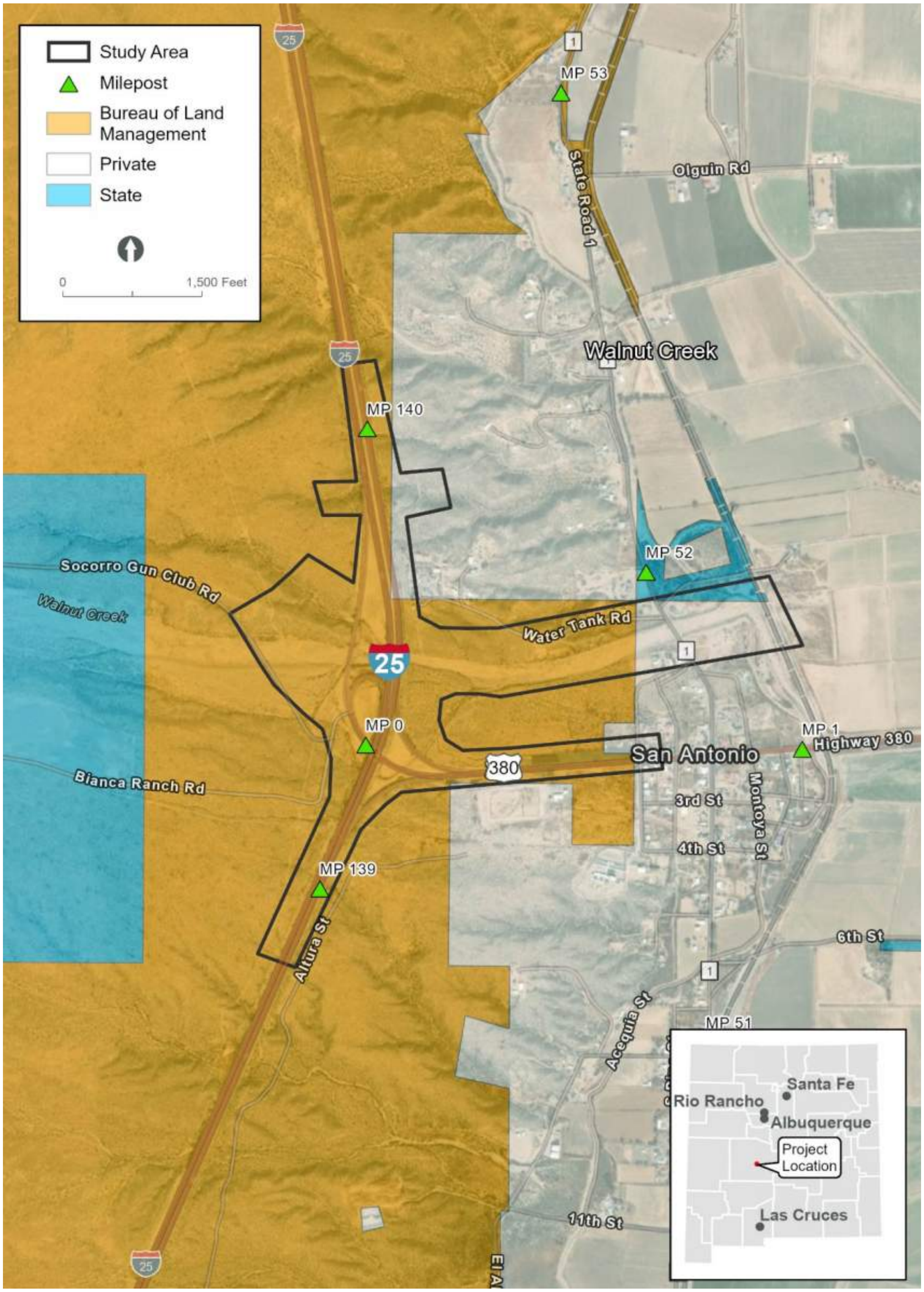
The I-25 interchange is located on a BLM easement and the land surrounding the I-25 interchange is primarily undeveloped and rural with little to no development directly adjacent to the interchange. See figure 42 – Land Ownership Map. There are no BLM special planning designations within the study area. New Mexico State Land occurs approximately ½ mile to the west of the interchange. Most land to the east of I-25 is privately owned, with some small State

Land parcels occurring north of and east of San Antonio. Businesses and homes can be found ½ mile to the east in the town of San Antonio. The San Antonio Fire District is located directly east of the interchange on the south side of US 380. Cattle grazing and agriculture are the primary land uses immediately adjacent to the interchange.

Farther from the I-25 interchange and outside the study area, approximately 3.3 miles to the south, the Bosque del Apache National Wildlife Refuge is located between the Chupadera Mountains and the San Pascual Mountains and encompasses more than 57,000 acres. To the north of Socorro, approximately 21.3 miles away, the Sevilleta National Wildlife Refuge is a 230,000-acre wildlife refuge bisected by the Rio Grande. National wildlife refuges allow recreation users a place to camp, hike, hunt, picnic, and watch wildlife.

Approximately 7.8 miles to the east, the White Sands Missile Range stretches along US 380 south and encompasses more than 2 million acres. The White Sands Missile Range occurs to the east of the Rio Grande and is managed by the U.S. Army.

Figure 42 - Land Ownership Map



4.4.11 Hazardous Materials

The NMDOT Hazardous Material Investigation (HMIB) prepared an Initial Site Assessment (ISA) summary memo to evaluate the study area for hazardous substances and petroleum products that might affect the project design and/or construction. The memo concluded that the only hazardous substance within the study area is lead-based paint present on two of the bridge structure.

4.5 Geotechnical

4.5.1 Regional Geology

The Rio Grande Valley is an alluvial rift valley extending from southern Colorado through central New Mexico into west Texas. The Rio Grande flows north to south along the valley. Tertiary and Pennsylvanian volcanic rocks are exposed in the Ladron, Socorro, and Magdalena Mountains located west of the study site. Erosion of these mountains and other mountains to the east has filled the Socorro Basin with alluvium to a thickness of up to 250 meters (800 ft.). Groundwater occurs in the basin-fill alluvial deposits and, in general, flows toward the Rio Grande.

The study area lies along the eastern edge of the Socorro Mountains located in central New Mexico. The mountains form a structurally high block within the Rio Grande Rift Valley. The area is characterized by volcanic activity and uplifts resulting in faulting, cinder cones, and ash flows.

The study area consists predominantly of quaternary alluvial fan and piedmont deposits of several ages that form dissected aprons between the mountains and the river. The oldest sedimentary, volcanic, and plutonic bedrock materials are typically exposed on the west side of the Socorro area.

4.5.2 Site Geology

Geologic conditions at the study site are consistent with the regional geology. The surficial geologic formations at or near the study site consist of the following.

- Qal: Alluvium (Holocene to Upper Pleistocene) – consists of unconsolidated cobbles, gravels, sand, silt, and clays
- Qp: Piedmont Alluvial Deposits (Middle to Lower Pleistocene) – consists of unconsolidated cobbles, gravels, sand, silt, and clays from higher-gradient tributaries, alluvial veneers, and alluvial fans
- QTs: Santa Fe Group (Middle Pleistocene to Upper Oligocene) – basin fill of the Rio Grande consisting of weakly to strongly cemented sand, gravels, silts, and clays

Review of geologic information from the U.S. Geological Survey Quaternary Faults database for the United States, accessed on October 26, 2022, at https://www.usgs.gov/programs/earthquake-hazards/faults, indicates that three faults are located within about 3.5 miles from the study site. The closest fault system is located approximately 1 mile north of the existing interchange.

4.5.3 Natural Resources Conservation Service Soil Survey

Four expected soil units were identified near surface layers for the corridor area and are summarized below:

- Arizo-Riverwash Complex, 0 to 5 percent slopes – 61 percent of study area with USCS Classification of GW, GW-GM, SW, SP, SM and AASHTO Classification A-1
- Nickel-Caliza Very Gravelly Sandy Loams, 1 to 30 percent slopes – 35 percent of study area with USCS Classification of GW-GM, GM, GC-GM, SM and AASHTO Classification A-1 and A-2
- Anthony Sandy Loam, 0 to 1 percent slopes – 3 percent of study area with USCS Classification of SM and AASHTO Classification A-2 and A-4
- Gila Clay Loam, 0 to 1 percent slopes – 1 percent of study area with USCS Classification of CL and AASHTO Classification A-4 and A-6

4.5.4 Typical Subsurface Profile

Table 8 summarizes the expected subsurface conditions at I-25 over US 380.

Table 8. Subsurface Conditions at I-25 over US 380

Description	Approximate Depth to Bottom of Stratum (ft.)	Material Encountered	AASHTO	Relative Density, Consistency, and Hardness
Stratum 1	0–10	Clay and silt with varying amounts of sand, gravel, and cobbles	A-4 A-6	Soft to very stiff
Stratum 2	10–30	Gravel, sand, and cobbles with occasional boulders	A-1 A-2	Loose to very dense
Stratum 3	30+	Clay and silt with varying amounts of sand, gravel, and cobbles	A-4 A-6	Very stiff to hard

Table 9 summarizes subsurface conditions at I-25 over Walnut Creek.

Table 9. Subsurface Conditions at I-25 over Walnut Creek

Description	Approximate Depth to Bottom of Stratum (ft.)	Material Encountered	AASHTO	Relative Density, Consistency, and Hardness
Stratum 1	0–10	Clay and silt with varying amounts of sand, gravel, and cobbles Sand with varying amounts of gravel and cobbles	A-2-4 A-4 A-6	Soft to very stiff Loose to medium dense
Stratum 2	10–30	Gravel, sand, and cobbles with occasional boulders	A-1 A-2	Loose to very dense
Stratum 3	30+	Clay and silt with varying amounts of sand, gravel, and cobbles Gravel, sand, and cobbles with occasional boulders	A-1 A-2 A-4 A-6	Very stiff to hard Dense to very dense

Table 10 summarizes the subsurface conditions at the I-25 southbound off ramp over Walnut Creek.

Table 10. Subsurface Conditions at I-25 Southbound Off Ramp over Walnut Creek

Description	Approximate Depth to Bottom of Stratum (ft.)	Material Encountered	AASHTO	Relative Density, Consistency, and Hardness
Stratum 1	0–10	Clay and silt with varying amounts of sand, gravel, and cobbles Sand with varying amounts of gravel and cobbles	A-2-4 A-4 A-6	Soft to very stiff Loose to medium dense
Stratum 2	10–30	Gravel, sand, and cobbles with occasional boulders	A-1 A-2	Loose to very dense
Stratum 3	30+	Clay and silt with varying amounts of sand, gravel, and cobbles Gravel, sand, and cobbles with occasional boulders	A-1 A-2 A-4 A-6	Very stiff to hard Dense to very dense

The surface and shallow subsurface soils along the proposed study alignment are considered to possess relatively low to moderate strength and low to moderate bearing capacity. The deeper soils will likely exhibit moderate to high bearing capability. It is expected that the sand soils, gravels, and cobbles to be encountered along the majority of the improvements at or near Walnut Creek will have relatively fair to good quality pavement support characteristics.

4.5.5 As-built Pavement Information

Table 11 provides as-built information for the pavement on I-25 and US 380.

Table 11. As-built Pavement Information

Highway	Location	Existing Asphalt Concrete Thickness (in.)	Asphalt Treated Base Course (in.)	Untreated Base Course (in.)	Subbase (in.)
I-25	Main line	5	6	—	4
I-25	Ramps	4	—	6	—
US 380	Main line	4	—	6	—

4.5.6 As-built Structure Information

Table 12 provides as-built information for the structures in the study area.

Table 12. As-built Structure Information

Structure No.	Location	Existing Foundation System	Depth/Length of Foundation (ft.)	Minimum Pile Penetration Depth (ft.)
6454	I-25 northbound over US 380	Abutments: 12-in. diameter timber piles Piers: Cast-in-place concrete footings	Abutments: 20–30 Piers: 5	17–25
6455	I-25 southbound over US 380	Abutments: 12-in. diameter timber piles Piers: Cast-in-place concrete footings	Abutments: 24–30 Piers: 5	25–40
6456	I-25 northbound over Walnut Creek	Abutments: 10BP57 piles Piers: 10BP57 piles	Abutments: 50 Piers: 60	25–40
6457	I-25 southbound over Walnut Creek	Abutments: 10BP57 piles Piers: 10BP57 piles	Abutments: 50 Piers: 60	25–40

4.5.7 Groundwater

Groundwater was not observed at or in nearby projects up to about 50 ft. below the existing site grade. Regional groundwater is anticipated to have significant seasonal variations and may be encountered at depths near the surface within drainages, arroyos, and when irrigation canals are flowing to over 50 ft. below existing site grade. These observations represent groundwater conditions at the time of the field exploration and may not be indicative of other times or other locations. Groundwater conditions can change with varying seasonal and weather conditions and other factors.

Groundwater aquifers within the Middle Rio Grande Valley consist of unconsolidated Quaternary/Tertiary alluvium. The uppermost aquifer is the Rio Grande Alluvium, which is approximately 200 ft. in thickness and occurs within the Rio Grande floodplain. Depth to water in the study vicinity ranges between 8 and 200 ft. below ground surface, according to the NM State

Engineer's, office and the regional direction of groundwater flow in the vicinity of the study site is toward the east.

Groundwater conditions should be anticipated to change with varying seasonal and weather conditions and other factors. Fluctuations in groundwater levels can best be determined by implementation of a groundwater monitoring plan. Such a plan would include installation of groundwater monitoring wells and periodic measurement of groundwater levels over a sufficient period of time.

4.6 Evaluation Summary

The detailed evaluation of the existing system in the study area has identified the following conditions and deficiencies that warrant correction or improvement. These items may be a result of the infrastructure's aging process or improvements in the design standards through time that now make the features outdated.

- deficient acceleration and merge lane lengths for the northbound and southbound entrance ramps
- deficient merge lane length for northbound to eastbound US 380 ramp
- deficient horizontal alignment geometry (superelevation) for I-25
- aged and dilapidated bridge structures
- drainage
- lighting

5. Purpose and Need

The purpose and need statement is essential in establishing a basis for the development of alternatives. The purpose and need assists with the identification and eventual selection of a preferred alternative. The statement demonstrates why the proposed action, with its cost and associated environmental impacts, is being pursued. The purpose and need also demonstrates the problems that will persist if project improvements are not implemented.

The existing deficiencies and issues within the study area and are described in detail throughout this report. The purpose of the I-25/US 380 (San Antonio) Interchange Study is to correct geometric roadway deficiencies, enhance drainage structures and protections to diminish scour and erosion, and to provide a safe and efficient interchange that meets user expectations.

6. Development of Alternatives

Fulfilling the purpose and need of the study is a critical focus in the development of alternatives. The proposed alternatives achieve that objective with different levels of success. The alternatives will be valued later in the report regarding their success in fulfilling the purpose and need and achieving other engineering and environmental criteria.

Four alternatives were developed and evaluated in this study. One of the alternatives is the No-Build and the remaining three are build alternatives with different levels of modifications to the interchange. See Appendix C for exhibits showing the alternatives.

6.1 No-Build Alternative

The No-Build Alternative includes no changes to the existing situation. Geometric deficiencies on the roadway would not be improved. No improvements would occur for the public through signs, striping, and drainage. The existing drainage structures would be left as-is with implementation of the No-Build Alternative.

Geometric deficiencies that exist would not be corrected, the roadway would continue to be non-compliant with AASHTO standards, and safety would not be improved. No additional ROW would be required, and access would remain as it does today.

Utility conflicts would not be an issue.

The No-Build Alternative involves some real challenges from a drainage perspective. While most of the culverts within the interchange are in decent condition, the Walnut Creek crossings will continue to face increasing operational and maintenance challenges if no improvements are made. Both culverts for the existing southbound off ramp are undersized, meaning the ramp may flood during peak flood events. In addition, when the ramp's 20-box culvert crossing floods, the headwater may even reach the I-25 and US 380 bridge, further inhibiting traffic operations. The I-25 and Walnut Creek main line bridges also face drainage challenges. While the bridges have sufficient hydraulic capacity, the scour experienced at the piers and abutments is reaching a point where the structural capacity may become threatened should the erosion be allowed to continue unmitigated.

The bridge structures would not be modified or replaced. The dilapidated and aged structures would continue requiring maintenance and preservation efforts. The remaining life span of the structures would depend on those efforts. It is expected that the extent and frequency of those efforts will increase as the structures continue to age.

Because no improvements would be made with implementation of this alternative, constructability would not be an obstacle. No traffic control measures would be required.

The No-Build Alternative does not meet the requirements of the purpose and need statement.

6.2 Build Alternatives

The build alternatives were developed with a combination of NMDOT and AASHTO design criteria. The criteria and sources for each discipline are listed below.

6.2.1 Criteria

ROADWAY

The design criteria for the roadway elements of the Build Alternatives were drawn from the following sources:

- AASHTO's *A Policy on Geometric Design of Highways and Streets* (The Green Book)
- AASHTO's *Roadside Design Guide*
- NMDOT 2019 *Standard Specifications for Highway and Bridge Construction*
- NMDOT 2019 *Standard Drawings for Highway and Bridge Construction*
- NMDOT *Design Manual*

Table 13 lists the design criteria for I-25.

Table 13. I-25 Design Criteria

Design Aspect	Criteria
Functional classification	Interstate
Terrain	Level
Design speed	80 mph
Posted speed	75 mph
Design vehicle	WB 67
Number of lanes	Two lanes in each direction
Width of lane Width of outside shoulders Width of inside shoulders	12 ft. 10 ft. 4 ft.
Normal crown slope	2%
Maximum superelevation slope	4% preferred 8% maximum
Stopping sight distance	910 ft.
Vertical alignment maximum grade	5.0%
Vertical alignment minimum grade	0.5%
K-value, crest curve	384 ft.
K-value, sag curve	231 ft.
Vertical clearance (bridge)	17 ft.
Vertical clearance (sign structures)	18 ft.
Cut and fill slopes	Typical – No guardrail *Cut* 4:1 for depths up to 10 ft. 3:1 for depths of 10 to 20 ft. 2.5:1 for depths of 20 ft. and deeper *Fill* 4:1 for all depths Typical – Guardrail *Cut* 4:1 for depths up to 5 ft. 3:1 for depths of 5 to 10 ft. 2.5:1 for depths of 10 ft. and deeper *Fill* 4:1 for all depths Typical – Concrete wall barrier *Fill* 2.5:1 for all depths

Table 14 lists the design criteria for US 380.

Table 14. US 380 Design Criteria

Design Aspect	Criteria
Functional classification	Minor arterial
Terrain	Level
Design speed	45 mph
Posted speed	40 mph
Design vehicle	WB 67
Number of lanes	Two lanes
Width of lane Width of right shoulder	12 ft. 8 ft.
Normal crown slope	2%
Maximum superelevation slope	4% preferred 8% maximum
Stopping sight distance	360 ft.
Vertical alignment maximum grade	6.0%
Vertical alignment minimum grade	0.5%
K-value, crest curve	61 ft.
K-value, sag curve	79 ft.
Vertical clearance (bridge)	17 ft.
Vertical clearance (sign structures)	18 ft.
Cut and fill slopes	Typical – No guardrail *Cut* 4:1 for depths up to 10 ft. 3:1 for depths of 10 to 20 ft. 2.5:1 for depths of 20 ft. and deeper *Fill* 4:1 for all depths Typical – Guardrail *Cut* 4:1 for depths up to 5 ft. 3:1 for depths of 5 to 10 ft. 2.5:1 for depths of 10-ft. and deeper *Fill* 4:1 for all depths Typical – Concrete wall barrier *Fill* 2.5:1 for all depths

Table 15 list the design criteria for ramps.

Table 15. Ramp Design Criteria

Design Aspect	Criteria
Functional classification	Interchange
Terrain	Level
Design speed (ramp body)	50 mph
Design speed (ramp terminus)	25 mph
Design vehicle	WB 67
Number of lanes	Single lane
Width of lane Width of outside shoulders Width of inside shoulders	14 ft. 8 ft. 4 ft.
Cross slope	2%
Maximum superelevation slope	4% preferred 8% maximum
Stopping sight distance (ramp body)	425 ft.
Vertical alignment maximum grade	4.0% up, 5.0% down
Vertical alignment minimum grade	0.5%
K-value, crest curve (ramp body)	84 ft. minimum
K-value, sag curve (ramp body)	96 ft. minimum
Vertical clearance (bridge)	17 ft.
Vertical clearance (sign structures)	18 ft.
Cut and fill slopes	Typical – No guardrail *Cut* 4:1 for depths up to 10-ft. 3:1 for depths of 10-ft. to 20-ft. 2.5:1 for depths of 20-ft. and deeper *Fill* 4:1 for all depths Typical – Guardrail *Cut* 4:1 for depths up to 5-ft. 3:1 for depths of 5-ft. to 10-ft. 2.5:1 for depths of 10-ft. and deeper *Fill* 4:1 for all depths Typical – concrete wall barrier *Fill* 2.5:1 for all depths

DRAINAGE

The drainage elements will be designed in accordance with the NMDOT *Drainage Design Manual*.

BRIDGE

The selected bridge type will be designed in accordance with current engineering criteria from the following sources:

- AASHTO *Load and Resistance Factor Design Bridge Design Specifications*, 9th Edition
- NMDOT *Bridge Procedures and Design Guide*, 2018 Edition
- NMDOT *Standard Specifications for Highway and Bridge*, 2019 Edition

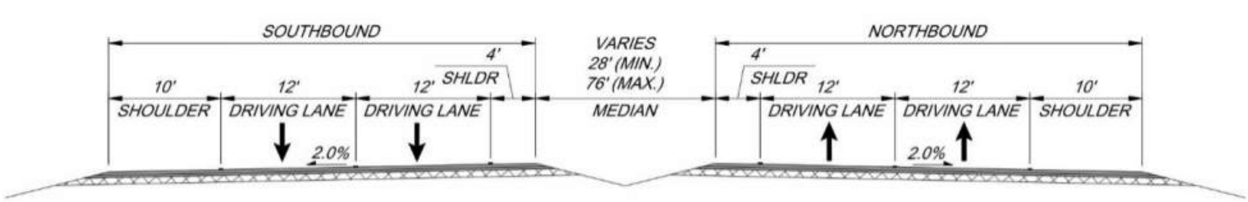
6.2.2 Alternative Description

ROADWAY

The general approach in the development of roadway alternatives for the study is to minimize improvements and limit changes to elements that meet current design and safety standards. For example, maintaining the existing I-25 horizontal and vertical alignments will minimize changes to the roadway and avoid costly expenses that are not needed. However, some changes are needed to improve safety and meet the current design standards. An example of this concept is found in the proposed improvements to I-25 by increasing the superelevation of roadway through the horizontal curve to meet the current design standards. This deficiency will be corrected with all the build alternatives.

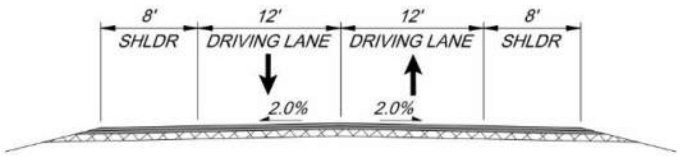
The proposed typical section for I-25 (Figure 43) is very similar to the existing section, with minimal changes.

Figure 43. Proposed I-25 Typical Section



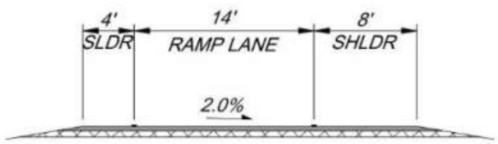
See the proposed typical section for US 380 (Figure 44). Any changes to US 380 will facilitate construction and maintenance of traffic approaches.

Figure 44. Proposed US 380 Typical Section



The proposed typical section for the ramps is shown in Figure 45. The other modifications to the ramp configurations will be presented in the alterative discussions below.

Figure 45. Proposed Ramp Typical Section



All the build alternatives are proposing new roadway surfacing within the affected areas of construction. In addition to the new pavement, the alternatives incorporate new roadway barriers to protect traffic from roadside hazards, new markings, and new signs. Lighting is recommended at the noted gores as a safety improvement.

BRIDGE

All of the build alternatives are proposing to replace the I-25 structures. The structures over Walnut Creek are being replaced with longer bridges to provide a wider drainage channel section. The wider channel will help to decrease velocities and expected scour. The lower velocities and scour will improve safety and help to minimize maintenance issues in the channel.

The other improvement that affects both the US 380 and Walnut Creek structures and requires their replacement is the change in superelevation to meet current roadway design standards. Both crossings are located on the horizontal curve of I-25 and, per design standards, warrant a greater superelevation.

A bridge type selection report will be developed for the new bridge structures once the build alternative is selected. The report will evaluate the alternatives for bridge types using the following criteria.

Existing Site Conditions/Geometric Constraints

The proposed structure alternatives will be evaluated on how well they fit into the existing conditions and proposed geometry. The existing conditions include the topography, hydrology, and geology. The proposed geometric constraints include span lengths, number of spans, structure width, vertical clearances, horizontal clearances, etc.

Structural Requirements

The proposed structures are evaluated on how well they will perform structurally given the constraints and loads that are produced from the existing conditions and proposed geometry.

Economics

The initial construction cost and long-term maintenance must be carefully weighed to determine the most economical alternative from a life cycle perspective. Historic data will be used to evaluate the relative costs of superstructure types to determine the most efficient.

Constructability

The proposed structures will be evaluated on how conducive they are for construction. The structure locations are not located near existing infrastructure that will limit or hinder constructability; therefore, access is not considered problematic for any of the structure types.

Aesthetics

The aesthetics discussion and evaluation will assess how well the appearance of the structure fits into its surroundings.

DRAINAGE

The drainage improvements proposed for each alternative are similar in general aspects. Each proposed build alternative will include new bridge structures for I-25 over Walnut Creek. Given the high scour forces experienced at the existing bridge, several improvements are proposed for the new bridge. First, to reduce the water depth and velocities through the bridge opening, the bridge length will be extended approximately 130 ft. In addition, scour protection around the bridge abutments and piers will be added, if necessary. It is recommended to use concrete revetment block for the slope protection to cope with the high velocities and to reduce long-term maintenance.

Other general improvements will include additional culverts to accommodate roadway geometry modifications, roadside ditches, median drop inlets, removal of outdated culverts, and erosion protection.

GEOTECHNICAL

The geotechnical conditions anticipated along the study alignment appear to be suitable for the proposed improvements. Soft/loose soils at shallow depths will require particular attention in the design and construction.

Preliminary geotechnical engineering recommendations for the preliminary design of earth connected phases of the study are outlined below. The preliminary recommendations contained in this report are based on the results of a literature research, review of existing geotechnical reports, as-built and construction plans, professional experience in the area, geotechnical field exploration, laboratory testing performed by NMDOT, and the study team's current understanding of the proposed study.

The surface and shallow subsurface soils at the proposed study site are anticipated to possess relatively low to moderate strength soils and will likely exhibit a low to moderate tendency for compression and/or none to low expansion with increasing load and when elevated in moisture content. The shallow existing soils will likely exhibit low to moderate bearing capacity. The deeper soils will likely exhibit moderate to high bearing capability. Bedrock is anticipated to be encountered at depths greater than about 100 ft. below existing site grade.

Based on the geological literature study, site reconnaissance, review of existing reports and plans, and professional experience in the area, the planned bridge structures are anticipated to be supported on shallow footings or deep foundations consisting of drilled shafts or driven piles. Given the presence of gravels, cobbles, and boulders within or adjacent to Walnut Creek and at the existing interchange, driven piles may not be feasible for bridge support in these areas. Supporting the bridge structures on footings bearing on mechanically stabilized earth abutments could be considered depending on the magnitude of long-term settlement/consolidation of existing subsurface soils. The wingwalls, cast-in-place retaining walls, and other ancillary structures are anticipated to bear on shallow foundations bearing on undisturbed native soils or structural backfill.

The anticipated pavement thickness will be based on the subgrade materials and traffic types and volumes at the study site. It is expected that the soils will typically have fair to good quality pavement-support characteristics.

On-site poorly graded and silty sands are anticipated to be suitable for use as engineered fill beneath bridge wingwalls, cast-in-place retaining walls, and drainage structures. On-site clay and silt soils are anticipated to be encountered at the study site. Shallow excavations into the on-site soils are expected to be accomplished with conventional earthwork equipment. Caving soils should be anticipated due to loose, granular soils. Dense to very dense soils with large gravels, cobbles, and boulders may be encountered and require specialized equipment. This is likely to vary with additional site-specific subsurface soil information at the proposed structure locations.

For permanent slopes in compacted fill and cut areas with maximum heights of about 20 ft., recommended preliminary maximum configurations for on-site materials are listed in Table 16.

Table 16. Maximum Slope Configuration

Soil Type	Horizontal:Vertical (H:V)
Clays and silts	2.5H:1V to 3H:1V
Poorly graded to silty sands	2H:1V[1] to 2.5H:1V[2]
Gravels	1.5H:1V[1] to 2H:1V[2]

[1] structural backfill and used in conjunction with slope paving or riprap

[2] Cemented soils or cobbles and boulder may allow for steeper slopes, where encountered.

Steeper slopes can be considered with subsurface information (geophysical and/or geotechnical) and slope stability analysis. If steeper slopes are required for site development, the study team recommends the use of retaining walls/systems consisting of mechanically stabilized earth retaining walls, soil nails, or cast-in-place retaining walls.

BRIDGE FOUNDATION CONSTRUCTION

Based on the geological literature study, site reconnaissance, review of existing reports and plans, field exploration, laboratory testing, and professional experience in the area, the planned bridge structures are anticipated to be supported on shallow footings/foundations or deep foundations consisting of drilled shafts bearing on driven piles bearing on undisturbed soils. Given the presence of gravels, cobbles, and boulders within or adjacent to Walnut Creek and at the existing interchange, driven piles may not be feasible for bridge support in these areas. Supporting the bridge structures on footings bearing on mechanically stabilized earth abutments could be considered depending on the magnitude of long-term settlement/consolidation of existing subsurface soils.

Shallow excavations may encounter both loose, caving soils and coarse soils with large cobbles and boulders. Dense to very dense soils are anticipated to be encountered at depths ranging from about 20 to 40 ft. below existing site grade. This could likely vary with additional site-specific subsurface soil information at the proposed structure locations. The results of our preliminary analyses indicate that the estimated required axial and lateral capacity per pile or drilled shaft can likely be achieved with pile/shaft lengths ranging from about 40 to 60 ft.

Pile drivability analysis should be performed using GRLWEAP software. This will determine any pre-drilling that could be required for pile installation along with specifying the appropriate pile driving equipment. Dense to very dense gravel soils and large cobbles will affect drivability and constructability of deep foundations.

Pile driving criteria should be determined based on Pile Dynamic Analysis testing of the first pile driven at each abutment and pier. During installation of piles, driving stresses should not be allowed to exceed 90 percent of the pile yield strength. For A-252 Grade 3 (minimum certified yield strength 45 ksi) piling, this is 40.5 ksi.

Drilled shaft excavations for foundation construction may encounter caving soils and groundwater. Therefore, a slurry or temporary casing may be required during installation and some difficulty in completing the drilled shaft should be anticipated. The use of drilling slurries should take into account any environmental impacts or restrictions. Cross-hole sonic logging testing will need to be performed on completed shafts to assess and confirm shaft construction integrity. In the case of dense to very dense gravels and cobbles, specialized or heavy duty equipment may be required to pre-drill and construct drilled shaft excavations.

For wingwalls, retaining walls, and ancillary structures, a shallow foundation system consisting of shallow continuous or spread footings could be considered feasible, provided that some movement can be tolerated. However, based on the magnitude of potential compression and/or expansion anticipated in the near-surface soils, shallow footings bearing on undisturbed native soils or a zone of structural backfill may be required for support of the proposed structures. The thickness of engineered fill below footings is anticipated to be on the order of about 2 to 4 ft.

Areas of loose soils may be encountered at shallow foundation bearing depth after excavation is completed for footings. When such conditions exist beneath planned footing areas, the subgrade soils should be superficially compacted prior to placement of the foundation system. If sufficient compaction cannot be achieved in place, the loose soils should be removed and replaced as engineered fill.

Site Class D should be considered for preliminary design purposes. Site Class C could be considered if dense to very dense soils or gravels extend down to considerable depth below the study alignment. This could be verified with supplemental exploration consisting of seismic testing or borings

Scour and erosion were observed at existing bridges and culverts located within Walnut Creek and are anticipated to be a concern with new structures. In areas of existing drainages, countermeasures will likely be required and may include riprap, slope paving, gabion walls, sediment fencing, and soil cement.

PAVEMENT DESIGN CONSIDERATIONS

Pavement rehabilitation and/or reconstruction could be considered for the study. The anticipated new or rehabilitation pavement section thickness will be based on the existing pavements materials, subgrade soil, and traffic types and volumes along the study alignment. In areas of significant structural distress and poor pavement condition, pavement reconstruction is recommended. Based on a review of existing pavement conditions, reconstruction is likely associated with the I-25 southbound off ramp, while pavement rehabilitation may be possible for the remaining I-25 ramps and US 380.

Based on the estimated existing asphalt and base course thickness and pavement condition, a partial mill and inlay/overlay could be considered for pavement rehabilitation. The design life and future performance would be based on the new overall pavement section thickness, condition of existing pavement materials, subgrade, and traffic.

Thicker pavement sections will be associated with poorer quality (A-4 and A-6) subgrades associated with the clays and silts. Thinner pavement sections will be associated with higher quality (A-1 and A-2) subgrades associated with the poorly graded, well-graded, and silty sands and gravels. According to NMDOT specifications, stabilization may be required in areas of poor quality/low R-value (less than 20) subgrade and/or in areas of elevated moisture contents present within the subgrade soils along the study alignment.

In addition, in areas of existing pavement distress, remediation and/or replacement of unstable subgrade soils should be anticipated in areas of pavement reconstruction and/or rehabilitation. The depth of remediation and/or replacement would be based on the magnitude of instability of the subgrade. Placement of geotextile fabrics or geogrids could also be considered to improve subgrade strength and stability and/or reduce long-term maintenance. Chemical treatment (lime or cement) could be considered as a potential option for expansive soils (if encountered). Additional chemical tests of the subgrade materials will need to be performed to verify the feasibility and use of lime for subgrade stabilization measures to ensure that sulfate heave is not an issue during construction. High sulfate contents would preclude the use of lime-treated subgrade.

ENVIRONMENTAL

Environmental impacts for all alternatives may consist of biological impacts, cultural resources impacts, elevated noise impacts, impacts to potential Waters of the US, and temporary changes in air quality. Depending on the amount of ROW required, ground disturbance impacts would fluctuate for each alternative. Ground disturbance would be associated with increased vegetation and habitat removal, although no threatened or endangered species, nor BLM sensitive species, are anticipated to be found in the study area. The Walnut Creek bridge and culverts will be evaluated to determine if bats or birds are roosting or nesting in the structures to determine if there would be any impacts to those species. To determine whether the alternative would affect cultural resources, a cultural resources survey would be necessary in all areas of disturbance. If cultural resources will be affected by the alternative, data recovery or other mitigation efforts might be necessary. Because the existing bridges will be replaced and lead-based paint was identified on two structures, the HMIB will be provided plans for the preferred alternative plans so that they may provide appropriate recommendations pertaining to hazardous materials.

6.2.3 Alternative No. 1

Alternative No. 1 maintains the existing interchange layout and enhances the geometry to improve safety. The enhancements include the following:

1. Addition of an auxiliary lane for the northbound entrance ramp to provide adequate acceleration and merge distance for vehicles
2. Addition of an auxiliary lane for the southbound entrance ramp to provide adequate acceleration and merge distance for vehicles
3. Addition of an auxiliary lane for the northbound I-25 exit ramp merging with eastbound US 380 traffic
4. Reconstruction of I-25 through the limits of the horizontal curve to provide adequate superelevation
5. Reconstruction of the I-25 bridges over US 380 to match the new superelevation slope
6. Reconstruction of the I-25 bridge over Walnut Creek to increase hydraulic conveyance capacity
7. Expansion of Bridge No. 3168 to add additional hydraulic conveyance capacity

DRAINAGE

Despite featuring the least roadway modifications, Alternative No. 1 still requires significant drainage improvements. In addition to the I-25/main line bridge improvements over Walnut Creek, the 20-box culvert Walnut Creek crossing for the southbound off ramp needs to be expanded by approximately eight 8 ft. by 9 ft. box culverts to provide the required capacity. The southbound off ramp's other culvert crossing for the arroyo just north of Walnut Creek also requires an additional 4 ft. by 6 ft. box culvert to gain sufficient capacity.

ENVIRONMENTAL

For Alternative No. 1, there is a potential that approximately 36 acres of ground would be temporarily or permanently disturbed. These areas will be reseeded with a native seed mix after construction and the area will be returned to preconstruction conditions. There will be permanent ground disturbance, which is associated with permanent vegetation removal and potential habitat removal for any invertebrates or wildlife that inhabit the area of permanent disturbance. There are no threatened or endangered species anticipated in the study area; however, if tree removal is necessary, nesting or migratory birds may be affected. The area would be surveyed for possibility of cultural resources, and cultural resource impacts are possible, but unknown at this point in the study. The bridge replacement over Walnut Creek and improvements at the two culvert locations may impact potential Waters of the US, which depending on the magnitude of impacts, could warrant the need for Clean Water Act Sections 404 and 401 permitting.

OPINION OF POSSIBLE CONSTRUCTION COST

An estimate of the possible construction cost has been developed for Alternative No. 1. The estimate includes quantities developed for some of the major pay items based on the conceptual-level design. Some of the items have been estimated based on costs from a similar project. A 30 percent contingency is included in the estimate for planning purposes to account for construction items that have not been accounted for at this level of development. The engineer's opinion of possible construction cost for Alternative No. 1 is $58,900,000.

ADVANTAGES/DISADVANTAGES

Advantages:

- minimized construction cost
- no ROW acquisitions
- maintains existing user expectations
- no Interstate Access Change Request required
- eliminates merge issues with northbound and southbound entrance ramps
- replaces I-25 bridges
- improves drainage conveyance of Walnut Creek under the I-25 bridges

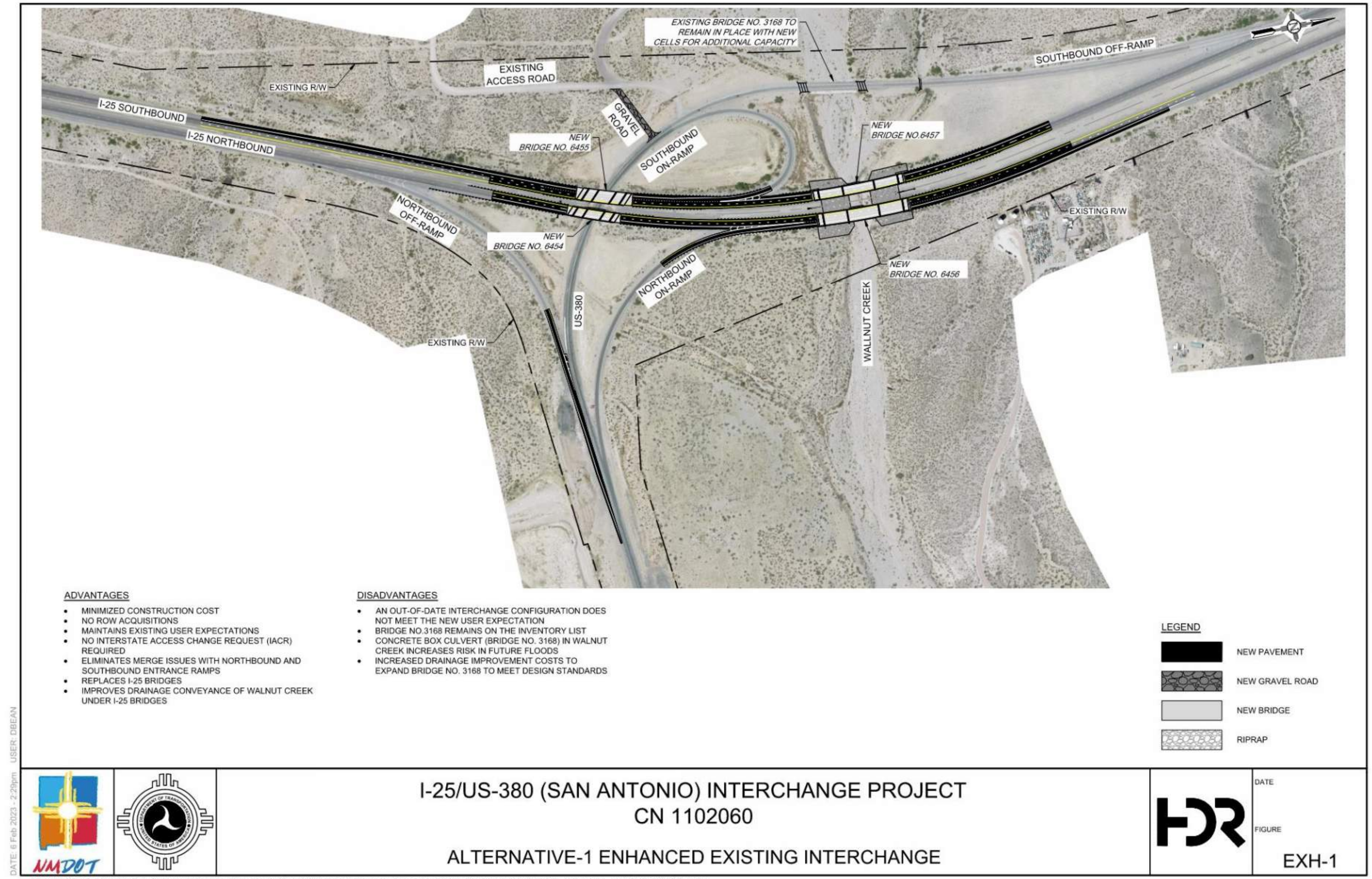
Disadvantages:

- an out-of-date interchange configuration does not meet the new user expectation
- Bridge No. 3168 remains on the inventory list
- CBC (Bridge No. 3168) in Walnut Creek increases risk of future floods

- increased drainage improvement costs to expand Bridge No. 3168 to meet design standards

Figure 46 shows the elements of Alternative No. 1.

Figure 46. Alternative No. 1



6.2.4 Alternative No. 2

Alternative No. 2 changes the interchange layout to a modern diamond interchange configuration that meets the new user expectations. The specific enhancements include the following:

1. Addition of an auxiliary lane for the northbound entrance ramp to provide adequate acceleration and merge distance for vehicles
2. Addition of an auxiliary lane for the southbound entrance ramp to provide adequate acceleration and merge distance for vehicles
3. Reconstruction of I-25 through the limits of the horizontal curve to provide adequate superelevation
4. Reconstruction of the I-25 bridges over US 380 to match the new superelevation slope
5. Reconstruction of the I-25 bridges over Walnut Creek to increase hydraulic conveyance capacity
6. Removes Bridge No. 3168 from the inventory

DRAINAGE

Given its reconfiguration of the interchange, Alternative No. 2 includes several additional culvert crossings to facilitate the drainage from the west to the east through the interchange. The existing drainage configuration routes the off-site flows approaching the interchange under I-25, US 380, and the northbound on ramp through a series of large culvert crossings. However, it is proposed to route these off-site flows north to drain in the direction to Walnut Creek through a new riprap-lined channel. This removes the need for the large culvert crossings, helps mitigate potential flooding at the interchange, and reduces the long-term maintenance requirements.

ENVIRONMENTAL

For Alternative No. 2, there is a potential that approximately 67 acres of ground would be temporarily or permanently disturbed. These areas will be reseeded with a native seed mix after construction and the area will be returned to preconstruction conditions. There will be permanent ground disturbance, which is associated with permanent vegetation removal and potential habitat removal for any invertebrates or wildlife that inhabit the area of permanent disturbance. There are no threatened or endangered species anticipated in the study area; however, if tree removal is necessary, nesting or migratory birds may be affected. The area would be surveyed for possibility of cultural resources, and cultural resource impacts are possible, but unknown at this point in the study. The bridge replacement over Walnut Creek and improvements at the two culvert locations may impact potential Waters of the US which depending on the magnitude of impacts, could warrant the need for Clean Water Act Sections 404 and 401 permitting.

OPINION OF POSSIBLE CONSTRUCTION COST

An estimate of the possible construction cost has been developed for Alternative No. 2. The estimate includes quantities developed for some of the major pay items based on the conceptual-level design. Some of the items have been estimated based on costs from a similar project. A 30 percent contingency is included in the estimate for planning purposes to account for construction items that have not been accounted for at this level of development. The engineer's opinion of possible construction cost for Alternative No. 2 is $74,400,000.

ADVANTAGES/DISADVANTAGES

Advantages:

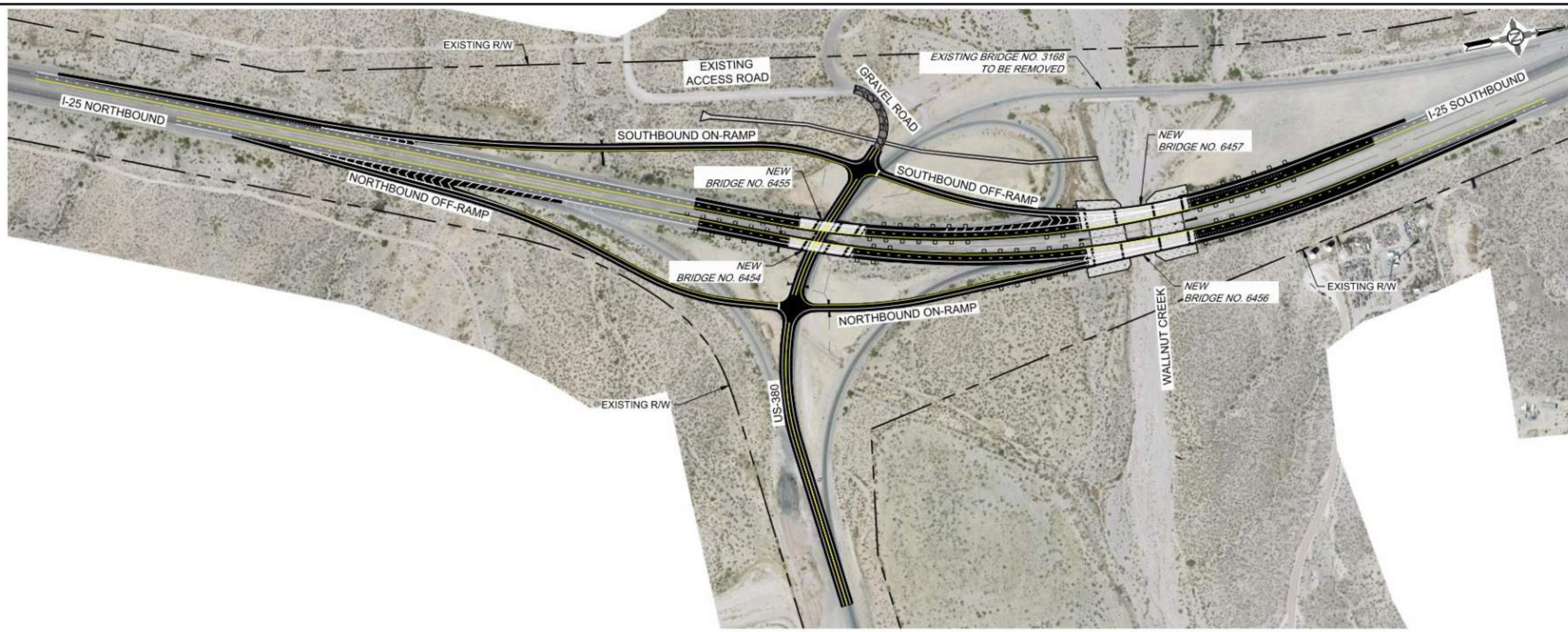
- interchange configuration meets typical user expectations
- removes Bridge No. 3168 from the inventory
- removal of Bridge No. 3168 reduces risk of flooding by removing structure from waterway
- replaces I-25 bridges over US 380 and over Walnut Creek
- improves drainage conveyance of Walnut Creek under the I-25 bridges

Disadvantages:

- increased construction cost when compared to Alternative No. 1
- Interstate Access Change Request required
- stop-controlled intersection for ramps
- Requires temporary US 380 closures during construction

Figure 47 shows the components of Alternative No. 2.

Figure 47. Alternative No. 2



ADVANTAGES

- INTERCHANGE CONFIGURATION MEETS TYPICAL USER EXPECTATIONS
- REMOVES BRIDGE NO. 3168 FROM THE INVENTORY
- REMOVAL OF BRIDGE NO. 3168 REDUCES RISK OF FLOODING BY REMOVING STRUCTURE FROM WATERWAY
- REPLACES I-25 BRIDGE OVER US 380 AND OVER WALNUT CREEK
- IMPROVES DRAINAGE CONVEYANCE OF WALNUT GREEK UNDER THE I-25 BRIDGES

DISADVANTAGES

- AN INCREASED CONSTRUCTION COST WHEN COMPARED TO ALT. NO. 1
- AN INTERSTATE ACCESS CHANGE REQUEST (IACR) REQUIRED
- STOP CONTROLLED INTERSECTION FOR RAMPS
- REQUIRES TEMPORARY CLOSURES OF US 380 DURING CONSTRUCTION OF THE BRIDGES.

LEGEND

- NEW PAVEMENT
- NEW GRAVEL ROAD
- NEW BRIDGE
- RIPRAP

USER: DBEAN DATE: 6 Feb 2023 - 2:42pm

I-25/US-380 (SAN ANTONIO) INTERCHANGE PROJECT
CN 1102060

ALTERNATIVE 2: DIAMOND INTERCHANGE MAINTAINING US 380 ALIGNMENT

DATE

FIGURE
EXH-2

DRAWING FILE: 10340805/6.0_CAD_BIM/6.2_WIP/_Study Phase CN 1102060/Exhibits/Roadway Alternative Exhibits/DWG/1102060_EXHIBIT_ALT 2.dwg LAYOUT: EXHIBIT ALT 2

6.2.5 Alternative No. 3

Alternative No. 3 changes the interchange layout to a modern diamond interchange configuration that meets the new user expectations. The specific enhancements include the following:

1. Addition of an auxiliary lane for the northbound entrance ramp to provide adequate acceleration and merge distance for vehicles
2. Addition of an auxiliary lane for the southbound entrance ramp to provide adequate acceleration and merge distance for vehicles
3. Reconstruction of I-25 through the limits of the horizontal curve to provide adequate superelevation
4. Reconstruction of the I-25 bridges over US 380 to match the new superelevation slope
5. Reconstruction of the I-25 bridge over Walnut Creek to increase hydraulic conveyance capacity
6. Removes Bridge No. 3168 from the inventory

DRAINAGE

Alternative No. 3 includes nearly identical drainage improvements to Alternative No. 2. The added culverts are in slightly different locations because of the bridge location. It also routes the off-site flows north to Walnut Creek through a riprap-lined channel.

ENVIRONMENTAL

For Alternative No. 3, there is a potential that approximately 62 acres of ground would be temporarily or permanently disturbed. These areas will be reseeded with a native seed mix after construction and the area will be returned to preconstruction conditions. There will be permanent ground disturbance, which is associated with permanent vegetation removal and potential habitat removal for any invertebrates or wildlife that inhabit the area of permanent disturbance. There are no threatened or endangered species anticipated in the study area; however, if tree removal is necessary, nesting or migratory birds may be affected. The area would be surveyed for possibility of cultural resources, and cultural resource impacts are possible, but unknown at this point in the study. The bridge replacement over Walnut Creek and improvements at the two culvert locations may impact potential Waters of the US, which depending on the magnitude of impacts, could warrant the need for Clean Water Act Sections 404 and 401 permitting.

OPINION OF POSSIBLE CONSTRUCTION COST

An estimate of the possible construction cost has been developed for Alternative No. 3. The estimate includes quantities developed for some of the major pay items based on the conceptual-level design. Some of the items have been estimated based on costs from a similar project. A 30 percent contingency is included in the estimate for planning purposes to account for construction items that have not been accounted for at this level of development. The engineer’s opinion of possible construction cost for Alternative No. 3 is $75,400,000.

ADVANTAGES/DISADVANTAGES

Advantages:

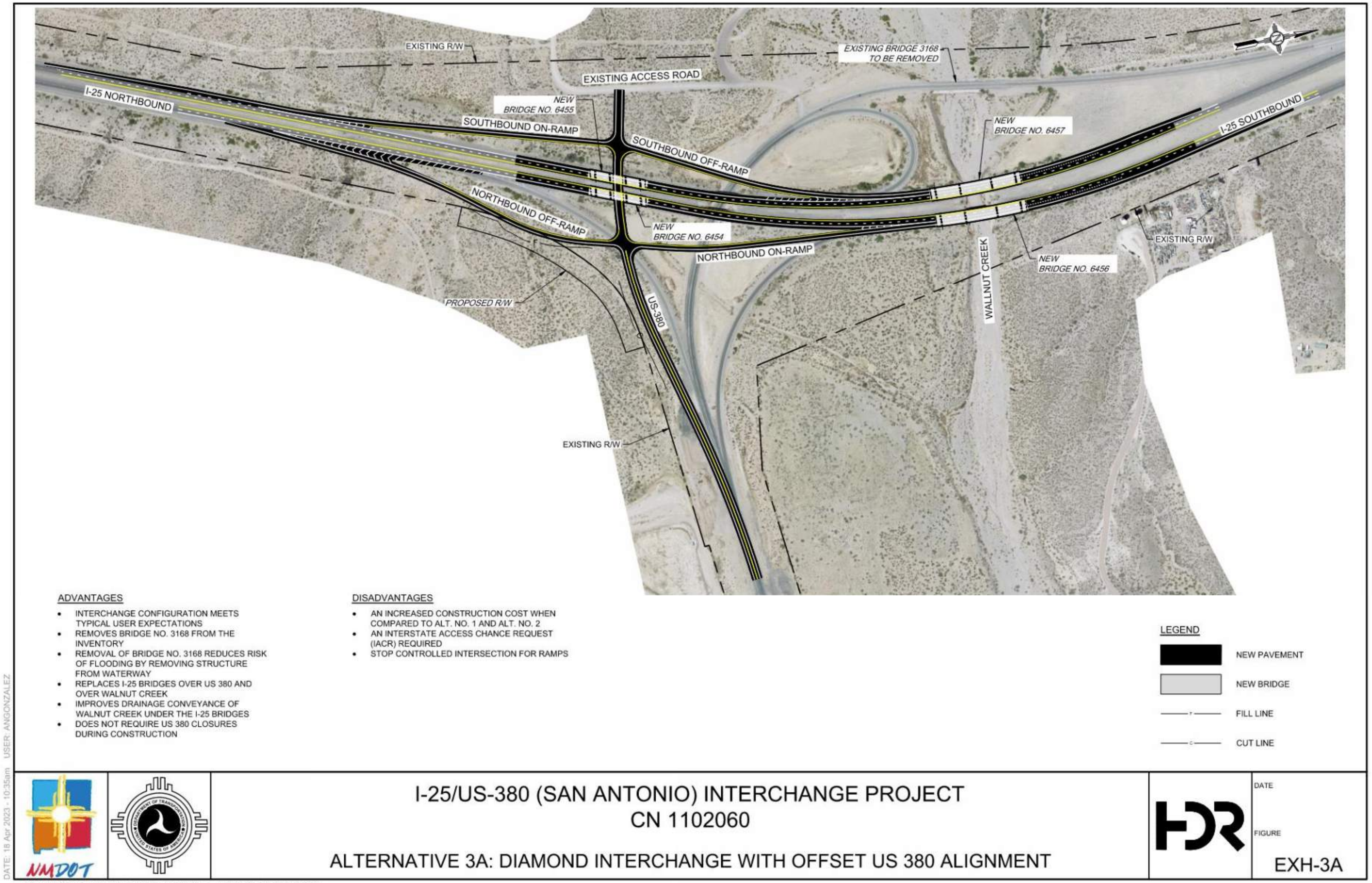
- interchange configuration meets typical user expectations
- removes Bridge No. 3168 from the inventory
- removal of Bridge No. 3168 reduces risk of flooding by removing structure from waterway
- replaces I-25 bridges over US 380 and over Walnut Creek
- improves drainage conveyance of Walnut Creek under the I-25 bridges
- Does not require US 380 closures during construction

Disadvantages:

- increased construction cost when compared to Alternative No. 1 and Alternative No. 2
- Interstate Access Change Request required
- stop-controlled intersection for ramps

Figure 48 shows the components of Alternative No. 3.

Figure 48. Alternative No. 3



7. Evaluation of Alternatives

Each alternative has been developed and evaluated against engineering and environmental criteria. The evaluation process will assign a factor value to the different criteria for each alternative. The factors are as follows:

++ = very positive effects
+ = positive effects
0 = negligible or no effects
- = negative effects
-- = very negative effects

The following discussion details the scoring of those factors for each alternative and determines the preferred alternative for advancement into Phase C of the study.

7.1 Purpose and Need Analysis

7.1.1 No-Build Alternative

The No-Build Alternative does not meet the purpose and need of the study. The safety concerns associated with the identified deficiencies and aged structures would not be corrected. Because of not meeting the purpose and need of the study, it is valued as a very negative effect.

7.1.2 Build Alternatives

The build alternatives would meet the purpose and need of the study. The safety concerns associated with the identified deficiencies and aged structures would be corrected and the alternatives are valued as a very positive effect.

Table 17. Summary of Purpose and Need Analysis

Alternative	Factor
No-Build	- -
Alt. No. 1	+ +
Alt. No. 2	+ +
Alt. No. 3	+ +

7.2 Cost Analysis

Funding is continually requested to improve infrastructure and construct new projects. With so many needs and requests for funding, each available dollar is greatly valued and requested. The evaluation of alternatives under this factor considered the cost of the alternative. The more the alternative will cost, the greater the negative effect. The costs were developed by considering the major items for the study. Some of the items were estimated using a lump sum approach. The estimated quantities and construction cost development are shown in

Appendix D. Each alternative also has maintenance costs that are typically borne by the NMDOT District and should be considered in the evaluation. Maintenance costs for new structures are expected to be less than the costs for maintaining old and aging infrastructure. The maintenance costs are not quantified below but were factored into the evaluation. The following costs are estimates and were developed for planning purposes and should not be regarded as actual costs. Inflation factors may be appropriate for future construction timelines.

7.2.1 No-Build Alternative

The estimated cost for the No-Build Alternative is:

Estimated Construction Cost: $0

Estimated ROW Cost: $0 (no ROW required)

Estimated Maintenance Cost: High maintenance cost for existing bridges that remain

The cost for the No-Build Alternative is valued as a negative effect because of the expected cost for maintenance on the old and aging bridge structures.

7.2.2 Alternative No. 1

The estimated cost for the Alternative No. 1 is:

Estimated Construction Cost: $60,500,000

Estimated ROW Cost: $0 (no ROW required)

Estimated Maintenance Cost: High maintenance cost for existing Bridge No. 3168 that remains.

The cost for Alternative No. 1 is valued as a negative effect because of the expected construction cost and the maintenance costs on the old and aging bridge structure.

7.2.3 Alternative No. 2

The estimated cost for the Alternative No. 2 is:

Estimated Construction Cost: $74,400,000

Estimated ROW Cost: $0 (no ROW required)

Estimated Maintenance Cost: Low maintenance cost because existing structures are replaced

The cost for the Alternative No. 2 is valued as a very negative effect because of the expected construction cost.

7.2.4 Alternative No. 3

The estimated cost for the Alternative No. 3 is:

Estimated Construction Cost: $75,400,000

Estimated ROW Cost: $20,000 (ROW required)

Estimated Maintenance Cost: Low maintenance cost because existing structures are replaced

The cost for the Alternative No. 3 is valued as a very negative effect because of the expected construction cost.

Table 18. Summary of Estimated Cost Analysis

Alternative	Cost
No-Build	-
Alt. No. 1	-
Alt. No. 2	- -
Alt. No. 3	- -

7.3 Engineering Factors and Analysis

The engineering factors that are discussed below and that contributed to the identification of a preferred alternative are:

- traffic operations and safety
- maintenance of traffic
- constructability
- access management
- geology and soils
- ROW impacts
- utility conflicts
- bridge design
- future maintenance and operation
- drainage performance

7.3.1 Traffic Operations and Safety

NO-BUILD ALTERNATIVE

The No-Build Alternative is expected to operate in the future design year in an acceptable LOS A for traffic. The traffic capacity and operation of the No-Build Alternative is not expected to be a differentiating factor. However, the level of safety is not expected to be satisfactory now or in the future design year for the No-Build Alternative. The identified deficiencies of the ramp designs affect the level of safety negatively and the No-Build Alternative is valued as a very negative effect.

BUILD ALTERNATIVES

The build alternatives are also expected to operate in the future design year in an acceptable LOS for traffic. The level of safety for the build alternatives is improved with the addition of adequate ramps and new structures. The interchange layout for Alternative No. 2 and No. 3 are more modern and will meet user expectations more than the layout for the Alternative No. 1. Alternative No. 1 is valued as positive effect due to the improvements to the ramps and Alternative No. 2 and 3 are valued as very positive due to the improvements to the ramps and changes to a more modern layout that meet user expectations.

Table 19. Summary of Traffic Operations and Safety Analysis

Alternative	Factor
No-Build	- -
Alt. No. 1	+
Alt. No. 2	+ +
Alt. No. 3	+ +

7.3.2 Maintenance of Traffic

Work zone traffic control provides a safe environment in those areas where workers and transportation modes may compete for common or adjacent space. Every reasonable effort will be made to reduce the risk of injury to both the worker and transportation user within the interchange. The sequencing of the construction and the work area has a great influence on the safety of workers and corridor users. This factor will consider the alternatives' abilities to maintain traffic and access during construction. Closure of movements within the interchange are valued with more negative effects.

Maintaining all movements of the interchange within the study area is the desired goal; however, some of the alternatives and some construction efforts may require the closure of a movement within the study area during the construction efforts and require detouring traffic to other routes to fulfill the movement. NM 1 is the only north-to-south parallel route that may be used as a detour if movements in the interchange are closed during construction. The adjacent interchange to the north that provides connection to NM 1 is approximately 9 miles away and the interchange to the south is approximately 24 miles away.

NO-BUILD ALTERNATIVE

The No-Build Alternative would have no impact on traffic and there would be no need for any maintenance of traffic considerations—subsequently, the factor was valued as negligible or no effect. However, the No-Build Alternative would still have a deferred, negative effect on maintenance of traffic in the future since future maintenance projects would be needed and would obstruct traffic when they take place.

ALTERNATIVE NO. 1

I-25 Roadway and Bridge Construction: The work zone will be phased to restrict activities to the northbound and then the southbound sides of the interstate. During the closure, both directions of traffic will be reduced to a single lane and the direction of the closure will use a crossover detour to pass through the study site on the opposing direction travel lane.

Northbound Exit Ramp: The work zone will consist of shoulder widening to construct the auxiliary lane for merging onto US 380. Traffic will remain in its current location.

Northbound Entrance Ramp: The ramp construction will occur at the same time as the I-25 northbound construction. The ramp is expected to be closed during the duration of the construction phase. Northbound ramp traffic would be detoured to NM 1 to travel north to the interchange at milepost 147.

Southbound Entrance Ramp: The ramp construction will occur at the same time as the I-25 southbound construction. The ramp is expected to be closed during the duration of the construction phase. Southbound ramp traffic would be detoured to NM 1 to travel south to the interchange at milepost 115.

Given the closure of the northbound and southbound ramp movements in the interchange for an extended period of time, Alternative No. 1 was valued as very negative.

ALTERNATIVE NO. 2

A preliminary concept for the construction of Alternative No. 2 indicates that the alternative can be constructed with no long-term closures of any movements within the interchange. Short-term closures of US 380 for bridge demolition, hanging of girders, and pouring of new bridge decks will be required. During these short-term closures, the southbound on and off ramp traffic will have to be detoured to alternative routes. Offsetting the proposed US 380 alignment slightly from the existing lanes will facilitate the phasing construction of US 380.

I-25 Roadway and Bridge Construction: The work zone will be phased to restrict activities to the northbound and then the southbound sides of the interstate. During the closures, the southbound direction of I-25 will be moved to the existing southbound off ramp and detoured to the new southbound on ramp. The northbound direction of I-25 will be detoured to the southbound side during the construction of the northbound side of the interstate. Both directions of the interstate will be moved to the northbound side once it is constructed.

US 380: The work zone will be phased to construct the roadway section in halves. The proposed alignment will be offset slightly to the south, so traffic can be maintained during construction. The first phase will be to construct half of the roadway section offset from the existing pavement. Once that is complete, the traffic will be moved to the new surface and the existing will be removed and construction can be completed. A shoofly detour will be needed at the tie-in point to existing for traffic to bypass the construction of the connection point.

Northbound Exit Ramp: Construct detour pavement to move the ramp traffic to the inside of the proposed ramp alignment so construction activities will not conflict with traffic.

Northbound Entrance Ramp: Construct detour pavement to move the ramp traffic to the inside of the proposed ramp alignment so construction activities will not conflict with traffic.

Southbound Exit Ramp: The new southbound on ramp needs to be built so the removal of the existing southbound ramp will make way for the construction of the new southbound exit ramp.

Southbound Entrance Ramp: The proposed alignment is offset from all the existing roadway alignments and can be constructed with no impacts to traffic. Southbound entrance ramp traffic will be moved to the proposed ramp from the existing US 380 alignment once the proposed ramp is completed.

No closures of interchange movements are needed during construction; however some temporary closures of US 380 will be needed for the bridge construction. Alternative No. 2 was valued as positive for maintenance of traffic due to minimal closures of US 380 during construction.

ALTERNATIVE NO. 3

A preliminary concept for the construction of Alternative No. 3 indicates that the alternative can be constructed with no closures of any movements within the interchange. The primary difference for Alternative No. 3 from Alternative No. 2 is the location of the US 380 and I-25 crossing. Alternative No. 3 moves the crossing to the south and away from the existing alignment. The offset alignment of US 380 allows for construction of the new facility to occur while maintaining traffic on the existing roadway.

I-25 Roadway and Bridge Construction: The work zone will be phased to restrict activities to the northbound and then the southbound sides of the interstate. During the closures, the southbound direction of I-25 will be moved to the existing southbound off ramp and detoured to the new southbound on ramp. The northbound direction of I-25 will be detoured to the southbound side during the construction of the northbound side of the interstate.

US 380: The US 380 traffic will be detoured around the construction area where the proposed alignment is on top of the existing alignment. This work zone is east of the interstate, which provides adequate space for the detour alignment. The remaining length of the US 380 construction is offset from existing and can be constructed without detour alignments.

Northbound Exit Ramp: Construct detour pavement to move the ramp traffic to the inside of the proposed ramp alignment so construction activities will not conflict with traffic.

Northbound Entrance Ramp: Construct detour pavement to move the ramp traffic to the inside of the proposed ramp alignment so construction activities will not conflict with traffic.

Southbound Exit Ramp: Ramp traffic stays on the existing alignment until the proposed US 380 alignment and structures are completed. Construct detour pavement to connect the ramp traffic to the proposed US 380 lanes. Construction of the new southbound exit ramp can occur once traffic is removed from the existing US 380 alignment.

Southbound Entrance Ramp: The proposed alignment is offset from all the existing roadway alignments and can be constructed with no impacts on traffic. Southbound entrance ramp traffic will be moved to the proposed ramp from the existing US 380 alignment once the proposed ramp is completed.

No closures of interchange movements are needed during construction, so Alternative No. 3 was valued as very positive for maintenance of traffic.

Table 20. Summary of Maintenance of Traffic Analysis

Alternative	Factor
No-Build	0
Alt. No. 1	- -
Alt. No. 2	+
Alt. No. 3	+ +

7.3.3 Constructability

The evaluation of constructability considered the alternatives' feasibility to be built. This factor considered how construction would affect residential or business access, utilities, and ROW. It also considered whether the alternative can be constructed using methods, materials, and equipment common to the construction industry and area. Positive scores were given to alternatives that minimize impacts and are more easily constructed. The evaluation also considered the location of the work zone in relation to the traveling public. A greater negative effect was valued for the approaches with work zones near the travel ways with hindered access.

NO-BUILD ALTERNATIVE

There would be no construction with the No-Build Alternative, so the factor was valued as negligible or no effect. The No-Build Alternative would also have deferred constructability impacts because of future maintenance needs.

BUILD ALTERNATIVES

All the build alternatives are very similar in terms of construction methods, materials, and equipment required for construction. They all are typical for construction in New Mexico and would not require any methods, materials, or equipment not typically used in New Mexico. The embankment and pavement section material are expected to be readily available in the area. The bridge type is expected to be prestressed concrete or steel girders, which would be fabricated in New Mexico or adjacent states to the study site and shipped to the study location by typical means for bridges in New Mexico. The remaining materials for the study are expected to be typical and readily available.

The rural setting and large space around the study give the contractor space for construction activities with limited constraints that would make activities difficult. There are no businesses or residences in the close proximity to the study that may constrain construction activities. The access for the residences and businesses in San Antonio is expected to be maintained along with the interchange traffic.

Both Alternative No. 2 and 3 will require construction of detours, which add to the construction schedule and budget. Alternative No. 3 has a disadvantage from the other alternatives that should be recognized. A temporary retaining wall will be needed in the center of the interstate median to retain the embankment when the first I-25 and US 380 bridge is built. Interstate traffic will be on the opposing side and the embankment must be preserved in its existing configuration during that phase.

Based on the limited constraints and typical construction methods, the Alternative No. 1 is valued as negligible or no effect. Alternative No. 2 will be valued as negative due to the required detour construction. Alternative No. 3 was valued as very negative because of the detour construction and temporary retaining walls.

Table 21. Summary of Constructability Analysis

Alternative	Factor
No-Build	0
Alt. No. 1	0
Alt. No. 2	-
Alt. No. 3	- -

7.3.4 Access Management

The access control along the interstate is expected to stay the same as today. There are no access points currently along the interstate and no new access points are proposed with the design alternatives. There is an access point on US 380 in the area of the terminus of US 380 and the gore of the southbound exit ramp and the entrance ramp.

NO-BUILD ALTERNATIVE

The No-Build Alternative will not change the current access point location on US 380, which is problematic for access because of possible conflicts in the movements. Given the negative nature of the current access on US 380, the No-Build Alternative was valued as a very negative effect.

ALTERNATIVE NO. 1

There is an opportunity to improve the location of the access on US 380 by moving it away from the ramp gore. However, the relocation of the access will not eliminate the negative nature of possible conflicts in the movements, so it was valued as a negative effect.

ALTERNATIVE NO. 2 AND NO. 3

Both Alternative No. 2 and No. 3 eliminate the safety concern of the access point by connecting the gravel road to the end of US 380. The modification significantly improves the access connection to the interchange and was valued as a very positive effect.

Table 22. Summary of Access Management Analysis

Alternative	Factor
No-Build	- -
Alt. No. 1	-
Alt. No. 2	+ +
Alt. No. 3	+ +

7.3.5 Geology and Soils

NO-BUILD ALTERNATIVE

There are no improvements proposed with the No-Build Alternative, so the geology and soils are not relevant to this alternative and they were valued as no effect.

BUILD ALTERNATIVES

The geotechnical conditions anticipated to exist along the study alignment appear to be suitable for the proposed improvements. The build alternatives were valued as no effect for geology and soils.

Table 23. Summary of Geology and Soil

Alternative	Factor
No-Build	0
Alt. No. 1	0
Alt. No. 2	0
Alt. No. 3	0

7.3.6 Right-of-Way Impacts

The need for additional ROW for the considered alternatives is a factor to be considered with each alternative. The location of the needed property and the impacts that the acquisition brings to the project is a factor to consider when evaluating alternatives. The adjacent properties are all similar and are valued the same. No property will be valued greater, so the score has been based on solely on the quantity of needed property. The alternatives with lower impacts will receive higher scores.

Alternative No. 3 has the potential of needing additional ROW. Currently, 2 additional acres of property will be needed for the northbound exit ramp in the southeast quadrant of the interchange. The ROW limits and potential for construction maintenance easements and temporary construction permits will be evaluated as the design develops.

Table 24. Right-of-Way Score Summary

Alternative	Needed ROW
No-Build	0 No ROW acquisition
Alt. No. 1	0 No ROW acquisition
Alt. No. 2	0 No ROW acquisition
Alt. No. 3	- ROW acquisition required

7.3.7 Utility Conflicts

The subsurface utility investigation efforts completed for the study area have located an underground communication line that appears to be abandoned because it terminates at the Walnut Creek channel and two underground fiber optic lines that are just outside the ROW fence on the southeastern quadrant of the interchange.

NO-BUILD ALTERNATIVE

The No-Build Alternative was valued as no effect because there are no proposed improvements that may conflict with existing utilities.

BUILD ALTERNATIVE NO. 1

The proposed improvements associated with Alternative No. 1 are not near the existing utilities, so no conflicts are expected for Alternative No. 1 and it was valued as no effect.

BUILD ALTERNATIVE NO. 2 AND NO. 3

Currently, there are no known conflicts between the proposed improvements of the build alternatives and the existing utilities. However, the proposed improvements are close to the two fiber optic lines on the southeastern quadrant of the interchange and the earthwork for the northbound exit ramp has the potential to affect the utilities. Alternatives No. 2 and 3 were valued as a negative effect.

Table 25. Summary of Utility Conflicts

Alternative	Factor
No-Build	0
Alt. No. 1	0
Alt. No. 2	-
Alt. No. 3	-

7.3.8 Bridge Design

A detailed description of the bridge type selection will be included in the bridge type selection report. At this point in the evaluation of the bridge criteria, the evaluation will appraise the bridge geometry with favored layouts. Bridge geometry that contains large skews, superelevation transitions, horizontal curves, or splayed deck width will be valued lower because of the complications that arise from those characteristics.

NO-BUILD ALTERNATIVE

There are no improvements to the bridge structures with the No-Build Alternative, so it was valued as a negligible or no effect.

ALTERNATIVE NO. 1

All of the build alternatives are proposing to reconstruct the I-25 bridges over US 380 and Walnut Creek. For Alternative No. 1, the US 380 bridges have an approximate 18-degree skew and the Walnut Creek bridges are expected to be normal. All the bridges are located on a large curve of the horizontal alignment and the girder lines are expected to be corded between girder seats. The bridge widths are constant with no splay. Given the reasonable bridge geometries the bridge design criteria were valued as negligible or no effect for Alternative No. 1.

ALTERNATIVE NO. 2 AND NO. 3

The evaluation of Alternative No. 2 and No. 3 for the bridge design criteria are similar to each other. Again, the US 380 bridges have a small skew and the Walnut Creek bridges are normal to the horizontal alignment. All the bridges are located on a large curve of the alignment and the girder lines are expected to be corded between girder seats. The differentiating element for Alternative No. 2 and No. 3 from Alternative No. 1 is that the deck width varies in width because of the gore of the southbound exit ramp and northbound entrance ramp. The girders are expected to be splayed to accommodate the bridge deck geometry. Given the more complicated bridge geometry on the Walnut Creek bridges for Alternative No. 2 and No. 3, the bridge design analysis was valued as a negative effect.

Table 26. Summary of Bridge Design Analysis

Alternative	Factor
No-Build	0
Alt. No. 1	0
Alt. No. 2	-
Alt. No. 3	-

7.3.9 Future Maintenance and Operations

NMDOT maintains an expanding statewide road system with many lane miles. The maintenance efforts are not limited to travel lanes but also include barrier systems, pavement markings, roadway signs, drainage waterways, structures, bridges, retaining walls, etc. The demand on the maintenance dollars and crews is high and the desired alternatives are those that minimize future maintenance. The overall purpose of the maintenance efforts is to delay or reduce deterioration of the infrastructure, restore the function of existing infrastructure, keep the infrastructure in good condition, and extend the life of the element. Those actions may be cyclical or condition-driven and may be preventative or restorative.

NO-BUILD ALTERNATIVE

The No-Build Alternative would not replace or improve the existing infrastructure so the existing structures would continue to age and degrade. Being late in their expected useful life, the maintenance efforts would continue and accelerate as time passes. The No-Build Alternative was valued as very negative effect given the expected level of maintenance needed for the existing infrastructure.

ALTERNATIVE NO. 1

The proposed infrastructure of Alternative No. 1 is similar as the other build alternatives, with the exception of Bridge No. 3168 remaining in place for this alternative. Again, this aged structure is late in the expected useful life and the maintenance efforts will continue and accelerate as time passes. Alternative No. 1 was valued as a negative effect given the expected level of maintenance needed for Bridge No. 3168.

ALTERNATIVE NO. 2 AND NO. 3

Alternative No. 2 and No. 3 replace the existing bridge structures, pavement surfacing in the study area, and drainage structures. The maintenance efforts on the new infrastructure is expected to be less in the near term than the old infrastructure so the alternatives were valued as a very positive effect.

Table 27. Summary of Future Maintenance and Operations Analysis

Alternative	Factor
No-Build	- -
Alt. No. 1	-
Alt. No. 2	+ +
Alt. No. 3	+ +

7.3.10 Drainage Performance

NO-BUILD ALTERNATIVE

The No-Build option appears to be least desirable and was valued as a very negative effect because of the serious flooding, scour, and maintenance issues facing the existing configuration.

ALTERNATIVE NO. 1

Alternative No. 1 has the advantage of maintaining more of the existing drainage infrastructure. However, the drainage improvements required at the southbound off ramp are expensive and will require ongoing maintenance. Once the improvements are constructed, Alternative No. 1 will perform better than the existing conditions, so it was valued as a positive effect. The cost and maintenance implications are valued in those respective sections.

ALTERNATIVE NO. 2 AND NO. 3

Alternative No. 2 and No. 3 are very similar from a drainage performance perspective and were valued together and the same. Alternative No. 2 and No. 3 may include the removal of more of the existing drainage structures but the replacement system should prove to be more effective and easier to maintain over time and was valued as a very positive effect.

Table 28. Summary of Drainage Performance Analysis

Alternative	Factor
No-Build	- -
Alt. No. 1	+
Alt. No. 2	+ +
Alt. No. 3	+ +

7.4 Environmental Factors and Analysis

7.4.1 General Environmental Setting

NO-BUILD ALTERNATIVE

The No-Build Alternative would not affect the general environmental setting. The No-Build Alternative would be valued as a negligible or no effect because there would be no ground disturbance or construction activities.

ALTERNATIVE NO. 1

Alternative No. 1 would replace the bridge and improve the existing interchange but would not affect the overall general environmental setting or characteristics of the surrounding landscape. The improvements would largely remain within the existing ROW and roadway prism. Alternative No. 1 would be valued as a negligible or no effect given the lack of impacts on the environment.

ALTERNATIVE NO. 2

Alternative No. 2 would replace the bridges and slightly change the placement of the interchange but would not affect the overall general environmental setting or characteristics of the surrounding landscape. Alternative No. 2 would be valued as a slightly negative effect as a result of shifting the existing roadway prism.

ALTERNATIVE NO. 3

Alternative No. 3 would replace the bridges and slightly change the placement of the interchange and slightly alter the US 380 alignment. These shifts would slightly change the environmental setting immediately around the interchange but would not affect the overall general environmental setting or characteristics of the surrounding landscape. Alternative No. 3 was valued as a slightly negative effect on account of shifting the existing roadway prism.

Table 29. Summary of General Environmental Setting Impact Analysis

Alternative	Factor
No-Build	0
Alt. No. 1	0
Alt. No. 2	-
Alt. No. 3	-

7.4.2 Natural Resources

NO-BUILD ALTERNATIVE

The No-Build Alternative would not affect natural resources. The No-Build Alternative would be valued as a negligible or no effect because there would be no ground disturbance or construction activities.

ALTERNATIVE NO. 1

Alternative No. 1 will require vegetation removal along the edge of the ROW for on and off ramp improvements and the bridge replacement. There is a potential that approximately 36 acres of ground would be temporarily or permanently disturbed. No ground disturbance or vegetation removal would remove habitat for threatened or endangered species. All improvements would be within the existing configuration. Alternative No. 1 was valued as a negative effect because of the necessity for ground disturbance and vegetation removal; however, reseeding with a native seed mix would be implemented to mitigate impacts.

ALTERNATIVE NO. 2

Alternative No. 2 will require vegetation removal along the edge of the ROW for on and off ramp improvements and the bridge replacement; it will also require vegetation removal in previously undisturbed ground for the new on and off ramp stops. There is a potential that approximately 67 acres of ground would be temporarily or permanently disturbed. No ground disturbance or vegetation removal would remove habitat for threatened or endangered species. There will be a permanent net loss of vegetated areas resulting from the new on and off ramp configurations. Alternative No. 2 was valued as a negative effect because of the necessity for ground disturbance and vegetation removal; however, reseeding with a native seed mix would be implemented to mitigate impacts.

ALTERNATIVE NO. 3

Alternative No. 3 will require vegetation removal along the edge of the ROW for on and off ramp improvements and the bridge replacement; it will also require vegetation removal in previously undisturbed ground for the new on and off ramp stops. There is a potential that approximately 62 acres of ground would be temporarily or permanently disturbed. No ground disturbance or vegetation removal would remove habitat for threatened or endangered species. There will be a permanent net loss of vegetated areas as a result of the new on and off ramp configurations. Alternative No. 3 was valued as a negative effect because of the necessity for ground disturbance and vegetation removal; however, reseeding with a native seed mix would be implemented to mitigate impacts.

Table 30. Summary of Natural Resource Impacts

Alternative	Factor
No-Build	0
Alt. No. 1	-
Alt. No. 2	-
Alt. No. 3	-

7.4.3 Historic and Cultural Resources

NO-BUILD ALTERNATIVE

The No-Build Alternative will have no impacts on cultural resources because there would be no construction activities or ground disturbance.

ALTERNATIVE NO. 1

Alternative No. 1 will require cultural resources survey wherever ground disturbance will occur but will be restricted to the existing ROW. If cultural resources will be affected by the alternative, data recovery or other mitigative efforts might be necessary. Alternative No. 1 was valued as a potentially negative effect because of the potential adverse impact on cultural resources.

ALTERNATIVE NO. 2

Alternative No. 2 will require cultural resources survey wherever ground disturbance will occur, and will need to occur outside of the existing ROW because the on and off ramps will be changed into a diamond interchange. If cultural resources will be affected by the alternative, data recovery or other mitigative efforts might be necessary. Alternative No. 2 was valued as a potentially negative effect because of the potential adverse impact on cultural resources.

ALTERNATIVE NO. 3

Alternative No. 3 will require cultural resources survey wherever ground disturbance will occur, and will need to occur outside of the existing ROW because the on and off ramps will be changed into a diamond interchange and the US 380 alignment will be offset. If cultural resources will be affected by the alternative, data recovery or other mitigative efforts might be necessary. Alternative No. 3 was valued as a potentially negative effect because of the potential adverse impact on cultural resources.

Table 31. Summary of Historic and Cultural Resource Impacts

Alternative	Factor
No-Build	0
Alt. No. 1	-
Alt. No. 2	-
Alt. No. 3	-

7.4.4 Section 4(f)

NO-BUILD ALTERNATIVE

There are no public parks, recreation lands, wildlife and waterfowl refuges, or historic sites within the study area and there would be no construction activities or ground disturbance with the No-Build Alternative. The No-Build Alternative will have no impact on Section 4(f) resources.

ALTERNATIVE NO. 1

There are no public parks, recreation lands, wildlife and waterfowl refuges, or known historic sites within the Alternative No. 1 study area. Therefore, Alternative No. 1 was valued as a negligible or no effect given the absence of Section 4(f) resources. Should historic sites be discovered during cultural resource surveys, Alternative No. 1 would be evaluated to determine whether there would be a use of the historic site.

ALTERNATIVE NO. 2

There are no public parks, recreation lands, wildlife and waterfowl refuges, or known historic sites within the Alternative No. 2 study area. Therefore, Alternative No. 2 was valued as a negligible or no effect given the absence of Section 4(f) resources. Should historic sites be discovered during cultural resource surveys, Alternative No. 2 would be evaluated to determine whether there would be a use of the historic site.

ALTERNATIVE NO. 3

There are no public parks, recreation lands, wildlife and waterfowl refuges, or known historic sites within the Alternative No. 3 study area. Therefore, Alternative No. 3 was valued as a negligible or no effect given the absence of Section 4(f) resources. Should historic sites be discovered during cultural resource surveys, Alternative No. 3 would be evaluated to determine whether there would be a use of the historic site.

Table 32. Summary of Section 4(f) Analysis

Alternative	Factor
No-Build	0
Alt. No. 1	0
Alt. No. 2	0
Alt. No. 3	0

7.4.5 Noise

NO-BUILD ALTERNATIVE

The No-Build Alternative will have no noise effects because there would be no ground disturbance or construction activities.

BUILD ALTERANTIVES

The build alternatives would temporarily increase noise levels in the study area during construction; this impact would be short-term and minor. There would not be any long-term or permanent noise impacts resulting from the study because capacity is not being increased and the bridge profile is not changing. The build alternatives would not move traffic any closer to receptors and they were valued as a potentially negative effect because of short-term, temporary, minor noise increases from construction equipment.

Table 33. Summary of Noise Analysis

Alternative	Factor
No-Build	0
Alt. No. 1	-
Alt. No. 2	-
Alt. No. 3	-

7.4.6 Air Quality

NO-BUILD ALTERNATIVE

The No-Build Alternative will have no air quality effects because there would be no ground disturbance or construction activities.

BUILD ALTERNATIVES

The build alternatives would temporarily affect air quality in the study area during construction because of construction equipment; this impact would be short-term, temporary, and minor. There would not be any long-term or permanent air quality impacts resulting from the project because capacity is not being increased. The build alternatives were valued as potentially negative effect because of short-term, temporary, minor air quality impacts resulting from construction equipment.

Table 34. Summary of Air Quality Impacts

Alternative	Factor
No-Build	0
Alt. No. 1	-
Alt. No. 2	-
Alt. No. 3	-

7.4.7 Visual Resources

NO-BUILD ALTERNATIVE

The No-Build Alternative would have no effects on visual resources because there would be no ground disturbance or construction activities and the existing condition would be unchanged.

ALTERNATIVE NO. 1

Alternative No. 1 would replace the Walnut Creek bridge and extend on and off ramps; however, the vertical profile would remain the same and other improvements would remain within the existing ROW. This type of bridge replacement would have minimal permanent visual impacts to the viewshed because the bridge would be replaced with a similar structure and would be consistent with the area’s existing character. Temporary and minor visual impacts would include construction equipment or construction signs. Alternative No. 1 was valued as potentially negative because of the short-term, temporary, and minor construction-related visual impacts.

ALTERNATIVE NO. 2 AND NO. 3

Alternative No. 2 and No. 3 would replace the Walnut Creek bridge but would not raise the profile; they would extend on and off ramps and alter stops getting onto the on and off ramps. This type of bridge replacement would have minimal permanent visual impacts to the viewshed. The alterations to the stops and on and off ramps would not drastically alter the area’s visual character. Temporary and minor visual impacts would include any construction equipment or construction signs. Alternative No. 2 and No. 3 would be valued as potentially negative because of the short-term, temporary, and minor construction-related visual impacts.

Table 35. Summary of Visual Resources Impacts

Alternative	Factor
No-Build	0
Alt. No. 1	-
Alt. No. 2	-
Alt. No. 3	-

7.4.8 Farmlands

NO-BUILD ALTERNATIVE

The No-Build alternative will have no effects on major farmlands because there would be no ground disturbance or construction activities.

BUILD ALTERNATIVES

There is no farmland in the study area; therefore, no farmland will be converted for this project. The build alternatives will have a negligible or no impact on farmlands given the lack of prime farmland in the study area.

Table 36. Summary of Farmlands Analysis

Alternative	Factor
No-Build	0
Alt. No. 1	0
Alt. No. 2	0
Alt. No. 3	0

7.4.9 Floodplains

NO-BUILD ALTERNATIVE

The No-Build Alternative would have no effect on floodplains because there would be no ground disturbance or construction activities.

BUILD ALTERNATIVES

There is a floodplain that occurs along Walnut Creek and under the Walnut Creek bridge. Permanent construction impacts would occur outside of the floodplain limits. The build alternatives would have no effect on floodplains because the project will not change the floodplain limits; therefore, there is no effect to floodplains.

Table 37. Summary of Floodplains Impacts

Alternative	Factor
No-Build	0
Alt. No. 1	0
Alt. No. 2	0
Alt. No. 3	0

7.4.10 Social Resources

NO-BUILD ALTERNATIVE

The No-Build Alternative will have a negative effect on social resources because the alternative would not improve the interchange and the interchange is a safety concern for drivers and community members in the area.

BUILD ALTERNATIVES

The build alternatives will have a positive effect on social resources because they will improve the interchange, upgrade the bridge, and improve safety for drivers and community members in the area.

Table 38. Summary of Social Resources Impacts

Alternative	Factor
No-Build	-
Alt. No. 1	+
Alt. No. 2	+
Alt. No. 3	+

7.4.11 Hazardous Materials

NO-BUILD ALTERNATIVE

The No-Build Alternative will have no effect on hazardous materials because there will be no ground disturbance or construction activities.

BUILD ALTERNATIVES

The build alternatives would require the replacement of the Walnut Creek bridge. There is lead-based paint found in the Walnut Creek bridge and US 380 bridge. Therefore, this was valued as a potentially negative effect related to hazardous materials.

Table 39. Summary of Hazardous Materials Impacts

Alternative	Factor
No-Build	0
Alt. No. 1	-
Alt. No. 2	-
Alt. No. 3	-

7.5 Evaluation of Alternatives

Table 40 shows the evaluation of the alternatives.

Table 40. Evaluation of Alternatives

Evaluation Factor	No Build	Build Alternative No. 1	Build Alternative No. 2	Build Alternative No. 3
Purpose and Need	- -	++	++	++
Cost	- High Maintenance Costs	- $60,500,000 High Maintenance Costs	- - $74,400,000 Low Maintenance Costs	- - 75,400,000 Low Maintenance Costs
Traffic Operations and Safety	- -	+	++	++
Maintenance of Traffic	0	- -	+	++
Constructability	0	0	-	- -
Access Management	- -	-	++	++
Geology and Soils	0	0	0	0
Right-of-Way Impacts	0 No ROW Acquisition	0 No ROW Acquisition	0 No ROW Acquisition	- ROW Acquisition
Utility Conflicts	0	0	-	-
Bridge	0	0	-	-
Future Maintenance and Operations	- -	-	++	++
Drainage Performance	- -	+	++	++
General Environmental Setting	0	0	-	-
Biological Resources	0	-	-	-
Historic and Cultural Resources	0	-	-	-
4(f)	0	0	0	0
Noise	0	-	-	-
Air Quality	0	-	-	-
Visual Resources	0	-	-	-
Farmland	0	0	0	0
Floodplain	0	0	0	0
Social Resources	-	+	+	+
Hazardous Materials	0	-	-	-

8. Recommendations

Alternative No. 1 was not recommended for a couple of primary issues. First, the construction would require the closure of ramps and traffic would need to be detoured along alternative routes, adding to travel times and disruption to the public. Second, the alternative type does not meet the current driver expectations. A tight diamond interchange is a more modern configuration that meets driver expectations.

Alternatives No. 2 and 3 are similar in their layouts and advantages. Both alternatives are tight diamond interchanges. Alternative No. 2 would minimize the change in the horizontal alignment for US 380, which simplifies construction and reduces the estimated construction cost. However, Alternative No. 2 requires temporary closures of US 380 during construction for bridge demolition, girder placement, and deck pours. These closures would require detouring interchange movements to alternative routes, which would affect the traveling public. Currently, Alternative No. 3 appears to be constructable with fewer impacts and closures to the traveling public.

Based on the evaluation discussed in this report, Alternative No. 3 is recommended to be advanced for further development. This alternative would upgrade the interchange configuration to a more modern layout that meets user expectations and fulfills the purpose and need for the project by improving safety. The engineer's opinion of possible construction cost for this alternative is $75,400,000.

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Appendix A. Virtual Public Meeting Summary

Virtual Public Meeting Summary

I-25 San Antonio Interchange Study

CN 1102060

New Mexico Department of Transportation

December 2022

Prepared by:
HDR Engineering, Inc.
2155 Louisiana Blvd NE
Albuquerque, NM 87110

In cooperation with:
NMDOT
FHWA

Contents

Appendices

Introduction

The New Mexico Department of Transportation (NMDOT) is conducting a study on the Interstate 25 (I-25) San Antonio Traffic Interchange, which is approximately 0.5 miles west of San Antonio, New Mexico between Milepost (MP) 139 and MP 140 (see figure 1).

Within the I-25 San Antonio Traffic Interchange Study (Study) area, I-25 is a rural, divided four-lane roadway located ten miles south of Socorro, New Mexico.

I-25 San Antonio Interchange Study

The purpose of the study is to document existing conditions and develop highway improvement alternatives along the I-25 San Antonio Interchange.

Figure 1: I-25 San Antonio Interchange Study Limits

Public Involvement Process

I-25 connects with US 380, which is the main road into the nearby community of San Antonio. Due to this, there is a unique set of stakeholders that need to be engaged through these efforts including commuters, emergency services, schools and school transportation, agencies, and the traveling public among others. Ultimately, the goal of the public involvement efforts is to identify these stakeholders' concerns and values to help guide the development of improvements along this corridor.

There have been no recent studies or evaluations on this interchange or this portion of I-25. During this phase, the study team planned and implemented two virtual public meetings to provide study information and solicit feedback. A summary of those efforts is highlighted below.

Stakeholder Meeting

The study team, in collaboration with NMDOT, held a virtual stakeholder meeting on Wednesday, November 9, 2022, at 10 a.m. MST via Webex. To participate, stakeholders were invited to log in to the meeting using the Webex application, web browser, or via telephone. The meeting had a total of 16 attendees. The meeting focused on an overview of the study area, the preliminary purpose and need, existing roadway conditions, and proposed highway improvements. Comments and questions were accepted live, following the presentation. There were no comments or questions received.

Stakeholder Meeting Notification

The team prepared an email meeting invitation that was sent to 36 organizations and invitees. A copy of the stakeholder meeting invitation and list of invitees can be found in Appendix A – Public Meeting Notification.

Virtual Public Meeting

The study team, including NMDOT staff, held a virtual public meeting on Wednesday, November 16, 2022, at 6 p.m. via Webex. To participate, the public was invited to log in to the meeting using the Webex application, web browser, or via telephone.

The meeting focused on an overview of the study area, the preliminary purpose and need, existing roadway conditions, and proposed highway improvements. Thirty-five participants attended the virtual meeting. Comments and questions were accepted live, following the presentation. All questions and comments provided at the virtual public meeting were recorded and are included in Appendix C – Public Comments.

Notifications

Newspaper Advertisements

The team developed and distributed two newspaper advertisements for this meeting. The newspaper advertisements provided an overview of the study, invited the public to attend the virtual public meeting, and provided information on how to provide their comments. The advertisements – which included the date, time, and log-in information for the meeting – were distributed in the following publications:

- El Defensor Chieftain (November 3, 2022)
- Albuquerque Journal (November 8, 2022)

Copies of the newspaper advertisements can be found in Appendix A – Public Meeting Notification.

Meeting Notification Banner

A banner was created and posted at the I-25 San Antonio/US 380 interchange in November 2022. The banner listed details on how to attend and participate in the virtual public meeting. A copy of the banner can be found in Appendix A – Public Meeting Notification.

Direct Mailer

A direct mailer was sent to 360 addresses in the study area to inform residents and property owners of the virtual public meeting. The mailer was distributed on November 2, 2022. The mailers were sent to the following postal codes within the study area:

- 87832- H030
- 87832- PBOX

A copy of the direct mailer can be found in Appendix A – Public Meeting Notification.

Local Radio Stations

Copies of the direct mailer were provided electronically to local radio stations within the study area via email on November 4, 2022. The emails were sent to the following radio stations:

- KUNM 89.9 FM
- KXFR 91.9 FM
- KKOB 96.3 FM
- KYRN 102.1 FM
- KNML 610 AM

A copy of the email can be found in Appendix A – Public Meeting Notification.

Social Media

Social media posts were developed for NMDOT accounts, including details on how to participate in the virtual public meeting, how to comment, and how to watch the recording of the virtual public meeting. Copies of the social media posts can be found in Appendix A – Public Meeting Notification.

Project Webpage

The study webpage www.dot.nm.gov/i25-san-antonio-study/ was updated in October 2022 and included information about the study and a link to the event webpage with full meeting details. An event webpage was created at www.dot.nm.gov/event/i25-san-antonio-public-meeting/, which included information about the study, how to log in and participate in the meeting, and how to provide comments on the study. Following the meeting, the recording of the event was also placed on this webpage to allow the public to watch the meeting at their convenience and continue to provide comments through December 15, 2022.

Public Meeting Materials

Presentation

A PDF of the presentation was made available to the public through the study webpage on November 10, 2022. In addition to the presentation, a link to the recording of the virtual public meeting was posted to the study webpage on November 10, 2022. A copy of the presentation is available in Appendix B – Public Meeting Materials.

Public Comments

Public comments were accepted from November 3 – December 15 in the following ways:

- Live at the virtual public meeting
- Study webpage: www.dot.nm.gov/i25-san-antonio-study/
- Email: I25SanAntonio@hdrinc.com
- Phone: 602.245.6330
- Mail: I-25 San Antonio Study C/O HDR Engineering
  20 E. Thomas Road, Ste 2500, Phoenix, AZ 85012

In total, 40 comments were received throughout the study period which focused on safety, construction timelines, drainage, potential road closures, flooding, and business impacts. Of the 39 comments received, 39 were study-specific and one was unrelated to the current study.

Virtual Meeting Questions and Answers

Twelve (12) questions/comments were submitted by attendees during the virtual public meeting and were responded to by the study team on November 16, 2022 during the meeting. These comments focused on the dangers of the current on-ramps, proposed safety improvements and flood protection. A summary of those questions and answers can be found in Appendix C – Public Comments.

Additional Comments/Questions

Twenty-eight (28) additional questions/comments were received during the comments period and were responded to by the study team. These comments focused on the dangers of the current on-ramps, proposed safety improvements and flood protection. A summary of those comments and responses can be found in Appendix C – Public Comments.

Appendix A – Public Meeting Notification

Stakeholder Meeting Invitation

Stakeholder Meeting Invitee List

Newspaper Advertisements

Meeting Notification Banner

Direct Mailer

Radio Station Emails

Social Media

Policar, Randy

Subject: I25 Interchange Study Virtual Agency Meeting
Location: https://meethdr.webex.com/meethdr/j.php?MTID=m4b61f1eb30961bf3aadcee1f93aea18a

Start: Wed 11/9/2022 10:00 AM
End: Wed 11/9/2022 11:00 AM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Policar, Randy
Required Attendees I25 San Antonio
Optional Attendees: Coffey, Bryce; Bean, Danton; gene.paulk@dot.nm.gov; leandro.montoyaiii@dot.nm.gov; ami.evans@dot.nm.gov; aaron.chavarria@dot.nm.gov; harold.love@dot.nm.gov; andreas.linnan@dot.nm.gov; earl.franks@dot.nm.gov; joshua.holguin@dot.nm.gov; ernesto.santillano@dot.nm.gov; sherri.holliefield@dot.nm.gov; dave.lepre@nmt.edu; thomas.guengerich@nmt.edu; jason@mrgcd.us; alexander.rodiguez@state.nm.us; max.valerio@dot.nm.gov; daniel.chavez@nm.state.us; raymundo.sanchez@state.nm.us; marmijo@slo.state.nm.us; mark.watson@state.nm.us; michelle.ensey@state.nm.us; bob.estes@state.nm.us; nm.shpo@state.nm.us; safd@co.socorro.nm.us; dhicks@socorroschools.org; scsfb@socorroschools.org; rhendrix@socorroschools.org; mhawkes@co.socorro.nm.us; agonzales@co.socorro.nm.us; warmijo@co.socorro.nm.us; mmatthew@blm.gov; christopher.m.parrish@usace.army.mil; shawn_sartorius@fws.gov; greg.heitmann@dot.gov; usarmy.wsmr.atec.mesg.wsmr-installation-commander@mail.mil; rafer.nichols@bnsf.com; arael@sccog-nm.com

On behalf of the New Mexico Department of Transportation, we would like to invite you to a virtual agency meeting for the Interstate 25 (I-25) San Antonio Interchange Study on **Wednesday, Nov. 9 from 10:00 a.m. to 11:00 a.m.** on Webex. The meeting will provide a presentation to introduce the study, the project area, the conditions identified and receive agency input. The proposed project area is between milepost 139 to 140 on Interstate 25. The presentation will also include proposed improvements to improve the roadway geometry, increasing the capacity of drainage structures and replacing old and dilapidated bridged structures.

If you or someone from your agency would like to attend, please RSVP to this meeting invite. The meeting will be held virtually on Webex. Login details can be found below.

For more information on the project, please visit this website: https://www.dot.nm.gov/i25-san-antonio-study/

If you have any questions or comments prior to the meeting, feel free to email Maria Altemus, Environmental Planner at HDR (maria.altemus@hdrinc.com), or Randy Policar, Strategic Communications Manager at HDR (Randy.Policar@hdrinc.com).

NMDOT CN 1102060 - Interstate 25 (I-25) San Antonio Traffic Interchange Study Agency Meeting

https://meethdr.webex.com/meethdr/j.php?MTID=m4b61f1eb30961bf3aadcee1f93aea18a
Wednesday, Nov. 9, 2022 10 am (MT)
Meeting number: 2489 104 4914
Password: NMDOTI25 (66368425 from phones)

Join by phone: 1-408-418-9388
Access code: 2489 104 4914

We also invite you to the I-25 San Antonio Traffic Interchange Study virtual public involvement meeting being held on **Wednesday, Nov. 16, 2022 at 6:00 p.m.** The purpose of this meeting is to introduce the study and the conditions identified and receive public input.

https://meethdr.webex.com/meethdr/j.php?MTID=mdbde063d42a8ac0d7aaa1fde50fcffe9
Meeting number: 2482 100 1408
Password: NMDOTI25 (66368425 from phones)

Join by phone: 1-408-418-9388
Access code: 2482 100 1408

The meeting will also be available in Spanish.

Join by phone: 1-408-418-9388
Access code: 2498 458 9275

Stakeholder Meeting Invitee List

Type	Name	Title	Agency	Street Address	City, State	ZIP Code	Email address
State	Trent Doolittle	District 1 Engineer	NMDOT	2912 E. Pine St.	Deming, NM	88030	trent.doolittle@dot.nm.gov
State	Gene Paulk	ADE Maintenance	NMDOT	2912 E. Pine St.	Deming, NM	88030	gene.paulk@dot.nm.us
State	Ami Evans	District 1 Public Information Officer	NMDOT	2912 E. Pine St.	Deming, NM	88030	ami.evans@dot.nm.gov
State	Aaron Chavarria	ADE Construction	NMDOT	2912 E. Pine St.	Deming, NM	88030	aaron.chavarria@dot.nm.gov
State	Harold Love	ADE Technical Support	NMDOT	2912 E. Pine St.	Deming, NM	88030	harold.love@dot.nm.gov
State	Andreas Linnan	Technical Support Engineer	NMDOT	2912 E. Pine St.	Deming, NM	88030	andreas.linnan@dot.nm.gov
State	Joshua Holguin	District 1 Environmental Contact	NMDOT, Environmental Bureau	NMDOT Room 205, PO Box 1149	Santa Fe, NM	87504-1149	joshua.holguin@dot.nm.gov
State	Ernesto Santillano	South Regien Design	NMDOT	750 S Solano	Las Cruces, NM	88001	ernesto.santillano@dot.nm.gov
State	Sherri Holliefield	South Regien Design	NMDOT	750 S Solano	Las Cruces, NM	88001	sherri.holliefield@dot.nm.gov
State	Dave Lepre	Communication and Marketing Office	NM Tech				dave.lepre@nmt.edu
State	Thomas Guengerich	Public Information	NM Tech				thomas.guengerich@nmt.edu
State	Jason Casuga	Chief Operations Officer	Middle Rio Grande Conservancy District				jason@mrgcd.us
State	Alex Rodriguez	Soccoro District 11	New Mexico State Police				alexander.rodiguez@state.nm.us
FHWA	Max Valerio	FHWA					max.valerio@dot.nm.gov
State	Daniel Chavez	Captain	New Mexico State Police	PO Box 1455, I-25, Exit 152	Socorro, NM	87801	daniel.chavez@nm.state.us
State	Melissa Armijo	ROW Leasing Supervisor	New Mexico State Land Office	310 Old Santa Fe Trail	Santa Fe, NM	87501	marmijo@slo.state.nm.us
State	Mark Watson	Terrestrial Habitat Specialist	NM Department of Game and Fish	PO Box 25112	Santa Fe, NM	87504	mark.watson@state.nm.us
State	Michelle Ensey	Deputy State Historic Preservation Officer/Archaeologist	New Mexico Historic Preservation Division				michelle.ensey@state.nm.us
State	Bob Estes	Historic Preservation Specialist	New Mexico Historic Preservation Division				bob.estes@state.nm.us
State	General		New Mexico Historic Preservation Division				nm.shpo@state.nm.us
Local	Gabriel Garza	Chief	San Antonio Fire District	PO Box 128	San Antonio, NM	87832	safd@co.socorro.nm.us
Local	Daniel Hicks	Director of Transportation	Socorro Consolidated Schools				dhicks@socorroschools.org
Local	General		Soccoro Consolidated Schools				scsfb@socorroschools.org
Local	Ron Hendrix	Superintendent	Soccoro Consolidated Schools				rhendrix@socorroschools.org
County	Michael Hawkes	County Manager	Socorro County	PO Box I	Socorro, NM	87801	mhawkes@co.socorro.nm.us
County	Arthur Gonales	Road Director	Socorro County, Public Works Road Department	2409 NM State Highway 1, PO Box I	Socorro, NM	87801	agonzales@co.socorro.nm.us
County	William Armijo	Sheriff	Sheriff's Office, Socorro County	PO Box 581, 200 Church St.	Socorro, NM	87801	warmijo@co.socorro.nm.us
Federal	Mark Matthew	Field Manager	Socorro Field District, Bureau of Land Management	901 S. Hwy 85	Socorro, NM	87801-4168	mmatthew@blm.gov
Federal	Chris Parrish	NM/TX Branch Chief	Albuquerque District Office, USACE	4101 Jefferson Plaza NE	Albuquerque, NM	87109	christopher.m.parrish@usace.army.mil
Federal	Shawn Sartorius	Field Supervisor	New Mexico Ecological Services Field Office, U.S. Fish and Wildlife Service	2105 Osuna NE	Albuquerque, NM	87113	shawn_sartorius@fws.gov
Federal	Greg Heitmann	Environmental/Realty Lead Specialist	Federal Highway Administration	4001 Office Court Drive, Suite 801	Santa Fe, NM	87507-4929	greg.heitmann@dot.gov
Military	Eric D. Little	Brigadier General	US Army White Sands Missle Range	Building 1782	WSMR, NM	88002	usarmy.wsmr.atec.mesg.wsmr-installation-commander@mail.mil
BNSF	Rafer Nichols	Manager of Public Projects	BNSF Railway				rafer.nichols@bnsf.com
Federal	Virginia Alguire	Assistant Field Manafer Multi-Resources	BLM	901 S. Hwy 85	Socorro, NM	87801	valguire@blm.gov
COG	Angela Rael	Regional Transportation Planning Program Manager	South Central Council of Governments	600 Hwy 195	Elephant Butte, NM	87935	arael@sccog-nm.com

You're Invited!

Interstate 25 San Antonio Interchange Study (CN 1102060)

Virtual Public Meeting

The New Mexico Department of Transportation (NMDOT), is conducting a study on the Interstate 25 (I-25) San Antonio Traffic Interchange, which is approximately 0.5 miles west of San Antonio, New Mexico between Milepost (MP) 139 and MP 140. I-25 connects with US 380, which is the main road into the nearby community of San Antonio. The purpose of this meeting is to introduce the study and the conditions identified and receive public input.

NMDOT invites you to participate in a live virtual public involvement meeting on **Wednesday, Nov. 16, 2022, starting at 6:00 p.m.** to learn more about and share your input on the study.

We Want to Hear From You!

Comments are being accepted through Dec. 15, 2022.

You can comment in the following ways:

- **Attend virtual meeting**
- **Email:** I25SanAntonio@hdrinc.com
- **Call:** 602-245-6330
- **Visit the project website:** https://www.dot.nm.gov/i25-san-antonio-study/
- **USPS mail to:** I-25 San Antonio Study c/o HDR, 20 E Thomas Rd., Ste 2500, Phoenix, AZ 85012

Unable to attend?

If you cannot participate in the virtual meeting, the event will be recorded and posted on the project website shortly after the meeting.

To request meeting assistance, language translation, or ADA accommodations, please contact **Bryce Coffey at 602-245-6330 or I25SanAntonio@hdrinc.com by Nov. 9, 2022.**

How To Participate

Wednesday, Nov. 16, 2022 | 6:00 p.m. (MT)

Join the live virtual public meeting on your computer, smart phone or tablet by using the link below, or by calling in on your telephone:

ONLINE OR CALL-IN

English

- **Link:** https://bit.ly/i-25sa
- **Phone:** 408-418-9388
- **Meeting number (Access code):** 2482 100 1408
- **Password:** NMDOTI25 (66368425 from phones)

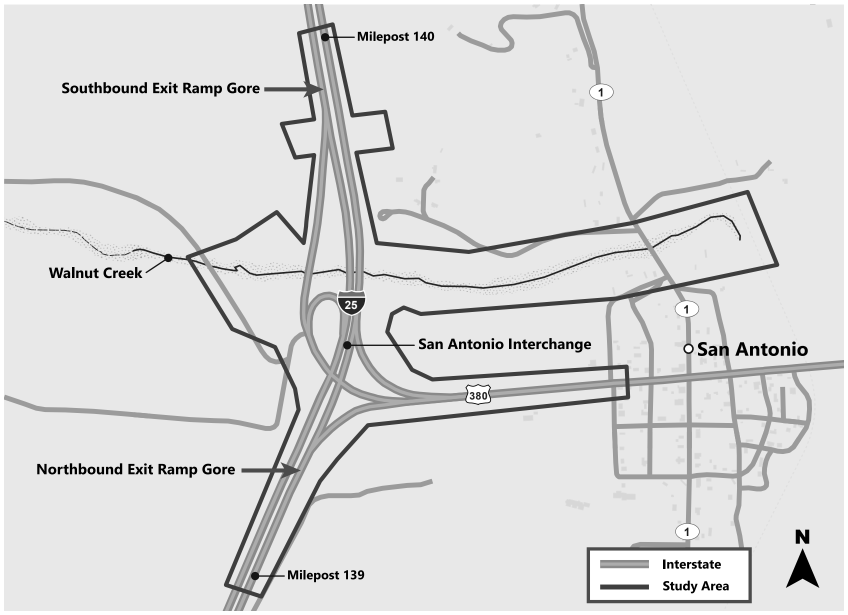
Spanish

- **Enlace:** https://bit.ly/i-25sa
- **Teléfono:** 408-418-9388
- **Número de Reunión (Código de acceso):** 2498 458 9275
- **Clave:** SanAntonio (72626866 from phones)

New Mexico DEPARTMENT OF TRANSPORTATION
MOBILITY FOR EVERYONE

You're Invited!

Interstate 25 San Antonio Interchange Study (CN 1102060)



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Interstate 25 San Antonio Interchange Study
(CN 1102060)
Virtual Public Meeting
November 16, 2022, 6:00 pm (MT)
Connect with us:
Email: I25SanAntonio@hdrinc.com
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Interstate 25 San Antonio Interchange Study
(CN 1102060)
Virtual Public Meeting
November 16, 2022, 6:00 pm (MT)
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Interstate 25 San Antonio Interchange Study (CN 1102060)

Virtual Public Meeting

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New Mexico DEPARTMENT OF TRANSPORTATION
MOBILITY FOR EVERYONE

Indicia clearance area

How To Participate

Wednesday, Nov. 16, 2022 | 6:00 p.m. (MT)

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Address and barcode clearance area

From:	I25 San Antonio
To:	I25 San Antonio
Cc:	Policar, Randy; Coffey, Bryce
Bcc:	kunm@kunm.org; llopez@familyradio.org; minecountry1021kyrn@gmail.com; Jared.Hart@cumulus.com; newsroom@newsradiokkob.com
Subject:	NMDOT Virtual Public Meeting for the I-25 San Antonio Traffic Interchange Study- November 16, 2022
Date:	Wednesday, November 2, 2022 8:32:47 PM
Attachments:	I-25 San Antonio Public Meeting.pdf

The New Mexico Department of Transportation (NMDOT) is conducting a study on the Interstate 25 (I-25) San Antonio Traffic Interchange, which is approximately 0.5 miles west of San Antonio, New Mexico between Milepost (MP) 139 and MP 140. I-25 connects with US 380, which is the main road into the nearby community of San Antonio. The purpose of the study is to introduce the roadway conditions identified and receive public input.

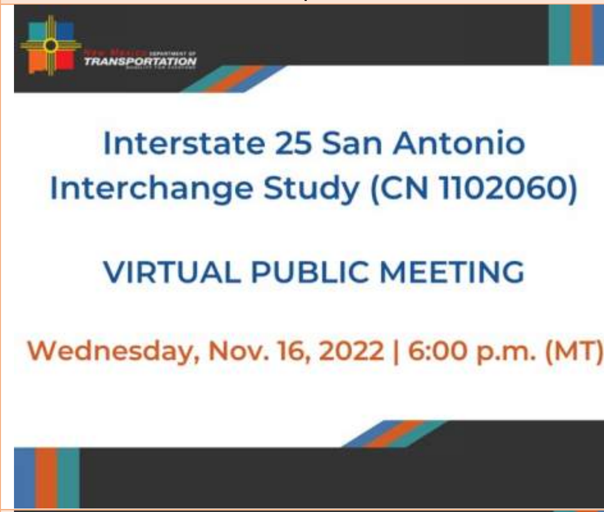
NMDOT invites the public to participate in the live virtual public involvement meeting on **Wednesday, Nov. 16, 2022, starting at 6 p.m.** to learn more about and share input on the study.

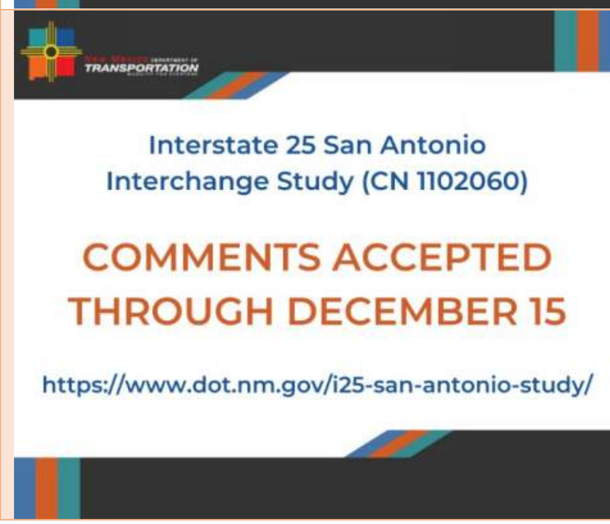
Attached is a copy of the postcard that was sent to residents in the study area about the upcoming virtual meeting. We would appreciate it if you could share details about the meeting with your listeners. Thank you in advance and let us know if you have any additional questions.

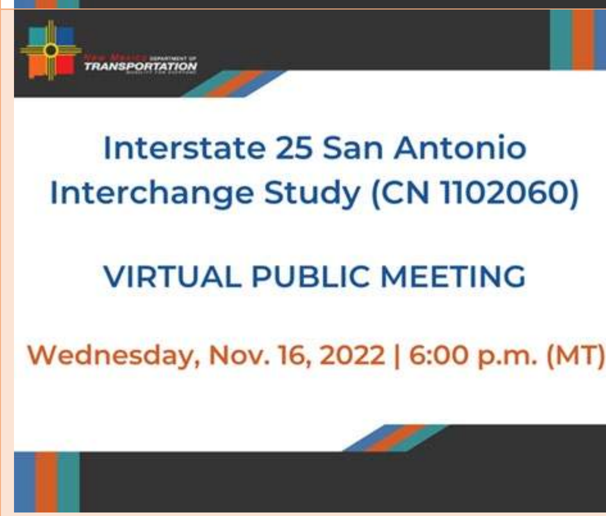
I-25 San Antonio Study Team
i25sanantonio@hdrinc.com

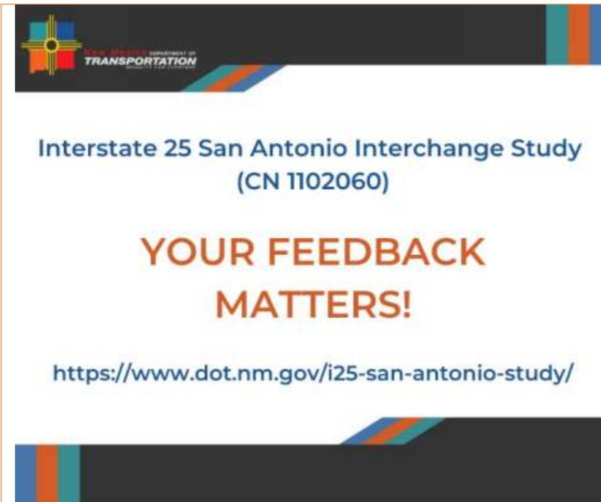
Randy Policar
Senior Communications Coordinator

I-25 San Antonio Interchange Study – Social Media Plan

<table>
<tr><th>Date</th><th>Outlet</th><th>Content</th><th>Graphics</th><th>Links</th></tr>
<tr>
<td>Nov. 1</td>
<td>Facebook</td>
<td>NMDOT invites you to participate in a live virtual public involvement meeting on Wednesday, Nov. 16, 2022, starting at 6 p.m. to learn more about and share your input on the Interstate 25 San Antonio Interchange Study (CN 1102060). Join the live virtual public meeting on your computer, phone, or tablet. Visit: https://www.dot.nm.gov/i25-san-antonio-study/</td>
<td>
</td>
<td>https://www.dot.nm.gov/i25-san-antonio-study/</td>
</tr>
<tr>
<td>Nov. 2</td>
<td>Facebook</td>
<td>Comment Public comments are being accepted through Dec. 15 for the I-25 San Antonio Interchange Study. Public comments can be made in several ways:

Attend virtual meeting
Email: I25SanAntonio@hdrinc.com
Call: 602-245-6330
Visit the project website: https://www.dot.nm.gov/i25-san-antonio-study/
USPS mail to: I-25 San Antonio Study c/o HDR, 20 E Thomas Rd., Ste 2500, Phoenix, AZ 85012
</td>
<td>
</td>
<td>https://www.dot.nm.gov/i25-san-antonio-study/</td>
</tr>
</table>

Nov. 9		Don't miss the live virtual public meeting for the Interstate 25 San Antonio Interchange Study (CN 1102060) happening Wednesday, Nov. 16, 2022, starting at 6 p.m. Visit the link below to see how you can join. https://www.dot.nm.gov/i25-san-antonio-study/		https://www.dot.nm.gov/i25-san-antonio-study/
Nov. 15		REMINDER: Join us for the virtual public meeting for the Interstate 25 San Antonio Interchange Study on Nov. 16, starting at 6 p.m. Click the link to learn more: https://www.dot.nm.gov/i25-san-antonio-study/ Call-in/Online through Webex: English: •Link: https://bit.ly/i-25sa •Phone: 408-418-9388 •Meeting number (Access code): 2482 100 1408 •Password: NMDOTI25 (66368425 from phones) Spanish: •Link: https://bit.ly/i-25sa •Phone: 408-418-9388 •Meeting number (Access code): 2498 458 9275 •Password: SanAntonio (72626866 from phones)		https://www.dot.nm.gov/i25-san-antonio-study/

Nov. 22	Facebook	REMINDER: Your feedback matters! Don't forget to submit your comments on the I-25 San Antonio Interchange Study. Public comment closes on Dec. 15. Visit the link below to find out the different ways you can comment. https://www.dot.nm.gov/i25-san-antonio-study/		https://www.dot.nm.gov/i25-san-antonio-study/
Nov. 29	Facebook	REMINDER: We want to hear from you! The I-25 San Antonio Interchange Study, comment period closes on Dec. 15. You can provide your comments in several different ways: • **Email:** I25SanAntonio@hdrinc.com • **Call:** 602-245-6330 • **Visit the project website:** https://www.dot.nm.gov/i25-san-antonio-study/ • **USPS mail to:** I-25 San Antonio Study c/o HDR, 20 E Thomas Rd., Ste 2500, Phoenix, AZ 85012		https://www.dot.nm.gov/i25-san-antonio-study/

Dec. 7		REMINDER: Your comments are important! Don't forget to submit your comments on the Interstate 25 San Antonio Study before Dec. 15. Visit the link below to see how you can provide your comments https://www.dot.nm.gov/i25-san-antonio-study/.		https://www.dot.nm.gov/i25-san-antonio-study/
Dec. 14	Facebook	LAST CHANCE TO COMMENT: Tomorrow is the last day to provide your comments on the I-25 San Antonio Interchange Study**.** Provide your feedback before the comment period closes Dec. 15 at <LINK> You can comment in the following ways: • **Email:** I25SanAntonio@hdrinc.com • **Call:** 602-245-6330 • **Visit the project website:** https://www.dot.nm.gov/i25-san-antonio-study/ • **USPS mail to:** I-25 San Antonio Study c/o HDR, 20 E Thomas Rd., Ste 2500, Phoenix, AZ 85012		https://www.dot.nm.gov/i25-san-antonio-study/

Graphics:

Appendix A – Public Meeting Notification – Social Media Calendar

Interstate 25 San Antonio Interchange Study (CN 1102060)

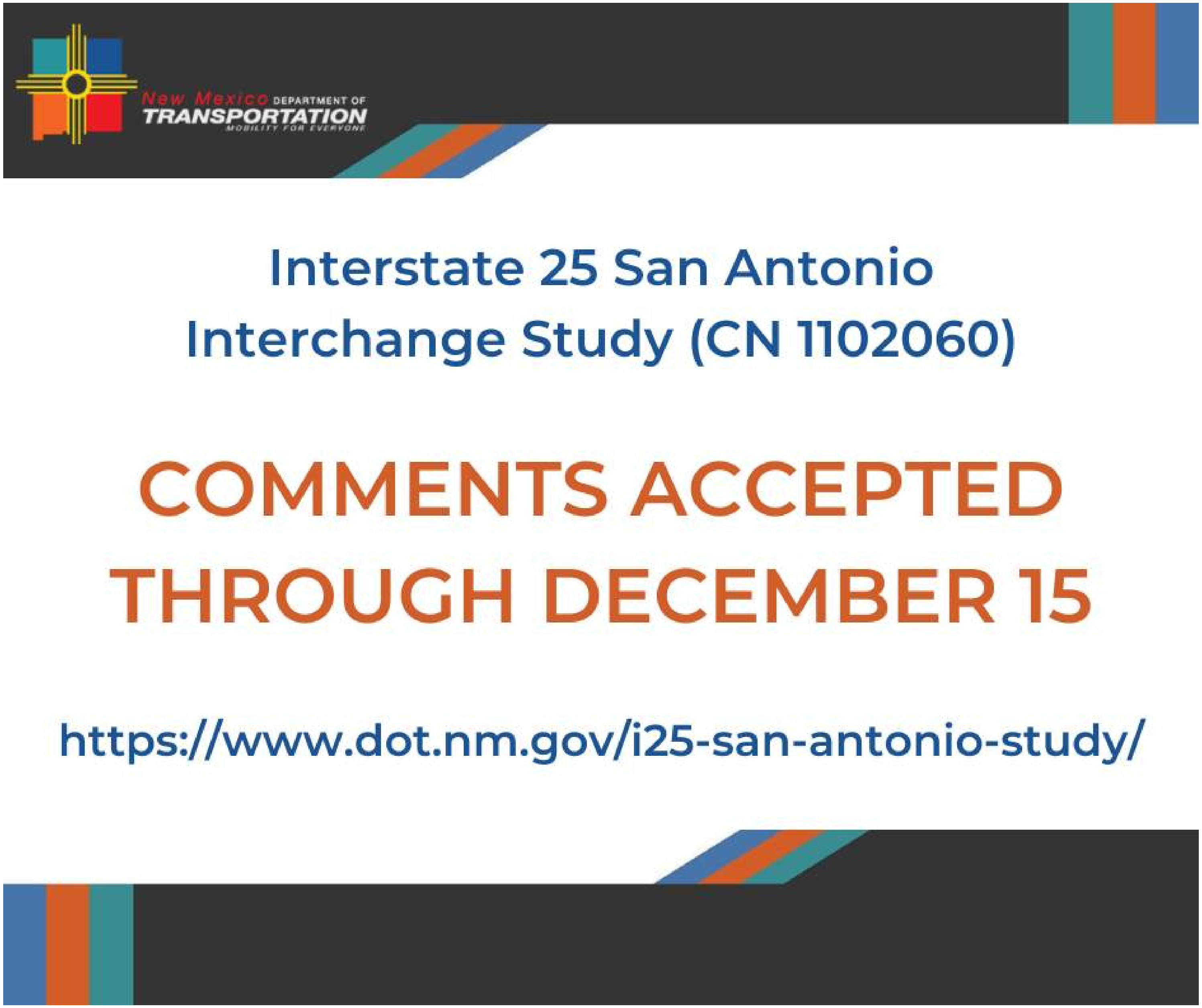
New Mexico DEPARTMENT OF TRANSPORTATION
MOBILITY FOR EVERYONE

Interstate 25 San Antonio Interchange Study (CN 1102060)

WE WANT TO HEAR FROM YOU!

https://www.dot.nm.gov/i25-san-antonio-study/

Appendix A – Public Meeting Notification – Social Media Calendar



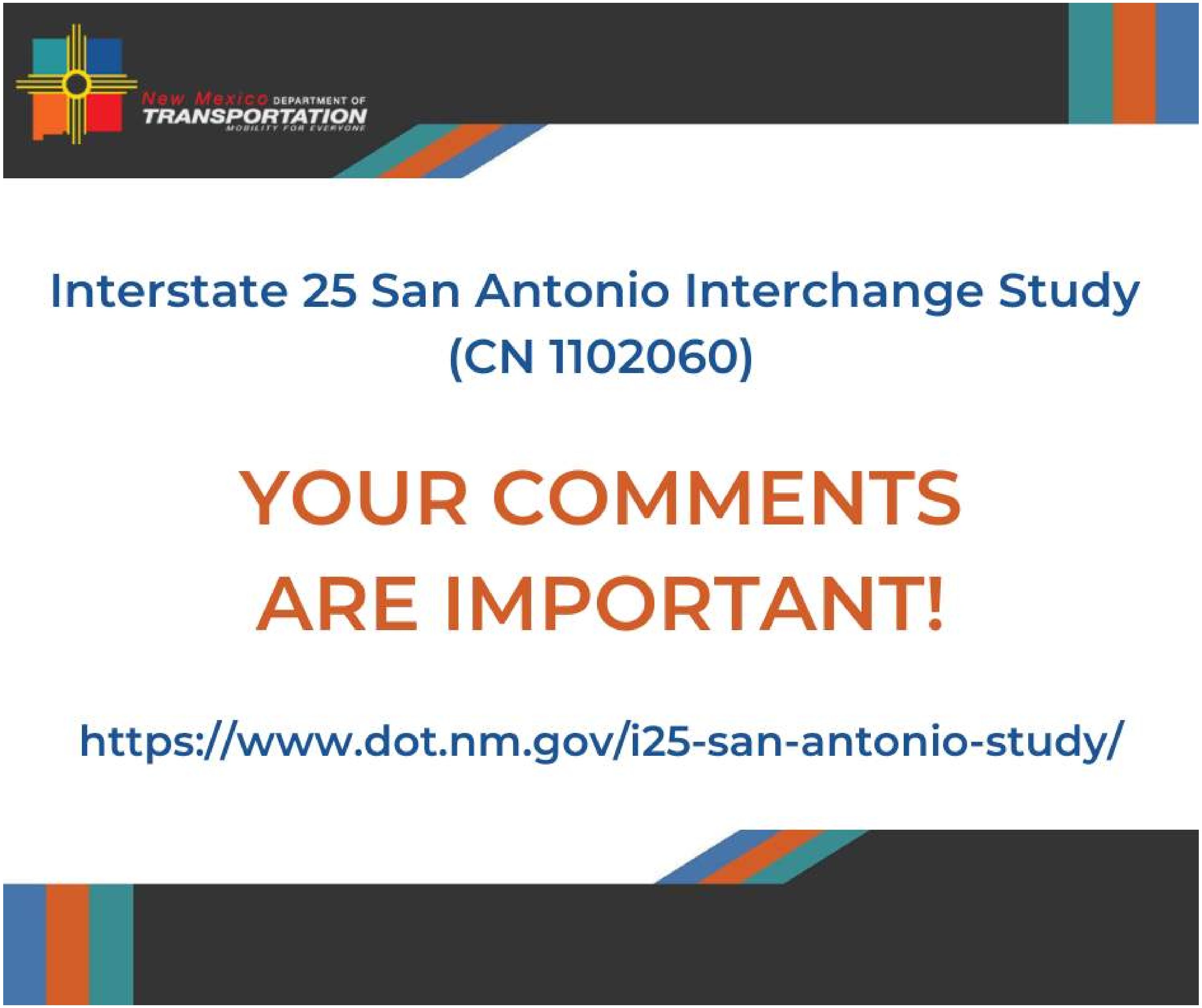
Appendix A – Public Meeting Notification – Social Media Calendar

New Mexico DEPARTMENT OF TRANSPORTATION
MOBILITY FOR EVERYONE

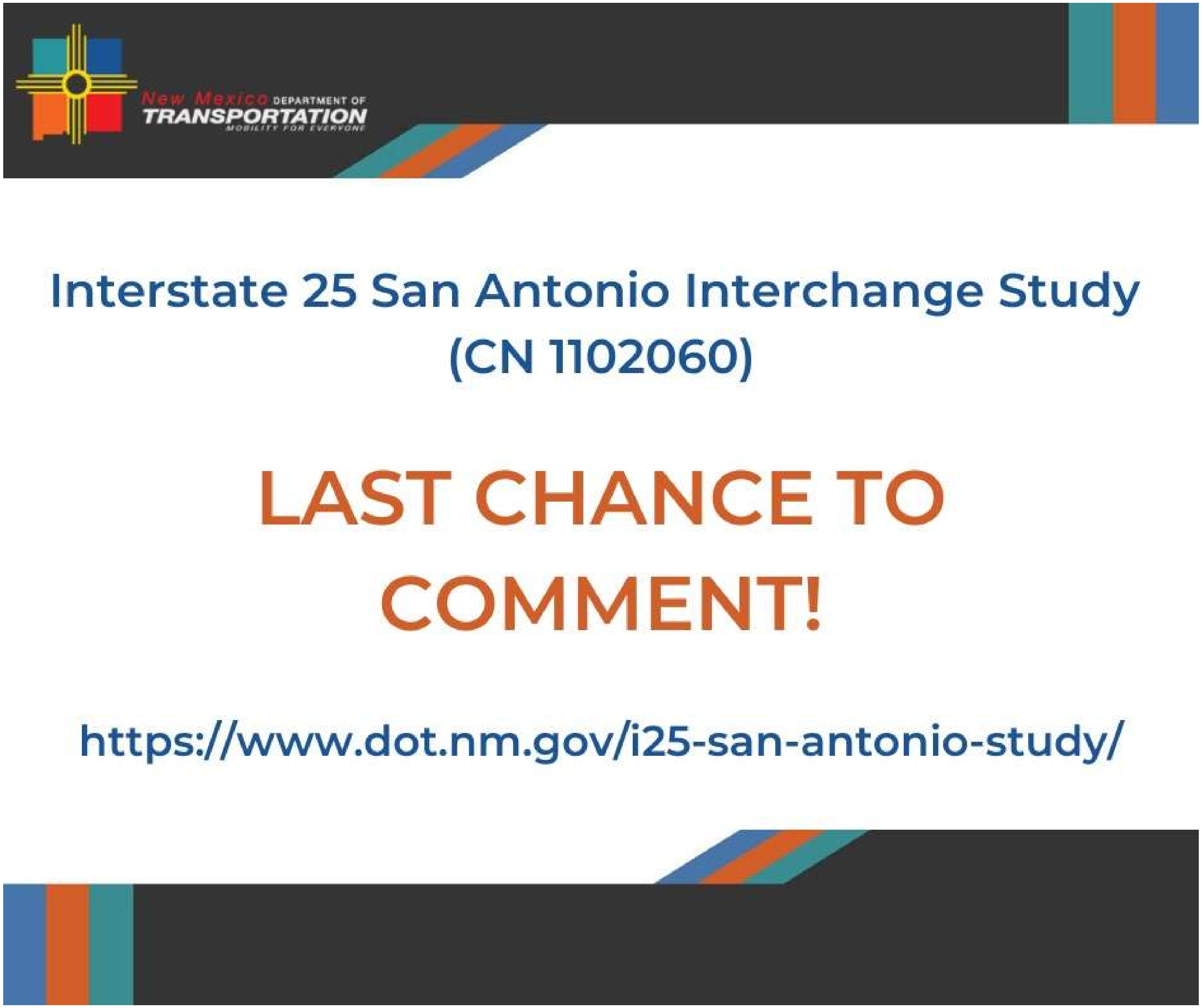
Interstate 25 San Antonio Interchange Study (CN 1102060)

VIRTUAL PUBLIC MEETING

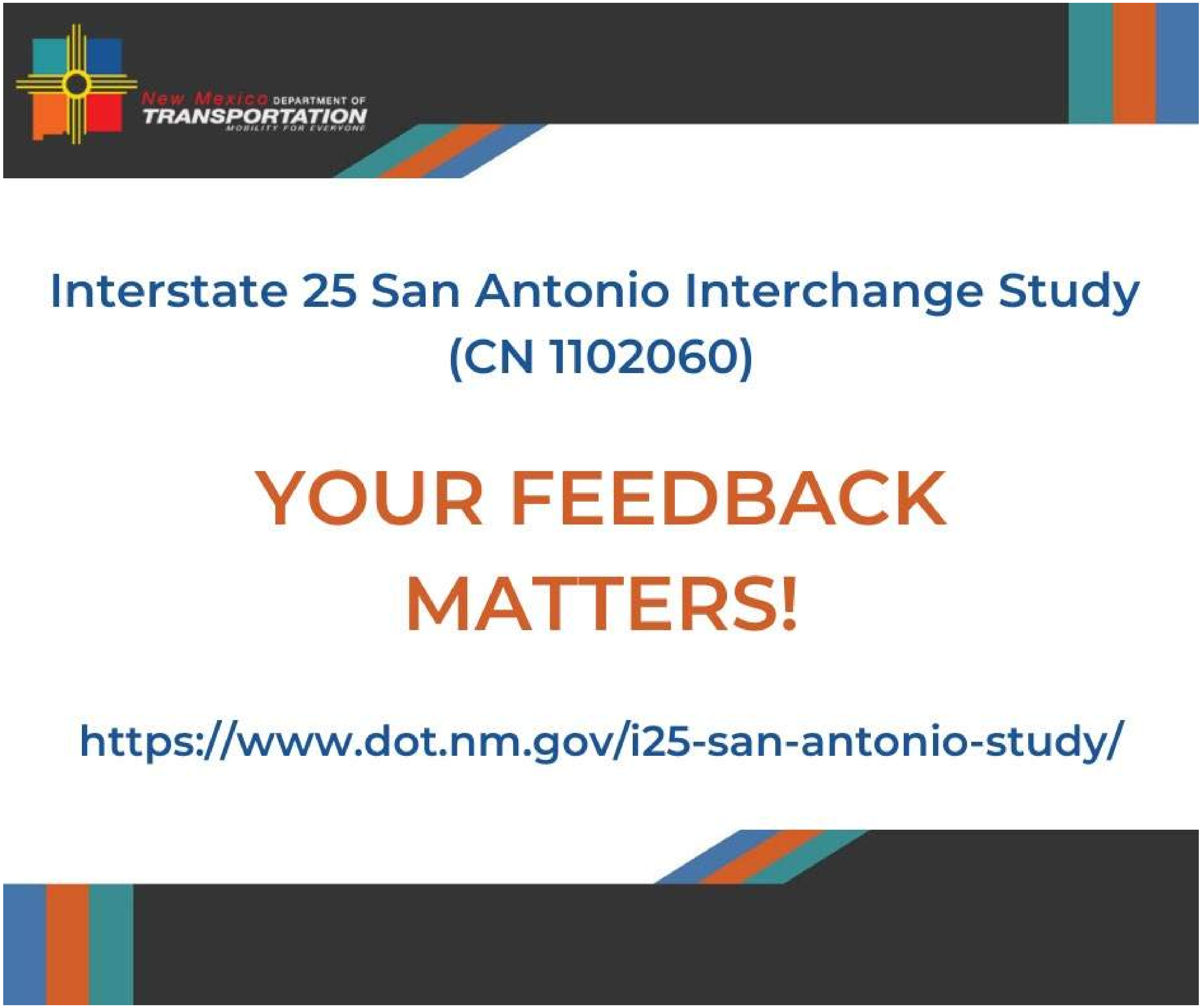
Wednesday, Nov. 16, 2022 | 6:00 p.m. (MT)



Appendix A – Public Meeting Notification – Social Media Calendar



Appendix A – Public Meeting Notification – Social Media Calendar



Appendix A – Public Meeting Notification – Social Media Calendar

Appendix B – Public Meeting Materials

Presentation

I-25/US 380 (San Antonio) Interchange Project
CN 1102060

Public Meeting

The public meeting will begin shortly.

If you are having technical difficulties, contact Webex Help: 866.229.3239

Welcome

- All participants have been muted to avoid background noise
- This meeting will be recorded
- Technical difficulties: Call Webex at 866.229.3239
- Following the meeting presentation, we will take questions and comments online and by phone
    - Instructions will be provided on how to participate

I-25/US 380 (San Antonio) Interchange Project

CN 1102060

Public Meeting

November 16, 2022

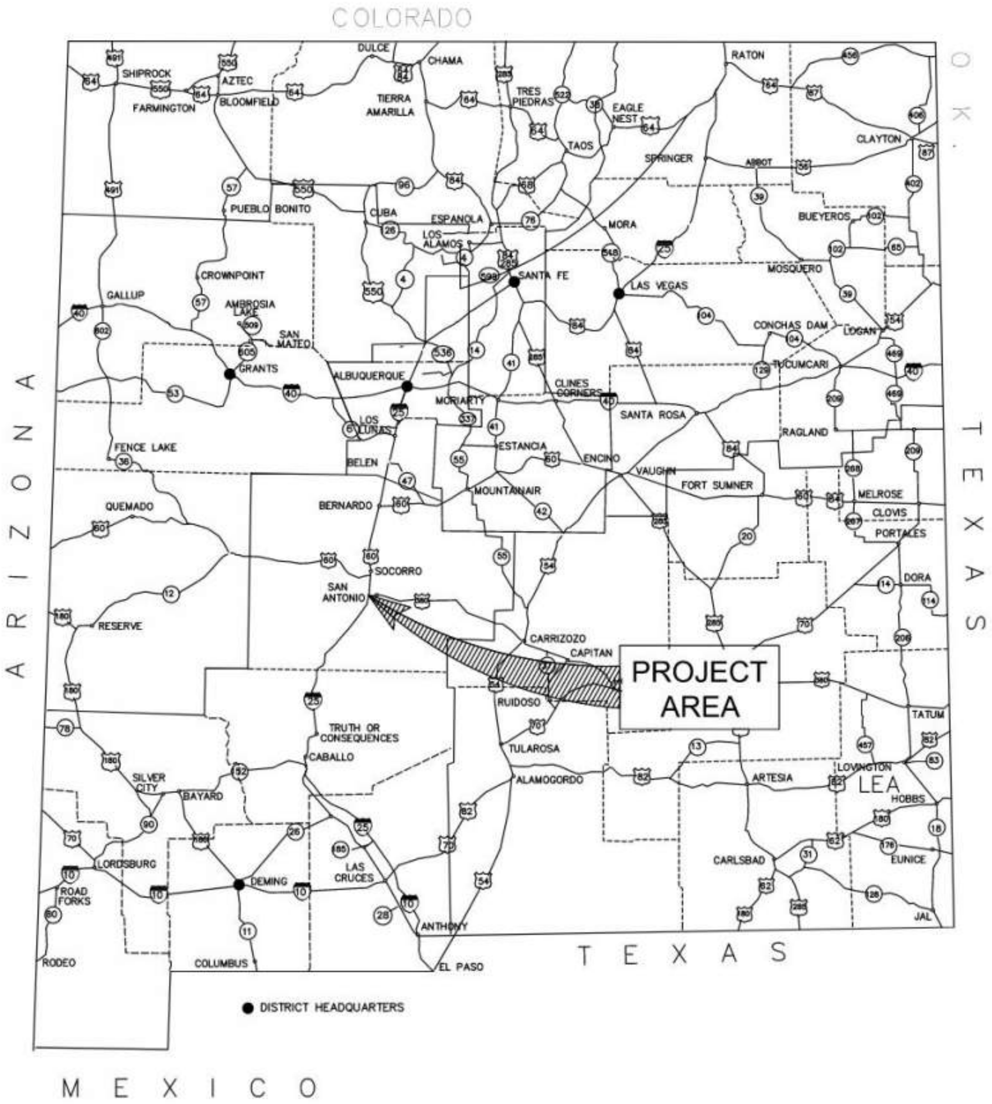
Agenda

- Introductions
- Project location
- What is the purpose of this meeting?
- Project purpose
- Existing description & conditions
- Proposed alternatives
- Schedule
- Questions

Introductions: Design team

- NMDOT
  - Mark Salazar, PE, Project Development Engineer
  - Gene Paulk, PE, D1 Interim District Engineer
  - Harold Love, PE, D1 Assistant District Engineer
  - Aaron Chavarria, PE, Assistant District Engineer
  - Joshua Holguin, D1 Environmental Liaison
  - Jennifer Mullins, Public Involvement Specialist
- Consultants
  - Danton Bean, PE, Project Manager
  - Ravi Sripada, PE, Roadway Engineer
  - Sanjay Paul, PE, Traffic Engineer
  - Andrew Wong, PE, Drainage Engineer
  - Randy Policar, Public Involvement Specialist

Project Location



I-25/US 380 (San Antonio) Interchange Project

Project Area

What is the purpose of this meeting?

- Inform the public on project development and status
- Solicit public feedback and insights of the project area such as:
  - Physical, environmental and operational characteristics
  - Other important considerations

Project Purpose

- Improve safety by correcting roadway geometry that does not meet current design standards
- Improve safety by increasing the capacity of drainage structures
- Improve safety by replacing old and dilapidated bridge structures

Existing Description and Condition

Roadway

- **I-25 Mainline (NB and SB)**
  - 2-12' lanes
  - 4' Inside shoulder
  - 10' outside shoulder
  - Posted speed 75 mph

Existing Description and Condition

Roadway

- **I-25 NB On-Ramp**
  - Yield control
  - Deficient geometry
    - Acceleration lane
      - 150’ available (1,160’ required)

Existing Description and Condition

Roadway

- **I-25 SB On-Ramp**
  - Yield control
  - Deficient geometry
    - Acceleration lane
      - 150' available (1,580' required)

Existing Description and Condition

Roadway

- **I-25 NB Off-Ramp**
  - Yield control at US-380

Existing Description and Condition

Roadway

- **US-380**
  - 2-12’ Lanes (40’ wide)
  - Posted Speed 40 mph

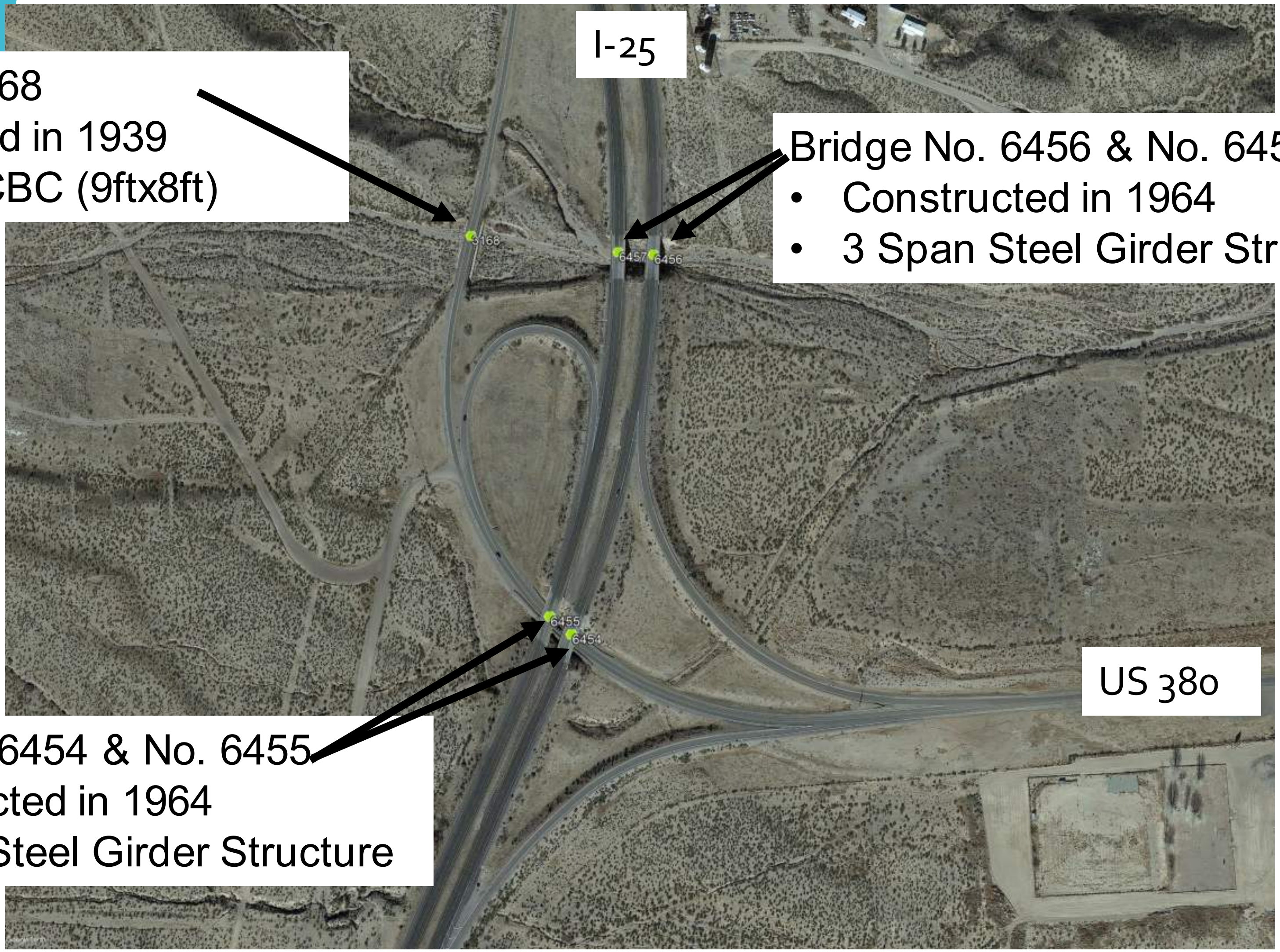
Existing Description and Condition

Roadway

- **Summary**
  - Deficient acceleration lanes for NB and SB on-ramps
  - Deficient super elevation for I-25 NB and SB lanes
  - Yield control for NB and SB on-ramps and for NB off-ramp at US 380

Existing Description and Condition

Bridge



Bridge No. 3168
- Constructed in 1939
- 20 Barrel CBC (9ftx8ft)

Bridge No. 6456 & No. 6457
- Constructed in 1964
- 3 Span Steel Girder Structure

Bridge No. 6454 & No. 6455
- Constructed in 1964
- 3 Span Steel Girder Structure

Existing Description and Condition

Bridge No. 3168

Constructed in 1939

Existing Description and Condition

Bridge No. 3168

Existing Description and Condition

Bridge No. 6454 & 6455

Poor Condition

Constructed in 1964

Existing Description and Condition

Bridge No. 6454 & 6455

- Deck Patches
- Cracks, Spalls Delamination

Existing Description and Condition

Bridge No. 6454 & 6455

- Minor rust
- Holes for fatigue cracks

Existing Description and Condition

Bridge No. 6456 & 6457

Poor Condition

Constructed in 1964

Existing Description and Condition

Bridge No. 6456 & 6457

- Erosion of Abutment Slope

Existing Description and Condition

Bridge No. 6456 & 6457

- Deck Patches
- Cracks, Spalls Delamination

Existing Description and Condition

Bridge No. 6456 & 6457

- Cracks, Spalls Delamination
- Holes for fatigue cracks

Existing Description and Condition

Bridge

- **Summary**
  - Bridge structure are old and in need of replacement

Drainage Structure Summary

19 Crossings

25 Culverts

3 Bridges to convey Walnut Creek

Scour and sediment issues

Hydrologic Analysis

Walnut Creek basin size is 32.1 square miles

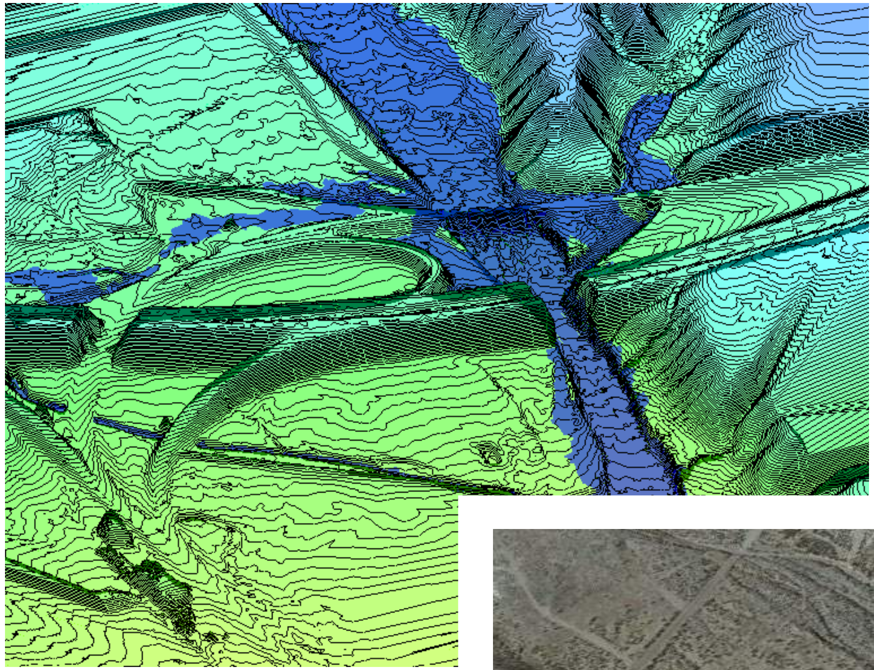
Peak flowrate for the 1% annual chance storm of Walnut Creek was calculated to be over 19000 cfs

Hydraulic Analysis

Bridges analyzed with SMS 2D to check capacity

Culverts analyzed with HY 8

3 undersized culverts within the area



Scour Analysis

Preliminary scour analysis revealed significant scour issues reflecting field conditions.

Proposed Drainage Improvements

Priorities:

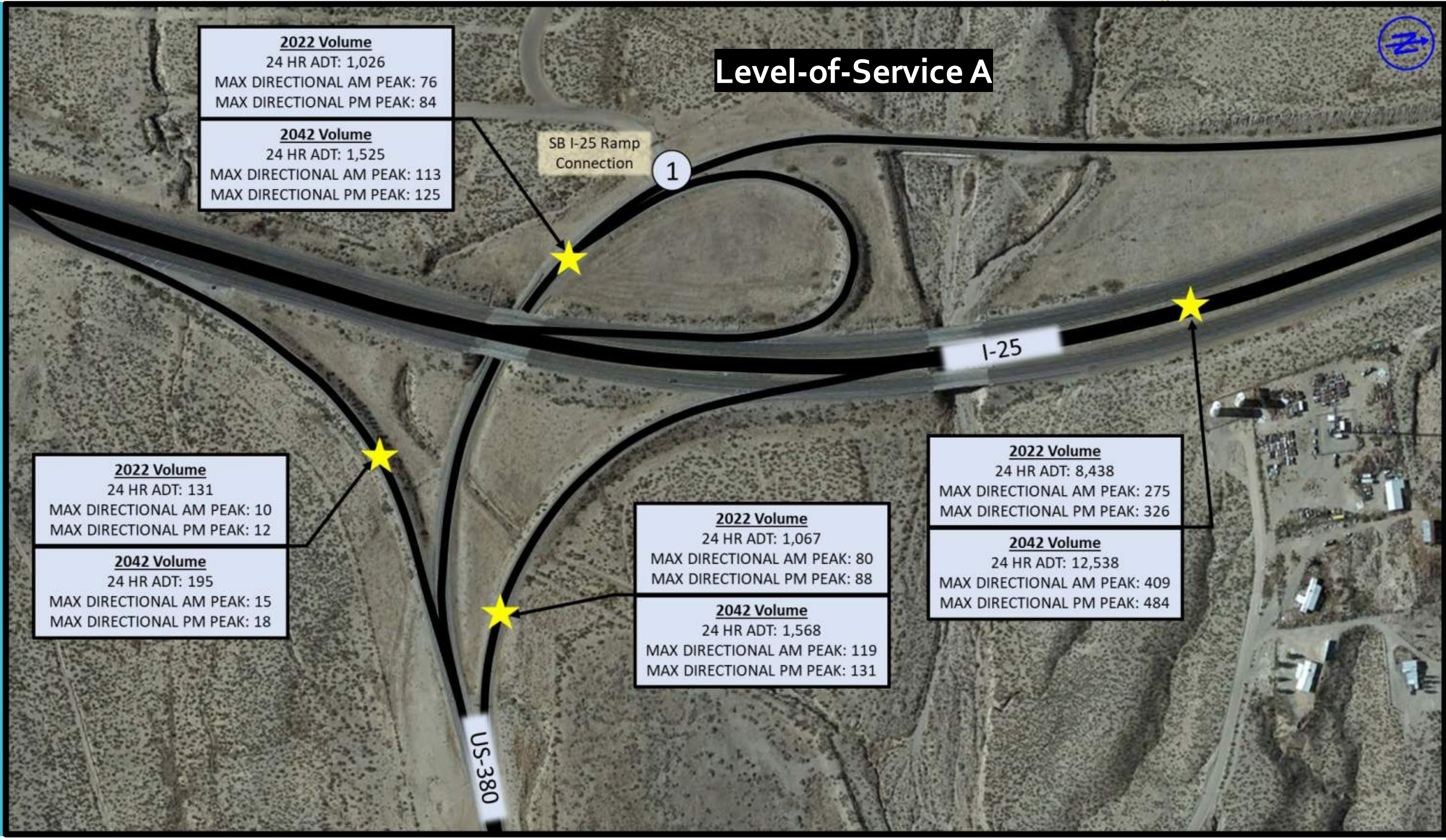
- Maintain existing drainage patterns downstream
- Ensure proper drainage through interchange
- Reduce maintenance due to scour and sedimentation

Proposed Improvements

- Upgrade any undersized culverts
- Reconfigure drainage depending on proposed drainage layout
- Design new Walnut Creek bridge to mitigate scour concerns

Existing Description and Condition

Traffic – Volumes



Existing Description and Condition **Traffic – Summary**

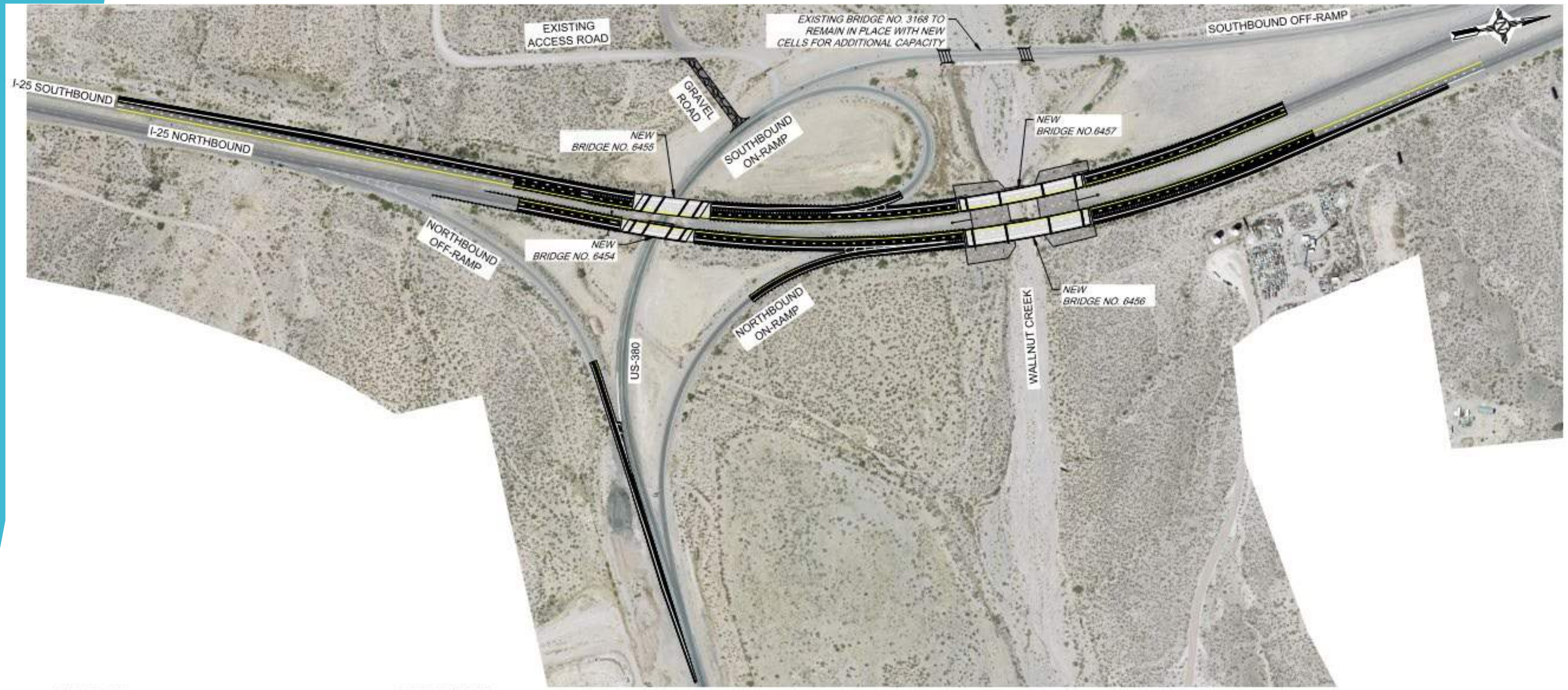
- **Traffic signs** - good/fair condition, suggest new signs
- **Pavement markings** - deteriorated, need improvements
- **Pavement condition** - cracks, need improvement
- **Traffic demand** - capacity available, minimal delay, Level-of-Service A
- **Heavy vehicle presence** – high 10% on ramps, 30% on I-25, need to be cautious with radius/superelevation, need acceleration lanes
- **Speed** - speeding is a concern
- **Safety** - few crashes, need lighting near gore area, enhance signing

Proposed Alternatives

- **Alternative - 1: Enhancement to the existing geometry**
- **Alternative – 2: Tight Diamond Interchange geometry**
  - **Existing US 380 alignment**
- **Alternative – 3: Tight Diamond Interchange geometry**
  - **Adjust US 380 alignment**

Traffic Interchange (T.I.) Alternatives

- **Alternative-1**
  - Enhancement to the existing geometry

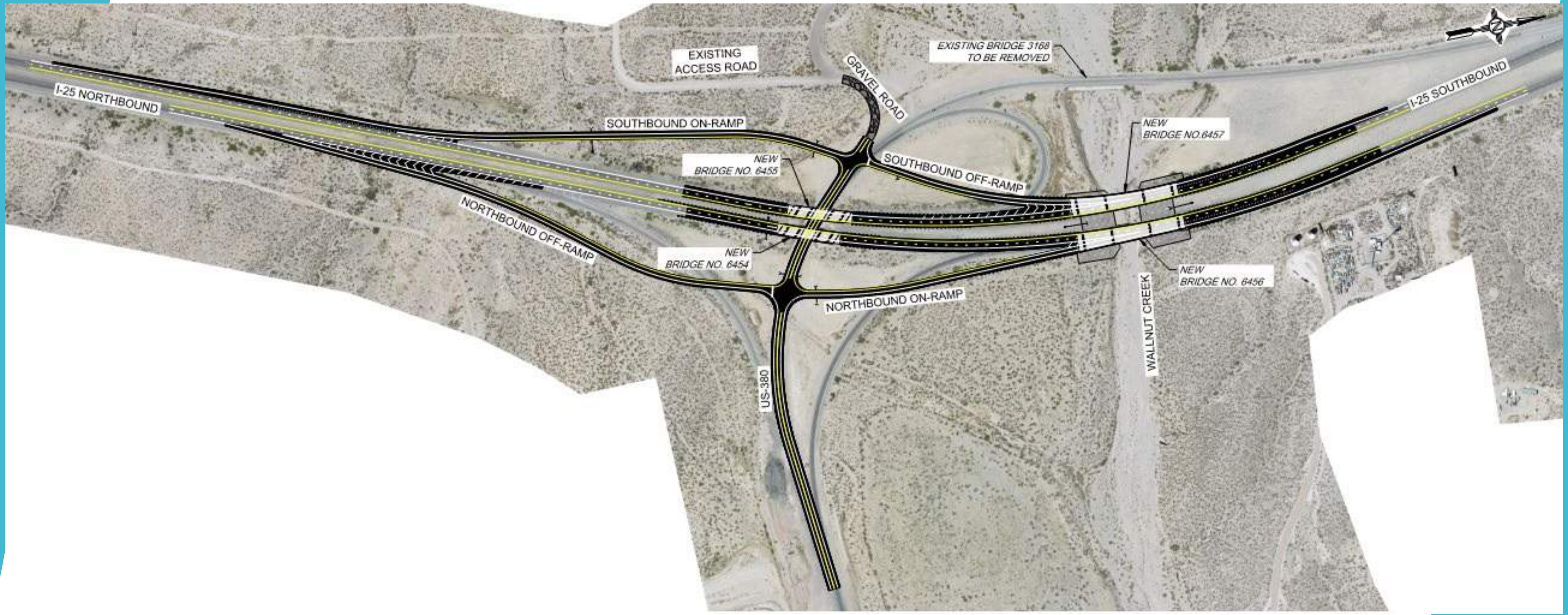


Traffic Interchange (T.I.) Alternatives

- **Alternative-1**
  - Pros
    - Low-cost alternative
      - Anticipated construction cost: $58.8 million
    - No right-of-way impacts
    - Eliminates northbound and southbound acceleration issues
  - Cons
    - Increased cost for drainage improvements
    - Increased bridge maintenance costs for Bridge # 3168

Traffic Interchange (T.I.) Alternatives

- **Alternative-2**
  - Diamond Traffic Interchange
    - With existing US-380 alignment

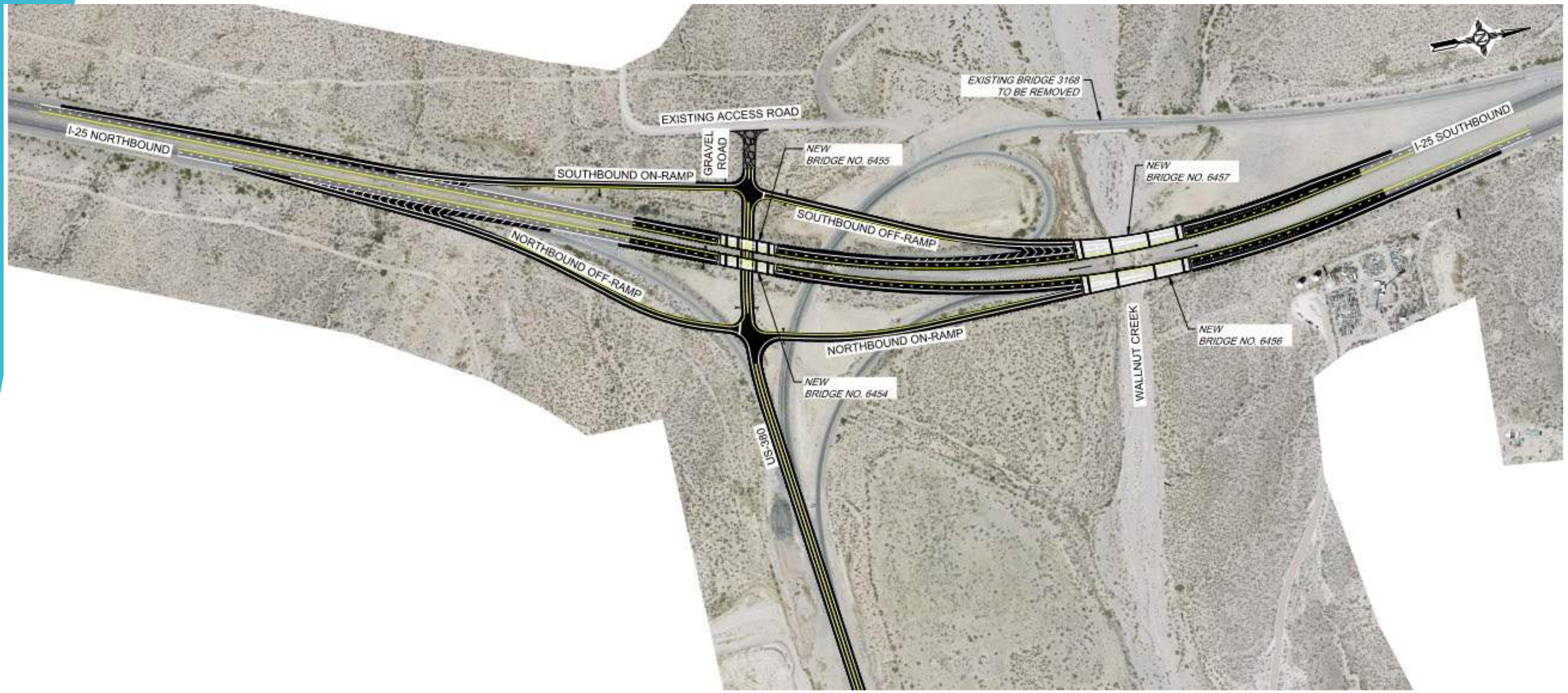


Traffic Interchange (T.I.) Alternatives

- **Alternative-2**
  - Pros
    - Eliminates southbound off-ramp bridge
      - Reduces maintenance and inspection costs
    - Improves Walnut Creek drainage
    - Potential for I-25 bridge rehabilitation at US-380
    - Increased local road access to I-25
  - Cons
    - Increased construction cost
      - Anticipated construction cost: $72.6 million
    - Stop controlled access between US-380 and ramps
    - Potential closure of US-380 during construction

Traffic Interchange (T.I.) Alternatives

- **Alternative-3**
  - Diamond Traffic Interchange
    - With new US-380 alignment



Traffic Interchange (T.I.) Alternatives

- **Alternative-3**
  - Pros
    - Eliminates southbound off-ramp bridge
      - Reduces maintenance and inspection costs
    - Improves Walnut Creek drainage
    - Traffic along US-380 can be maintained during construction
    - Increased local road access to I-25
  - Cons
    - Increased construction cost
      - Anticipated construction cost: $73.6 million
    - Increased right-of-way acquisition
    - Stop controlled access between US-380 and ramps

Schedule

- Begin Study Phase A/B: Spring 2022
- 1st Public Meeting: Nov. 16, 2022
- 2nd Public Meeting: Winter 2023
- Complete Study Phase A/B: Spring 2023

- Begin Preliminary Design Phase I-D and Environmental Documentation Phase I-C: TBD
- Final Design Phase II: TBD
- Construction: TBD

THANKYOU FORYOURTIME

How to Provide Input

- Website Comments: www.dot.nm.gov/i-25-san-antonio-study
- Call: 602-245-6330
- Email: I25SanAntonio@hdrinc.com
- USPS Mail:

I-25 San Antonio Study

c/o HDR

20 E Thomas Rd., Ste 2500, Phoenix, AZ 85012

Comments should be received by Dec. 16, 2022

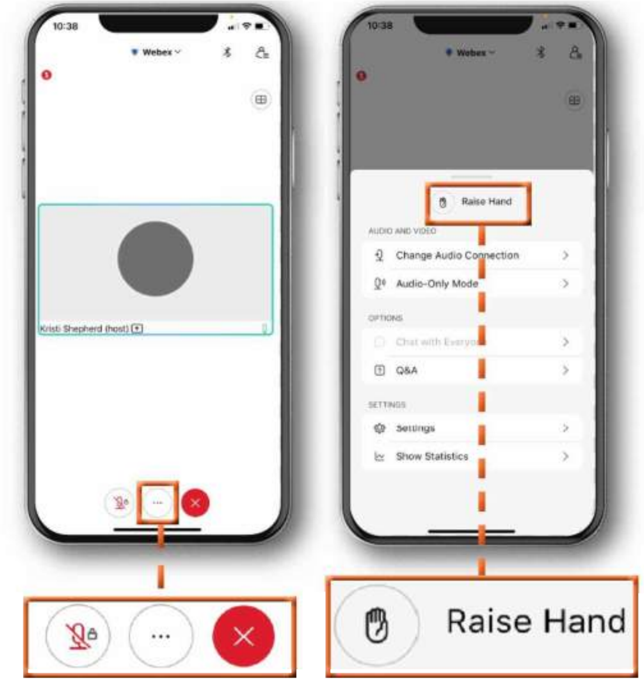
Issues? Call Webex Help:
866.229.3239

Raising Your Hand

Webex App & Online

1. Select "Participant" panel
2. Find your name
3. Click on the "hand" icon (raise/lower)

Mobile App



1. Click three dot menu icon
2. Click "Raise Hand" icon
3. To lower, click icon again

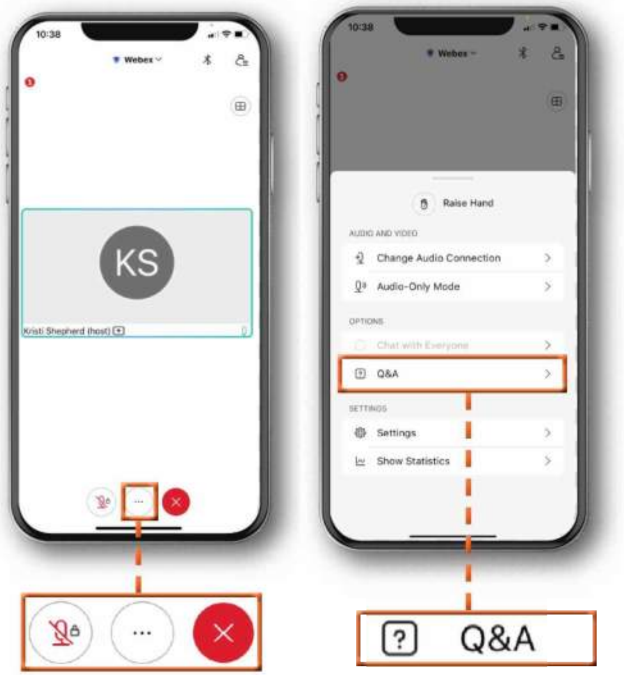
Issues? Call Webex Help:
866.229.3239

Asking a Question

Webex App & Online

1. Open the “Q&A” panel
2. “Q&A” panel will pop up
3. Type your question, hit send

Mobile App



1. Click three dot menu icon
2. Click “Q&A” tab
3. Type your question, hit send

Questions?

Appendix C – Public Comments

Virtual Meeting Q&A

Comment Period Comments

Public Meeting Questions and Comments

November 16, 2022

Number	Question/Comment	Response
1	I am representing the Friends of the Bosque del Apache. We wanted to go on record noting the heavy traffic volume that comes down to visit Bosque del Apache, both New Mexico residents and out of state tourists, and the dangers that they face on the on ramps. We are very, very concerned. It sounds like a major consideration for the study and we support very, very much. The on ramps are very dangerous for those unfamiliar with the area.	We appreciate the comment. That has been a comment message, that the on ramps are a safety concern. We definitely recognize that.
2	Is the extremely short on ramp from 380 to I-25 north being addressed?	Yes, that's the strong issue that definitely has been recognized and is part of the study. As improvements happen, that will be one that gets attention and gets corrected.
3	I am very happy that the study is happening and that there will be some corrections. That interchange is very dangerous. There's a lot of traffic and it needs to be replaced and fixed. I am also glad that you are addressing the drainage. It has flooded a few times and we'd like to help that from happening. Where can we find all this information and stay up to date on the progress?	The information will be posted on the project website. The recording of the meeting will be posted as well, along with the PowerPoint presentation.

4	I live in San Antonio and have driven the interchange for 35 years. I am really pleased to see it is finally being addressed. Any of the solutions would be better than what we have right now. I am wondering what the estimated construction period would be and would the bridge be completely closed and traffic re-routed?	In regard to closures, that is information that we hope to have in our next public meeting. We will estimate the phasing of these alternatives. The intention will be to leave things open as much as possible to minimize inconvenience to the traveling public. We do not have a construction schedule at this time. The funding for this project is not yet programmed.

5	The maps that you're showing are very good but difficult to see. I'm wondering what kind of impact there will be on the businesses and real estate in that area?	There will be some need for additional right of way and that would be additional property for some of those alternatives. But they would not impact any currently developed property. The impacts that may happen to businesses in San Antonio would be if there were some short-term closures of roads during construction. And of course, as I mentioned before, all attempts would be made to minimize those types of closures. If there a closure of a portion of the interchange then detour routes would be developed for those traffic elements.

6	One of the alternatives said that 380 would be closed? Can you tell me specifically, is that just 380 close to the interstate or what does that include?	In the final product, 380 will be left open but during construction there may be temporary closures of US380 depending on the alternative. As I mentioned, there would be detour routes developed when those closures happen. We haven't gotten deep into the development of the phasing of the construction of these alternatives. That's something that we hope to be able to present in more detail at the next public meeting.
7	I'm a farmer here in San Antonio and I'm very glad I've lived here all my life. My dad has lived here all his life. I appreciate you guys looking into the fact that the onramp accessibility and danger have always existed there, especially on northbound from 380. At different times, my dad has almost gone into the guardrail. My mother-in-law almost hit the guardrail because people that are coming from the south do not move over and yield to people coming on, so I'm very glad that you guys are looking into this. Also, the issues with flooding, and rehabilitating the bridges on Walnut Creek. I also have a question because I'm a farmer and have individuals that come from up north and down south to pick up hay. Most of them are pulling trailers, semis, or goosenecks with pickups. How much time would be able to give us in advance for when this is going to happen or find a different way, so they don't have to drive out of the way or encounter a delay.	Those are things that will be organized and developed when the construction plans are put together. Oftentimes the DOT puts a mechanism into the contract where the construction contractor has to make the public aware of their activities and upcoming closures so I would expect that in this project we would do something similar in that nature. Oftentimes you'll see those message boards on project limits that will give you information about upcoming closures or shifting of traffic. These are some of the ways the DOT will notify users of construction activities. Adding to that comment, anytime we have a project you give advance notice, we'll do

		public meetings on when these projects will be underway, what to expect then definitely at any milestones if we have to close bridges. All of that information is sent out days, weeks, or months in advance. We will give detour routes and anything that may be needed.
8	It seems like the on ramp to I-25 north should run parallel longer before you are forced onto the highway. In the meantime, before construction begins, will there be signs warning about the extremely short onramp to north I-25?	Yes. We agree with that. It's definitely needed in the improvements. As for the second part of that question, we've been discussing with the district to see what type of signs maybe we could put in that area. Maybe switching the mainline traffic over to the left so they could be away from the oncoming traffic from the ramp. We're looking into that signage and if and how soon we could do it.
9	Because the money has not yet actually been established for this, is it likely to happen or this still just a theoretical construction?	This is a high priority for the district so they're doing what they can to get fund program after the alternative is developed.
10	Are you going to be presenting some additional information on what you're doing after the waters pass the interstate and go down the highway between the refuge and slopes? Are you going to be doing any bank improvements, so the waters do not flood properties on both sides of the Walnut Creek arroyo that goes up towards the river?	At this point, that is outside of this study area. Currently there is no plan for expected improvements that far away from the interchange.
11	I have a couple of questions. One is a concern about alternatives to entry. As a farmer, I have a lot of hay buyers with trailers and	As far as the merging acceleration of large vehicles getting onto I-25, we definitely

	semi-trucks. My concern is they're going to have to stop to get onto the ramp and may not have enough speed to get onto the highway. There's also a lot of RV traffic coming 380 from Ruidoso and Bosque del Apache. My other concern is about the river drainage. The red boxed in area that's part of this project goes all the way down to where that drainage takes a right turn and goes under the railroad tracks, is that part of this or is that not included? Since it's going under the bridge, are you going to ensure it doesn't affect downstream? By widening that out are you going to be allowing more or less water to pass through?	recognize that as something we need to think about. The proposed improvements with alternatives 2 & 3 and even 1, add a signficant length for acceleration. The challenge is as you're going up in elevation, you would need a mile or more to get those large trucks up to speed. We really can't add the auxiliary lanes that far but the benefits of those improvements is the auxiliary lane that allows for merging. In regards to Walnut Creek downstream, we currently do not anticipate improvements. We included that area so we can properly model Walnut Creek and get the comparison of existing to post conditions. We are aware of the flooding down by the railroad tracks, but that's outside the jurisdiction of NMDOT. We do want to make sure that we won't be negatively impacting the conditions that already exist. By widening the bridge, it enables the water to flow a little bit slower so the total flow through there we've modeled the existing conditions and a wider bridge. By the time you reach 300-400 ft downstream, it's completely equalized both in terms of the peak flow and water surface elevation. This is something we'll continue to monitor as we

		develop the drainage analysis for the proposed conditions. The proposed structures for the interstate over Walnut Creek would widen the channel and decrease the speed of water flowing through that area. This will improve the situation and decrease that scour. The scour is primarily caused by the high velocities as well as the depth so by widening, you reduce both of those and the water basically because it's flowing slower and more shallow, it's really about the same amount of water flowing through. Over a period of time, the energy gradeline of the water flowing through there tends to equalize even if you have some modifications.
12	Is there a study that also addresses the poor road conditions of the I-25 pavement in both directions?	At the moment, we are not aware of any longer projects that are looking at the pavement of I-25 nb & sb for larger areas of our project. This is something we can check on with the district and their maintenance to see if that's something they have planned in the near future.

Public Comments

Comment Period: November 4 – December 15, 2022

#	Received Via	Question/Comment	Response
1	Email	Hi I would like to sign up for study updates and be added to the mailing list for the I-25 San Antonio	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/
2	Email	I live in San Antonio, over the last 30 years I have had several close calls on the north bound on ramp. It is to short to do a proper merge and right at the critical location the change in slope from right to left tends to throw a driver into the right lane faster when attention is on the rear view mirror or looking over shoulder for traffic. There have been times when unable to merge and having to squeeze between traffic and the guard rail on the bridge. Please do something about this poorly engineered ramp.	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/

3	Email	After seeing several near misses at this site the Northbound I25 entrance ramp needs to be extended to 1/4 mile in length. This interchange handles a lot of traffic not to mention visitors to the Bosque de Apache with large travel trailers and RV's. North bound vehicles heading East on 380 come flying off the exit ramp into a blind merge with traffic below them. This is very dangerous. There is room to extend this merger ramp another 100 yards. Thank you for accepting our input and allowing us to voice our concerns. I would rather come to a meeting about this than go to a funeral	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/
4	Email	After watching the presentation at the public meeting Nov. 16th, I'd like to slightly modify my comments of yesterday. In my email of Nov. 16, 2022 I wrote "I don't know if moving the interchange to the south is under consideration, but if so I would be strongly opposed, for several reasons." I saw from the presentation that one of the options under consideration, Option 3, would slightly modify Hwy 380's current alignment and probably in a southern direction. However this change looked quite small, at least in the graphic as presented, so I see no problem with that. In	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/

		fact, of all the choices, Option 3 seems the most favorable, as it would fix the problems and (according to the speakers) probably not require any closure of the current Hwy 380. The "do nothing" option seems like a poor choice. I know there are always more places to spend money, but this intersection is dangerous, the very old bridge under the southbound exit contributed significantly to some locally very damaging floods in recent year (floods that easily could have caused fatalities), and the current amount of erosion could further damage the existing bridge foundations. One consideration I would like to convey is that any time there will be a closure of the interchange or its component parts, the message boards should be placed intelligently and well ahead of the work zone. As an example, there was work done here a number of years ago, and the closure sign was placed far south of the south entrance to southbound I25 at Socorro. That is the way most of the traffic commutes between jobs or school in Socorro and homes in San Antonio. Thus, any closures need to be clearly marked at the entrance ramps in Socorro so that we

		will not enter I-25 at Socorro but can take Hwy 1. They should also be marked on I-25 itself so that people can exit the interstate in time should they need to detour.. Likewise, any closure of the Hwy 380 exit coming from southbound I25 should be signed south of the exit to San Marcial. While this seems obvious, it wasn't always observed in the past. Although not a part of this project, those of us who live in San Antonio would also hope that the NM DOT considers repaving the entire stretch of I-25 between San Antonio and Socorro. The paving is in poor shape and a couple of years ago was subject to a terrible patching job. The "repair" patches are extremely noisy and rough, are not graded well to the underlying paving and I have seen many vehicles swerve as their tires are caught on the edges of those patches. I consider the pavement to be dangerous, and most people avoid it by driving in the left-hand lanes, even the semis. Again thank you for including the public in the discussion of this project.	
5	Email	I'm looking at the map on the invitation to the virtual public meeting and I would like to comment on a few things.	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the

		1. The exit ramps are both labeled and the entry ramps are not. The biggest problem, as I see it, is the northbound entry. The one where recently a Nissan Sentra slammed into another Nissan Sentra and at least one person was killed. We need a merge lane longer than about 30 feet like we have now. Of course you'll need to widen the bridge ahead. Not easy. But what else can you do? I can't imagine how else you can handle this. 2. You have labeled both exit ramps as gores. That's not correct, since the arrows point to places quite apart from the actual gores. A gore is "a small usually triangular piece of land" (Merriam-Webster). In other words it's land between the highway and the ramp. 3. At our exits, as at many outside of California, signs in the gore have the arrow angled up. California abandoned that style long ago, because ambiguity kills people. For a sign before the ramp, up arrow; for the sign after the ramp, down arrow, as in "right here". It's unambiguous. Simply, we need good merge lanes, and 139 northbound is the worst approach around here. While I'm on the subject, 147 southbound is crappy, and there's no	study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/

		constraint from a narrow bridge, so why not just put one in?	
6	Email	I live near San Antonio NM and have used the highway interchange under study almost daily (2 or 3 times on some days) for 35 years. It is poorly designed, particularly for those trying to enter I25 north from hwy 380. There is insufficient time for travelers on either road to assess oncoming traffic, and the angle of approach is such that neither can see each other unless 1) both vehicles are tall and/or 2) you are coming in at night and can see the glow of headlights. My suggestion would be to make the entry lane onto northbound I25 (to the far right) much longer, carrying over Walnut Creek (aka Nogal creek to those of us who live here) to the north. This would give entering traffic a chance to assess what is on the interstate, and a place for them to stay out of the traffic lanes for enough time to yield and also to pick up speed. Particularly if you are driving a loaded pickup truck, the entry is a challenge because of the relatively immediate need for speed and an uphill grade. The entry to 380 from the south is not as bad but still can be a challenge, as can the entry from 380 to	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/

		southbound I-25. Those could be helped by making the loop to the west larger so that traffic entering I25 south doesn't have as tight a turn (this entry doesn't get near as much use, in my observation so is less of an issue), and using some of that wide easement south of 380 to make the merge lane longer for the exit from 25NB to 380 EB. This entry is pretty abrupt for some trucks who are supposed to yield to traffic on 380 that's kind of hard to see until it pops out from under the bridge. I don't know if moving the interchange to the south is under consideration, but if so I would be strongly opposed, for several reasons. First, although the surrounding area is rural, that doesn't mean nobody cares about it. As my home and others about the large parcel of BLM land east of I25, south of 380 and west of Hwy 1, I am aware of the value of the land as a buffer for wildlife (I've seen badger, javelina, coyotes, antelope, elk, bear, and of course all manner of small creatures out there), and as a place that is convenient for recreation near to San Antonio (horseback riding, hiking, mountain biking, and ATVs all occasionally use this land, particularly along the power line easement. It would be

		difficult to reroute 380 without impinging on a significant amount of land and moving traffic (awkwardly) closer to the elementary school. Also, many people use the 380 easement as an informal rest stop - there is almost always a trucker or two parked along there. Finally, DOT itself has several piles (EXTREMELY UGLY PILES I might add) of road material that it keeps stored in those easements. Thanks for your consideration of these issues.	
7	Email	Hello, I am a retired HS language arts teacher who lives in Socorro. I have four sets of friends that I visit in the San Antonio area, all of whose houses/farms require the use of the on and off ramps on I25 @ San Antonio; I have another friend I visit further south at the 107 exit. When returning to Socorro from 107, it's always safer to be in the left lane and to either slow down so you have no vehicle on your right or speed up to pass a vehicle on your right as you negotiate the San Antonio interchange because the vehicles entering I25 going north just can't see any vehicles to their left as the turn is to tight and too steep. If you're entering the freeway there to go north you simply cannot see oncoming traffic because the entrance	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/

		ramp is too short and steep to check oncoming traffic at the normal 75 mph, not to mention truckers barreling north from the border at El Paso at 80-85 mph. As you know, every year there's a massive influx of out-of-state and international visitors in the fall months who exit and enter San Antonio off I25 to go down to the Bosque del Apache Wildlife Refuge during the annual Festival of the Cranes. This interchange is a fatality— or two or three—waiting to happen, and while such a situation may be the policy of the interstate and state highway departments, it is unconscionable, and it needs to be fixed, sooner than later with my taxes. Thank you.	
8	Email	The entrance ramp from US 380 onto Northbound I-25 is one of, if not the most, dangerous entrance ramps I have ever had this misfortune to use. Approaching the entrance ramp from Westbound US 380 a driver cannot see traffic on I-25 except for the tallest of trucks. This even though I am driving a full size, lifted, 4-wheel drive pickup. The entrance ramp curves to the right as it rises up from US 380. Which is well below the surface of I-25, as I-25 runs over US 380. Then there is absolutely no	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/

		acceleration lane to speak of. Certainly not enough to even come close to matching the 75 MPH speed limit of I-25 from a curved road. At this point I-25 is curving to the left making for the need to go well below the speed limit to be able to safely negotiate what is essentially an S curve. This entrance ramp isn't as widely used as many other entrance ramps in NM. But, the people of San Antonio, tourists visiting the Bosque Del Apache National Wildlife Refuge, as well as people using US 380 to return to I-25 from Ruidoso all would appreciate not having to risk life and limb. Please, fix this major problem.	
9	Email	The rip-rap that was protecting the bridge abutments at MP 139 on I-25 doesn't need to be "studied", it needs to be repaired! Then, decide what to do next. We just finished our 5th monsoon season since the flood of July 15-16, 2018, and nothing of substance has been done. I have lived in this immediate area for 30+ years, during that time there has been another flow comparable to 2018, a frequency of about 15 years. So we've used up about 1/3 of our luck. This is not my field, but I do have an engineering degree from NMIMT. After the July 16, 2018 event, I conducted my own	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/

		"study" and also took a number of aerial photos of the exact area in question. Using survey data taken below the last "box" on Walnut Canyon, the Manning formula and an estimated value of "n", surface roughness, of .04, the flow rate peaked around 46 K cfs. Some other conclusions: a debris dam formed on the upstream side of the southbound off-ramp, this contributed to the partial diversion of water to the underpass leading to San Antonio/Highway 380. Expecting a drainage this large to stay it's course, go under the bridges, make a 90 degree turn to the right, go under the tracks and 380 then somehow dissipate involves magical thinking. There needs to be better upstream channelization and a clear path for this drainage to the Rio Grande. If these bridges were to become unusable, there is no viable alternative. Highway 1 in this area would be a dangerous and completely inadequate detour route and have economic consequences far beyond San Antonio, NM.	
10	Email	This is very important work you are addressing. My comment contains the fact that: Everyone who uses Hwy 380W into the village NEEDS a warning about this	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will

		exit. I always inform my travelling friends of the Danger to be encountered at the junction of I-25 and the top of that very steeply curved Entrance ramp from San Antonio. Depending on whether travelers come through during daylight or at night-time, my warning will vary. At night, strangers cannot discern clearly that a Bridge is immediately south of this intersection. At best a driver looks way over their left shoulder to see an oncoming headlight in their lane and recognizes that the right-of-way is not clear and the off-shoulder drive runway is ludicrously short and brief. All this is in a split-second as a driver Tops Out on I-25 in the dark. It is too much to compute. In daylight, the bridge stands out in the landscape and is more visible. I tell daytime drivers of the congestion-at-the top, and mention the very brief off-shoulder runway. Then wish them good luck! The best outcome is hoped for this project, that it be added to the NM Highway list of urgent redesign and correction.	continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/
11	Email	Thank you so much for taking the initiative to address this interchange. It is definitely very dangerous coming into traffic on I25 as they don't really see vehicles coming off	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will

		the ramp. If there are two vehicles on I25, there is no place to speak of to merge into the traffic. I am surprised no one has died on this on-ramp that I know of, but there have been several wrecks. Coming off of I25 from the South is also dangerous as people who are exiting from the North traveling under the underpass have to watch for the South incoming traffic as they ignore the yield sign completely! Whatever is done will be an improvement.	continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/
12	Email	The northbound ramp at San Antonio on to I 25 is a death trap there is no room to merge On to I 25 I've come close to a crash only by pulling off onto the dirt with no room the tractor trailer had nowhere to go as he had a car in the left lane. This is the scariest on ramp in New Mexico it needs to be fixed.	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/
13	Email	Many thanks for the announcement of the I25 interchange study. We have lived in San Antonio for over 14 years, driving into Socorro nearly everyday, and have had multiple scares at that entrance ramp. I drive a small Honda, and it is often impossible to see other like-sized vehicles in that right hand lane. We have a small	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on

		Airbnb near the Bosque del Apache, and our guests drive in from all over the country, even some from overseas. Since they are unfamiliar with the area, we always warn them about the danger of that exchange, yet we still worry that one day, there will be a fatality. My husband & I will happily attend the virtual meeting.	how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/
14	Email	As a thirty plus year resident of the San Antonio area I have used the involved interchange extensively......some 15 years operating fire trucks over same. Involving same I see three problems; 1. The ramp, West bound 380 to Northbound I-25 is far too short to gain speed to merge into Northbound traffic and too difficult to observe approaching Northbound traffic on I-25. Sometimes a driver must stop before attempting a merger. Most all, including your author, keep to the right hugging the Northbound I-25 parking lane for as long as it takes......problem, sometimes there are pedestrians in the area. So one has two hazards to consider.....traffic on the left, people on the right. To my knowledge one person has been killed attempting to gain access to I-25 from 380. A stopped vehicle was rear ended killing a rear seat occupant	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/

		2. The Westbound 380 to Southbound I-25 ramp involves a reverse turn that is far too tight. First time through can be a problem to the unsuspecting. 3. The South bound I-25 off ramp to East bound 380 and the Northbound I-25 off ramp to Eastbound 380, where the two form a junction, and continue East as Eastbound 380 can, also cause problems for the unsuspecting. Both items two and three can be lived with but if the first is to be fixed the other two should follow.	
15	Email	Thank you for hosting the I-25 San Antonio Study meeting last night. Before it is too late, would it be possible to add in a Interstate Camera, one for each direction, for use with NM Roads. This should be a priority when designing roadways and is beneficial to the NMDOT as well as the traveling public. Mr. Charles Remkes would be the best contact to work with should you need any guidelines or specifications.	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/
16	Email	The interchange there In San Antonio is very dangerous. I lost a good friend on that interchange. It should have been rectified years ago . Please get it done the one in Lemitar is beautiful.	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For

			more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/
17	Email	I live north of San Antonio on Highway 1 and have a PO Box in San Antonio. It is convenient to stop in San Antonio and then get on I 25 north to Socorro to run errands. However, getting on the northbound interstate is scary--I can't see oncoming traffic without almost coming to a stop at the point where I should be picking up speed to merge on to the Interstate. I'll often take highway 1 north to avoid this interchange. Likewise, exiting on to Highway 380 from the south is tricky because it is difficult to see traffic that is below me headed east on 380 (just as it is difficult to see traffic above me when I am the traffic headed east on 380 off of I-25). I appreciate that this study is being done and that it is open for public comment. Please let me know if there is anything I can do to help.	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/
18	Email	Both North and South bound entrances to I-25 are dangerous. Since the reworking of this bridge northbound traffic is unable to see approaching cars coming up the ramp.	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community

		Southbound curves too tight. Looking forward to a rework of these ramps.	to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/
19	Email	I am writing on behalf of the 1000+ members of the Friends of Bosque del Apache. We wish to thank you and NMDOT for your work thus far examining the I-25/US380 interchange, and for your excellent presentation at the virtual public meeting on November 16, 2022. Permit me to repeat the comment I made at the meeting: we are concerned for the safety of visitors to Bosque del Apache as they enter the interchange both northbound and southbound. So many of our visitors are from the Albuquerque area or from out of state, and are not familiar with the interchange or the dangers its current design presents. On a personal note, my spouse and I live in Socorro, visit San Antonio restaurants and Bosque del Apache almost weekly, and use the northbound on-ramp. I have lost count of the number of "near misses" we have had getting on the I-25 at that interchange. Please keep me and the Friends of Bosque del Apache on your list of parties interested in the study you are doing. We look forward	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/

		to the results and are optimistic that NMDOT will eventually modify the interchange to improve safety.	
20	Email	Living in Luis Lopez I use the exchange entrance heading north quite often. Visibility is poor; it is difficult to see vehicles approaching from the south in my small car. There is insufficient room, once one can see what's coming, to accelerate even close to interstate speed. We have thousands of visitors to the Bosque del Apache NWR, hundreds pulling trailers or in RV's which can create/experience even greater hazards given the above. A revised entrance is needed!	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/
21	Email	I live in the City of Socorro and frequently go to San Antonio. I always drive to San Antonio on the interstate but never return by this route. The reason is because I feel the northbound entrance from San Antonio on to I-25 is too dangerous. Therefore, I always drive the back road which takes longer but I feel is safer. I believe it is just a matter of time before there is a serious accident due to poor visibility on the entrance from San Antonio to I-25 North. Thank you for your consideration.	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/

22	Email	I noticed Walnut creek is on the I25 comment map. This creek accounted for the flood years ago that damaged many homes in San Antonio not to mention washing out the rail road tracks. Any major highway work in this area should consider the Walnut creek issue before another flood washes San Antonio off the face of the earth. Maybe some type of diversion dam or holding area. Thank you, I will attend the meetings	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/
23	Voicemail	I am calling about the DOT problem in San Antonio New Mexico the offramp or the on-ramp from san Antonio going north to I-25 is very dangerous I've seen numerous accidents. I've lived here since 1975 and I must go through that intersection three times a week, I won't be out at the meeting but boy it's long overdue, very dangerous situation there. Thank you very much.	
24	Voicemail	If this is the survey I'm really for a new entrance to I-25 in San Antonio, it's dangerous, it's dangerous, it's dangerous	
25	Voicemail	I'm complaining about the entrance to I-25 going north from San Antonio it's a very dangerous intersection I go through it about three times a week and I never feel safe, thank you	

26	Voicemail	I don't think your interested in my comments because you haven't answered your phone for four days. I'm calling about the problem with I-25 at San Antonio the on-ramp going north it's very dangerous I go through it three times a week and I am scared every time I enter that intersection but you're not even answering the phone so I mean you really don't want to know do you, thanks for my call	Called back and told her that we have taken a record of her voicemails and have shared her comments with the study team. Told her they will review all comments received during the comment period and take them into account during the study.
27	Voicemail	Hi, I'm just calling to put in my vote for the San Antonio study. I would really like a longer ramp because it is scary, definitely very scary. Not a good on-ramp, thank you bye.	
28	Email	The Interchange at I-25 and US-380 West is dangerous. Drivers on US 380 heading north on I-25 are forced to use an on-ramp with hardly any merge lane and severely restricted visibility of oncoming traffic from the south. A curve just south of this interchange prevents a driver attempting to merge onto the interstate from seeing any but the closest vehicles. Finally, with this study residents and visitors to Socorro have reason to hope that the dangerous US	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/

		380/I-25 Interchange will be redesigned and made safe.	
29	Email	Thank you for this opportunity to comment. I have lived in San Antonio, NM for 22 years. The GREATEST need we have there, as regards the underpass/overpass, the bridge across our large arroyo (occasionally in-flood), and our on & off ramps IS: — a CRYING need for flood-control!! There is virtually none; and in July 2017, our entire old village was over-washed with a, perhaps, thousand-year event. — PLEASE study the record of that massive and detailed failure of the Interstate's structures to safely convey that volume of water and debris, reaching us from the Magdalena highlands — and plan accordingly! — The freeway would not allow the flood to remain in the arroyo's channel. The results were catastrophic! I am available to tell you	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/

		more, in detail, from on-site, detailed observations. I see you have included "Walnut Creek" (the arroyo) within your study area. Please help re-engineer its carrying capacity and don't do as all other agencies have done in the past (MRGCD, BNSF RR, BurRec, etc): they only make it worse!

Virtual Public Meeting #2 Summary

I-25 San Antonio Interchange Study

CN 1102060

New Mexico Department of Transportation

June 2023

Prepared by:
HDR Engineering, Inc.
2155 Louisiana Blvd NE, #3000
Albuquerque, NM 87110

In cooperation with:
NMDOT
FHWA

Contents

Appendices

Introduction

The New Mexico Department of Transportation (NMDOT) is evaluating improvement alternatives on the Interstate 25 (I-25) San Antonio Traffic Interchange, which is approximately 0.5 miles west of San Antonio, New Mexico between Milepost (MP) 139 and MP 140 (see figure 1).

Within the I-25 San Antonio Traffic Interchange Study (Study) area, I-25 is a rural divided four-lane roadway located 10 miles south of Socorro, New Mexico.

I-25 San Antonio Interchange Study

The purpose of the study is to correct geometric roadway deficiencies, enhance drainage structures and protections to diminish scour and erosion, and provide a safe and efficient interchange that meets user expectations.

Figure 1: I-25 San Antonio Interchange Study Limits

Public Involvement Process

I-25 connects with US 380, which is the main road into the nearby community of San Antonio. Due to the study's location, there is a unique set of stakeholders that need to be engaged through the public involvement efforts including commuters, emergency services, schools and school transportation, agencies, and the traveling public among others. Ultimately, the goal of these efforts is to identify these stakeholders' concerns and values to help guide the development of improvements along this corridor.

There have been no recent studies or evaluations on this interchange or this portion of I-25. During this phase, the study team planned and implemented two virtual public meetings to provide study information and solicit feedback. A summary of those efforts is highlighted below.

Virtual Public Meeting

The study team, including NMDOT staff, held the second virtual public meeting of the study on Thursday, May 18, 2023, at 6 p.m. via Zoom. To participate, the public was invited to log in to the meeting using the Zoom application, web browser, or via telephone.

The meeting provided an overview of the study area, the study purpose and need, a summary of feedback received from the first public meeting held in November 2022, the proposed alternatives, the recommended alternative, and the next steps. 19 participants attended the virtual meeting. Comments and questions were accepted live, following the presentation. All questions and comments provided at the virtual public meeting were recorded and are included in Appendix C – Public Comments.

Notifications

Newspaper Advertisements

The team developed and distributed two newspaper advertisements for this meeting. The newspaper advertisements provided an overview of the study, invited the public to attend the virtual public meeting, and gave information on how to provide their comments. The advertisements – which included the date, time, and log-in information for the meeting – were distributed in the following publications and were published in both English and Spanish:

- El Defensor Chieftain (May 4, 2023)
- Albuquerque Journal (May 4, 2023)

Copies of the newspaper advertisements can be found in Appendix A – Public Meeting Notification.

Meeting Notification Banner

Banners were created and posted at the I-25 San Antonio/US 380 interchange in May 2023. The banners listed details on how to attend and participate in the virtual public meeting. A copy of the banners can be found in Appendix A – Public Meeting Notification.

Direct Mailer

A direct mailer was sent to 360 addresses in the study area to inform residents and property owners of the virtual public meeting. The mailer was distributed on May 2, 2023. The mailers were sent to the following postal codes within the study area:

- 87832- H030
- 87832- PBOX

A copy of the direct mailer can be found in Appendix A – Public Meeting Notification.

Local Radio Stations

Copies of the direct mailer were provided electronically to local radio stations within the study area via email on May 4, 2023. The emails were sent to the following radio stations:

- KUNM 89.9 FM
- KXFR 91.9 FM
- KKOB 96.3 FM
- KYRN 102.1 FM
- KNML 610 AM

A copy of the email can be found in Appendix A – Public Meeting Notification.

Social Media

Social media posts were developed for NMDOT accounts, including details on how to participate in the virtual public meeting, how to comment, and how to watch the recording of the virtual public meeting. Copies of the social media posts can be found in Appendix A – Public Meeting Notification.

Project Webpage

The study webpage www.dot.nm.gov/i25-san-antonio-study/ was updated in April 2023 and included information about the study and a link to the event webpage with full meeting details. An event webpage was created at www.dot.nm.gov/event/i25-san-antonio-public-meeting/, which included information about the study, how to log in and participate in the meeting, and how to provide comments on the study. Following the meeting, the recording of the event was added to the webpage to allow the public to watch the meeting at their convenience and continue to provide comments through June 17, 2023.

Public Meeting Materials

Presentation

A PDF of the presentation was made available to the public through the study webpage on May 19, 2023. In addition to the presentation, a link to the recording of the virtual public meeting was posted to the study webpage on May 26, 2023. A copy of the presentation is available in Appendix B – Public Meeting Materials.

Fact Sheet

A PDF of the study fact sheet was made available to the public through the study webpage on May 18, 2023. A copy of the fact sheet is available in Appendix B – Public Meeting Materials.

Public Comments

Public comments were accepted from May 4 – June 17, 2023 in the following ways:

- Live at the virtual public meeting
- On the study webpage: www.dot.nm.gov/i25-san-antonio-study/
- Via email: I25SanAntonio@hdrinc.com
- Via phone: 505.357.7327
- Via mail: I-25 San Antonio Study C/O HDR Engineering
  2155 Louisiana Blvd NE, #3000, Albuquerque, NM 87110

In total, 28 comments were received throughout the comment period. The comments focused on safety, construction timelines, drainage, potential road closures, flooding, and business impacts. Of the 28 comments received, four were received live during the virtual public meeting.

Virtual Meeting Questions and Answers

Four questions/comments were submitted by attendees during the virtual public meeting and were responded to live by the study team on May 18, 2023. These comments ranged from support of the project to specific questions about construction materials and subcontractors. A summary of those questions and answers can be found in Appendix C – Public Comments.

Additional Comments/Questions

24 additional questions/comments were received during the comment period and were responded to by the study team. These comments focused on the dangers of the current on-ramps, proposed safety improvements and flood protection. A summary of those comments and responses can be found in Appendix C – Public Comments.

Media Coverage

An article about the study was published in the El Defensor Chieftain on May 29, 2023. A copy of the article can be found in Appendix D – Media Coverage.

Appendix A – Public Meeting Notification

Newspaper Advertisements

Meeting Notification Banner

Direct Mailer

Radio Station Emails

Social Media

Join Us!

New Mexico DEPARTMENT OF TRANSPORTATION MOBILITY FOR EVERYONE

FHWA

Interstate 25 San Antonio Interchange Study (CN 1102060)

Second Virtual Public Meeting

The New Mexico Department of Transportation (NMDOT) is evaluating improvement alternatives on the Interstate 25 (I-25) San Antonio Interchange, which is approximately 0.5 miles west of San Antonio, New Mexico between Milepost (MP) 139 and MP 140. I-25 connects with US 380, which is the main road into the nearby community of San Antonio. The purpose of this meeting is to go over the improvement alternatives developed and the study team's recommendations. We appreciated your involvement in the first meeting this past November; however, we want to hear your thoughts on the alternatives and study recommendations! Please join us on **Thursday, May 18, 2023, starting at 6:00 p.m.** to learn more and share your input!

How To Participate

Thursday, May 18, 2023 | 6:00 p.m. (MT)

Join the live virtual public meeting on your computer, smartphone or tablet by using the link below, or by calling in on your telephone:

ONLINE OR CALL-IN

English

- **Link:** bit.ly/i25sastudy
- **Phone:** 669-900-6833
- **Webinar ID:** 964 6290 8836
- **Password:** NMDOTI25 (15847150 from phones)

Unable to attend?

If you cannot participate in the virtual meeting, the event will be recorded and posted on the project website shortly after the meeting.

We Want to Hear From You!

Comments are being accepted through June 17, 2023.

You can comment in the following ways:

- **Attend the virtual meeting**
- **Email:** I25SanAntonio@hdrinc.com
- **Call:** 505-357-7327
- **Visit the project website:** https://www.dot.nm.gov/i25-san-antonio-study/
- **USPS Mail to:** I-25 San Antonio Study c/o HDR
  2155 Louisiana Blvd. NE, # 3000
  Albuquerque, NM 87110

To request meeting assistance, language translation, or ADA accommodations, please contact **Victoria Romejko at 505-357-7327 or I25SanAntonio@hdrinc.com by May 11, 2023.**

Acompáñenos:

New Mexico DEPARTMENT OF TRANSPORTATION MOBILITY FOR EVERYONE

FHWA

Estudio sobre la intersección de San Antonio en la interestatal 25 (CN 1102060)

Segunda reunión pública virtual

El Departamento de Transporte de Nuevo México (New Mexico Department of Transportation, NMDOT) está evaluando alternativas de mejora en la intersección de San Antonio en la interestatal 25 (I-25), que se encuentra aproximadamente a 0.5 millas al oeste de San Antonio, Nuevo México entre Milepost (MP) 139 y MP 140. La I-25 conecta con la US 380, que es la carretera principal hacia la comunidad cercana de San Antonio. El propósito de esta reunión es repasar las alternativas de mejora desarrolladas y las recomendaciones del equipo del estudio. Apreciamos su participación en la primera reunión del pasado mes de noviembre; sin embargo, queremos escuchar sus opiniones sobre las alternativas y las recomendaciones del estudio. Acompáñenos el **jueves 18 de mayo de 2023 a partir de las 6:00 p.m.** para obtener más información y compartir su opinión.

Cómo participar

Jueves 18 de mayo de 2023 | 6:00 p.m. (MT)

Participe en la reunión pública virtual en directo desde su computadora, teléfono inteligente o tableta mediante el siguiente enlace o llame por teléfono:

En línea o por teléfono

Español:

- **Enlace:** bit.ly/i25sastudyesp
- **Teléfono:** 669-444-9171
- **ID del seminario web:** 920 4239 6094
- **Contraseña:** I25ESP (456419 desde teléfonos)

¿No puede asistir?

Si no puede participar en la reunión virtual, el evento se grabará y publicará en el sitio web del proyecto poco después de la reunión.

Queremos escucharlo

Se aceptan comentarios hasta el 17 de junio de 2023.

Puede hacer comentarios de las siguientes maneras:

- **Asistir a la reunión virtual**
- **Correo electrónico:** I25SanAntonio@hdrinc.com
- **Teléfono:** 505-357-7327
- **Visite el sitio web del proyecto:** https://www.dot.nm.gov/i25-san-antonio-study/
- **Correo postal de USPS dirigido a:** I-25 San Antonio Study c/o HDR
  2155 Louisiana Blvd. NE, #3000
  Albuquerque, NM 87110

Para solicitar asistencia para reuniones, traducción de idiomas o adaptaciones de la ADA, comuníquese con **Victoria Romejko al 505-357-7327 o envíe un correo electrónico a I25SanAntonio@hdrinc.com antes del 11 de mayo de 2023.**

New Mexico DEPARTMENT OF TRANSPORTATION
MOBILITY FOR EVERYONE
FHWA

Join Us!

Interstate 25 San Antonio Interchange Study (CN 1102060)

Second Virtual Public Meeting

The New Mexico Department of Transportation (NMDOT) is evaluating improvement alternatives on the Interstate 25 (I-25) San Antonio Interchange, which is approximately 0.5 miles west of San Antonio, New Mexico between Milepost (MP) 139 and MP 140. I-25 connects with US 380, which is the main road into the nearby community of San Antonio. The purpose of this meeting is to go over the improvement alternatives developed and the study team's recommendations. We appreciated your involvement in the first meeting this past November; however, we want to hear your thoughts on the alternatives and study recommendations! Please join us on **Thursday, May 18, 2023, starting at 6:00 p.m.** to learn more and share your input!

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English

- **Link:** bit.ly/i25sastudy
- **Phone:** 669-900-6833
- **Webinar ID:** 964 6290 8836
- **Password:** NMDOTI25 (15847150 from phones)

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  2155 Louisiana Blvd. NE, # 3000
  Albuquerque, NM 87110

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New Mexico DEPARTMENT OF TRANSPORTATION
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FHWA

Acompáñenos:

Estudio sobre la intersección de San Antonio en la interestatal 25 (CN 1102060)

Segunda reunión pública virtual

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Newspaper : El Defensor Chieftain Issue Date : 05/04/2023 Advertiser : HDR INC Ad Number : 000156955001

New Mexico DEPARTMENT OF TRANSPORTATION MOBILITY FOR EVERYONE

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Join Us!

Interstate 25 San Antonio Interchange Study (CN 1102060)

Second Virtual Public Meeting

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New Mexico DEPARTMENT OF TRANSPORTATION
MOBILITY FOR EVERYONE

Interstate 25 San Antonio Interchange Study (CN 1102060)

Virtual Public Meeting

May 18, 2023 | 6:00 pm (MT)

Connect with us:

Email: I25SanAntonio@hdrinc.com
Call: 505-357-7327
Visit the project website: www.dot.nm.gov/i25-san-antonio-study/


16FT 7IN
TRANSPORTATION
Interstate 25 San Antonio
Interchange Study (CN 1102060)
Virtual Public Meeting
May 18, 2023 | 6:00 pm (MT)
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16FT. 7IN.
TRANSPORTATION
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Virtual Public
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Join us!

Interstate 25 San Antonio Interchange Study (CN 1102060)

New Mexico DEPARTMENT OF TRANSPORTATION MOBILITY FOR EVERYONE

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Indicia clearance area

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Address and barcode clearance area

From:	I25 San Antonio
To:	I25 San Antonio
Cc:	Policar, Randy; Mullins, Jennifer, NMDOT; Bean, Danton
Subject:	NMDOT Second Virtual Public Meeting for the I-25 San Antonio Traffic Interchange Study- Thursday, May 18, 2023
Date:	Thursday, May 4, 2023 1:03:39 PM
Attachments:	NMDOT_I-25 San Antonio _Public Meeting 2_Direct Mail Postcard.pdf

Good afternoon,

The New Mexico Department of Transportation (NMDOT) is conducting a study on the Interstate 25 (I-25) San Antonio Traffic Interchange, which is approximately 0.5 miles west of San Antonio, New Mexico between Milepost (MP) 139 and MP 140. I-25 connects with US 380, which is the main road into the nearby community of San Antonio.

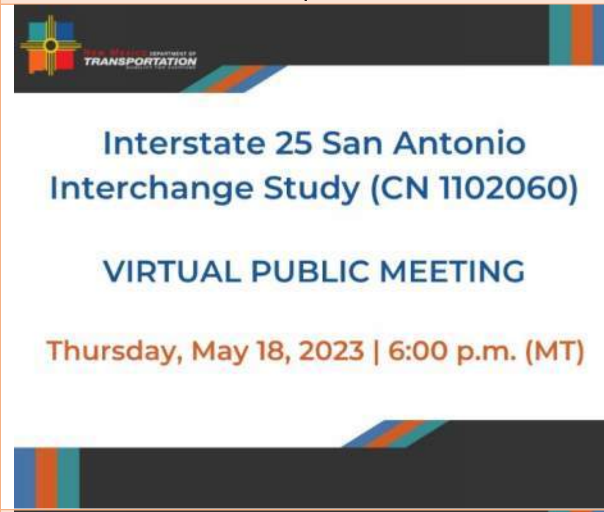
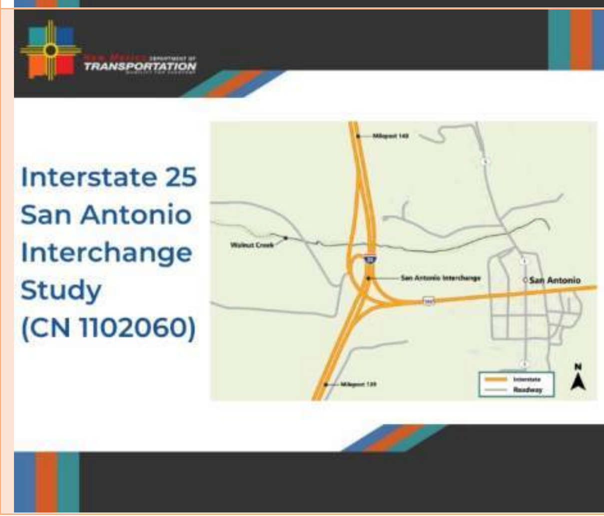
NMDOT invites the public to participate in the second virtual public involvement meeting on **Thursday, May 18, 2023, starting at 6 p.m**. to learn more about and share input on the study. The purpose of the second meeting is to go over the improvement alternatives developed and the study team's recommendations.

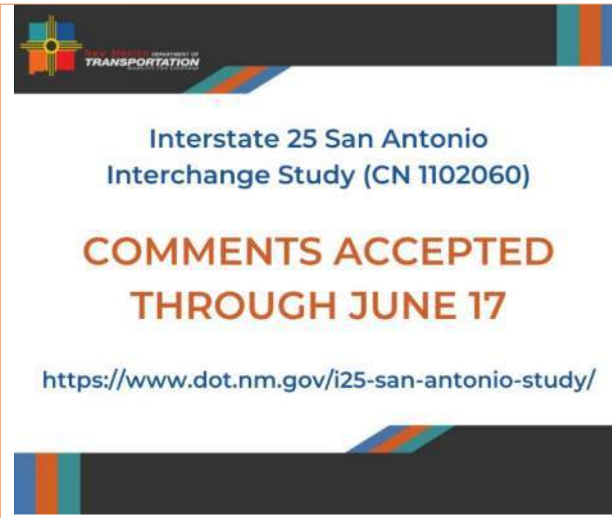
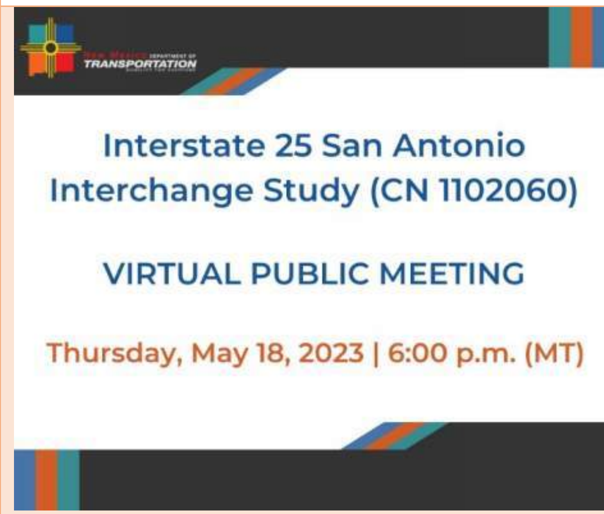
Attached is a copy of the postcard that was sent to residents in the study area about the upcoming virtual meeting. We would appreciate it if you could share details about the meeting with your listeners. Thank you in advance and let us know if you have any additional questions.

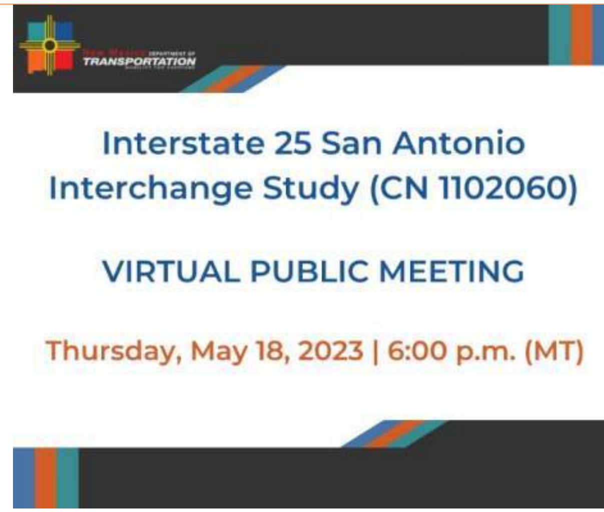
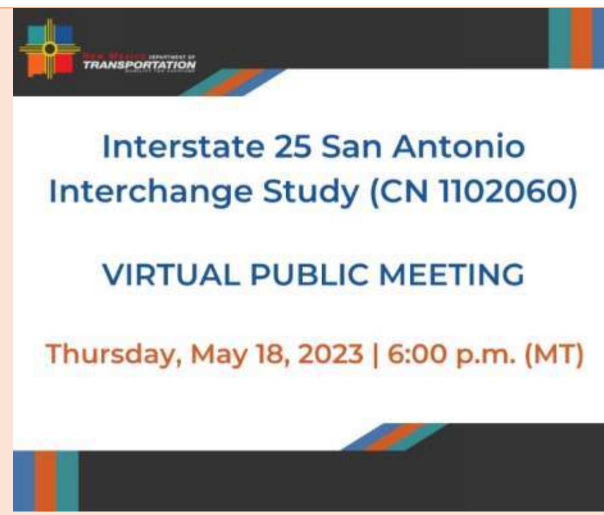
I-25 San Antonio Study Team
i25sanantonio@hdrinc.com

Victoria Romejko
Senior Communications Coordinator

I-25 San Antonio Interchange Study – Social Media Plan

Date	Outlet	Content	Graphics	Links
May 4	Facebook	NMDOT invites you to participate in a virtual public meeting on Thursday, May 18, starting at 6 p.m. to learn about and share your input on the Interstate 25 San Antonio Interchange Study (CN 1102060). Join the virtual public meeting through Zoom on your computer, phone, or tablet. Visit: https://www.dot.nm.gov/i25-san-antonio-study/		https://www.dot.nm.gov/i25-san-antonio-study/
May 9	Facebook	Don't miss the virtual public meeting for the Interstate 25 San Antonio Interchange Study (CN 1102060) happening Thursday, May 18, starting at 6 p.m. Visit the link below to see how you can join through Zoom. https://www.dot.nm.gov/i25-san-antonio-study/		https://www.dot.nm.gov/i25-san-antonio-study/

May 12	Facebook	Public comments are being accepted through June 17 for the I-25 San Antonio Interchange Study. Public comments can be made in several ways: • **Attend the virtual meeting** • **Email:** I25SanAntonio@hdrinc.com • **Call:** 505-357-7327 • **Visit the project website:** https://www.dot.nm.gov/i25-san-antonio-study/ • **USPS mail to:** I-25 San Antonio Study c/o HDR 2155 Louisiana Blvd. NE, Suite 3000 Albuquerque, NM 87110		https://www.dot.nm.gov/i25-san-antonio-study/
May 15	Facebook	REMINDER: Join us for the virtual public meeting for the Interstate 25 San Antonio Interchange Study on Thursday, May 18, starting at 6 p.m. Click the link to learn more: https://www.dot.nm.gov/i25-san-antonio-study/ Call-in/Online through Zoom: English: •Link: bit.ly/i25sastudy •Phone: 669-900-6833 •Webinar ID: 964 6290 8836 •Password: NMDOTI25 (15847150 from phones) Español: • Enlace: bit.ly/i25sastudyesp • Teléfono: 669-444-9171 • ID del seminario web: 920 4239 6094 • Contraseña: I25ESP (456419 desde teléfonos)		https://www.dot.nm.gov/i25-san-antonio-study/

May 17	Facebook	TOMORROW: Join us for the virtual public meeting for the Interstate 25 San Antonio Interchange Study starting at 6 p.m. Click the link to learn more: https://www.dot.nm.gov/i25-san-antonio-study/ Call-in/Online through Zoom: English: •Link: bit.ly/i25sastudy •Phone: 669-900-6833 •Webinar ID: 964 6290 8836 •Password: NMDOTI25 (15847150 from phones) Español: • Enlace: bit.ly/i25sastudyesp • Teléfono: 669-444-9171 • ID del seminario web: 920 4239 6094 • Contraseña: I25ESP (456419 desde teléfonos)		https://www.dot.nm.gov/i25-san-antonio-study/
May 18	Facebook	TONIGHT: Join us for the virtual public meeting for the Interstate 25 San Antonio Interchange Study starting at 6 p.m. Click the link to learn more: https://www.dot.nm.gov/i25-san-antonio-study/ Call-in/Online through Zoom: English: •Link: bit.ly/i25sastudy •Phone: 669-900-6833 •Webinar ID: 964 6290 8836 •Password: NMDOTI25 (15847150 from phones) Español: • Enlace: bit.ly/i25sastudyesp • Teléfono: 669-444-9171		https://www.dot.nm.gov/i25-san-antonio-study/

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May 25	Facebook	REMINDER: Your feedback is important! Don't forget to submit your comments on the Interstate 25 San Antonio Interchange Study before June 17. Visit the link below to see how you can provide your comments https://www.dot.nm.gov/i25-san-antonio-study/.		https://www.dot.nm.gov/i25-san-antonio-study/
June 1	Facebook	REMINDER: Your feedback matters! Don't forget to submit your comments on the I-25 San Antonio Interchange Study. The public comment period closes on June 17. Visit the link below to find out the different ways you can comment. https://www.dot.nm.gov/i25-san-antonio-study/		https://www.dot.nm.gov/i25-san-antonio-study/

June 8	Facebook	REMINDER: We want to hear from you! The I-25 San Antonio Interchange Study comment period closes on June 17. You can provide your comments in several different ways: • **Email:** I25SanAntonio@hdrinc.com • **Call:** 505-357-7327 • **Visit the project website:** https://www.dot.nm.gov/i25-san-antonio-study/ • **USPS mail to:** I-25 San Antonio Study c/o HDR 2155 Louisiana Blvd. NE, Suite 3000 Albuquerque, NM 87110		https://www.dot.nm.gov/i25-san-antonio-study/
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June 16	Facebook	TOMORROW IS THE DEADLINE! Don't forget to submit your comments on the Interstate 25 San Antonio Interstate Study before tomorrow, June 17. Visit the link below to see how you can provide your comments https://www.dot.nm.gov/i25-san-antonio-study/.		https://www.dot.nm.gov/i25-san-antonio-study/

Interstate 25 San Antonio Interchange Study (CN 1102060)

Appendix A – Public Meeting Notification – Social Media Calendar

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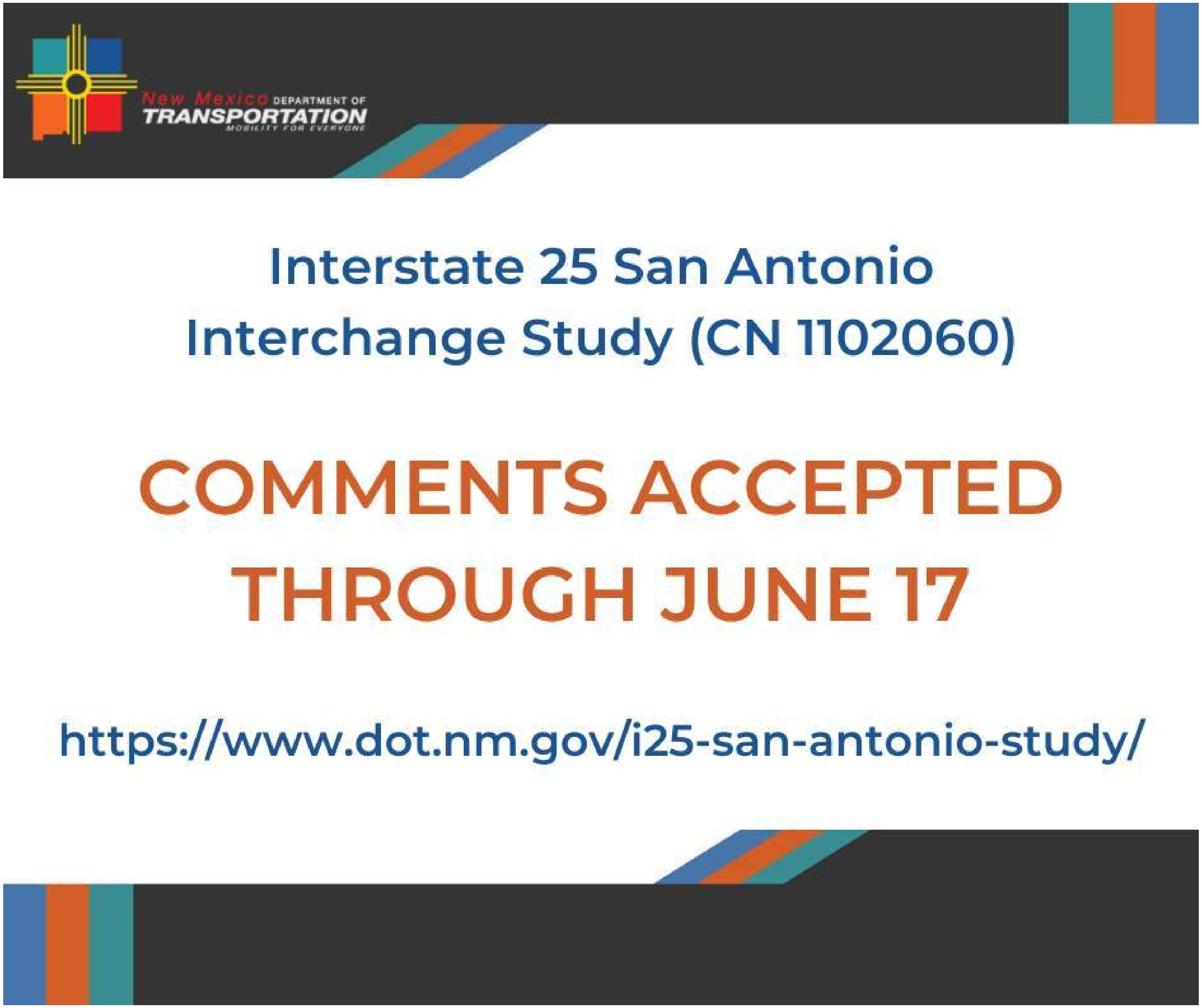

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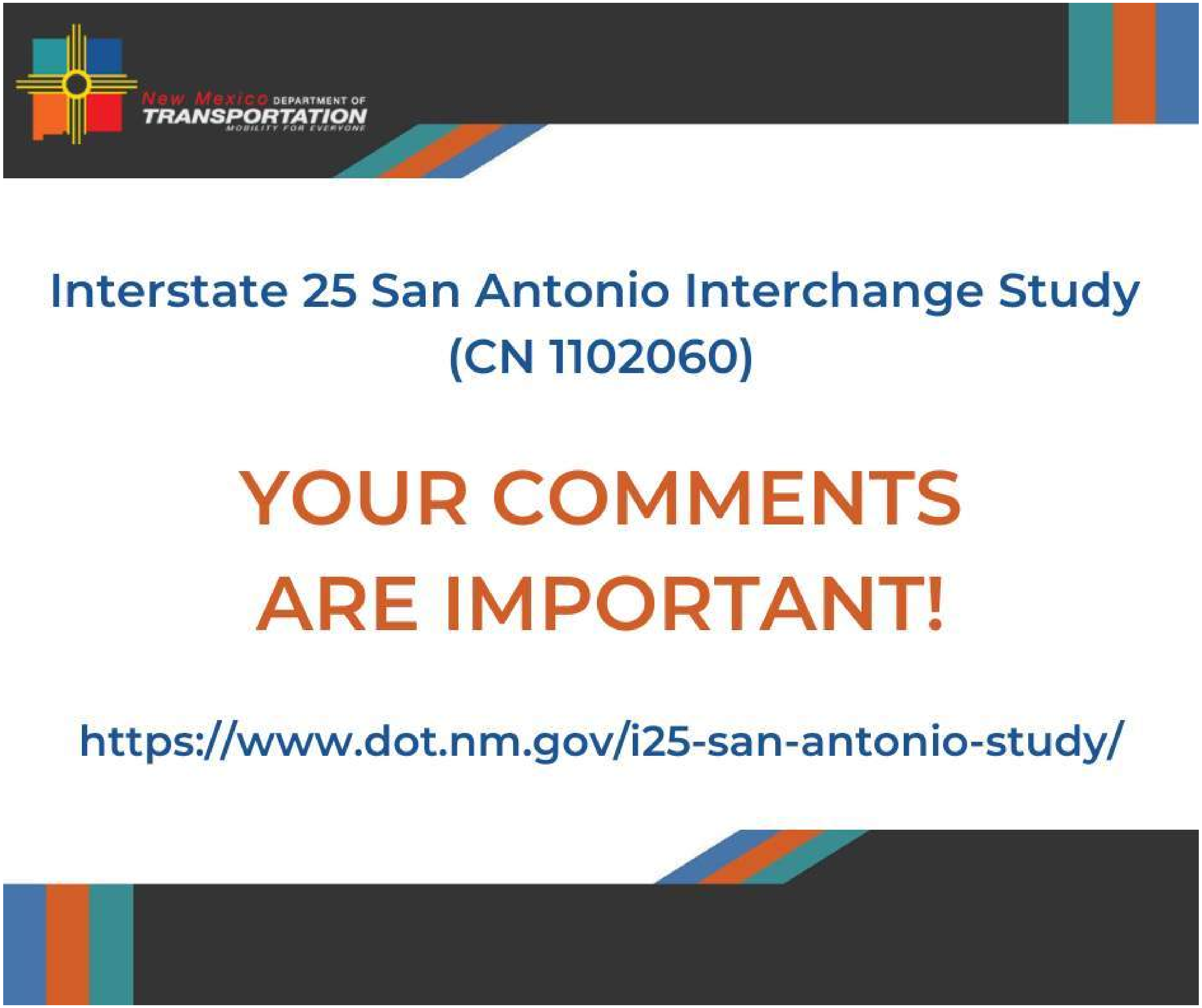

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New Mexico DEPARTMENT OF TRANSPORTATION
MOBILITY FOR EVERYONE

Interstate 25 San Antonio Interchange Study (CN 1102060)

YOUR FEEDBACK MATTERS!

https://www.dot.nm.gov/i25-san-antonio-study/

Appendix A – Public Meeting Notification – Social Media Calendar

Appendix B – Public Meeting Materials

Presentation

I-25/US 380 (San Antonio) Interchange Study
CN 1102060

Second Virtual Public Meeting

May 18, 2023

The public meeting will begin shortly.

Welcome

- All participants have been muted to avoid background noise
- This meeting will be recorded
- *Para acceder a la reunión en español, marcar* ***669-444-9171*** *y usar código de reunión 920 4239 6094 y contraseña 456419*
- Following the meeting presentation, we will take questions and comments online and by phone
  - Instructions will be provided on how to participate

I-25/US 380 (San Antonio) Interchange Study

CN 1102060

Second Virtual Public Meeting

May 18, 2023

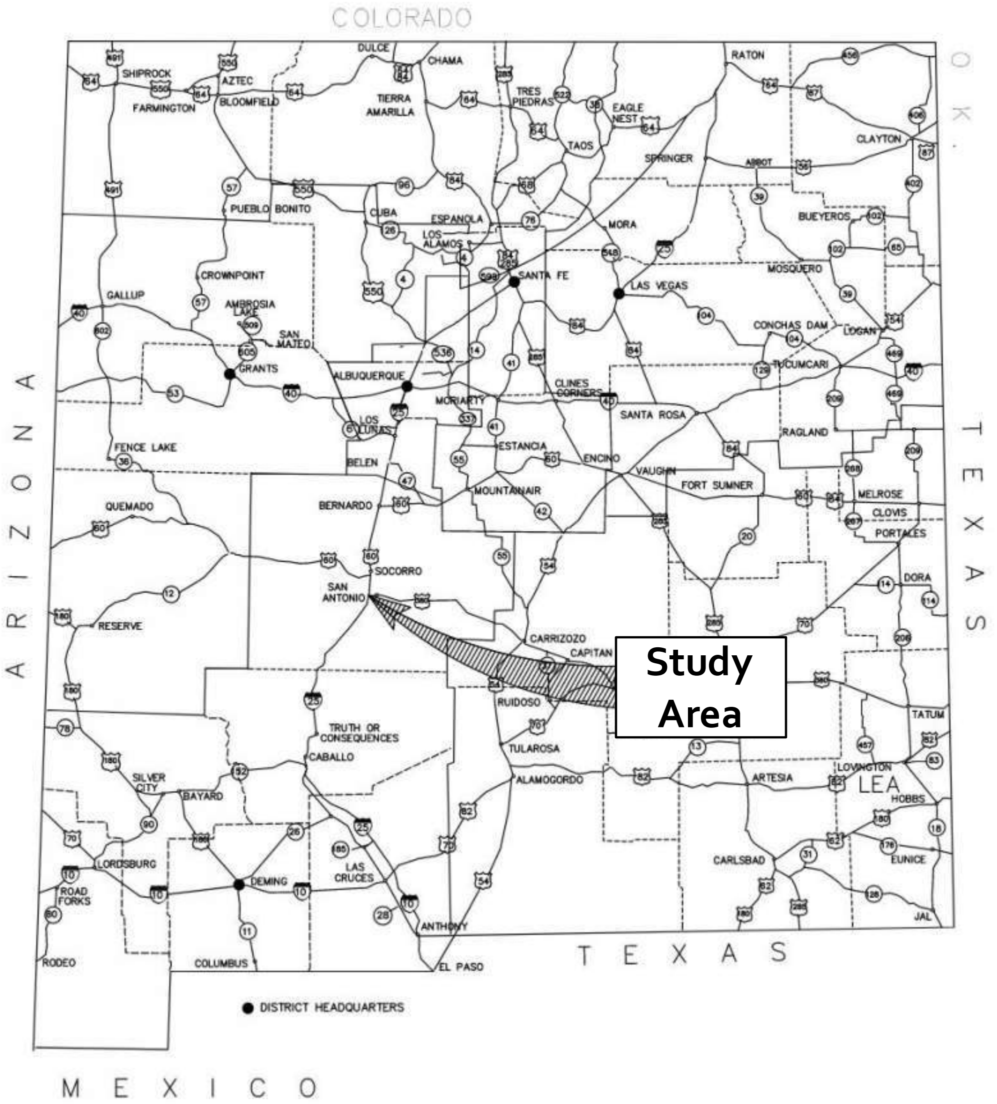
Agenda

- Introductions
- Purpose and Need
- What We Heard in November 2022 Public Meeting
- Proposed Alternatives Evaluated
- Recommended Alternative
- Next Steps
- Questions

Introductions

- NMDOT
  - Mark Salazar, PE, Project Development Engineer
  - Aaron Chavarria, PE, Interim District 1 Engineer
  - Harold Love, PE, Assistant District 1 Engineer
  - Gene Paulk, PE, Assistant District 1 Engineer
  - Joshua Holguin, Environmental Liaison
- Consultants
  - Danton Bean, PE, Project Manager
  - Ravi Sripada, PE, Roadway Engineer
  - Andrew Wong, PE, Drainage Engineer
  - Randy Policar, Public Involvement Specialist
  - Maria Altemus, Environmental Planner

Study Location



Study Area

I-25/US 380 (San Antonio) Interchange Study

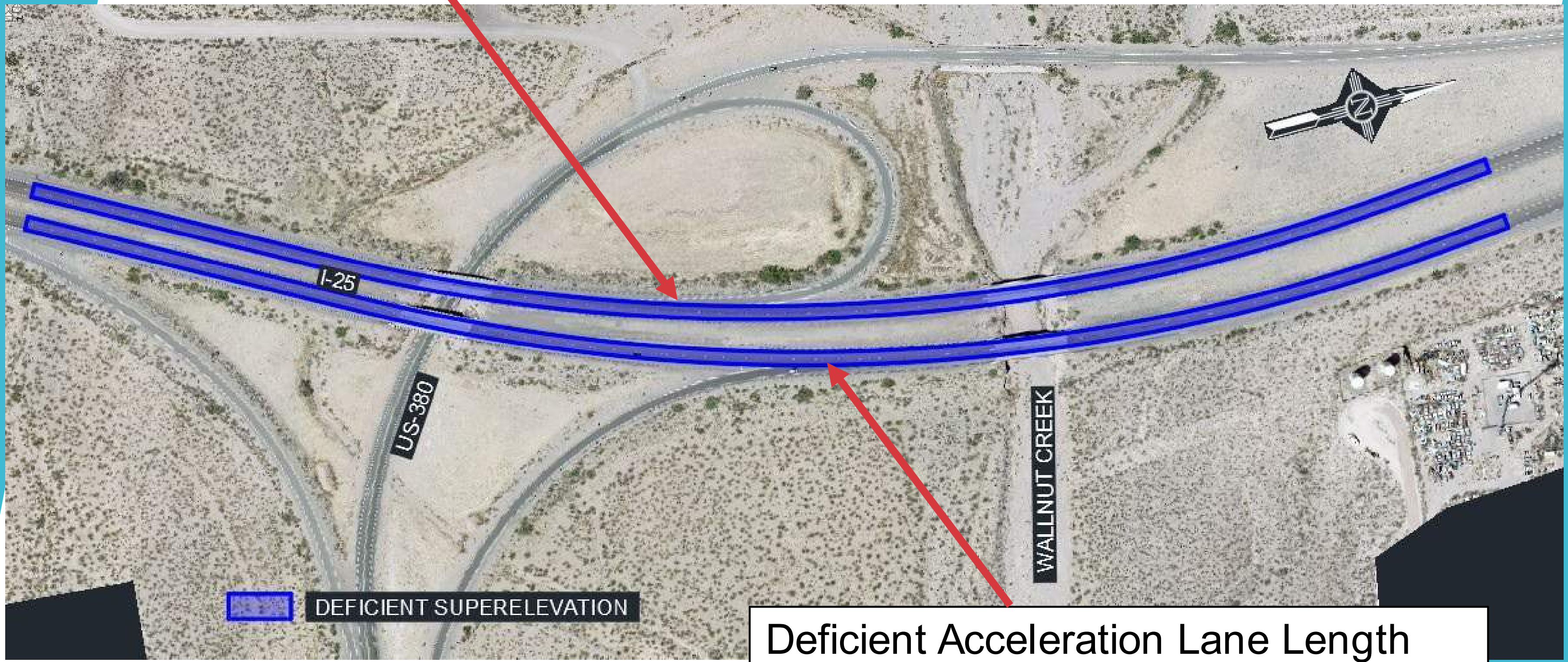
Purpose and Need

- Needs:
  - Deficient acceleration and merge lanes for entrance ramps
  - Deficient roadway superelevation geometry
  - Problematic drainage elements
  - Aged and dilapidated bridge structures
- Purpose: Improve safety

Existing Description and Condition

Roadway

Deficient Acceleration Lane Length
- 150 ft available
- 1,160 ft required



Deficient Acceleration Lane Length
- 150 ft available
- 1,580 ft required

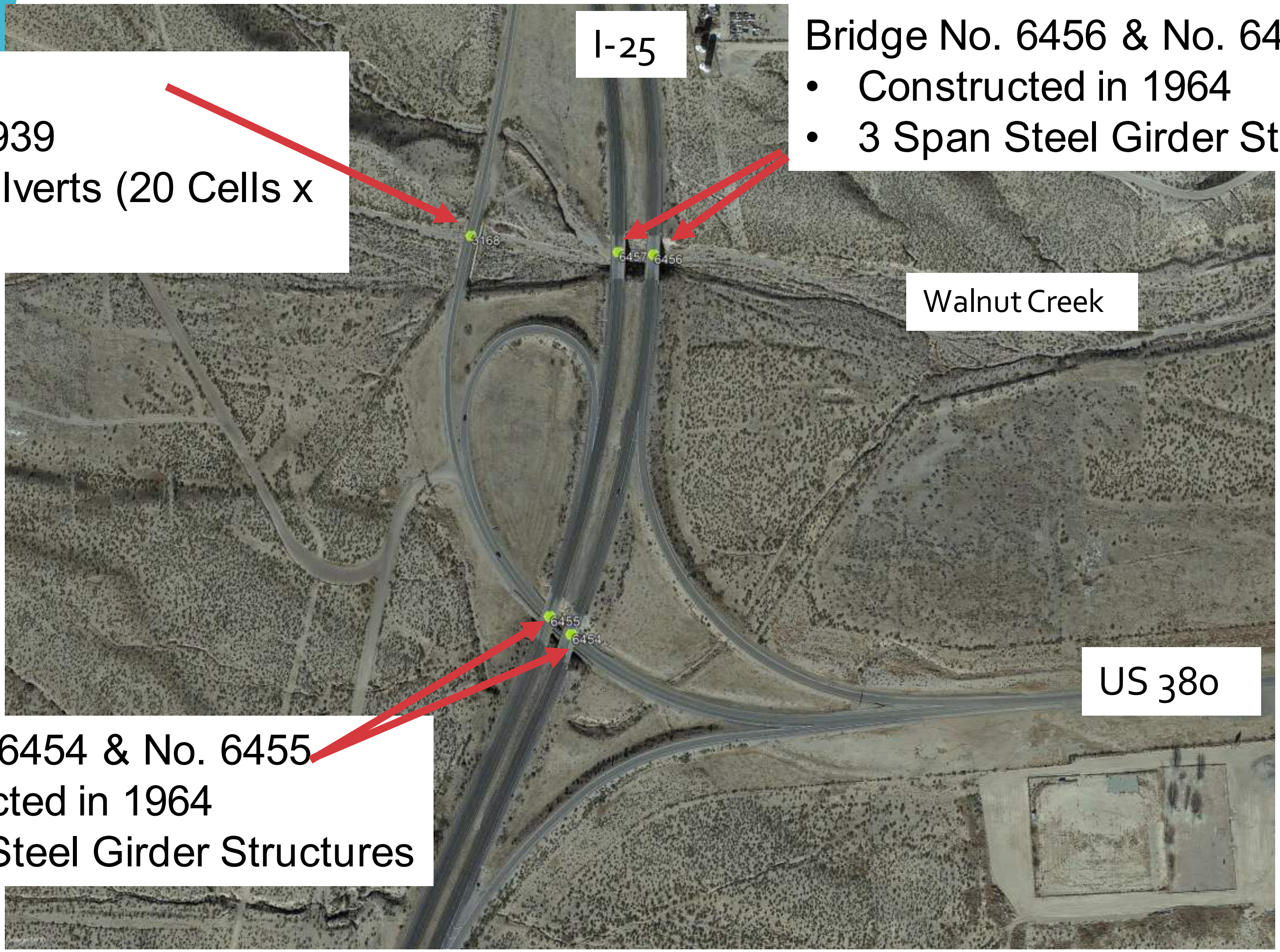
Existing Description and Condition

Roadway

- **Summary**
  - Deficient acceleration lanes for Northbound and Southbound on-ramps
  - Deficient superelevation for I-25 Northbound and Southbound lanes

Existing Description and Condition

Bridge



Bridge No. 3168
- Constructed in 1939
- Concrete Box Culverts (20 Cells x 9 ft x 8 ft)

Bridge No. 6456 & No. 6457
- Constructed in 1964
- 3 Span Steel Girder Structures

Bridge No. 6454 & No. 6455
- Constructed in 1964
- 3 Span Steel Girder Structures

Existing Description and Condition

Bridge

- **Summary**
  - All five bridge structures are reaching the end of their design life.

Drainage Structure Summary

19 Crossings

25 Culverts

3 Bridges to convey Walnut Creek

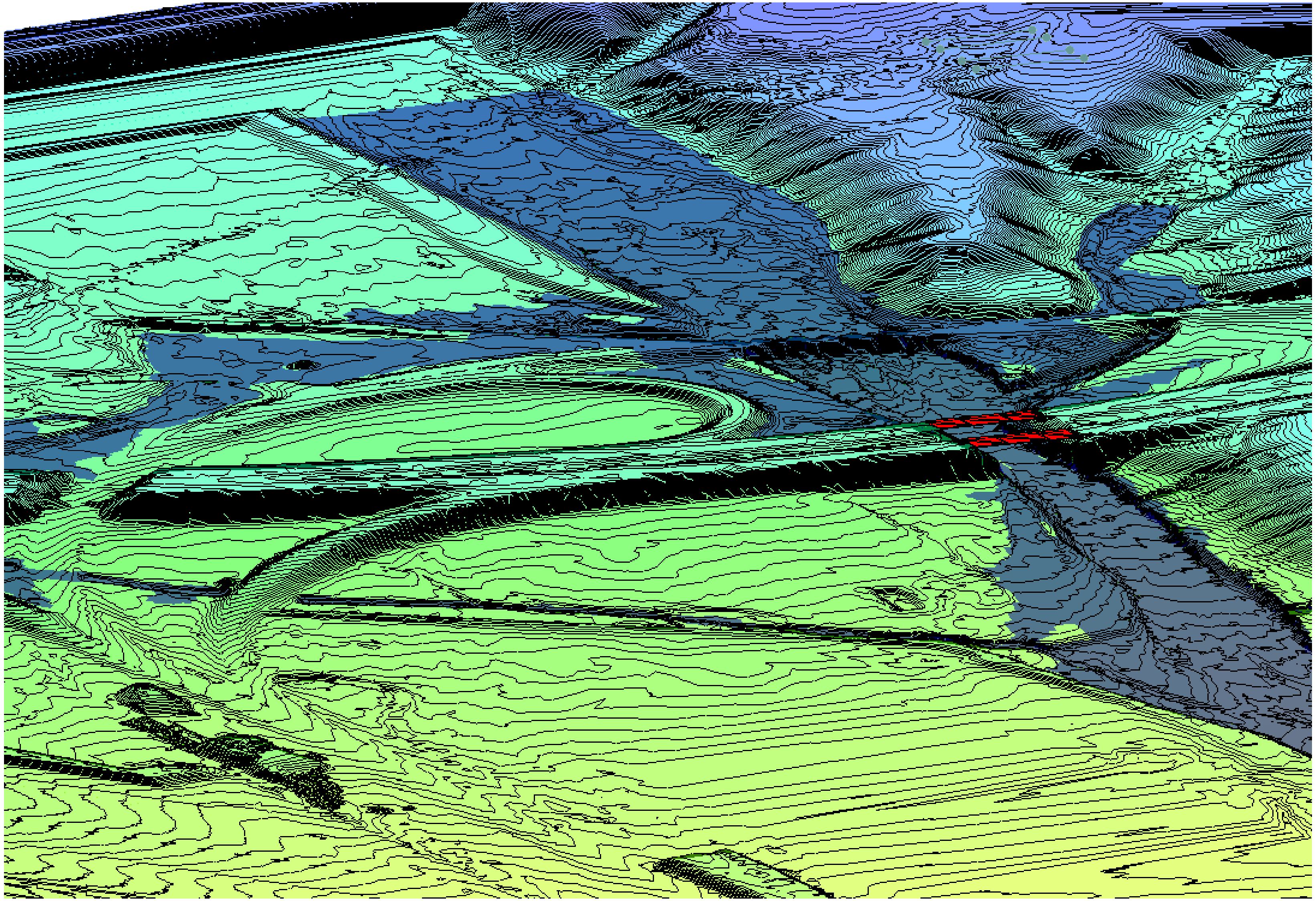
Scour and sediment issues

Hydrologic Analysis

- Walnut Creek basin size is 32.1 square miles
- Peak flowrate for the 1% annual chance storm of Walnut Creek was calculated to be over 19,000 cubic feet per second

Hydraulic Analysis

- Bridges analyzed with SMS 2D to check capacity
- Culverts analyzed with HY 8
- 3 undersized culverts within the area



Scour Analysis

- Preliminary scour analysis revealed significant scour issues reflecting field conditions

Stakeholder Meeting
November 9, 2022

Public Meeting
November 16, 2022

Comment Period closed
December 15, 2022

- 41 Total Comments/Questions Received
  - 12 at the virtual public meeting
  - 24 via email
  - 5 via phone call
- General Comment Themes
  - Driver safety concerns with existing roadway
  - Ramp geometry concerns
  - Concerns about Northbound on-ramp
  - Flood control

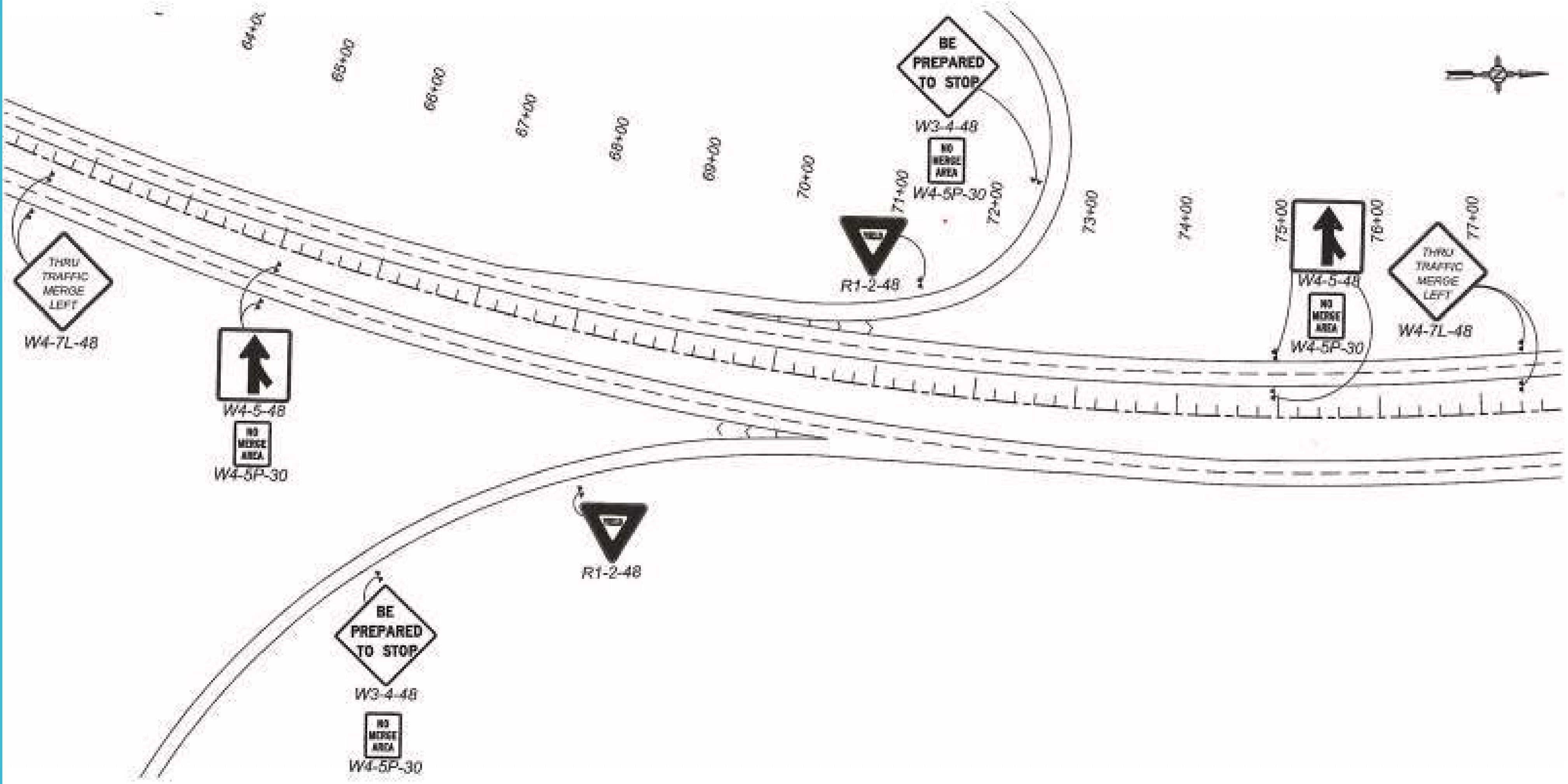
Response to Comments

- The majority of the expressed concerns have been identified by the study team as an issue in the project area that will be improved.
- Plans for traffic and traffic control will be developed in Final Design.
- Intent is to limit closures and traffic restrictions.

NMDOT Update

- Walnut Creek Improvements
- Signs for Northbound movements
- Pavement Preservation

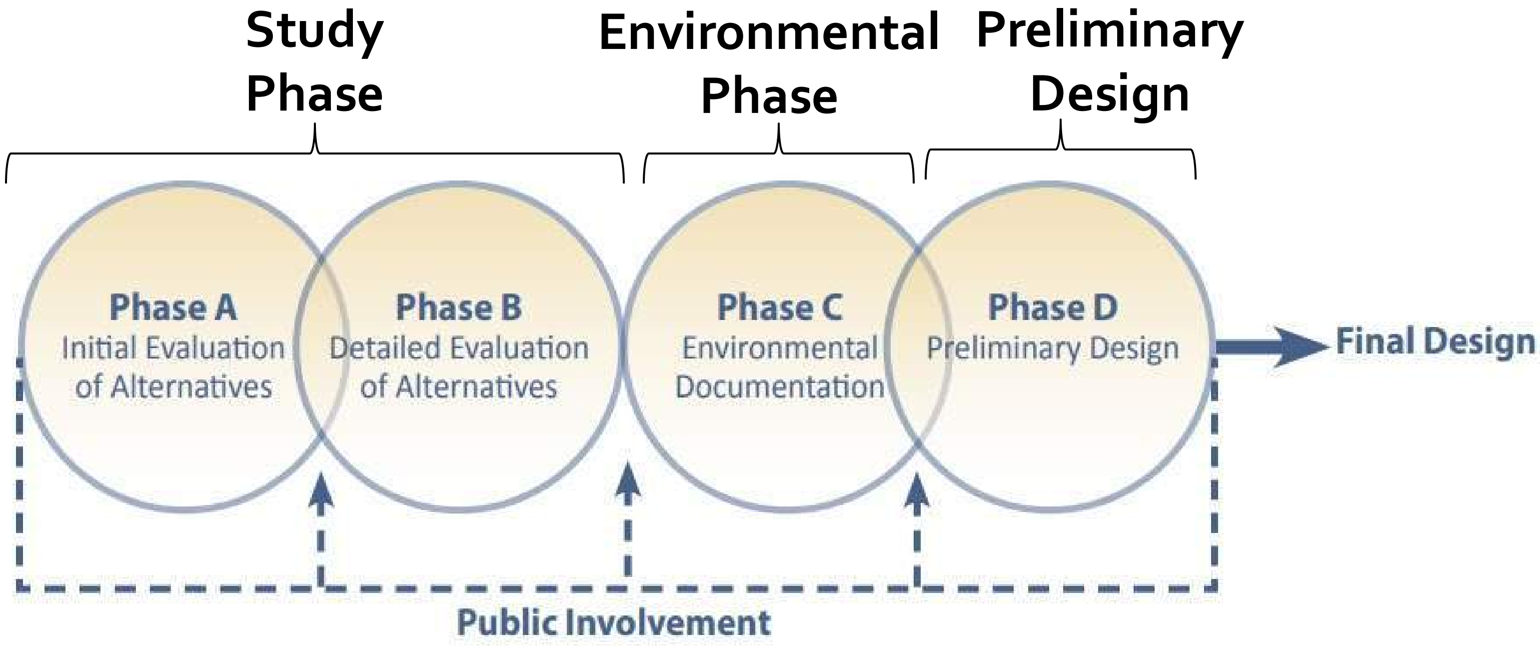
NMDOT Update



NMDOT Update

What is the purpose of this meeting?

- Inform the public on study development and status
- Solicit public feedback and insights of the study area such as:
  - Physical, environmental and operational characteristics
  - Other important considerations



Study Purpose and Need

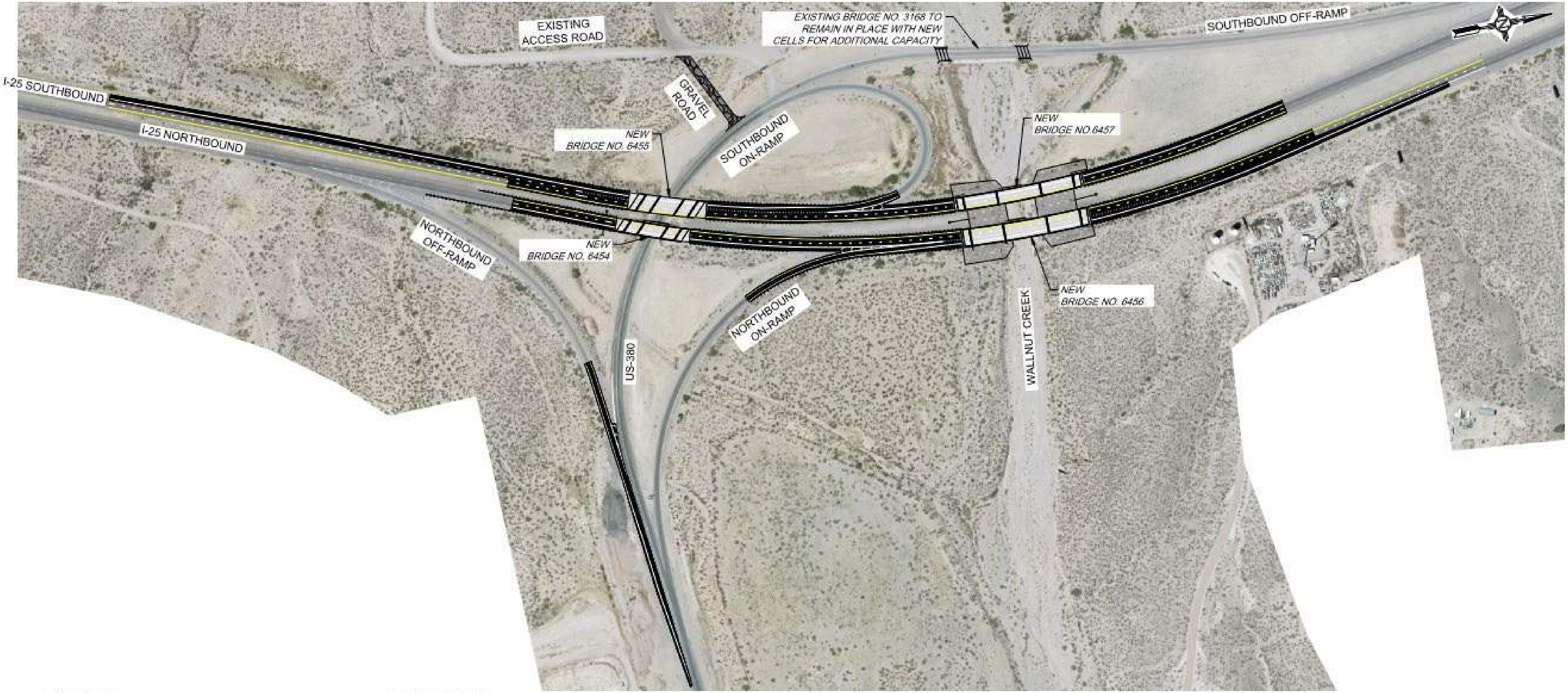
- Needs:
  - Deficient acceleration and merge lanes for entrance ramps
  - Deficient roadway superelevation geometry
  - Problematic drainage elements
  - Aged and dilapidated bridge structures

- Purpose: Improve safety

Proposed Alternatives

- No-Build
- Build Alternatives
  - Alternative - 1: Enhancement to the existing geometry
  - Alternative - 2: Tight Diamond Interchange geometry
    - Match Existing US 380 alignment
  - Alternative - 3: Tight Diamond Interchange geometry
    - Adjust US 380 alignment

- **Alternative 1:** Enhancement to the existing geometry



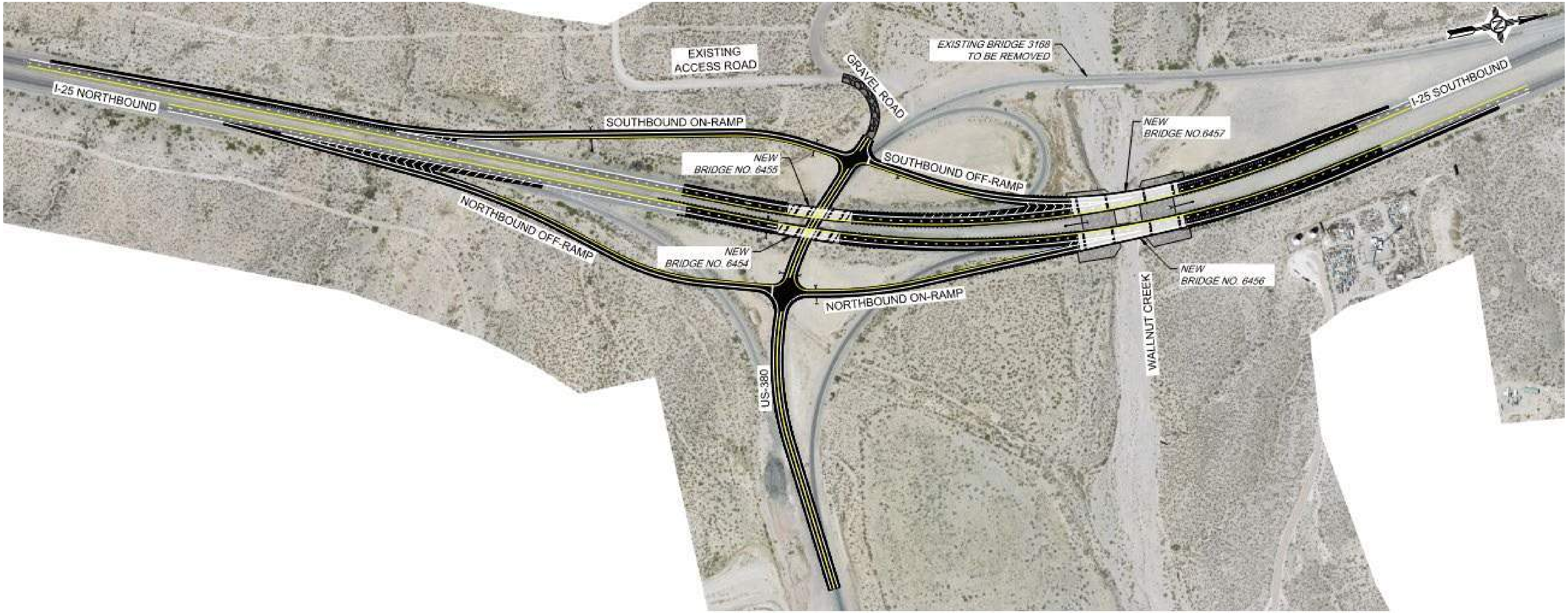
Evaluation

Alternative 1

- ADVANTAGES
  - Minimized construction cost
  - No need for new right-of-way
  - Maintains existing user expectations
  - Eliminates Northbound and Southbound entrance ramp issues
  - Replaces I-25 bridges
  - Improves drainage conveyance of Walnut Creek

- DISADVANTAGES
  - Potential flood conditions involving the concrete box culvert crossing at Walnut Creek would remain
  - Increased drainage improvement costs to expand bridge No. 3168 to meet design standards

- **Alternative 2:** Diamond Interchange
  - Match existing US 380 alignment

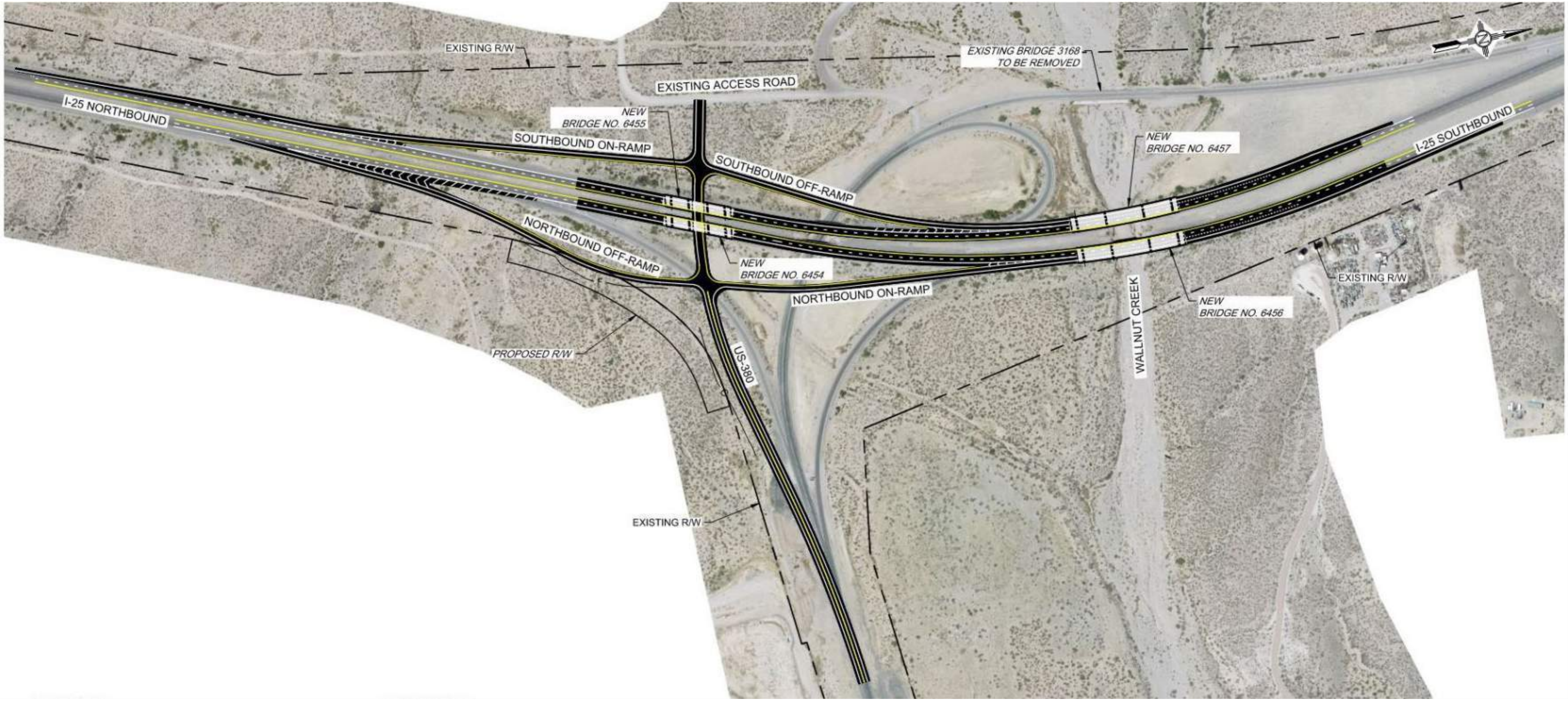


Evaluation

Alternative 2

- ADVANTAGES
  - Interchange configuration meets typical user expectations
  - Removes bridge No. 3168 from the inventory
  - Removal of bridge No. 3168 reduces risk of flooding by removing structure from waterway
  - Replaces I-25 bridges over Walnut Creek
  - Improves drainage conveyance of Walnut Creek
- DISADVANTAGES
  - An increased construction cost when compared to Alternative 1
  - Requires temporary closures of US 380 during construction of the bridges

- **Alternative 3:** Diamond Interchange
  - Adjust US 380 alignment



Evaluation

Alternative 3

- ADVANTAGES
  - Interchange configuration meets typical user expectations
  - Removes bridge No. 3168 from the inventory
  - Removal of bridge No. 3168 reduces risk of flooding by removing structure from waterway
  - Replaces I-25 bridge over US 380 and over Walnut Creek
  - Improves drainage conveyance of Walnut Creek under the I-25 bridges
  - Does not require US 380 closures during construction
- DISADVANTAGES
  - An increased construction cost when compared to Alternative 1 and Alternative 2
  - Additional right-of-way will be required

Proposed Drainage Improvements

Priorities:

- Maintain existing drainage patterns downstream
- Ensure proper drainage through interchange
- Reduce maintenance due to scour and sedimentation

Proposed Improvements

- Upgrade any undersized culverts
- Expand or remove 20-box culvert bridge to mitigate risk of flooding down US 380
- Reconfigure drainage depending on proposed drainage layout
- Design new Walnut Creek bridge to mitigate scour concerns

Evaluation of Alternatives

- **Evaluation Analysis Categories**
  - Purpose and Need
  - Cost
  - Engineering Factors
  - Environmental Factors

- **Evaluation Scoring**

  ++ = very positive effects

  + = positive effects

  o = negligible or no effects

  - = negative effects

  - - = very negative effects

Evaluation of Alternatives

Purpose and Need

- **Purpose:** improve the level of safety, correct deficiencies, and replace the aged infrastructure to provide a safe and efficient interchange that meets user expectations

No Build	Alternative 1	Alternative 2	Alternative 3
- -	+ +	+ +	+ +

Evaluation of Alternatives

Cost

	No Build	Alternative 1	Alternative 2	Alternative 3
Construction	$0.00	$60,500,000	$74,400,000	$75,400,000
Right-of-Way	$0.00 No ROW needed	$0.00 No ROW needed	$0.00 No ROW needed	2 Acres
Maintenance	High due to aged infrastructure	High due to Bridge No. 3168	Low due to new construction	Low due to new construction
Analysis Value	- Due to Maintenance Cost	- Due to Construction and Maintenance Cost	- - Due to Construction Cost	- - Due to Construction Cost

Evaluation of Alternatives

Engineering Factors

	No Build	Alternative 1	Alternative 2	Alternative 3
Traffic Operations and Safety	- -	+ +	+ +	+ +
Maintenance of Traffic	o	- -	+	+ +
Constructability	o	o	-	- -
Access Management	- -	-	+ +	+ +
Geology and Soils	o	o	o	o
Right-of-Way	o	o	o	-
Utility Conflicts	o	o	-	-
Bridge Design	o	o	-	-
Maintenance	- -	-	+ +	+ +
Drainage	- -	+	+ +	+ +

Evaluation of Alternatives

Engineering Factors

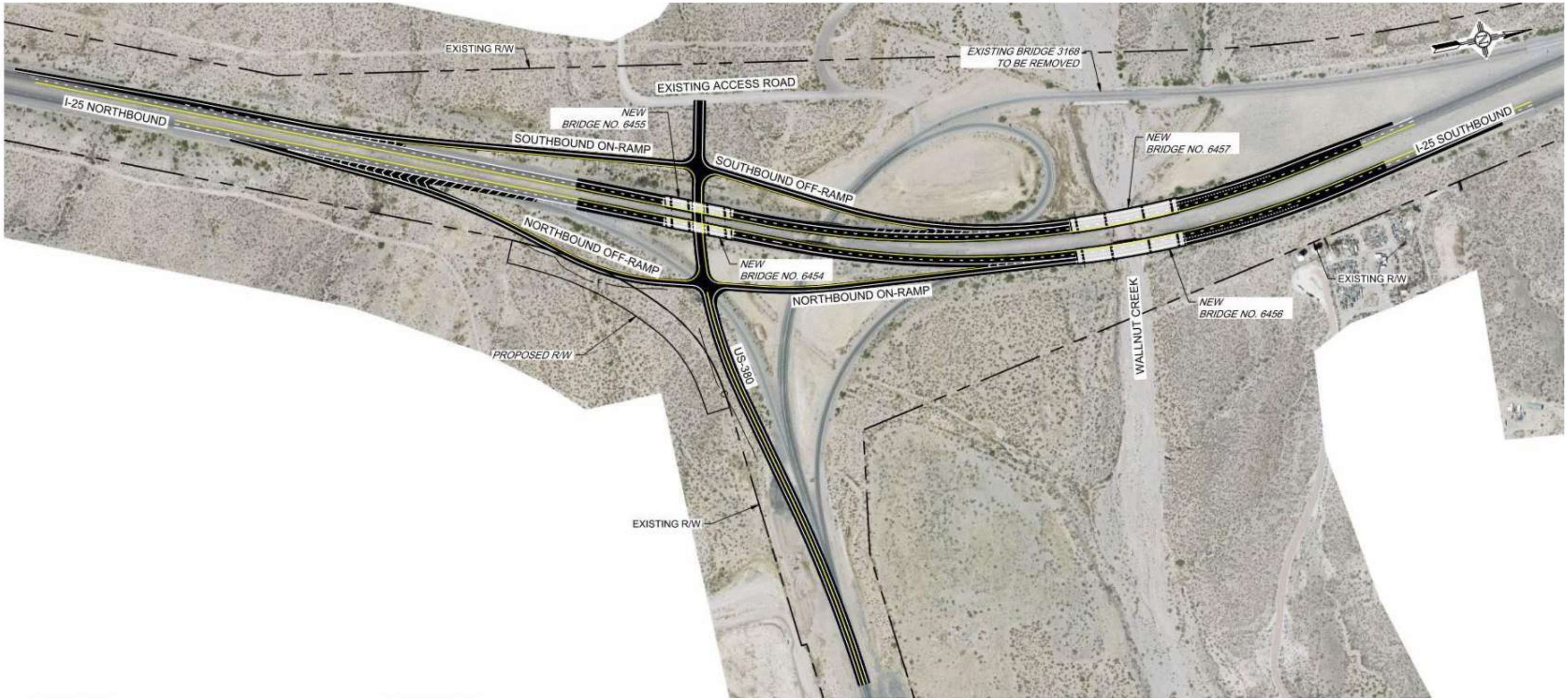
	No Build	Alternative 1	Alternative 2	Alternative 3
Traffic Operations and Safety	- -	+ +	+ +	+ +
Maintenance of Traffic	o	- -	+	+ +
Constructability	o	o	-	- -
Access Management	- -	-	+ +	+ +
Geology and Soils	o	o	o	o
Right-of-Way	o	o	o	-
Utility Conflicts	o	o	-	-
Bridge Design	o	o	-	-
Maintenance	- -	-	+ +	+ +
Drainage	- -	+	+ +	+ +

Evaluation of Alternatives

Environmental Factors

	No Build	Alternative 1	Alternative 2	Alternative 3
General	o	o	-	-
Natural Resources	o	-	-	-
Cultural Resources	o	-	-	-
Section 4 (f)	o	o	o	o
Noise	o	-	-	-
Air Quality	o	-	-	-
Visual Resources	o	-	-	-
Farmlands	o	o	o	o
Floodplains	o	o	o	o
Social Resources	-	+	+	+
Hazardous Materials	o	-	-	-

- **Alternative 3:** Diamond Interchange
    - Adjust US-380 alignment



I-25/US 380 (San Antonio) Interchange Study

Next Steps

- Begin Study Phase (I-A/B): Spring 2022
  - 1st Public Meeting: Nov. 16, 2022
  - 2nd Public Meeting: **May 18, 2023**
    - **Need Public Input**
  - Complete Study Phase: Summer 2023

- Preliminary Design Phase (I-D) and Environmental Documentation Phase (I-C): Summer 2024
- Final Design Phase (II): TBD
- Construction Phase (III): TBD

Questions?

How to Provide Input

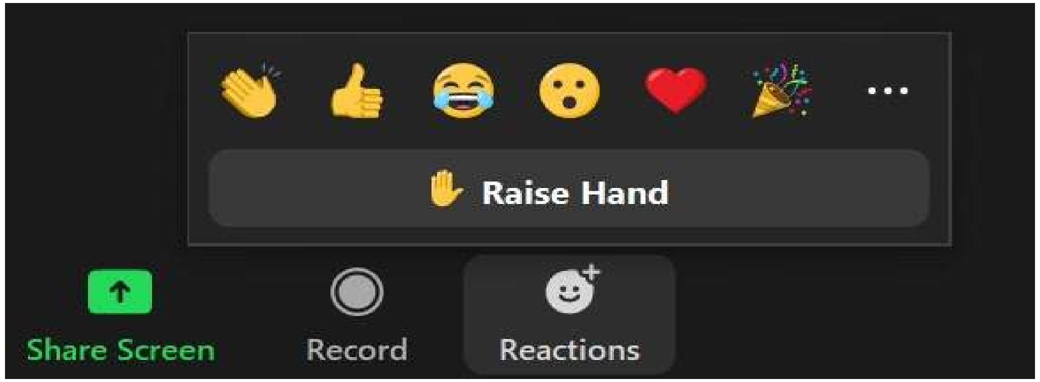
- Website Comments: www.dot.nm.gov/i25-san-antonio-study
- Call: 505-357-7327
- Email: I25SanAntonio@hdrinc.com
- USPS Mail:

I-25 San Antonio Study
c/o HDR
2155 Louisiana Blvd. NE, Suite 3000
Albuquerque, NM 87110-5483

Comments should be received by June 17, 2023

Raising Your Hand

To verbally ask a question, please raise your hand.

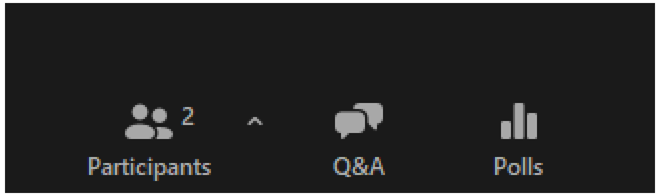


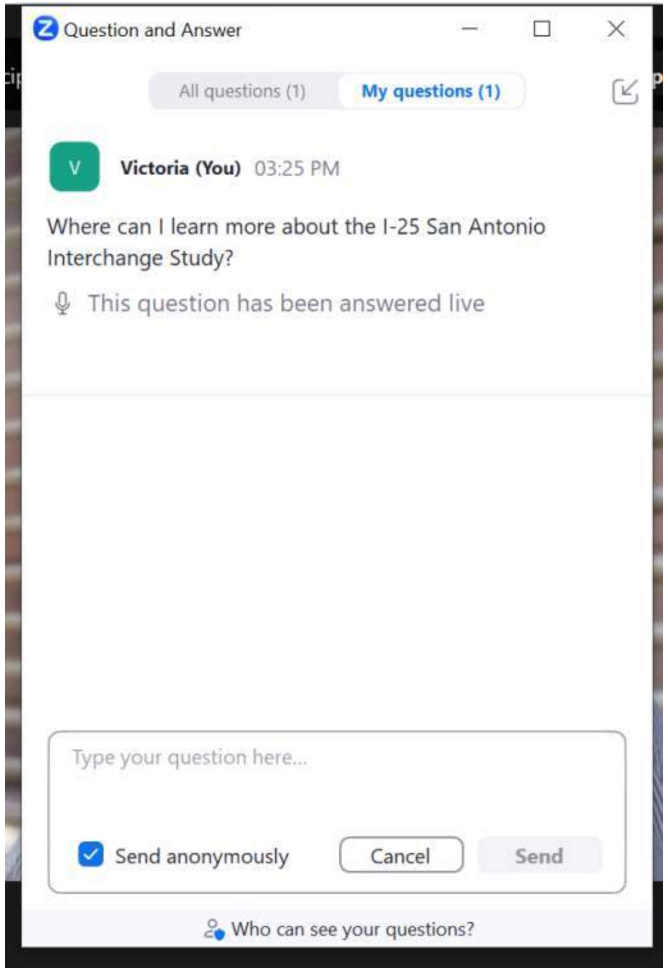
To raise your hand, select the **"reactions"** button and then select **"raise hand"**

If you are joining by phone, press *9 to raise your hand. When your name is called, press *6 to unmute your line when prompted. When you are finished speaking, press *9 again to lower your hand.

Asking a Question

To type in a question, select the Q&A button





Enter your question into the Question and Answer box and click send.

THANK YOU FOR YOUR TIME

Appendix C – Public Comments

Virtual Meeting Q&A

Comment Period Comments

Public Meeting Questions and Comments

May 18, 2023

Number	Question/Comment	Response
1	Does the New Mexico Department of Transportation have a priority list for projects that are going on throughout the state? If so, how is it decided which projects are at the top of the list?	We're following a program from the state transportation improvement plan, this is a public document that you can follow on the NMDOT website. Within that plan we identify ongoing projects that the NMDOT has programmed. It shows you in the next 4 years, which of these projects are actually obligated for funds and will be leading on with construction. The prupose of the study we're doing right now is to identify the necessary funds needed to address the improvements. This money is not currently programmed but with the results from study, it allows us to go out and look for grants, look for funding sources with the results being the justification that these improvements are warranted. On the website you can see which projects are currently on the bid or going out to construction.
2	Will you be using a Partnering Consultant to facilitate the resolution of disputes during the project?	We hope that there are no disputes during construction and we don't foresee that.

		During the construction of a project of this magnitude, we typically have a consultant on board to assist during the construction period and we would work closely with them and the member of the public that has a question or a dispute. We'd work together to resolve that.
3	I don't have a question at this time, but wanted to express support formally from Bosque del Apache National Wildlife Refuge for pursuing alternative 3.	Thank you.
4	Does NMDOT already have the necessary building materials to complete the project? If not, do you think that might be an issue holding the project up?	Thank you. That's a great question. At this point, the acquiring of building materials is up to the contractor that bids on the project. We don't expect any supply issues. Some of the items needed on projects do require some lead time, but at this time we're not anticipating any issues with that. Some of those issues are subject to the climate of economics, gas fluctuations, and those types of things always have an influence and some of that is unknown this far out. We're too early in the development stage to identify any issues concerning materials. But at this moment, we don't see an issue but time goes on and we get more specific on what materials are needed we'll be further along in the process.

Public Comments

Comment Period: May 4 – June 17, 2023

#	Date Received	Received Via	Question/Comment	Follow Up Response
1	5/5/23	Email	As it has been stated, the bridges are ripe for replacement. Do that and make them wider to enable including sane merge lanes; particularly, of course, the northbound entry, the one that kills people. Everything else is frosting on the cake. This is the cake.	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. The preferred alternatives does replace the bridge structures and improve the entrance ramps. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/.
2	5/11/23	Email	The ramp from San Antonio, New Mexico onto I-25 frightens me. I've spent many days at the Bosque del Apache NWR, and I have friends in Socorro. Every time I use that entry ramp I'm scared. The car joining traffic needs a lot longer lane, or something.	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. The preferred alternative does plan to improve the entrance ramps to improve safety.

			It feels like I have a fraction of a second to check my rear view mirror, and there is no way to know if oncoming traffic is going 50 mph or 90 mpg.	We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/.
3	5/11/23	Email	It does not take a traffic engineer to know that the entrance lane is too short and the grade too steep to see oncoming traffic.	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. The preferred alternative does plan to improve the entrance ramps to improve safety. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit www.dot.nm.gov/i25-san-antonio-study
4	5/11/23	Email	Thank you for being open to public input as you consider improvements at I-25/San Antonio exit in regard to entrance and exit pathways and dangerous intersecting with the adjacent access road. Please do all you can to safely improve road travel at this confluence.	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. The preferred alternative does plan to improve the ramps and safety. We appreciate your input and will continue to coordinate with this critical community to

			My son attended New Mexico Tech, which introduced me to the wonders of Socorro, San Antonio (not so much a wonder in itself and certainly not a major hub of activity!), and to the Bosque. I still visit the Bosque numerous times a year and am aware of road hazards associated with that journey. But the Bosque notwithstanding, this is a road confluence area that needs mitigation, so I thank you for looking into this matter and look forward to seeing it slated as an upcoming project.	develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit www.dot.nm.gov/i25-san-antonio-study
5	5/11/23	Email	This short ramp is truly dangerous particularly in light of the heavy traffic from the ride rode onto I25. Please modify this dangerous ramp.	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. The preferred alternative does improve the ramps and safety. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit www.dot.nm.gov/i25-san-antonio-study

6	5/11/23	Email	I can not attend the MNDOT Meeting on May 18 @ 6pm, but just a comment that I hope the the dept. study being conducted on I-25 between milepost 139 and milepost 140 at the US Hwy 380 interchange results in improvement and alternatives that are less dangerous for drivers.	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. The preferred alternative does improve safety in the interchange. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit www.dot.nm.gov/i25-san-antonio-study
7	5/11/23	Email	I am a member of the Friends of Bosque del Apache NWR. I have visited the Refuge a number of times and plan to visit again in the future. I stay in Socorro and travel back and forth on I-25 several times each day. The San Antonio interchange is extremely dangerous. Each time I have used it I have felt that I am risking my life. I sincerely hope that changes to this interchange can be made to eliminate its dangerous features.	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. The preferred alternative does improve safety in the interchange. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit www.dot.nm.gov/i25-san-antonio-study
8	5/11/23	Email	I have lived around and traveled a great deal of the Interstate Highway System. I always considered the short	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment

			shoot of Central Expressway in Dallas to be the most dangerous I have ever encountered. The only reason the Bosque interchange is not as dangerous is because there are fewer vehicles. At night I go slow approaching it and the lights approaching help me in evaluating the situation but during the day this is not possible as I can not swivel my head enough to know if there is traffic coming on my left and just inch out and take a chance. I think most drivers move over to accommodate oncoming traffic but sometimes that is not possible. Lighted signs warning of a dangerous entrance would be the minimum that should be considered. I have been coming to Bosque for ten years and have only had one close call and am super cautious because of that.	has been received and will be shared with members of the study team. The preferred alternative does improve safety in the interchange. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit www.dot.nm.gov/i25-san-antonio-study
9	5/11/23	Email	I am unable to attend the online meeting regarding the I-25 San Antonio Interchange Project on May 18. I support the need to increase acceleration lanes when entering I-25 from San Antonio. The current entry is extremely dangerous. There's no	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. The preferred alternative does plan to improve the ramps and safety in the interchange.

			room to get up to speed and safely merge into traffic. This is exacerbated by the fact that you are entering from a curve, and the traffic heading north is coming around a curve, so very difficult to see. There is a continual risk of losing control while trying to get up to speed and look for oncoming traffic. Please ensure that the plan implemented removes this safety hazard. Thank you	We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit www.dot.nm.gov/i25-san-antonio-study
10	5/11/23	Email	Just a quick comment on the I25 ramps at San Antonio. Heading north from San Antonio to, say, Socorro is not safe at all. The entrance ramp is too short onto I25 and visibility for oncoming traffic is horrible. We visit Bosque del Apache NWR at least twice a year from Colorado and I absolutely hate that north bound on ramp. Fix It!	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. The preferred alternative does plan to improve the ramps and safety in the interchange. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit www.dot.nm.gov/i25-san-antonio-study
11	5/12/23	Email	The primary thing to me at this site is that the north bound on-ramp enters on a curve and sometimes the sight view is not very good for on-ramp	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team.

			entering vehicles. There should be an entry lane to the 2 lanes north bound. Same thing is true for the south bound lane. At times there is a lot of traffic (weekends with people headed to Elephant Butte Lake) that makes it more difficult for eighteen wheelers, motor homes, large vehicles to enter. I hope something can be done to reduce the change of major accidents. Thank you.	The preferred alternative does plan to improve the ramps and safety in the interchange. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit www.dot.nm.gov/i25-san-antonio-study
12	5/12/23	Email	As a constant visitor to the Bosque, I am always a little nervous about going home to Albuquerque. You can not see oncoming traffic well enough and there is no room to merge. It definitely needs to be changed.	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. The preferred alternative does plan to improve the ramps and safety in the interchange. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit www.dot.nm.gov/i25-san-antonio-study
13	5/14/23	Email	Hello. I'm writing as a concerned driver in regards to the San Antonio on ramp to I-25.	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team.

			It is very dangerous. Because I have traveled to the Bosque for many years, I'm especially aware and careful of getting on to I-25 at that location. For people who are unfamiliar with it, it is a downright accident waiting to happen. One expects there to be a merging lane to gain access to the highway, but there is not one of sufficient length. Neither is there a sign giving drivers a heads up. The merge sign is too little too late. As it is, the on ramp is way too short to pick up the speed needed to safely enter the highway. And so, the only alternative is to merge from a standstill position in which one has to crane their neck over the shoulder to gage correctly (hopefully) the distance and speed of approaching cars. I have had cars come up behind me suddenly because I have not gaged correctly or been able to accelerate fast enough, creating a potentially lethal situation, not to mention the rush of panic, fear and anger for all concerned at a near miss. I count my	The preferred alternative does plan to improve the ramps and safety in the interchange. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit www.dot.nm.gov/i25-san-antonio-study

			lucky stars I've evaded an accident to date. Please make improvements to the onramp so that residents and visitors to San Antonio can safely leave the area in confidence while maintaining the good vibe one gets when visiting the Bosque.	
14	5/18/23	Email	Thank you for the second public meeting. Your presentations were clear and helpful. On behalf of Friends of Bosque del Apache, we support Alternative 3 for reconfiguring the current I25/US380 interchange. It should improve safety for the many tourists who visit Bosque del Apache each year and also not interrupt the traffic flow during busy times. On a personal note, I live in Socorro and visit San Antonio/Bosque del Apache frequently. The current interchange is very dangerous and I have had several close calls using the northbound ramp. Thanks for working to make this safer.	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit www.dot.nm.gov/i25-san-antonio-study
15	5/19/23	Email	Thank you for finally trying to address this interchange. I have been driving from Alamogordo to Albuquerque	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with

			since 1969. I have seen the changes that have been made to US 380 over the years to make it a much safer road. This intersection has always been a huge concern when leaving US 380 heading North onto I-25. I understand why this has been on the backburner. It is just not a path that a lot of politicians travel. Now with the extra funding available prayerfully something will be done before someone else has a serious accident. You have done the studies and know the deficiencies of the intersection. I will not go over those. I want to focus on the different build options. My opinions are below: Option 1—No Build: Totally unacceptable! Alternative 1—Enhancement to existing geometry: While this should have been done many years ago, the traffic increases make this option mute and just plain hazardous. NO Alternative 2—Matching US 380 alignment: While this addresses the on/off ramp acceleration and line of sight issues, it still leaves US 380/I-25 bridge in the same location which has	members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/.

			been shown to be susceptible to flooding. Also, there is really no place to safely divert US 380 traffic during bridge construction. HWY 1 does not lend itself to the quantity of semi traffic that would be diverted in either direction. You would also be sending diverted traffic though housing and at-grade water crossings that are dangerous. NO Alternative 3—Readjust US 380 alignment: Although this option is $1M more expensive than Alternative 2, THIS IS MY PREFERRED REBUILD. It removes the bridge # 3168; it gives much better line of sight for the intersections and ramps; and the proposed new right of way can be reduced or altered, if not available. The other major advantage is that this proposal gets rid of the bridge currently over US 380 that has flooded the town of San Antonio. I understand the costs associated with all of the above options, but by reviewing this intersection and acknowledging the deficiencies of the intersection, you cannot do nothing. This would leave the State of New

			Mexico in such a liability situation if someone were to be injured after a decision to do nothing was rendered. Therefore, the cost difference between the different alternatives is not that significant to do something half-way. If you are going to rebuild, then please do it right and do Alternative 3.	
16	5/19/23	Phone	I think Walnut Creek might be the legal term, but Spanish-speaking people are more familiar with Nogal Arroyo. It was referred to Nogal last time we got a flood three years ago. I would recommend that the small cells that measure 9ft by 9 ft for the water to run through on the westside of the interchange be replaced by a clear span bridge for the south exit over the arroyo. The last time we had a flood that span plugged up and that was part of the problem. I think a clear span over that arroyo would help to alleviate this. Both north and southbound on I-25 onramps, I think they need a least a quarter mile of land lanes so the traffic from 380 to I-25 can get on safely. There have been several people killed them and almost	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. The preferred alternative does plan to improve the ramps and safety in the interchange. Sorry, the concerns you present about Walnut Creek (Nogal Arroyo) adjacent to the railroad tracks is not within the study area and no improvements are planned to correct your concerns. I expect that Socorro County may be the governing agency for area and may be able to help with your concerns. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit www.dot.nm.gov/i25-san-antonio-study

			a few other fatalities that I know of. You're looking back over your shoulder to try and see the traffic, it's a good thing it's a constant radius curve because you can be distracted for a little bit. When you get onto the I-25 ramp, there's no place to blend and it's the same way going southbound on I-25. Another thing, the Arroyo Nogal runs from 150 wide on the west side of the south exit to the railroad tracks which was not shown on the map and that is a very important part of this. That railroad track had a big steel bridge over it, over the canyon, and then the water would go under that bridge into a flood plain which is a field that I believe it is still owned by Matt Chapel. That information I got from the tax people when I was finding out about this problem with the railroad tracks. He had a small dam built parallel with the railroad tracks and approximately 15 or 18 ft high which to me is illegal to start with and then when the flood came three years ago, it finally soaked through that and washed it out. Then that relieved the water that was

			coming on 380, coming down the irrigation ditch, it came into my house, I had 30 inches of water coming into my house. If I didn't live in a hole I wouldn't have a problem but my house was built over 100 years ago when the railroad track was going through San Marcial. That's when the flood happened and the river backed up before Elephant Butte was put in, but I'm not sure. The railroad lost several engines then. When this arroyo runs, it runs a lot of water and it gathers up a lot of debris along the way from trees to cattle, the ranchers that own that and have grazing rights have lost cattle. One of them ended up in the alfalfa field in the irrigation ditch. There was a cow that was dead in the field east of me and all kinds of butane tanks and everything else flooded down in the alfalfa fields. This guy spent the rest of the summer moving the debris and sludge and the stuff that washed down off of his land. I spent the last 2 years cleaning up mine and fortunately I had a lot of help when it first flooded, but that was at first. I still had a lot of things to do	

			after that. The arroyo starts out at 150 ft at average to the east side of the railroad tracks where it makes a 90 degree turn at 380. Water doesn't usually make its course that way. It makes slow turns and meanders. People rebuilt that dam 20ft higher than the railroad tracks are so Matt Chapel was financed that deal. He is responsible in my opinion for building that dam and when he rebuilt it, he put it up higher, 15-20ft higher than the railroad tracks and that's all the way along the east side of the railroad tracks. Then on highway 380 which is not to scale on the map that was sent out in the mailer, because where it makes that right turn it goes straight out to the south along the track then makes a left-hand turn to San Antonio- it runs down the northside of 380 and there's a dam on the left and there's a dam that was built on the right. The only place for water to go now is to the south where it will take me out and it's also diverting the water if you want to call it diverting, and it's going to go down the highway because there's a bridge east of the	

		railroad tracks and these dams that block the bridge, the water can't go any place because it's blocked on both sides of the bridge. Right now, it's full of silt and if you go on a little bit further, you'll go down there a little ways, it's like the ditch is a ski jump because they didn't put in any way for the water to cross the irrigation ditch. I don't know how many thousands of cubic feet it will carry, but that is supposed to carry all the water then it's blocked and there's no way for the water to escape that. Before Matt Chapel built the dams, that field was a flood plain and that's nature taking it back. That water wants to seek its best course to the river and there's boulders in there. I got this information from a guy who ran a dozer through there. We're at their mercy and they don't give a hoot about us. The guy that owned A1 ready mix concrete, he said I never could figure out what was keeping San Antonio from being washed off the map when they built that highway because the highway that used to carry all the traffic to TorC used to be	

			85/87 and it's called Highway 1 now. Even without culverts it was alright. As soon as it would be done raining, it would go again. These structures that involve these exits, they've got a lot of thinking to do because the last time it flooded, there was a guy coming through, it picked his vehicle up and turned him around 380 degrees. The water washed him underneath I-25 and finally he got on clear water after the railroad tracks and there was no warning.	
17	5/22/23	Email	Heading north from US380 onto I-25 is a nightmare. If there were any way to improve that ramp thousands of minds would be put at rest. I am astonished that I have never seen an accident there, but I am not there every day or even every month.	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. The preferred alternative does plan to improve the ramps and safety in the interchange. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit www.dot.nm.gov/i25-san-antonio-study
18	5/22/23	Email	As somebody who has visited Bosque many times over the last 30 years and	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment

			bitched every time I use that ramp it is remarkable that we haven't seen an accident there. That is one of or the most dangerous that we have found in our travels across the country. It is lucky that traffic is light on that stretch of I 25, blocking off the right lane to thru traffic and giving us a spot to get on without hilling the bridge would be great.	has been received and will be shared with members of the study team. The preferred alternative does plan to improve the ramps and safety in the interchange. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit www.dot.nm.gov/i25-san-antonio-study
19	5/25/23	Email	Use of the northbound on-ramp is very dangerous. People have died there. The merge lane is too short and the slope blocks the view. It will be a shame to rebuild so much and not address this problem also.	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. The preferred alternative does plan to improve the ramps and safety in the interchange. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit www.dot.nm.gov/i25-san-antonio-study
20	5/31/23	Email	I live in San Antonio and so have a regular encounter with this interchange.	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team.

			There are two main problems, the first, and the deadly one, is the Northbound on-ramp. The reasons being the inability of drivers on I-25 and the on-ramp to easily see one another until the last moment and the lack of space to safely merge. Alternatives 2 and 3 change the problem but don't solve it. Here's the new problem: you are way below the grade of the freeway and can't see on-coming traffic, from a standing start, accelerate uphill to near freeway speed in something like 200 yards, at the last moment you get a rear-view mirror look at the situation, and again, there is no room to safely merge. Different problem, same result. From a users perspective, here is what would help. Lengthen and elevate the Northbound on-ramp from US380, reduce and make continuous the radius of the curve in the on-ramp. When the new bridge is constructed, make it wider than standard, so there is room to merge. The Northbound off-ramp could also stand to be longer, flatter and larger radius.	The preferred alternative does plan to improve the ramps and safety in the interchange. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit www.dot.nm.gov/i25-san-antonio-study

			The second main problem is the Southbound off-ramp. During the last big flow in Walnut arroyo, a debris dam formed against the concrete boxes of the off-ramp causing a significant portion of the flow to overbank and divert through the underpass and directly into the village. The southbound exit as shown in alternatives 2 and 3 solve the above problem, but create a new one, how to decelerate safely from freeway speed to a complete stop given the bridge constriction/extremely short, steep ramp combination. Better to modify the off-ramp bridge so it will pass debris. Has the possibility of disentangling the interchange from the arroyo by moving it off to the South been considered? If not, it ought to be. Walnut arroyo produced a flow of roughly 35,000 cfs the night of July 15/16, 2018. This isn't just some number, I have an engineering degree, collected field data below the last constriction, and used the Manning equation to estimate flow.	

			It's a matter of when, not if a similar event will occur. So far, nothing has been done to repair the severely damaged rip-rap protecting the bridge abutments. Imagine the chaos and economic impact to the entire State if a Highway 1 detour were suddenly the major North/South route. It's way past time some at least remedial action was taken.	
21	6/7/23	Email	We go to Bosque del apache at least twice a year. Each time we go from San Antonio back to I25 north I dread getting on the highway. From the on ramp approach you can't see the highway it is uphill & a curve then the merge lane is the shortest merge ever. This is so dangerous I'm going to stop going to Bosque due to this dangerous merge lane. Something needs to be done for the merging traffic & for the cars on 25 heading northbound. I hope you can do something to correct this dangerous situation.	Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. The preferred alternative does plan to improve the ramps and safety in the interchange. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit www.dot.nm.gov/i25-san-antonio-study
22	6/14/23	Email	Thank you for giving us the opportunity to comment on the	

			Interstate 25 San Antonio Interchange, which is approximately .5 miles west of San Antonio, New Mexico between Mileposts 139 and 140. Ten years ago, my husband and I retired to the quiet, historic community of San Antonio, New Mexico, one of the top birding sites not only in North America but the world. It is almost impossible to see cars and trucks bearing down as you try to merge onto I-25. I have had to pull over to the side of the bridge to avoid being run over by bottle-necked large trucks in both lanes speeding past. Behind you, local traffic from State Highway 1 is not so much the problem as faster through traffic from U.S. Highway 380. A dangerous situation is made more dangerous by vehicles from U.S. 380, unaware of the impossibly short merge lane with I-25, almost rear-ending you while honking impatiently. This doubly dangerous situation is made triply dangerous during tourist season for the Bosque del Apache with visitors from all over the world descending on our jewel in the National Wildlife Refuge system.

			Thank you for your understanding and your help	
23	6/16/23	Email	We live in Colorado but routinely vacation in NM. My wife is an avid birder so we frequent the Las Vegas and San Antonio area especially Bosque Del Apache. I am glad that you are evaluating this interchange because it is incredibly dangerous getting onto I25 north. You can't see the cars coming from the south and because the North bound on ramp is below I25 you the north bound traffic can't see you on the on ramp. Please improve this intersection as quickly as possible b4 there are more accidents there.	
24	6/17/23	Email	My final two cents: 1. Some of the alternatives are way overboard. The northbound entrance squeeze (lack of a merge lane because of the narrow bridge just past there) is THE deadly problem. It's been said that all of the bridges are ripe for replacement, and that's fine. 2. Northbound traffic leaving the freeway comes down a ramp at the end of which they are supposed to	

			yield. That's crazy, partly because at the bottom of the ramp there is a curb that prevents the traffic from moving to the right. It's crazy also because of limited sight of the oncoming traffic from the southbound ramp. Get rid of that curb and make a decent merge lane for traffic ENTERING 380. You will also need to get rid of the piles of ground pavement and dirt that have recently been put in the way of the needed merge lane.

Note: All emails received were responded to with this message: Thank you for your interest in the I-25 San Antonio Interchange Study. Your comment has been received and will be shared with members of the study team. We appreciate your input and will continue to coordinate with this critical community to develop solutions for this stretch of roadway. For more project information or to stay up to date on how you can get involved, please visit https://www.dot.nm.gov/i25-san-antonio-study/

Appendix D – Media Coverage

San Antonio interchange alternatives presented

3 ideas range from a minimal adjustment to a complete overhaul

BY JOHN LARSON
EL DEFENSOR CHIEFTAIN

In a project similar to the renovation of the Interstate 25 Escondida interchange, the New Mexico Department of Transportation is reevaluating the design of the aging San Antonio interchange.

Last Thursday, a second public meeting was held via Zoom with representatives from NMDOT, HDR Engineering, and Molzen-Corbin Architects.

As outlined in a May 5 Chieftain article, the interchange was found to be deficient in acceleration and merge lanes for entrance ramps, roadway superelevation geometry, and drainage elements.

"All five bridge structures in the study are reaching the end of their design life," said Mark Salazar, DOT District 1 Project Development Engineer. "Those 50-plus years old structures are currently showing signs of dilapidation and disrepair."

Citing results from the first public meeting in November, the presenters said most often mentioned by the public were drivers' safety with the existing roadway, ramp geometry concerns, and concerns about the northbound on-ramp.

Flood control was also a significant concern and is a project priority.

The proposed drainage plans aim to ensure proper drainage through the interchange and mitigate the risk of flooding down Highway 380.

Three build alternatives were presented, ranging from a minimal adjustment of northbound and southbound ramp improvements to a complete overhaul of the interchange, including the removal of obsolete bridges.

- Alternative 1, as presented, would involve enhancing the existing roadway geometry, eliminating the northbound and southbound entrance ramp issues, replacing I-25 bridges, and improving the drainage conveyance of Walnut Creek. Disadvantages are potential flood conditions involving the concrete box culvert crossing at Walnut Creek, which would remain. It would be the least costly.
- Alternative 2 would create a tight diamond interchange geometry and match the existing Highway 380 alignment. This alternative would remove the bridge on the southbound entrance ramp reducing the risk of flooding by removing the structure from the waterway, and replacing the I-25 bridges over Walnut Creek to improve the drainage conveyance of Walnut Creek. This alternative would require temporary closures of Highway 380 during the construction of the bridges.
- Alternative 3 would also create a tight diamond interchange geometry but also adjust Highway 380's alignment. This involves the removal and replacement of bridges listed in Alternative 2. This alternative does not require Highway 380 closures during construction, although additional right-of-ways will be necessary. There will be an increased construction cost compared to Alternative 1 and 2.

It was pointed out that Alternative 3 would have the most negligible impact on closures, but construction would last more than a year.

Comments or questions on the project may be made at www.dot.nm.gov/I25-San-Antonio-Study. Comments can also be made by calling 505-357-7327 or emailing I25SanAntonio@hdrinc.com.

The comment period will end on June 17, 2023.

The project's next phase involves environmental documentation, followed by a third public meeting yet to be scheduled. The final phase will produce a preliminary design.

Appendix B. Transportation Needs Analysis Report

2155 Louisiana Blvd NE, Suite 3000, Albuquerque, NM 8770-5483

Transportation Needs Analysis Report

I-25 San Antonio Interchange Phase I-A/B

CN1102060

Prepared for:

New Mexico Department of Transportation

The technical material and data contained in this document were prepared under the supervision and direction of the undersigned, whose seal as a Professional Engineer, licensed to practice in the State of New Mexico, is affixed below.

Sanjay Paul

Sanjay Paul
Engineer of Record
License No. 27727

SANJAY PAUL
NEW MEXICO
27727
PROFESSIONAL ENGINEER

EXECUTIVE SUMMARY

HDR and Molzen Corbin team is commissioned by the New Mexico Department of Transportation (NMDOT) to perform a comprehensive transportation needs analysis at Interstate-25 (I-25) interchange at San Antonio where US 380 meets with I-25. The project area is located in Socorro County in the south-central portion of the state. The study area is defined by approximately 1/2 of a mile on each direction of the interchange. US 380 in the project area is classified as Minor Arterial which serves public for trips of moderate length and offer connectivity to the higher Arterial system (Principal Arterials). These roads may serve as local bus routes. They offer less mobility (than Principal Arterials), but more accessibility.

The objective of this report is to identify necessary improvement options for the existing trumpet interchange to upgrade to a modern interchange configuration to enhance overall safety and mobility at this location. To fulfill the department's goals, the project team performed the following:

- Review of existing conditions, including traffic signage, pavement marking, surface condition, and roadway geometry
- Traffic operational analysis with existing and future conditions for the following
  - Six roadway segments
  - Two intersections
- Speed analyses
- Traffic safety analyses
- Acceleration lanes analyses
- Deceleration lanes analyses
- Lighting analyses

To conduct these analyses, the corridor was divided into the following six distinct segments based on uniformity in roadway geometry, function, and operational condition:

- The I-25 mainline is a 4-lane, divided freeway with a posted speed limit of 75 mph. The travel lanes are 12 feet wide. The freeway is divided by a depressed median and has paved shoulders with rumble strips. The roadway grade is mostly flat, and the alignment has a horizontal curve with 3,370 feet radius.
- The US 380 is a 2 lane, undivided highway with no median and a posted speed limit of 40 mph in both the eastbound and westbound directions. The driveway density is low, with two intersections and a few driveways that access the local business and homes. The land uses are mixed residential and commercial in the project vicinity. The intersection at US 380 and SR 1 was analyzed as part of the study. The roadway grade is mostly flat, and the alignment is straight.
- The southbound (SB) exit ramp from the I-25 to the US 380 is a one lane, one-way ramp with a recommended speed limit of 45 mph. The exit ramp has paved shoulders and guard rails along the bridge section when going over the wash. The travel lane is 12 feet wide. The inside shoulder on the bridge is 5 feet wide and 3 feet wide on the rest of the ramp. The outside shoulder is 6 feet wide on the bridge and is otherwise 8 feet wide. The end of the exit ramp marks the beginning of the US 380.
- The northbound (NB) exit ramp from the I-25 to the US 380 is a one lane, one-way ramp with a recommended speed limit of 45 mph. The ramp has a concrete curb and gutter on both sides. The travel lane is approximately 13 feet wide. The exit ramp merges onto the US 380, yielding the US 380 traffic.
- The southbound I-25 entrance ramp from the US 380 is a loop with one travel lane that is approximately 16 feet wide. The loop curves toward the outside shoulder and has a recommended speed limit of 25 mph. There is a curb and gutter on both sides of the ramp with a guard rail on the inside shoulder at the top of the loop. The ramp merges onto the I-25 after yielding to the mainline traffic.
- The northbound I-25 entrance ramp from the US 380 has one travel lane and a curb and gutter on both sides. The travel lane is 14 feet wide and has a guard rail on the outside shoulder after the curb and gutter end. The ramp traffic yields to the mainline traffic before merging.

Based on the analyses, field observations and discussions with the stakeholders, the team developed the following recommendations:

- As field observation identified deficiencies in acceleration lanes at the entrance ramps, it is recommended to provide sufficient acceleration lanes at least 980 feet per AASHTO on the entrance ramps for the merging traffic to gain the speed on I-25
- As field observation identified deficiencies in deceleration lanes at the entrance ramps, it is recommended to provide enough deceleration distance at least 440 feet per AASHTO for the exiting traffic to safety stop at the end of the exit ramp
- Provide lighting near gore area for SB exit ramp, and NB entrance ramp, as these locations meet the warrants and there are nighttime crashes
- Improve signage on both I-25 mainline with warning for animal crossings, as identified in the crash data review. Also improve the signage in the project area
- Improve pavement markings along with pavement condition
- Enhance guardrail end treatments to upgrade to current standard, as identified in crash data review

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1. INTRODUCTION

The New Mexico Department of Transportation (NMDOT) is evaluating potential improvements at the Interstate-25 (I-25) at San Antonio Interchange off to US 380. Refer to **Figure 1** for the project location map. The project area is located in Socorro County in the south-central portion of the state. The study area extends approximately 1/2 of a mile on each direction of I-25 and US 380. The property surrounding the project area mainly undeveloped and in rural environment.

HDR and Molzen Corbin team is commissioned by the NMDOT to prepare Phase I-A/B report. The HDR team performed a comprehensive transportation needs analysis at this interchange and prepared this report. The proposed project has been assigned NMDOT Control Number (CN) 1102060. The objective of this report is to identify necessary improvement options for I-25 mainline, entrance and exit ramps, as well as the ramp intersections with the US 380 roadway to enhance overall safety and mobility on the corridor. The project interchange was divided into six major elements for detailed transportation needs analyses:

- I-25 Mainline
- US 380
- Southbound exit-ramp from I-25 to US 380
- Northbound exit-ramp from I-25 to US 380
- Southbound entrance-ramp from US 380 to I-25
- Northbound entrance-ramp from US 380 to I-25

Among the six major Functional Classes (Interstates, Other Freeways & Expressways, Other Principal Arterials, Minor Arterials, Major and Minor Collector, and Local Roads), US 380 classifies as Minor Arterial which serves public for trips of moderate length and offer connectivity to the higher Arterial system (Principal Arterials). These roads may carry local bus routes. They offer less mobility (than Principal Arterials), but more accessibility (**Figure 2** on Page 2 shows the functional classification map).

1.1. Project Purpose and Limit

As previously mentioned, the primary purpose of this study is to develop and evaluate alternatives for the entire interchange which includes I-25 mainline, entrance and exit ramps, as well as the ramp intersections with US 380 and develop and evaluate potential improvements in the form of a Phase 1A and 1B, Alignment Study. It is noted that the Phase I-A/B report would consist of the conditions and recommendations of bridge structures as well in addition to the findings from this transportation needs analyses. Refer to **Figure 3** of Page 3 for a map showing the project elements.

Figure 1. Project Location Map of I-25 San Antonio Interchange

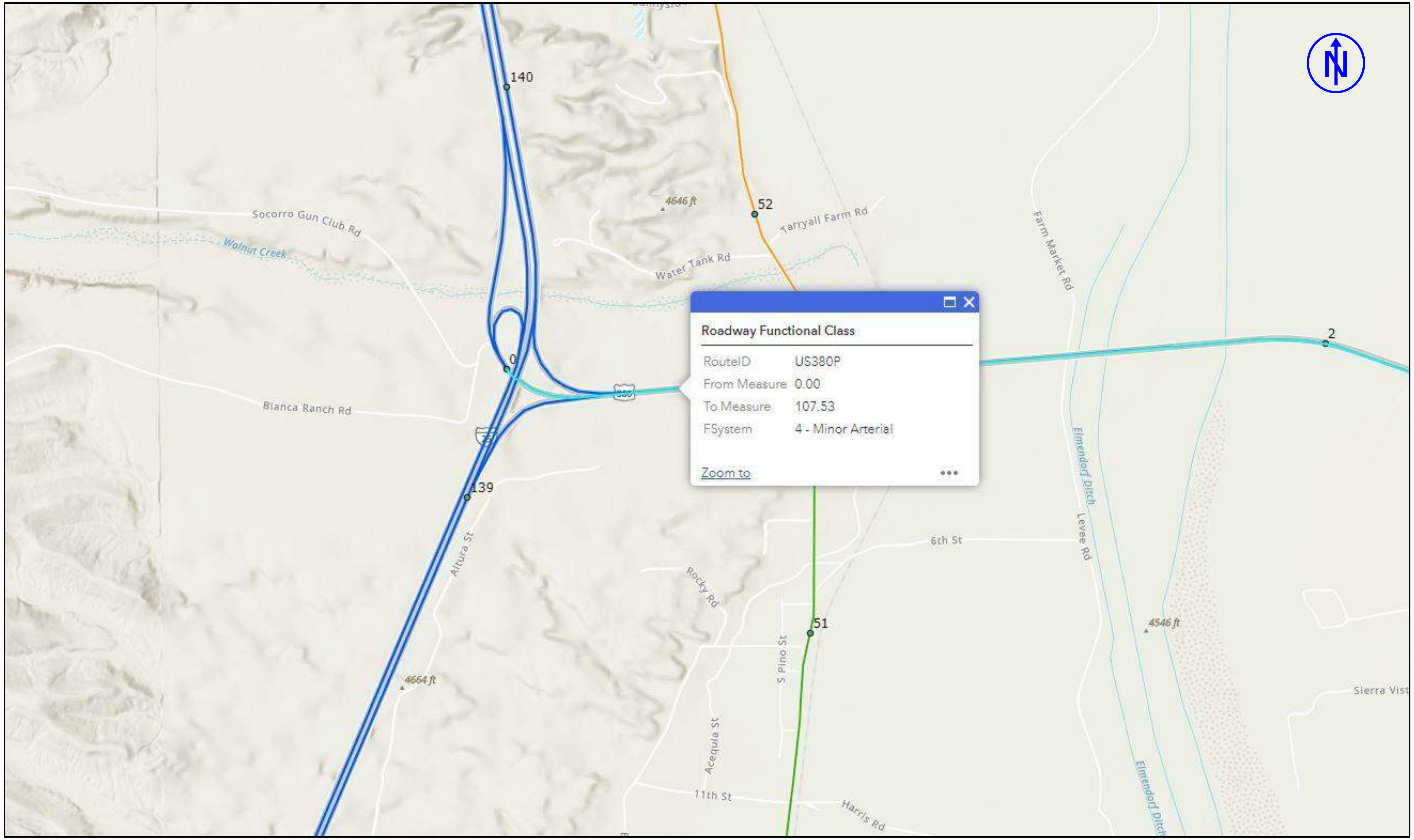


Figure 2. Functional Classification of US 380 (San Antonio)
(https://www.arcgis.com/apps/webappviewer/index.html?id=f2fc877d107b4e338deb789f70a8779e)

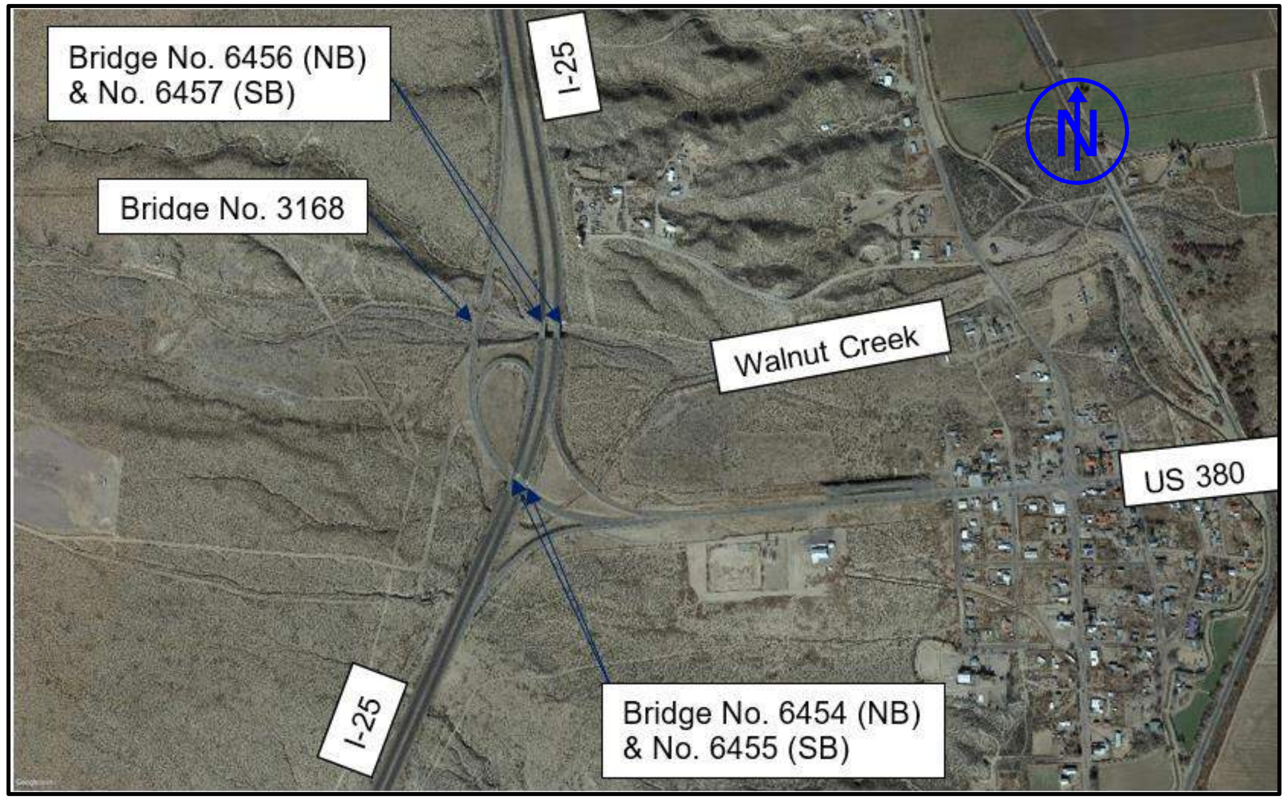


Figure 3. Project Elements

2. PROJECT DESCRIPTION

For the purposes of the analyses and this report, the project area is defined as the San Antonio I-25 interchange and US 380 corridor from the interchange to SR-1. This transportation needs analysis report provides a detailed traffic analysis that includes a review of historic crash data, and addresses capacity improvements for existing (2022), and horizon year (2042) conditions to improve capacity and promote safety.

The capacity analyses were performed for both roadway segments and intersections. The study area was divided into six segments based on geometric configurations and purpose of the elements. Additionally, a total of 2 intersections were analyzed.

2.1. Inventory of Existing Roadway

2.1.1. Roadway Configuration

As previously mentioned, six segments can be identified in the project corridor based on uniformity in roadway geometry, speed limit, and surrounding land uses.

2.1.1.1. Segment 1 – I-25 Mainline

The I-25 mainline is a 4-lane, divided highway with a posted speed limit of 75 mph. The travel lanes are 12 feet wide. The highway is divided by a depressed median and has paved shoulders with rumble strips. The inside shoulder is approximately 7 feet wide in the northbound direction and approximately 4 feet wide in the southbound direction. The outside shoulder is approximately 11 feet wide in both the northbound and southbound directions. The roadway grade is mostly flat, and the alignment has a curve. Refer to **Figure 4** for a Google aerial and **Figure 5** for a street view of a sample location on segment 1.

Figure 4. San Antonio I-25 Mainline at the Interchange (Aerial View)

Figure 5. San Antonio I-25 Mainline at the Interchange (Street View, Facing South)

2.1.1.2. Segment 2 – US 380 from San Antonio Interchange to SR 1 intersection

The US 380 is a 2 lane, undivided highway with no median and a posted speed limit of 40 mph in both the eastbound and westbound directions. The travel lanes are 11 feet wide and typically have paved shoulders that are approximately 8 feet wide. The driveway density is low, with two intersections and a few driveways to access the local business and homes. The land uses are mixed residential and commercial. The intersection at US 380 and SR 1 was analyzed as part of the study. The roadway grade is mostly flat, and the alignment is straight. Refer to **Figure 6** for a Google aerial and **Figure 7** for a street view of a sample location on segment 2.

Figure 6. US 380, just west of Interchange (Aerial View)

Figure 7. US 380, just west of Interchange (Street View, Facing West)

2.1.1.3. Segment 3 – Southbound exit-ramp from I-25 to US 380

The southbound exit ramp from the I-25 to the US 380 is one-way with one lane and a speed limit of 45 mph. The exit ramp has paved shoulders and guard rails along the bridge section when going over the wash. The travel lane is 12 feet wide. The inside shoulder on the bridge is 5 feet wide and 3 feet wide on the rest of the ramp. The outside shoulder is 6 feet wide on the bridge and is otherwise 8 feet wide. The end of the exit ramp marks the beginning of the US 380. Refer to **Figure 8** for a Google aerial and **Figure 9** for a street view of a sample location on segment 3.

Figure 8. SB Exit-Ramp from I-25 to US 380 (Aerial View)

Figure 9. SB Exit-Ramp from I-25 to US 380 (Street View, Facing South)

2.1.1.4. Segment 4 – Northbound exit-ramp from I-25 to US 380

The northbound exit ramp from the I-25 to the US 380 is one-way with one lane and a suggested speed limit of 45 mph. The ramp has a concrete curb and gutter. The travel lane is approximately 13 feet wide. The exit ramp merges onto the US 380, yielding the US 380 traffic. Refer to **Figure 10** for a Google aerial and **Figure 11** for a street view of a sample location on segment 4.

Figure 10. NB Exit-Ramp from I-25 to US 380 (Aerial View)

Figure 11. NB Exit-Ramp from I-25 to US 380 (Street View, Facing North-East)

2.1.1.5. Segment 5 – Southbound entrance-ramp from US 380 to I-25

The southbound I-25 entrance ramp from the US 380 is a loop with one travel lane that is 16 feet wide approximately. The loop curves toward the outside shoulder and has a suggested speed limit of 25 mph. There is a curb and gutter on the on ramp with a guard rail on the inside shoulder at the top of the loop. The ramp merges onto the I-25 after yielding to the mainline traffic. Refer to **Figure 12** for a Google aerial and **Figure 13** for a street view of a sample location on segment 5.

Figure 12. SB Entrance-Ramp from US 380 to I-25 (Aerial View)

Figure 13. SB Entrance-Ramp from US 380 to I-25 (Street View, Facing South-West)

2.1.1.6. Segment 6 – Northbound entrance-ramp from US 380 to I-25

The northbound I-25 entrance ramp from the US 380 has one travel lane and a curb and gutter. The travel lane is 14 feet wide and has a guard rail on the outside shoulder after the curb and gutter end. The ramp traffic yields to the mainline traffic before merging. There is no suggested speed limit for the ramp. Refer to Figure 14 for a Google aerial and Figure 15 for a street view of a sample location on segment 6

Figure 14. NB Entrance-Ramp from US 380 to I-25 (Aerial View)

Figure 15. NB Entrance-Ramp from US 380 to I-25 (Street View, Facing North-West)

2.2. Intersections

As previously mentioned, 2 intersections were identified and analyzed as part of this report. Currently, both intersections are unsignalized.

2.2.1. Unsignalized Intersection (One-Way Stop Controlled)

2.2.1.1. I-25 SB Exit Ramp/Service Road

This is an unsignalized intersection with 4-legs and the following geometric configuration:

- Eastbound (EB) – undesignated, shared as right, through and left-turn lane
- Northbound (NB) – 1 through lane, left-turn prohibited
- Southbound (SB) – through lane that allows right-turns

Refer to **Figure 16** for a Google aerial view of the intersection.

Figure 16. SB Exit Ramp at Service Road

2.2.2. Unsignalized Intersection (One-Way Stop Controlled)

2.2.2.1. US 380/SR-1

This is an unsignalized intersection with 4-legs and the following geometric configuration:

- Westbound (WB) – undesignated, shared as left-turn, through and right-turn lane
- Eastbound (EB) – undesignated, shared as left-turn, through and right-turn lane
- Northbound (NB) – undesignated, shared as left-turn, through and right-turn lane
- Southbound (SB) – undesignated, shared as left-turn, through and right-turn lane

Refer to **Figure 17** for a Google aerial view of the intersection.

Figure 17. US 380 at SR 1

2.3. Pavement Conditions

The pavement conditions throughout all sections for the project area are in poor condition and need improvements. From visual observation, the team found the pavement surfaces with severe distresses including alligator, block, transverse, and longitudinal cracking. Refer to **Figure 18**, and 19 for sample pavement distresses.

Figure 18: Pavement Condition on a Sample Ramp

Figure 19: Pavement Condition onus 380, Below I-25 Bridge

2.4. Conditions of Signage and Pavement Markings

There are traffic signs on both directions on I-25 mainlines, ramps and US 380. Supplementary informative signs are also present at critical locations such as ramp splits. Wrong Way signs also present on the ramps to warn drivers entering ramps from wrong way of travel direction. **Figures 20** and **21** show conditions of traffic signs in the project area. Object markers also present as necessary. The signs are in fair to good condition, yet considering the life span of traffic signs i.e., 6-10 years, it is recommended to replace the signs as part of this construction project.

During a field review the team found that there are pavement markings on both mainlines and ramps at the interchange area. However, due to poor pavement conditions, the markings are observed to be deteriorated (refer to **Figures 18** and **19**), and thus new pavement markings are recommended.

Figure 20: Existing Signage Condition at Sample Location 1

Figure 21: Existing Signage Condition at Sample Location 2

3. TRAFFIC OPERATIONAL ANALYSIS

The primary purpose of performing a traffic analysis is to determine the operating characteristics of an identified transportation facility for existing and future conditions and to identify any deficiencies on the facility from an operational perspective. If any deficiencies are identified, recommendations to geometrics and/or traffic control devices of that facility are made to improve performance. The two primary elements of a transportation facility that are identified and analyzed in this study are intersections and roadway segments.

3.1. Existing Traffic Data

Existing traffic data was collected at several locations around the San Antonio I-25 interchange. The 24-hour traffic volume, vehicle classification, and speed data at the were collected on a typical weekday, i.e., Wednesday, May 4, 2022. Turning movement counts (TMCs) at 2 intersections were collected for both AM and PM peak hours on Wednesday, May 4, 2022, from 6-9 AM and 4-7 PM respectively. The data was collected by All Traffic Data Inc.

3.1.1. Existing Traffic Volume

The traffic volume data was reviewed and analyzed and trend by time of day. **Figure 22** shows the average daily traffic (ADT) and peak hour directional traffic for both AM and PM peak periods. The charts showing the 24-hour traffic distributions at the four identified locations around the study corridor are shown in **Figure 23-26**. Detailed data is presented in ***Appendix A***.

The peak hours at the intersections were identified as following

- Intersection 1 (SB Exit Ramp at Service Road): 7:45-8:45 in AM and 4:45-5:45 in PM peak periods.
- Intersection 2 (US 380 at SR-1): 7:30-8:30 in AM and 4:30-5:30 in PM peak periods.

Figure 27 and **Figure 28** show the turning movement counts (TMC) for existing 2022 conditions at the subject intersections.

Detailed TMC data is also presented in ***Appendix A***.

3.1.2. Existing Heavy Vehicle Percentage

The heavy vehicle percentages on the study corridor were identified from the classification data. The heavy vehicle percentages include 2 Axle Long, Buses, and trucks with 2 Axle 6 Tire, 3 Axle Single, 4 Axle Single, less than 5 Axle Double, 5 Axle Double, more than 6 Axle Double, less than 6 Axle Multi, 6 Axle Multi, and more than 6 Axle Multi. The heavy vehicle percentage along the corridor is high with the following percentages:

- ❖ Southbound I-25 Off-Ramp to US 380: 41.91% heavy vehicles
- ❖ Northbound I-25 Off-Ramp to US 380: 40.46% heavy vehicles
- ❖ Westbound US 380 On-Ramp to Northbound I-25: 37.02% heavy vehicles
- ❖ I-25 Mainline: 52.71% heavy vehicles

Refer to **Figure 29** for the detailed heavy vehicles presence on the corridor. Raw classification data is presented in ***Appendix B***.

3.2. Traffic Growth Projections

Historical traffic data was obtained from the New Mexico Department of Transportation (NMDOT) Transportation Data Management System (TDMS) (https://nmdot.public.ms2soft.com/tcds/tsearch.asp?loc=Nmdot). Additionally, as previously mentioned, the study team collected traffic data as well. These traffic data points were utilized to develop growth projections. Based on historic trend a 2% growth was calculated. Therefore. a 2% annual growth factor i.e., a combined factor of 1.48595 for 20 years was used while projecting future year traffic on the corridor and at the intersections. Refer to **Table 1** and ***Appendix C*** for detailed growth factors estimations and the data sources analyzed.

Table 1. Growth Factor Estimations

Location	Source	Growth Factor	Average Annual Growth Factor
Overall	NMDOT Projections	2%	2%
US 387	NMDOT TDMS	1%	
I-25 Southbound Only	NMDOT TDMS	3%	
I25 SB to Hwy 387	NMDOT TDMS	2%	
I25 NB to Hwy 387	NMDOT TDMS	1%	
Hwy 380 to I-25 NB	NMDOT TDMS	0%	
Note: Based on the historic and current traffic data, and historic growth trend, 2% annual growth factor is determined for future traffic volume projections.			

3.3. Future Traffic Volumes

As previously mentioned, an annual growth factor of 2% i.e., a combined growth factor of 1.48595 for 20 years was used while projecting future year i.e., 20-year horizon traffic conditions. The same growth factor was used on all segments ADT, peak hours traffic as well as turning movements at the intersections.

- ❖ 2042 background traffic = 2022 traffic*$(1+2\%)^{20}$

Figure 27 and **Figure 28** show the future year TMCs at the intersections.

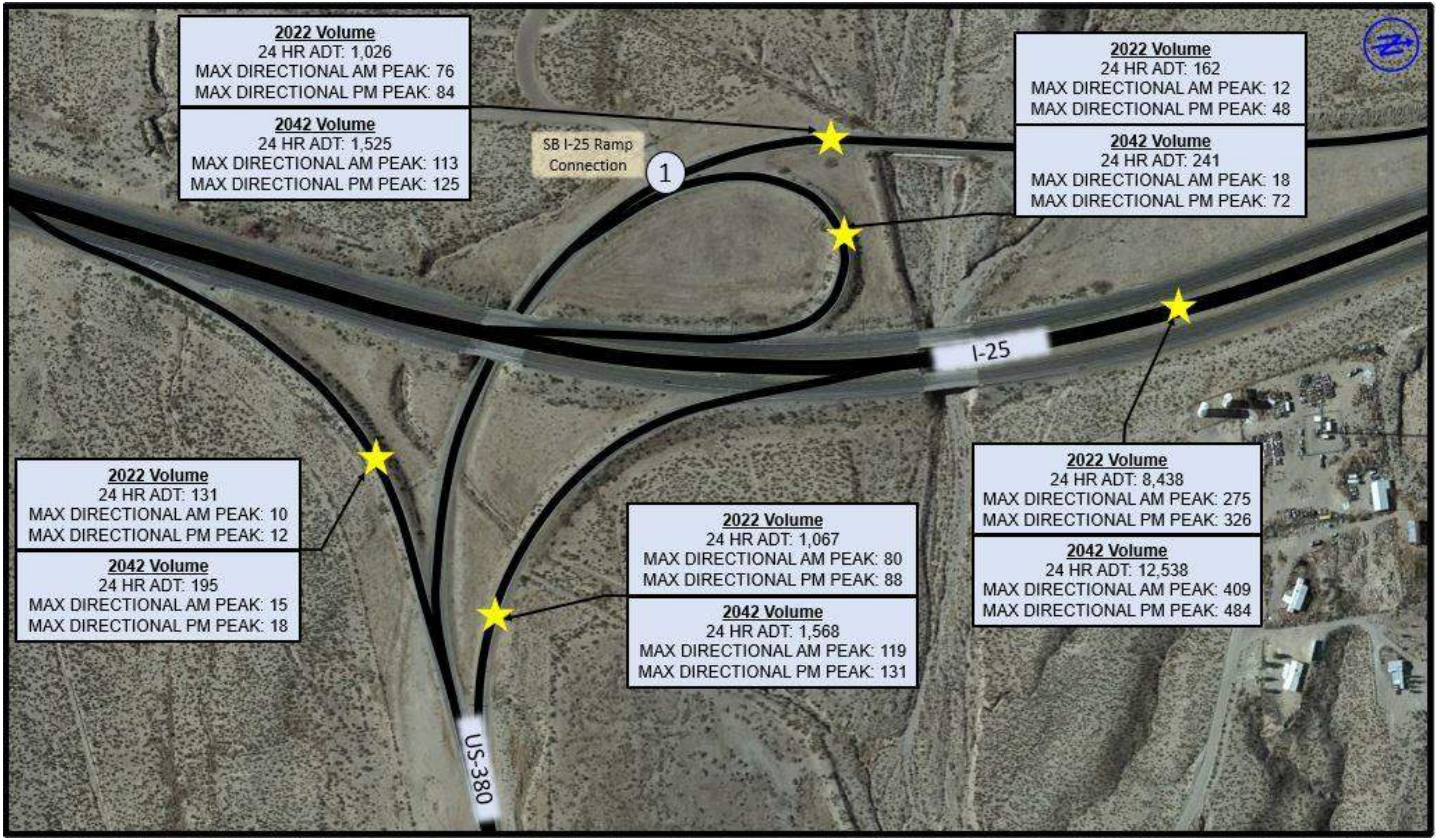


Figure 22. Traffic Volumes around San Antonio I-25 Interchange

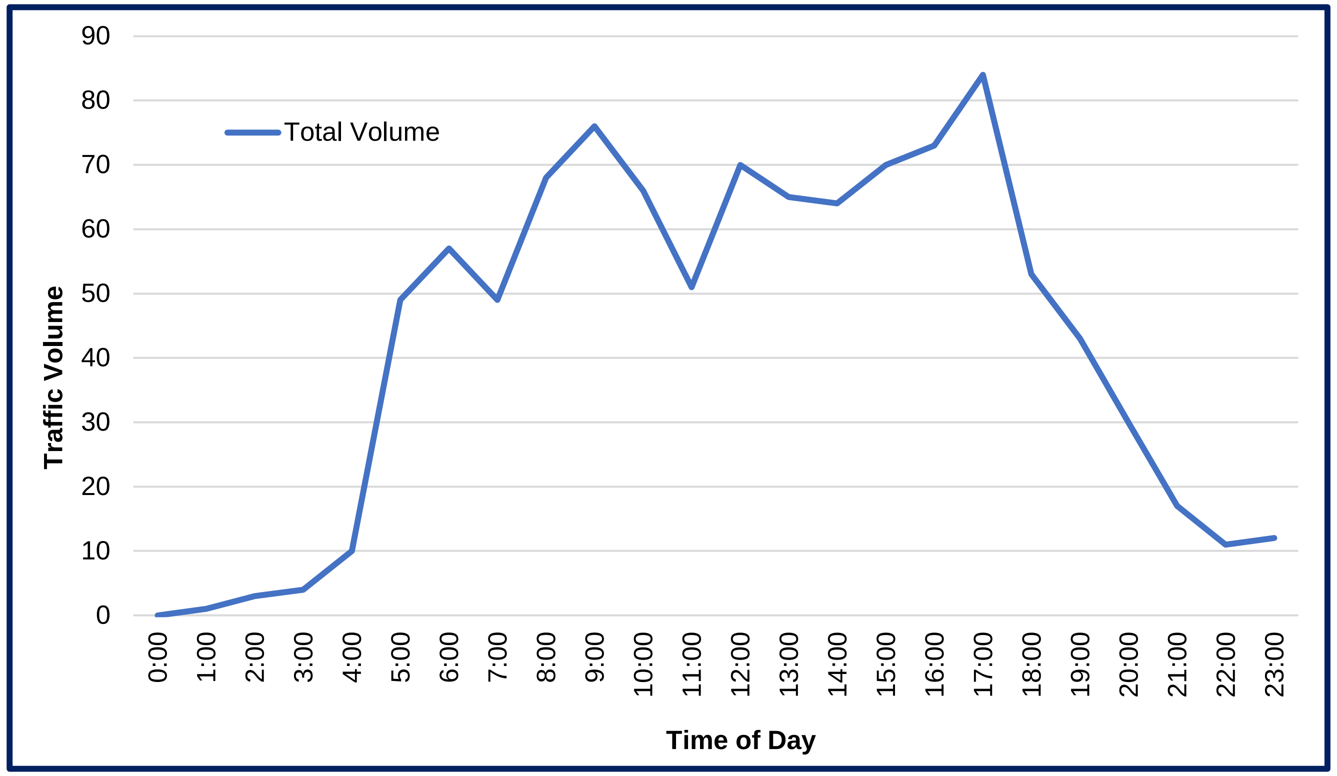


Figure 23. Traffic Volume Distribution on Southbound I-25 Off-Ramp to US 380

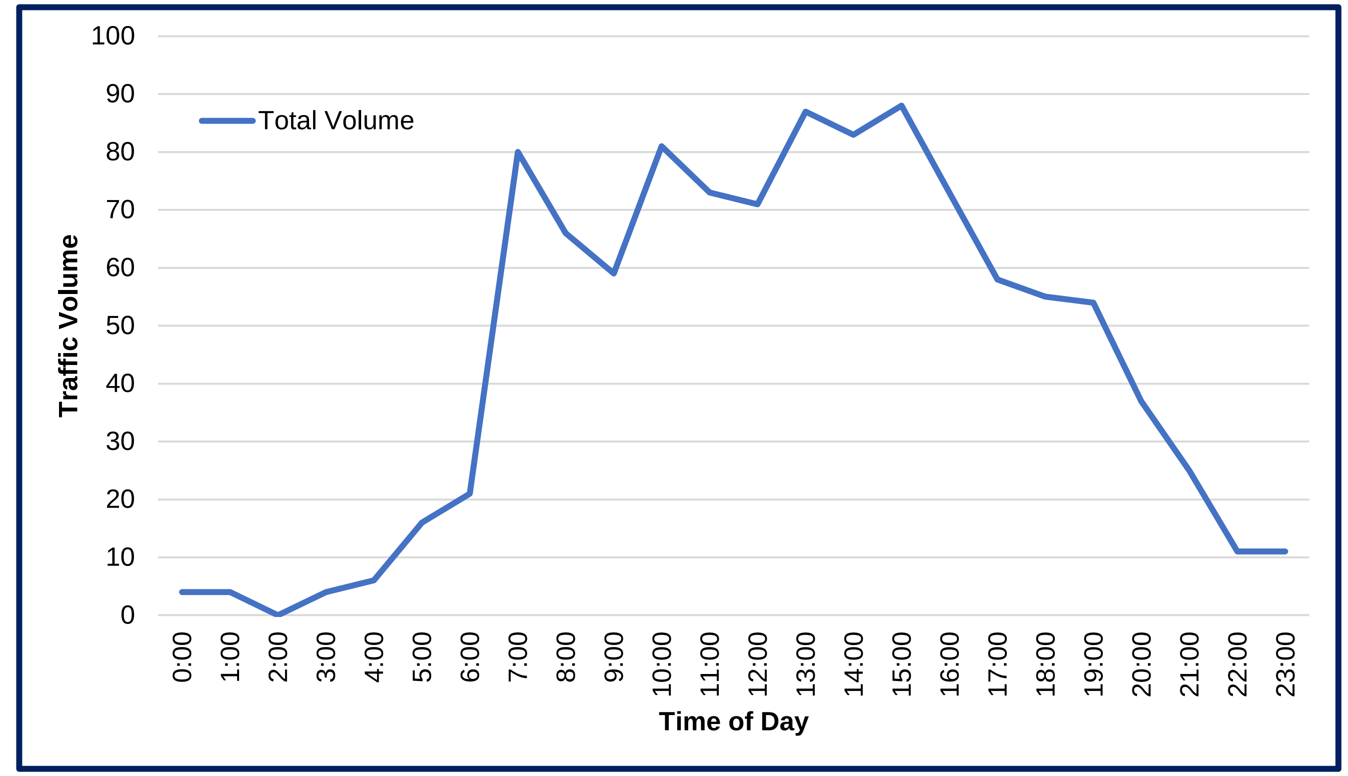


Figure 25. Traffic Volume Distribution on Westbound US 380 On-Ramp to Northbound I-25

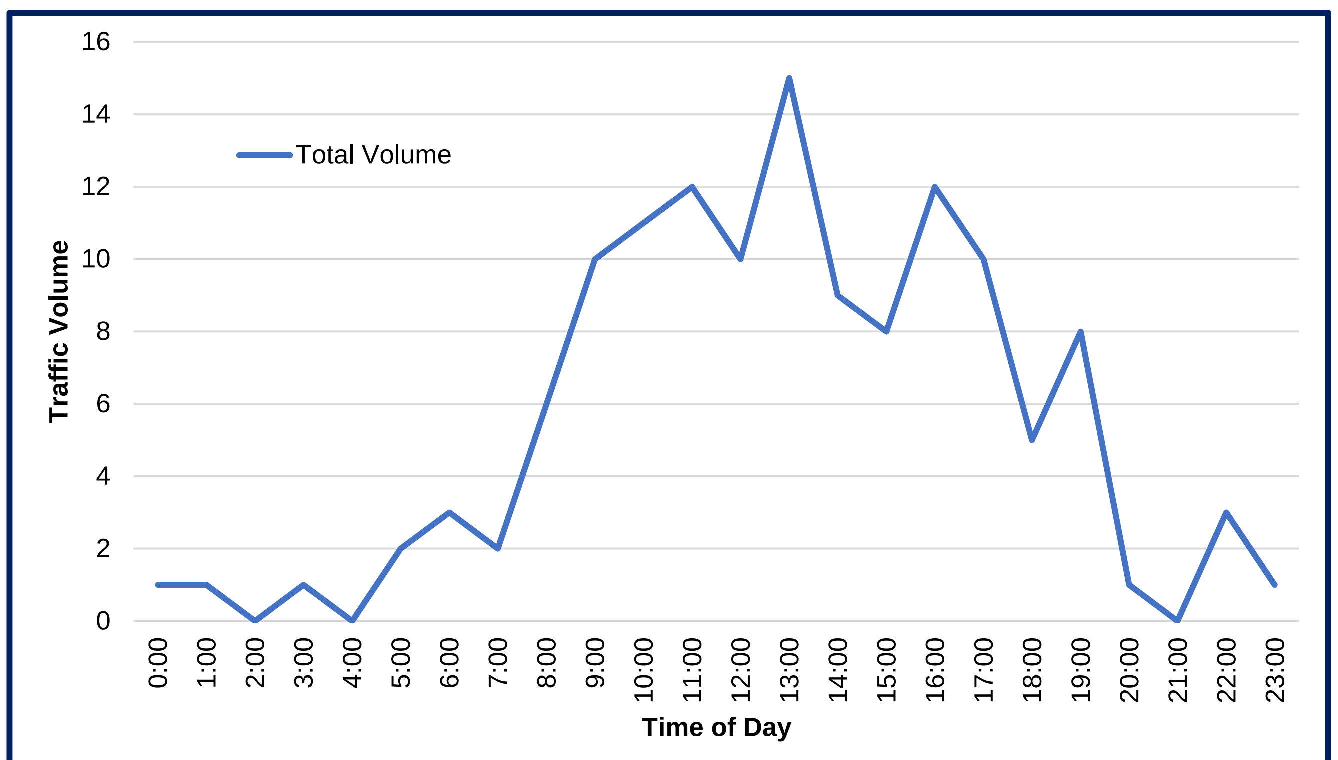


Figure 24. Traffic Volume Distribution on Northbound I-25 Off-Ramp to US 380

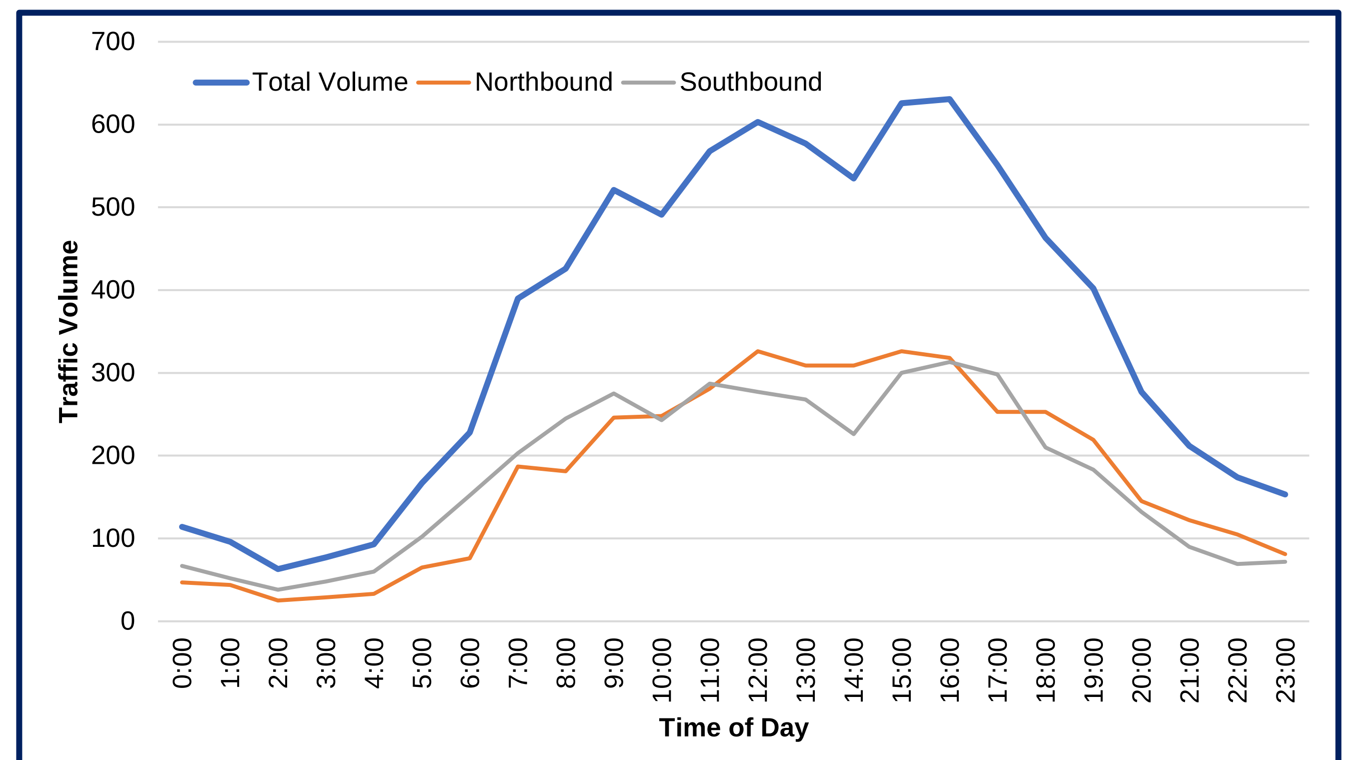


Figure 26. Traffic Volume Distribution on I-25 Mainline at US 380

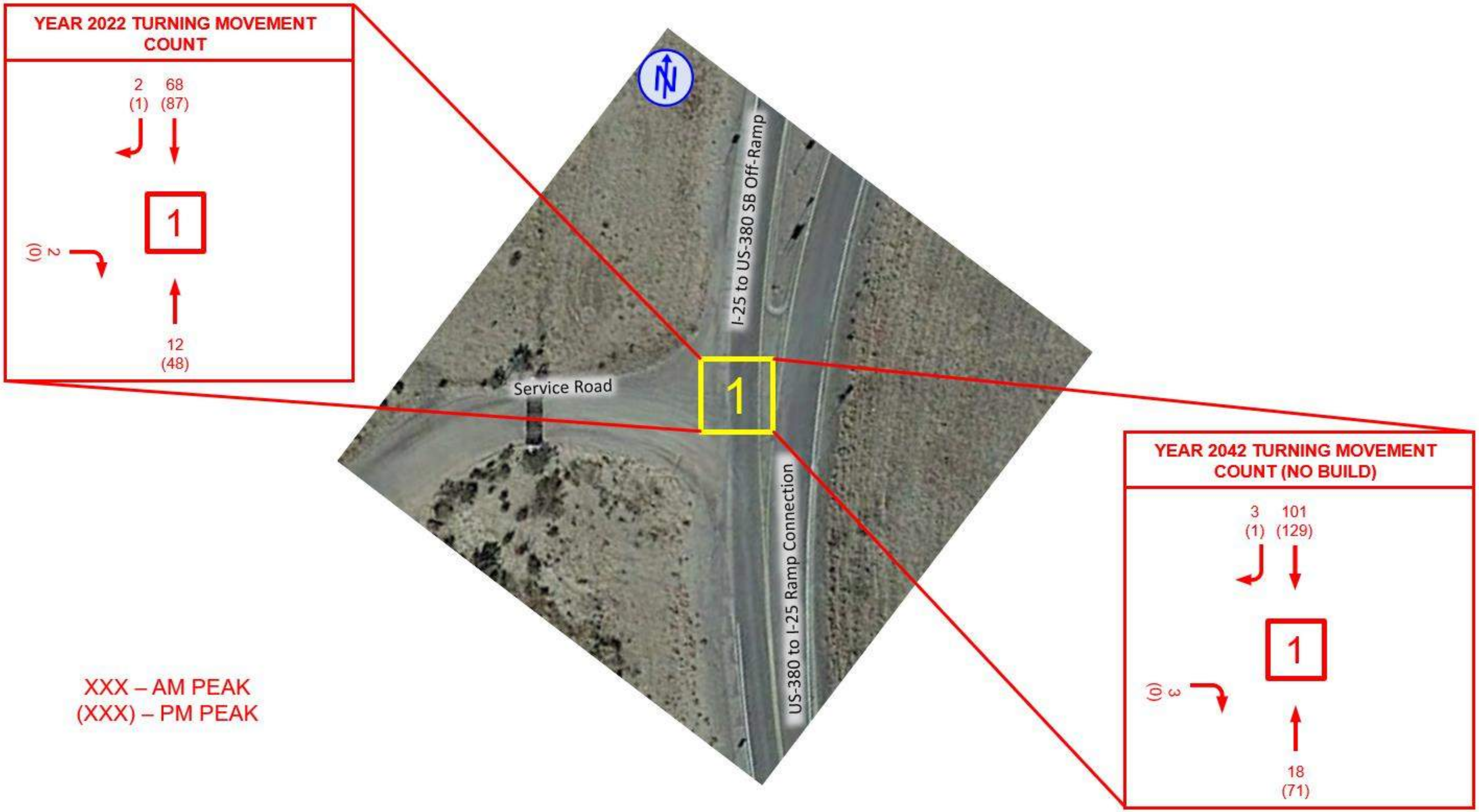


Figure 27. Turning Movement Counts at US 380/ I-25 Ramp Connection and Service Road

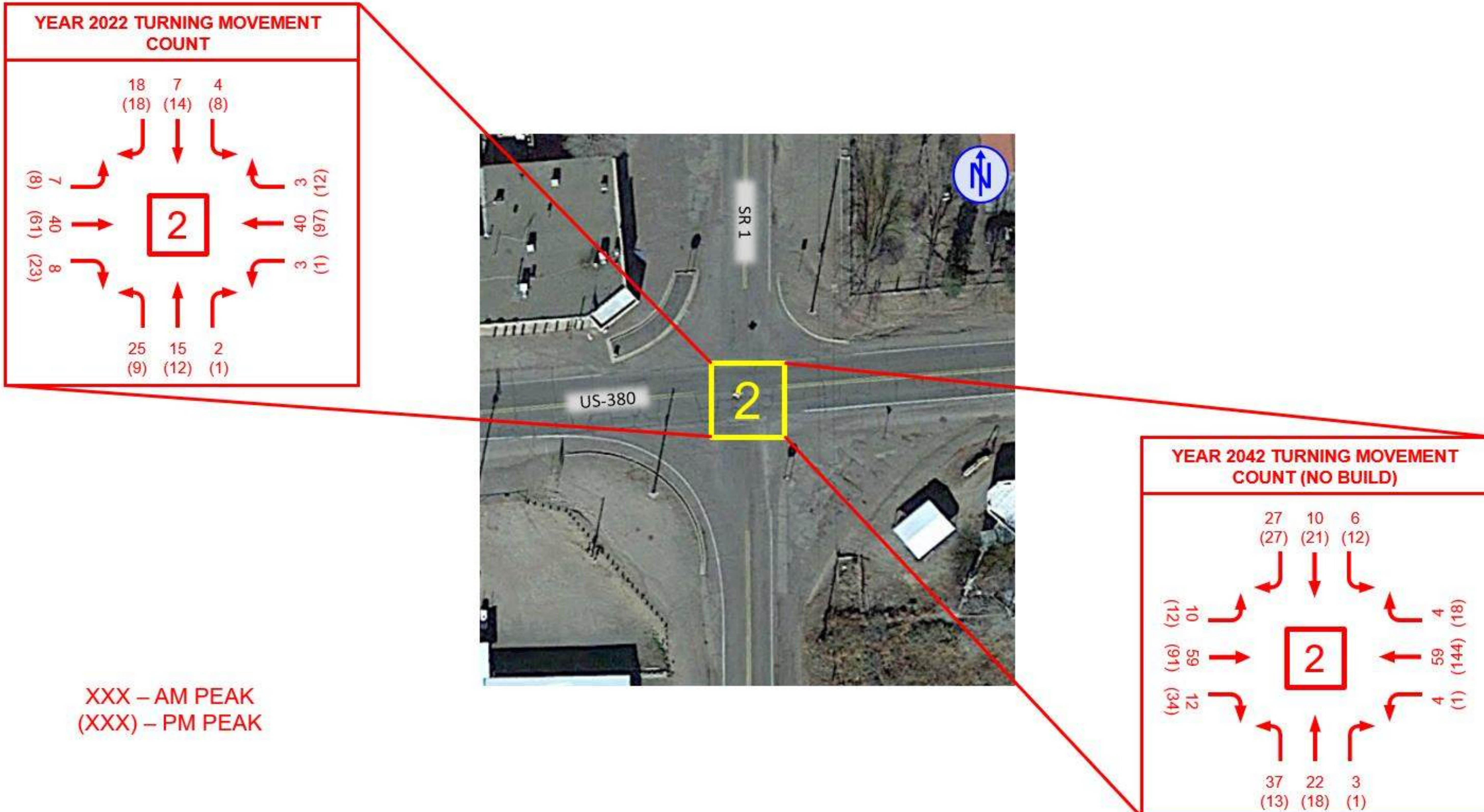


Figure 28. Turning Movement Counts at US 380 and SR 1

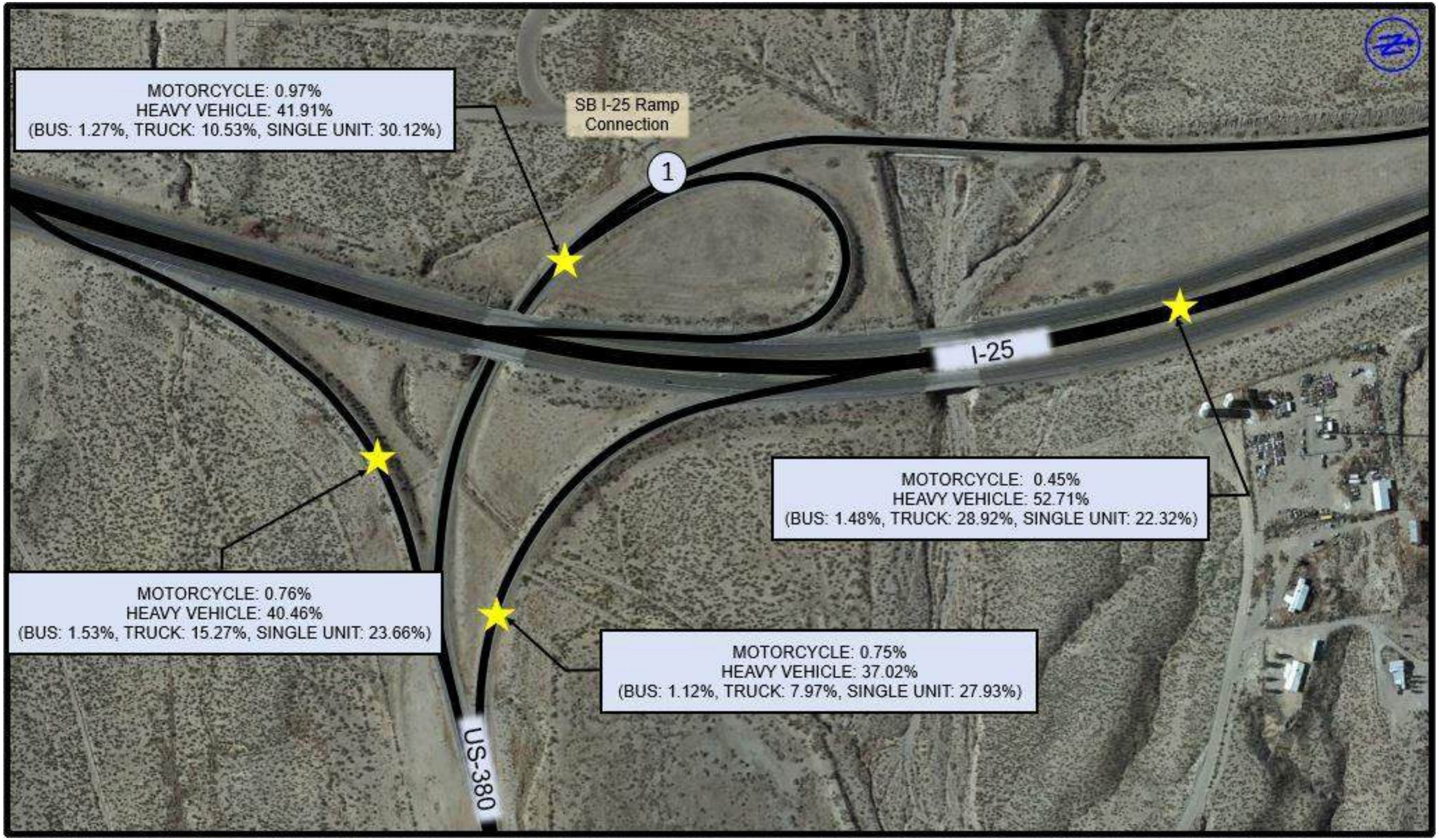


Figure 29. Heavy Vehicle Presence around San Antonio I-25 Interchange

3.4. Traffic Analysis Methodology

Signalized and un-signalized intersections are analyzed to determine the approach delay and capacity for existing and future conditions. The future conditions scenarios consider the projected peak hour volumes utilizing existing as well as proposed roadway or intersection improvements. As traffic volumes along roadway segments continue to increase over time, the flow rate of the vehicles tends to also increase, causing the mean speed of vehicles to decrease. This ultimately causes delay along roadway segments.

3.4.1. Operational Analysis Definitions

The operational performance of an intersection or a highway facility is based on Level-of-Service (LOS) criteria based on Highway Capacity Manual (HCM). LOS is a term used to qualitatively describe roadway and intersection traffic operations. LOS is expressed in letter grade format from A to F, with LOS A representing the best operating conditions and LOS F representing the worst. Per the NMDOT State Access Management Manual, LOS C for rural conditions and LOS D for urban conditions are acceptable measures. In either case, a LOS of E or F shall not be accepted for any individual movements. A general description of LOS is as follows:

- **LOS A:** Travel time is as efficient as the roadway or intersection facility can provide. Individual users virtually travel unaffected by the presence of others in the traffic stream.
- **LOS B:** Travel time remains efficient. Motorists have a high degree of freedom to select speed and operating conditions but are slightly influenced by other road users.
- **LOS C:** The efficiency of travel is reduced, but delays are well within reasonable limits. Traffic flow is becoming more restricted as individual users interact substantially with other road users.
- **LOS D:** Travel time continues to increase, and motorist delay increases but remains within reasonable limits. Motorists are able to travel at designated speeds for the facility, but freedom to maneuver in the traffic stream is restricted.
- **LOS E:** Travel time is substantially affected. Delays have reached and may exceed reasonable limits. The capacity of the facility is fully utilized.
- **LOS F:** Travel along the roadway and through intersections is very inefficient. Traffic flow is forced in that the amount of traffic approaching a point exceeds the amount that can be served. The roadway facility fails.

3.4.2. Study Methodology

In order to efficiently analyze traffic operations at the locations previously described, the use of a couple of traffic analysis software packages is required. These software programs are all developed using the Highway Capacity Manual. Highway Capacity Software version 7 (HCS7), and Synchro 11.0/SimTraffic are used for a variety of analyses. HCS7 is used to analyze roadway segments. Synchro/SimTraffic is utilized for un-signalized and simulation analysis.

Table 2, and Error! Reference source not found. show the LOS criteria for roadway segments, and unsignalized intersections, respectively.

Table 2. LOS Criteria for Multilane Highways

LOS	Density Range (pc/mi/ln)
A	0 -11
B	>11 -18
C	>18 - 26
D	>26 - 35
E	>35 - 45

Table 3. LOS Criteria for Unsignalized Intersections

LOS	Average Control Delay (sec/veh)
A	0 - 10
B	>10 - 15
C	>15 - 25
D	>25 - 35
E	>35 - 50

3.5. Existing Condition Operational Analysis

3.5.1. Intersection Operations

Synchro 11 was used for Level-of-service (LOS) analysis of the 2 study intersections.

- US 380 to I-25 Ramp Connection at Service Road (Unsignalized) – All approaches of this unsignalized intersection operate at LOS A with existing condition for both AM and PM peak hour scenarios.
- US 380 at SR 1 (Unsignalized) – All critical movements of this unsignalized intersection operate at LOS B or better with existing condition for both AM and PM peak hour scenarios.

Refer to **Table 4** for LOS results.

3.5.2. Highway Segment Operations

HCS software was used to analyze the segment LOS. Both directions of all roadway segments on the study corridor are expected to operate at LOS A or better for existing conditions for both AM and PM peak hours. Refer to **Table 5** for detailed delay, speed, and LOS information.

3.6. 2042 No-Build Condition Operational Analysis

As previously mentioned, the 2022 traffic data was increased with a 2% annual growth factor for 20 years i.e., combined factor of 1.48595 and 2042 traffic volumes were estimated for LOS analyses for both intersections and highway segments.

3.6.1. 2042 No-Build Condition Intersection Operations

The 2042 No-build condition LOS summary are as follows:

- US 380 to I-25 Ramp Connection at Service Road (Unsignalized) – All approaches of this unsignalized intersection operate at LOS A with no-build condition for both AM and PM peak hour scenarios.
- US 380 at SR 1 (Unsignalized) – All critical movements of this unsignalized intersection operate at LOS B or better with no-build condition for both AM and PM peak hour scenarios.

Refer to **Table 4** for LOS results.

Table 4. Existing and No-Build Condition LOS Summary for Study Intersections

Sl No.	Intersection			2022 Existing Scenario		2042 No-Build Scenario	
				Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS
1	SB I-25 Ramp Connection	AM Peak	EBR	8.7	A	8.9	A
		PM Peak	EBR	0.0	A	0.0	A
2	US-380 AT SR-1	AM Peak	EBL	7.3	A	7.4	A
			WBL	7.3	A	7.4	A
			NB	10.1	B	11.0	B
			SB	9.2	A	9.6	A
		PM Peak	EBL	7.5	A	7.6	A
			WBL	7.4	A	7.5	A
			NB	10.6	B	11.9	B
			SB	10.1	B	11.1	B

3.6.2. 2042 No-Build Condition Highway Segment Operations

Both directions of all roadway segments on the study corridor are expected to operate at LOS A or better with existing condition for both AM and PM peak hours with 2042 future year's forecasted traffic. Refer to **Table 5** for detailed delay, speed, and LOS information.

The 2022 existing and 2042 No-Build condition LOS analysis has been represented graphically in the **Figure 30**

Table 5. Existing and No-Build Condition LOS Summary for Roadway Segments

Segment	Scenarios		LOS	V/C	AVERAGE TRAVEL SPEED (MPH)
US 380 to I-25 WB/NB Entrance Ramp	2022 Existing Scenario	AM PEAK	A	0.05	54.0
		PM PEAK	A	0.06	54.0
	2042 No-Build Scenario	AM PEAK	A	0.07	50.6
		PM PEAK	A	0.08	50.6
US 380 to I-25 WB/SB Entrance Ramp	2022 Existing Scenario	AM PEAK	A	0.01	53.8
		PM PEAK	A	0.03	55.6
	2042 No-Build Scenario	AM PEAK	A	0.01	53.8
		PM PEAK	A	0.05	55.6
I-25 to US 380 NB Exit Ramp	2022 Existing Scenario	AM PEAK	A	0.01	54.8
		PM PEAK	A	0.01	54.8
	2042 No-Build Scenario	AM PEAK	A	0.01	54.8
		PM PEAK	A	0.01	54.8
I-25 to US 380 SB Exit Ramp	2022 Existing Scenario	AM PEAK	A	0.04	58.0
		PM PEAK	A	0.05	58.1
	2042 No-Build Scenario	AM PEAK	A	0.06	51.6
		PM PEAK	A	0.08	51.5
I-25 NB Downstream to Entrance Ramp	2022 Existing Scenario	AM PEAK	A	0.08	65.0
		PM PEAK	A	0.11	65.0
	2042 No-Build Scenario	AM PEAK	A	0.12	65.0
		PM PEAK	A	0.16	64.9
I-25 SB Downstream to Entrance Ramp	2022 Existing Scenario	AM PEAK	A	0.1	64.5
		PM PEAK	A	0.12	64.5
	2042 No-Build Scenario	AM PEAK	A	0.14	64.5
		PM PEAK	A	0.18	64.4
US 380 west of US 380/SR 1 Intersection	2022 Existing Scenario	AM PEAK	A	0.06	41.3
		PM PEAK	A	0.09	40.6
	2042 No-Build Scenario	AM PEAK	A	0.09	40.6
		PM PEAK	A	0.13	40.2

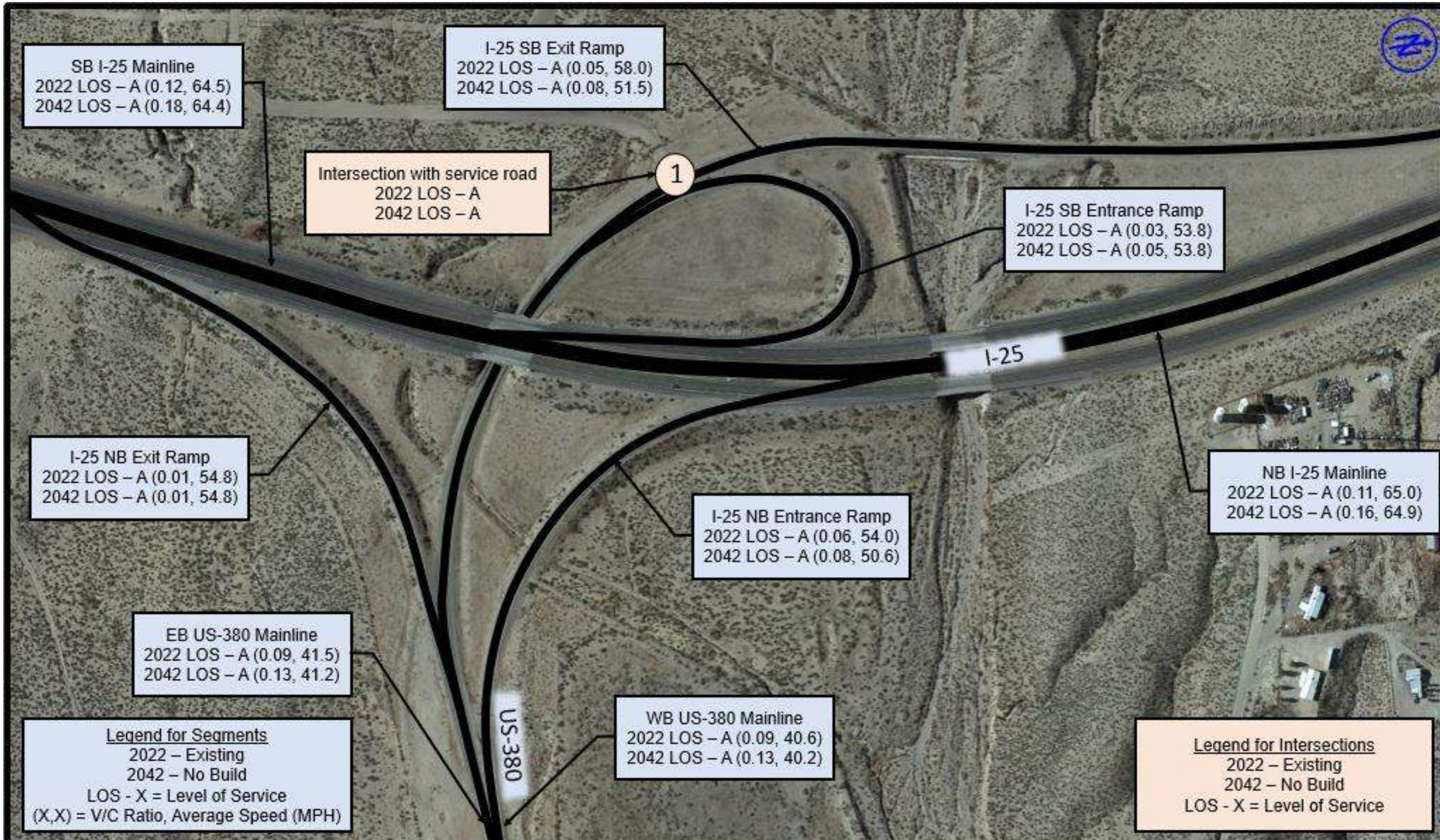


Figure 30. Level Of Service – 2022 Existing and 2042 No-Build

3.7. 2042 Build Condition Operational Analysis

3.7.1. 2042 Build Condition Intersection Operations

It is noted that even though the roadway segments and intersections are expected to operate at acceptable level-of-service, the study team identified that the entrance ramps acceleration lanes consistent with current design standards. Considering the needs of adding acceleration lanes as well as eliminating one bridge structure on SB Exit ramp, the team developed several alternatives:

- Alternative 1 – Existing Configuration with acceleration lane, refer to ***Figure 31***,
- Alternative 2A – Diamond Interchange with existing US 380 alignment, refer to ***Figure 32***
- Alternative 2B – Diamond Interchange with new US 380 alignment refer to ***Figure 33***
- Alternative 3A – Partial Cloverleaf Interchange, refer to ***Figure 34***
- Alternative 3B – Enhanced Trumpet Interchange, refer to ***Figure 35***

Based on detailed discussions in a project progress meeting with the stakeholders, on August 23, 2022, alternatives 2A, and 2B are identified as preferred alternatives. From operational perspective both of these alternatives would operate in similar manner and thus only one scenario was analyzed as build condition.

Future year traffic volumes were used to estimate the turning movement volumes at the proposed interchange for year 2042 build conditions Error! Reference source not found.shows the build condition TMCs a t the proposed San Antonio I-25 interchange.

Synchro was used to analyze the two alternative scenarios. The LOS summary are as follows:

- Alternative A (Unsignalized): All approaches of the unsignalized ramp intersections of the interchange operates at LOS A or better with build condition for both AM and PM peak hour scenarios. Please refer to **Table 6** for LOS results.
- Alternative B (signalized): All approaches of the unsignalized ramp intersections of the interchange operates at LOS A or better with build condition for both AM and PM peak hour scenarios. Please refer to **Table 6** for LOS results.

3.7.2. 2042 Build Condition Highway Segment Operations

Both directions of all roadway segments on the study corridor are expected to operate at LOS A or better with existing condition for both AM and PM peak hours with 2042 future year's forecasted traffic. Refer to Table **7** for detailed delay, speed, and LOS information.

The 2022 existing and 2042 No-Build condition LOS analysis has been represented graphically in the **Figure 36**

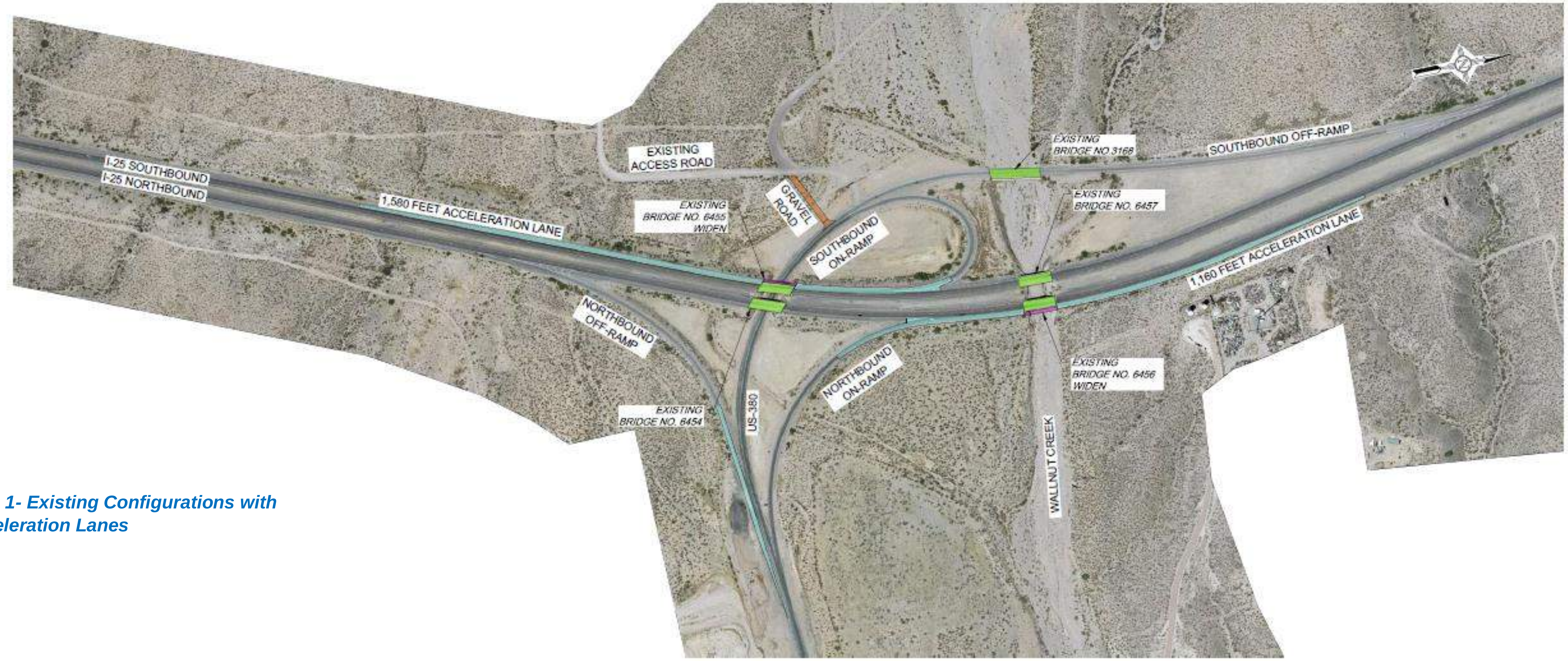
Table 6. 2042 Build Condition LOS Summary for Proposed Interchange

Sl No.	Intersection			2042 Build Scenario	
				Delay (Sec/Veh)	LOS
3	US-380 at SB Entrance Ramp/SB Exit Ramp	AM Peak	EB	7.2	A
			WB	7.5	A
			SB	7.8	A
		PM Peak	EB	0.0	A
			WB	7.9	A
			SB	8.2	A
3	US-380 at NB Entrance Ramp/NB Exit Ramp	AM Peak	EB	7.7	A
			WB	7.2	A
			NB	6.9	A
		PM Peak	EB	8.0	A
			WB	7.8	A
			NB	7.2	A

Table 7. Build Condition LOS Summary for Roadway Segments

Segment	Scenarios		LOS	V/C	AVERAGE TRAVEL SPEED (MPH)
US 380 to I-25 NB Entrance Ramp	2042 Build Scenario	AM PEAK	A	0.07	55.0
		PM PEAK	A	0.08	54.8
US 380 to I-25 SB Entrance Ramp	2042 Build Scenario	AM PEAK	A	0.01	55.8
		PM PEAK	A	0.04	55.8
US 380 to I-25 NB Exit Ramp	2042 Build Scenario	AM PEAK	A	0.01	55.4
		PM PEAK	A	0.01	55.4
US 380 to I-25 SB Exit Ramp	2042 Build Scenario	AM PEAK	A	0.07	55.2
		PM PEAK	A	0.08	54.9
I-25 NB Downstream to Entrance Ramp	2042 Build Scenario	AM PEAK	A	0.13	66.8
		PM PEAK	A	0.17	66.8
I-25 SB Downstream to Entrance Ramp	2042 Build Scenario	AM PEAK	A	0.14	66.8
		PM PEAK	A	0.18	66.8
US 380 west of US 380/SR 1 Intersection	2042 Build Scenario	AM PEAK	A	0.09	41.5
		PM PEAK	A	0.13	41.3

Figure 31. Alternative 1- Existing Configurations with Acceleration Lanes



ADVANTAGES

- MINIMIZED CONSTRUCTION COST
- MINIMIZED ROW ACQUISITIONS
- MAINTAINS USER EXPECTATIONS
- INTERSTATE ACCESS CHANGE REQUEST (IACR) NOT REQUIRED
- ELIMINATES NB AND SB ON-RAMP ACCELERATION ISSUES

DISADVANTAGES

- WALNUT CREEK BRIDGE NO. 3168 WILL BE MAINTAINED/REHABILITATED
- INCREASED DRAINAGE IMPROVEMENTS COST

LEGEND

- NEW PAVEMENT
- NEW GRAVEL ROAD
- BRIDGE WIDENING
- NEW BRIDGE
- EXISTING BRIDGE

NMDOT

I-25/US-380 (SAN ANTONIO) INTERCHANGE PROJECT
CN 1102060

ALTERNATIVE-1 EXISTING CONFIGURATION WITH ACCELERATION LANES

HDR

DATE 08/2022

FIGURE EXH-1

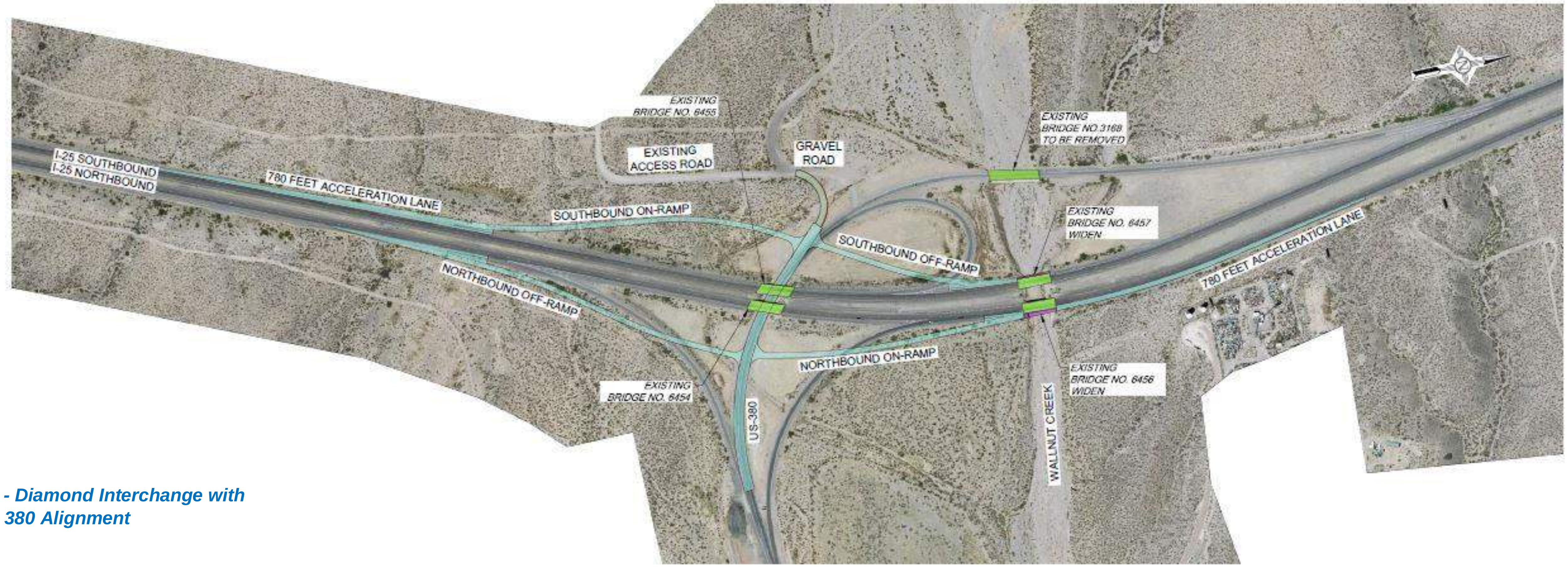


Figure 32. Alternative 2A - Diamond Interchange with Existing US 380 Alignment

ADVANTAGES

INTERCHANGE TYPE MEETS TYPICAL USER EXPECTATIONS

REMOVES BRIDGE NO 3168

ELIMINATES INSPECTION AND MAINTENANCE COSTS FOR BRIDGE NO. 3168

IMPROVES WALNUT CREEK DRAINAGE

INCREASED LOCAL ROAD ACCESS TO INTERCHANGE

EXISTING I-25 BRIDGES AT US-380 CAN BE MAINTAINED

DISADVANTAGES

INCREASED CONSTRUCTION COST

INCREASED ROW ACQUISITION

INTERSTATE ACCESS CHANGE REQUEST (IACR) IS REQUIRED

STOP CONTROLLED ACCESS BETWEEN US-380 AND RAMPS

LEGEND

NEW PAVEMENT

NEW GRAVEL ROAD

BRIDGE WIDENING

NEW BRIDGE

EXISTING BRIDGE

I-25/US-380 (SAN ANTONIO) INTERCHANGE PROJECT
CN 1102060

ALTERNATIVE-2A DIAMOND T.I. WITH EXISTING US-380 ALIGNMENT

DATE 08/2022

FIGURE EXH-2A

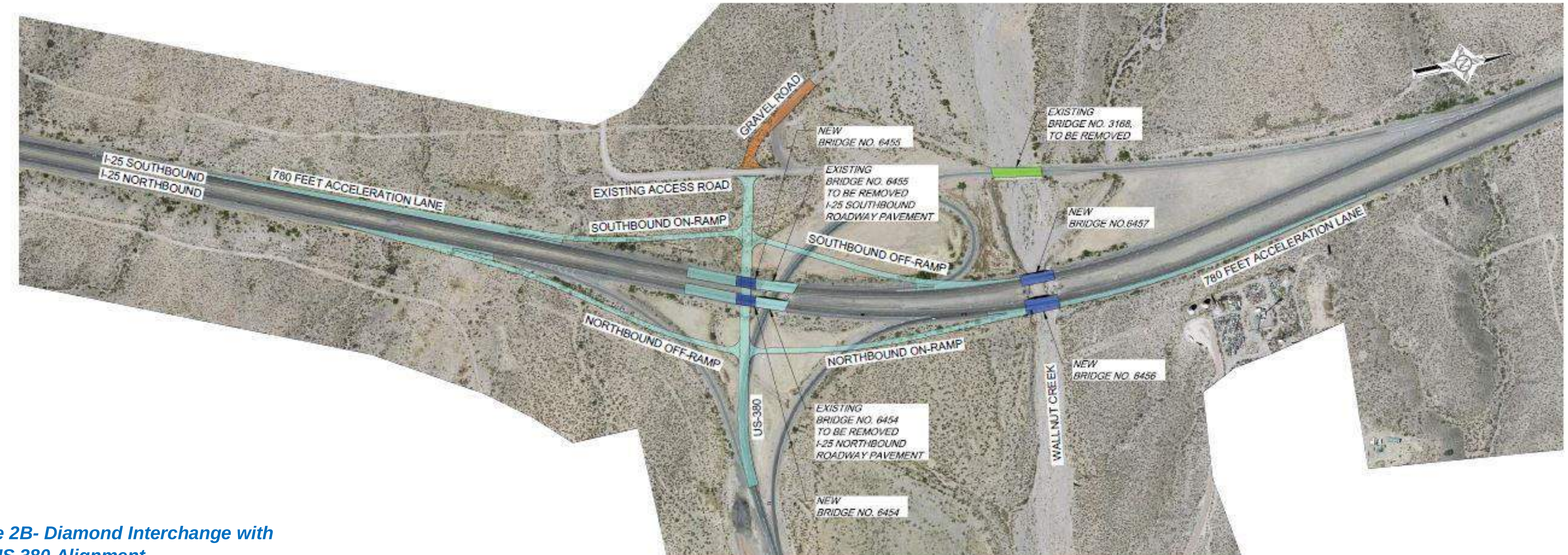


Figure 33. Alternative 2B- Diamond Interchange with New US 380 Alignment

ADVANTAGES

- INTERCHANGE TYPE MEETS TYPICAL USER EXPECTATIONS
- REMOVES BRIDGE NO. 3168
- ELIMINATES INSPECTION AND MAINTENANCE COSTS FOR BRIDGE NO. 3168
- IMPROVES WALNUT CREEK DRAINAGE
- INCREASED LOCAL ROAD ACCESS TO INTERCHANGE

DISADVANTAGES

- REQUIRES RECONSTRUCTION OF I-25 BRIDGES AT US-380
- INCREASED MAINTENANCE OF TRAFFIC PHASES AND COSTS
- INCREASED CONSTRUCTION COST
- INCREASED ROW ACQUISITION
- INTERSTATE ACCESS CHANCE REQUEST (IACR) IS REQUIRED
- STOP CONTROLLED ACCESS BETWEEN US-380 AND RAMPS

LEGEND

- NEW PAVEMENT
- NEW GRAVEL ROAD
- BRIDGE WIDENING
- NEW BRIDGE
- EXISTING BRIDGE

I-25/US-380 (SAN ANTONIO) INTERCHANGE PROJECT
CN 1102060

ALTERNATIVE-2B DIAMOND T.I. WITH NEW US-380 ALIGNMENT

DATE 08/2022
FIGURE EXH-2B

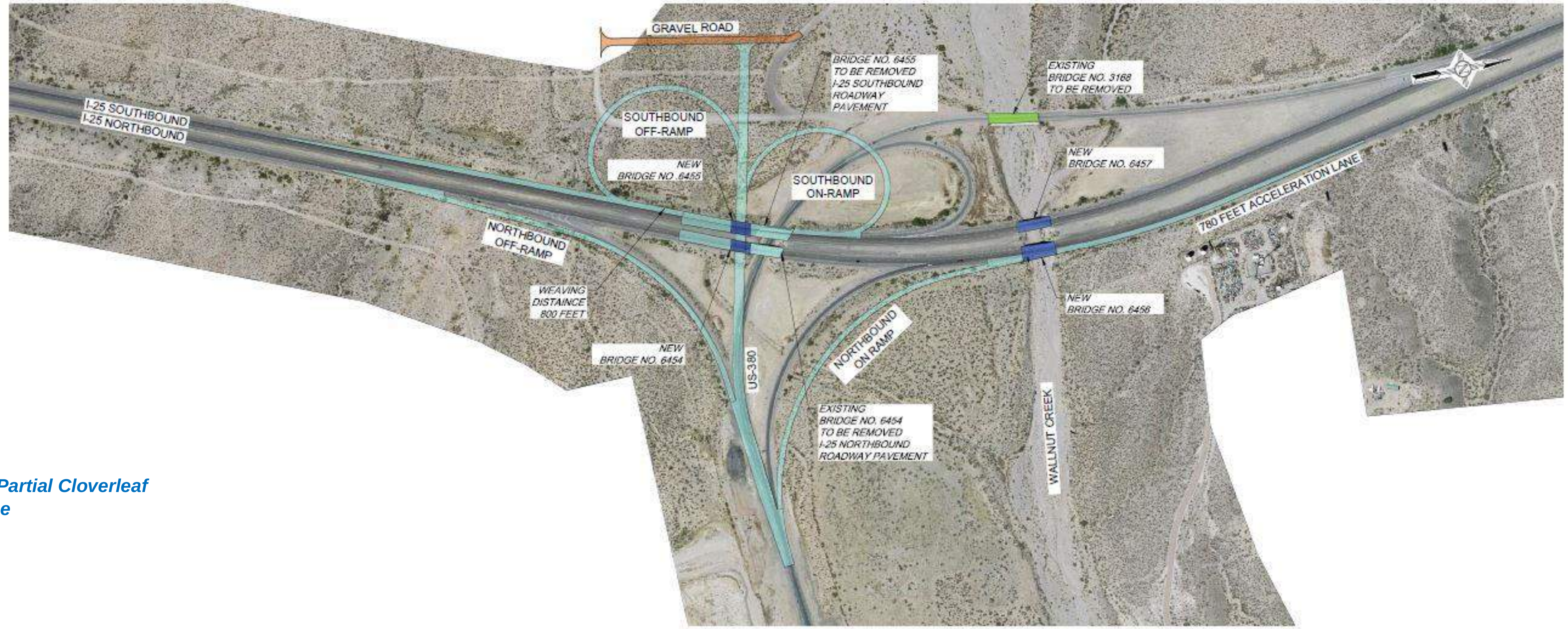


Figure 34. Alternative 3A- Partial Cloverleaf Interchange

ADVANTAGES

- REMOVES BRIDGE NO. 3168
- ELIMINATES INSPECTION AND MAINTENANCE COSTS FOR BRIDGE NO. 3168
- IMPROVES WALNUT CREEK DRAINAGE
- FREE TRAFFIC MOVEMENT BETWEEN US-380 AND I-25

DISADVANTAGES

- INCREASED CONSTRUCTION COST
- INCREASED ROW ACQUISITION
- INTERSTATE ACCESS CHANCE REQUEST (IACR) IS REQUIRED
- POTENTIAL WEAVING ISSUE BETWEEN SOUTHBOUND AND ON/OFF RAMPS
- LIMITED LOCAL ROAD ACCESS TO INTERCHANGE

LEGEND

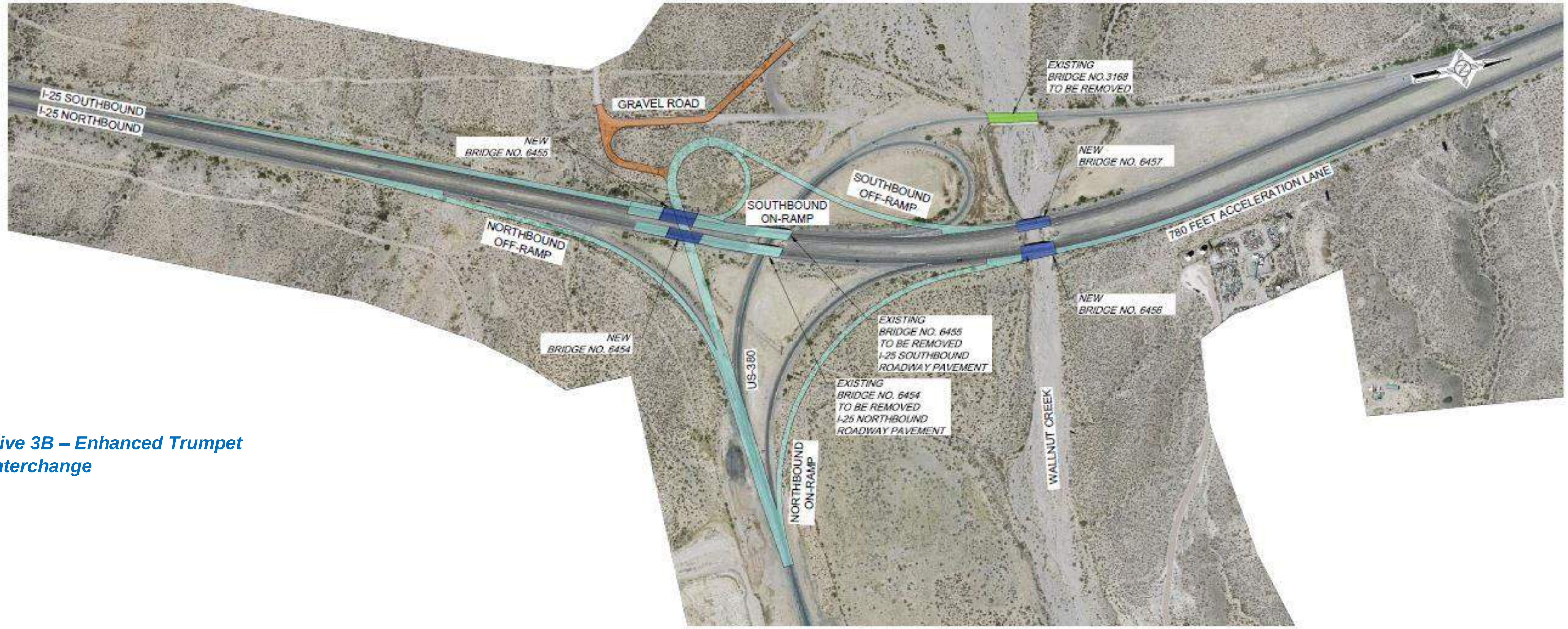
- NEW PAVEMENT
- NEW GRAVEL ROAD
- BRIDGE WIDENING
- NEW BRIDGE
- EXISTING BRIDGE

I-25/US-380 (SAN ANTONIO) INTERCHANGE PROJECT
CN 1102060

ALTERNATIVE-3A PARTIAL CLOVERLEAF T.I.

DATE 08/2022
FIGURE EXH-3A

Figure 35. Alternative 3B – Enhanced Trumpet Interchange



ADVANTAGES

- REMOVES BRIDGE NO. 3168
- ELIMINATES INSPECTION AND MAINTENANCE COSTS FOR BRIDGE NO. 3168
- IMPROVES WALNUT CREEK DRAINAGE
- FREE TRAFFIC MOVEMENT BETWEEN US-380 AND I-25

DISADVANTAGES

- INCREASED CONSTRUCTION COST
- INCREASED ROW ACQUISITION
- INTERSTATE ACCESS CHANGES REQUEST (IACR) IS REQUIRED
- LIMITED LOCAL ROAD ACCESS TO INTERCHANGE

LEGEND

- NEW PAVEMENT
- NEW GRAVEL ROAD
- BRIDGE WIDENING
- NEW BRIDGE
- EXISTING BRIDGE

I-25/US-380 (SAN ANTONIO) INTERCHANGE PROJECT
CN 1102060

ALTERNATIVE-3B ENHANCED TRUMPET T.I.

DATE 08/2022

FIGURE EXH-3B

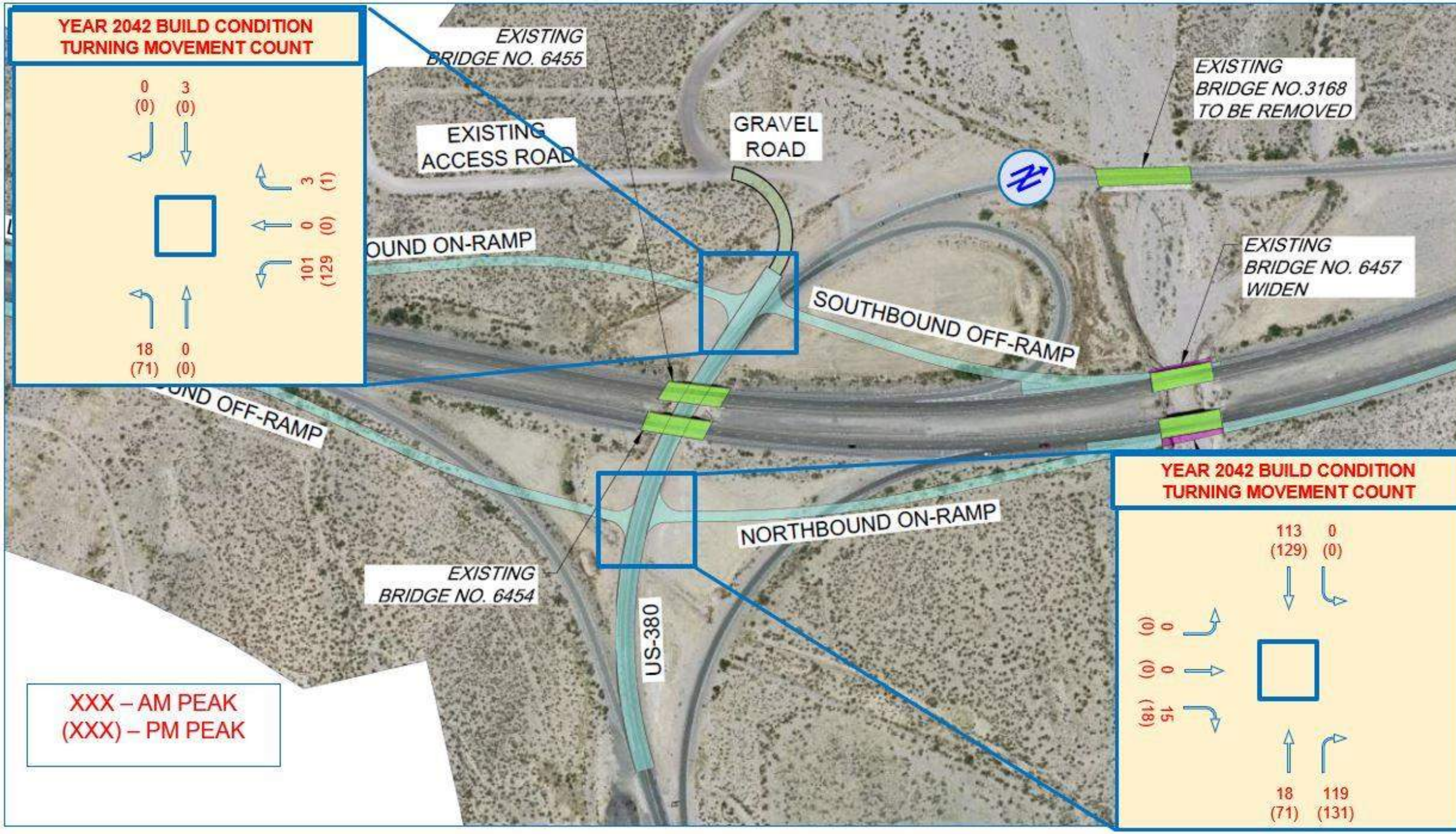


Figure 36. Turning Movements for Diamond Interchange Alternative – 2042 Build

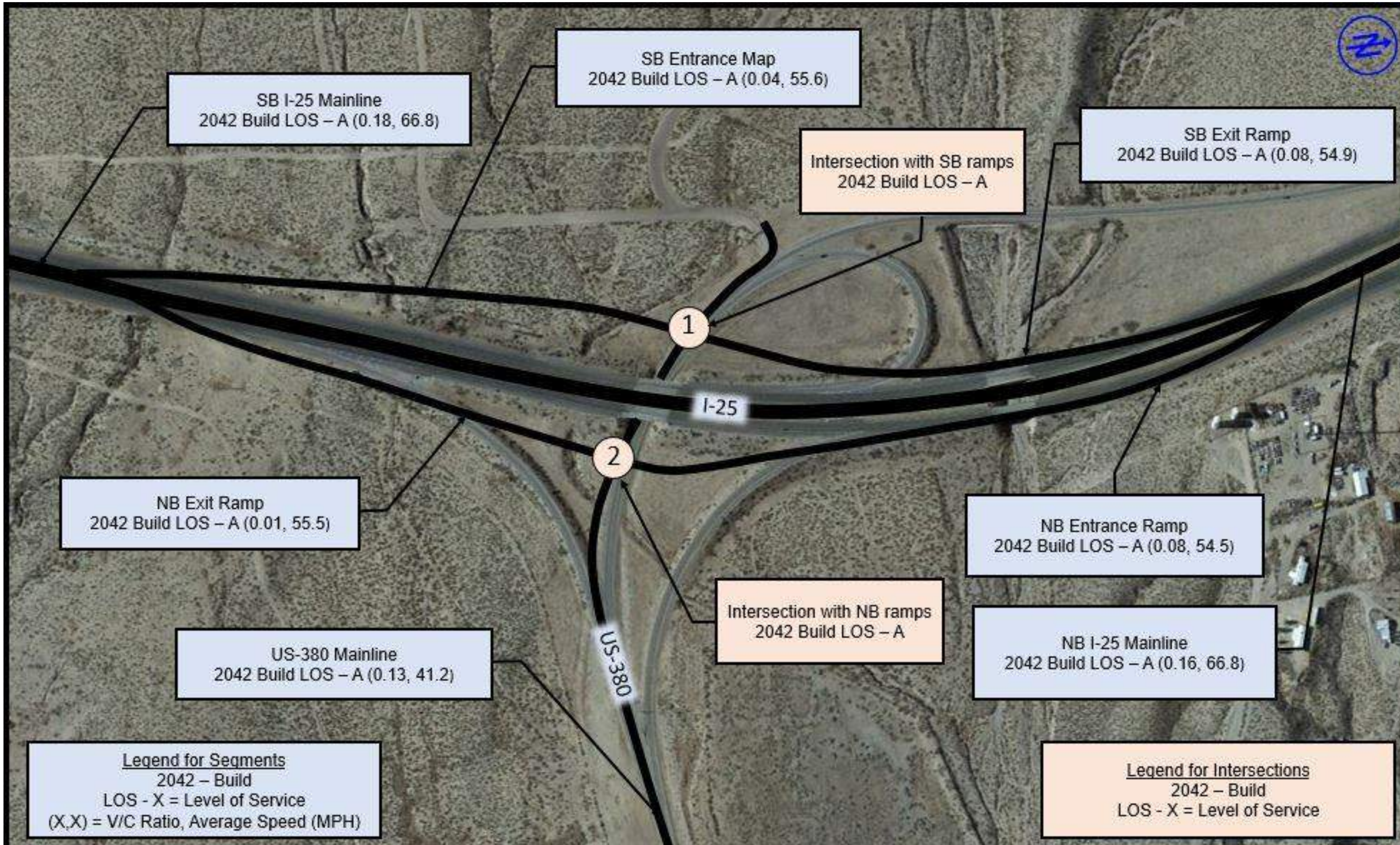


Figure 37. Level Of Service – 2042 Build (Alternatives 2A and 2B)

4. SPEED ANALYSIS

Speed data was collected for a 24-hour period on a typical weekday, specifically Wednesday, May 4, 2022. Four different locations on the I-25/US 380 San Antonio Interchange were collected as part of the project. Posted speed limit data was also collected. **Figure 41** shows the location of speed data collection

After reviewing the speed data, the team found that the posted speed limit on the I-25 mainline is 75 miles per hour (mph) and the speed limit on the US 380 is 40 mph. The advisory speed limit is 45 mph on both the northbound and southbound I-25 Exit-Ramps to the US 380, and the advisory speed limit is 25 mph on the westbound US 380 Entrance-Ramp to southbound I-25. Figure 42 shows the existing posted speed limits in the study vicinity.

4.1. Southbound I-25 Exit-Ramp to US 380 Speed Analysis

On the southbound I-25 Exit-ramp to the US 380, the 85th percentile speed was found as 60 mph based on 24-hour, peak periods, and nighttime data, and 59 mph based on midday data. The mode speed i.e., the speed at which maximum drivers are driving at, was found to be 54 mph for the 24-hour, midday, and nighttime periods, and 57 mph for the peak periods. The pace speeds i.e., 10 mph speed range where most drivers fall in, were found to be 49-59 mph for the 24-hour, peak, and nighttime periods, while the midday pace speeds are 49-59 mph.

Refer to **Figure 38** and **Figure 39** for 24-hour 85th percentile and mode and pace speeds graphs, and to **Figure 40** and **Figure 43** for AM and PM peak periods 85th percentile and mode and pace speeds graphs on the southbound I-25 Exit-ramp to the US 380. Speed charts for 24-hour and peak periods will be given for each location in the report, and the midday and nighttime data along with the raw data are presented in ***Appendix G.***

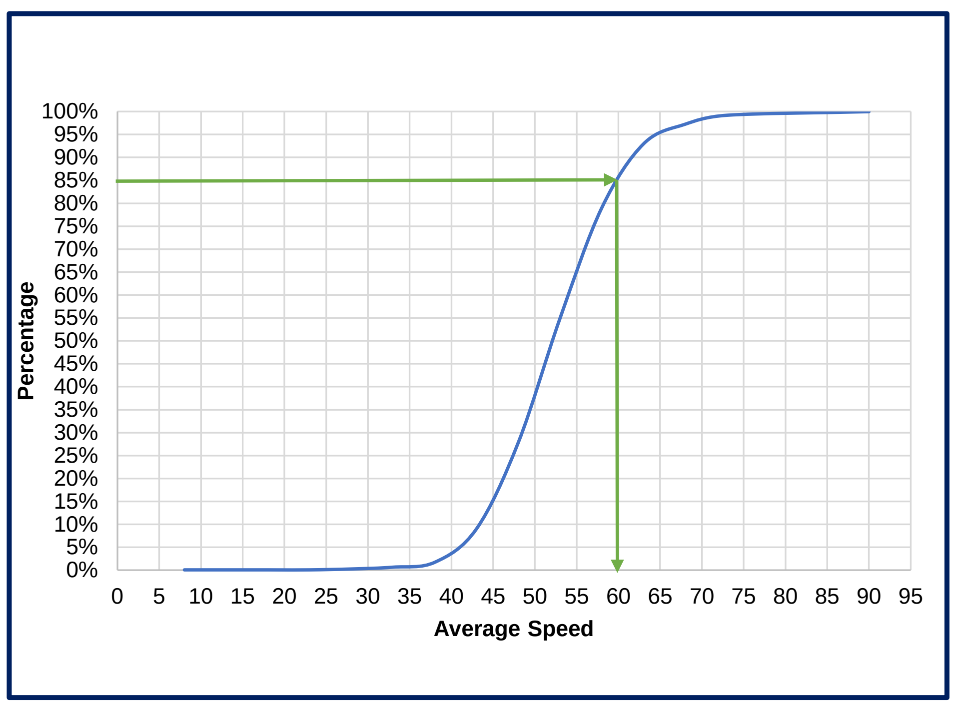


Figure 38. Cumulative Speed Distribution and 85th Percentile Speed – 24-hour Data on Southbound I-25 Exit-Ramp to US 380

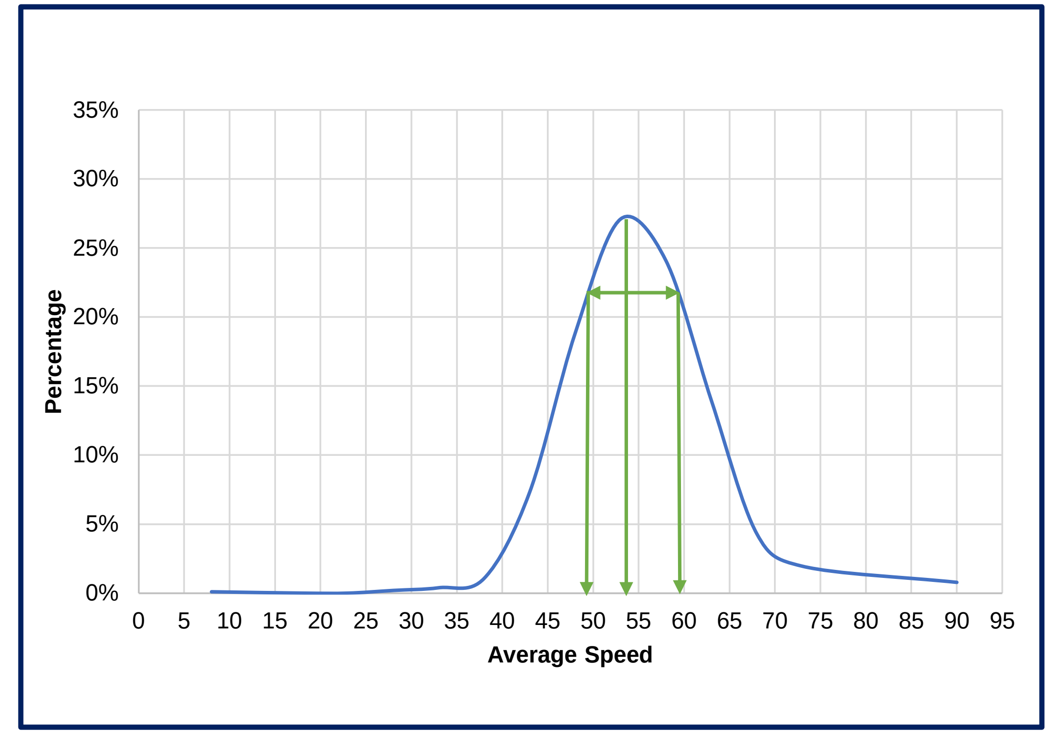


Figure 39. Speed Distribution, and Pace and Mode Speed – 24-Hour Data on Southbound I-25 Exit-Ramp to US 380

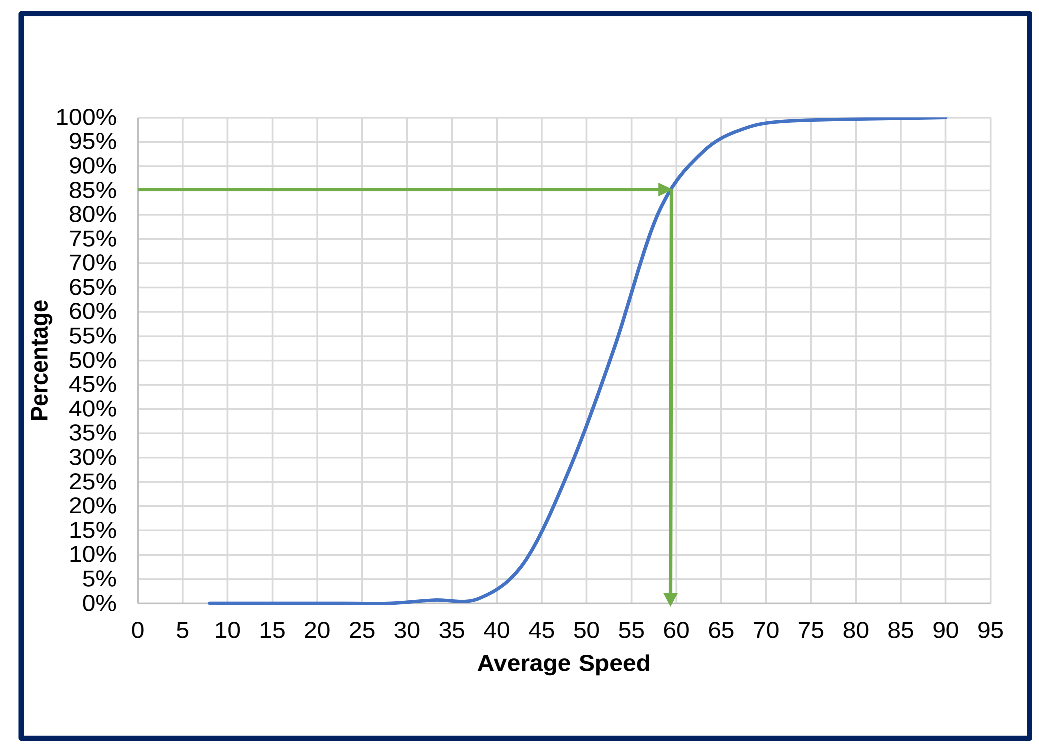


Figure 40. Cumulative Speed Distribution and 85th Percentile Speed – AM and PM Peak Periods on Southbound I-25 Exit-Ramp to US 380

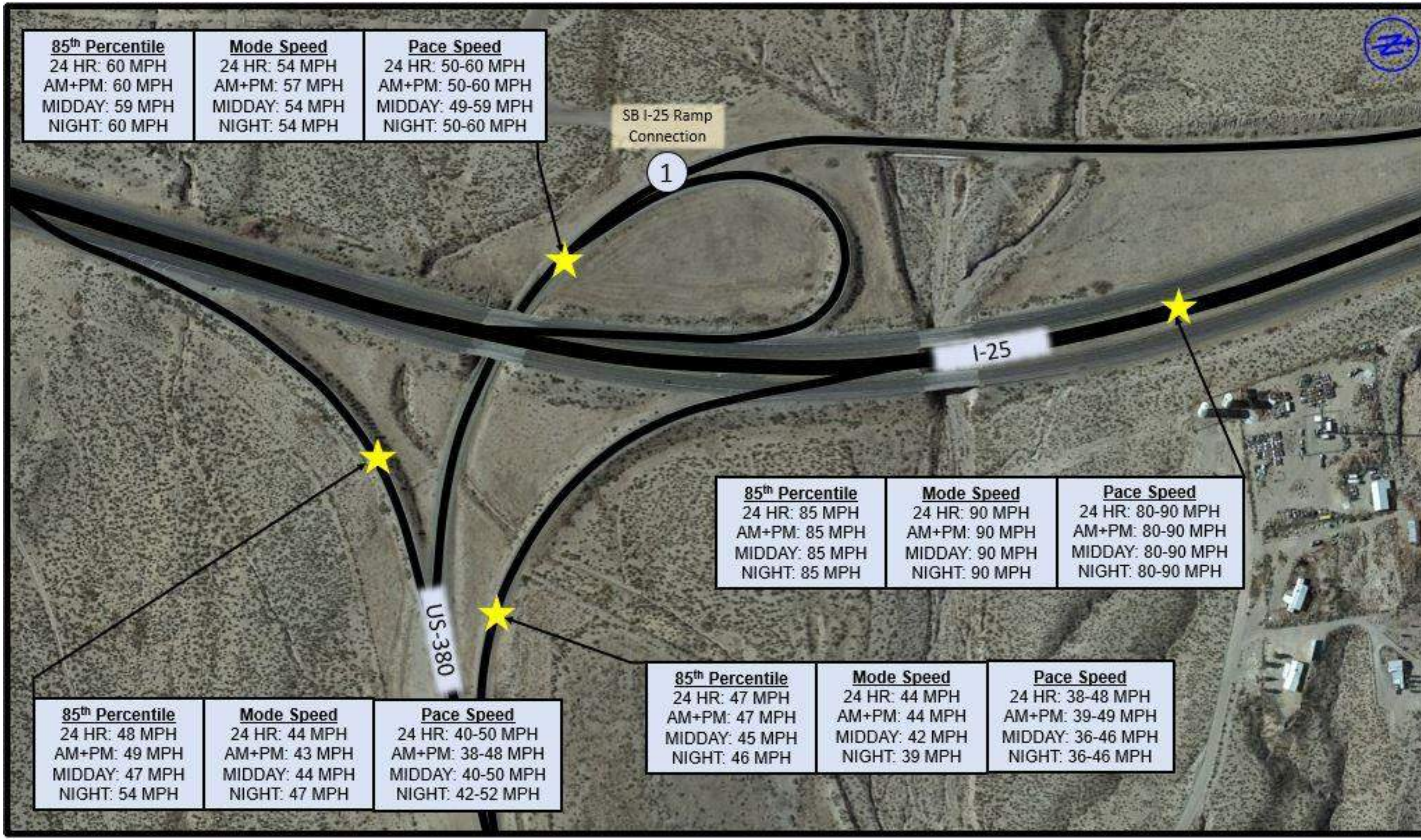


Figure 41. Critical Speed Study Parameters on I-25 San Antonio Interchange

Figure 42. Existing Posted Speed Limits around I-25 San Antonio Interchange

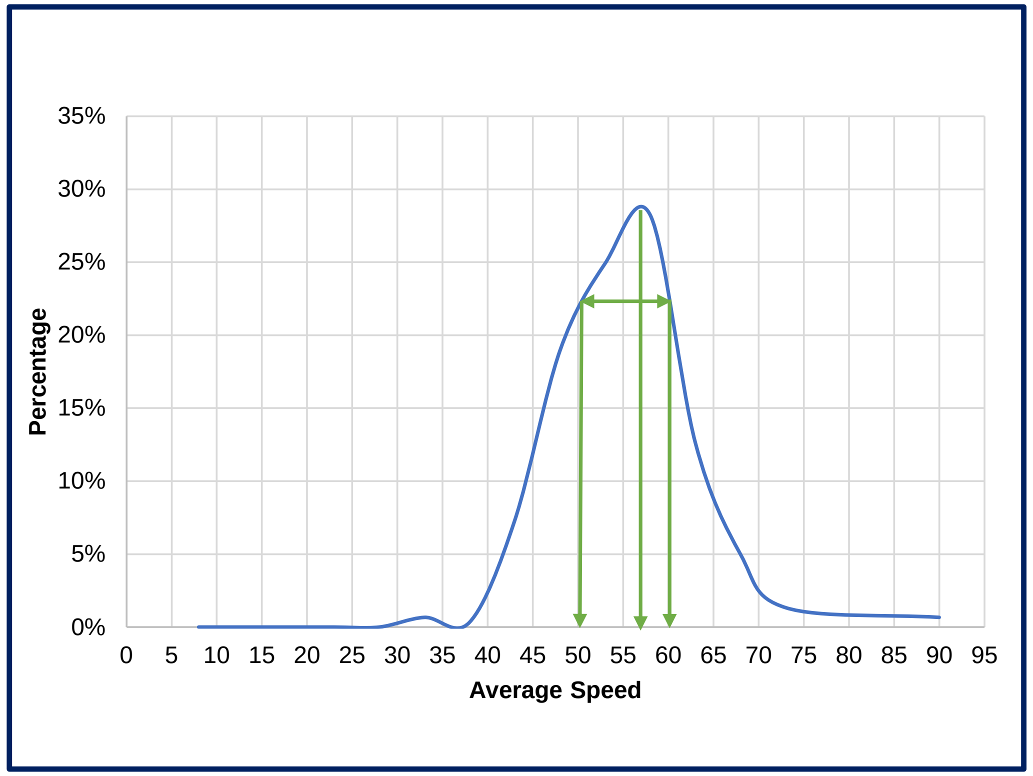


Figure 43. Speed Distribution, and Pace and Mode Speed – AM and PM Peak Periods on Southbound I-25 Exit-Ramp to US 380

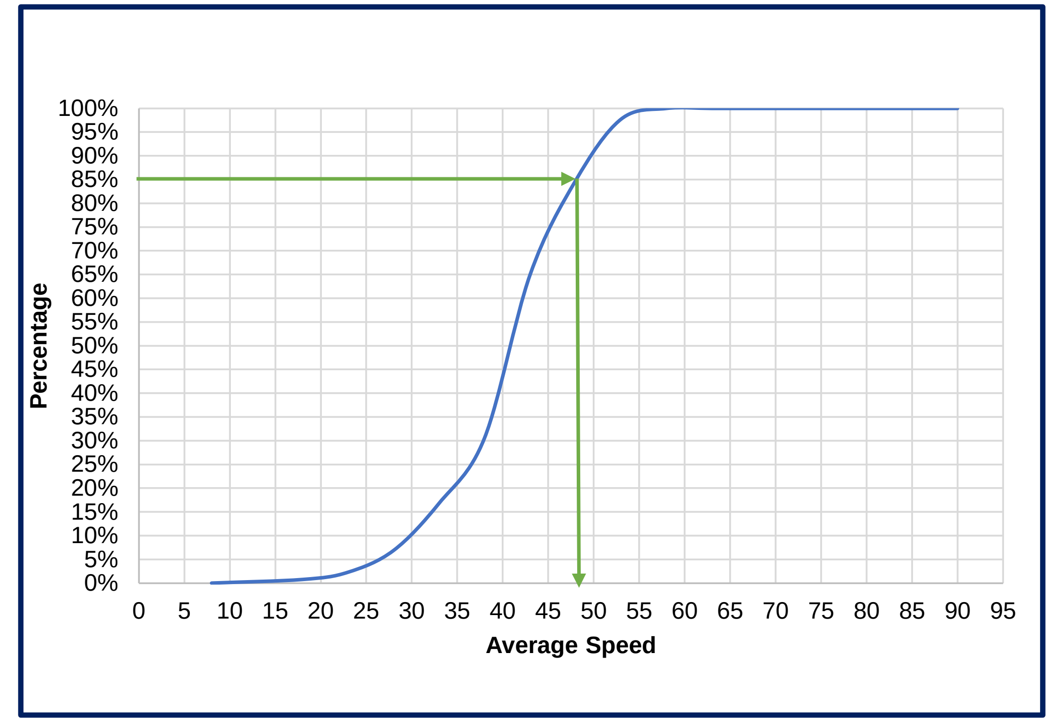


Figure 44. Cumulative Speed Distribution and 85th Percentile Speed – 24-Hour Data on Northbound I-25 Exit-Ramp to US 380

4.2. Northbound I-25 Exit-Ramp to US 380 Speed Analysis

On the northbound I-25 Exit-Ramp to the US 380, the 85th percentile speed was found to be 48 mph based on 24-hour data, whereas it is 43 mph, 49 mph, and 44 mph based on peak periods, midday, and nighttime, respectively. The mode speed found based on the 24-hour data is 44 mph, with similar speeds for peak periods and midday, while the nighttime mode speed is 47 mph. The pace speed is approximately 40-50 mph.

Refer to **Figure 44** and **Figure 45** for 24-hour 85th percentile and mode and pace speeds and to **Figure 46** and **Figure 47** for the AM and PM peak periods 85th percentile, and mode and pace speeds on the northbound I-25 Exit-Ramp to the US 380.

The midday and nighttime charts for the location are in ***Appendix G*** with the raw data.

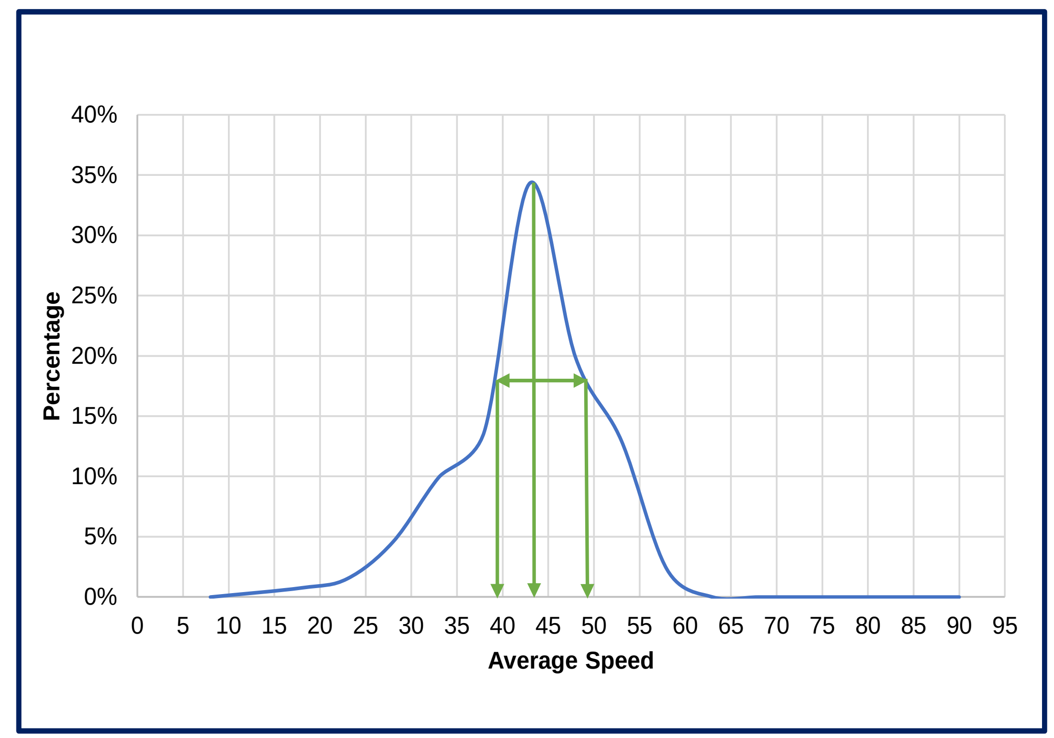


Figure 45. Speed Distribution, and Pace and Mode Speed – 24-Hour Data on Northbound I-25 Exit-Ramp to US 380

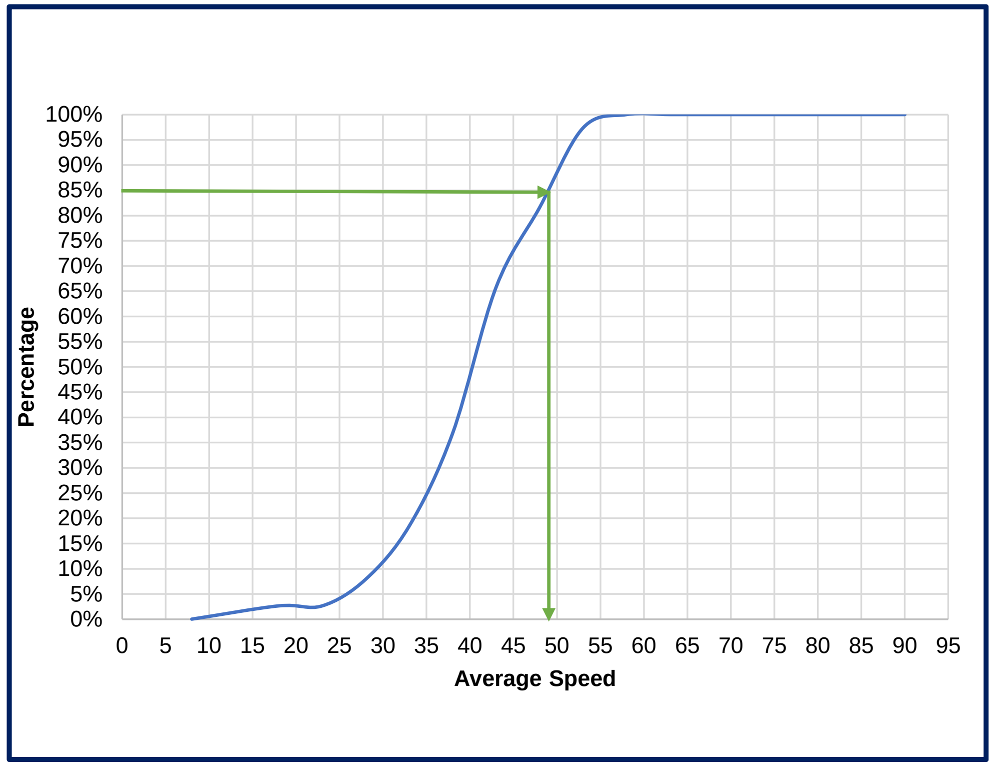


Figure 46. Cumulative Speed Distribution and 85th Percentile Speed – AM and PM Peak Periods on Northbound I-25 Exit-Ramp to US 380

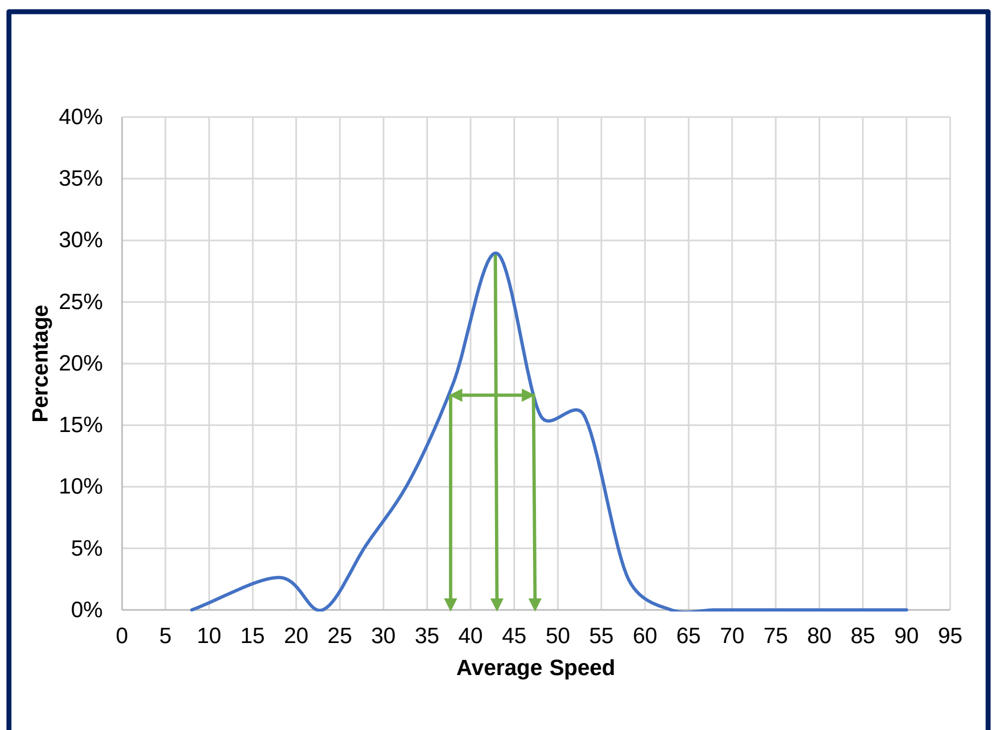


Figure 47. Speed Distribution, and Pace and Mode Speed – AM and PM Peak Periods on Northbound I-25 Exit-Ramp to US 380

4.3. Westbound US 380 Entrance-Ramp to Northbound I-25 Speed Analysis

On the westbound US 380 Entrance-Ramp to the northbound I-25, the 85th percentile speed was found to be 47 mph based on the 24-hour data, and between 45 mph and 46 mph depending on the time of day. The mode speed was found to be 44 mph for the 24-hour data and the peak periods, 42 mph during midday, and 39 mph during nighttime. The pace speeds were found to be 38-48 mph from the 24-hour data, 39-49 mph for the peak periods, and 36-46 mph for midday and nighttime.

Refer to **Figure 48** and **Figure 49** for 24-hour 85th percentile and mode and pace speeds, and to **Figure 50** and **Figure 51** for the AM and PM peak periods 85th percentile and mode and pace speeds for the westbound US 380 Entrance-Ramp to the northbound I-25.

As previously mentioned, for the brevity of the report the midday and nighttime charts will be in ***Appendix G*** with the raw detailed speed data.

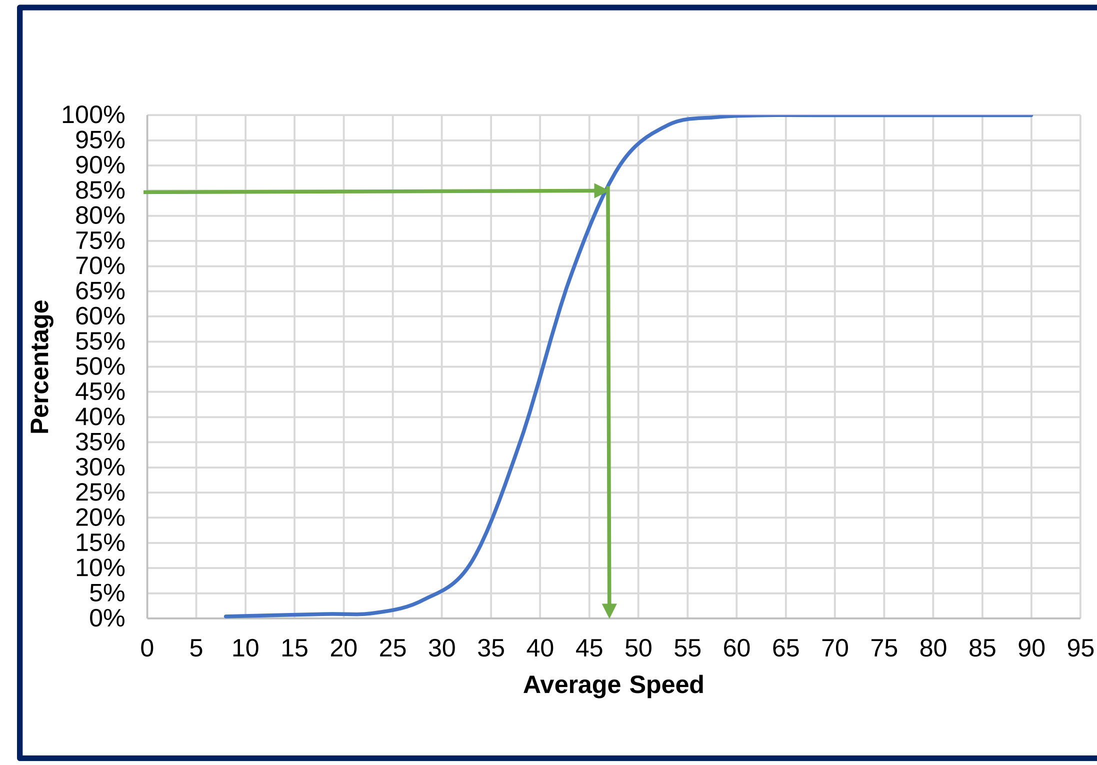


Figure 48. Cumulative Speed Distribution and 85th Percentile Speed – 24-Hour Data on Westbound US 380 Entrance-Ramp to Northbound I-25

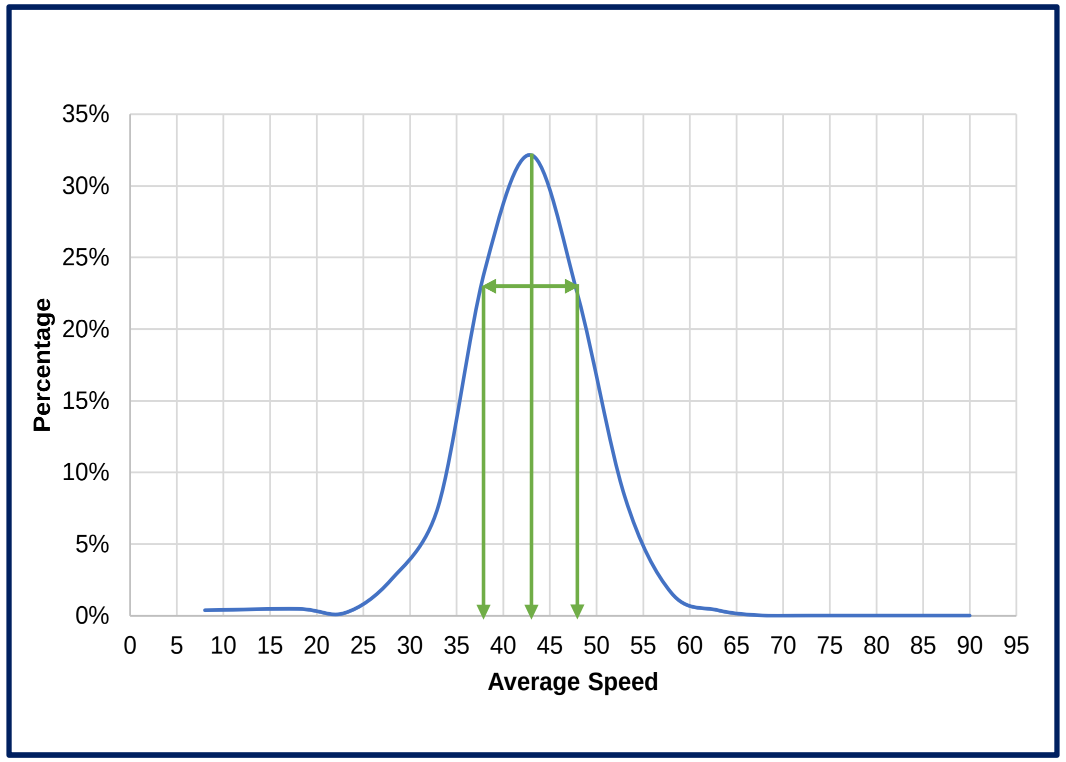


Figure 49. Speed Distribution, and Pace and Mode Speed – 24-Hour Data on Westbound US 380 Entrance-Ramp to Northbound I-25

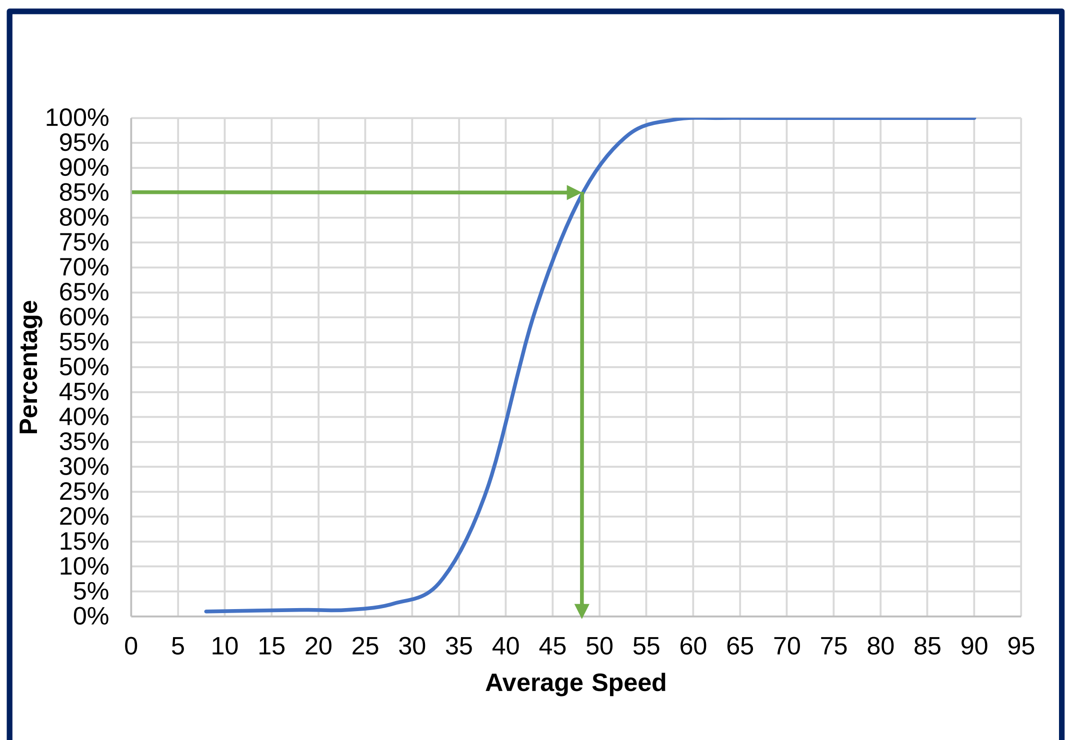


Figure 50. Cumulative Speed Distribution and 85th Percentile Speed – AM and PM Peak Periods on Westbound US 380 Entrance-Ramp to Northbound I-25

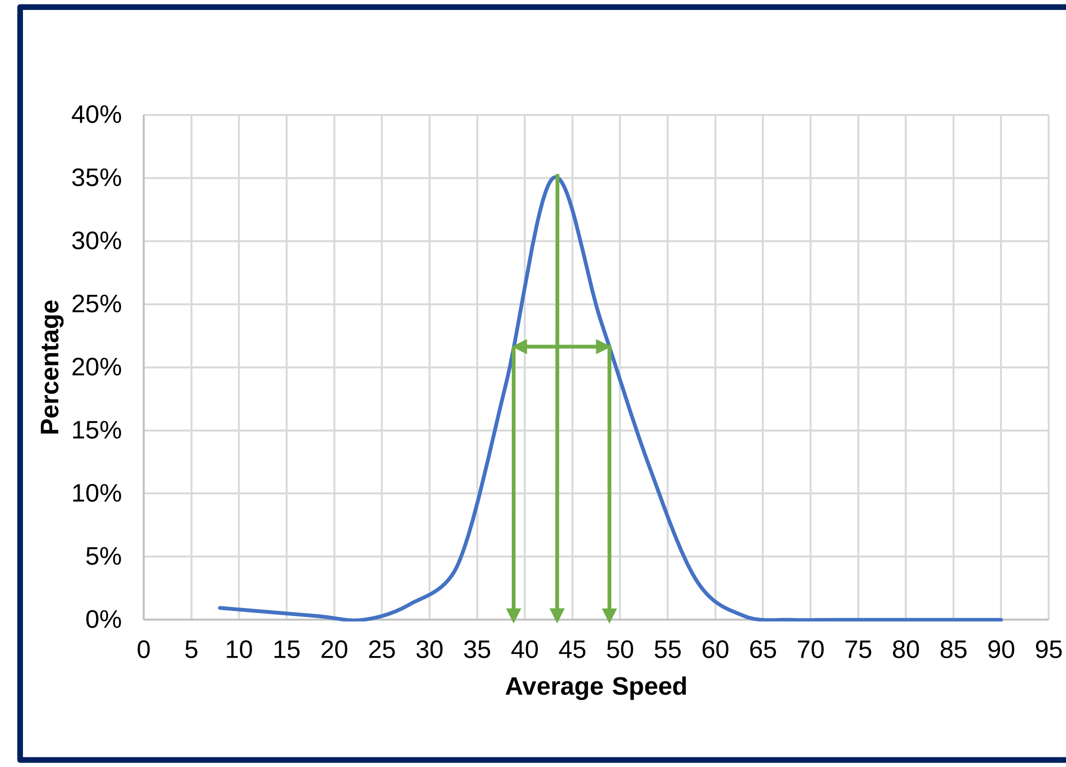


Figure 51. Speed Distribution, and Pace and Mode Speed – AM and PM Peak Periods on Westbound US 380 Entrance-Ramp to Northbound I-25

4.4. I-25 Mainline Speed Analysis

On the I-25 mainline, the 85th percentile speed was found to be 85 mph based on the 24-hour data, peak periods, midday, and nighttime. The mode speed was found to be 90 mph for the 24-hour data and the peak periods, midday, and nighttime. The pace speeds were found to be 80-90 mph during all the four time periods.

Refer to **Figure 52** and **Figure 53** for 24-hour 85th percentile and mode and pace speeds, and to **Figure 54** and **Figure 55** for the AM and PM peak periods 85th percentile and mode and pace speeds for the I-25 mainline.

As previously mentioned, for the brevity of the report the midday and nighttime charts will be in ***Appendix G*** with the raw detailed speed data.

Refer to **Figure 41** for the key parameters for the speed analysis at each of the four locations where speed data was collected.

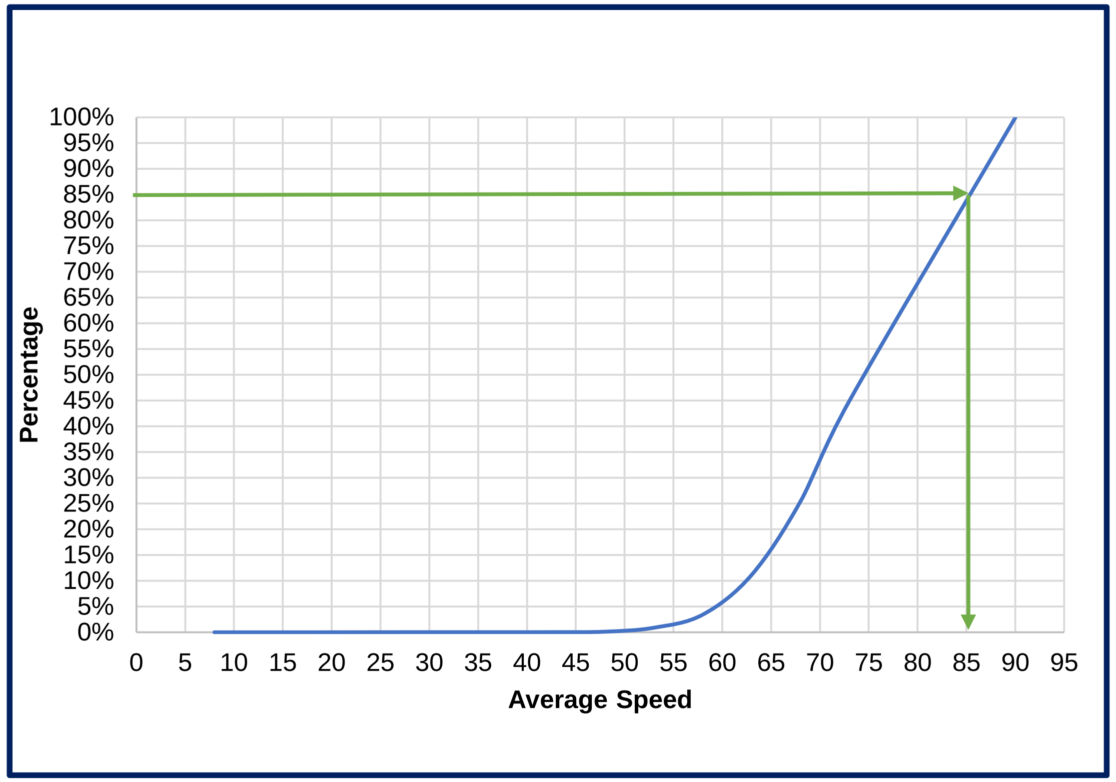


Figure 52. Cumulative Speed Distribution and 85th Percentile Speed – 24-Hour Data on I-25 Mainline

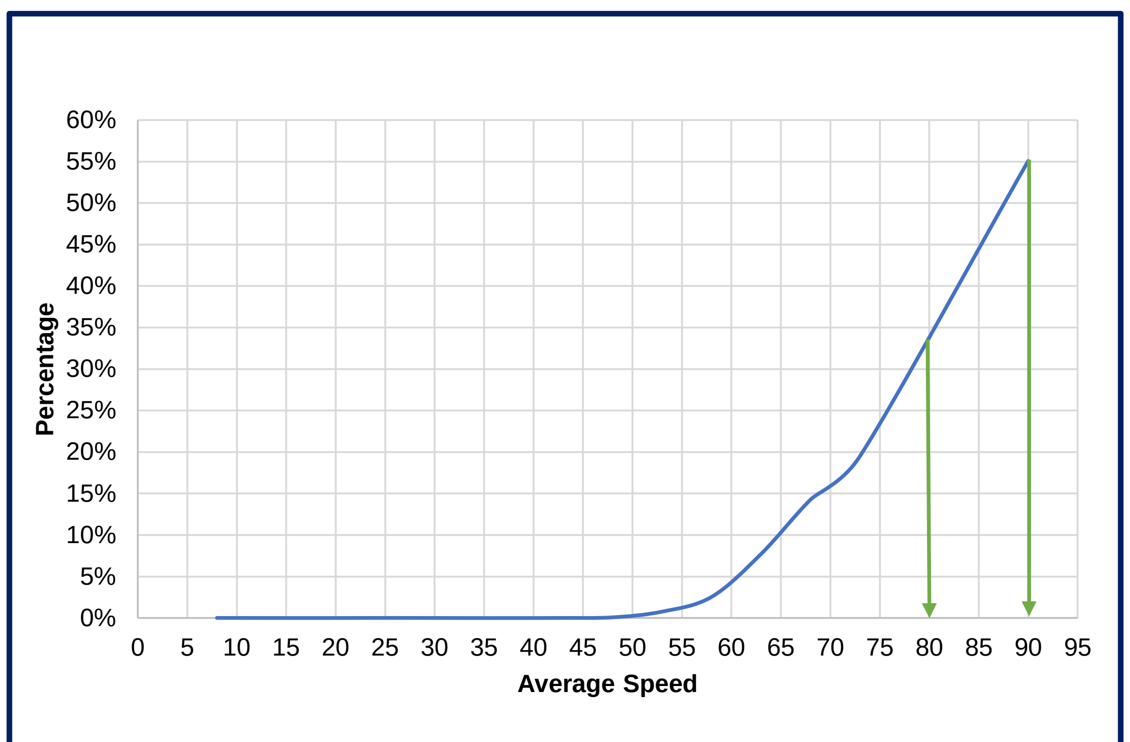


Figure 53. Speed Distribution, and Pace and Mode Speed – 24-Hour Data on I-25 Mainline

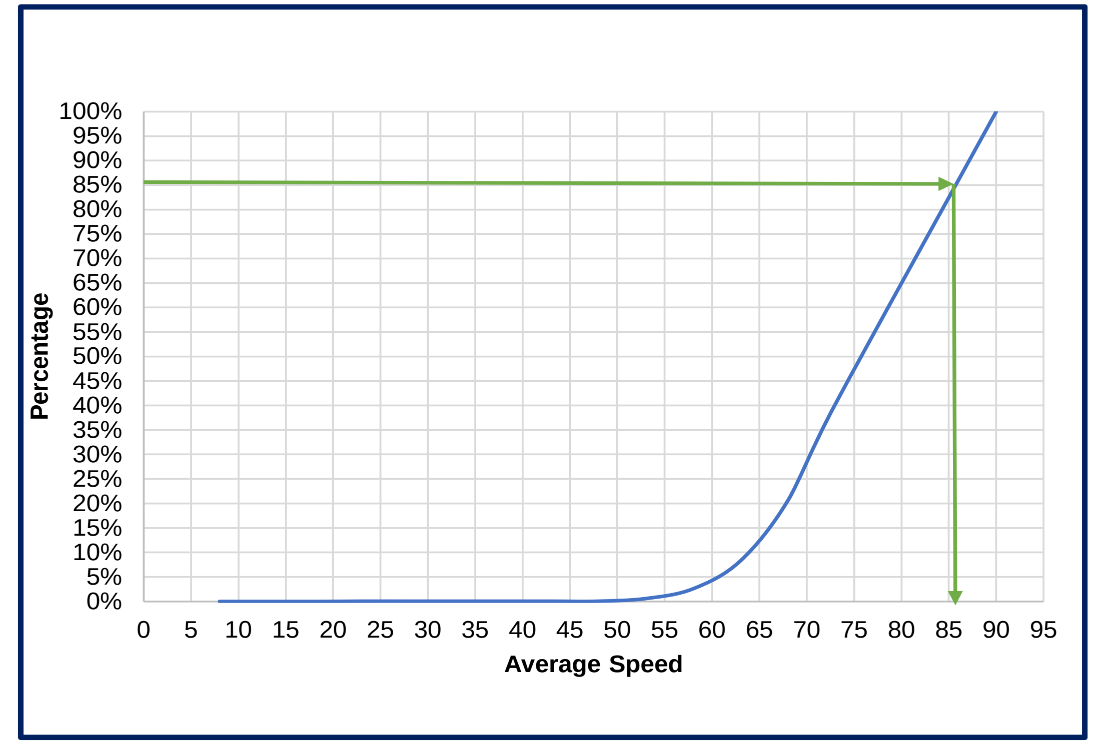


Figure 54. Cumulative Speed Distribution and 85th Percentile Speed – AM and PM Peak Periods on I-25 Mainline

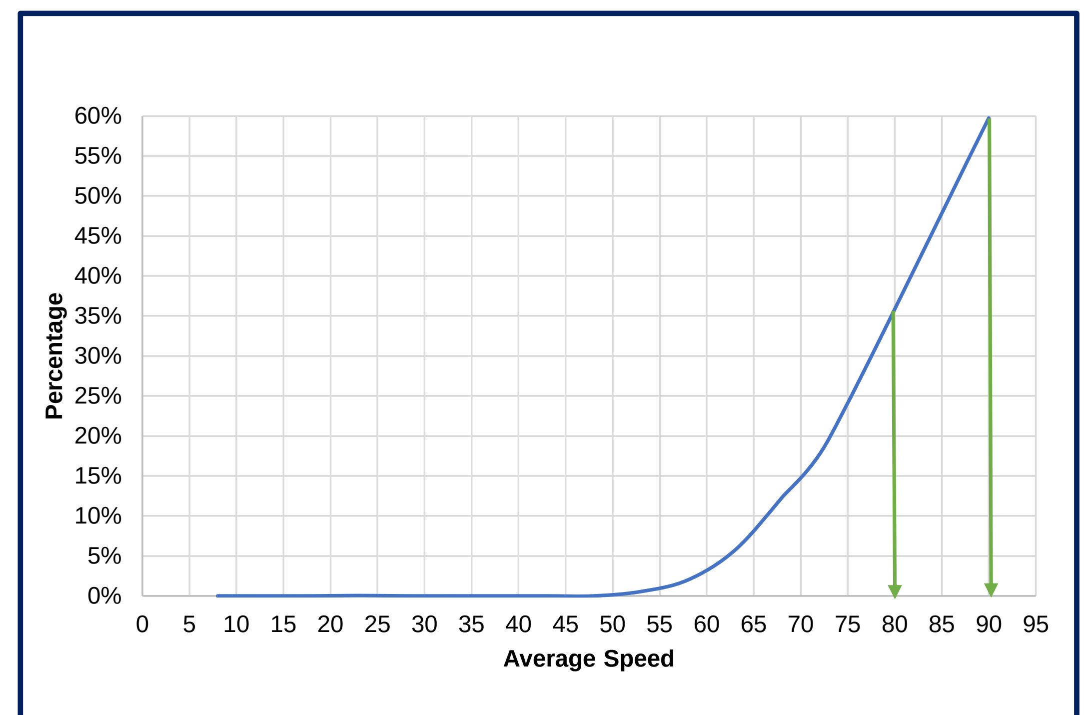


Figure 55. Speed Distribution, and Pace and Mode Speed – AM and PM Peak Periods on I-25 Mainline

5. TRAFFIC SAFETY ANALYSIS

5.1. Crash Data

The project team obtained 6 years of crash data (2015-2020) from NMDOT for this study. The team correlated the crash attributes with roadway geometry, operational condition, and other roadway features such as presence of streetlights. 5 crashes occurred on I-25 at the interchange with US-380 during this six-year timeframe in the project area. The locations of the 5 crashes can be found in **Figure 56 on Page 35.**

5.2. Safety Analysis for Intersections and Highway Segments

Out of the total 5 crashes, there was 1 injury crash and there were no fatal crashes. Two of the crashes were with an animal (one dog, and one deer), two of the crashes were with other vehicles, and one crash was with a fixed object (guardrail). Two of the crashes occurred during dark, not lighted, conditions, two of the crashes occurred during daylight, and one crash occurred during dusk lighting conditions. Four of the crashes occurred during clear or other weather conditions, while one crash occurred during windy conditions. The details of the 5 crashes can be found in **Figure 57.**

The recommended improvements as a result of this analysis and a description of the proposed project can be found in **Table 8.**

Table 8. Recommended Improvements by Project Location

Project Location	Description of the project
I-25 and US-380 Interchange	Install intersection lighting
	Improve guardrail
	Install guardrail object marker signage
	Improve animal fencing
	Install animal warning signage
	Install acceleration lanes

5.3. Safety Analysis with Highway Safety Manual (HSM) Procedure

A safety analysis was completed using HSM procedure, including reviewing crash data on an individual basis, determining proposed improvements/countermeasures, selecting applicable Crash Modification Factors (CMFs) or Crash Reduction Factors (CRFs) using the *cmfclearinghouse.org* website, and applying these factors to the appropriate number of crashes. A detailed account of proposed improvements, countermeasures, and CMFs can be found in **Table 9.**

Table 9. Proposed Countermeasures and CMFs

Proposed Improvements	Countermeasure	CMF ID	CMF	CRF (%)	Crash Type	Crash Severity	Roadway Type	Area Type	Rating	# of Crashes CMF Applies	Location of Proposed Improvements
Install intersection lighting	INSTALL INTERSECTION LIGHTING	10993	0.792	20.8	All	All	All	Rural	4 stars	2	I-25 and US 380 Interchange
	ILLUMINATION	575	0.8	20	All	Injury	All	Rural	3 stars	1	
	ILLUMINATION	496	0.69	31	All	Property Damage	Not specified	Not Specified	3 stars	1	
Enhance signage (speed limit signs)	INSTALL COMBINATION HORIZONTAL ALIGNMENT/ ADVISORY SPEED SIGNS	74	0.71	29	All	Property Damage	Not specified	Not specified	3 stars	3	

<u>Sources of CMFs:</u>
Install intersection lighting - https://www.cmfclearinghouse.org/detail.cfm?facid=10993
https://www.cmfclearinghouse.org/detail.cfm?facid=575
https://www.cmfclearinghouse.org/detail.cfm?facid=496
Enhance signage - https://www.cmfclearinghouse.org/detail.cfm?facid=74

Figure 56. Map Showing Crash Locations

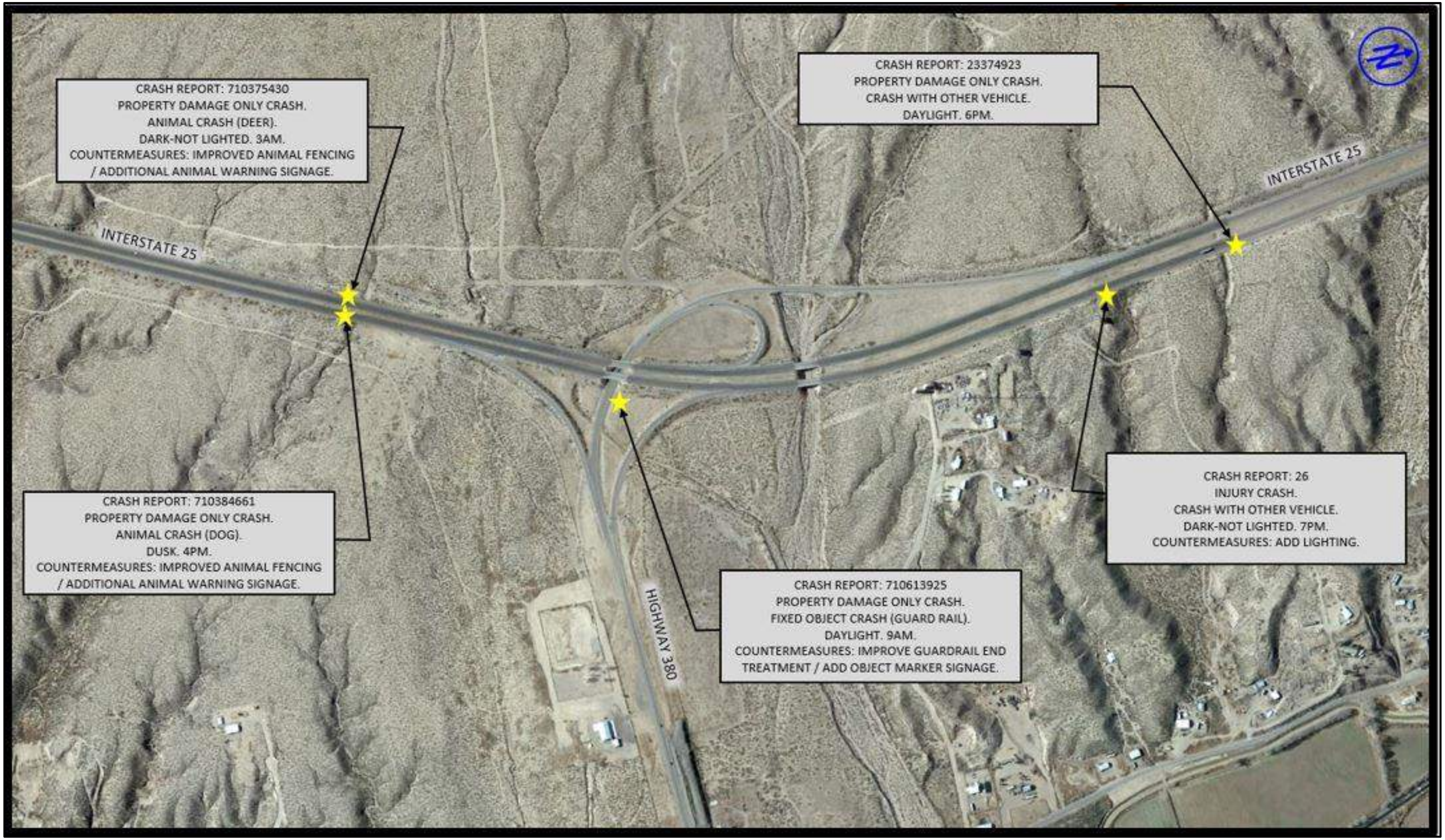


Figure 57. Crash Details and Potential Countermeasures

6. ACCELERATION AND DECELERATION LANE ANALYSES

Detailed acceleration/deceleration lane analyses were performed using the design speed, ramp grades, and other criterion as described in the AASHTO (American Association of State Highway and Transportation Officials) Green Book, 7th Edition. Assuming a maximum intersection grade of less than 3%, Tables 10-4 and 10-6 from the AASHTO Green Book, as shown in **Figure 58** and **Figure 59**, can be used to determine the minimum acceleration/deceleration lane lengths required.

6.1. Acceleration lanes

Based on the requirements in **Figure 58**, with a mainline design speed of 80 and ramp speeds of 50 for traditional ramps and 25 for cloverleaf ramps, the minimum length for acceleration lanes shall be as follows:

- Minimum of 980 feet for traditional ramps
- Minimum of 1750 feet for cloverleaf ramps

Table 10-4. Minimum Acceleration Lane Lengths for Entrance Terminals with Flat Grades of Less Than 3 Percent

U.S. Customary										
Acceleration Lane Length, L_a (ft) for Design Speed of Controlling Feature on Ramp, V' (mph)										
Highway		Stop Condition	15	20	25	30	35	40	45	50
Design Speed, V (mph)	Merge Speed, V_a (mph)	Average Running Speed (i.e., Initial Speed) at Controlling Feature on Ramp, V'_a (mph)								
		0	14	18	22	26	30	36	40	44
30	23	180	140	—	—	—	—	—	—	—
35	27	280	220	160	—	—	—	—	—	—
40	31	360	300	270	210	120	—	—	—	—
45	35	560	490	440	380	280	160	—	—	—
50	39	720	660	610	550	450	350	130	—	—
55	43	960	900	810	780	670	550	320	150	—
60	47	1200	1140	1100	1020	910	800	550	420	180
65	50	1410	1350	1310	1220	1120	1000	770	600	370
70	53	1620	1560	1520	1420	1350	1230	1000	820	580
75	55	1790	1730	1630	1580	1510	1420	1160	1040	780
80	57	2000	1900	1800	1750	1680	1600	1340	1240	980

Note: Uniform 50:1 to 70:1 tapers are recommended where lengths of acceleration lanes exceed 1,300 ft.
V = design speed of highway (mph)
V_a = merge speed (mph)
V' = design speed of controlling feature on ramp (mph)
V'_a = average running speed (i.e., initial speed) at controlling feature on ramp (mph)
L_a = acceleration lane length (ft)

Figure 58. Minimum Acceleration Lane Lengths, AASHTO Green Book

6.2. Deceleration lanes

Based on the requirements in **Figure 59**, with a mainline design speed of 80 and ramp speeds of 50 for traditional ramps and 25 for cloverleaf ramps, the minimum length for deceleration lanes shall be as follows:

- Minimum of 440 feet for traditional ramps
- Minimum of 645 feet for cloverleaf ramps

Table 10-6. Minimum Deceleration Lane Lengths for Exit Terminals with Flat Grades of Less Than 3 Percent

U.S. Customary										
Deceleration Lane Length, L_a (ft) for Design Speed of Controlling Feature on Ramp, V' (mph)										
Highway Design Speed, V (mph)	Diverge Speed, V_a (mph)	Stop Condition	15	20	25	30	35	40	45	50
		Average Running Speed at Controlling Feature on Ramp, V'_a (mph)								
		0	14	18	22	26	30	36	40	44
30	28	235	200	170	140	—	—	—	—	—
35	32	280	250	210	185	150	—	—	—	—
40	36	320	295	265	235	185	155	—	—	—
45	40	385	350	325	295	250	220	—	—	—
50	44	435	405	385	355	315	285	225	175	—
55	48	480	455	440	410	380	350	285	235	—
60	52	530	500	480	460	430	405	350	300	240
65	55	570	540	520	500	470	440	390	340	280
70	58	615	590	570	550	520	490	440	390	340
75	61	660	635	620	600	575	535	490	440	390
80	64	705	680	665	645	620	580	535	490	440

V = design speed of highway (mph)
V_a = average running speed on highway (i.e., diverge speed) (mph)
V' = design speed of controlling feature on ramp (mph)
V'_a = average running speed at controlling feature on ramp (mph)
L_a = deceleration lane length (ft)

Figure 59. Minimum Deceleration Lane Lengths, AASHTO Green Book

7. LIGHTING ANALYSES

Detailed lighting warrant analyses was performed based on AASHTO Lighting Guidelines. Refer to Table 10 for the AASHTO criteria. The team identified that the gore areas near southbound exit ramp and northbound entrance ramps on I-25 meet the partial lighting requirements. Refer to Figure 60 for the lighting layouts.

Table 10. AASHTO Partial Interchange Lighting

Case	Warranting Conditions
PIL-1	Where the total current ADT ramp traffic entereing and leaving the freeway within the interchange area exceeds 5,000 for urban conditions, 3,000 for suburban conditions, or 1,000 for rural conditions.
PIL-2	Where the current ADT on the freeway through traffic lanes exceeds 25,000 for urban conditions, 20,000 for suburban conditions, or 10,000 for rural conditions.
PIL-3	Where the ratio of nighttime to daytime crash rate within the interchange area is at least 1.25 times the statewide average for all unlighted similar sections, and a study indicates that the lighting may be expected to result in a significant reduction in the night crash rate. Where crash data are not available, rate comparison may be used as a general guideline for crash severity.

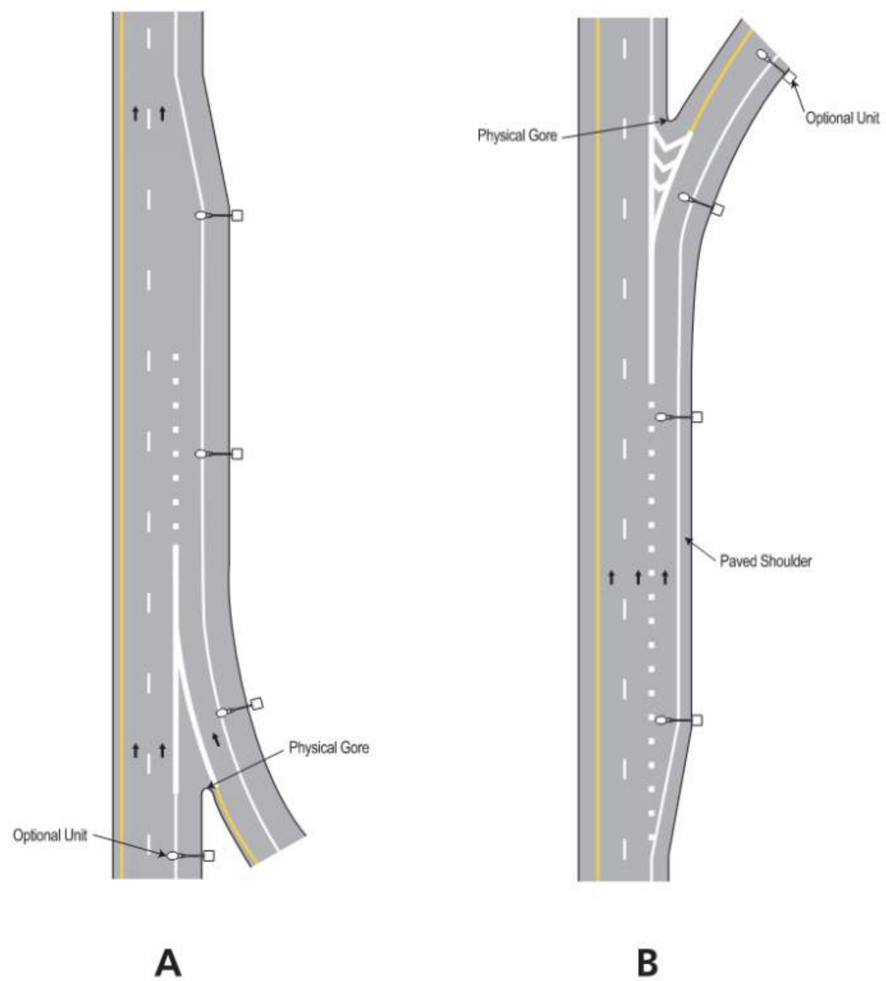


Figure 3-2. Typical Luminaire Locations: A) Entrance Ramp; B) Exit Ramp

Figure 60. AASHTO Partial Interchange Lighting Layout

8. RECOMMENDATIONS FOR IMPROVEMENTS

The study team identified the following recommendations for the facility improvements:

- As field observation identified deficiencies in acceleration lanes at the entrance ramps, it is recommended to provide sufficient acceleration lanes at least 980 feet per AASHTO on the entrance ramps for the merging traffic to gain the speed on I-25
- As field observation identified deficiencies in deceleration lanes at the entrance ramps, it is recommended to provide enough deceleration distance at least 440 feet per AASHTO for the exiting traffic to safety stop at the end of the exit ramp
- Provide lighting near gore area for SB exit ramp, and NB entrance ramp, as these locations meet the warrants and there are nighttime crashes
- Improve signage on both I-25 mainline with warning for animal crossings, as identified in the crash data review. Also improve the signage in the project area
- Improve pavement markings along with pavement condition
- Enhance guardrail end treatments to upgrade to current standard, as identified in crash data review

9. APPENDICES

Appendix A - Traffic Volume Data

Appendix B - Growth Factor Estimations

Appendix C - Vehicle Classification Data

Appendix D - Existing Operational Analysis

Appendix E - 2042 No-Build Operational Analysis

Appendix F - 2042 Build Operational Analysis

Appendix G - Speed Data

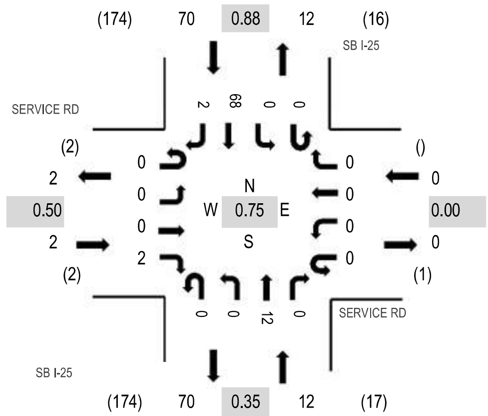
Appendix H - Crash Data

Appendix A – Traffic Volume Data

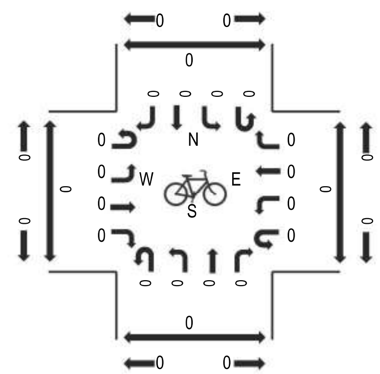
(303) 216-2439
www.alltrafficdata.net

Location: 1 SB I-25 & SERVICE RD AM
Date: Wednesday, May 4, 2022
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 08:00 AM - 08:15 AM

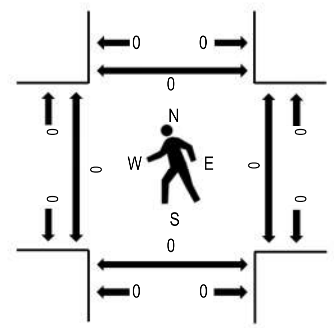
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

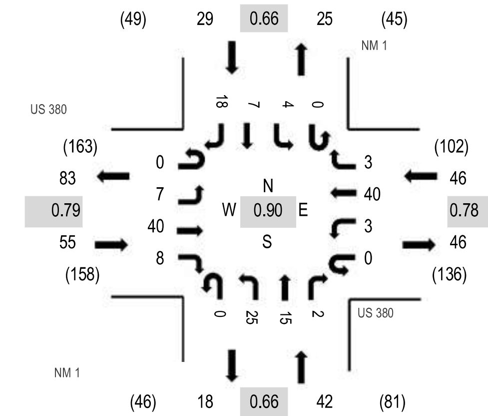
Traffic Counts - Motorized Vehicles

Interval Start Time	SERVICE RD Eastbound U-Turn	Left	Thru	Right	SERVICE RD Westbound U-Turn	Left	Thru	Right	SB I-25 Northbound U-Turn	Left	Thru	Right	SB I-25 Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	11	58	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	22	53	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	8	0	9	45	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	16	54	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	5	0	6	54	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	13	0	14	76	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	17	0	18	81	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	14	0	16	84	0	0	0	0
8:00 AM	0	0	0	1	0	0	0	0	0	0	10	0	0	0	16	1	28	81	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	1	19		0	0	0	0
8:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	20	0	21		0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	12	0	13		0	0	0	0
Count Total	0	0	0	2	0	0	0	0	0	0	16	1	0	0	172	2	193		0	0	0	0
Peak Hour	0	0	0	2	0	0	0	0	0	0	12	0	0	0	68	2	84		0	0	0	0

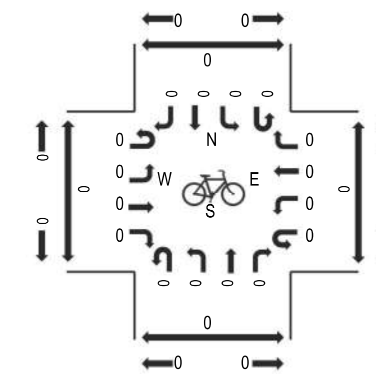
(303) 216-2439
www.alltrafficdata.net

Location: 2 NM 1 & US 380 AM
Date: Wednesday, May 4, 2022
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

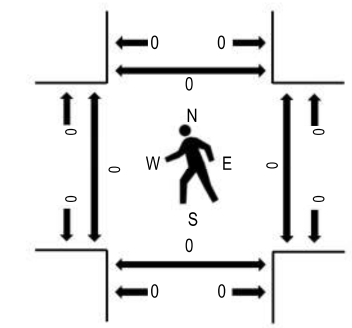
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

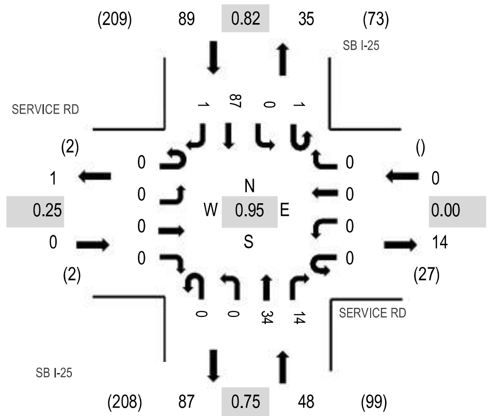
Traffic Counts - Motorized Vehicles

Interval Start Time	US 380 Eastbound U-Turn	Left	Thru	Right	US 380 Westbound U-Turn	Left	Thru	Right	NM 1 Northbound U-Turn	Left	Thru	Right	NM 1 Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
6:00 AM	0	0	8	3	0	0	1	0	0	1	0	0	0	1	1	0	15	92	0	0	0	0
6:15 AM	0	1	18	1	0	1	1	0	0	2	0	1	0	0	0	0	25	93	0	0	0	0
6:30 AM	0	0	7	2	0	1	4	1	0	5	2	1	0	1	0	0	24	101	0	0	0	0
6:45 AM	0	0	12	5	0	0	4	0	0	1	1	3	0	1	0	1	28	125	0	0	0	0
7:00 AM	0	1	5	0	0	0	3	0	0	5	1	0	0	0	0	1	16	145	0	0	0	0
7:15 AM	0	1	7	3	0	1	10	1	0	4	1	0	0	0	4	1	33	167	0	0	0	0
7:30 AM	0	1	9	1	0	0	9	1	0	10	6	0	0	1	4	6	48	172	0	0	0	0
7:45 AM	0	2	9	1	0	2	14	0	0	7	3	1	0	0	2	7	48	168	0	0	0	0
8:00 AM	0	0	10	2	0	1	10	1	0	4	5	1	0	0	1	3	38	153	0	0	0	0
8:15 AM	0	4	12	4	0	0	7	1	0	4	1	0	0	3	0	2	38		0	0	0	0
8:30 AM	0	2	15	2	0	0	12	0	0	5	4	0	0	2	0	2	44		0	0	0	0
8:45 AM	0	0	7	3	0	0	13	3	0	1	1	0	0	1	1	3	33		0	0	0	0
Count Total	0	12	119	27	0	6	88	8	0	49	25	7	0	10	13	26	390		0	0	0	0
Peak Hour	0	7	40	8	0	3	40	3	0	25	15	2	0	4	7	18	172		0	0	0	0

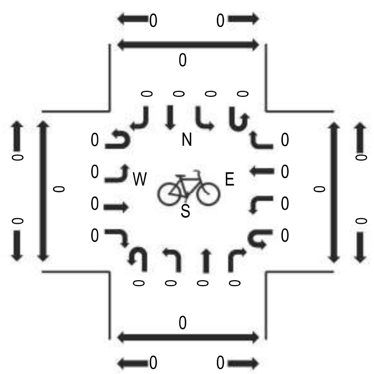
(303) 216-2439
www.alltrafficdata.net

Location: 1 SB I-25 & SERVICE RD PM
Date: Wednesday, May 4, 2022
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 04:45 PM - 05:00 PM

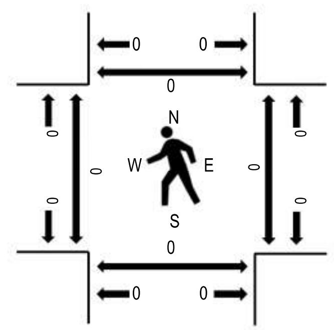
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

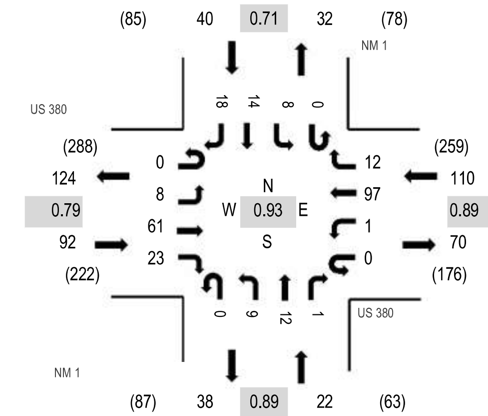
Traffic Counts - Motorized Vehicles

Interval Start Time	SERVICE RD Eastbound U-Turn	Left	Thru	Right	SERVICE RD Westbound U-Turn	Left	Thru	Right	SB I-25 Northbound U-Turn	Left	Thru	Right	SB I-25 Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
4:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	13	0	15	96	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	20	0	22	113	0	0	0	0
4:30 PM	0	0	0	2	0	0	0	0	0	0	4	0	0	0	17	0	23	127	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	11	5	0	0	19	1	36	137	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	10	4	1	0	17	0	32	123	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	6	3	0	0	27	0	36	111	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	7	2	0	0	24	0	33	98	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	5	1	0	0	16	0	22	83	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	7	2	0	0	11	0	20	91	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	5	3	1	0	14	0	23		0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	3	2	0	0	13	0	18		0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	10	5	0	0	15	0	30		0	0	0	0
Count Total	0	0	0	2	0	0	0	0	0	1	71	27	2	0	206	1	310		0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	34	14	1	0	87	1	137		0	0	0	0

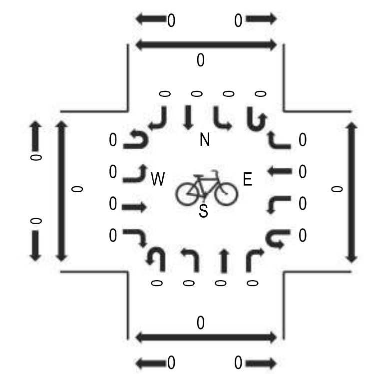
(303) 216-2439
www.alltrafficdata.net

Location: 2 NM 1 & US 380 PM
Date: Wednesday, May 4, 2022
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 04:30 PM - 04:45 PM

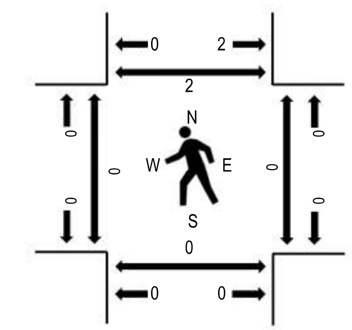
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	US 380 Eastbound U-Turn	Left	Thru	Right	US 380 Westbound U-Turn	Left	Thru	Right	NM 1 Northbound U-Turn	Left	Thru	Right	NM 1 Southbound U-Turn	Left	Thru	Right	Total	Rolling Hour	Pedestrian Crossings West	East	South	North
4:00 PM	0	1	13	4	0	1	19	1	0	0	2	1	0	3	1	3	49	230	0	0	0	0
4:15 PM	0	4	15	5	0	1	8	1	0	3	2	1	0	1	4	2	47	243	0	0	0	2
4:30 PM	0	4	14	3	0	0	28	3	0	2	3	0	0	3	4	7	71	264	0	0	0	0
4:45 PM	0	1	13	6	0	0	22	8	0	1	4	0	0	1	1	6	63	249	0	0	0	2
5:00 PM	0	1	15	6	0	1	23	1	0	3	2	1	0	2	5	2	62	229	0	0	0	0
5:15 PM	0	2	19	8	0	0	24	0	0	3	3	0	0	2	4	3	68	216	0	0	0	0
5:30 PM	0	5	10	5	0	0	18	4	0	3	3	1	0	4	2	1	56	195	0	0	0	0
5:45 PM	1	0	11	3	0	0	12	2	0	2	4	0	0	1	6	1	43	175	0	0	0	0
6:00 PM	0	2	9	3	0	1	24	3	0	1	1	0	0	3	2	0	49	170	0	0	0	0
6:15 PM	0	4	9	2	0	0	17	2	0	6	1	1	0	2	2	1	47		0	0	0	0
6:30 PM	0	2	6	1	0	1	17	0	0	4	0	2	0	0	1	2	36		0	0	0	0
6:45 PM	0	0	12	3	0	0	17	0	0	1	2	0	0	1	1	1	38		0	0	0	0
Count Total	1	26	146	49	0	5	229	25	0	29	27	7	0	23	33	29	629		0	0	0	4
Peak Hour	0	8	61	23	0	1	97	12	0	9	12	1	0	8	14	18	264		0	0	0	2

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Site Code: 7
SB I-25 TO US380 OFF RAMP

Start Time	04-May-22 Wed	SB								
12:00 AM		0								
01:00		1								
02:00		3								
03:00		4								
04:00		10								
05:00		49								
06:00		57								
07:00		49								
08:00		68								
09:00		**76**								
10:00		66								
11:00		51								
12:00 PM		70								
01:00		65								
02:00		64								
03:00		70								
04:00		73								
05:00		**84**								
06:00		53								
07:00		43								
08:00		30								
09:00		17								
10:00		11								
11:00		12								
Total		1026								
AM Peak	-	09:00	-	-	-	-	-	-	-	-
Vol.	-	76	-	-	-	-	-	-	-	-
PM Peak	-	17:00	-	-	-	-	-	-	-	-
Vol.	-	84	-	-	-	-	-	-	-	-
Grand Total		1026								
ADT		ADT 1,026		AADT 1,026						

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Site Code: 8
NB I-25 TO US380 OFF RAMP

Start Time	04-May-22 Wed	NB								
12:00 AM		1								
01:00		1								
02:00		0								
03:00		1								
04:00		0								
05:00		2								
06:00		3								
07:00		2								
08:00		6								
09:00		10								
10:00		11								
11:00		**12**								
12:00 PM		10								
01:00		**15**								
02:00		9								
03:00		8								
04:00		12								
05:00		10								
06:00		5								
07:00		8								
08:00		1								
09:00		0								
10:00		3								
11:00		1								
Total		131								
AM Peak	-	11:00	-	-	-	-	-	-	-	-
Vol.	-	12	-	-	-	-	-	-	-	-
PM Peak	-	13:00	-	-	-	-	-	-	-	-
Vol.	-	15	-	-	-	-	-	-	-	-
Grand Total		131								
ADT		ADT 131		AADT 131						

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Site Code: 9
WB US380 TO NB I-25 ON RAMP

Start Time	04-May-22 Wed	WB								
12:00 AM		4								
01:00		4								
02:00		0								
03:00		4								
04:00		6								
05:00		16								
06:00		21								
07:00		80								
08:00		66								
09:00		59								
10:00		**81**								
11:00		73								
12:00 PM		71								
01:00		87								
02:00		83								
03:00		**88**								
04:00		73								
05:00		58								
06:00		55								
07:00		54								
08:00		37								
09:00		25								
10:00		11								
11:00		11								
Total		1067								
AM Peak	-	10:00	-	-	-	-	-	-	-	-
Vol.	-	81	-	-	-	-	-	-	-	-
PM Peak	-	15:00	-	-	-	-	-	-	-	-
Vol.	-	88	-	-	-	-	-	-	-	-
Grand Total		1067								
ADT		ADT 1,067		AADT 1,067						

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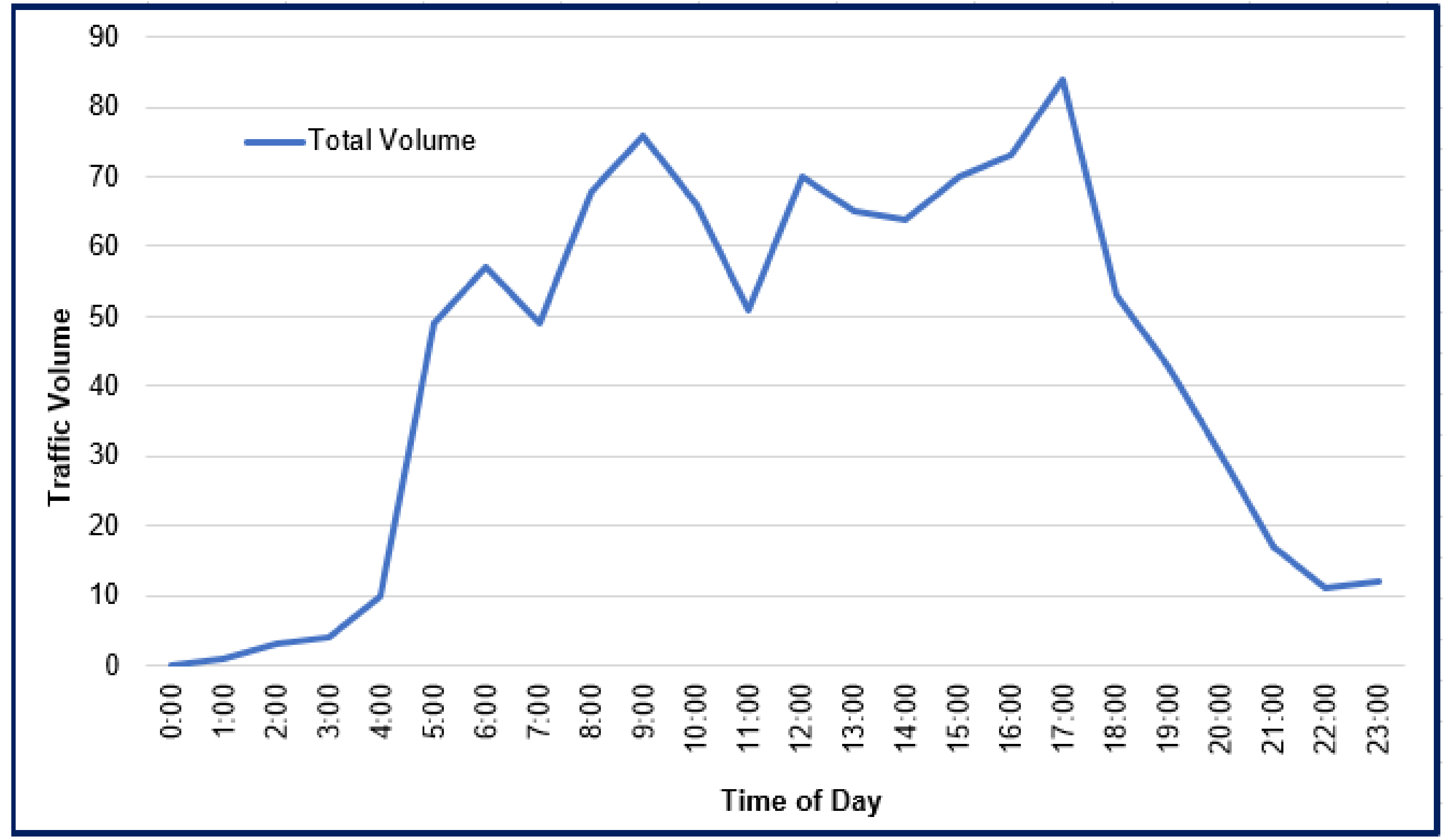
Site Code: 10
I-25 AT US380 MAINLINE

Start Time	04-May-22 Wed	NB LANE 1	NB LANE 2	SB LANE 1	SB LANE 2					Total
12:00 AM		41	6	57	10					114
01:00		39	5	47	5					96
02:00		23	2	35	3					63
03:00		27	2	44	4					77
04:00		30	3	53	7					93
05:00		56	9	89	13					167
06:00		66	10	129	23					228
07:00		163	24	172	31					390
08:00		157	24	208	37					426
09:00		213	33	234	41					521
10:00		216	32	207	36					491
11:00		**241**	**40**	**245**	**42**					**568**
12:00 PM		**281**	45	237	40					603
01:00		266	43	227	41					577
02:00		266	43	191	35					535
03:00		280	**46**	257	43					626
04:00		275	43	**266**	**47**					**631**
05:00		219	34	253	45					551
06:00		218	35	179	31					463
07:00		190	29	156	27					402
08:00		126	19	112	20					277
09:00		106	16	79	11					212
10:00		91	14	60	9					174
11:00		69	12	61	11					153
Total		3659	569	3598	612					8438
Percent		43.4%	6.7%	42.6%	7.3%					
AM Peak	-	11:00	11:00	11:00	11:00	-	-	-	-	11:00
Vol.	-	241	40	245	42	-	-	-	-	568
PM Peak	-	12:00	15:00	16:00	16:00	-	-	-	-	16:00
Vol.	-	281	46	266	47	-	-	-	-	631
Grand Total		3659	569	3598	612					8438
Percent		43.4%	6.7%	42.6%	7.3%					
ADT		ADT 8,438		AADT 8,438						

Southbound I-25 to US 380 Exit Ramp

24-Hour Southbound

Time of Day	Traffic Volume
0:00	0
1:00	1
2:00	3
3:00	4
4:00	10
5:00	49
6:00	57
7:00	49
8:00	68
9:00	76
10:00	66
11:00	51
12:00	70
13:00	65
14:00	64
15:00	70
16:00	73
17:00	84
18:00	53
19:00	43
20:00	30
21:00	17
22:00	11
23:00	12
Total	1026

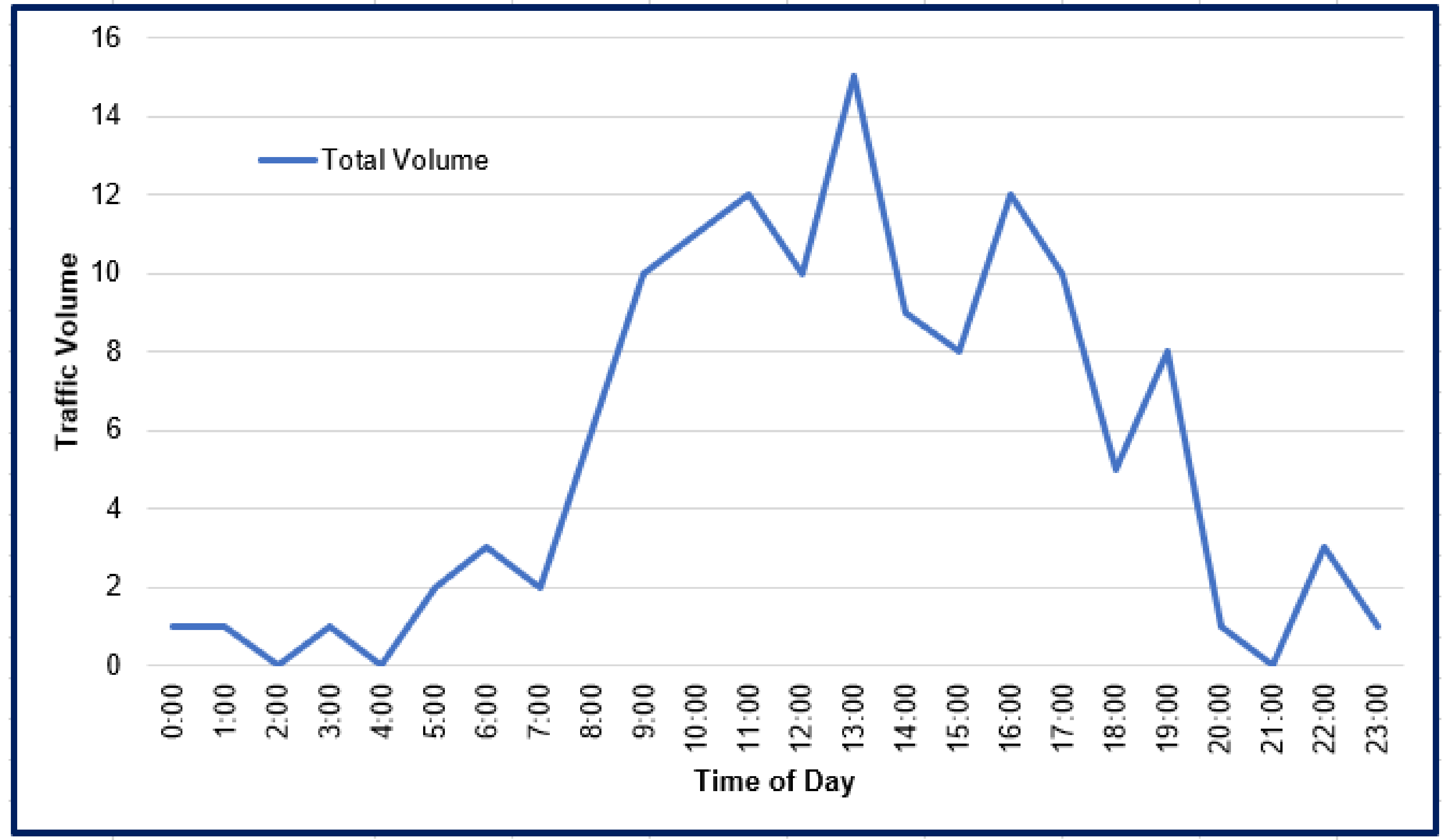


Traffic Volume Distribution on Southbound I-25 to US 380 Exit Ramp

Northbound I-25 to US 380 Exit Ramp

24-Hour Northbound

Time of Day	Traffic Volume
0:00	1
1:00	1
2:00	0
3:00	1
4:00	0
5:00	2
6:00	3
7:00	2
8:00	6
9:00	10
10:00	11
11:00	12
12:00	10
13:00	15
14:00	9
15:00	8
16:00	12
17:00	10
18:00	5
19:00	8
20:00	1
21:00	0
22:00	3
23:00	1
Total	131

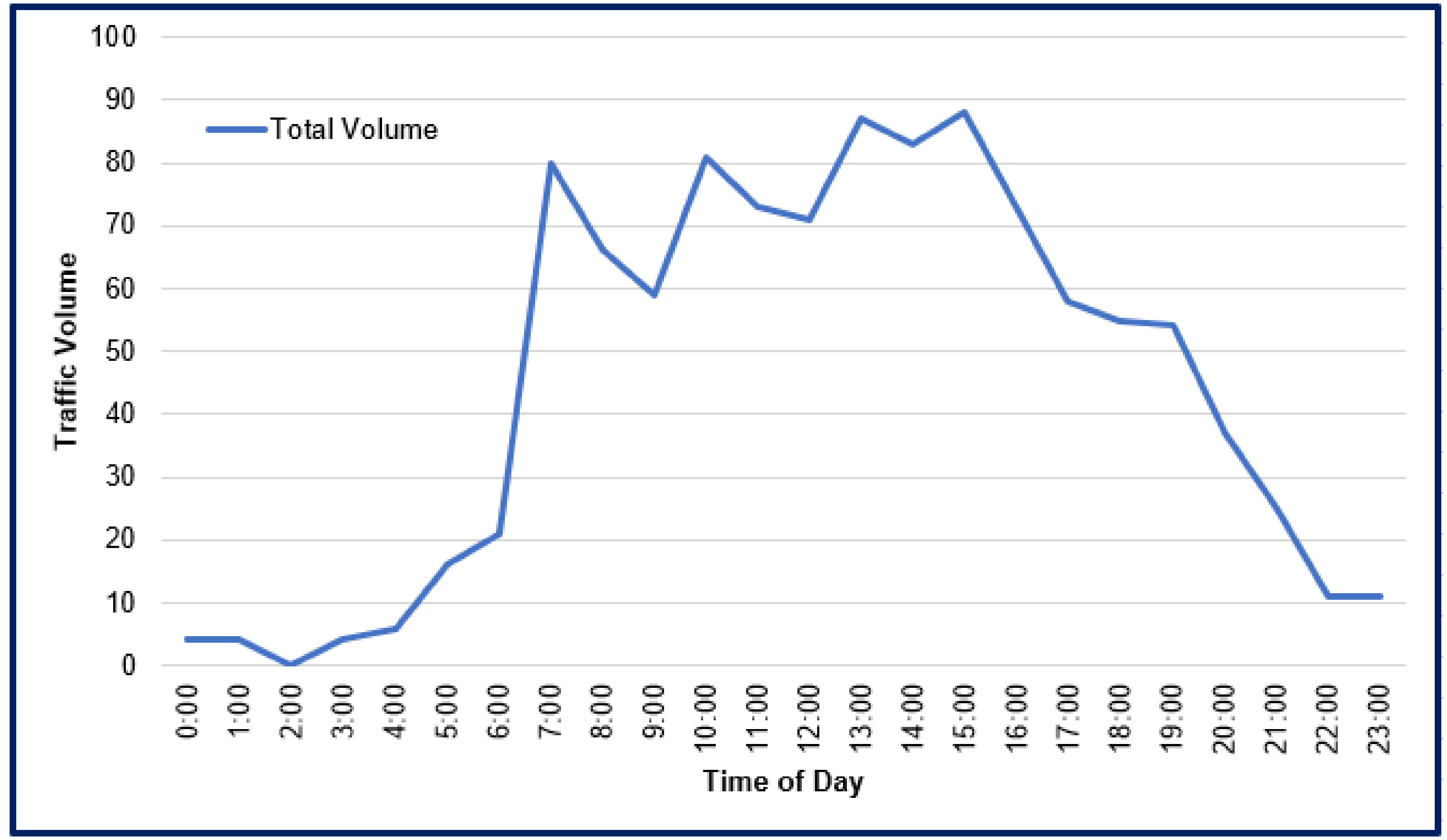


Traffic Volume Distribution on Northbound I-25 to US 380 Exit Ramp

Westbound US 380 to Northbound I-25 Entrance Ramp

24-Hour Westbound/Northbound

Time of Day	Traffic Volume
0:00	4
1:00	4
2:00	0
3:00	4
4:00	6
5:00	16
6:00	21
7:00	80
8:00	66
9:00	59
10:00	81
11:00	73
12:00	71
13:00	87
14:00	83
15:00	88
16:00	73
17:00	58
18:00	55
19:00	54
20:00	37
21:00	25
22:00	11
23:00	11
Total	1067



Traffic Volume Distribution on Westbound US 380 to Northbound I-25 Entrance Ramp

I-25 at US 380 Mainline

24-Hour Total Volume

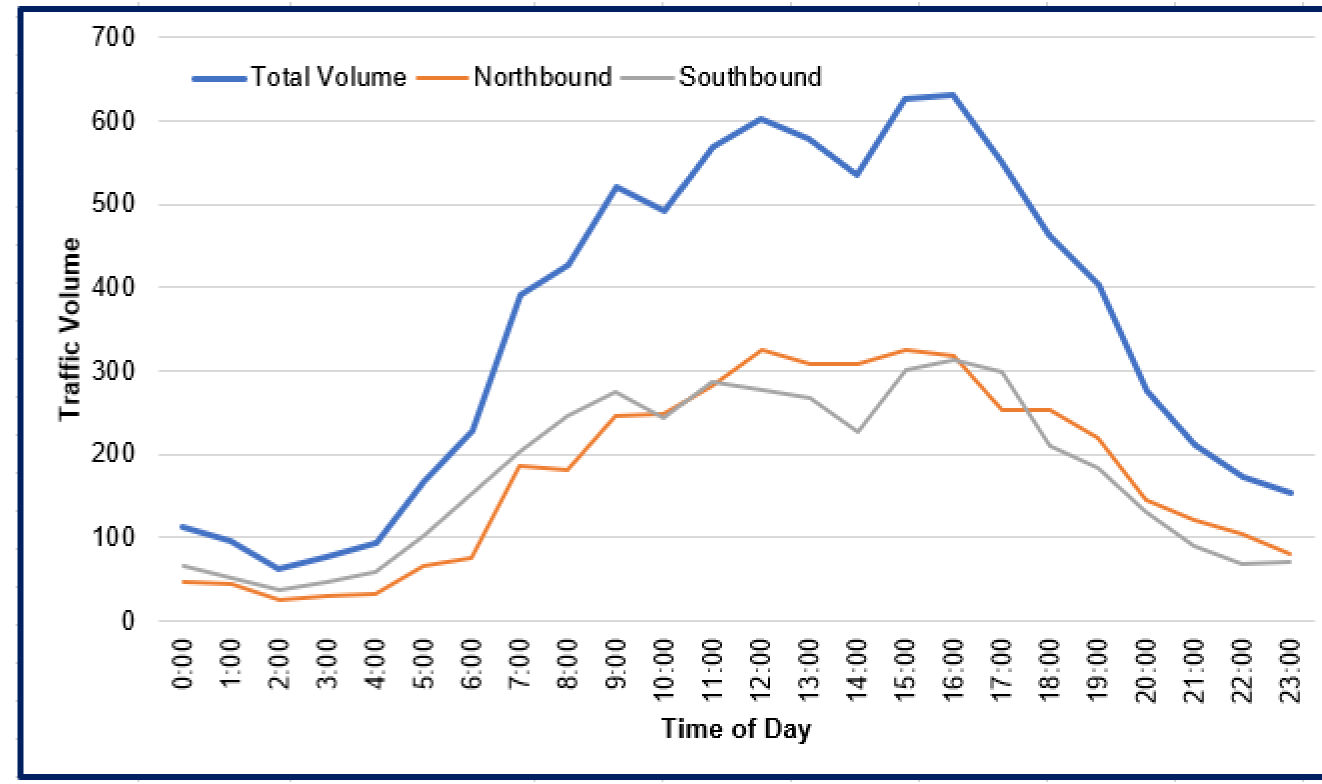
Time of Day	Traffic Volume
0:00	114
1:00	96
2:00	63
3:00	77
4:00	93
5:00	167
6:00	228
7:00	390
8:00	426
9:00	521
10:00	491
11:00	568
12:00	603
13:00	577
14:00	535
15:00	626
16:00	631
17:00	551
18:00	463
19:00	402
20:00	277
21:00	212
22:00	174
23:00	153
Total	8438

24-Hour Northbound

Time of Day	Traffic Volume
0:00	47
1:00	44
2:00	25
3:00	29
4:00	33
5:00	65
6:00	76
7:00	187
8:00	181
9:00	246
10:00	248
11:00	281
12:00	326
13:00	309
14:00	309
15:00	326
16:00	318
17:00	253
18:00	253
19:00	219
20:00	145
21:00	122
22:00	105
23:00	81
Total	4228

24-Hour Southbound

Time of Day	Traffic Volume
0:00	67
1:00	52
2:00	38
3:00	48
4:00	60
5:00	102
6:00	152
7:00	203
8:00	245
9:00	275
10:00	243
11:00	287
12:00	277
13:00	268
14:00	226
15:00	300
16:00	313
17:00	298
18:00	210
19:00	183
20:00	132
21:00	90
22:00	69
23:00	72
Total	4210



Traffic Volume Distribution on I-25 at US 380 Mainline

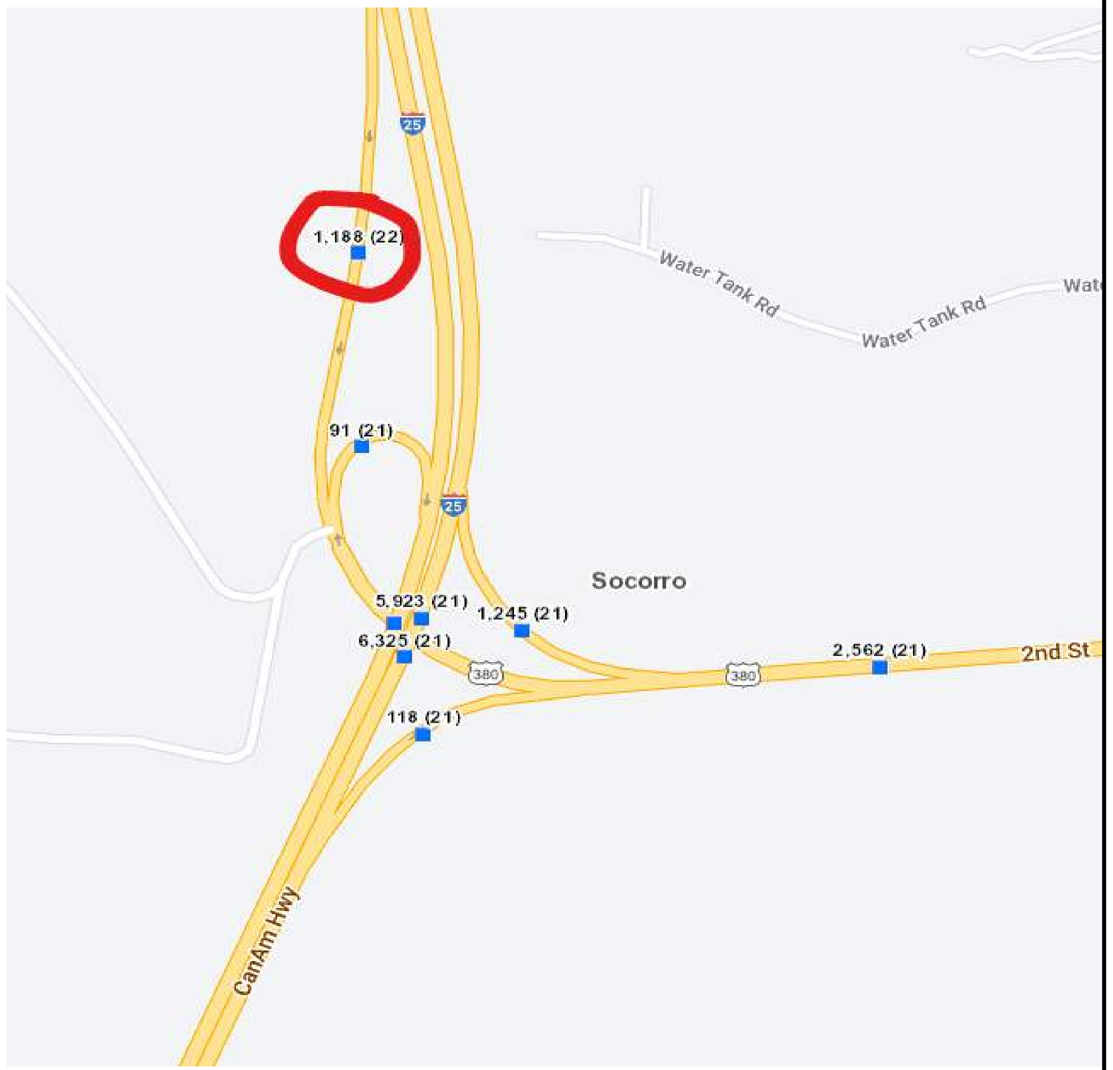
Appendix B – Growth Factor Estimations

Appendix B – Growth Factor Estimations

Location	Description	Year	Volume	Annual Growth	Comment	Data Source
A	I-25 SB to US-380 off-ramp	2022-Feb	959	7.0%	seasonal/ daily variance	NMDOT MS2 Location ID 10491
		2022-May	1026			ATDS Counts
B	I-25 NB to US-380 off-ramp	2014	102	3.1%		NMDOT MS2 Location ID 10050
		2022	131			ATDS Counts
C	US-380 WB to I-25 NB on-ramp	2019	1022	1.5%		NMDOT MS2 Location ID 10268
		2022	1067			ATDS Counts
D	I-25 SB at US-380	2019	3177	9.8%	Applied 50% directional split	NMDOT MS2 Location ID 18537
		2022	4210			ATDS Counts
E	I-25 NB at US-380	2019	3177	10.0%	Applied 50% directional split	NMDOT MS2 Location ID 18537
		2022	4228			ATDS Counts
F	I-25 SB Exit 147 off-ramp	2022	428	1.2%	seasonal/ daily variance	NMDOT MS2 Location ID 10492
		2022	433			ATDS Counts
G	Exit 147 on-ramp to I-25 SB	2021	844	-16.6%		NMDOT MS2 Location ID 10718
		2022	704			ATDS Counts
H	Exit 147 on-ramp to I-25 NB	2019	530	2.6%		NMDOT MS2 Location ID 10269
		2022	572			ATDS Counts
I	I-25 NB Exit 147 off-ramp	2022	837	4.5%	seasonal/ daily variance	NMDOT MS2 Location ID 10051
		2022	874			ATDS Counts

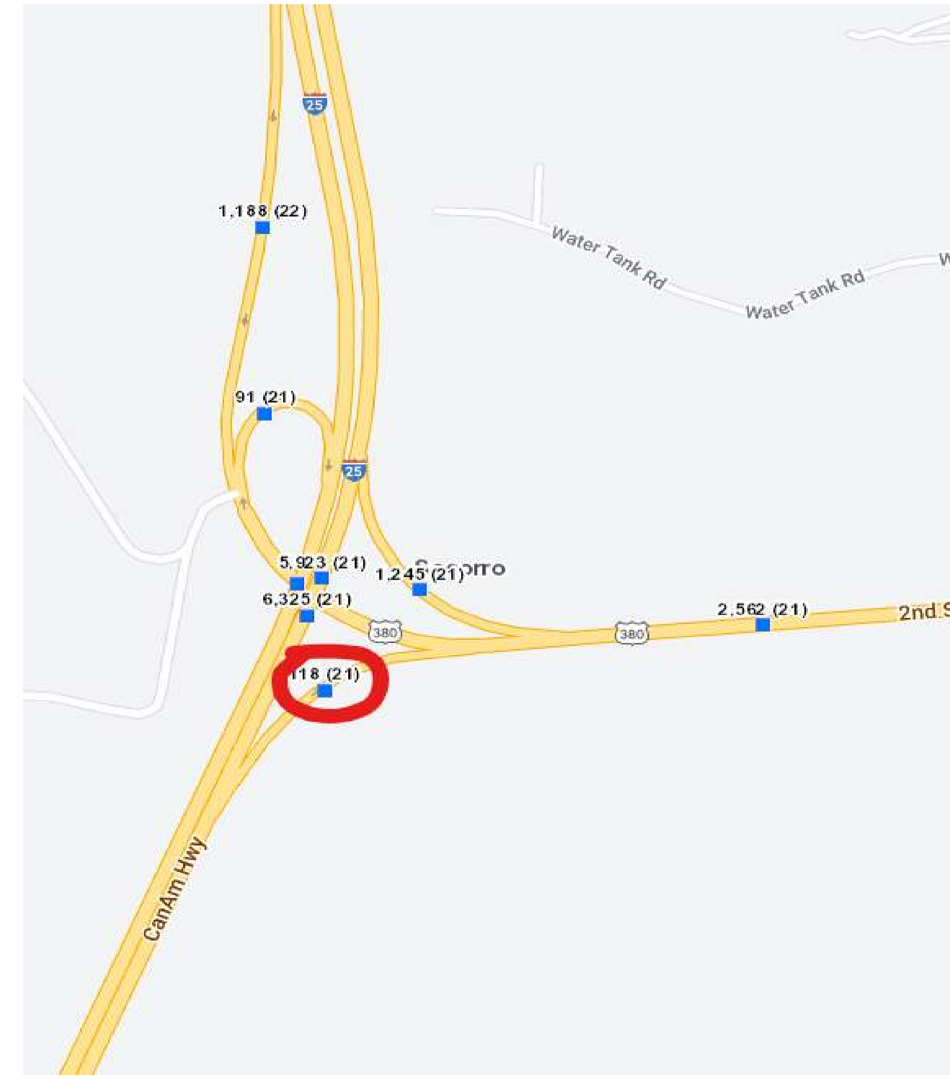
Location ID: 10491

Year	Annual Growth
2022	0%
2021	9%
2020	-13%
2019	2%
2018	-22%
2017	3%
2015	3%
2014	39%
2013	-13%
2012	9%
Average	2%



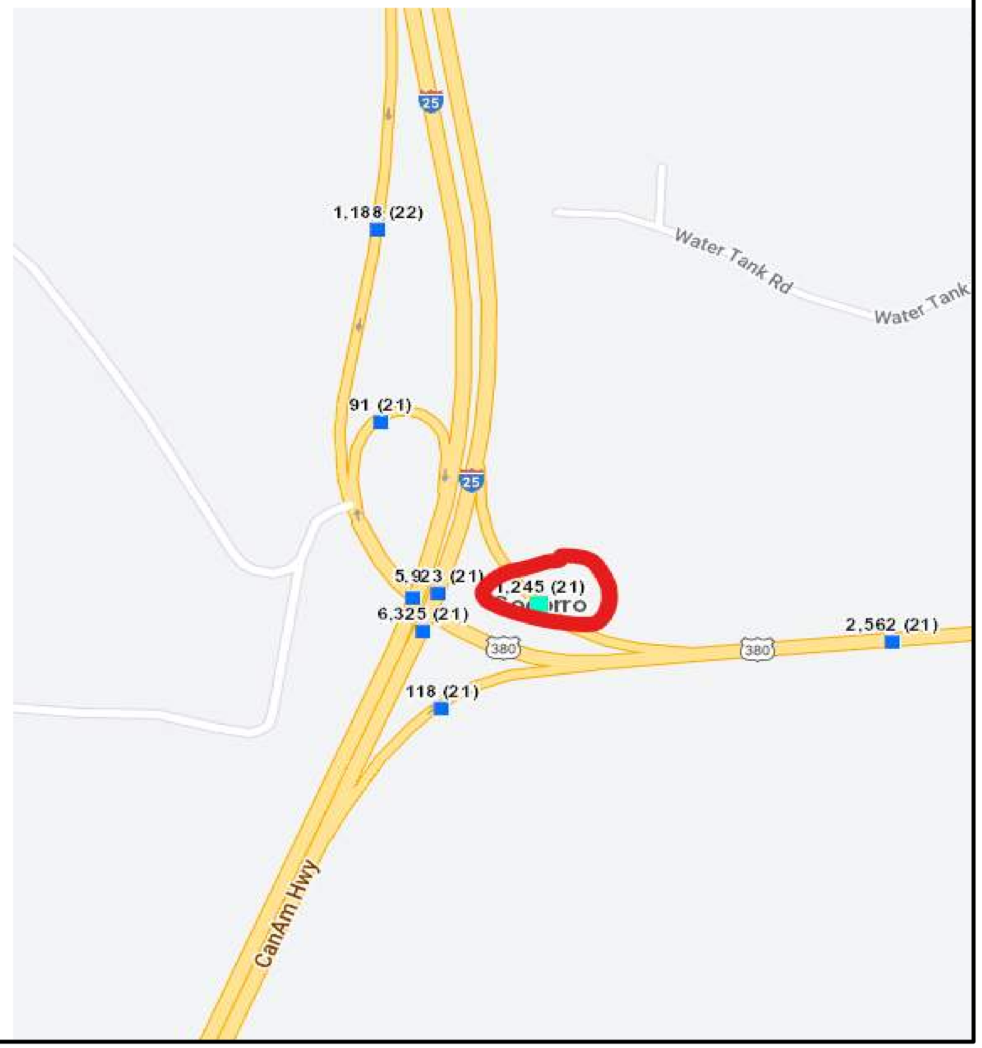
Location ID: 10050

2021	15%
2020	-13%
2019	2%
2018	2%
2017	3%
2015	4%
2014	-13%
2013	6%
2012	11%
2011	-10%
Average	1%



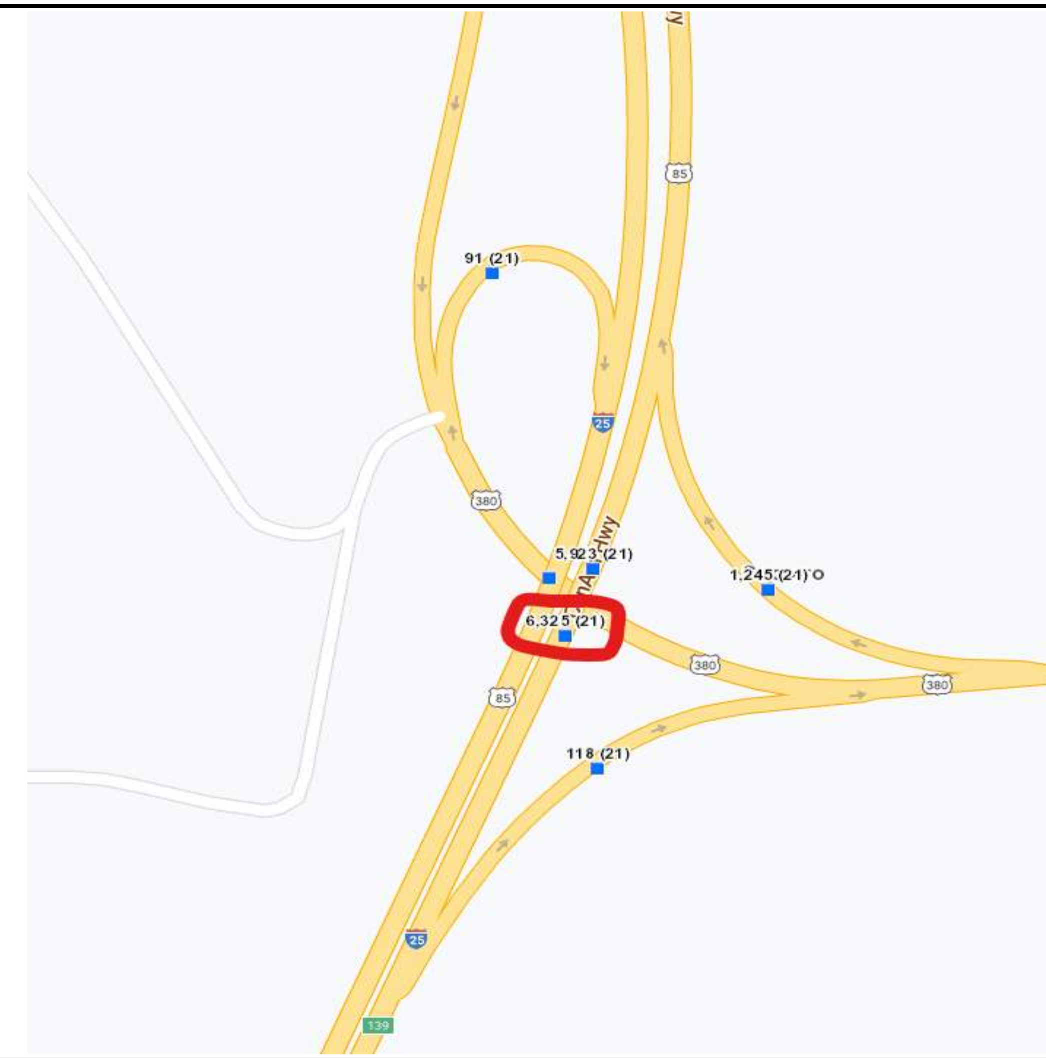
Location ID: 10268

2021	14%
2020	-13%
2019	-12%
2018	-10%
2017	3%
2015	3%
2014	22%
2013	-1%
2012	3%
2011	-8%
Average	0%



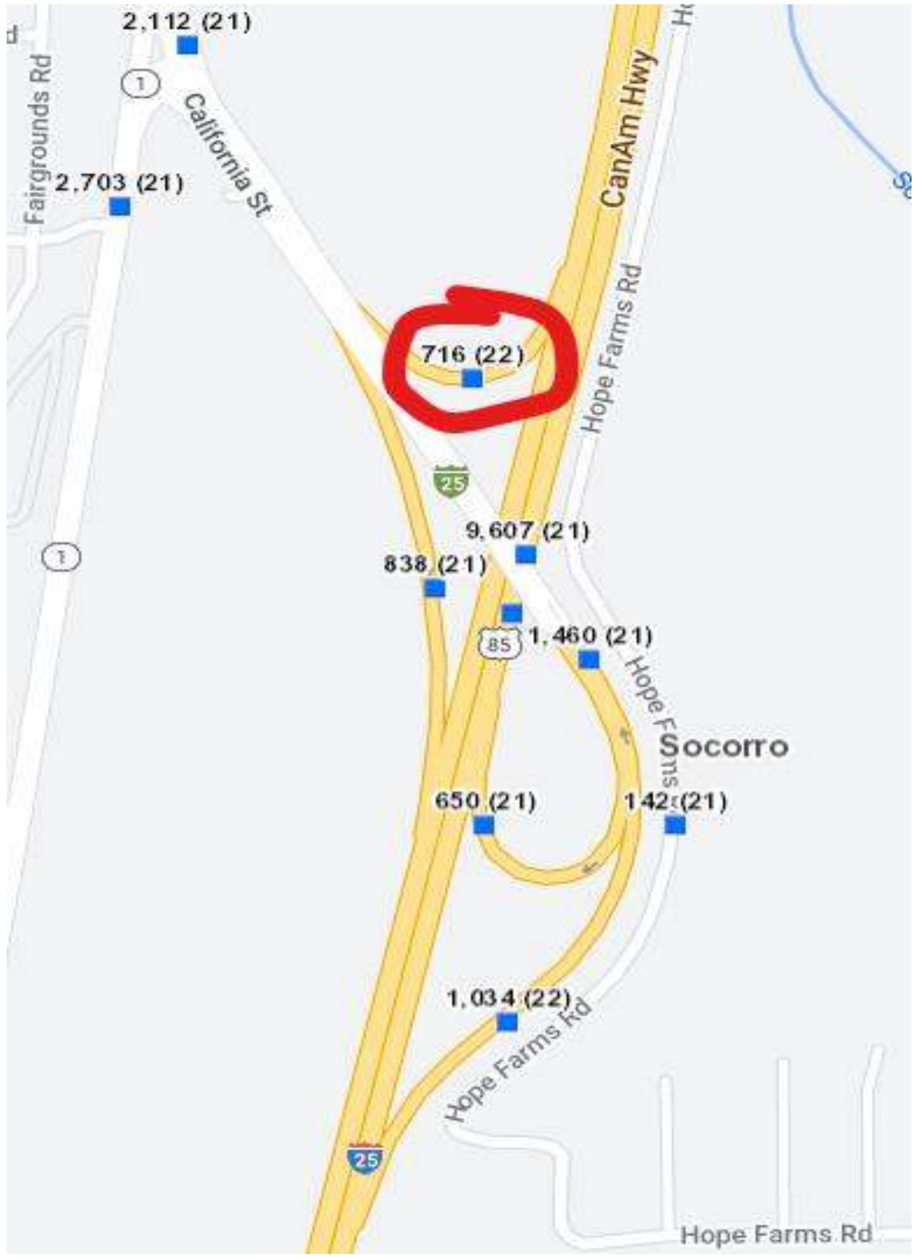
Location ID: 18537

2021	14%
2020	-13%
2019	-36%
2018	2%
2017	3%
2015	3%
2014	2%
2013	60%
2012	-1%
2011	0%
Average	3%



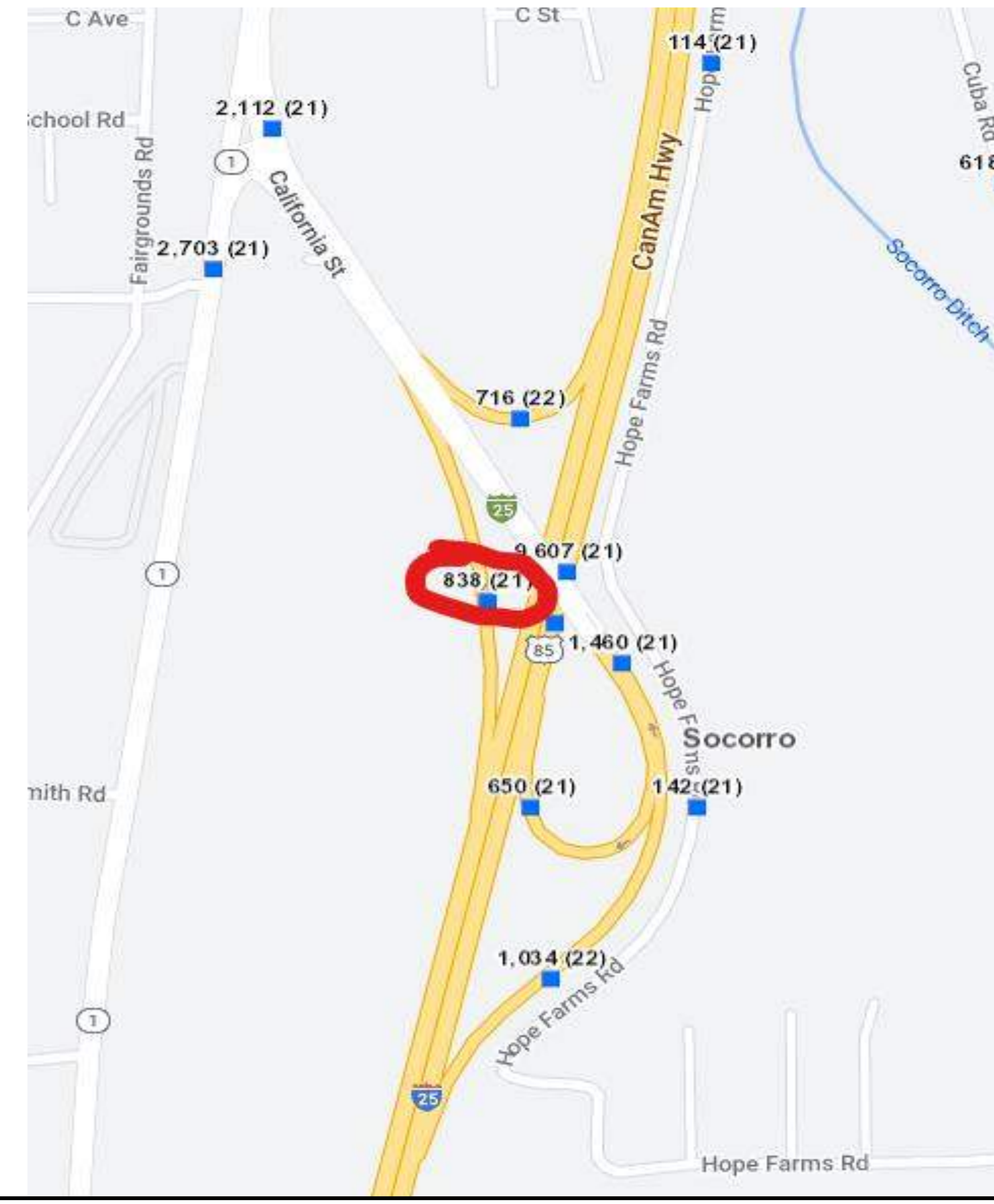
Location ID: 10492

Year	Annual Growth
2022	41%
2021	15%
2020	-6%
2019	2%
2018	19%
2017	5%
2015	2%
2014	58%
2013	-2%
2012	-2%
2011	-27%
2010	-2%
Average	9%



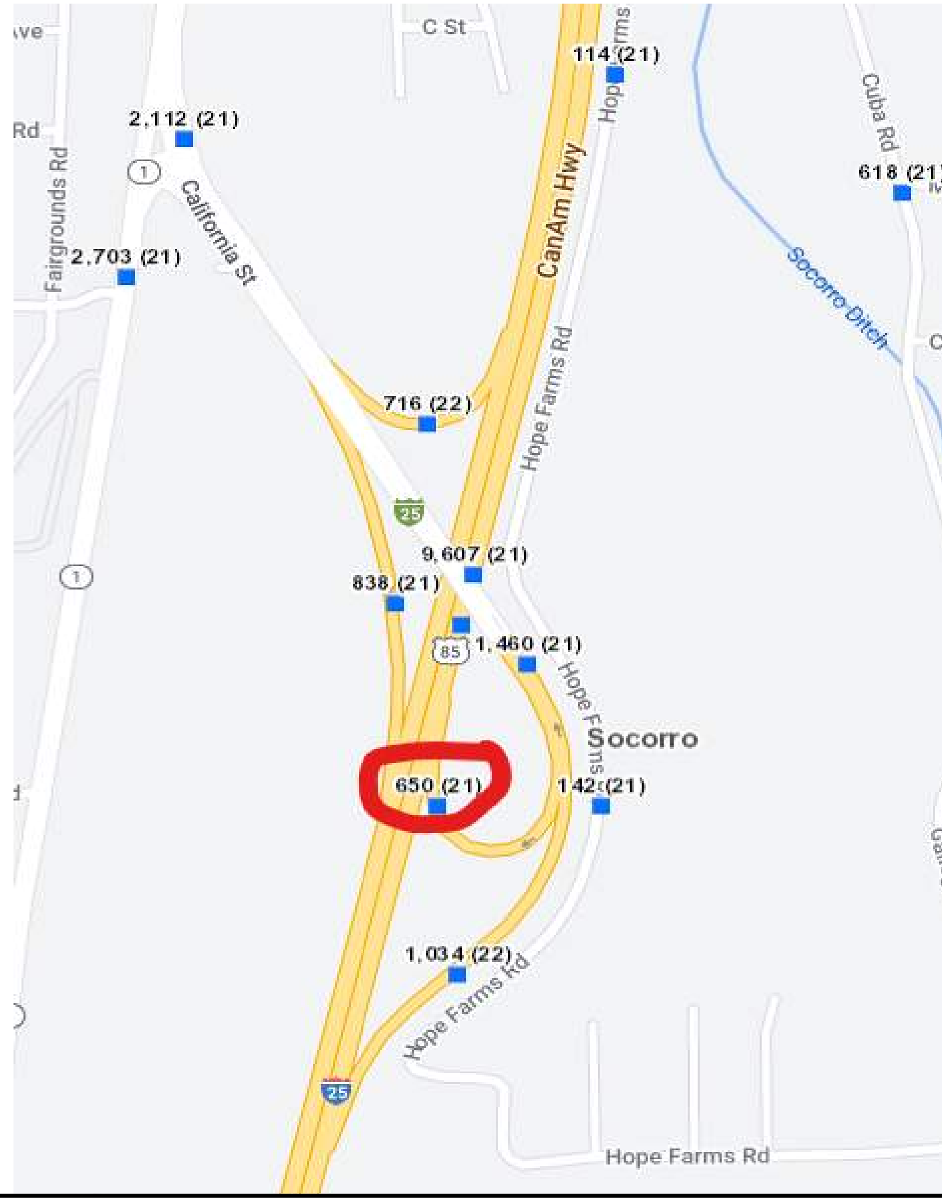
Location ID: 10718

Year	Annual Growth
2021	5%
2020	-32%
2019	2%
2018	2%
2017	3%
2015	3%
2014	23%
2013	-2%
2012	-2%
2011	-14%
2010	14%
Average	0%



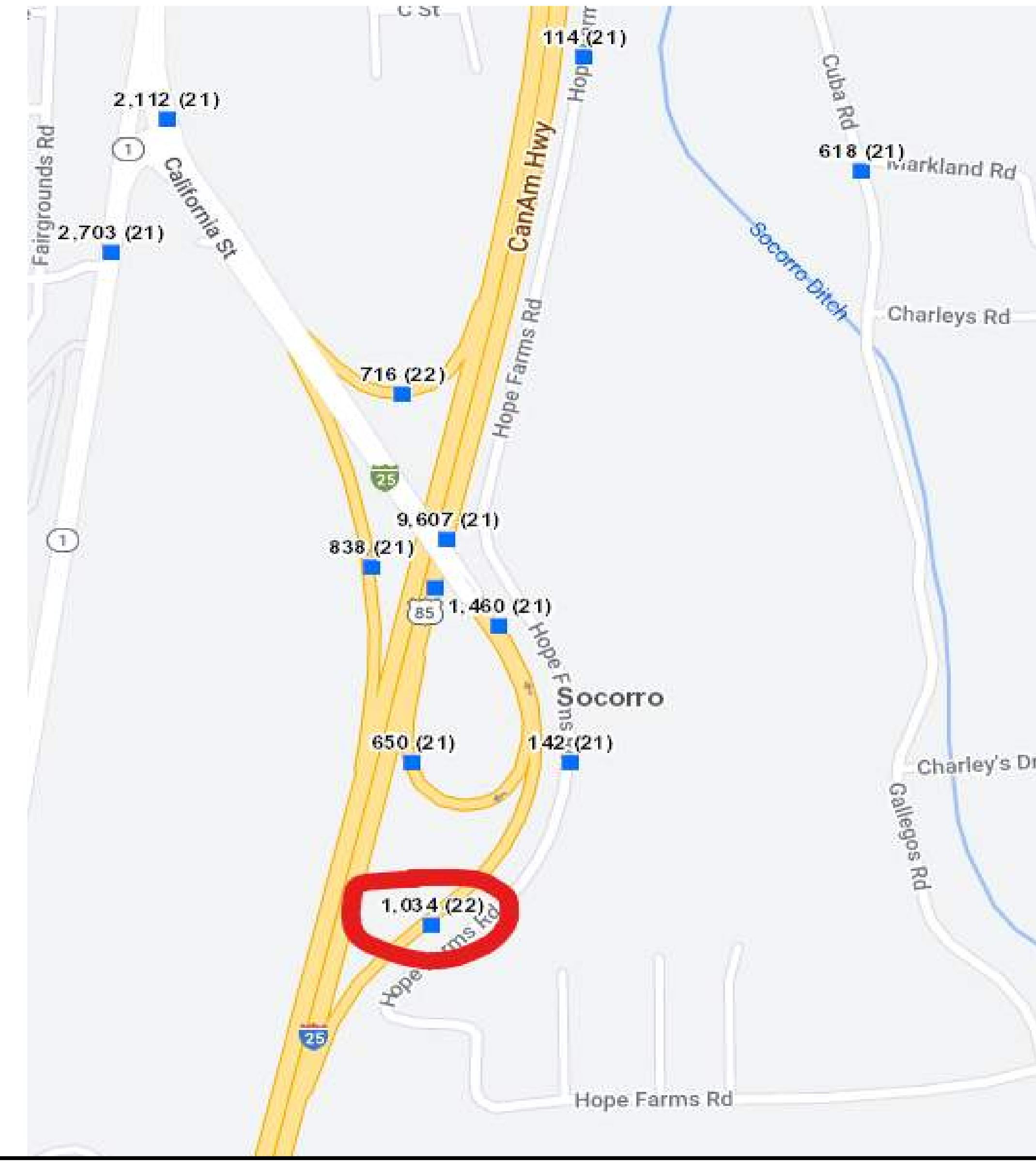
Location ID: 10269

Year	Annual Growth
2021	14%
2020	-13%
2019	49%
2018	2%
2017	5%
2015	2%
2014	0%
2013	-11%
2012	-2%
2011	-1%
2010	-2%
Average	4%



Location ID: 10051

Year	Annual Growth
2022	6%
2021	14%
2020	-13%
2019	-27%
2018	2%
2017	3%
2015	3%
2014	23%
2013	-2%
2012	-2%
2011	9%
2010	-2%
Average	1%



Appendix C – Vehicle Classification Data

All Traffic Data Services, LLC

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Site Code: 7
SB I-25 TO US380 OFF RAMP

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/04/22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	1	0	1	0	0	0	1	0	0	0	0	3
03:00	0	1	0	1	0	0	0	0	2	0	0	0	0	4
04:00	0	2	4	0	1	0	0	0	2	0	0	**1**	0	10
05:00	0	28	11	0	4	**1**	0	0	**5**	0	0	0	0	49
06:00	0	35	15	1	3	1	0	0	2	0	0	0	0	57
07:00	0	27	17	2	1	0	0	0	2	0	0	0	0	49
08:00	0	**39**	19	1	5	0	0	0	4	0	0	0	0	68
09:00	0	39	**27**	**3**	4	0	0	0	2	**1**	0	0	0	**76**
10:00	**2**	34	18	2	**7**	0	0	0	3	0	0	0	0	66
11:00	0	32	15	0	2	0	0	0	2	0	0	0	0	51
12 PM	0	35	20	**1**	**9**	0	0	**1**	**4**	0	0	0	0	70
13:00	0	30	**28**	0	4	**2**	0	0	1	0	0	0	0	65
14:00	**4**	32	25	0	3	0	0	0	0	0	0	0	0	64
15:00	1	42	19	1	4	0	0	0	3	0	0	0	0	70
16:00	0	42	26	0	2	0	0	0	2	**1**	0	0	0	73
17:00	3	**52**	25	0	2	0	0	0	2	0	0	0	0	**84**
18:00	0	35	15	0	3	0	0	0	0	0	0	0	0	53
19:00	0	32	9	0	1	0	0	0	1	0	0	0	0	43
20:00	0	20	7	0	1	0	0	0	2	0	0	0	0	30
21:00	0	14	3	0	0	0	0	0	0	0	0	0	0	17
22:00	0	7	2	1	0	0	0	0	1	0	0	0	0	11
23:00	0	7	3	0	0	1	0	0	0	0	0	**1**	0	12
Day Total	10	586	309	13	57	5	0	1	41	2	0	2	0	1026
Percent	1.0%	57.1%	30.1%	1.3%	5.6%	0.5%	0.0%	0.1%	4.0%	0.2%	0.0%	0.2%	0.0%	
AM Peak	10:00	08:00	09:00	09:00	10:00	05:00			05:00	09:00		04:00		09:00
Vol.	2	39	27	3	7	1			5	1		1		76
PM Peak	14:00	17:00	13:00	12:00	12:00	13:00		12:00	12:00	16:00		23:00		17:00
Vol.	4	52	28	1	9	2		1	4	1		1		84
Grand Total	10	586	309	13	57	5	0	1	41	2	0	2	0	1026
Percent	1.0%	57.1%	30.1%	1.3%	5.6%	0.5%	0.0%	0.1%	4.0%	0.2%	0.0%	0.2%	0.0%	

All Traffic Data Services, LLC
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Site Code: 8
NB I-25 TO US380 OFF RAMP

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/04/22	0	0	0	0	0	0	0	0	**1**	0	0	0	0	1
01:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
06:00	0	1	1	**1**	0	0	0	0	0	0	0	0	0	3
07:00	0	1	0	0	0	0	0	0	1	0	0	0	0	2
08:00	0	1	2	0	1	0	0	0	1	**1**	0	0	0	6
09:00	0	4	1	0	**5**	0	0	0	0	0	0	0	0	10
10:00	**1**	4	**4**	0	1	0	0	0	1	0	0	0	0	11
11:00	0	**8**	4	0	0	0	0	0	0	0	0	0	0	**12**
12 PM	0	7	1	0	**2**	0	0	0	0	0	0	0	0	10
13:00	0	**10**	**4**	0	0	0	0	0	**1**	0	0	0	0	**15**
14:00	0	7	2	0	0	0	0	0	0	0	0	0	0	9
15:00	0	5	3	0	0	0	0	0	0	0	0	0	0	8
16:00	0	8	4	0	0	0	0	0	0	0	0	0	0	12
17:00	0	7	1	**1**	0	0	0	0	1	0	0	0	0	10
18:00	0	4	0	0	1	0	0	0	0	0	0	0	0	5
19:00	0	3	2	0	2	0	0	0	1	0	0	0	0	8
20:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Day Total	1	77	31	2	12	0	0	0	7	1	0	0	0	131
Percent	0.8%	58.8%	23.7%	1.5%	9.2%	0.0%	0.0%	0.0%	5.3%	0.8%	0.0%	0.0%	0.0%	
AM Peak	10:00	11:00	10:00	06:00	09:00				00:00	08:00				11:00
Vol.	1	8	4	1	5				1	1				12
PM Peak		13:00	13:00	17:00	12:00				13:00					13:00
Vol.		10	4	1	2				1					15
Grand Total	1	77	31	2	12	0	0	0	7	1	0	0	0	131
Percent	0.8%	58.8%	23.7%	1.5%	9.2%	0.0%	0.0%	0.0%	5.3%	0.8%	0.0%	0.0%	0.0%	

All Traffic Data Services, LLC

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Site Code: 9
WB US380 TO NB I-25 ON RAMP

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/04/22	0	4	0	0	0	0	0	0	0	0	0	0	0	4
01:00	0	1	1	0	2	0	0	0	0	0	0	0	0	4
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	2	1	0	0	0	0	0	1	0	0	0	0	4
04:00	0	1	5	0	0	0	0	0	0	0	0	0	0	6
05:00	0	10	6	0	0	0	0	0	0	0	0	0	0	16
06:00	0	16	3	0	0	**1**	0	0	1	0	0	0	0	21
07:00	**1**	53	20	**1**	**3**	1	0	0	1	0	0	0	0	80
08:00	0	38	25	0	1	1	0	0	1	0	0	0	0	66
09:00	0	38	15	1	2	0	0	0	2	**1**	0	0	0	59
10:00	0	**60**	15	1	1	1	0	0	**3**	0	0	0	0	**81**
11:00	1	39	**28**	0	1	1	0	0	3	0	0	0	0	73
12 PM	0	45	20	1	1	1	**1**	0	2	0	0	0	0	71
13:00	1	47	**29**	**2**	4	1	0	0	3	0	0	0	0	87
14:00	**2**	47	25	1	1	**3**	0	0	**4**	0	0	0	0	83
15:00	1	**54**	25	1	5	0	0	0	2	0	0	0	0	**88**
16:00	1	49	17	1	3	1	0	0	1	0	0	0	0	73
17:00	1	37	13	1	4	1	0	0	1	0	0	0	0	58
18:00	0	31	15	1	**6**	0	0	0	2	0	0	0	0	55
19:00	0	37	14	0	2	0	0	0	1	0	0	0	0	54
20:00	0	27	9	1	0	0	0	0	0	0	0	0	0	37
21:00	0	14	7	0	2	0	0	0	2	0	0	0	0	25
22:00	0	7	2	0	1	0	0	0	0	0	0	**1**	0	11
23:00	0	7	3	0	0	0	0	0	1	0	0	0	0	11
Day Total	8	664	298	12	39	12	1	0	31	1	0	1	0	1067
Percent	0.7%	62.2%	27.9%	1.1%	3.7%	1.1%	0.1%	0.0%	2.9%	0.1%	0.0%	0.1%	0.0%	
AM Peak	07:00	10:00	11:00	07:00	07:00	06:00			10:00	09:00				10:00
Vol.	1	60	28	1	3	1			3	1				81
PM Peak	14:00	15:00	13:00	13:00	18:00	14:00	12:00		14:00			22:00		15:00
Vol.	2	54	29	2	6	3	1		4			1		88
Grand Total	8	664	298	12	39	12	1	0	31	1	0	1	0	1067
Percent	0.7%	62.2%	27.9%	1.1%	3.7%	1.1%	0.1%	0.0%	2.9%	0.1%	0.0%	0.1%	0.0%	

All Traffic Data Services, LLC

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Site Code: 10
I-25 AT US380 MAINLINE

NB LANE 1

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/04/22	0	13	5	0	4	0	0	0	16	1	1	1	0	41
01:00	0	3	2	0	4	0	0	3	20	3	**2**	2	0	39
02:00	0	4	2	1	2	0	0	1	11	1	1	0	0	23
03:00	0	6	2	0	0	0	0	1	14	0	0	**3**	1	27
04:00	0	4	8	0	5	0	0	0	12	0	1	0	0	30
05:00	0	16	11	1	4	4	0	0	16	1	2	0	1	56
06:00	0	24	15	3	4	1	0	0	18	0	0	1	0	66
07:00	**1**	68	38	4	11	**7**	**1**	1	27	2	0	1	2	163
08:00	0	62	44	1	16	5	0	2	23	0	2	2	0	157
09:00	0	90	52	**6**	**25**	3	0	0	31	4	1	0	1	213
10:00	1	90	**61**	3	13	5	0	**4**	**36**	2	1	0	0	216
11:00	1	**120**	59	3	15	2	0	4	24	**7**	0	0	**6**	**241**
12 PM	2	**146**	64	**5**	13	3	**1**	5	32	4	0	1	5	**281**
13:00	1	130	62	5	22	2	0	3	29	**7**	0	0	5	266
14:00	**7**	142	61	3	14	**7**	0	1	28	1	0	0	2	266
15:00	2	143	**77**	4	21	5	1	0	22	5	0	0	0	280
16:00	1	145	57	5	**26**	4	0	**7**	27	1	0	0	2	275
17:00	2	107	52	5	19	2	0	2	28	0	1	0	1	219
18:00	0	91	55	3	21	5	0	4	31	0	1	1	**6**	218
19:00	0	81	47	2	12	2	0	3	**36**	1	3	**2**	1	190
20:00	0	46	34	4	13	1	0	0	21	2	**5**	0	0	126
21:00	0	41	21	4	11	2	0	0	16	7	1	1	2	106
22:00	0	34	14	1	7	2	0	1	21	3	4	1	3	91
23:00	0	24	13	3	7	0	0	0	11	4	5	1	1	69
Day Total	18	1630	856	66	289	62	3	42	550	56	31	17	39	3659
Percent	0.5%	44.5%	23.4%	1.8%	7.9%	1.7%	0.1%	1.1%	15.0%	1.5%	0.8%	0.5%	1.1%	
AM Peak	07:00	11:00	10:00	09:00	09:00	07:00	07:00	10:00	10:00	11:00	01:00	03:00	11:00	11:00
Vol.	1	120	61	6	25	7	1	4	36	7	2	3	6	241
PM Peak	14:00	12:00	15:00	12:00	16:00	14:00	12:00	16:00	19:00	13:00	20:00	19:00	18:00	12:00
Vol.	7	146	77	5	26	7	1	7	36	7	5	2	6	281
Grand Total	18	1630	856	66	289	62	3	42	550	56	31	17	39	3659
Percent	0.5%	44.5%	23.4%	1.8%	7.9%	1.7%	0.1%	1.1%	15.0%	1.5%	0.8%	0.5%	1.1%	

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Site Code: 10
I-25 AT US380 MAINLINE

NB LANE 2

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/04/22	0	4	1	0	0	0	0	0	1	0	0	0	0	6
01:00	0	2	0	0	0	0	0	0	3	0	0	0	0	5
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	0	0	0	0	0	0	0	2	0	0	0	0	2
04:00	0	1	0	0	0	0	0	0	2	0	0	0	0	3
05:00	0	4	1	0	0	0	0	0	4	0	0	0	0	9
06:00	0	4	3	0	0	0	0	0	3	0	0	0	0	10
07:00	0	13	6	0	1	0	0	0	4	0	0	0	0	24
08:00	0	9	6	0	**4**	0	0	0	5	0	0	0	0	24
09:00	0	17	8	0	3	0	0	0	5	0	0	0	0	33
10:00	0	12	**10**	0	3	0	0	0	**7**	0	0	0	0	32
11:00	0	**19**	10	0	4	0	0	0	5	**1**	0	0	**1**	**40**
12 PM	0	**28**	10	0	2	0	0	0	5	0	0	0	0	45
13:00	0	23	11	0	3	0	0	0	5	0	0	0	**1**	43
14:00	0	26	10	0	2	0	0	0	5	0	0	0	0	43
15:00	0	25	**13**	0	**4**	0	0	0	4	0	0	0	0	**46**
16:00	0	26	10	0	3	0	0	0	4	0	0	0	0	43
17:00	0	16	9	0	3	0	0	0	**6**	0	0	0	0	34
18:00	0	18	9	0	3	0	0	0	5	0	0	0	0	35
19:00	0	14	8	0	1	0	0	0	6	0	0	0	0	29
20:00	0	7	5	0	3	0	0	0	4	0	0	0	0	19
21:00	0	8	3	0	2	0	0	0	3	0	0	0	0	16
22:00	0	8	2	0	0	0	0	0	4	0	0	0	0	14
23:00	0	7	3	0	0	0	0	0	2	0	0	0	0	12
Day Total	0	293	138	0	41	0	0	0	94	1	0	0	2	569
Percent	0.0%	51.5%	24.3%	0.0%	7.2%	0.0%	0.0%	0.0%	16.5%	0.2%	0.0%	0.0%	0.4%	
AM Peak		11:00	10:00		08:00				10:00	11:00			11:00	11:00
Vol.		19	10		4				7	1			1	40
PM Peak		12:00	15:00		15:00				17:00				13:00	15:00
Vol.		28	13		4				6				1	46
Grand Total	0	293	138	0	41	0	0	0	94	1	0	0	2	569
Percent	0.0%	51.5%	24.3%	0.0%	7.2%	0.0%	0.0%	0.0%	16.5%	0.2%	0.0%	0.0%	0.4%	

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Site Code: 10
I-25 AT US380 MAINLINE

SB LANE 1

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/04/22	1	21	5	0	2	1	0	1	17	0	5	4	0	57
01:00	0	10	8	0	0	0	0	2	20	**4**	0	1	2	47
02:00	0	4	4	1	1	1	0	0	14	0	5	**5**	0	35
03:00	0	10	4	2	1	1	0	0	15	0	**10**	1	0	44
04:00	0	11	10	0	2	1	0	0	23	0	4	2	0	53
05:00	0	38	18	3	5	3	0	0	21	0	0	1	0	89
06:00	0	47	32	4	10	**4**	0	1	27	1	1	1	1	129
07:00	1	89	37	5	5	1	0	0	29	4	0	0	1	172
08:00	0	93	**60**	4	**13**	1	0	1	32	3	0	0	1	208
09:00	0	113	59	3	12	2	0	0	42	2	0	0	1	234
10:00	**3**	92	45	**6**	11	1	0	0	45	3	0	0	1	207
11:00	0	**114**	48	3	8	3	0	**3**	**60**	1	1	0	**4**	**245**
12 PM	0	114	51	3	**17**	1	0	**3**	**45**	**1**	1	0	1	237
13:00	2	107	58	3	8	1	0	2	42	1	0	0	3	227
14:00	3	109	42	2	8	0	0	1	25	0	0	0	1	191
15:00	3	129	**63**	3	8	2	0	1	43	1	1	0	3	257
16:00	2	**142**	56	1	10	**3**	0	1	42	1	0	0	**8**	**266**
17:00	**4**	137	50	**5**	9	2	0	2	40	0	0	2	2	253
18:00	0	101	34	1	9	1	0	2	29	1	0	0	1	179
19:00	1	76	35	4	11	0	0	3	21	0	2	0	3	156
20:00	0	60	19	0	4	1	0	0	26	0	1	1	0	112
21:00	0	41	9	1	3	0	0	0	23	0	1	1	0	79
22:00	0	22	8	2	1	2	0	0	19	0	**4**	2	0	60
23:00	0	17	7	2	1	2	0	1	23	0	2	**5**	1	61
Day Total	20	1697	762	58	159	34	0	24	723	23	38	26	34	3598
Percent	0.6%	47.2%	21.2%	1.6%	4.4%	0.9%	0.0%	0.7%	20.1%	0.6%	1.1%	0.7%	0.9%	
AM Peak	10:00	11:00	08:00	10:00	08:00	06:00		11:00	11:00	01:00	03:00	02:00	11:00	11:00
Vol.	3	114	60	6	13	4		3	60	4	10	5	4	245
PM Peak	17:00	16:00	15:00	17:00	12:00	16:00		12:00	12:00	12:00	22:00	23:00	16:00	16:00
Vol.	4	142	63	5	17	3		3	45	1	4	5	8	266
Grand Total	20	1697	762	58	159	34	0	24	723	23	38	26	34	3598
Percent	0.6%	47.2%	21.2%	1.6%	4.4%	0.9%	0.0%	0.7%	20.1%	0.6%	1.1%	0.7%	0.9%	

All Traffic Data Services, LLC
www.alltrafficdata.net

Site Code: 10
I-25 AT US380 MAINLINE

SB LANE 2

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/04/22	0	6	1	0	0	0	0	0	3	0	0	0	0	10
01:00	0	2	0	0	0	0	0	0	3	0	0	0	0	5
02:00	0	1	0	0	0	0	0	0	2	0	0	0	0	3
03:00	0	1	0	0	0	0	0	0	2	0	**1**	0	0	4
04:00	0	4	0	0	0	0	0	0	3	0	0	0	0	7
05:00	0	6	3	0	0	0	0	0	4	0	0	0	0	13
06:00	0	11	6	0	1	0	0	0	5	0	0	0	0	23
07:00	0	19	6	0	0	0	0	0	6	0	0	0	0	31
08:00	0	15	**11**	0	**4**	0	0	0	7	0	0	0	0	37
09:00	0	19	10	**1**	3	0	0	0	8	0	0	0	0	41
10:00	0	18	8	0	2	0	0	0	8	0	0	0	0	36
11:00	0	**20**	9	0	2	0	0	0	**11**	0	0	0	0	**42**
12 PM	0	21	8	0	**3**	0	0	0	**8**	0	0	0	0	40
13:00	0	24	**10**	0	0	0	0	0	7	0	0	0	0	41
14:00	0	21	7	0	2	0	0	0	5	0	0	0	0	35
15:00	0	25	10	0	0	0	0	0	8	0	0	0	0	43
16:00	0	**28**	9	0	1	0	0	0	8	0	0	0	**1**	**47**
17:00	0	27	10	0	1	0	0	0	7	0	0	0	0	45
18:00	0	17	7	0	1	0	0	0	6	0	0	0	0	31
19:00	0	16	6	0	1	0	0	0	4	0	0	0	0	27
20:00	0	12	4	0	0	0	0	0	4	0	0	0	0	20
21:00	0	6	2	0	0	0	0	0	3	0	0	0	0	11
22:00	0	6	0	0	0	0	0	0	3	0	0	0	0	9
23:00	0	7	0	0	0	0	0	0	4	0	0	0	0	11
Day Total	0	332	127	1	21	0	0	0	129	0	1	0	1	612
Percent	0.0%	54.2%	20.8%	0.2%	3.4%	0.0%	0.0%	0.0%	21.1%	0.0%	0.2%	0.0%	0.2%	
AM Peak		11:00	08:00	09:00	08:00				11:00		03:00			11:00
Vol.		20	11	1	4				11		1			42
PM Peak		16:00	13:00		12:00				12:00				16:00	16:00
Vol.		28	10		3				8				1	47
Grand Total	0	332	127	1	21	0	0	0	129	0	1	0	1	612
Percent	0.0%	54.2%	20.8%	0.2%	3.4%	0.0%	0.0%	0.0%	21.1%	0.0%	0.2%	0.0%	0.2%	

Southbound I-25 to US 380 Exit Ramp

Southbound

	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi
Total	10	586	309	13	57	5	0	1	41	2	0	2	0
Percentage	0.97%	57.12%	30.12%	1.27%	5.56%	0.49%	0.00%	0.10%	4.00%	0.19%	0.00%	0.19%	0.00%

Northbound I-25 to US 380 Exit Ramp

Northbound

	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi
Total	1	77	31	2	12	0	0	0	7	1	0	0	0
Percentage	0.76%	58.78%	23.66%	1.53%	9.16%	0.00%	0.00%	0.00%	5.34%	0.76%	0.00%	0.00%	0.00%

Westbound US 380 to Northbound I-25 Entrance Ramp

Westbound/ Northbound

	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi
Total	8	664	298	12	39	12	1	0	31	1	0	1	0
Percentage	0.75%	62.23%	27.93%	1.12%	3.66%	1.12%	0.09%	0.00%	2.91%	0.09%	0.00%	0.09%	0.00%

I-25 at US 380 Mainline

Both Directions

	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi
Total	38	3952	1883	125	510	96	3	66	1496	80	70	43	76
Percentage	0.45%	46.84%	22.32%	1.48%	6.04%	1.14%	0.04%	0.78%	17.73%	0.95%	0.83%	0.51%	0.90%

Northbound

	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi
Total	18	1923	994	66	330	62	3	42	644	57	31	17	41
Percentage	0.43%	45.48%	23.51%	1.56%	7.81%	1.47%	0.07%	0.99%	15.23%	1.35%	0.73%	0.40%	0.97%

Southbound

	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi
Total	20	2029	889	59	180	34	0	24	852	23	39	26	35
Percentage	0.48%	48.19%	21.12%	1.40%	4.28%	0.81%	0.00%	0.57%	20.24%	0.55%	0.93%	0.62%	0.83%

Appendix D – 2022 Existing Operational Analysis

Existing Synchro Analysis

Intersection						
Int Delay, s/veh	0.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	0	12	68	2
Future Vol, veh/h	0	2	0	12	68	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	50	92	35	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	0	34	83	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	84	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	975	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	975	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	975	-	-
HCM Lane V/C Ratio	-	0.004	-	-
HCM Control Delay (s)	-	8.7	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Intersection												
Int Delay, s/veh	4.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	40	8	3	40	3	25	15	2	4	7	18
Future Vol, veh/h	7	40	8	3	40	3	25	15	2	4	7	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	78	78	78	66	66	66	66	66	66
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	51	10	4	51	4	38	23	3	6	11	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	55	0	0	61	0	0	154	137	56	148	140	53
Stage 1	-	-	-	-	-	-	74	74	-	61	61	-
Stage 2	-	-	-	-	-	-	80	63	-	87	79	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1550	-	-	1542	-	-	813	754	1011	820	751	1014
Stage 1	-	-	-	-	-	-	935	833	-	950	844	-
Stage 2	-	-	-	-	-	-	929	842	-	921	829	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1550	-	-	1542	-	-	777	747	1011	793	744	1014
Mov Cap-2 Maneuver	-	-	-	-	-	-	777	747	-	793	744	-
Stage 1	-	-	-	-	-	-	929	828	-	944	841	-
Stage 2	-	-	-	-	-	-	890	839	-	888	824	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.5	10.1	9.2
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	774	1550	-	-	1542	-	-	901
HCM Lane V/C Ratio	0.082	0.006	-	-	0.002	-	-	0.049
HCM Control Delay (s)	10.1	7.3	0	-	7.3	0	-	9.2
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	48	87	1
Future Vol, veh/h	0	0	0	48	87	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	25	92	75	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	64	106	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	107	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	947	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	947	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	0	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	61	23	1	97	12	9	12	1	8	14	18
Future Vol, veh/h	8	61	23	1	97	12	9	12	1	8	14	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	89	89	89	89	89	89	71	71	71
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	77	29	1	109	13	10	13	1	11	20	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	122	0	0	106	0	0	252	236	92	237	244	116
Stage 1	-	-	-	-	-	-	112	112	-	118	118	-
Stage 2	-	-	-	-	-	-	140	124	-	119	126	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1465	-	-	1485	-	-	701	665	965	717	658	936
Stage 1	-	-	-	-	-	-	893	803	-	887	798	-
Stage 2	-	-	-	-	-	-	863	793	-	885	792	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1465	-	-	1485	-	-	662	660	965	701	653	936
Mov Cap-2 Maneuver	-	-	-	-	-	-	662	660	-	701	653	-
Stage 1	-	-	-	-	-	-	887	797	-	881	797	-
Stage 2	-	-	-	-	-	-	818	792	-	863	786	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	10.6	10.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	670	1465	-	-	1485	-	-	768
HCM Lane V/C Ratio	0.037	0.007	-	-	0.001	-	-	0.073
HCM Control Delay (s)	10.6	7.5	0	-	7.4	0	-	10.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Existing HCS Analysis

HCS7 Freeway Facilities Report

Project Information

Analyst	MCS	Date	8/11/2022
Agency	HDR	Analysis Year	2022
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description		Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	1.60		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-25 NB between on-ramp and off-ramp	1677	2
2	Merge	Merge	I-25 NB 1500ft north of on-ramp	1500	2
3	Basic	Basic	I-25 NB north of merge segment	5280	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.649	272	4800	0.06	75.0	1.8	A

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.649	0.730	389	117	4800	2100	0.08	0.06	65.0	65.0	3.0	7.0	A

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.649	403	4800	0.08	75.0	2.7	A

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	72.9	2.6	1.7	1.30	A

Facility Overall Results

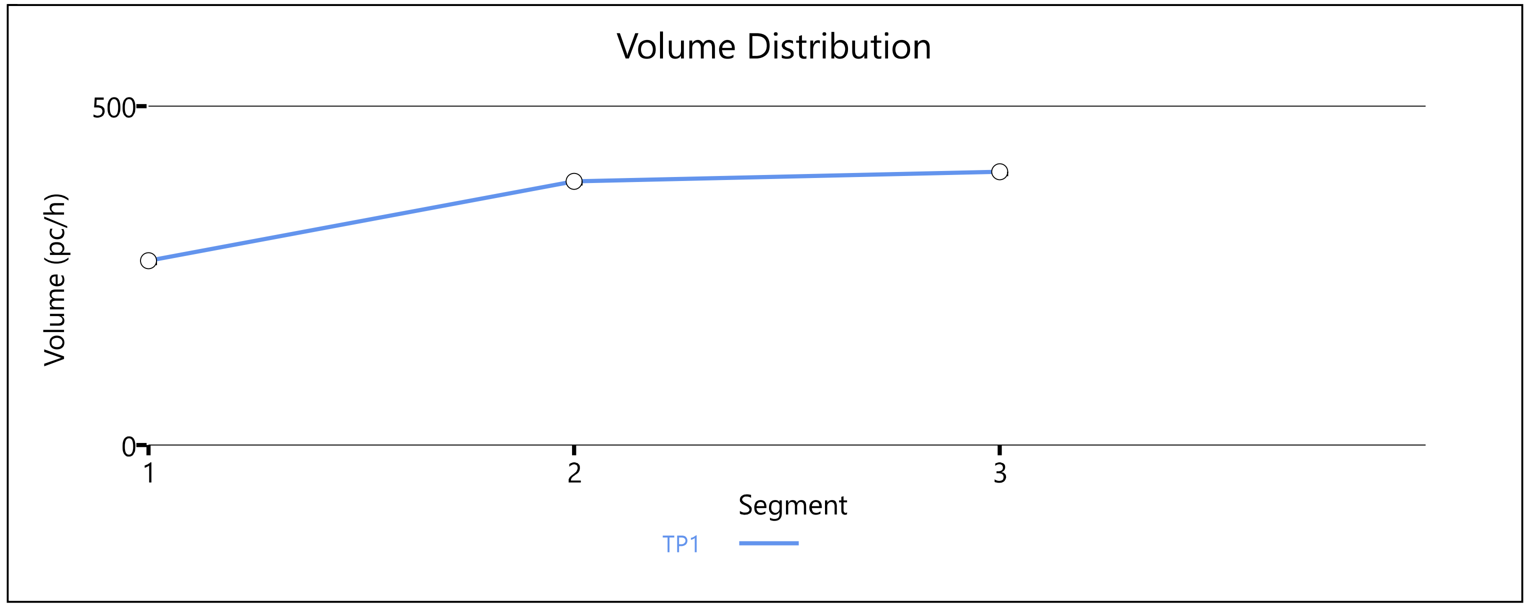
Space Mean Speed, mi/h	72.9	Density, veh/mi/ln	1.7
Average Travel Time, min	1.30	Density, pc/mi/ln	2.6

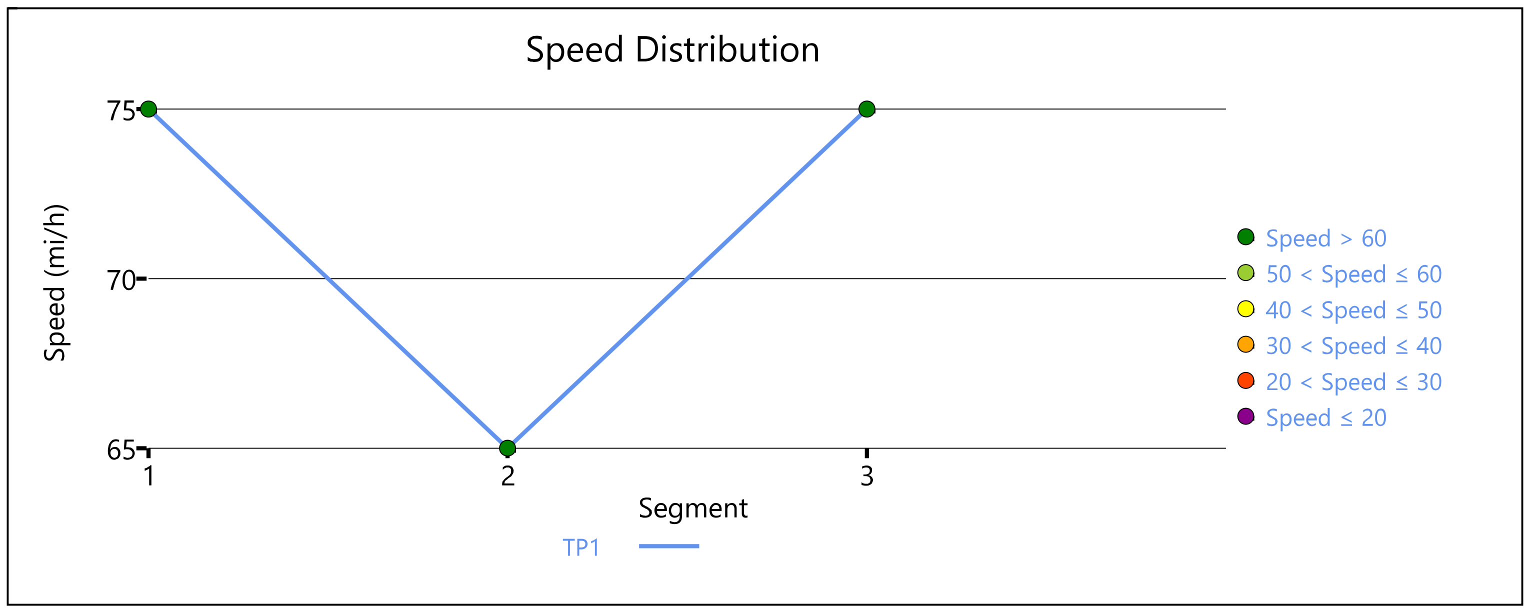
Messages

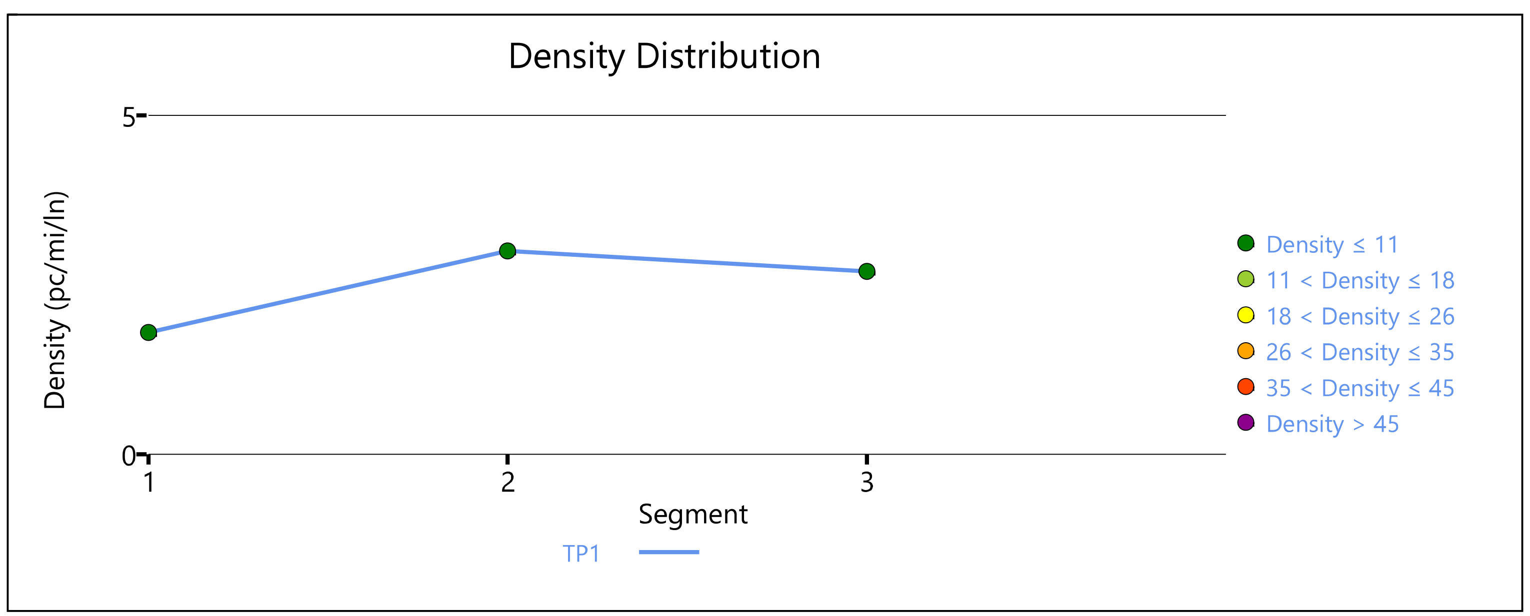
I-25 NB 2022 Existing AM

Comments

I-25 NB 2022 Existing AM







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I-25 NB 2022 Existing PM

HCS7 Freeway Facilities Report

Project Information

Analyst	MCS	Date	8/11/2022
Agency	HDR	Analysis Year	2022
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description		Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	1.60		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-25 NB between on-ramp and off-ramp	1677	2
2	Merge	Merge	I-25 NB 1500ft north of on-ramp	1500	2
3	Basic	Basic	I-25 NB north of merge segment	5280	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.649	390	4800	0.08	75.0	2.6	A

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.649	0.730	518	128	4800	2100	0.11	0.06	65.0	65.0	4.0	8.0	A

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.649	534	4800	0.11	75.0	3.6	A

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	72.9	3.5	2.2	1.30	A

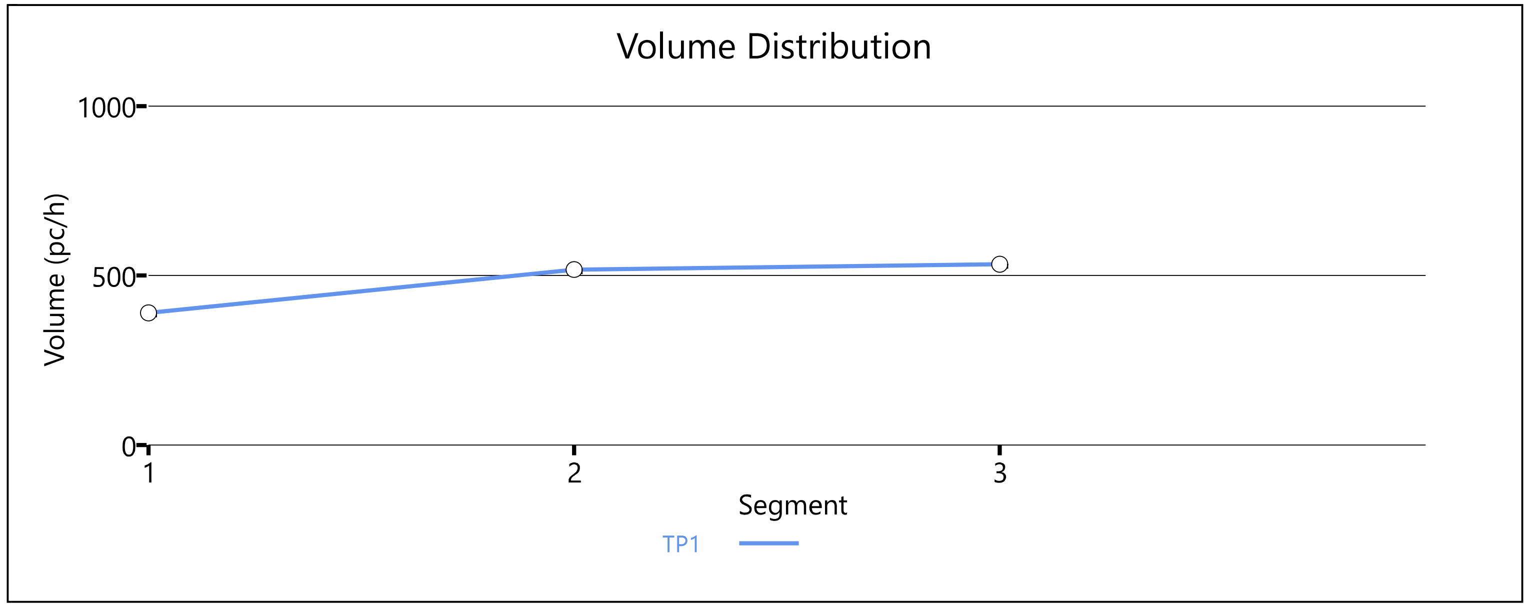
Facility Overall Results

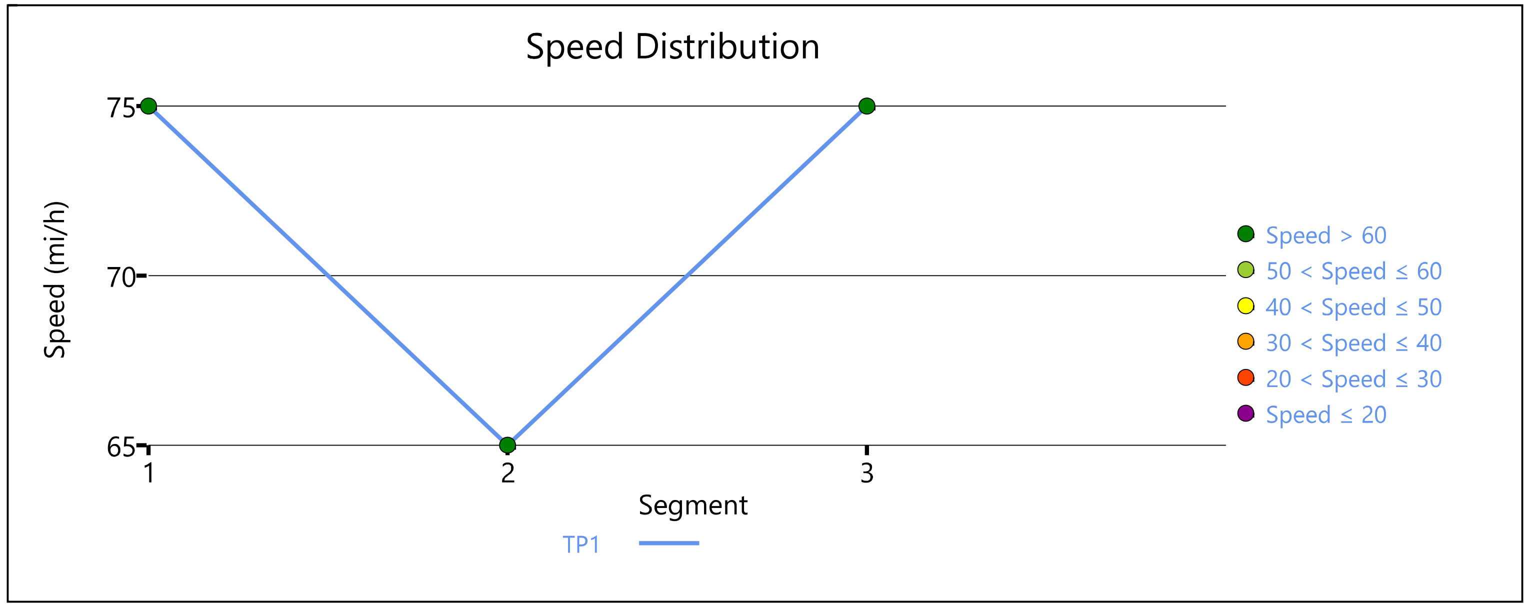
Space Mean Speed, mi/h	72.9	Density, veh/mi/ln	2.2
Average Travel Time, min	1.30	Density, pc/mi/ln	3.5

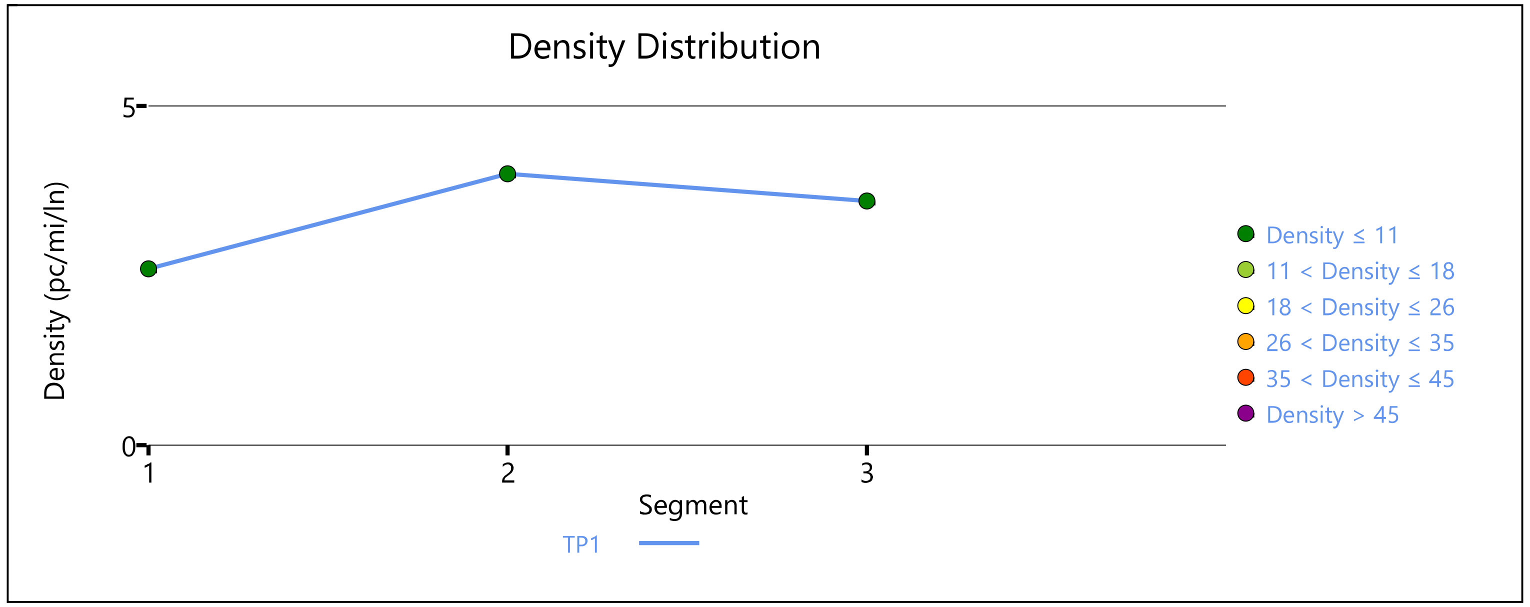
Messages

Comments

I-25 NB 2022 Existing PM







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HCS7 Freeway Facilities Report

Project Information

Analyst	MCS	Date	8/11/2022
Agency	HDR	Analysis Year	2022
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description		Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	1.76		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-25 NB between on-ramp and off-ramp	2530	2
2	Merge	Merge	I-25 NB 1500ft north of on-ramp	1500	2
3	Basic	Basic	I-25 NB north of merge segment	5280	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.661	443	4800	0.09	75.0	3.0	A

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.661	0.546	466	23	4800	1900	0.10	0.01	64.5	64.5	3.6	8.1	A

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.661	462	4800	0.10	75.0	3.1	A

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	73.0	3.2	2.1	1.40	A

Facility Overall Results

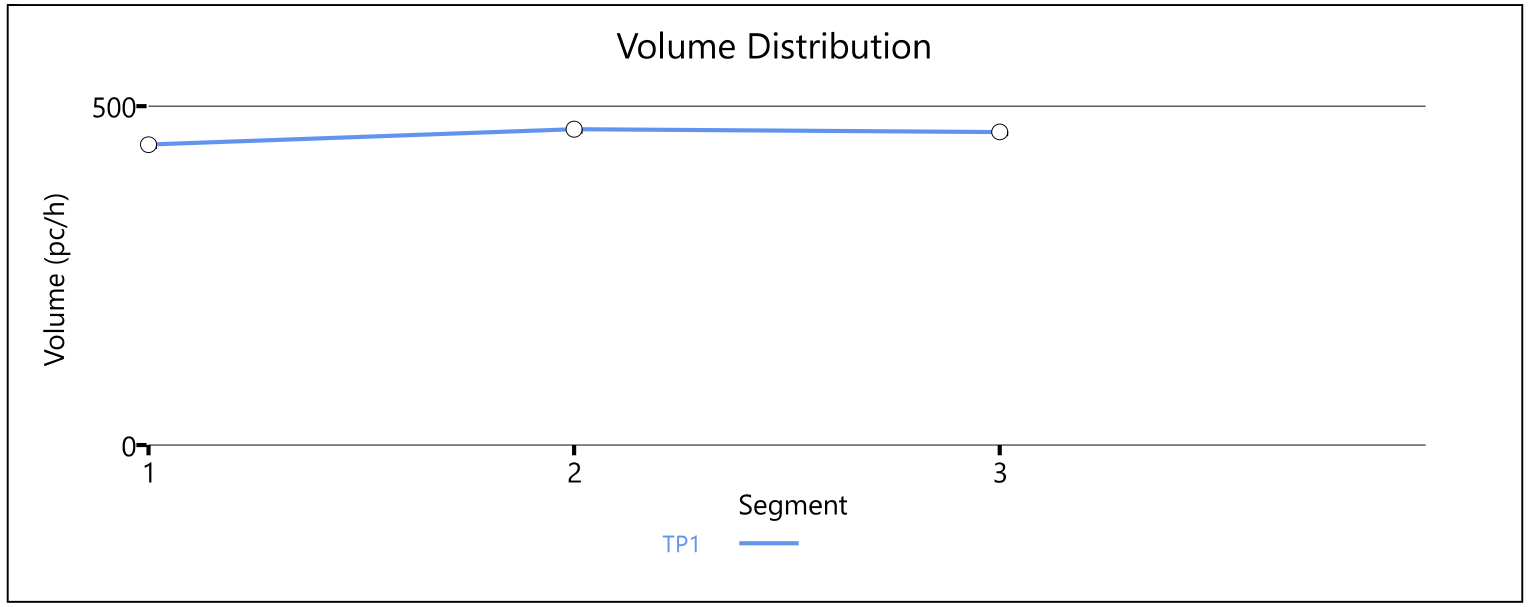
Space Mean Speed, mi/h	73.0	Density, veh/mi/ln	2.1
Average Travel Time, min	1.40	Density, pc/mi/ln	3.2

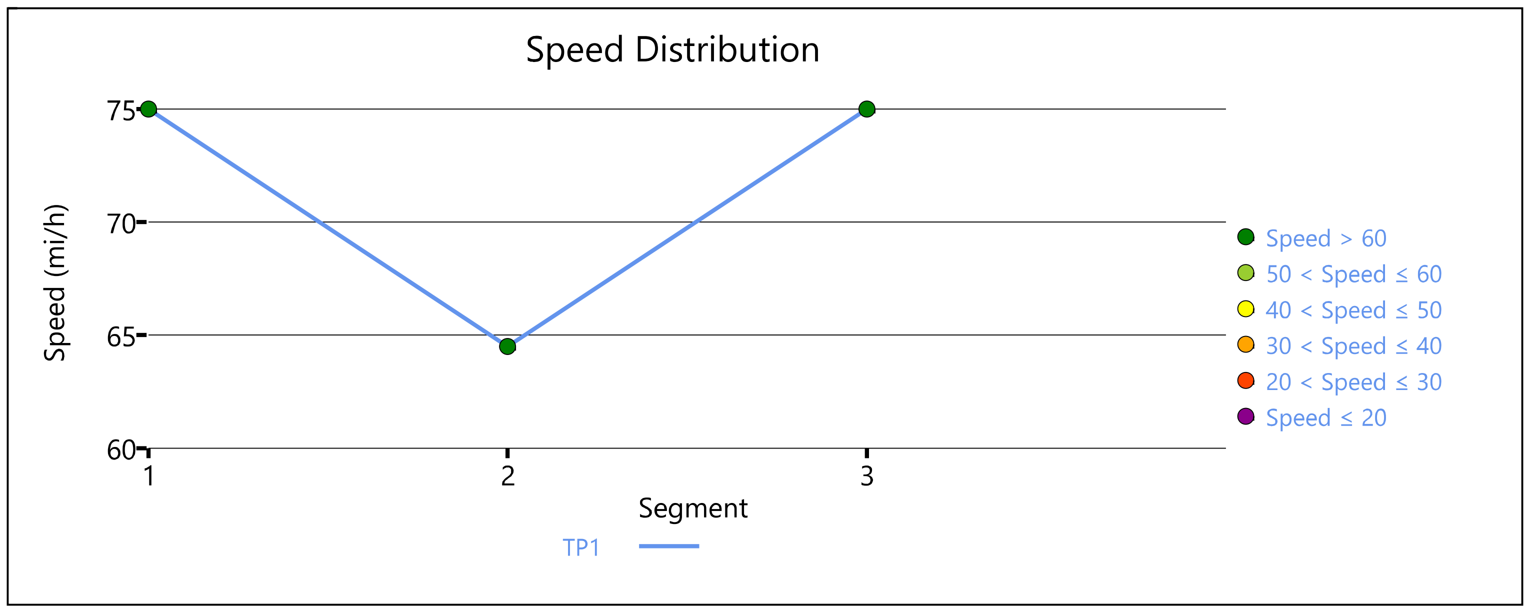
Messages

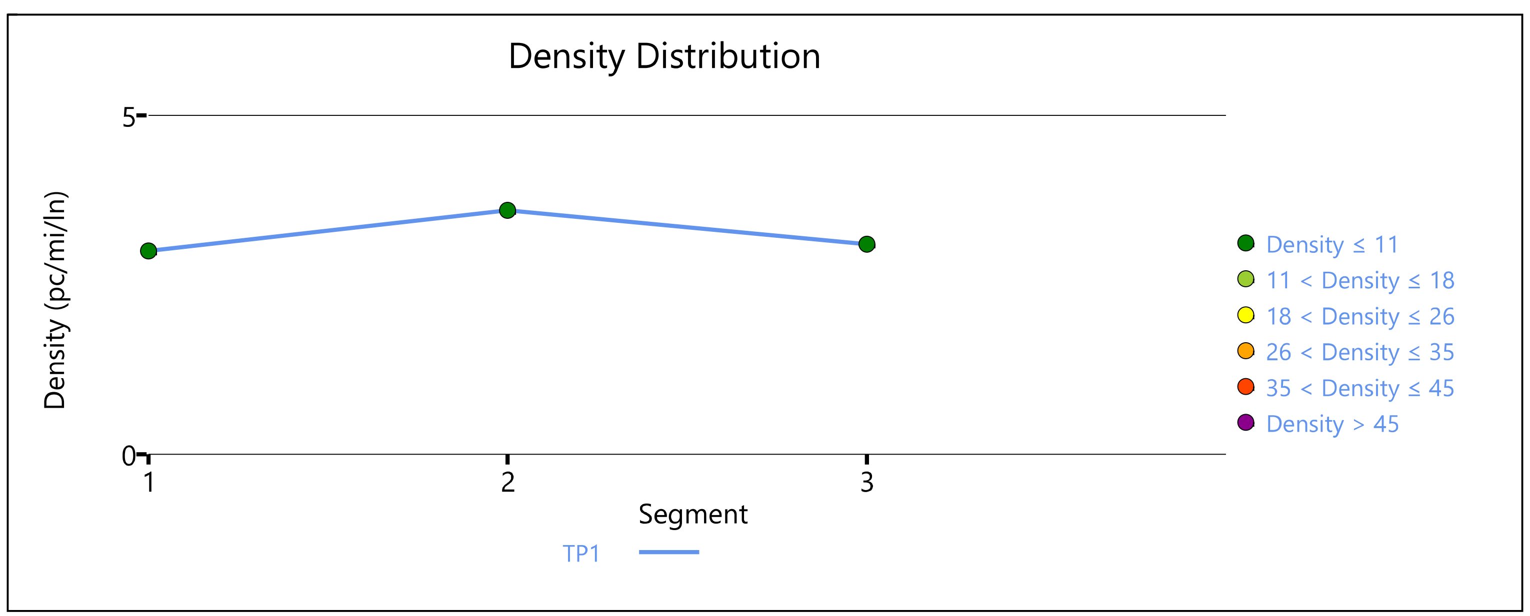
I-25 SB 2022 Existing AM

Comments

I-25 SB 2022 Existing AM







I-25 SB 2022 Existing PM

HCS7 Freeway Facilities Report

Project Information

Analyst	MCS	Date	8/11/2022
Agency	HDR	Analysis Year	2022
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description		Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	1.76		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-25 NB between on-ramp and off-ramp	2530	2
2	Merge	Merge	I-25 NB 1500ft north of on-ramp	1500	2
3	Basic	Basic	I-25 NB north of merge segment	5280	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.661	504	4800	0.11	75.0	3.4	A

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.661	0.762	571	67	4800	1900	0.12	0.04	64.5	64.5	4.4	8.9	A

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.661	581	4800	0.12	75.0	3.9	A

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	73.0	3.8	2.5	1.40	A

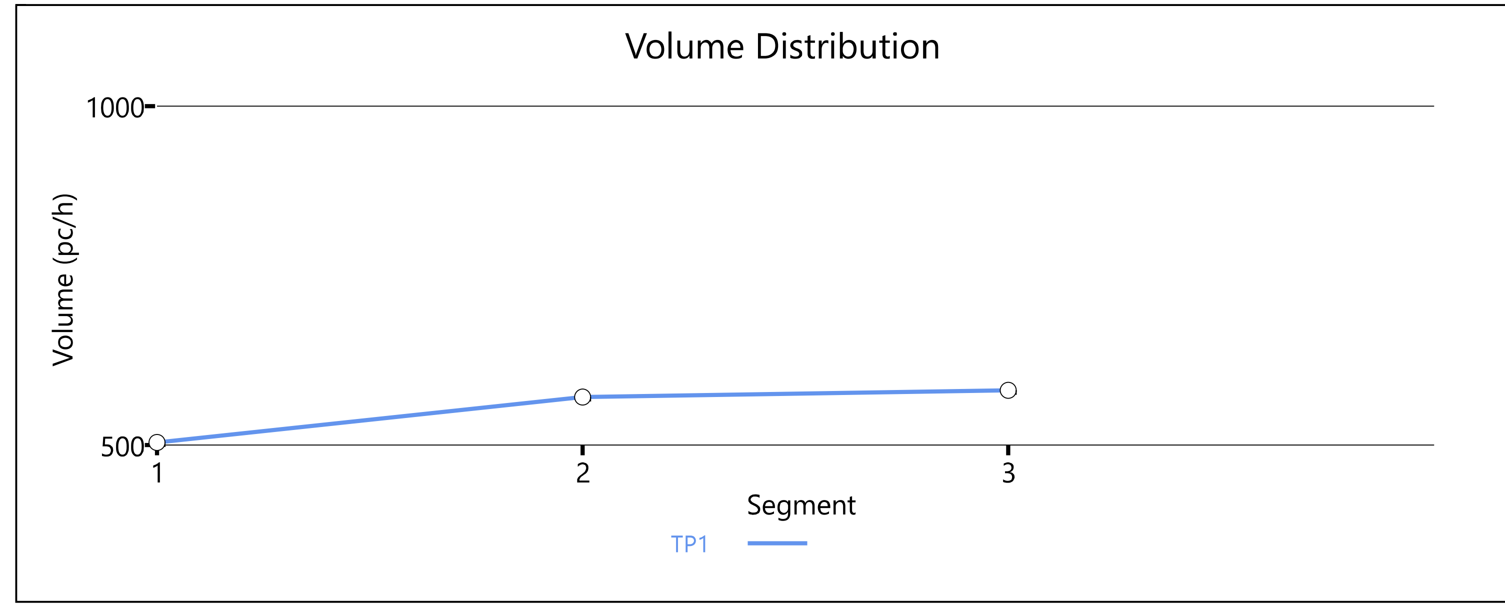
Facility Overall Results

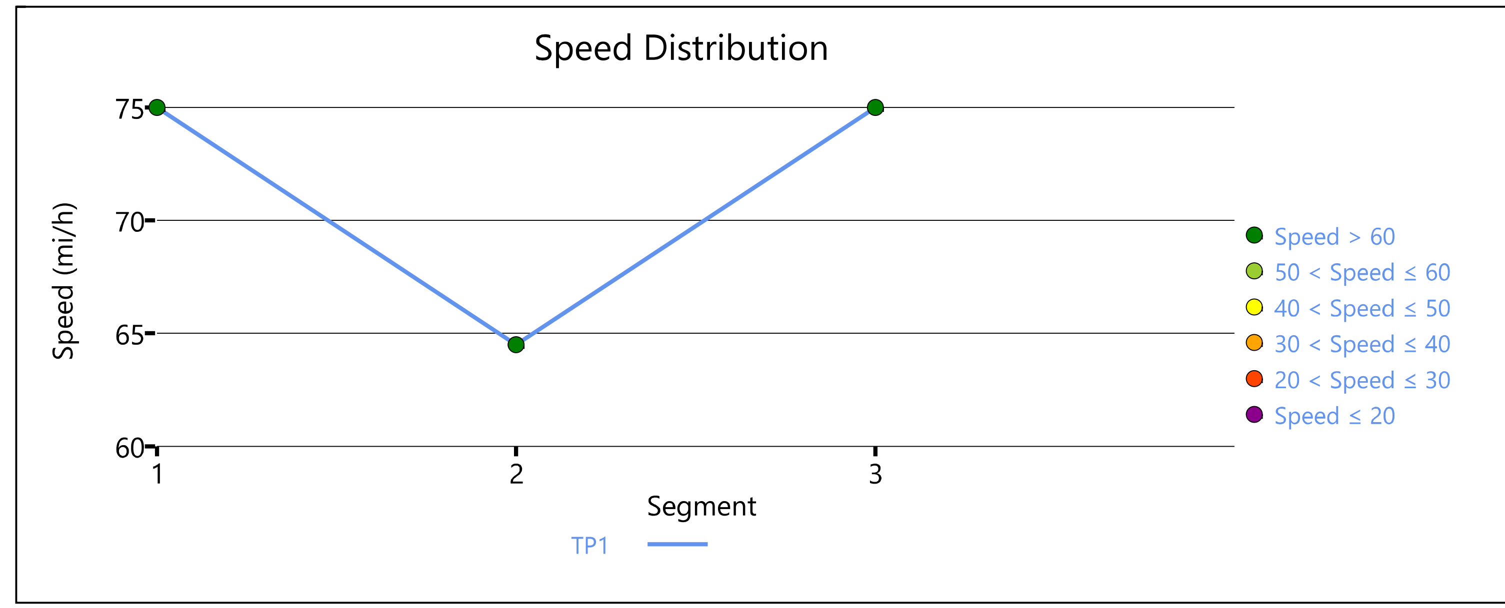
Space Mean Speed, mi/h	73.0	Density, veh/mi/ln	2.5
Average Travel Time, min	1.40	Density, pc/mi/ln	3.8

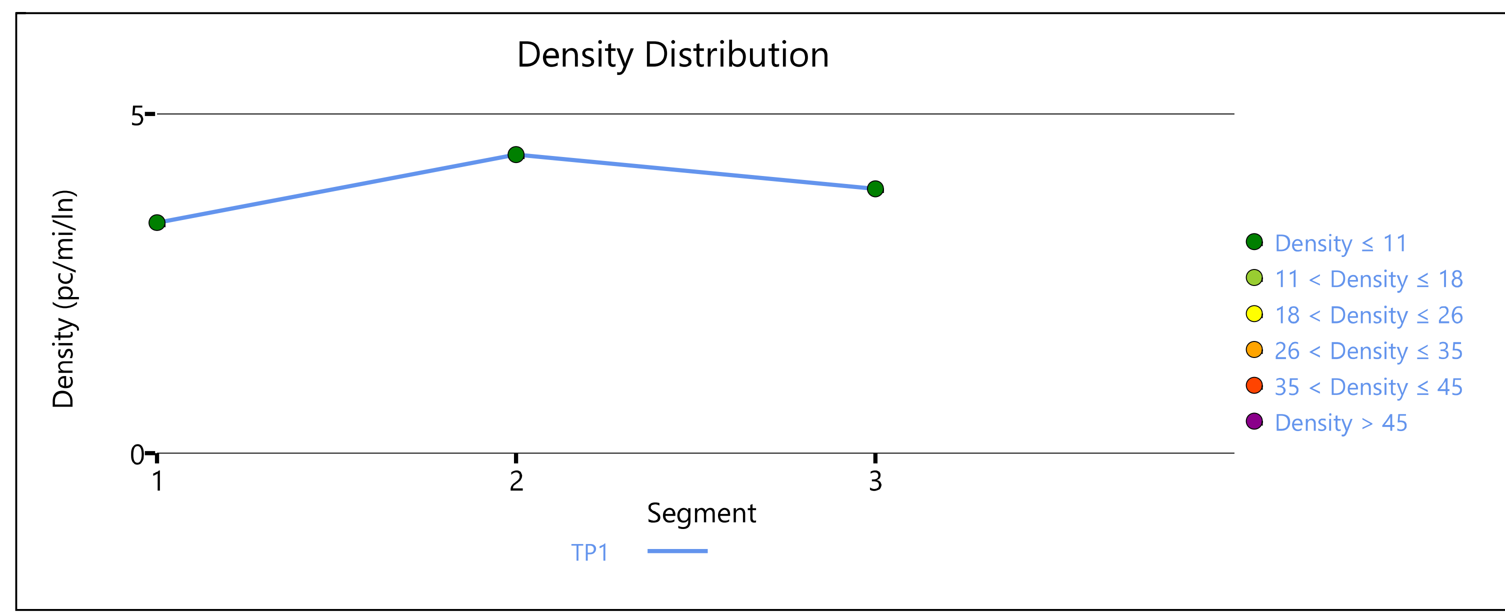
Messages

Comments

I-25 SB 2022 Existing PM







US380 EB 2022 Existing AM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2022
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1565
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	3.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	98	Opposing Demand Flow Rate, veh/h	98
Peak Hour Factor	0.94	Total Trucks, %	41.91
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	43.4
Speed Slope Coefficient	2.56418	Speed Power Coefficient	0.57519
PF Slope Coefficient	-1.28221	PF Power Coefficient	0.74869
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1565	-	-	43.4

Vehicle Results

Average Speed, mi/h	43.4	Percent Followers, %	20.2
Segment Travel Time, minutes	0.41	Follower Density, followers/mi/ln	0.5
Vehicle LOS	A		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1386
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	7.6

Demand and Capacity

Directional Demand Flow Rate, veh/h	98	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	41.91

Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	42.3
Speed Slope Coefficient	2.80262	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.49310	PF Power Coefficient	0.69283
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

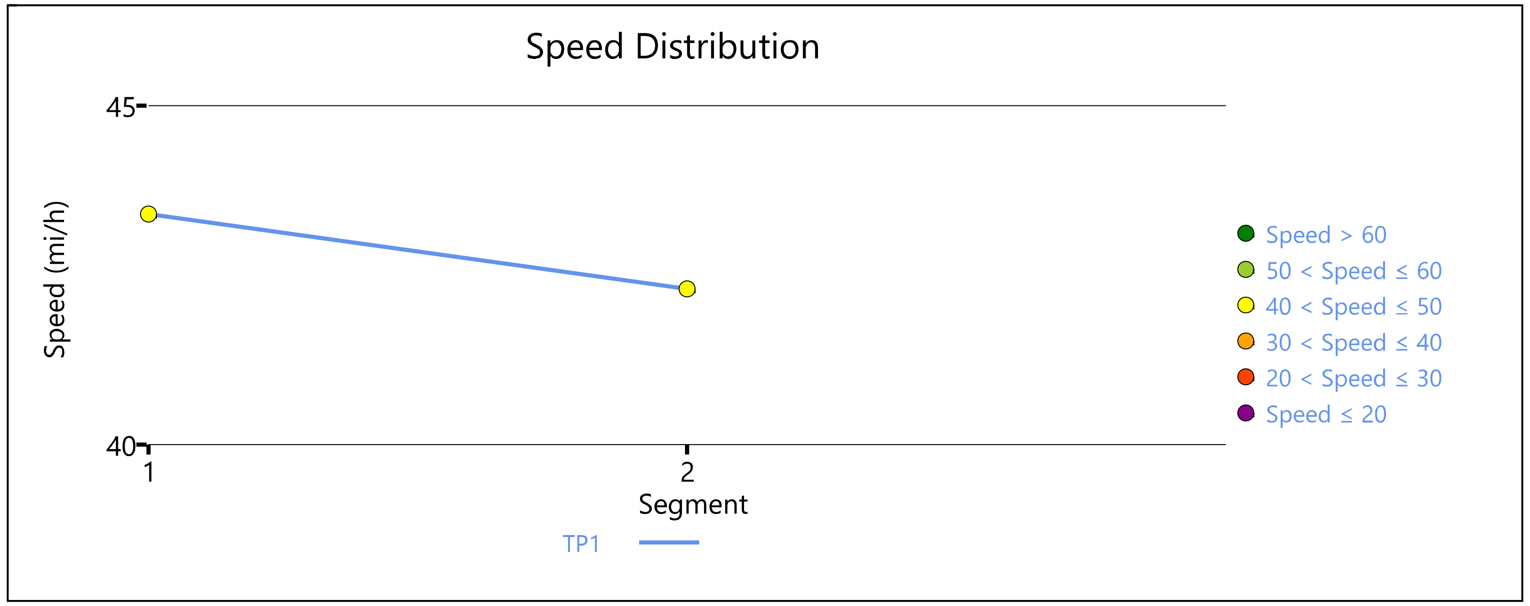
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1386	-	-	42.3

Vehicle Results

Average Speed, mi/h	42.3	Percent Followers, %	25.8
Segment Travel Time, minutes	0.37	Follower Density, followers/mi/ln	0.6
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.5	A



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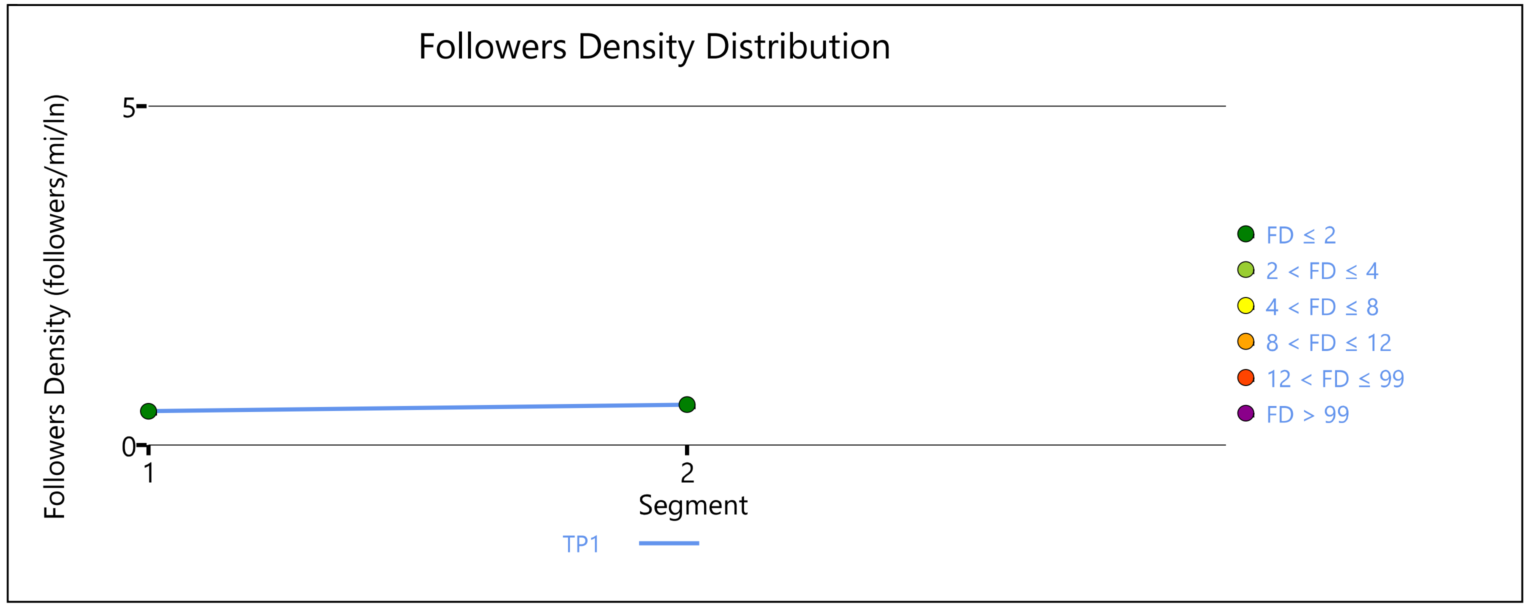

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US380 EB 2022 Existing PM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2022
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1565
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	3.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	145	Opposing Demand Flow Rate, veh/h	145
Peak Hour Factor	0.94	Total Trucks, %	41.91
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	43.4
Speed Slope Coefficient	2.58632	Speed Power Coefficient	0.55658
PF Slope Coefficient	-1.30191	PF Power Coefficient	0.74450
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1565	-	-	42.9

Vehicle Results

Average Speed, mi/h	42.9	Percent Followers, %	26.6
Segment Travel Time, minutes	0.41	Follower Density, followers/mi/ln	0.9
Vehicle LOS	A		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1386
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	7.6

Demand and Capacity

Directional Demand Flow Rate, veh/h	145	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	41.91

US380 EB 2022 Existing PM

Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	42.3
Speed Slope Coefficient	2.80262	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.49310	PF Power Coefficient	0.69283
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

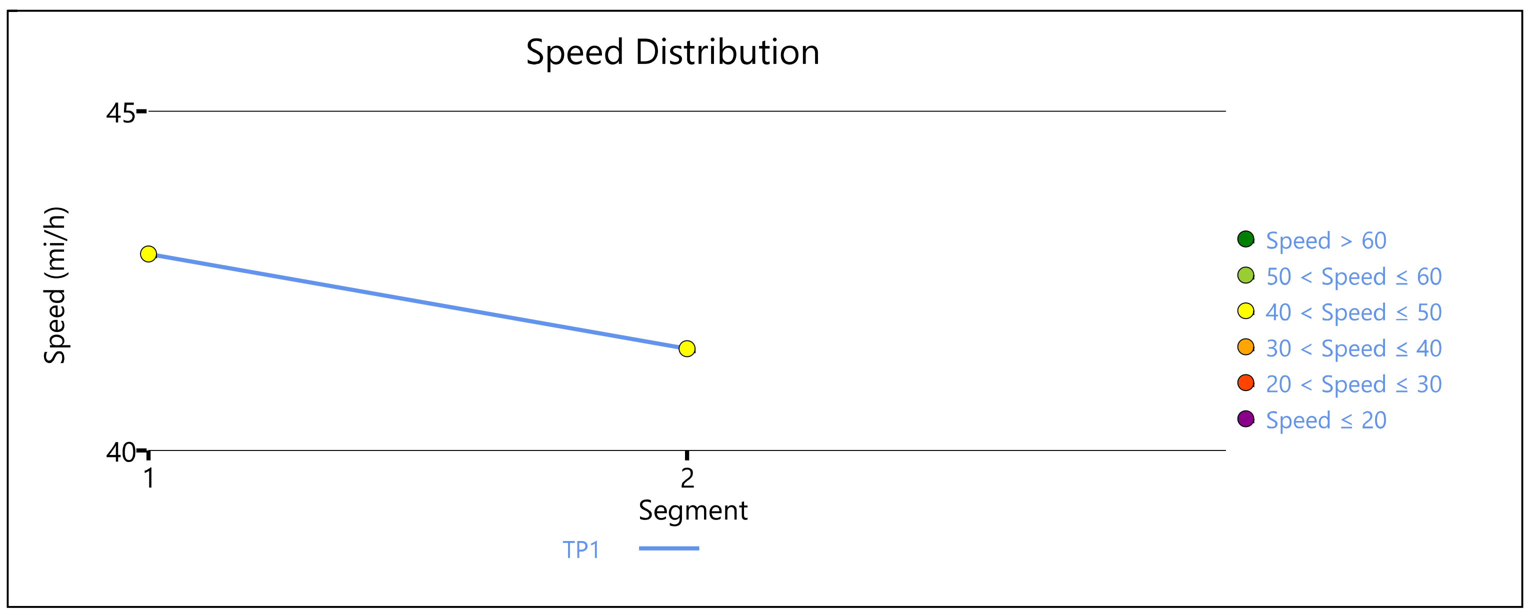
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1386	-	-	41.5

Vehicle Results

Average Speed, mi/h	41.5	Percent Followers, %	32.4
Segment Travel Time, minutes	0.38	Follower Density, followers/mi/ln	1.1
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	1.0	A



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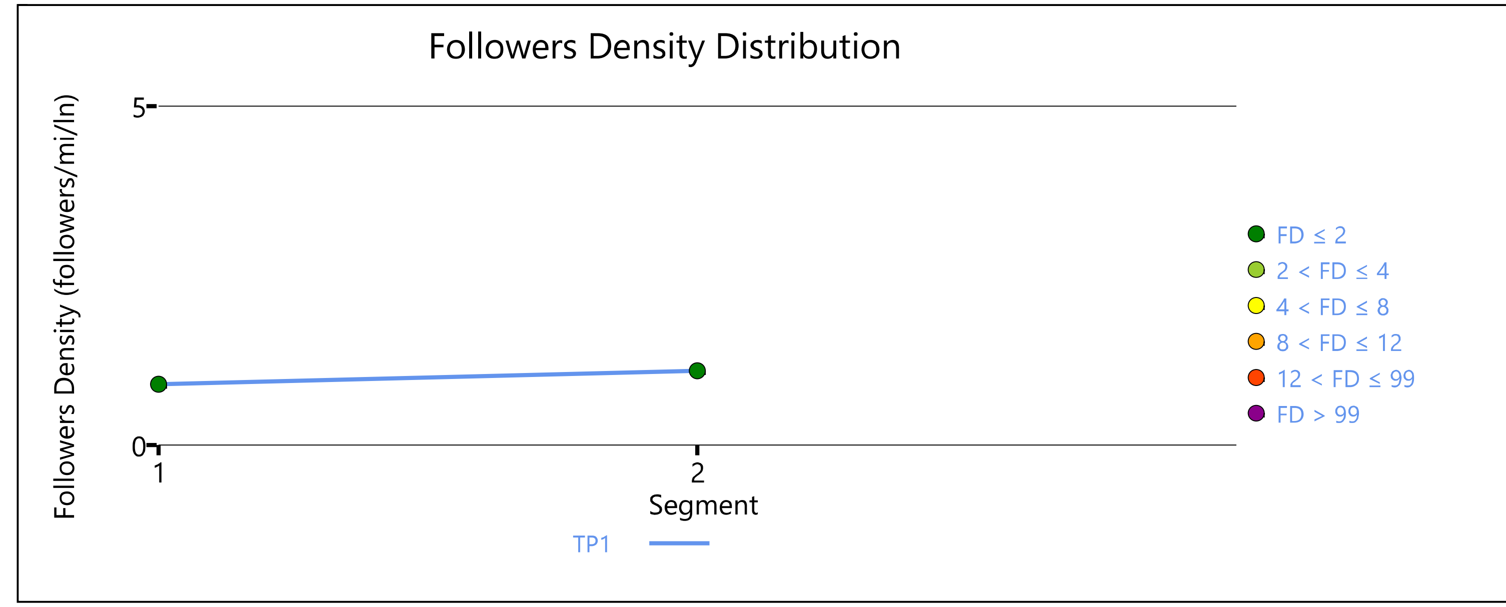


HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2022
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	871
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	12.1

Demand and Capacity

Directional Demand Flow Rate, veh/h	98	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	37.02
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	41.3
Speed Slope Coefficient	2.74920	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.49949	PF Power Coefficient	0.68732
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	871	-	-	41.3

Vehicle Results

Average Speed, mi/h	41.3	Percent Followers, %	26.2
Segment Travel Time, minutes	0.24	Follower Density, followers/mi/ln	0.6
Vehicle LOS	A		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1578
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	98	Opposing Demand Flow Rate, veh/h	98
Peak Hour Factor	0.94	Total Trucks, %	37.02
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

US380 WB 2022 Existing AM

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	44.4
Speed Slope Coefficient	2.61931	Speed Power Coefficient	0.57519
PF Slope Coefficient	-1.28347	PF Power Coefficient	0.75194
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

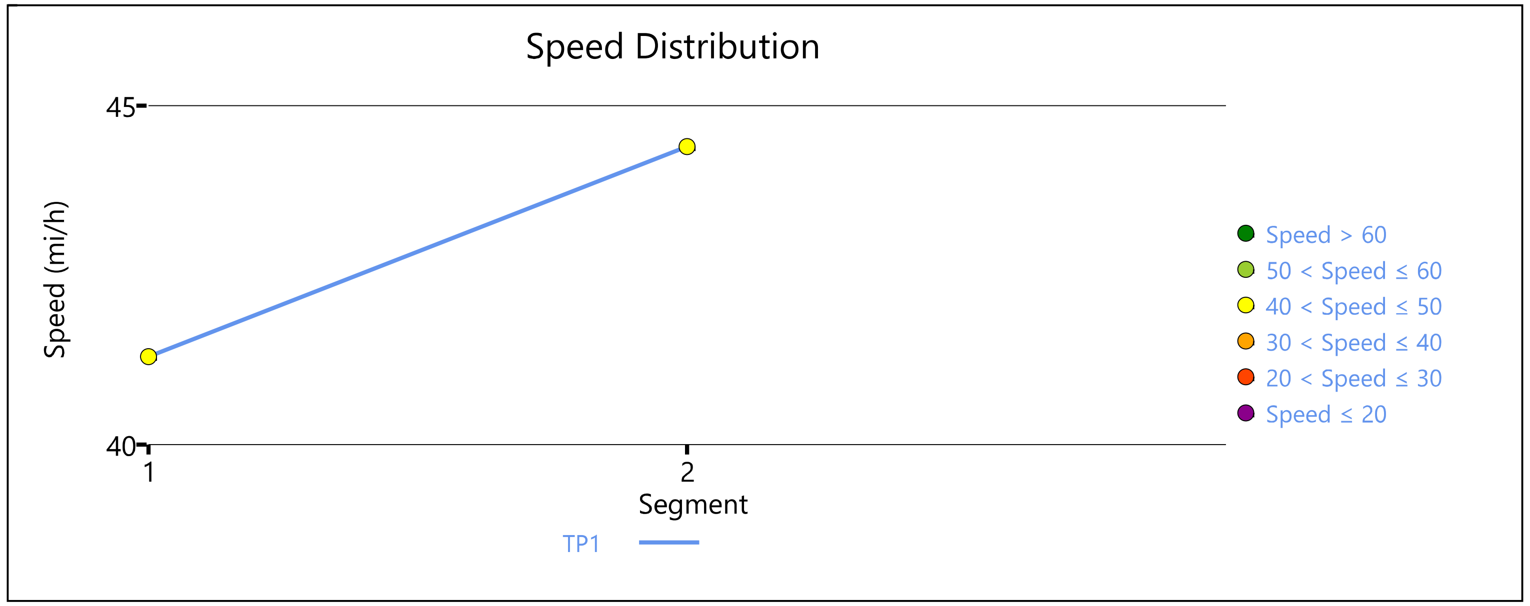
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1578	-	-	44.4

Vehicle Results

Average Speed, mi/h	44.4	Percent Followers, %	20.0
Segment Travel Time, minutes	0.40	Follower Density, followers/mi/ln	0.4
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.5	A



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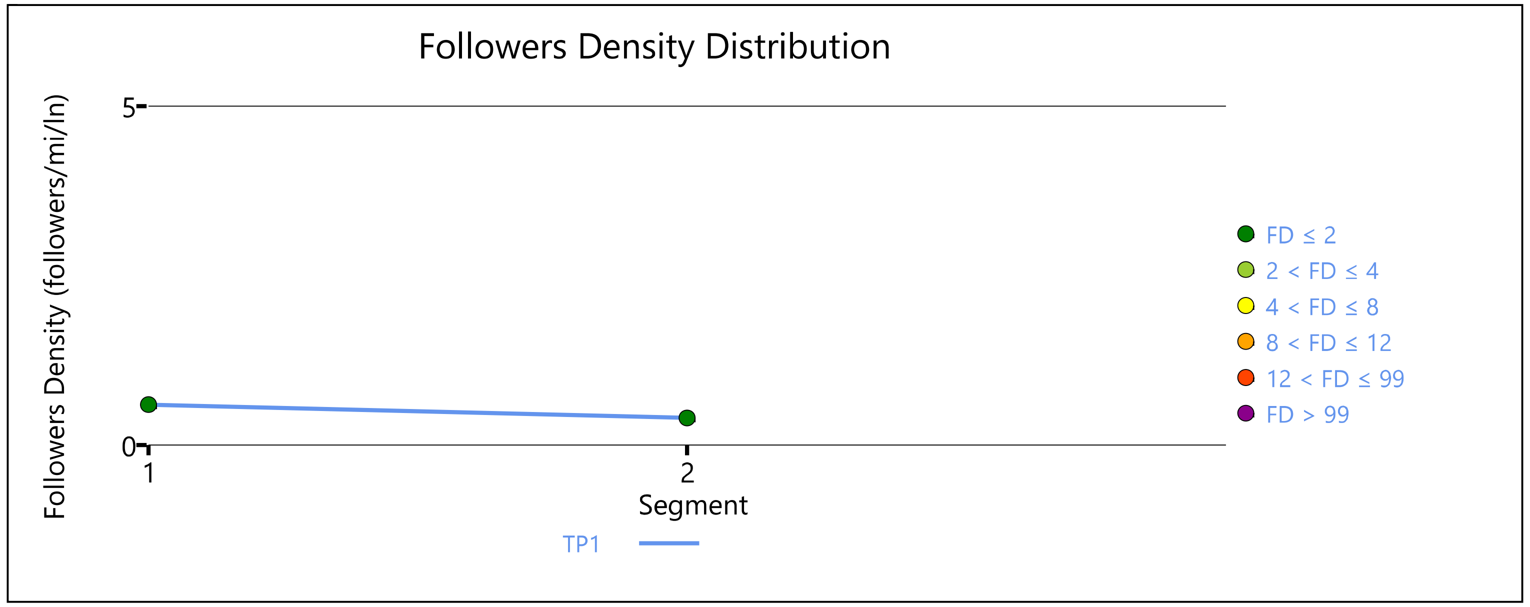

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US380 WB 2022 Existing PM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2022
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	871
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	12.1

Demand and Capacity

Directional Demand Flow Rate, veh/h	145	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	37.02
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	41.3
Speed Slope Coefficient	2.74920	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.49949	PF Power Coefficient	0.68732
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	871	-	-	40.6

Vehicle Results

Average Speed, mi/h	40.6	Percent Followers, %	32.8
Segment Travel Time, minutes	0.24	Follower Density, followers/mi/ln	1.2
Vehicle LOS	A		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1578
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	145	Opposing Demand Flow Rate, veh/h	145
Peak Hour Factor	0.94	Total Trucks, %	37.02

Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	44.4
Speed Slope Coefficient	2.64144	Speed Power Coefficient	0.55658
PF Slope Coefficient	-1.30309	PF Power Coefficient	0.74777
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

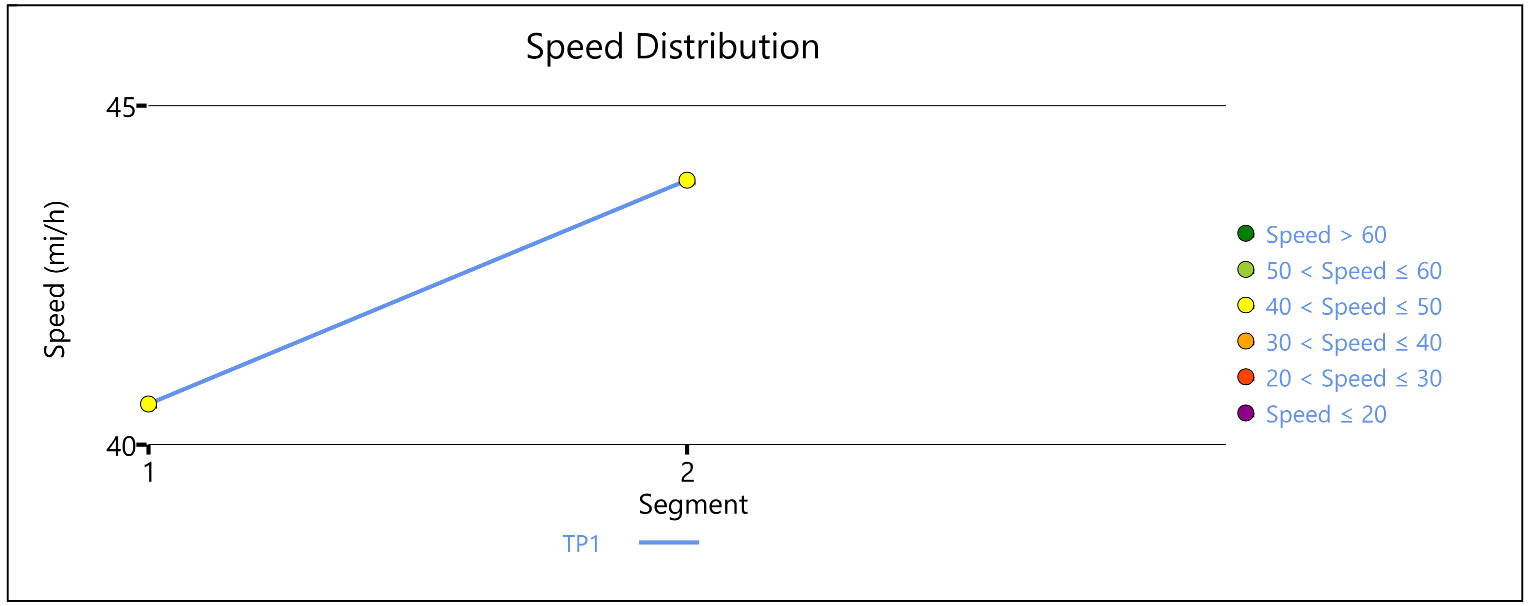
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1578	-	-	43.9

Vehicle Results

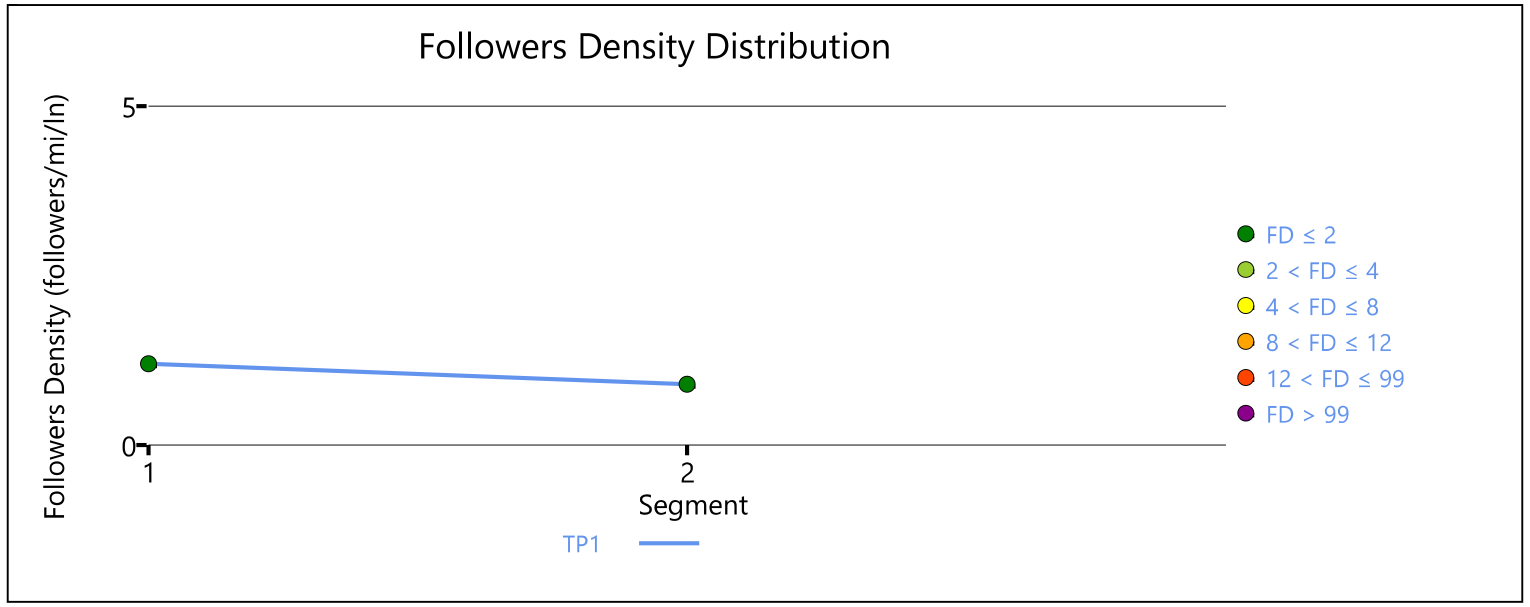
Average Speed, mi/h	43.9	Percent Followers, %	26.4
Segment Travel Time, minutes	0.41	Follower Density, followers/mi/ln	0.9
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	1.0	A



US380 WB 2022 Existing PM



NB I-25 To US380 Off-Ramp 2022 Existing AM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2022
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1343
Lane Width, ft	14	Shoulder Width, ft	3
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	11	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	40.46
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	54.8
Speed Slope Coefficient	3.47676	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.43511	PF Power Coefficient	0.72994
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	1343	650	6	54.8

Vehicle Results

Average Speed, mi/h	54.8	Percent Followers, %	5.1
Segment Travel Time, minutes	0.28	Follower Density, followers/mi/ln	0.0
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.0	A

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NB I-25 To US380 Off-Ramp 2022 Existing PM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2022
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1343
Lane Width, ft	14	Shoulder Width, ft	3
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	13	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	40.46
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	54.8
Speed Slope Coefficient	3.47676	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.43511	PF Power Coefficient	0.72994
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	1343	650	6	54.8

Vehicle Results

Average Speed, mi/h	54.8	Percent Followers, %	5.8
Segment Travel Time, minutes	0.28	Follower Density, followers/mi/ln	0.0
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.0	A

 HCS™ Two-Lane Version 7.9 Generated: 08/22/2022 16:22:20
NB_I-25_To_US380_Off-Ramp_2022_Existing_PM.xuf

SB I-25 To US380 Off-Ramp 2022 Existing AM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2022
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3827
Lane Width, ft	14	Shoulder Width, ft	6
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	72	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	5.70
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.04

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.0
Speed Slope Coefficient	3.68903	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.32994	PF Power Coefficient	0.75524
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	3827	1000	6	58.0

Vehicle Results

Average Speed, mi/h	58.0	Percent Followers, %	16.7
Segment Travel Time, minutes	0.75	Follower Density, followers/mi/ln	0.2
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.2	A

 HCS™ Two-Lane Version 7.9 Generated: 08/22/2022 16:23:03
SB_I-25_To_US380_Off-Ramp_2022_Existing_AM.xuf

SB I-25 To US380 Off-Ramp 2022 Existing PM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2022
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3827
Lane Width, ft	14	Shoulder Width, ft	6
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	93	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	3.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.05

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.1
Speed Slope Coefficient	3.69318	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.32960	PF Power Coefficient	0.75511
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	3827	1000	6	58.1

Vehicle Results

Average Speed, mi/h	58.1	Percent Followers, %	19.8
Segment Travel Time, minutes	0.75	Follower Density, followers/mi/ln	0.3
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.3	A

 HCS™ Two-Lane Version 7.9 Generated: 08/22/2022 16:23:39
SB_I-25_To_US380_Off-Ramp_2022_Existing_PM.xuf

WB US380 To NB I-25 On-Ramp 2022 Existing AM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2022
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1278
Lane Width, ft	14	Shoulder Width, ft	2
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	85	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	37.02
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.05

Intermediate Results

Segment Vertical Class	2	Free-Flow Speed, mi/h	54.0
Speed Slope Coefficient	4.33655	Speed Power Coefficient	0.42715
PF Slope Coefficient	-1.51823	PF Power Coefficient	0.72866
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	1278	800	6	54.0

Vehicle Results

Average Speed, mi/h	54.0	Percent Followers, %	22.3
Segment Travel Time, minutes	0.27	Follower Density, followers/mi/ln	0.4
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.4	A

 HCS™ Two-Lane Version 7.9 Generated: 08/22/2022 16:24:16
WB_US380_To_NB_I-25_On-Ramp_2022_Existing_AM.xuf

WB US380 To NB I-25 On-Ramp 2022 Existing PM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2022
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1278
Lane Width, ft	14	Shoulder Width, ft	2
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	94	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	37.02
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	2	Free-Flow Speed, mi/h	54.0
Speed Slope Coefficient	4.33655	Speed Power Coefficient	0.42715
PF Slope Coefficient	-1.51823	PF Power Coefficient	0.72866
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	1278	800	6	54.0

Vehicle Results

Average Speed, mi/h	54.0	Percent Followers, %	23.7
Segment Travel Time, minutes	0.27	Follower Density, followers/mi/ln	0.4
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.4	A

 HCS™ Two-Lane Version 7.9 Generated: 08/22/2022 16:25:04
WB_US380_To_NB_I-25_On-Ramp_2022_Existing_PM.xuf

WB US380 To SB I-25 On-Ramp 2022 Existing AM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2022
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1182
Lane Width, ft	16	Shoulder Width, ft	2
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	13	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	83.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	53.8
Speed Slope Coefficient	3.42610	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.43792	PF Power Coefficient	0.73318
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	1182	150	6	53.8

Vehicle Results

Average Speed, mi/h	53.8	Percent Followers, %	5.7
Segment Travel Time, minutes	0.25	Follower Density, followers/mi/ln	0.0
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.0	A

 HCS™ Two-Lane Version 7.9 Generated: 08/22/2022 16:25:39

WB_US380_To_SB_I-25_On-Ramp_2022_Existing_AM.xuf

WB US380 To SB I-25 On-Ramp 2022 Existing PM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2022
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1182
Lane Width, ft	16	Shoulder Width, ft	2
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	51	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	31.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.03

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.6
Speed Slope Coefficient	3.51995	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.43152	PF Power Coefficient	0.73020
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	1182	150	6	55.6

Vehicle Results

Average Speed, mi/h	55.6	Percent Followers, %	15.0
Segment Travel Time, minutes	0.24	Follower Density, followers/mi/ln	0.1
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.1	A

 HCS™ Two-Lane Version 7.9 Generated: 08/22/2022 16:26:14

WB_US380_To_SB_I-25_On-Ramp_2022_Existing_PM.xuf

Appendix E – 2042 No-Build Operational Analysis

2042 No-Build Synchro Analysis

Intersection						
Int Delay, s/veh	0.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	3	0	18	101	3
Future Vol, veh/h	0	3	0	18	101	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	50	92	35	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	6	0	51	123	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	125	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	926	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	926	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	926	-	-
HCM Lane V/C Ratio	-	0.006	-	-
HCM Control Delay (s)	-	8.9	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Intersection												
Int Delay, s/veh	5.1											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	59	12	4	59	4	37	22	3	6	10	27
Future Vol, veh/h	10	59	12	4	59	4	37	22	3	6	10	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	78	78	78	66	66	66	66	66	66
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	75	15	5	76	5	56	33	5	9	15	41

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	81	0	0	90	0	0	226	200	83	217	205	79
Stage 1	-	-	-	-	-	-	109	109	-	89	89	-
Stage 2	-	-	-	-	-	-	117	91	-	128	116	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1517	-	-	1505	-	-	729	696	976	739	691	981
Stage 1	-	-	-	-	-	-	896	805	-	918	821	-
Stage 2	-	-	-	-	-	-	888	820	-	876	800	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1517	-	-	1505	-	-	681	688	976	702	683	981
Mov Cap-2 Maneuver	-	-	-	-	-	-	681	688	-	702	683	-
Stage 1	-	-	-	-	-	-	888	798	-	910	819	-
Stage 2	-	-	-	-	-	-	833	818	-	828	793	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.4	11	9.6
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	694	1517	-	-	1505	-	-	848
HCM Lane V/C Ratio	0.135	0.008	-	-	0.003	-	-	0.077
HCM Control Delay (s)	11	7.4	0	-	7.4	0	-	9.6
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	71	129	1
Future Vol, veh/h	0	0	0	71	129	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	25	92	75	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	95	157	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	158	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	887	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	887	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	0	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	91	34	1	144	18	13	18	1	12	21	27
Future Vol, veh/h	12	91	34	1	144	18	13	18	1	12	21	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	89	89	89	89	89	89	71	71	71
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	115	43	1	162	20	15	20	1	17	30	38

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	182	0	0	158	0	0	375	351	137	351	362	172
Stage 1	-	-	-	-	-	-	167	167	-	174	174	-
Stage 2	-	-	-	-	-	-	208	184	-	177	188	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1393	-	-	1422	-	-	582	573	911	604	565	872
Stage 1	-	-	-	-	-	-	835	760	-	828	755	-
Stage 2	-	-	-	-	-	-	794	747	-	825	745	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1393	-	-	1422	-	-	529	566	911	581	558	872
Mov Cap-2 Maneuver	-	-	-	-	-	-	529	566	-	581	558	-
Stage 1	-	-	-	-	-	-	825	751	-	818	754	-
Stage 2	-	-	-	-	-	-	729	746	-	792	736	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	11.9	11.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	557	1393	-	-	1422	-	-	672
HCM Lane V/C Ratio	0.065	0.011	-	-	0.001	-	-	0.126
HCM Control Delay (s)	11.9	7.6	0	-	7.5	0	-	11.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.4

2042 No-Build HCS Analysis

I25 NB 2042 No-Build AM

HCS7 Freeway Facilities Report

Project Information

Analyst	MCS	Date	8/11/2022
Agency	HDR	Analysis Year	2022
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description		Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	1.60		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-25 NB between on-ramp and off-ramp	1677	2
2	Merge	Merge	I-25 NB 1500ft north of on-ramp	1500	2
3	Basic	Basic	I-25 NB north of merge segment	5280	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.649	405	4800	0.08	75.0	2.7	A

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.649	0.730	578	173	4800	2100	0.12	0.08	65.0	65.0	4.4	8.5	A

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.649	600	4800	0.13	75.0	4.0	A

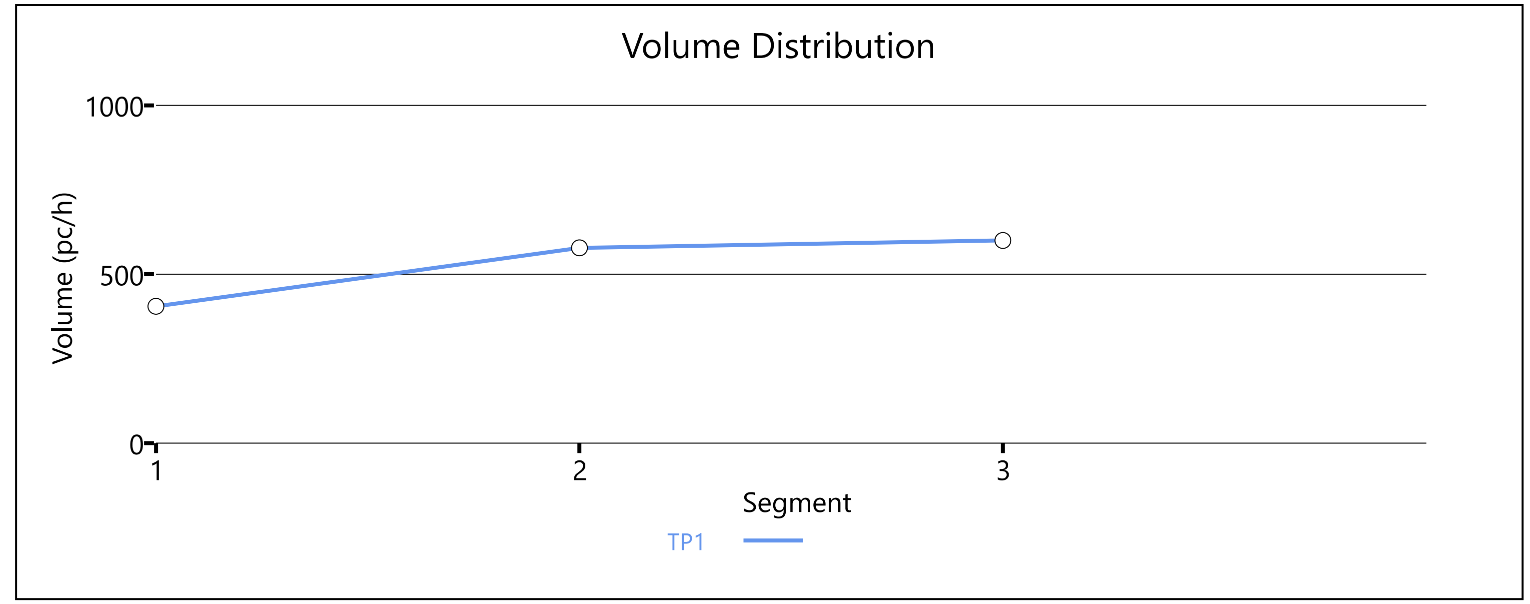
Facility Time Period Results

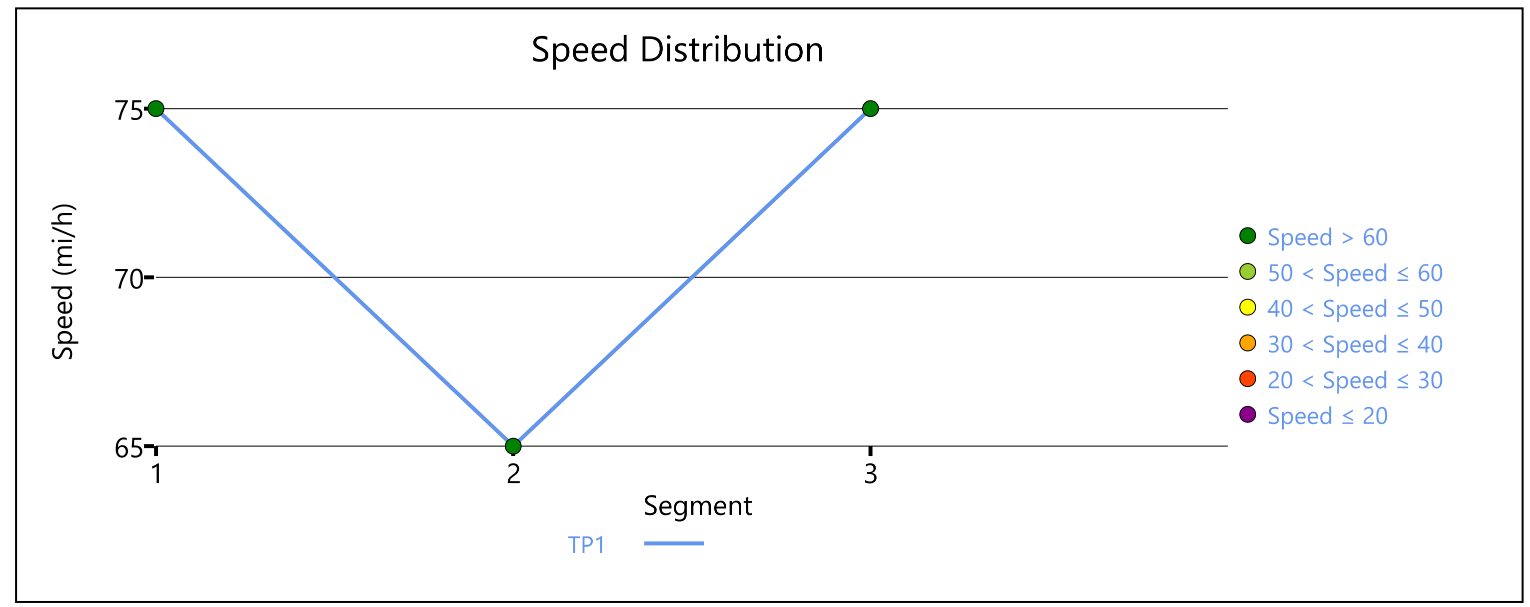
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	72.9	3.8	2.5	1.30	A

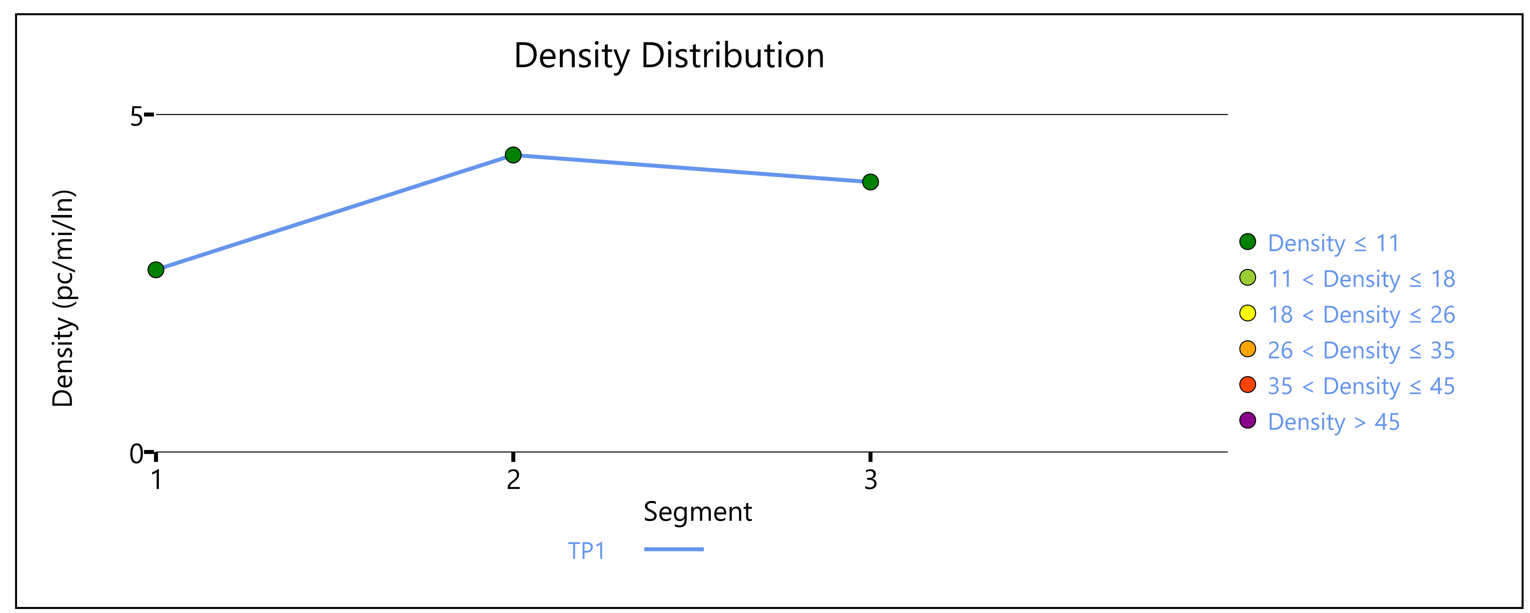
Facility Overall Results

Space Mean Speed, mi/h	72.9	Density, veh/mi/ln	2.5
Average Travel Time, min	1.30	Density, pc/mi/ln	3.8

Messages







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I25 NB 2042 No-Build PM

HCS7 Freeway Facilities Report

Project Information

Analyst	MCS	Date	8/11/2022
Agency	HDR	Analysis Year	2022
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description		Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	1.60		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-25 NB between on-ramp and off-ramp	1677	2
2	Merge	Merge	I-25 NB 1500ft north of on-ramp	1500	2
3	Basic	Basic	I-25 NB north of merge segment	5280	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.649	582	4800	0.12	75.0	3.9	A

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.649	0.730	773	191	4800	2100	0.16	0.09	64.9	64.9	6.0	10.0	A

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.649	797	4800	0.17	75.0	5.3	A

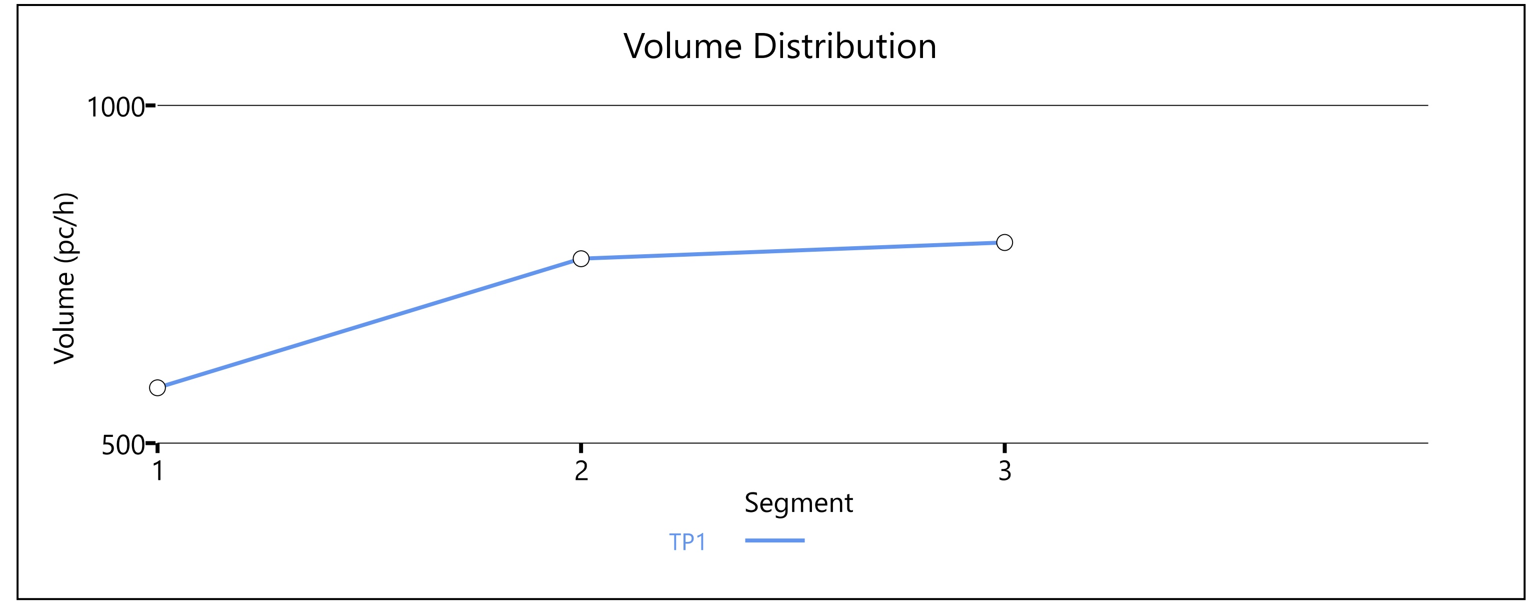
Facility Time Period Results

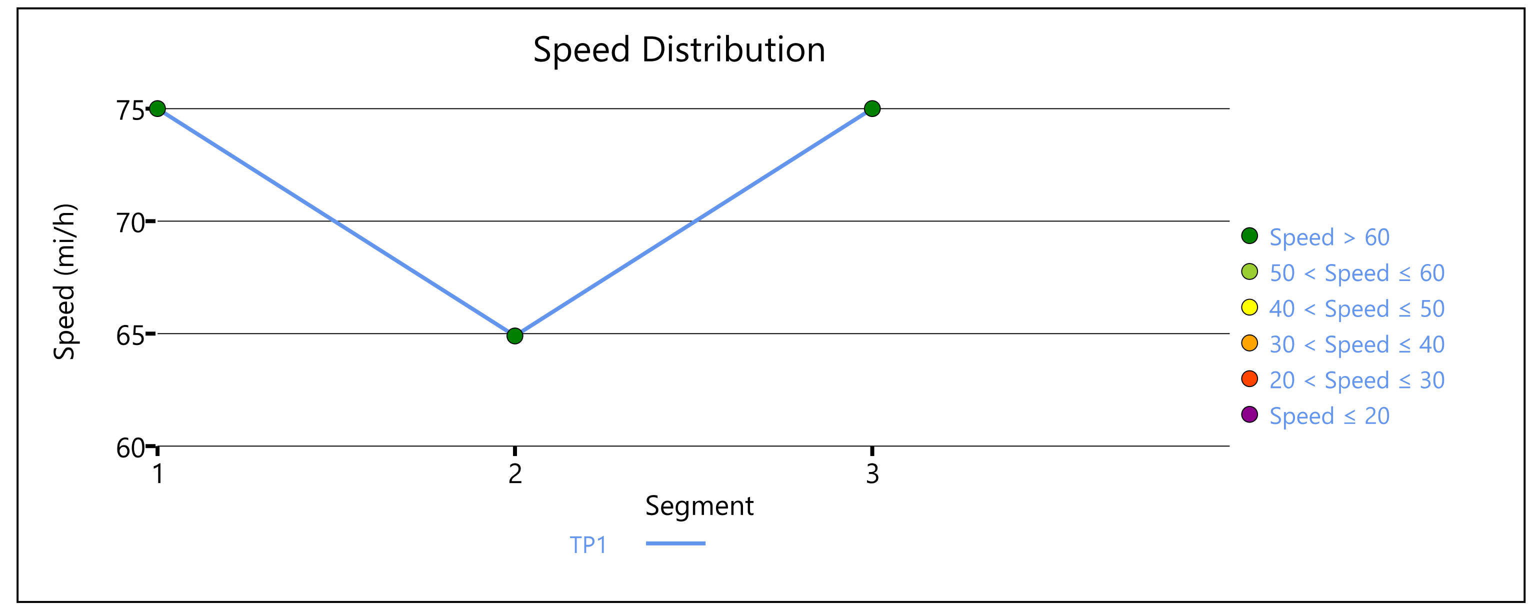
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	72.9	5.2	3.3	1.30	A

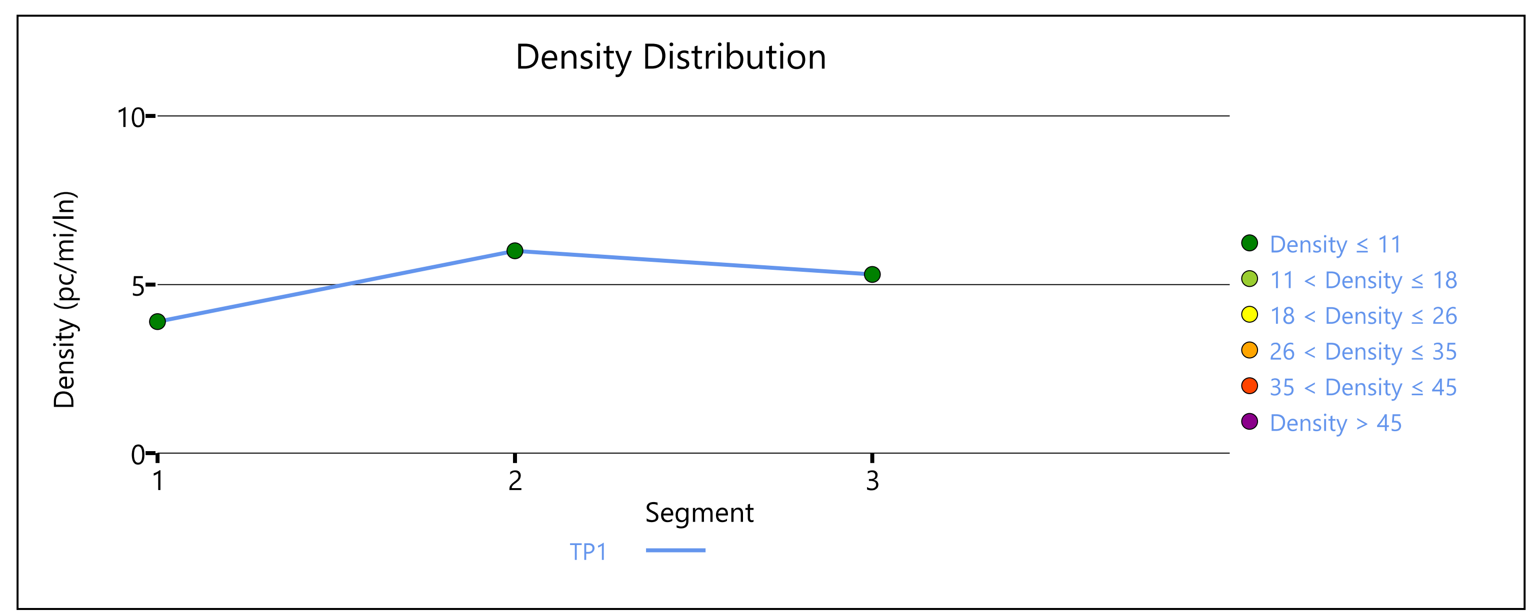
Facility Overall Results

Space Mean Speed, mi/h	72.9	Density, veh/mi/ln	3.3
Average Travel Time, min	1.30	Density, pc/mi/ln	5.2

Messages







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I25 SB 2042 No-Build AM

HCS7 Freeway Facilities Report

Project Information

Analyst	MCS	Date	8/11/2022
Agency	HDR	Analysis Year	2022
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description		Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	1.76		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-25 NB between on-ramp and off-ramp	2530	2
2	Merge	Merge	I-25 NB 1500ft north of on-ramp	1500	2
3	Basic	Basic	I-25 NB north of merge segment	5280	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.661	660	4800	0.14	75.0	4.4	A

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.661	0.546	695	35	4800	1900	0.14	0.02	64.5	64.5	5.4	9.9	A

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.661	689	4800	0.14	75.0	4.6	A

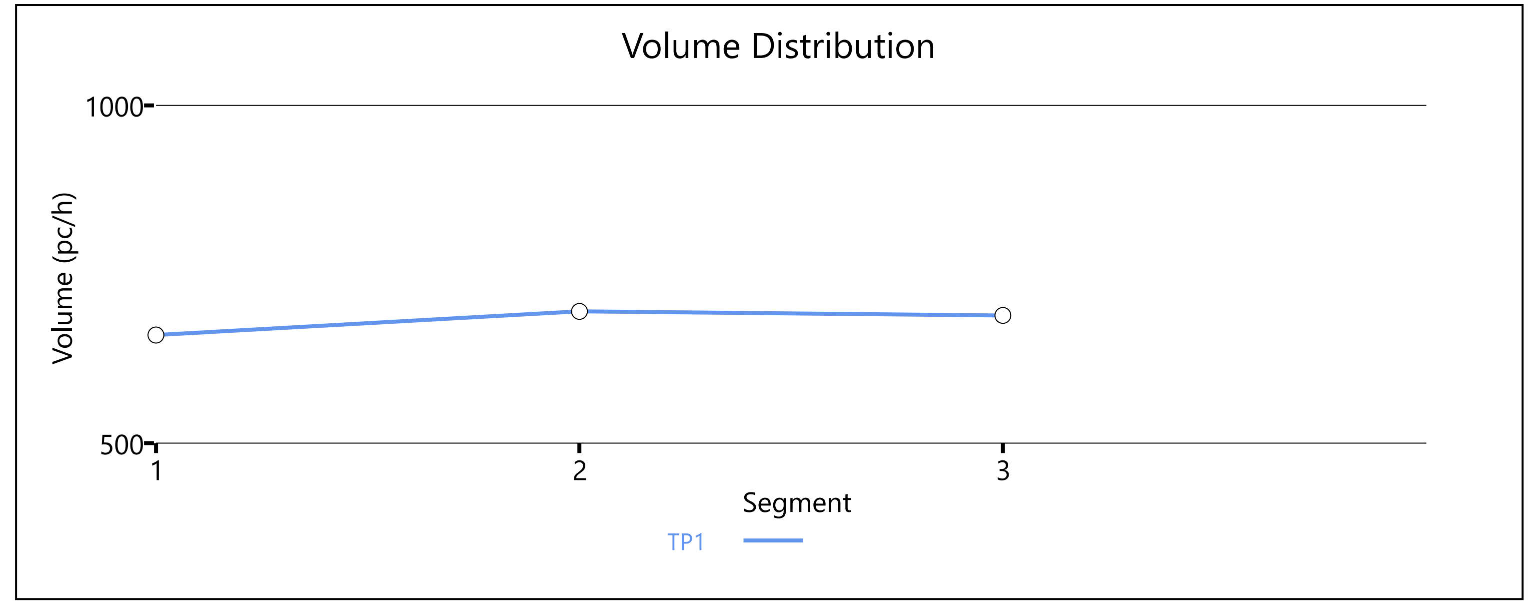
Facility Time Period Results

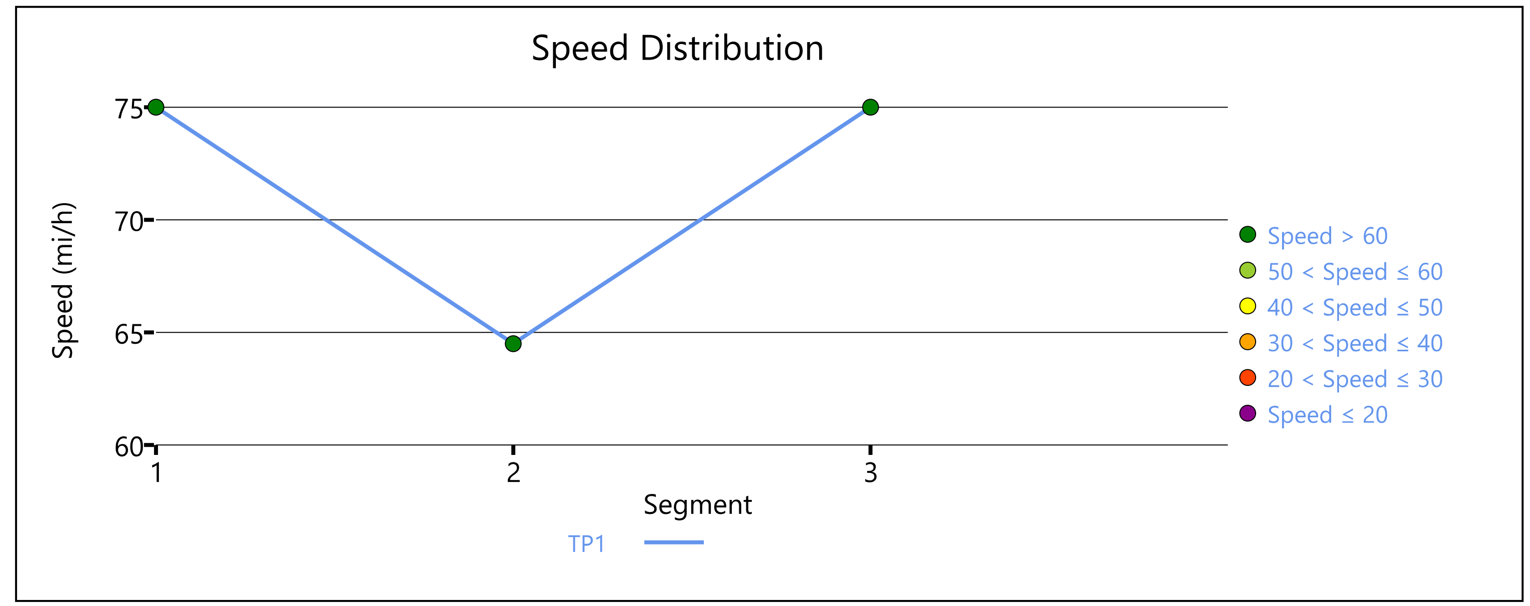
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	73.0	4.7	3.1	1.40	A

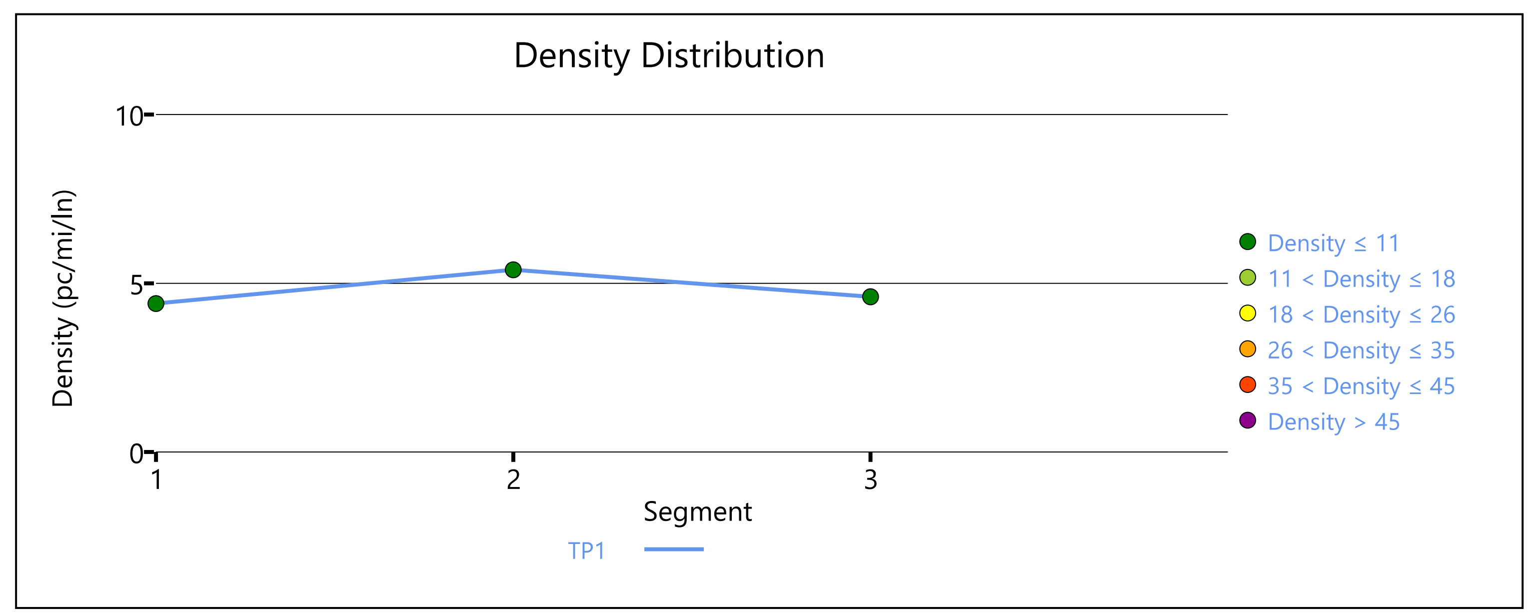
Facility Overall Results

Space Mean Speed, mi/h	73.0	Density, veh/mi/ln	3.1
Average Travel Time, min	1.40	Density, pc/mi/ln	4.7

Messages







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I25 SB 2042 No-Build PM

HCS7 Freeway Facilities Report

Project Information

Analyst	MCS	Date	8/11/2022
Agency	HDR	Analysis Year	2022
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description		Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	1.76		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-25 NB between on-ramp and off-ramp	2530	2
2	Merge	Merge	I-25 NB 1500ft north of on-ramp	1500	2
3	Basic	Basic	I-25 NB north of merge segment	5280	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.661	750	4800	0.16	75.0	5.0	A

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.661	0.762	851	101	4800	1900	0.18	0.05	64.4	64.4	6.6	11.1	B

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.661	866	4800	0.18	75.0	5.8	A

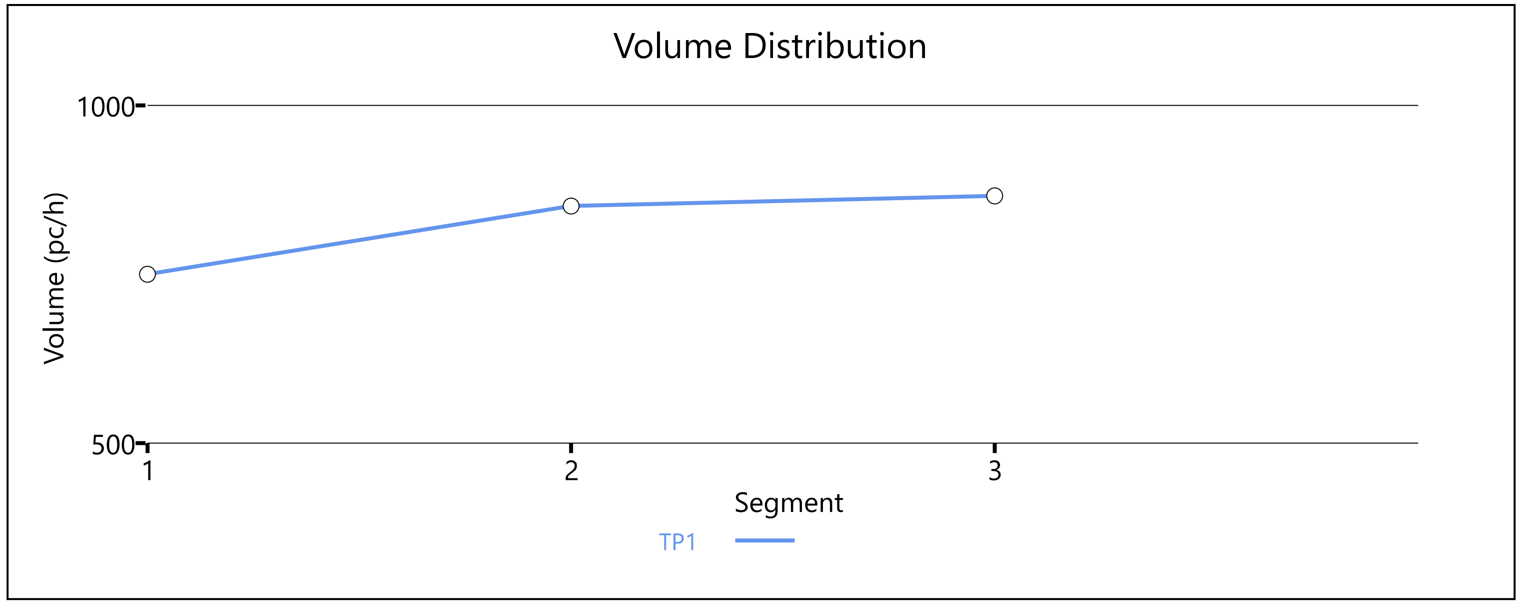
Facility Time Period Results

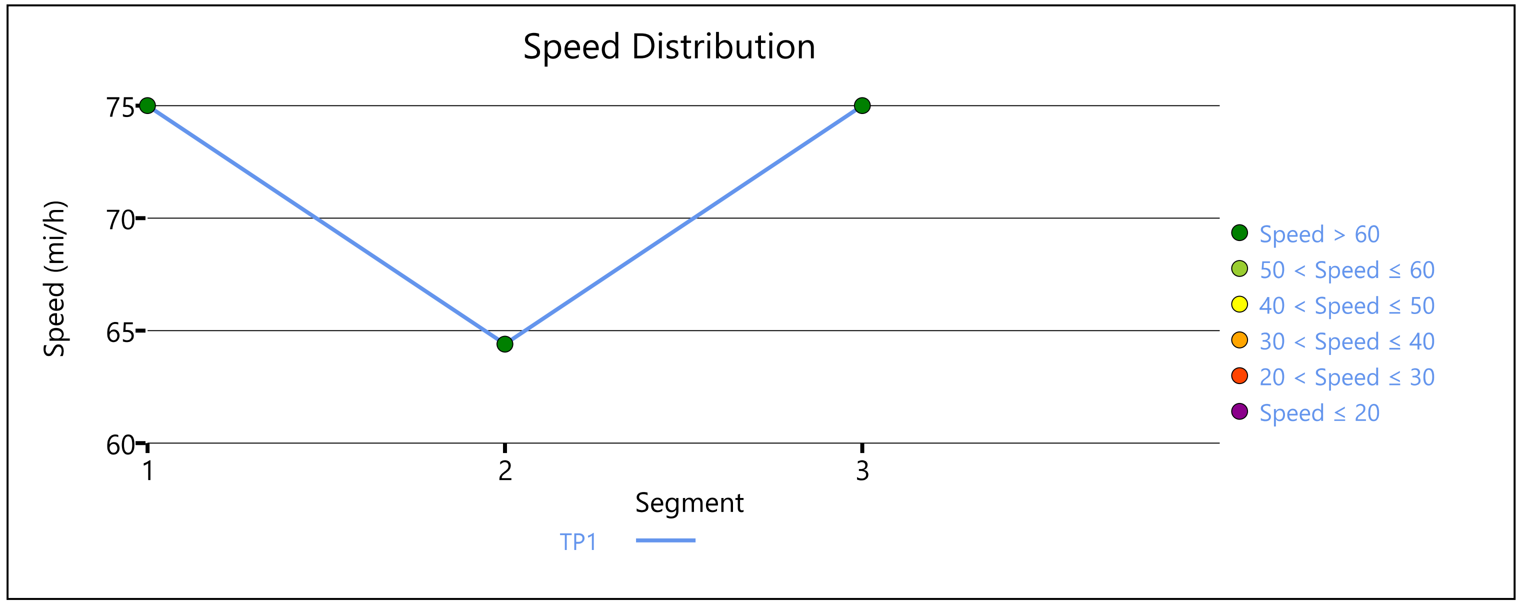
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	73.0	5.7	3.8	1.40	A

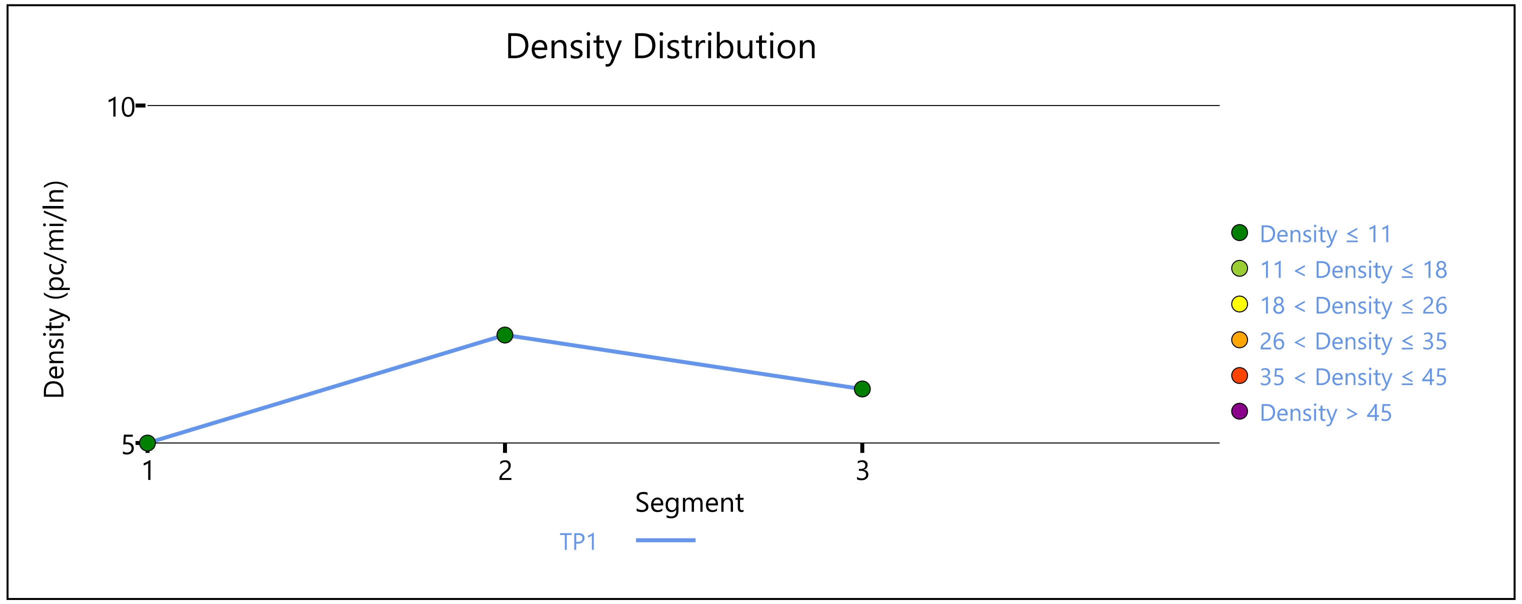
Facility Overall Results

Space Mean Speed, mi/h	73.0	Density, veh/mi/ln	3.8
Average Travel Time, min	1.40	Density, pc/mi/ln	5.7

Messages







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US380 EB 2042 No-Build Condition AM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2042
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1565
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	3.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	146	Opposing Demand Flow Rate, veh/h	146
Peak Hour Factor	0.94	Total Trucks, %	41.91
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	43.4
Speed Slope Coefficient	2.58677	Speed Power Coefficient	0.55621
PF Slope Coefficient	-1.30231	PF Power Coefficient	0.74442
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1565	-	-	42.9

Vehicle Results

Average Speed, mi/h	42.9	Percent Followers, %	26.7
Segment Travel Time, minutes	0.41	Follower Density, followers/mi/ln	0.9
Vehicle LOS	A		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1386
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	7.6

Demand and Capacity

Directional Demand Flow Rate, veh/h	146	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	41.91
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	42.3
Speed Slope Coefficient	2.80262	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.49310	PF Power Coefficient	0.69283
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

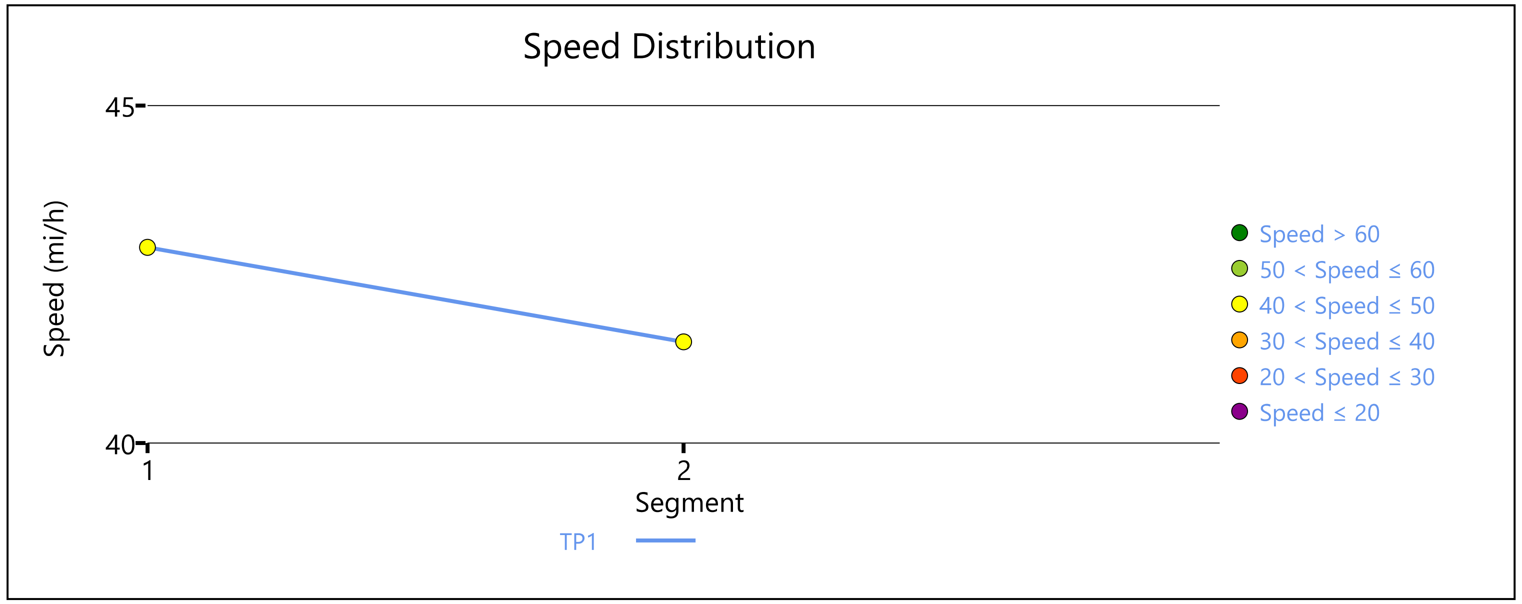
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1386	-	-	41.5

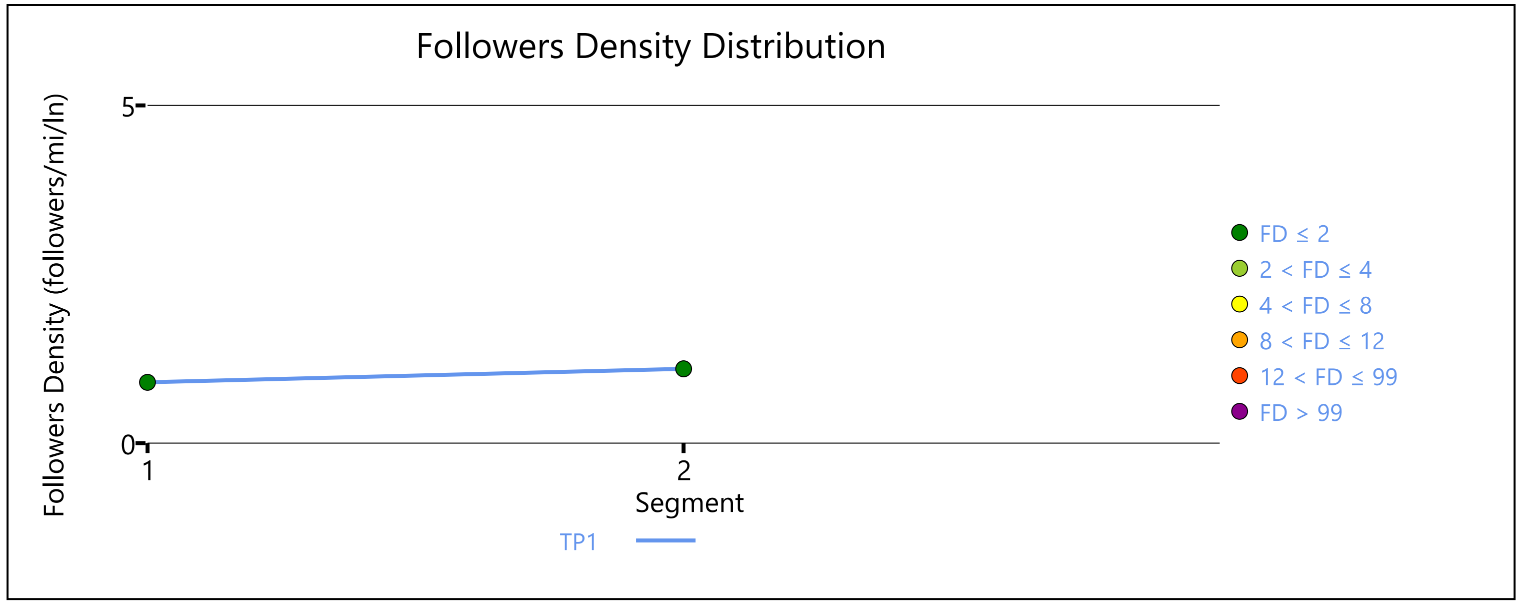
Vehicle Results

Average Speed, mi/h	41.5	Percent Followers, %	32.5
Segment Travel Time, minutes	0.38	Follower Density, followers/mi/ln	1.1
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	1.0	A





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US380 EB 2042 No-Build Condition PM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2042
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1565
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	3.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	216	Opposing Demand Flow Rate, veh/h	216
Peak Hour Factor	0.94	Total Trucks, %	41.91
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	43.4
Speed Slope Coefficient	2.61396	Speed Power Coefficient	0.53488
PF Slope Coefficient	-1.32562	PF Power Coefficient	0.73952
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.8
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1565	-	-	42.5

Vehicle Results

Average Speed, mi/h	42.5	Percent Followers, %	34.7
Segment Travel Time, minutes	0.42	Follower Density, followers/mi/ln	1.8
Vehicle LOS	A		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1386
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	7.6

Demand and Capacity

Directional Demand Flow Rate, veh/h	216	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	41.91

Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	42.3
Speed Slope Coefficient	2.80262	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.49310	PF Power Coefficient	0.69283
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

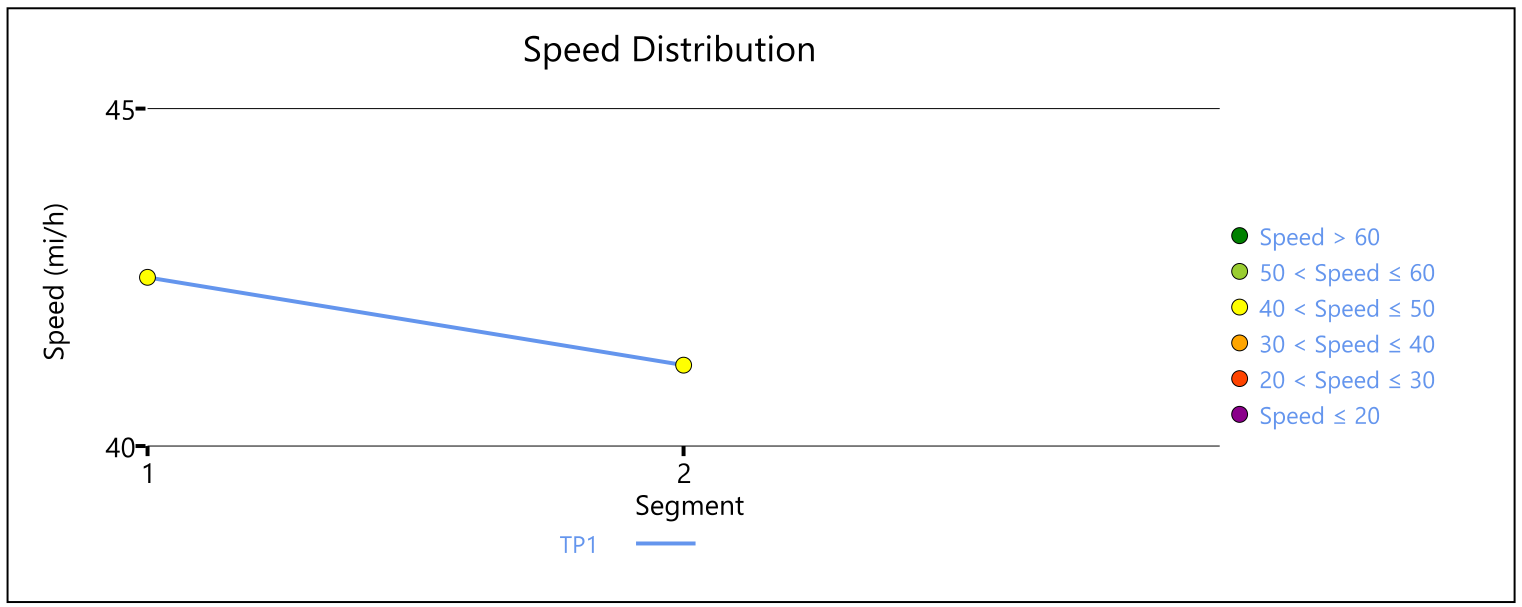
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1386	-	-	41.2

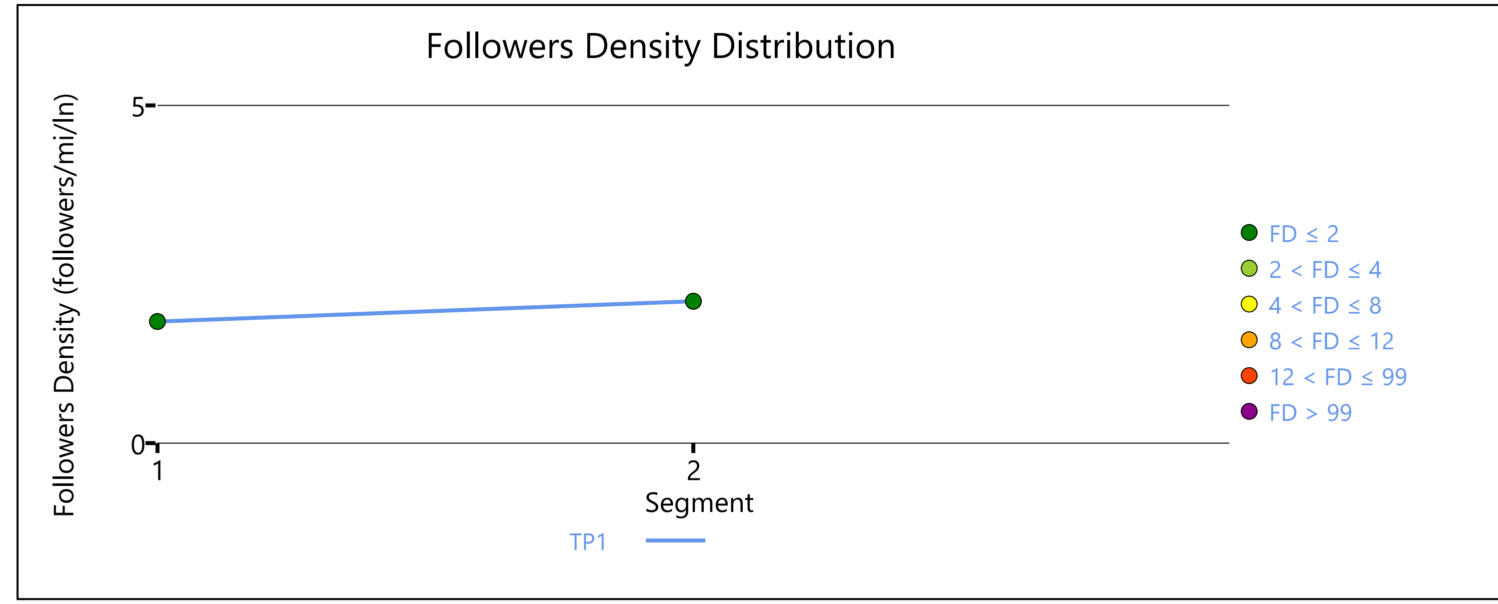
Vehicle Results

Average Speed, mi/h	41.2	Percent Followers, %	40.3
Segment Travel Time, minutes	0.38	Follower Density, followers/mi/ln	2.1
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	1.9	A





US380 WB 2042 No-Build Condition AM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2042
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	871
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	12.1

Demand and Capacity

Directional Demand Flow Rate, veh/h	146	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	37.02
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	41.3
Speed Slope Coefficient	2.74920	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.49949	PF Power Coefficient	0.68732
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	871	-	-	40.6

Vehicle Results

Average Speed, mi/h	40.6	Percent Followers, %	32.9
Segment Travel Time, minutes	0.24	Follower Density, followers/mi/ln	1.2
Vehicle LOS	A		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1578
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	146	Opposing Demand Flow Rate, veh/h	146
Peak Hour Factor	0.94	Total Trucks, %	37.02
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	44.4
Speed Slope Coefficient	2.64190	Speed Power Coefficient	0.55621
PF Slope Coefficient	-1.30349	PF Power Coefficient	0.74769
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

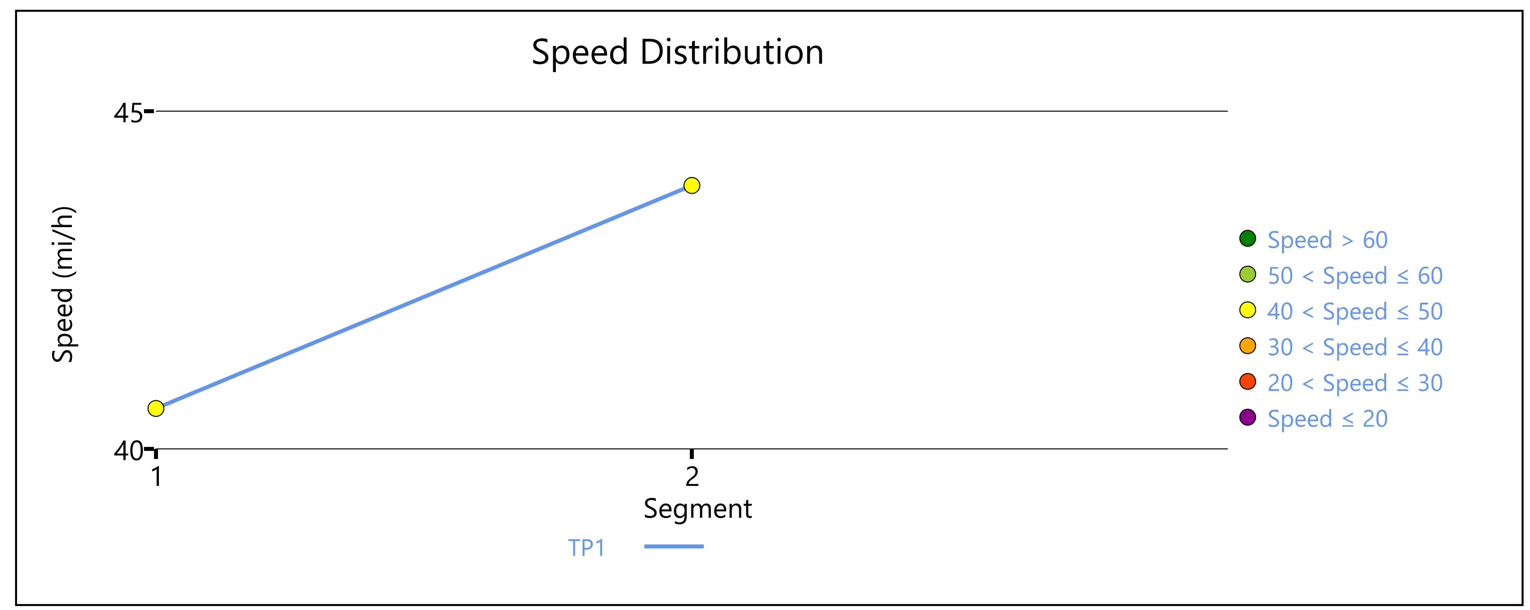
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1578	-	-	43.9

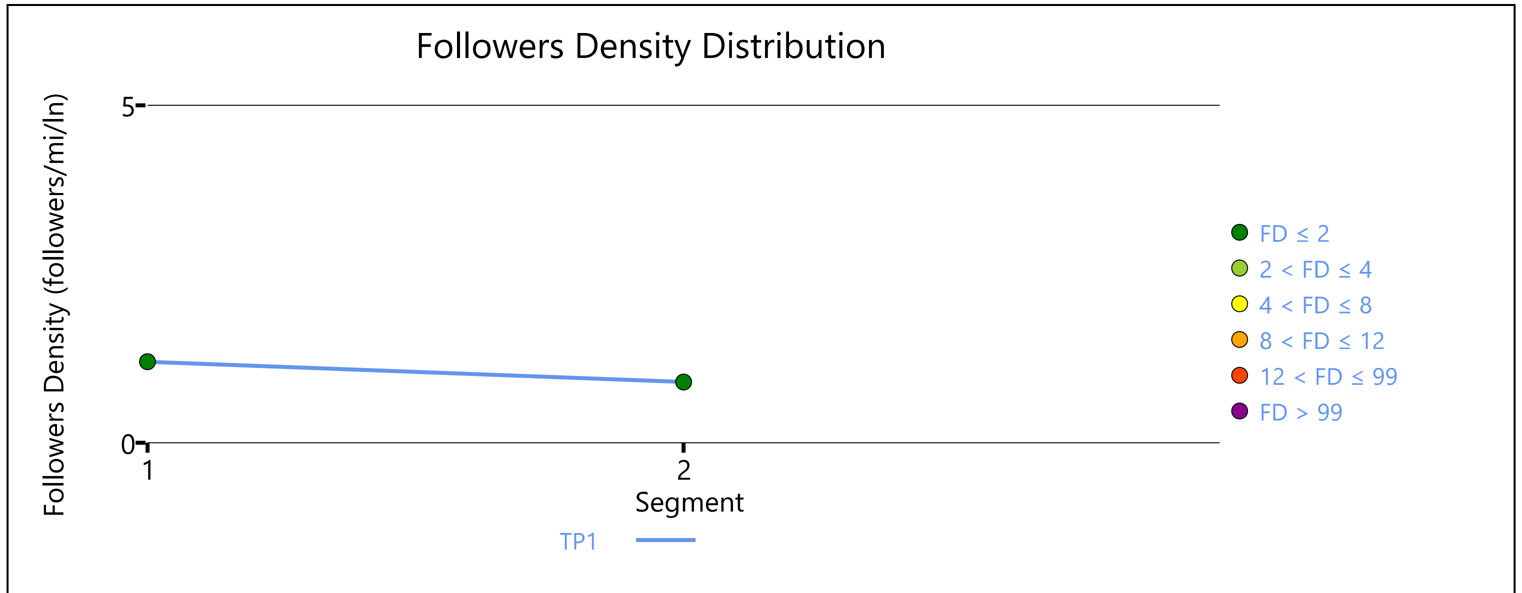
Vehicle Results

Average Speed, mi/h	43.9	Percent Followers, %	26.6
Segment Travel Time, minutes	0.41	Follower Density, followers/mi/ln	0.9
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	1.0	A





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US380 WB 2042 No-Build Condition PM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2042
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	871
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	12.1

Demand and Capacity

Directional Demand Flow Rate, veh/h	216	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	37.02
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	41.3
Speed Slope Coefficient	2.74920	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.49949	PF Power Coefficient	0.68732
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.2
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	871	-	-	40.2

Vehicle Results

Average Speed, mi/h	40.2	Percent Followers, %	40.7
Segment Travel Time, minutes	0.25	Follower Density, followers/mi/ln	2.2
Vehicle LOS	A		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1578
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	216	Opposing Demand Flow Rate, veh/h	216
Peak Hour Factor	0.94	Total Trucks, %	37.02

Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	44.4
Speed Slope Coefficient	2.66909	Speed Power Coefficient	0.53488
PF Slope Coefficient	-1.32667	PF Power Coefficient	0.74282
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

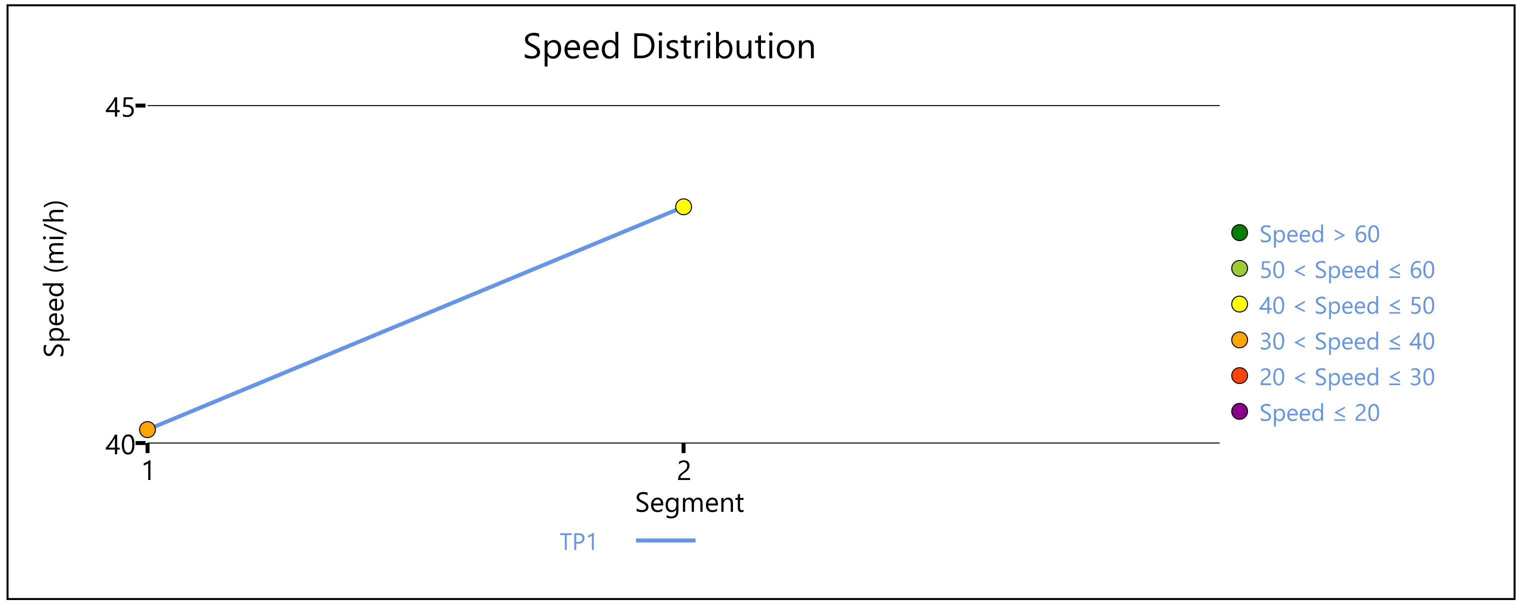
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1578	-	-	43.5

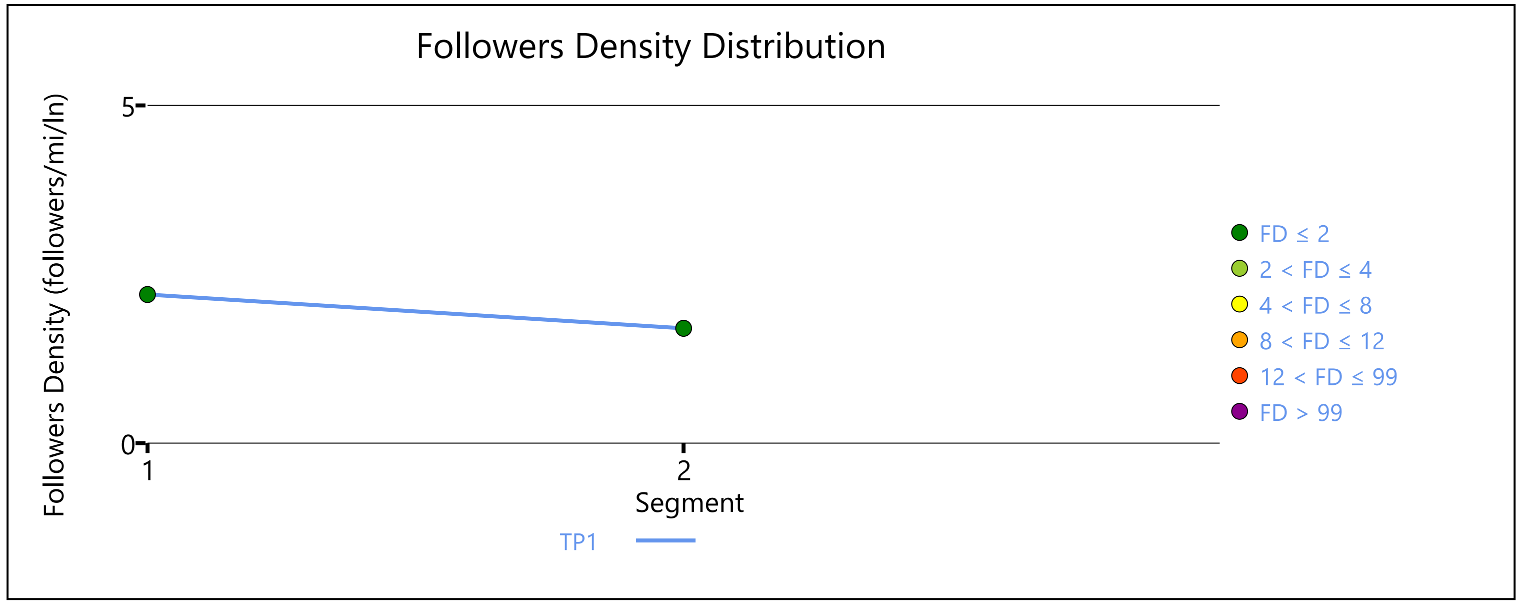
Vehicle Results

Average Speed, mi/h	43.5	Percent Followers, %	34.6
Segment Travel Time, minutes	0.41	Follower Density, followers/mi/ln	1.7
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	1.9	A





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US380_WB_2042_NoBuild_PM.xuf

US380/I25 NB Entrance Ramp 2042 No-Build AM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2042
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1278
Lane Width, ft	14	Shoulder Width, ft	2
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	127	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	37.02
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	2	Free-Flow Speed, mi/h	54.0
Speed Slope Coefficient	4.33655	Speed Power Coefficient	0.42715
PF Slope Coefficient	-1.51823	PF Power Coefficient	0.72866
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	1278	800	6	50.6

Vehicle Results

Average Speed, mi/h	50.6	Percent Followers, %	28.6
Segment Travel Time, minutes	0.29	Follower Density, followers/mi/ln	0.7
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.7	A

 HCS™ Two-Lane Version 7.9 Generated: 08/30/2022 15:41:59

WB_US380_To_NB_I-25_On-Ramp_2042_NoBuild_AM.xuf

US380/I25 NB Entrance Ramp 2042 No-Build PM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2042
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1278
Lane Width, ft	14	Shoulder Width, ft	2
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	139	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	37.02
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	2	Free-Flow Speed, mi/h	54.0
Speed Slope Coefficient	4.33655	Speed Power Coefficient	0.42715
PF Slope Coefficient	-1.51823	PF Power Coefficient	0.72866
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	1278	800	6	50.6

Vehicle Results

Average Speed, mi/h	50.6	Percent Followers, %	30.3
Segment Travel Time, minutes	0.29	Follower Density, followers/mi/ln	0.8
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.8	A

 HCS™ Two-Lane Version 7.9 Generated: 08/30/2022 15:42:20

WB_US380_To_NB_I-25_On-Ramp_2042_NoBuild_PM.xuf

US380/I25 NB Exit Ramp 2042 No-Build AM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2042
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1343
Lane Width, ft	14	Shoulder Width, ft	3
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	16	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	40.46
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	54.8
Speed Slope Coefficient	3.47676	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.43511	PF Power Coefficient	0.72994
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	1343	650	6	54.8

Vehicle Results

Average Speed, mi/h	54.8	Percent Followers, %	6.8
Segment Travel Time, minutes	0.28	Follower Density, followers/mi/ln	0.0
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.0	A

 HCS™ Two-Lane Version 7.9 Generated: 08/30/2022 15:40:32
NB_I-25_To_US380_Off-Ramp_2042_NoBuild_AM.xuf

US380/I25 NB Exit Ramp 2042 No-Build PM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2042
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1343
Lane Width, ft	14	Shoulder Width, ft	3
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	19	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	40.46
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	54.8
Speed Slope Coefficient	3.47676	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.43511	PF Power Coefficient	0.72994
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	1343	650	6	54.8

Vehicle Results

Average Speed, mi/h	54.8	Percent Followers, %	7.7
Segment Travel Time, minutes	0.28	Follower Density, followers/mi/ln	0.0
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.0	A

 HCS™ Two-Lane Version 7.9 Generated: 08/30/2022 15:41:14
NB_I-25_To_US380_Off-Ramp_2042_NoBuild_PM.xuf

US380/I25 SB Entrance Ramp 2042 No-Build AM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2042
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1182
Lane Width, ft	16	Shoulder Width, ft	2
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	19	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	83.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	53.8
Speed Slope Coefficient	3.42610	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.43792	PF Power Coefficient	0.73318
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	1182	150	6	53.8

Vehicle Results

Average Speed, mi/h	53.8	Percent Followers, %	7.6
Segment Travel Time, minutes	0.25	Follower Density, followers/mi/ln	0.0
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.0	A

 HCS™ Two-Lane Version 7.9 Generated: 08/30/2022 15:43:39
WB_US380_To_SB_I-25_On-Ramp_2042_NoBuild_AM.xuf

US380/I25 SB Entrance Ramp 2042 No-Build PM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2042
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1182
Lane Width, ft	16	Shoulder Width, ft	2
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	77	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	31.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.05

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.6
Speed Slope Coefficient	3.51995	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.43152	PF Power Coefficient	0.73020
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	1182	150	6	55.6

Vehicle Results

Average Speed, mi/h	55.6	Percent Followers, %	19.7
Segment Travel Time, minutes	0.24	Follower Density, followers/mi/ln	0.3
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.3	A

 HCS™ Two-Lane Version 7.9 Generated: 08/30/2022 15:44:03
WB_US380_To_SB_I-25_On-Ramp_2042_NoBuild_PM.xuf

US380/I25 SB Exit Ramp 2042 No-Build AM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2042
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3827
Lane Width, ft	14	Shoulder Width, ft	6
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	107	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	5.70
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.0
Speed Slope Coefficient	3.68903	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.32994	PF Power Coefficient	0.75524
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	3827	1000	6	51.6

Vehicle Results

Average Speed, mi/h	51.6	Percent Followers, %	21.9
Segment Travel Time, minutes	0.84	Follower Density, followers/mi/ln	0.5
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.5	A

 HCS™ Two-Lane Version 7.9 Generated: 08/30/2022 15:42:59
SB_I-25_To_US380_Off-Ramp_2042_NoBuild_AM.xuf

US380/I25 SB Exit Ramp 2042 No-Build PM

HCS7 Two-Lane Highway Report

Project Information

Analyst	MCS	Date	8/12/2022
Agency	HDR	Analysis Year	2042
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description		Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3827
Lane Width, ft	14	Shoulder Width, ft	6
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	138	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	3.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	58.1
Speed Slope Coefficient	3.69318	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.32960	PF Power Coefficient	0.75511
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	3827	1000	6	51.5

Vehicle Results

Average Speed, mi/h	51.5	Percent Followers, %	25.8
Segment Travel Time, minutes	0.85	Follower Density, followers/mi/ln	0.7
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.7	A

 HCS™ Two-Lane Version 7.9 Generated: 08/30/2022 15:43:16
SB_I-25_To_US380_Off-Ramp_2042_NoBuild_PM.xuf

Appendix F – 2042 Build Operational Analysis

2042 Build Synchro Analysis

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	3	0	18	0	0	0	0	0	101	0	3
Future Vol, veh/h	0	3	0	18	0	0	0	0	0	101	0	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	3	0	20	0	0	0	0	0	110	0	3
Number of Lanes	0	1	0	0	1	0	0	0	0	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	7.2	7.5	7.8
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	100%	97%
Vol Thru, %	100%	0%	0%
Vol Right, %	0%	0%	3%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	3	18	104
LT Vol	0	18	101
Through Vol	3	0	0
RT Vol	0	0	3
Lane Flow Rate	3	20	113
Geometry Grp	1	1	1
Degree of Util (X)	0.004	0.024	0.13
Departure Headway (Hd)	4.146	4.334	4.15
Convergence, Y/N	Yes	Yes	Yes
Cap	855	819	866
Service Time	2.212	2.395	2.166
HCM Lane V/C Ratio	0.004	0.024	0.13
HCM Control Delay	7.2	7.5	7.8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.1	0.4

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	113	0	0	18	119	0	0	15	0	0	0
Future Vol, veh/h	0	113	0	0	18	119	0	0	15	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	123	0	0	20	129	0	0	16	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.7	7.2	6.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	0%	0%	0%
Vol Thru, %	0%	100%	13%
Vol Right, %	100%	0%	87%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	15	113	137
LT Vol	0	0	0
Through Vol	0	113	18
RT Vol	15	0	119
Lane Flow Rate	16	123	149
Geometry Grp	1	1	1
Degree of Util (X)	0.017	0.139	0.146
Departure Headway (Hd)	3.793	4.072	3.531
Convergence, Y/N	Yes	Yes	Yes
Cap	930	882	1013
Service Time	1.874	2.09	1.562
HCM Lane V/C Ratio	0.017	0.139	0.147
HCM Control Delay	6.9	7.7	7.2
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.5	0.5

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	71	0	0	0	0	0	129	0	1
Future Vol, veh/h	0	0	0	71	0	0	0	0	0	129	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	77	0	0	0	0	0	140	0	1
Number of Lanes	0	1	0	0	1	0	0	0	0	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	0	7.9	8.2
HCM LOS	-	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	100%	99%
Vol Thru, %	100%	0%	0%
Vol Right, %	0%	0%	1%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	0	71	130
LT Vol	0	71	129
Through Vol	0	0	0
RT Vol	0	0	1
Lane Flow Rate	0	77	141
Geometry Grp	1	1	1
Degree of Util (X)	0	0.094	0.167
Departure Headway (Hd)	4.348	4.382	4.264
Convergence, Y/N	Yes	Yes	Yes
Cap	0	808	837
Service Time	2.348	2.463	2.313
HCM Lane V/C Ratio	0	0.095	0.168
HCM Control Delay	7.3	7.9	8.2
HCM Lane LOS	N	A	A
HCM 95th-tile Q	0	0.3	0.6

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	129	0	0	71	131	0	0	18	0	0	0
Future Vol, veh/h	0	129	0	0	71	131	0	0	18	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	140	0	0	77	142	0	0	20	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8	7.8	7.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	0%	0%	0%
Vol Thru, %	0%	100%	35%
Vol Right, %	100%	0%	65%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	18	129	202
LT Vol	0	0	0
Through Vol	0	129	71
RT Vol	18	0	131
Lane Flow Rate	20	140	220
Geometry Grp	1	1	1
Degree of Util (X)	0.022	0.161	0.225
Departure Headway (Hd)	4.06	4.131	3.683
Convergence, Y/N	Yes	Yes	Yes
Cap	887	867	970
Service Time	2.06	2.167	1.723
HCM Lane V/C Ratio	0.023	0.161	0.227
HCM Control Delay	7.2	8	7.8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.6	0.9

2042 Build HCS Analysis

I25 NB 2042 Build Condition AM

HCS7 Freeway Facilities Report

Project Information

Analyst	SD	Date	8/12/2022
Agency	HDR	Analysis Year	2042 Build Condition
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description	San Antonio/I-25	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	1.74		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Off-ramp to On-Ramp	2400	2
2	Merge	Merge	On-Ramp Segment	1500	2
3	Basic	Basic	North of On-Ramp Segment	5280	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.649	405	4800	0.08	75.0	2.7	A

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.649	0.730	578	173	4800	2100	0.12	0.08	66.8	66.8	4.3	5.0	A

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.649	600	4800	0.13	75.0	4.0	A

Facility Time Period Results

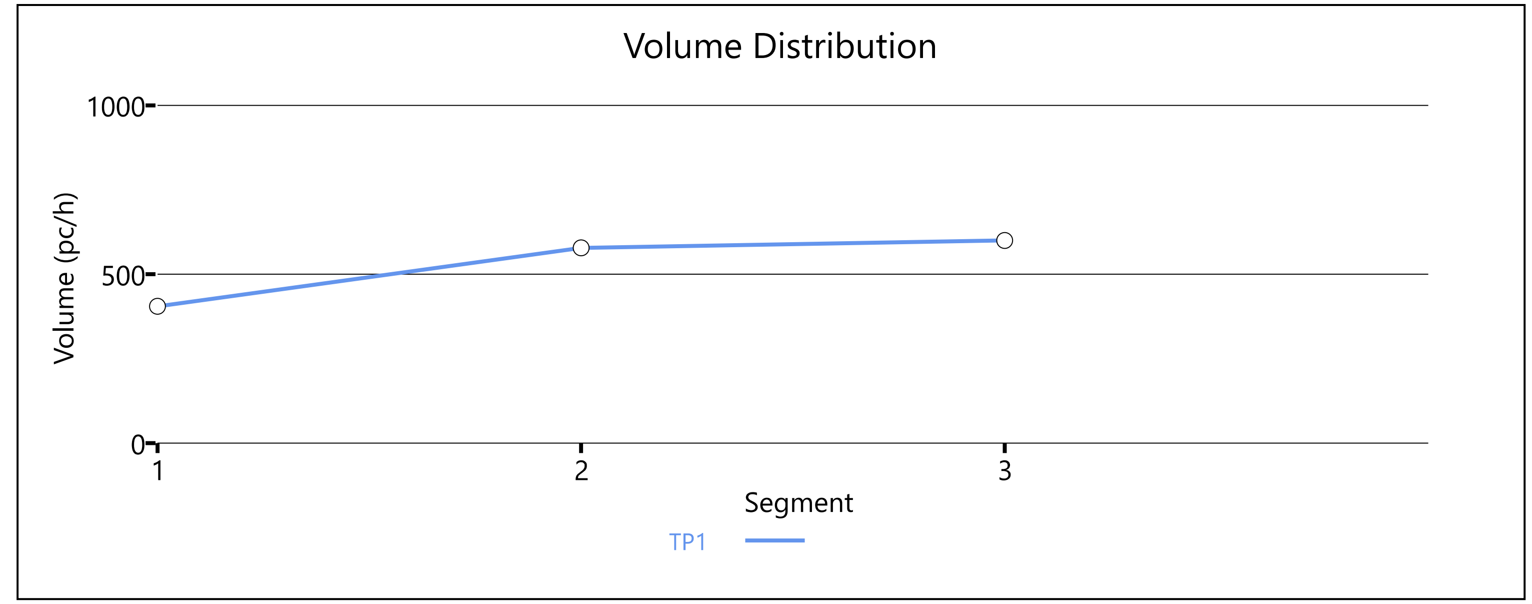
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	73.4	3.7	2.4	1.40	A

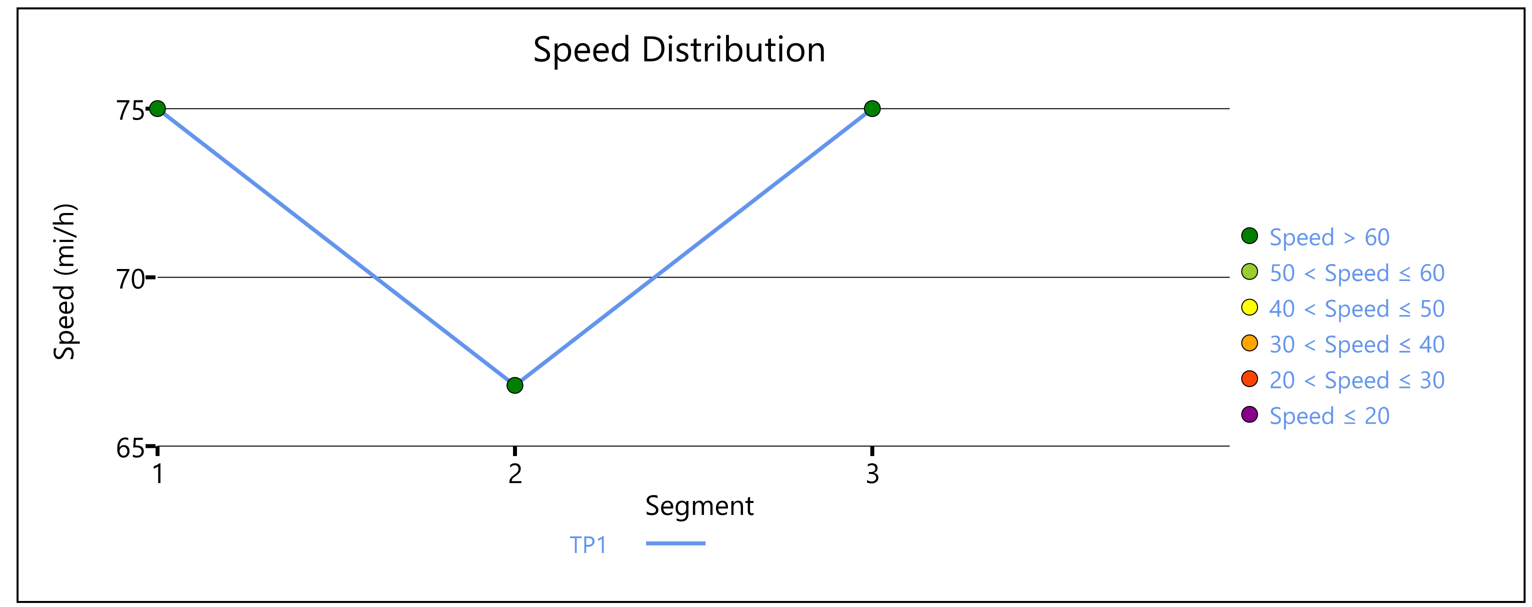
Facility Overall Results

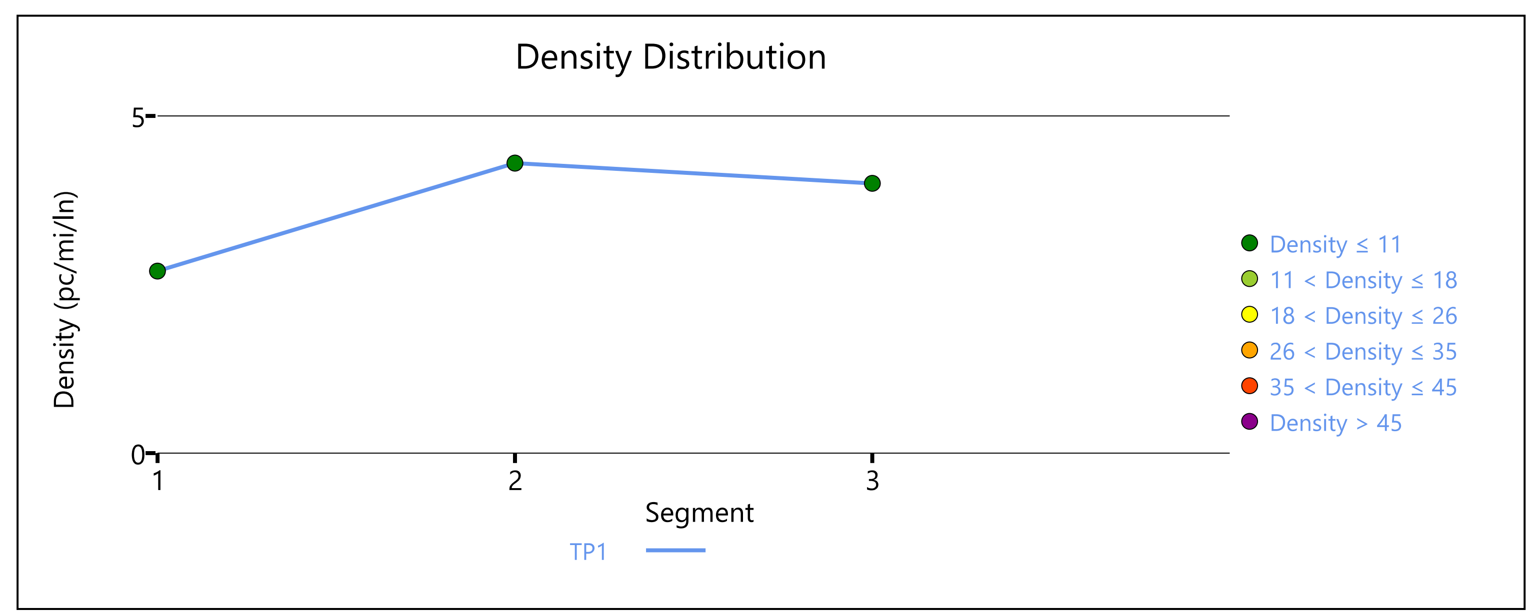
Space Mean Speed, mi/h	73.4	Density, veh/mi/ln	2.4
Average Travel Time, min	1.40	Density, pc/mi/ln	3.7

Messages

Comments







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I25 NB 2042 Build Condition PM

HCS7 Freeway Facilities Report

Project Information

Analyst	SD	Date	8/12/2022
Agency	HDR	Analysis Year	2042 Build Condition
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description	San Antonio/I-25	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	1.74		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Off-ramp to On-Ramp	2400	2
2	Merge	Merge	On-Ramp Segment	1500	2
3	Basic	Basic	North of On-Ramp Segment	5280	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.649	579	4800	0.12	75.0	3.9	A

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.649	0.730	770	191	4800	2100	0.16	0.09	66.8	66.8	5.8	6.4	A

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.649	793	4800	0.17	75.0	5.3	A

Facility Time Period Results

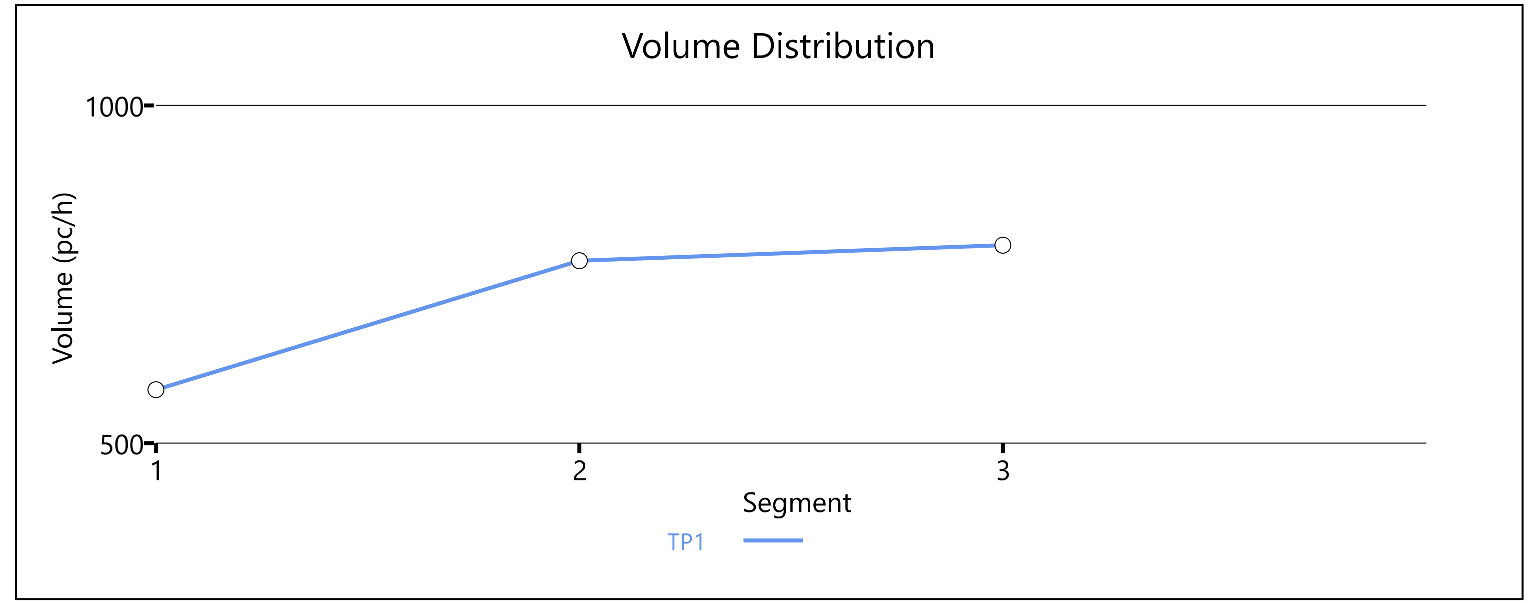
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	73.4	5.0	3.2	1.40	A

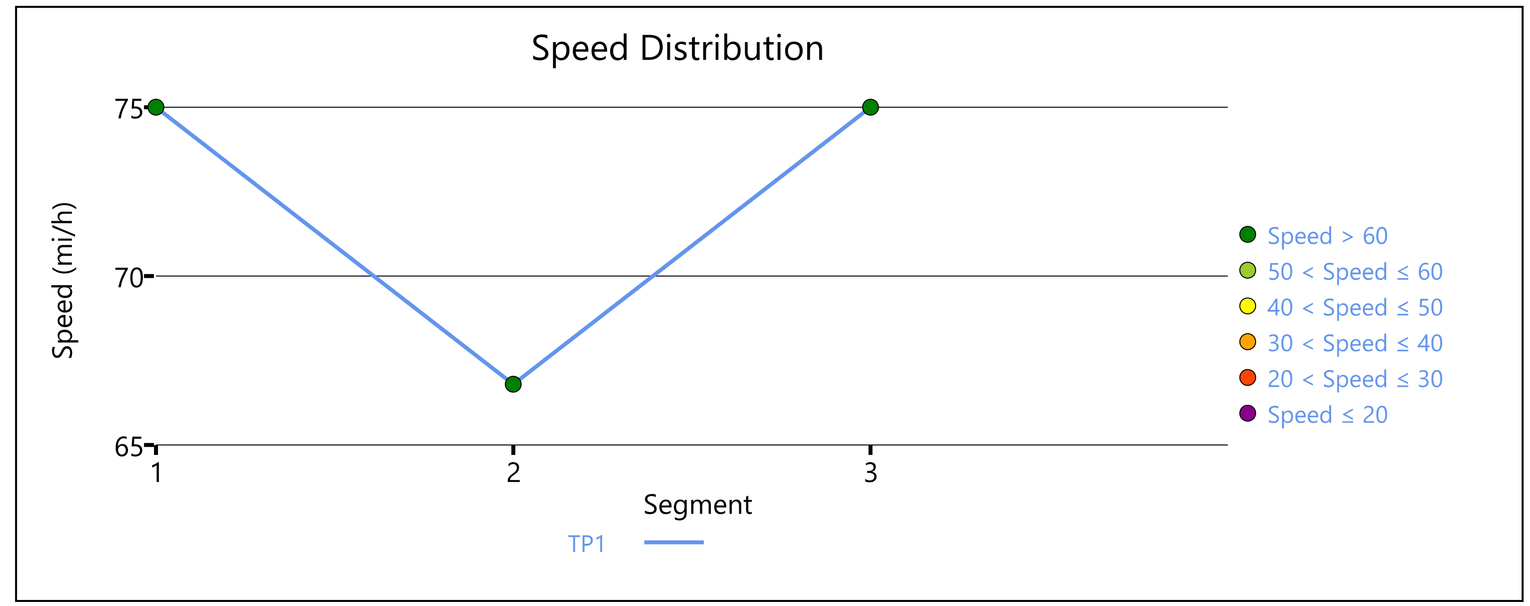
Facility Overall Results

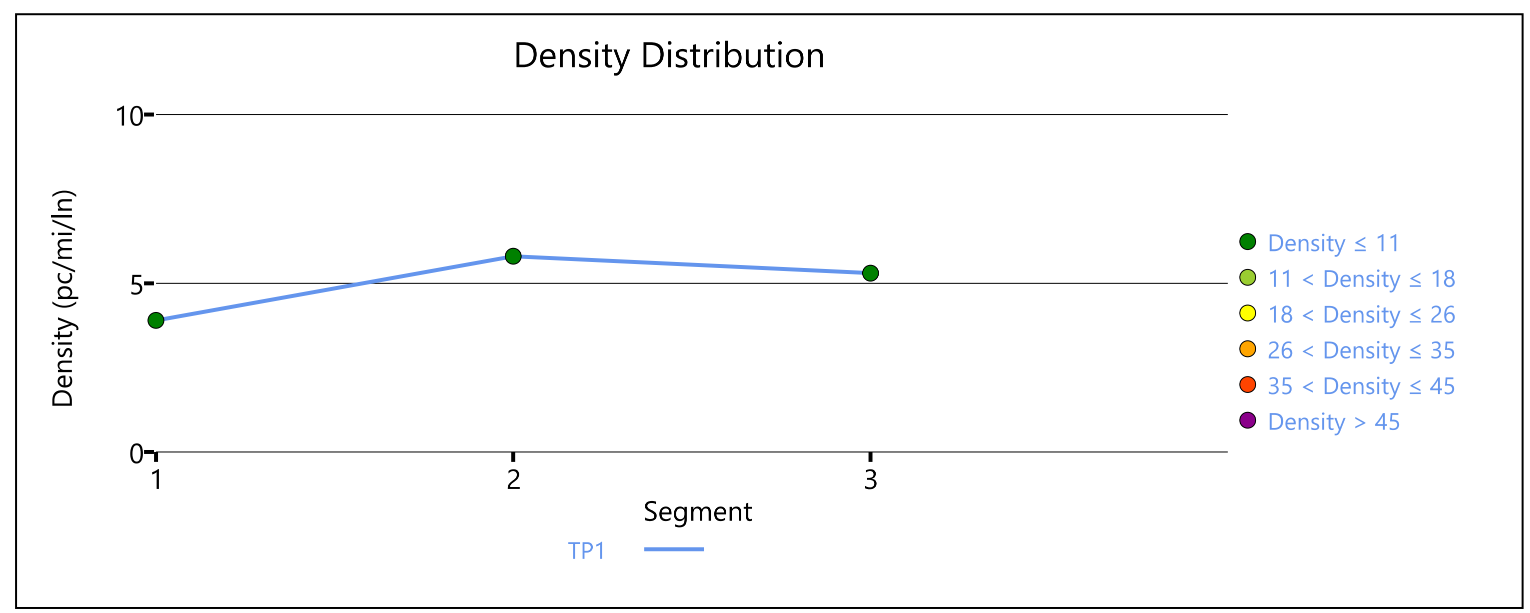
Space Mean Speed, mi/h	73.4	Density, veh/mi/ln	3.2
Average Travel Time, min	1.40	Density, pc/mi/ln	5.0

Messages

Comments







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I25 SB 2042 Build Condition AM

HCS7 Freeway Facilities Report

Project Information

Analyst	SD	Date	8/12/2022
Agency	HDR	Analysis Year	2042 Build Condition
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description	San Antonio/I-25	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	1.93		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic		3400	2
2	Merge	Merge		1500	2
3	Basic	Basic		5280	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.661	658	4800	0.14	75.0	4.4	A

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.661	0.705	685	27	4800	2100	0.14	0.01	66.8	66.8	5.1	5.9	A

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.661	687	4800	0.14	75.0	4.6	A

Facility Time Period Results

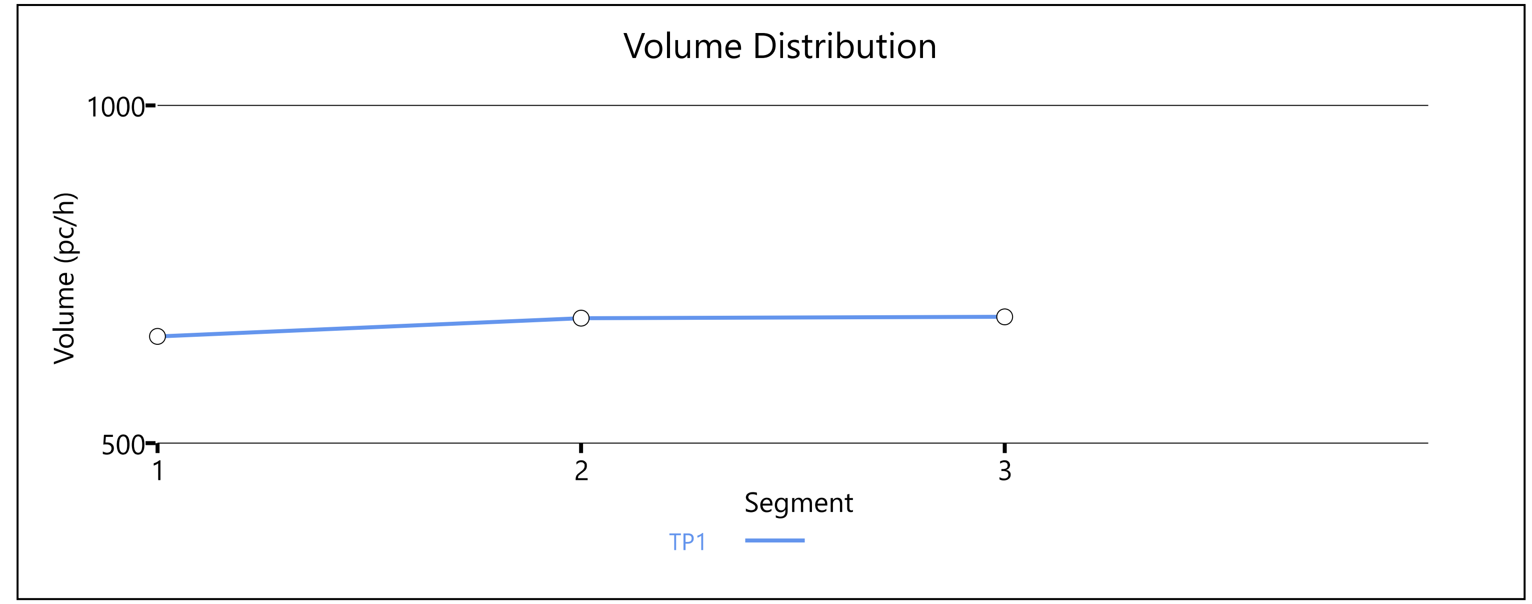
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	73.6	4.6	3.0	1.60	A

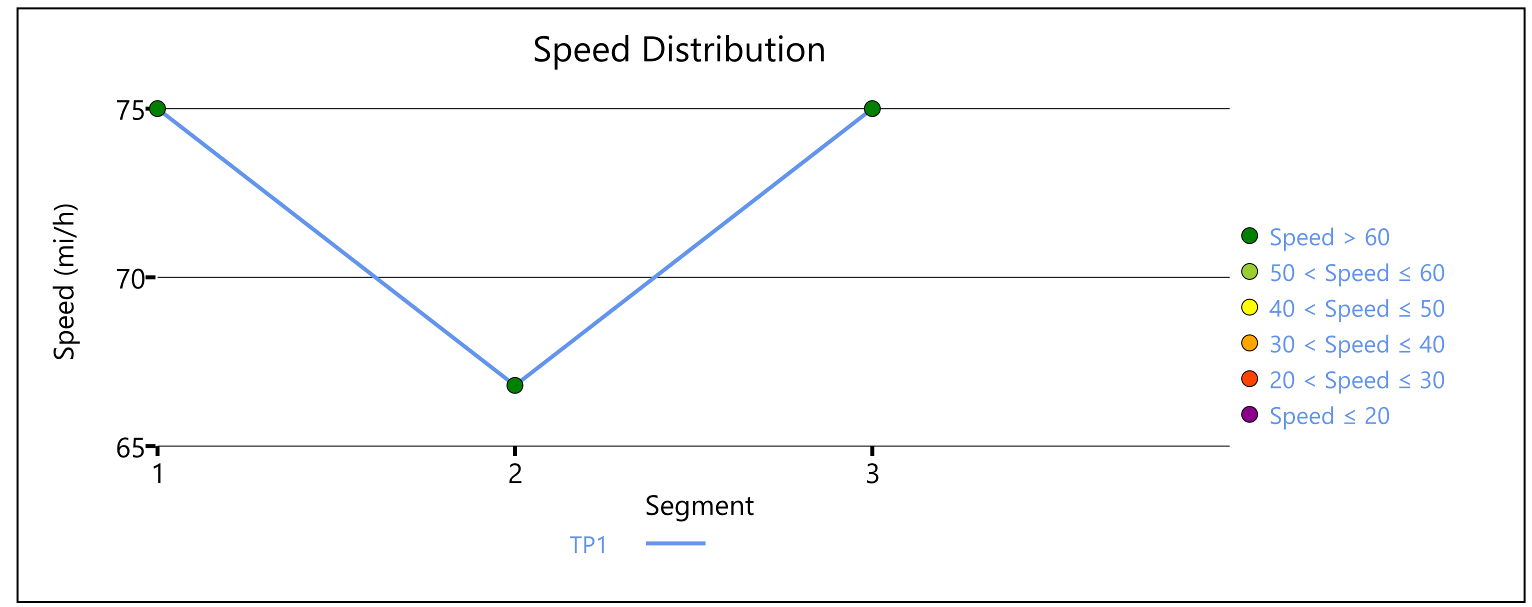
Facility Overall Results

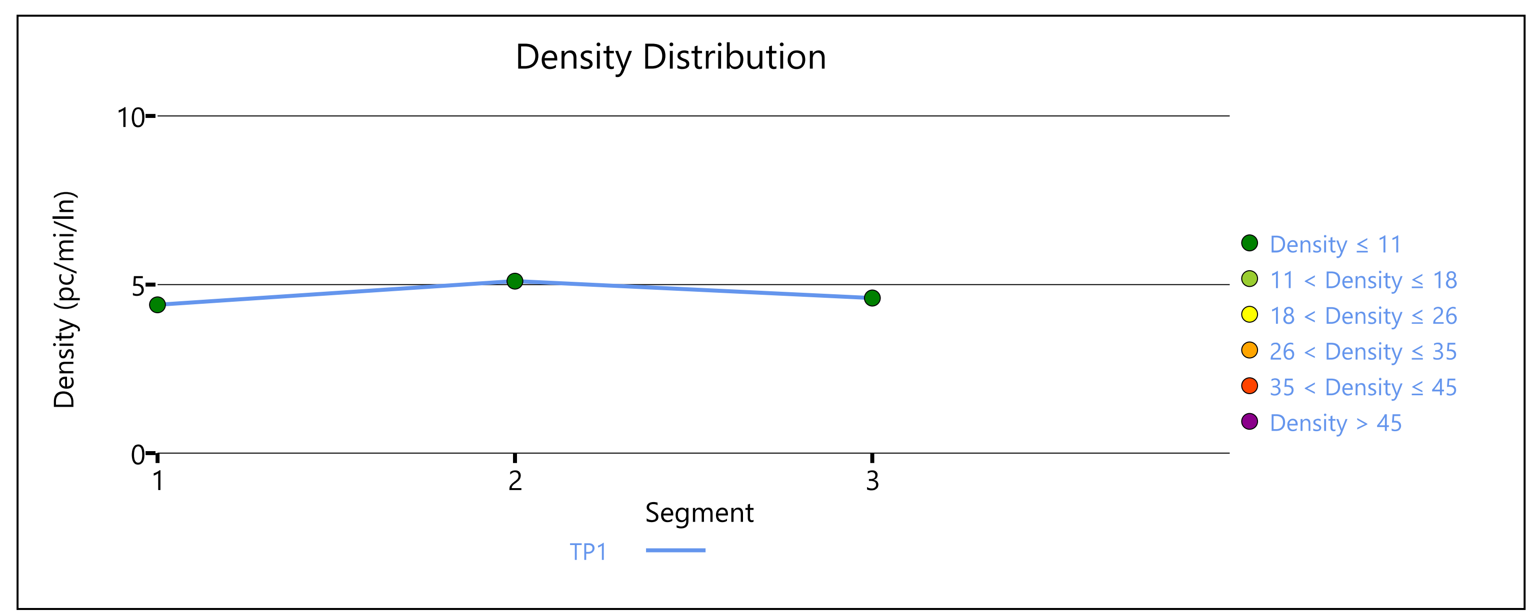
Space Mean Speed, mi/h	73.6	Density, veh/mi/ln	3.0
Average Travel Time, min	1.60	Density, pc/mi/ln	4.6

Messages

Comments







I25 SB 2042 Build Condition PM

HCS7 Freeway Facilities Report

Project Information

Analyst	SD	Date	8/12/2022
Agency	HDR	Analysis Year	2042 Build Condition
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description	San Antonio/I-25	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	3
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	1.93		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Off-Ramp to On-Ramp	3400	2
2	Merge	Merge	On-Ramp	1500	2
3	Basic	Basic	South of On-Ramp	5280	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.661	748	4800	0.16	75.0	5.0	A

Segment 2: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.661	0.705	855	107	4800	2100	0.18	0.05	66.8	66.8	6.4	7.2	A

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.661	863	4800	0.18	75.0	5.8	A

Facility Time Period Results

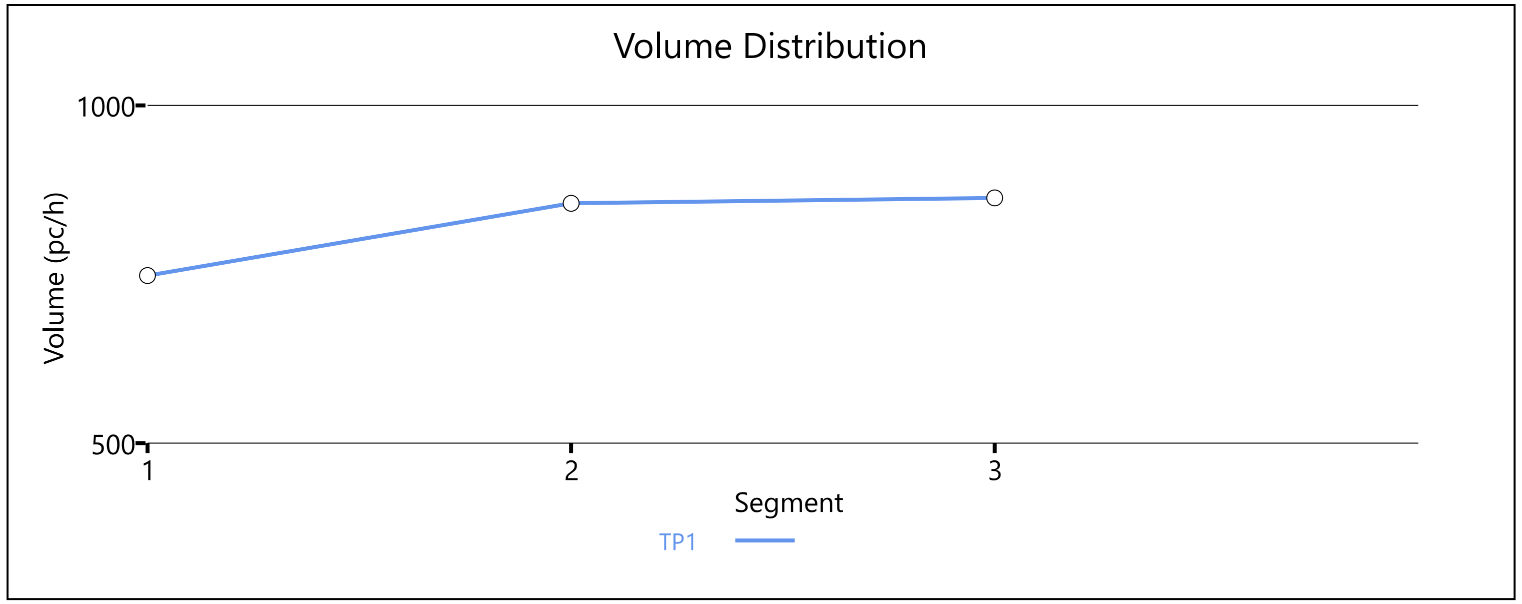
T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	73.6	5.6	3.7	1.60	A

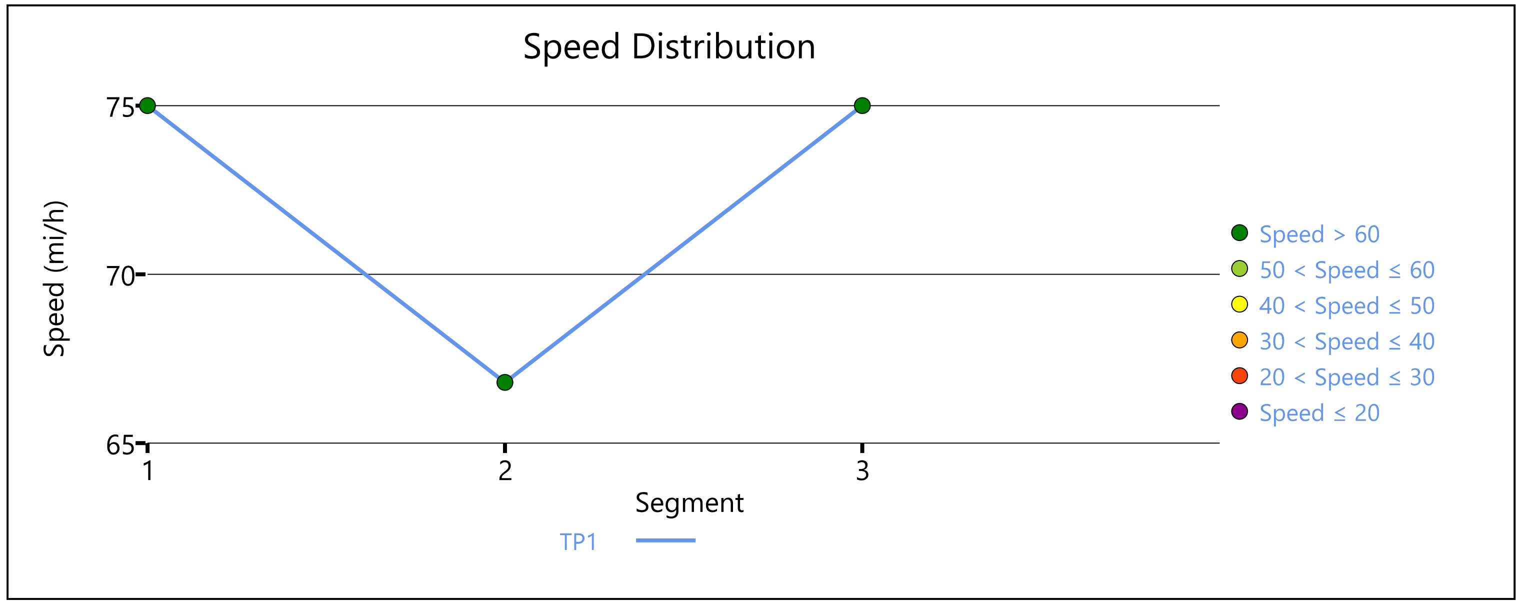
Facility Overall Results

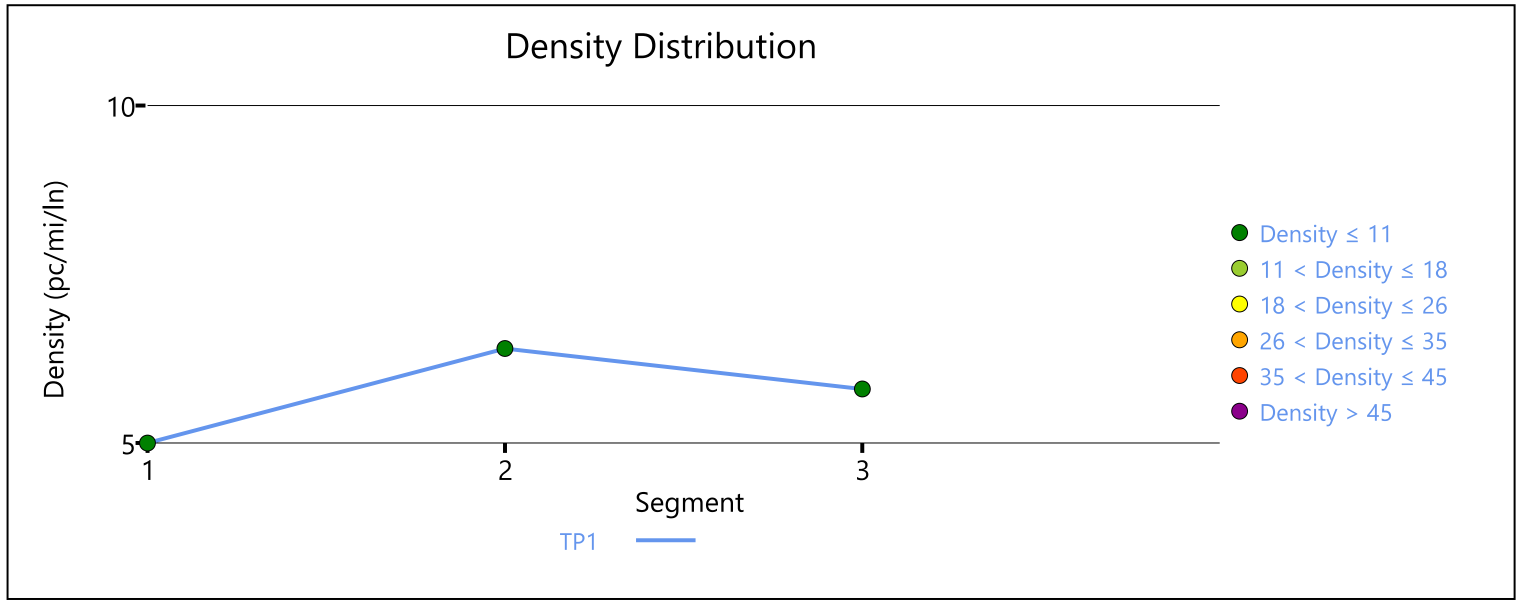
Space Mean Speed, mi/h	73.6	Density, veh/mi/ln	3.7
Average Travel Time, min	1.60	Density, pc/mi/ln	5.6

Messages

Comments







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US380 EB 2042 Build Condition AM

HCS7 Two-Lane Highway Report

Project Information

Analyst	SD	Date	8/12/2022
Agency	HDR	Analysis Year	2042 Build Condition
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description	San Antonio/I-25	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1500
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	3.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	146	Opposing Demand Flow Rate, veh/h	146
Peak Hour Factor	0.94	Total Trucks, %	41.91
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	43.4
Speed Slope Coefficient	2.58560	Speed Power Coefficient	0.55621
PF Slope Coefficient	-1.30559	PF Power Coefficient	0.74317
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1500	-	-	42.9

Vehicle Results

Average Speed, mi/h	42.9	Percent Followers, %	26.8
Segment Travel Time, minutes	0.40	Follower Density, followers/mi/ln	0.9
Vehicle LOS	A		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1375
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	7.6

Demand and Capacity

Directional Demand Flow Rate, veh/h	146	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	41.91
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	42.3
Speed Slope Coefficient	2.80241	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.49383	PF Power Coefficient	0.69264
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

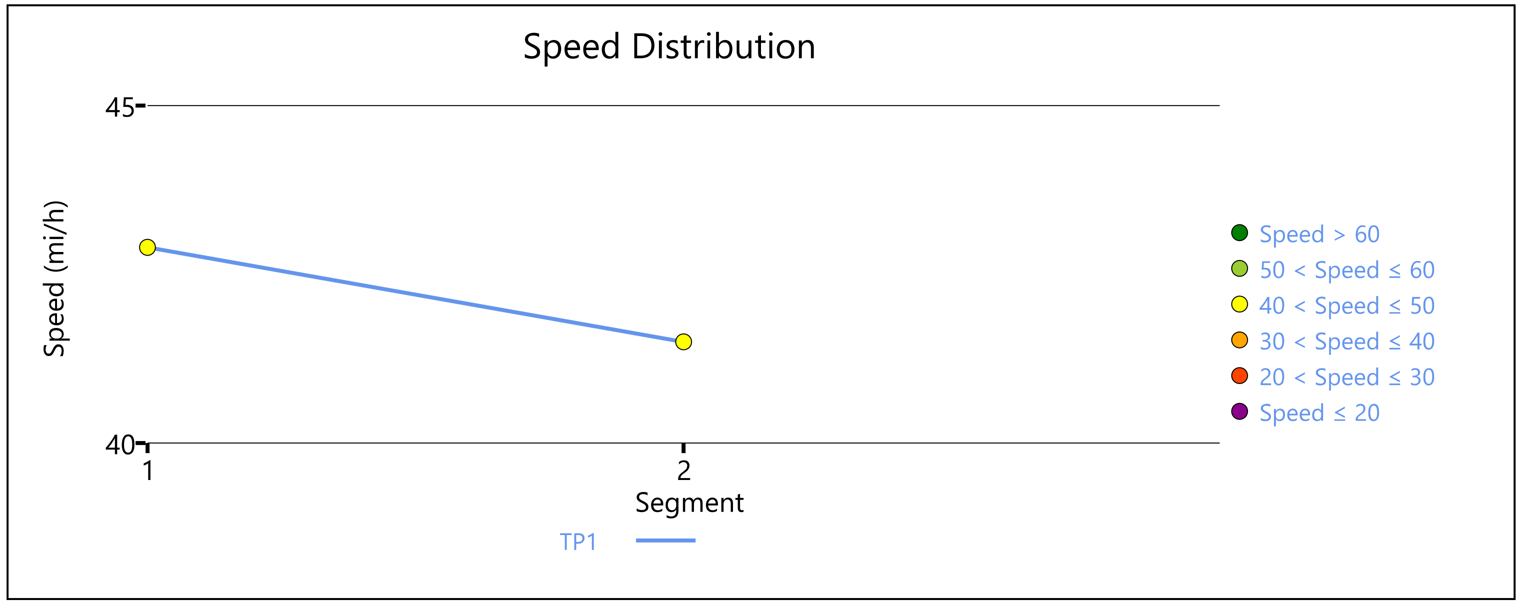
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1375	-	-	41.5

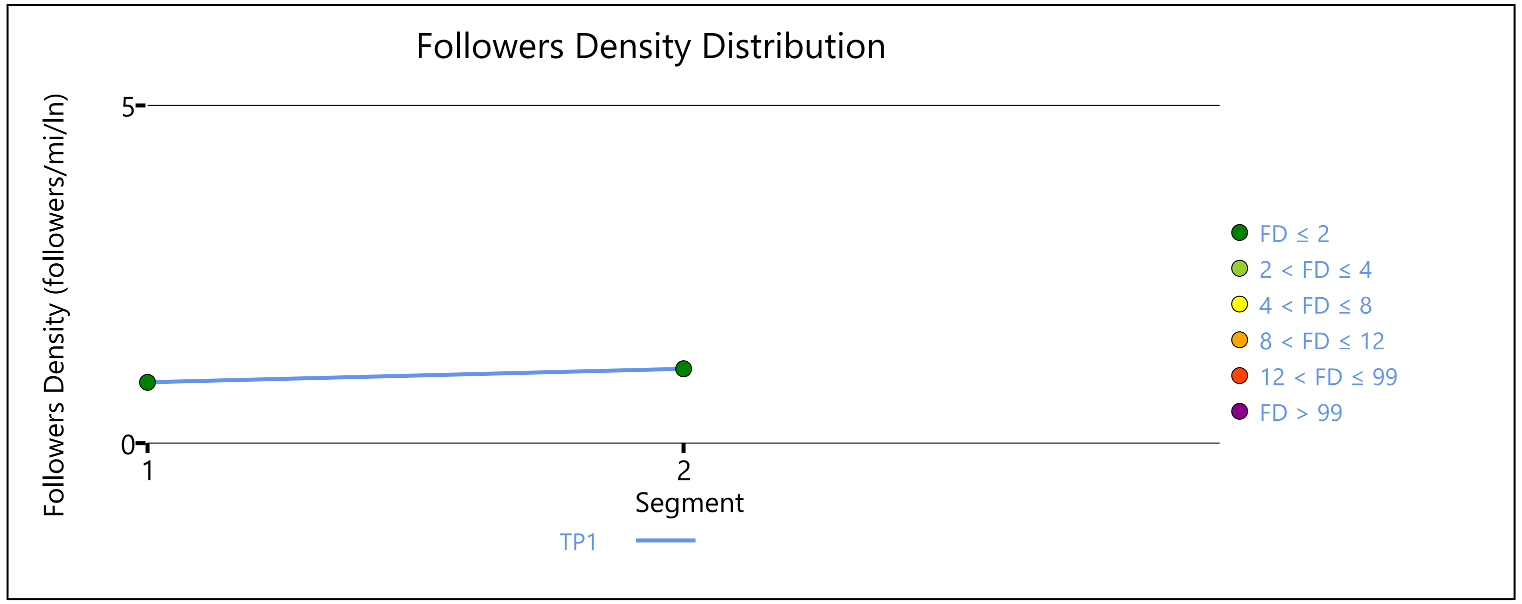
Vehicle Results

Average Speed, mi/h	41.5	Percent Followers, %	32.5
Segment Travel Time, minutes	0.38	Follower Density, followers/mi/ln	1.1
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	1.0	A





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US380 EB 2042 Build Condition PM

HCS7 Two-Lane Highway Report

Project Information

Analyst	SD	Date	8/12/2022
Agency	HDR	Analysis Year	2042 Build Condition
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description	San Antonio/I-25	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1500
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	3.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	215	Opposing Demand Flow Rate, veh/h	215
Peak Hour Factor	0.94	Total Trucks, %	41.91
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	43.4
Speed Slope Coefficient	2.61241	Speed Power Coefficient	0.53517
PF Slope Coefficient	-1.32866	PF Power Coefficient	0.73838
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.8
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1500	-	-	42.5

Vehicle Results

Average Speed, mi/h	42.5	Percent Followers, %	34.7
Segment Travel Time, minutes	0.40	Follower Density, followers/mi/ln	1.8
Vehicle LOS	A		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1375
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	7.6

Demand and Capacity

Directional Demand Flow Rate, veh/h	215	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	41.91

Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	42.3
Speed Slope Coefficient	2.80241	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.49383	PF Power Coefficient	0.69264
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

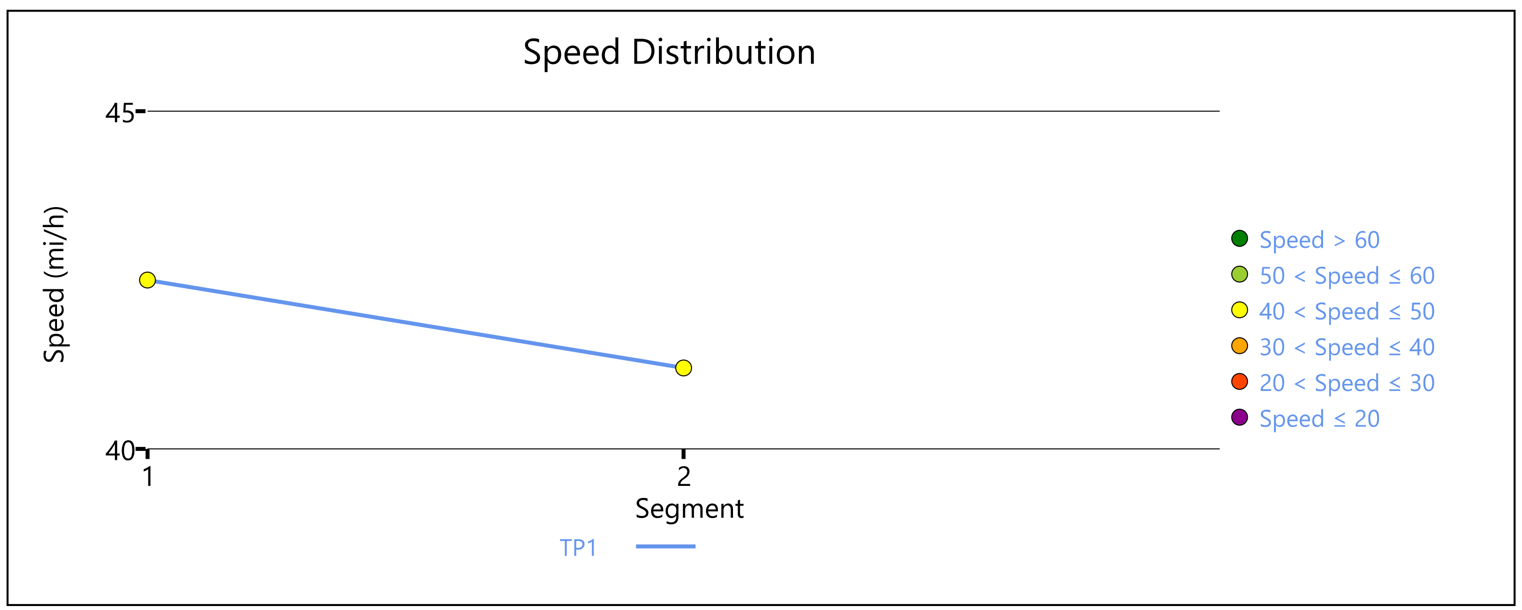
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1375	-	-	41.2

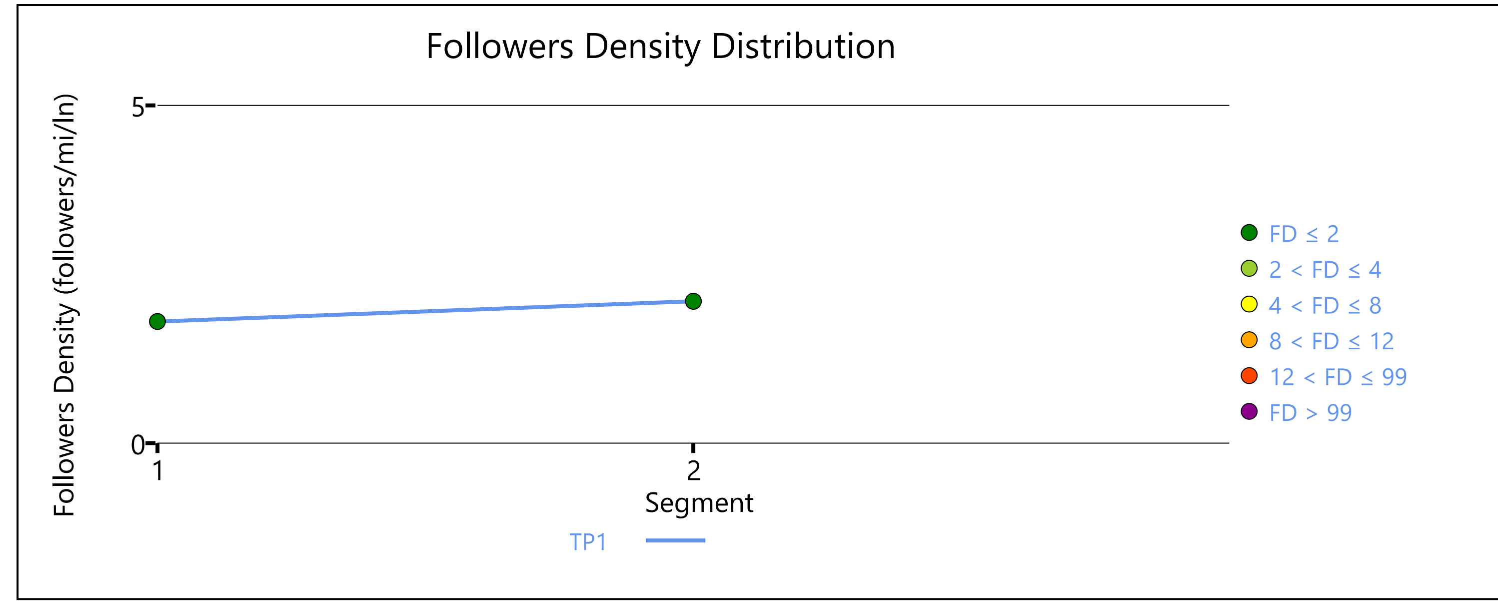
Vehicle Results

Average Speed, mi/h	41.2	Percent Followers, %	40.2
Segment Travel Time, minutes	0.38	Follower Density, followers/mi/ln	2.1
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	1.9	A





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US380 WB 2042 Build Condition AM

HCS7 Two-Lane Highway Report

Project Information

Analyst	SD	Date	8/12/2022
Agency	HDR	Analysis Year	2042 Build Condition
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description	San Antonio/I-25	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1375
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	7.6

Demand and Capacity

Directional Demand Flow Rate, veh/h	146	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	37.02
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	42.5
Speed Slope Coefficient	2.81151	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.49423	PF Power Coefficient	0.69260
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1375	-	-	41.7

Vehicle Results

Average Speed, mi/h	41.7	Percent Followers, %	32.5
Segment Travel Time, minutes	0.37	Follower Density, followers/mi/ln	1.1
Vehicle LOS	A		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1500
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	3.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	146	Opposing Demand Flow Rate, veh/h	146
Peak Hour Factor	0.94	Total Trucks, %	37.02
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	43.5
Speed Slope Coefficient	2.59442	Speed Power Coefficient	0.55621
PF Slope Coefficient	-1.30641	PF Power Coefficient	0.74307
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

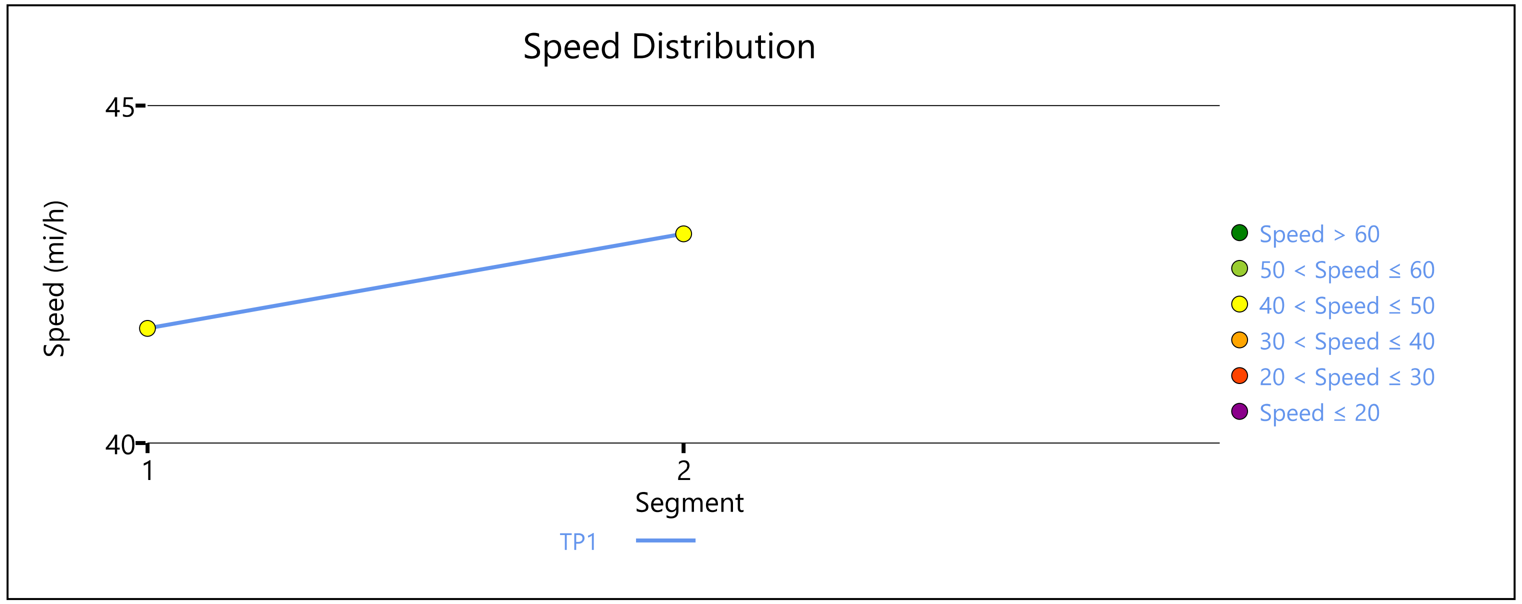
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1500	-	-	43.1

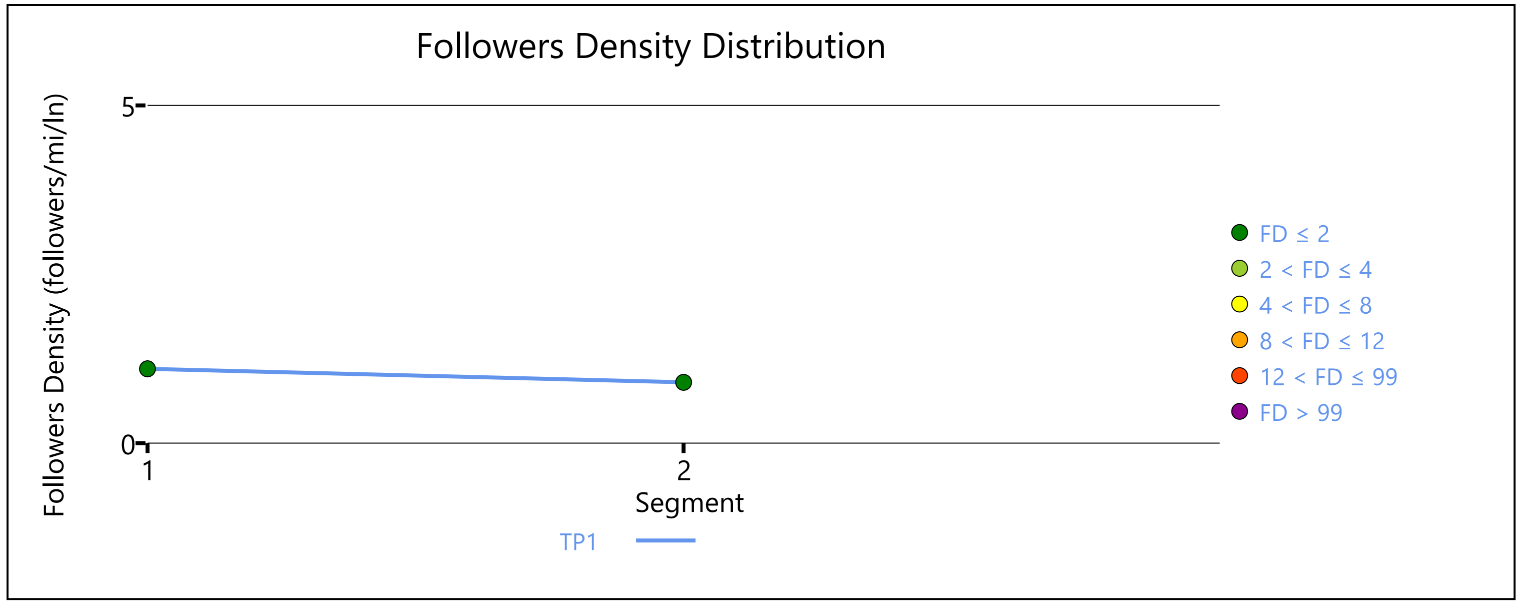
Vehicle Results

Average Speed, mi/h	43.1	Percent Followers, %	26.8
Segment Travel Time, minutes	0.40	Follower Density, followers/mi/ln	0.9
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	1.0	A





US380 WB 2042 Build Condition PM

HCS7 Two-Lane Highway Report

Project Information

Analyst	SD	Date	8/12/2022
Agency	HDR	Analysis Year	2042 Build Condition
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description	San Antonio/I-25	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1375
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	7.6

Demand and Capacity

Directional Demand Flow Rate, veh/h	215	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	37.02
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	42.5
Speed Slope Coefficient	2.81151	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.49423	PF Power Coefficient	0.69260
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1375	-	-	41.3

Vehicle Results

Average Speed, mi/h	41.3	Percent Followers, %	40.3
Segment Travel Time, minutes	0.38	Follower Density, followers/mi/ln	2.1
Vehicle LOS	A		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1500
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	40	Access Point Density, pts/mi	3.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	215	Opposing Demand Flow Rate, veh/h	215
Peak Hour Factor	0.94	Total Trucks, %	37.02

Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	43.5
Speed Slope Coefficient	2.62124	Speed Power Coefficient	0.53517
PF Slope Coefficient	-1.32947	PF Power Coefficient	0.73829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.8
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

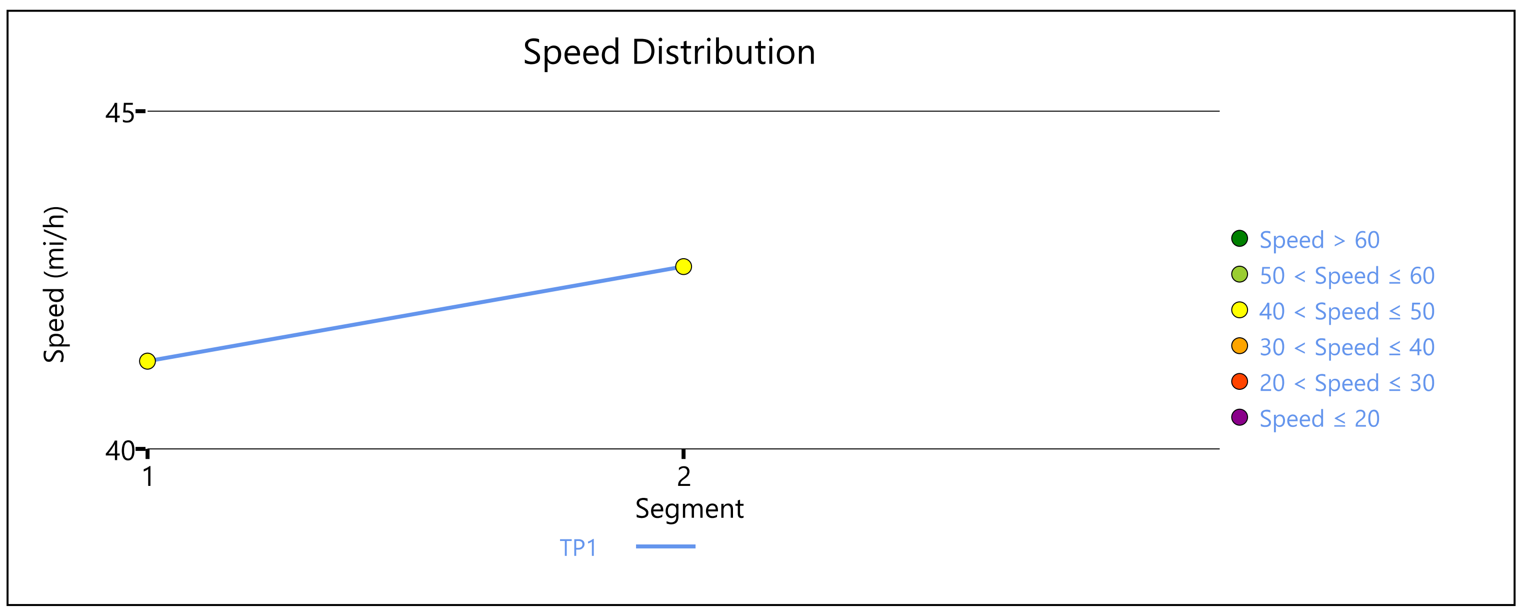
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1500	-	-	42.7

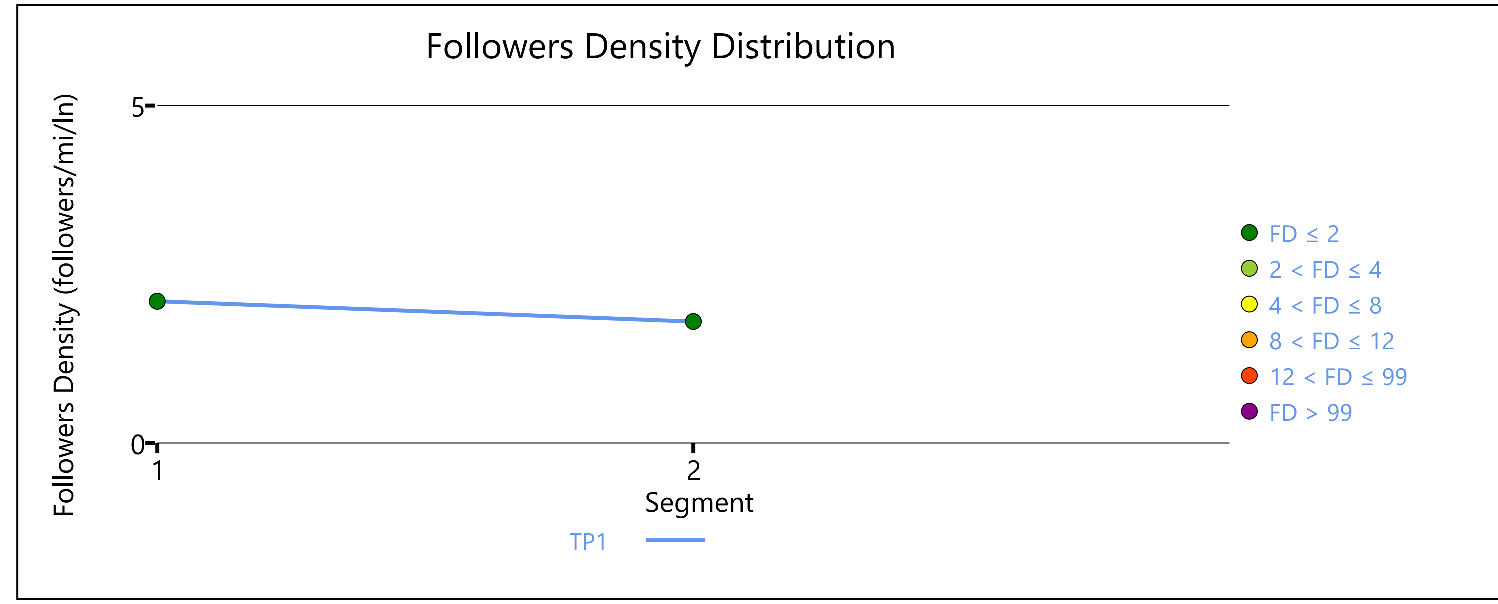
Vehicle Results

Average Speed, mi/h	42.7	Percent Followers, %	34.8
Segment Travel Time, minutes	0.40	Follower Density, followers/mi/ln	1.8
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	1.9	A





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US380/I25 Interchange NB Entrance Ramp 2042 Build Condition AM

HCS7 Two-Lane Highway Report

Project Information

Analyst	SD	Date	8/12/2022
Agency	HDR	Analysis Year	2042 Build Condition
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description	San Antonio/I-25	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1362
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	127	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	37.02
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.8
Speed Slope Coefficient	3.53212	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.42640	PF Power Coefficient	0.73230
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	173	-	-	55.0
2	Horizontal Curve	474	2292	4	55.0
3	Tangent	715	-	-	55.0

Vehicle Results

Average Speed, mi/h	55.0	Percent Followers, %	26.9
Segment Travel Time, minutes	0.28	Follower Density, followers/mi/ln	0.6
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.6	A

 HCS™ Two-Lane Version 7.9 Generated: 08/30/2022 14:49:10

US380_I25_NB_On-Ramp_2042_Build Condition_AM.xuf

US380/I25 Interchange NB Entrance Ramp 2042 Build Condition PM

HCS7 Two-Lane Highway Report

Project Information

Analyst	SD	Date	8/12/2022
Agency	HDR	Analysis Year	2042 Build Condition
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description	San Antonio/I-25	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1362
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	139	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	37.02
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.8
Speed Slope Coefficient	3.53212	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.42640	PF Power Coefficient	0.73230
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	173	-	-	54.8
2	Horizontal Curve	474	2292	4	54.8
3	Tangent	715	-	-	54.8

Vehicle Results

Average Speed, mi/h	54.8	Percent Followers, %	28.6
Segment Travel Time, minutes	0.28	Follower Density, followers/mi/ln	0.7
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.7	A

 HCS™ Two-Lane Version 7.9 Generated: 08/30/2022 14:49:33

US380_I25_NB_On-Ramp_2042_Build Condition_PM.xuf

US380/I25 Interchange NB Exit Ramp 2042 Build Condition AM

HCS7 Two-Lane Highway Report

Project Information

Analyst	SD	Date	8/12/2022
Agency	HDR	Analysis Year	2042 Build Condition
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description	San Antonio/I-25	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1723
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	16	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	40.46
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	2	Free-Flow Speed, mi/h	55.4
Speed Slope Coefficient	4.67015	Speed Power Coefficient	0.43509
PF Slope Coefficient	-1.46626	PF Power Coefficient	0.73959
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	617	-	-	55.4
2	Horizontal Curve	364	2292	4	55.4
3	Tangent	243	-	-	55.4
4	Horizontal Curve	286	1637	5	55.4
5	Tangent	213	-	-	55.4

Vehicle Results

Average Speed, mi/h	55.4	Percent Followers, %	6.6
Segment Travel Time, minutes	0.35	Follower Density, followers/mi/ln	0.0
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.0	A

 HCS™ Two-Lane Version 7.9 Generated: 08/30/2022 14:47:30
US380_I25_NB_Off-Ramp_2042_Build Condition_AM.xuf

US380/I25 Interchange NB Exit Ramp 2042 Build Condition PM

HCS7 Two-Lane Highway Report

Project Information

Analyst	SD	Date	8/12/2022
Agency	HDR	Analysis Year	2042 Build Condition
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description	San Antonio/I-25	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1724
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	19	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	40.46
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	2	Free-Flow Speed, mi/h	55.4
Speed Slope Coefficient	4.67013	Speed Power Coefficient	0.43510
PF Slope Coefficient	-1.46618	PF Power Coefficient	0.73961
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	617	-	-	55.4
2	Horizontal Curve	365	2292	4	55.4
3	Tangent	243	-	-	55.4
4	Horizontal Curve	286	1637	5	55.4
5	Tangent	213	-	-	55.4

Vehicle Results

Average Speed, mi/h	55.4	Percent Followers, %	7.6
Segment Travel Time, minutes	0.35	Follower Density, followers/mi/ln	0.0
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.0	A

 HCS™ Two-Lane Version 7.9 Generated: 08/30/2022 14:48:43
US380_I25_NB_Off-Ramp_2042_Build Condition_PM.xuf

US380/I25 Interchange SB Entrance Ramp 2042 Build Condition AM

HCS7 Two-Lane Highway Report

Project Information

Analyst	SD	Date	8/12/2022
Agency	HDR	Analysis Year	2042 Build Condition
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description	San Antonio/I-25	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1389
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	19	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	37.02
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.8
Speed Slope Coefficient	3.53263	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.42471	PF Power Coefficient	0.73279
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	109	-	-	55.8
2	Horizontal Curve	505	1274	5	55.8
3	Tangent	359	-	-	55.8
4	Horizontal Curve	416	1637	5	55.8

Vehicle Results

Average Speed, mi/h	55.8	Percent Followers, %	7.6
Segment Travel Time, minutes	0.28	Follower Density, followers/mi/ln	0.0
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.0	A

 HCS™ Two-Lane Version 7.9 Generated: 08/30/2022 14:50:43
US380_I25_SB_On-Ramp_2042_Build Condition_AM.xuf

US380/I25 Interchange SB Entrance Ramp 2042 Build Condition PM

HCS7 Two-Lane Highway Report

Project Information

Analyst	SD	Date	8/12/2022
Agency	HDR	Analysis Year	2042 Build Condition
Jurisdiction	NMDOT	Time Period Analyzed	PM
Project Description	San Antonio/I-25	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1389
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	76	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	37.02
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.04

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.8
Speed Slope Coefficient	3.53263	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.42471	PF Power Coefficient	0.73279
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	109	-	-	55.8
2	Horizontal Curve	505	1274	5	55.8
3	Tangent	359	-	-	55.8
4	Horizontal Curve	416	1637	5	55.8

Vehicle Results

Average Speed, mi/h	55.8	Percent Followers, %	19.3
Segment Travel Time, minutes	0.28	Follower Density, followers/mi/ln	0.3
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.3	A

 HCS™ Two-Lane Version 7.9 Generated: 08/30/2022 14:51:11
US380_I25_SB_On-Ramp_2042_Build Condition_PM.xuf

US380/I25 Interchange SB Exit Ramp 2042 Build Condition AM

HCS7 Two-Lane Highway Report

Project Information

Analyst	SD	Date	8/12/2022
Agency	HDR	Analysis Year	2042 Build Condition
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description	San Antonio/I-25	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1008
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	111	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	37.02
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.8
Speed Slope Coefficient	3.53131	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.42910	PF Power Coefficient	0.73151
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	676	1274	5	55.2
2	Tangent	332	-	-	55.2

Vehicle Results

Average Speed, mi/h	55.2	Percent Followers, %	24.8
Segment Travel Time, minutes	0.21	Follower Density, followers/mi/ln	0.5
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.5	A

 HCS™ Two-Lane Version 7.9 Generated: 08/30/2022 14:49:58
US380_I25_SB_Off-Ramp_2042_Build Condition_AM.xuf

US380/I25 Interchange SB Exit Ramp 2042 Build Condition PM

HCS7 Two-Lane Highway Report

Project Information

Analyst	SD	Date	8/12/2022
Agency	HDR	Analysis Year	2042 Build Condition
Jurisdiction	NMDOT	Time Period Analyzed	AM
Project Description	San Antonio/I-25	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1008
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	50	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	138	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.94	Total Trucks, %	37.02
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.8
Speed Slope Coefficient	3.53131	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.42910	PF Power Coefficient	0.73151
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	676	1274	5	54.9
2	Tangent	332	-	-	54.9

Vehicle Results

Average Speed, mi/h	54.9	Percent Followers, %	28.6
Segment Travel Time, minutes	0.21	Follower Density, followers/mi/ln	0.7
Vehicle LOS	A		

Facility Results

T	Follower Density, followers/mi/ln	LOS
1	0.7	A

 HCS™ Two-Lane Version 7.9 Generated: 08/30/2022 14:50:23
US380_I25_SB_Off-Ramp_2042_Build Condition_PM.xuf

Appendix G – Speed Data

All Traffic Data Services, LLC
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Site Code: 7
SB I-25 TO US380 OFF RAMP

SB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
05/04/22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	1	*	1
02:00	0	0	0	0	0	1	0	1	1	0	0	0	0	0	3	44-53	2
03:00	0	0	0	0	0	0	2	1	1	0	0	0	0	0	4	39-48	3
04:00	0	0	0	0	0	0	1	2	4	1	2	0	0	0	10	46-55	6
05:00	0	0	0	0	**2**	0	4	6	12	8	8	3	**4**	**2**	49	51-60	20
06:00	0	0	0	0	0	0	2	8	12	12	14	**6**	2	1	57	55-64	26
07:00	0	0	0	0	0	0	1	7	14	9	13	1	3	1	49	51-60	23
08:00	0	0	0	0	0	0	4	12	14	17	**15**	3	1	2	68	56-65	32
09:00	0	0	0	0	2	0	**10**	**14**	**22**	15	10	3	0	0	**76**	51-60	37
10:00	0	0	0	0	0	**2**	6	9	22	**19**	5	3	0	0	66	51-60	41
11:00	0	0	0	0	0	1	3	13	12	13	7	1	1	0	51	46-55	25
12 PM	0	0	0	0	0	**2**	5	**24**	16	16	7	0	0	0	70	46-55	40
13:00	0	0	0	0	0	2	3	14	19	16	8	1	2	0	65	51-60	35
14:00	0	0	0	0	0	1	**7**	15	18	10	8	**5**	0	0	64	46-55	33
15:00	0	0	0	**2**	0	0	4	8	**27**	14	**12**	1	1	**1**	70	51-60	41
16:00	0	0	0	0	0	1	6	15	21	21	4	5	0	0	73	51-60	42
17:00	0	0	0	0	0	0	2	16	18	**32**	9	4	**3**	0	**84**	51-60	50
18:00	0	0	0	0	0	0	4	8	15	14	7	3	1	1	53	51-60	29
19:00	0	0	0	0	0	0	1	8	11	12	8	2	1	0	43	51-60	23
20:00	0	0	0	0	0	0	5	5	11	6	2	1	0	0	30	49-58	17
21:00	0	0	0	0	0	0	2	2	2	9	2	0	0	0	17	51-60	11
22:00	0	0	0	0	0	0	0	5	4	0	1	0	1	0	11	46-55	9
23:00	0	0	0	0	0	1	3	0	2	3	1	2	0	0	12	51-60	5
Total	1	0	0	2	4	11	75	193	278	247	143	44	20	8	1026		
Percent	0.1%	0.0%	0.0%	0.2%	0.4%	1.1%	7.3%	18.8%	27.1%	24.1%	13.9%	4.3%	1.9%	0.8%			
AM Peak	01:00				05:00	10:00	09:00	09:00	09:00	10:00	08:00	06:00	05:00	05:00	09:00		
Vol.	1				2	2	10	14	22	19	15	6	4	2	76		
PM Peak				15:00		12:00	14:00	12:00	15:00	17:00	15:00	14:00	17:00	15:00	17:00		
Vol.				2		2	7	24	27	32	12	5	3	1	84		
Total	1	0	0	2	4	11	75	193	278	247	143	44	20	8	1026		
Percent	0.1%	0.0%	0.0%	0.2%	0.4%	1.1%	7.3%	18.8%	27.1%	24.1%	13.9%	4.3%	1.9%	0.8%			

	15th Percentile :	46 MPH
	50th Percentile :	54 MPH
	85th Percentile :	61 MPH
	95th Percentile :	66 MPH
Stats	10 MPH Pace Speed :	51-60 MPH
	Number in Pace :	525
	Percent in Pace :	51.2%
	Number of Vehicles > 55 MPH :	462
	Percent of Vehicles > 55 MPH :	45.0%
	Mean Speed(Average) :	55 MPH

All Traffic Data Services, LLC
www.alltrafficdata.net

Site Code: 8
NB I-25 TO US380 OFF RAMP

NB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
05/04/22	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	39-48	1
01:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	24-33	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	39-48	1
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	0	0	0	0	0	1	0	**1**	0	0	0	0	2	39-48	1
06:00	0	0	0	0	0	1	0	0	**2**	0	0	0	0	0	3	45-54	2
07:00	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	39-48	2
08:00	0	0	0	0	1	0	2	**2**	1	0	0	0	0	0	6	41-50	4
09:00	0	0	0	0	1	1	4	2	2	0	0	0	0	0	10	41-50	6
10:00	0	0	0	**1**	0	**2**	**5**	2	1	0	0	0	0	0	11	41-50	7
11:00	0	0	**1**	0	**2**	2	4	1	1	1	0	0	0	0	**12**	36-45	6
12 PM	0	0	0	**1**	0	2	5	1	1	0	0	0	0	0	10	36-45	7
13:00	0	0	0	1	**5**	0	**7**	2	0	0	0	0	0	0	**15**	41-50	9
14:00	0	0	0	1	0	0	3	**3**	**2**	0	0	0	0	0	9	41-50	6
15:00	0	0	0	0	0	0	4	3	1	0	0	0	0	0	8	41-50	7
16:00	0	**1**	0	1	0	**3**	2	2	2	**1**	0	0	0	0	12	36-45	5
17:00	0	0	0	1	2	3	3	0	1	0	0	0	0	0	10	36-45	6
18:00	0	0	0	0	0	2	2	0	1	0	0	0	0	0	5	36-45	4
19:00	0	0	0	0	0	2	3	2	1	0	0	0	0	0	8	41-50	5
20:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	39-48	1
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
22:00	0	0	**1**	0	1	0	0	1	0	0	0	0	0	0	3	14-23	1
23:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	44-53	1
Total	0	1	2	6	13	18	45	26	17	3	0	0	0	0	131		
Percent	0.0%	0.8%	1.5%	4.6%	9.9%	13.7%	34.4%	19.8%	13.0%	2.3%	0.0%	0.0%	0.0%	0.0%			
AM Peak			11:00	10:00	11:00	10:00	10:00	08:00	06:00	05:00					11:00		
Vol.			1	1	2	2	5	2	2	1					12		
PM Peak		16:00	22:00	12:00	13:00	16:00	13:00	14:00	14:00	16:00					13:00		
Vol.		1	1	1	5	3	7	3	2	1					15		
Total	0	1	2	6	13	18	45	26	17	3	0	0	0	0	131		
Percent	0.0%	0.8%	1.5%	4.6%	9.9%	13.7%	34.4%	19.8%	13.0%	2.3%	0.0%	0.0%	0.0%	0.0%			

	15th Percentile :	34 MPH
	50th Percentile :	42 MPH
	85th Percentile :	50 MPH
	95th Percentile :	53 MPH
Stats	10 MPH Pace Speed :	41-50 MPH
	Number in Pace :	71
	Percent in Pace :	54.2%
	Number of Vehicles > 55 MPH :	3
	Percent of Vehicles > 55 MPH :	2.3%
	Mean Speed(Average) :	43 MPH

All Traffic Data Services, LLC
www.alltrafficdata.net

Site Code: 9
WB US380 TO NB I-25 ON RAMP

WB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
05/04/22	0	0	0	0	0	3	0	1	0	0	0	0	0	0	4	31-40	3
01:00	0	0	0	0	1	0	2	1	0	0	0	0	0	0	4	39-48	3
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	1	1	0	1	0	0	**1**	0	0	0	4	29-38	2
04:00	0	0	0	0	0	0	3	0	2	1	0	0	0	0	6	51-60	3
05:00	0	0	0	0	1	2	4	3	6	0	0	0	0	0	16	45-54	9
06:00	0	0	0	0	2	4	6	8	0	1	0	0	0	0	21	41-50	14
07:00	0	0	0	0	2	7	**33**	**23**	11	**4**	0	0	0	0	80	41-50	56
08:00	**2**	0	0	1	2	12	20	15	**12**	1	1	0	0	0	66	41-50	35
09:00	0	0	0	**2**	4	14	26	10	3	0	0	0	0	0	59	36-45	40
10:00	0	0	0	1	**9**	**28**	28	13	2	0	0	0	0	0	**81**	36-45	56
11:00	0	**1**	0	1	4	20	28	14	4	1	0	0	0	0	73	36-45	48
12 PM	0	**1**	0	3	7	15	28	14	2	1	0	0	0	0	71	36-45	43
13:00	0	0	**1**	**7**	**12**	25	20	19	3	0	0	0	0	0	87	36-45	45
14:00	**1**	1	0	3	6	**26**	**33**	7	4	2	0	0	0	0	83	36-45	59
15:00	0	0	0	0	4	14	25	**30**	**12**	**3**	0	0	0	0	**88**	41-50	55
16:00	0	0	0	0	4	15	17	25	9	1	**2**	0	0	0	73	41-50	42
17:00	1	1	0	0	5	13	18	14	6	0	0	0	0	0	58	39-48	32
18:00	0	0	0	3	3	16	16	9	8	0	0	0	0	0	55	36-45	32
19:00	0	1	0	2	3	18	12	15	3	0	0	0	0	0	54	36-45	30
20:00	0	0	0	2	8	10	11	5	0	1	0	0	0	0	37	36-45	21
21:00	0	0	0	0	3	9	6	6	1	0	0	0	0	0	25	36-45	15
22:00	0	0	1	0	0	3	5	2	0	0	0	0	0	0	11	36-45	8
23:00	0	0	0	2	0	2	2	3	1	1	0	0	0	0	11	41-50	5
Total	4	5	2	27	81	257	343	238	89	17	4	0	0	0	1067		
Percent	0.4%	0.5%	0.2%	2.5%	7.6%	24.1%	32.1%	22.3%	8.3%	1.6%	0.4%	0.0%	0.0%	0.0%			
AM Peak	08:00	11:00		09:00	10:00	10:00	07:00	07:00	08:00	07:00	03:00				10:00		
Vol.	2	1		2	9	28	33	23	12	4	1				81		
PM Peak	14:00	12:00	13:00	13:00	13:00	14:00	14:00	15:00	15:00	15:00	16:00				15:00		
Vol.	1	1	1	7	12	26	33	30	12	3	2				88		
Total	4	5	2	27	81	257	343	238	89	17	4	0	0	0	1067		
Percent	0.4%	0.5%	0.2%	2.5%	7.6%	24.1%	32.1%	22.3%	8.3%	1.6%	0.4%	0.0%	0.0%	0.0%			

	15th Percentile :	35 MPH
	50th Percentile :	42 MPH
	85th Percentile :	48 MPH
	95th Percentile :	53 MPH
Stats	10 MPH Pace Speed :	36-45 MPH
	Number in Pace :	600
	Percent in Pace :	56.2%
	Number of Vehicles > 55 MPH :	21
	Percent of Vehicles > 55 MPH :	2.0%
	Mean Speed(Average) :	43 MPH

All Traffic Data Services, LLC
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Site Code: 10
I-25 AT US380 MAINLINE

NB LANE 1

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
05/04/22	0	0	0	0	0	0	0	0	0	0	1	6	9	25	41	66-75	15
01:00	0	0	0	0	0	0	0	0	0	0	0	14	13	12	39	66-75	27
02:00	0	0	0	0	0	0	0	0	0	0	3	9	3	8	23	61-70	12
03:00	0	0	0	0	0	0	0	0	0	**3**	0	9	6	9	27	66-75	15
04:00	0	0	0	0	0	0	0	0	0	0	2	3	7	18	30	66-75	10
05:00	0	0	0	0	0	0	0	0	0	0	3	12	11	30	56	66-75	23
06:00	0	0	0	0	0	0	0	0	0	2	4	8	13	39	66	66-75	21
07:00	0	0	0	0	0	0	0	0	0	1	**12**	19	29	102	163	66-75	48
08:00	0	0	0	0	0	0	0	0	0	1	5	18	32	101	157	66-75	50
09:00	0	0	0	0	0	0	0	0	0	2	6	19	35	151	213	66-75	54
10:00	0	0	0	0	0	0	0	0	**3**	3	9	**26**	35	140	216	66-75	61
11:00	0	0	0	0	0	0	0	0	0	1	2	21	**46**	**171**	**241**	66-75	67
12 PM	0	0	0	0	0	0	0	0	1	3	8	**30**	34	205	**281**	66-75	64
13:00	0	0	0	0	0	0	0	0	**8**	3	9	27	39	180	266	66-75	66
14:00	0	0	0	0	0	0	0	0	1	2	3	20	**44**	196	266	66-75	64
15:00	0	0	0	0	0	0	0	0	0	2	4	17	37	**220**	280	66-75	54
16:00	0	0	0	0	0	0	0	0	1	**4**	6	15	37	212	275	66-75	52
17:00	0	0	0	0	0	0	0	0	1	2	**11**	24	31	150	219	66-75	55
18:00	0	0	0	0	0	0	0	0	3	0	9	19	28	159	218	66-75	47
19:00	**1**	0	0	0	0	0	0	0	1	1	7	19	38	123	190	66-75	57
20:00	0	0	0	0	0	0	0	0	0	0	3	9	22	92	126	66-75	31
21:00	0	0	0	0	0	0	0	0	0	0	4	9	18	75	106	66-75	27
22:00	0	0	0	0	0	0	0	0	0	1	1	21	12	56	91	66-75	33
23:00	0	0	0	0	0	0	0	0	0	1	3	8	14	43	69	66-75	22
Total	1	0	0	0	0	0	0	0	19	32	115	382	593	2517	3659		
Percent	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.9%	3.1%	10.4%	16.2%	68.8%			
AM Peak									10:00	03:00	07:00	10:00	11:00	11:00	11:00		
Vol.									3	3	12	26	46	171	241		
PM Peak	19:00								13:00	16:00	17:00	12:00	14:00	15:00	12:00		
Vol.	1								8	4	11	30	44	220	281		
Total	1	0	0	0	0	0	0	0	19	32	115	382	593	2517	3659		
Percent	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.9%	3.1%	10.4%	16.2%	68.8%			

	15th Percentile :	65 MPH
	50th Percentile :	70 MPH
	85th Percentile :	73 MPH
	95th Percentile :	74 MPH
Stats	10 MPH Pace Speed :	66-75 MPH
	Number in Pace :	975
	Percent in Pace :	26.6%
	Number of Vehicles > 55 MPH :	3639
	Percent of Vehicles > 55 MPH :	99.5%
	Mean Speed(Average) :	70 MPH

All Traffic Data Services, LLC
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Site Code: 10
I-25 AT US380 MAINLINE

NB LANE 2

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
05/04/22	0	0	0	0	0	0	0	0	0	0	0	0	1	5	6	64-73	1
01:00	0	0	0	0	0	0	0	0	0	0	0	2	1	2	5	64-73	3
02:00	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	59-68	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	*	*
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	*	*
05:00	0	0	0	0	0	0	0	0	0	0	0	1	3	5	9	66-75	4
06:00	0	0	0	0	0	0	0	0	0	0	0	0	2	8	10	65-74	2
07:00	0	0	0	0	0	0	0	0	0	0	**1**	3	4	16	24	66-75	7
08:00	0	0	0	0	0	0	0	0	0	0	1	3	4	16	24	66-75	7
09:00	0	0	0	0	0	0	0	0	0	0	0	3	6	24	33	66-75	9
10:00	0	0	0	0	0	0	0	0	0	0	0	**4**	5	23	32	66-75	9
11:00	0	0	0	0	0	0	0	0	0	0	0	4	**7**	**29**	**40**	66-75	11
12 PM	0	0	0	0	0	0	0	0	0	0	**1**	**5**	6	33	45	66-75	11
13:00	0	0	0	0	0	0	0	0	**1**	0	1	5	**7**	29	43	66-75	12
14:00	0	0	0	0	0	0	0	0	0	0	0	4	7	32	43	66-75	11
15:00	0	0	0	0	0	0	0	0	0	0	0	4	6	**36**	**46**	66-75	10
16:00	0	0	0	0	0	0	0	0	0	0	0	2	7	34	43	66-75	9
17:00	0	0	0	0	0	0	0	0	0	0	1	4	5	24	34	66-75	9
18:00	0	0	0	0	0	0	0	0	0	0	1	4	5	25	35	66-75	9
19:00	0	0	0	0	0	0	0	0	0	0	1	3	6	19	29	66-75	9
20:00	0	0	0	0	0	0	0	0	0	0	0	1	4	14	19	66-75	5
21:00	0	0	0	0	0	0	0	0	0	0	0	1	3	12	16	66-75	4
22:00	0	0	0	0	0	0	0	0	0	0	0	3	2	9	14	65-74	5
23:00	0	0	0	0	0	0	0	0	0	0	1	2	2	7	12	64-73	4
Total	0	0	0	0	0	0	0	0	1	0	8	59	93	408	569		
Percent	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	1.4%	10.4%	16.3%	71.7%			
AM Peak											07:00	10:00	11:00	11:00	11:00		
Vol.											1	4	7	29	40		
PM Peak									13:00		12:00	12:00	13:00	15:00	15:00		
Vol.									1		1	5	7	36	46		
Total	0	0	0	0	0	0	0	0	1	0	8	59	93	408	569		
Percent	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	1.4%	10.4%	16.3%	71.7%			

	15th Percentile :	66 MPH
	50th Percentile :	70 MPH
	85th Percentile :	73 MPH
	95th Percentile :	74 MPH
Stats	10 MPH Pace Speed :	66-75 MPH
	Number in Pace :	152
	Percent in Pace :	26.7%
	Number of Vehicles > 55 MPH :	568
	Percent of Vehicles > 55 MPH :	99.8%
	Mean Speed(Average) :	71 MPH

All Traffic Data Services, LLC
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Site Code: 10
I-25 AT US380 MAINLINE

SB LANE 1

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
05/04/22	0	0	0	0	0	0	0	0	0	3	18	5	12	19	57	60-69	23
01:00	0	0	0	**1**	0	0	0	0	1	7	10	9	8	11	47	61-70	19
02:00	0	0	0	0	0	0	**1**	**1**	1	6	13	5	6	2	35	56-65	19
03:00	0	0	0	0	0	0	0	1	2	6	12	10	6	7	44	61-70	22
04:00	0	0	0	0	0	0	0	0	0	7	12	13	6	15	53	61-70	25
05:00	0	0	0	0	0	0	0	1	**5**	5	12	16	18	32	89	66-75	34
06:00	0	0	0	0	0	0	0	0	1	5	17	29	21	56	129	66-75	50
07:00	0	0	0	0	0	0	0	0	0	7	18	32	34	81	172	66-75	66
08:00	0	0	0	0	0	0	0	0	0	6	21	26	48	**107**	208	66-75	74
09:00	0	0	0	0	0	0	0	0	3	7	23	43	54	104	234	66-75	97
10:00	0	0	0	0	0	0	0	0	4	6	**31**	45	51	70	207	66-75	96
11:00	0	0	0	0	0	0	0	0	4	**16**	28	**50**	**57**	90	**245**	66-75	107
12 PM	0	0	0	0	0	0	0	0	2	**15**	**34**	**48**	57	81	237	66-75	105
13:00	0	0	0	0	0	0	0	0	**6**	13	22	32	**65**	89	227	66-75	97
14:00	0	0	0	0	0	0	0	0	0	12	18	32	50	79	191	66-75	82
15:00	0	0	**1**	0	0	0	0	0	5	7	22	44	62	116	257	66-75	106
16:00	0	0	0	0	0	0	0	0	3	12	23	48	62	**118**	**266**	66-75	110
17:00	0	0	0	0	0	0	0	0	1	7	31	43	62	109	253	66-75	105
18:00	0	0	0	0	0	0	0	**3**	3	3	17	36	40	77	179	66-75	76
19:00	0	0	0	0	0	0	0	0	0	1	15	24	40	76	156	66-75	64
20:00	0	0	0	0	0	0	0	0	1	2	12	21	19	57	112	66-75	40
21:00	0	0	0	0	0	0	0	1	2	2	14	14	13	33	79	61-70	28
22:00	0	0	0	0	0	0	0	0	1	7	9	15	11	17	60	65-74	26
23:00	0	0	0	0	0	0	0	0	0	5	18	9	10	19	61	61-70	27
Total	0	0	1	1	0	0	1	7	45	167	450	649	812	1465	3598		
Percent	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	1.3%	4.6%	12.5%	18.0%	22.6%	40.7%			
AM Peak				01:00			02:00	02:00	05:00	11:00	10:00	11:00	11:00	08:00	11:00		
Vol.				1			1	1	5	16	31	50	57	107	245		
PM Peak			15:00					18:00	13:00	12:00	12:00	12:00	13:00	16:00	16:00		
Vol.			1					3	6	15	34	48	65	118	266		
Total	0	0	1	1	0	0	1	7	45	167	450	649	812	1465	3598		
Percent	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	1.3%	4.6%	12.5%	18.0%	22.6%	40.7%			

	15th Percentile :	61 MPH
	50th Percentile :	68 MPH
	85th Percentile :	73 MPH
	95th Percentile :	74 MPH
Stats	10 MPH Pace Speed :	66-75 MPH
	Number in Pace :	1461
	Percent in Pace :	40.6%
	Number of Vehicles > 55 MPH :	3543
	Percent of Vehicles > 55 MPH :	98.5%
	Mean Speed(Average) :	68 MPH

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Site Code: 10
I-25 AT US380 MAINLINE

SB LANE 2

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
05/04/22	0	0	0	0	0	0	0	0	0	0	4	1	2	3	10	59-68	5
01:00	0	0	0	0	0	0	0	0	0	1	1	1	1	1	5	54-63	2
02:00	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	56-65	3
03:00	0	0	0	0	0	0	0	0	0	1	2	0	1	0	4	55-64	3
04:00	0	0	0	0	0	0	0	0	0	0	2	3	0	2	7	61-70	5
05:00	0	0	0	0	0	0	0	0	0	0	1	3	3	6	13	66-75	6
06:00	0	0	0	0	0	0	0	0	0	1	2	6	5	9	23	66-75	11
07:00	0	0	0	0	0	0	0	0	0	1	3	6	7	14	31	66-75	13
08:00	0	0	0	0	0	0	0	0	0	0	4	5	9	**19**	37	66-75	14
09:00	0	0	0	0	0	0	0	0	0	1	4	8	10	18	41	66-75	18
10:00	0	0	0	0	0	0	0	0	0	0	**6**	8	9	13	36	66-75	17
11:00	0	0	0	0	0	0	0	0	0	**2**	5	**9**	**11**	15	**42**	66-75	20
12 PM	0	0	0	0	0	0	0	0	0	2	5	**9**	11	13	40	66-75	20
13:00	0	0	0	0	0	0	0	0	0	**3**	4	6	**12**	16	41	66-75	18
14:00	0	0	0	0	0	0	0	0	0	1	4	6	9	15	35	66-75	15
15:00	0	0	0	0	0	0	0	0	0	0	4	7	12	20	43	66-75	19
16:00	0	0	0	0	0	0	0	0	0	2	3	9	12	**21**	**47**	66-75	21
17:00	0	0	0	0	0	0	0	0	0	1	**6**	7	11	20	45	66-75	18
18:00	0	0	0	0	0	0	0	0	0	0	4	6	8	13	31	66-75	14
19:00	0	0	0	0	0	0	0	0	0	0	2	4	7	14	27	66-75	11
20:00	0	0	0	0	0	0	0	0	0	0	2	4	4	10	20	65-74	8
21:00	0	0	0	0	0	0	0	0	0	0	2	2	1	6	11	61-70	4
22:00	0	0	0	0	0	0	0	0	0	0	1	3	1	4	9	66-75	4
23:00	0	0	0	0	0	0	0	0	0	0	4	1	2	4	11	59-68	5
Total	0	0	0	0	0	0	0	0	0	16	78	114	148	256	612		
Percent	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.6%	12.7%	18.6%	24.2%	41.8%			
AM Peak										11:00	10:00	11:00	11:00	08:00	11:00		
Vol.										2	6	9	11	19	42		
PM Peak										13:00	17:00	12:00	13:00	16:00	16:00		
Vol.										3	6	9	12	21	47		
Total	0	0	0	0	0	0	0	0	0	16	78	114	148	256	612		
Percent	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.6%	12.7%	18.6%	24.2%	41.8%			

	15th Percentile :	62 MPH
	50th Percentile :	68 MPH
	85th Percentile :	73 MPH
	95th Percentile :	74 MPH
Stats	10 MPH Pace Speed :	66-75 MPH
	Number in Pace :	262
	Percent in Pace :	42.8%
	Number of Vehicles > 55 MPH :	612
	Percent of Vehicles > 55 MPH :	100.0%
	Mean Speed(Average) :	69 MPH

Southbound I-25 to US 380 Exit Ramp – 24-Hour

Speed Data:

Average Speed	Speed Bin / Range	Southbound Lane	Individual %	Cumulative Sum	Cumulative %
8	1-15	1	0%	1	0.10%
18	16-20	0	0%	1	0.10%
23	21-25	0	0%	1	0.10%
28	26-30	2	0%	3	0.29%
33	31-35	4	0%	7	0.68%
38	36-40	11	1%	18	1.75%
43	41-45	75	7%	93	9.06%
48	46-50	193	19%	286	27.88%
53	51-55	278	27%	564	54.97%
58	56-60	247	24%	811	79.04%
63	61-65	143	14%	954	92.98%
68	66-70	44	4%	998	97.27%
73	71-75	20	2%	1018	99.22%
90	76-999	8	1%	1026	100.00%

Southbound I-25 to US 380 Exit Ramp – AM and PM

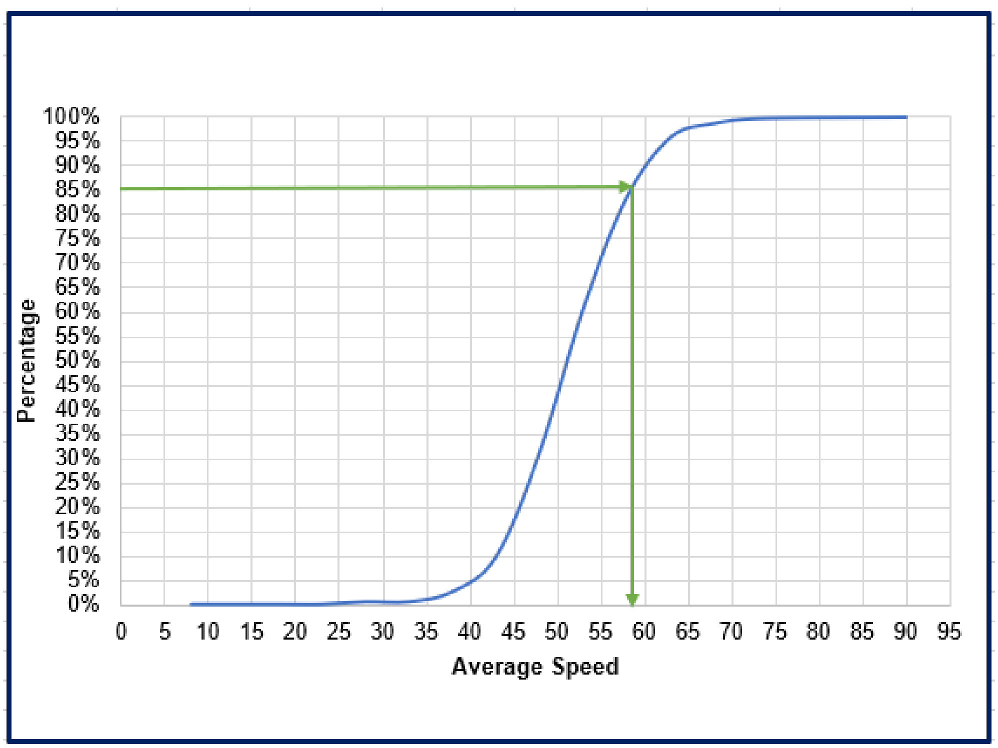
Speed Data:

Average Speed	Speed Bin / Range	Southbound Lane	Individual %	Cumulative Sum	Cumulative %
8	1-15	0	0%	0	0.00%
18	16-20	0	0%	0	0.00%
23	21-25	0	0%	0	0.00%
28	26-30	0	0%	0	0.00%
33	31-35	2	1%	2	0.66%
38	36-40	1	0%	3	1.00%
43	41-45	22	7%	25	8.31%
48	46-50	57	19%	82	27.24%
53	51-55	75	25%	157	52.16%
58	56-60	85	28%	242	80.40%
63	61-65	38	13%	280	93.02%
68	66-70	15	5%	295	98.01%
73	71-75	4	1%	299	99.34%
90	76-999	2	1%	301	100.00%

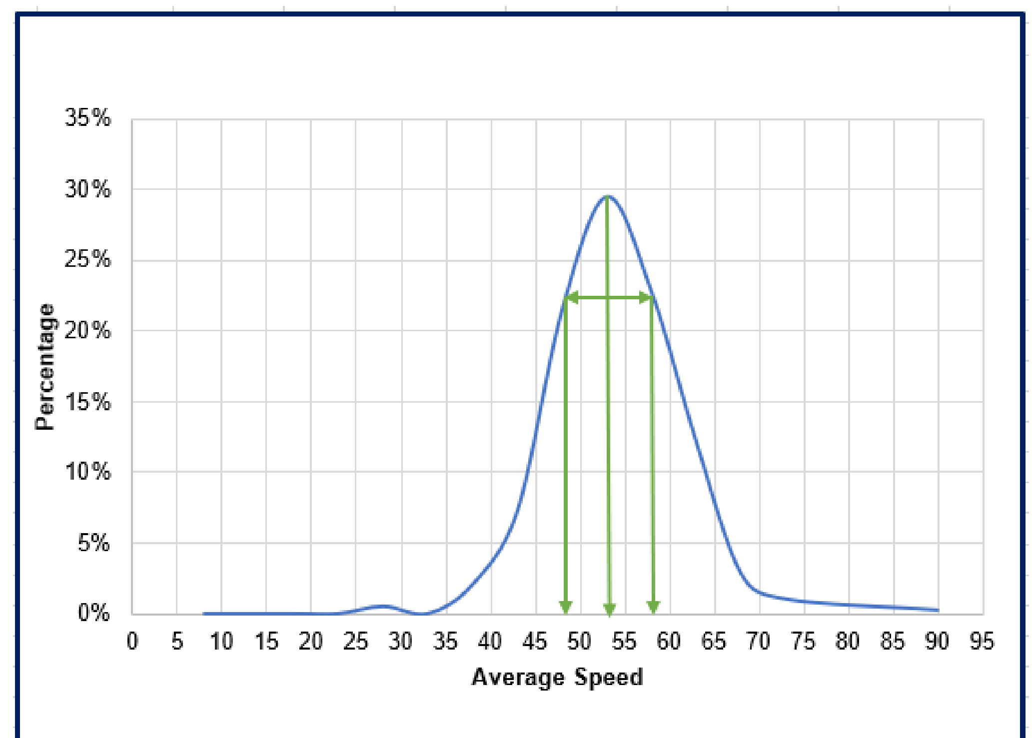
Southbound I-25 to US 380 Exit Ramp – Midday

Speed Data:

Average Speed	Speed Bin / Range	Southbound Lane	Individual %	Cumulative Sum	Cumulative %
8	1-15	0	0%	0	0.00%
18	16-20	0	0%	0	0.00%
23	21-25	0	0%	0	0.00%
28	26-30	2	1%	2	0.52%
33	31-35	0	0%	2	0.52%
38	36-40	8	2%	10	2.59%
43	41-45	28	7%	38	9.84%
48	46-50	83	22%	121	31.35%
53	51-55	114	30%	235	60.88%
58	56-60	88	23%	323	83.68%
63	61-65	47	12%	370	95.85%
68	66-70	11	3%	381	98.70%
73	71-75	4	1%	385	99.74%
90	76-999	1	0%	386	100.00%



Cumulative Speed Distribution and 85th Percentile Speed

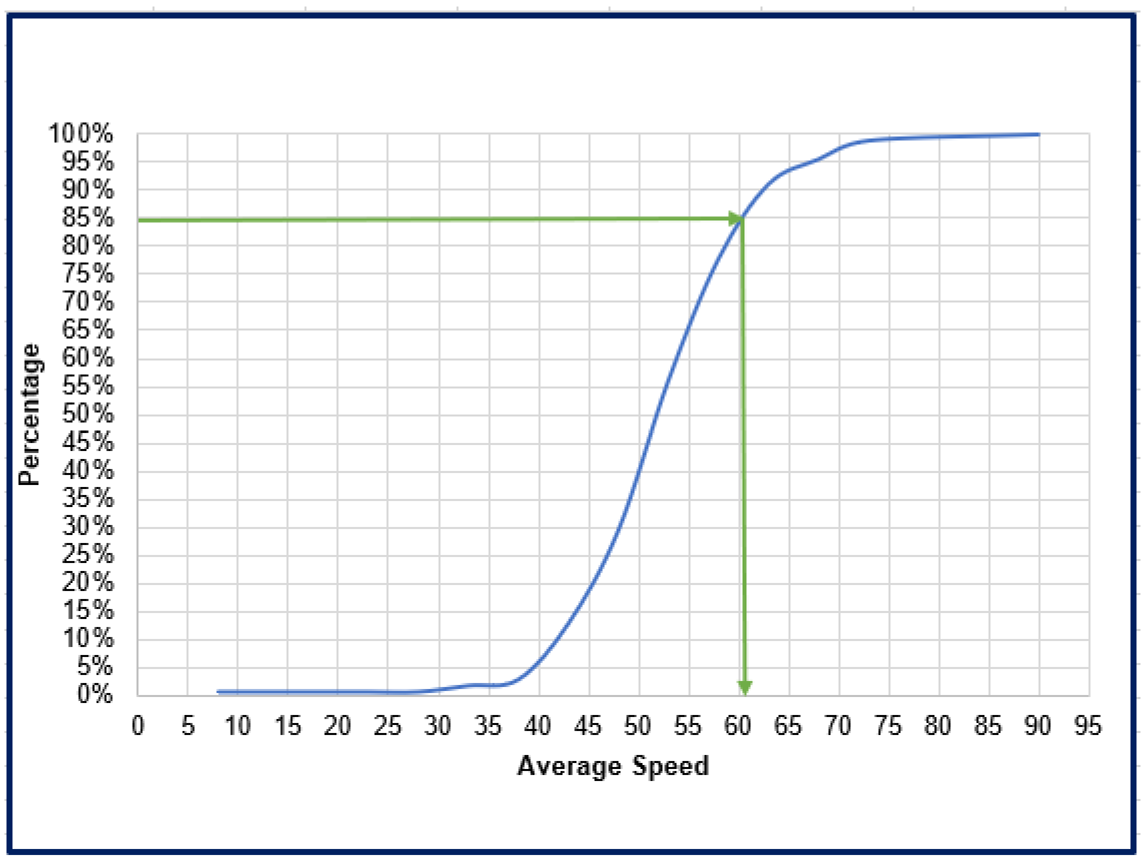


Speed Distribution, and Pace and Mode Speed

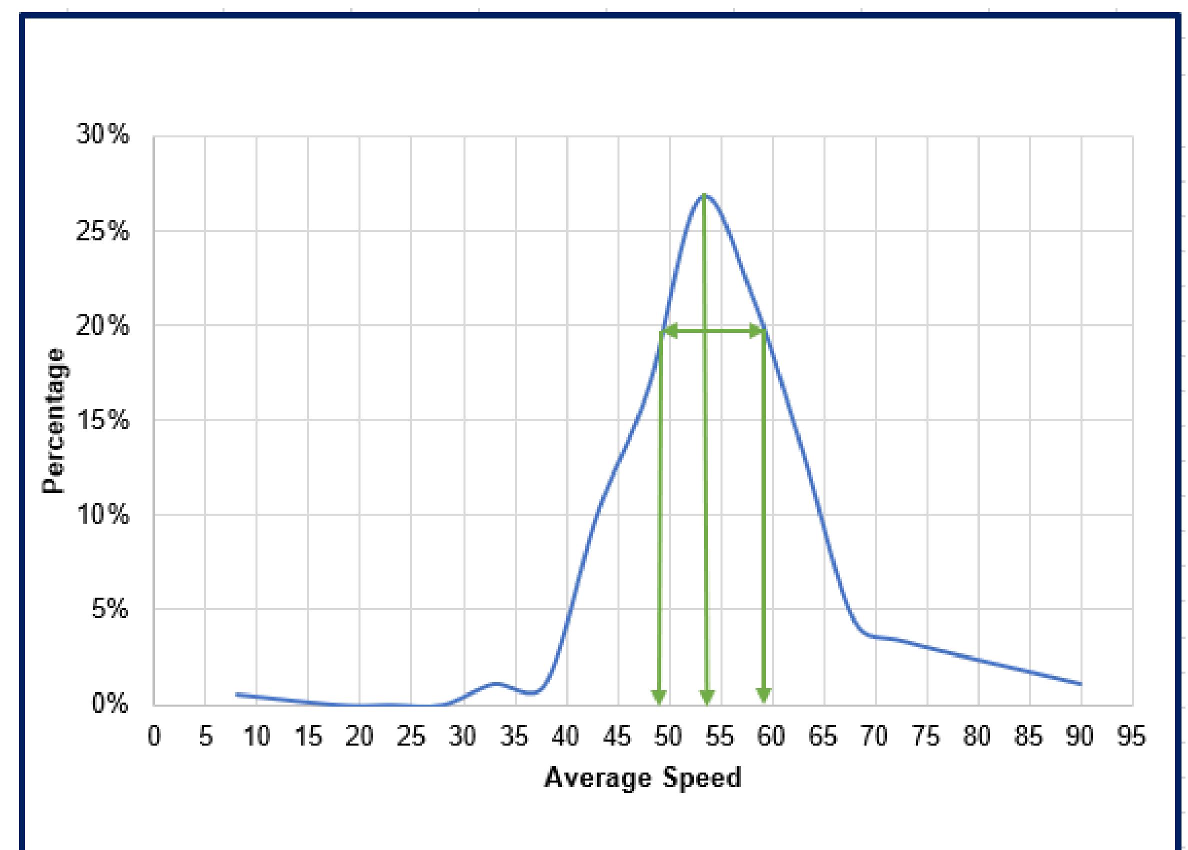
Southbound I-25 to US 380 Exit Ramp – Nighttime

Speed Data:

Average Speed	Speed Bin / Range	Southbound Lane	Individual %	Cumulative Sum	Cumulative %
8	1-15	1	1%	1	0.56%
18	16-20	0	0%	1	0.56%
23	21-25	0	0%	1	0.56%
28	26-30	0	0%	1	0.56%
33	31-35	2	1%	3	1.67%
38	36-40	2	1%	5	2.78%
43	41-45	18	10%	23	12.78%
48	46-50	30	17%	53	29.44%
53	51-55	48	27%	101	56.11%
58	56-60	39	22%	140	77.78%
63	61-65	24	13%	164	91.11%
68	66-70	8	4%	172	95.56%
73	71-75	6	3%	178	98.89%
90	76-999	2	1%	180	100.00%



Cumulative Speed Distribution and 85th Percentile Speed



Speed Distribution, and Pace and Mode Speed

Northbound I-25 to US 380 Exit Ramp – 24-Hour

Speed Data:

Average Speed	Speed Bin / Range	Northbound Lane	Individual %	Cumulative Sum	Cumulative %
8	1-15	0	0%	0	0.00%
18	16-20	1	1%	1	0.76%
23	21-25	2	2%	3	2.29%
28	26-30	6	5%	9	6.87%
33	31-35	13	10%	22	16.79%
38	36-40	18	14%	40	30.53%
43	41-45	45	34%	85	64.89%
48	46-50	26	20%	111	84.73%
53	51-55	17	13%	128	97.71%
58	56-60	3	2%	131	100.00%
63	61-65	0	0%	131	100.00%
68	66-70	0	0%	131	100.00%
73	71-75	0	0%	131	100.00%
90	76-999	0	0%	131	100.00%

Northbound I-25 to US 380 Exit Ramp – AM and PM

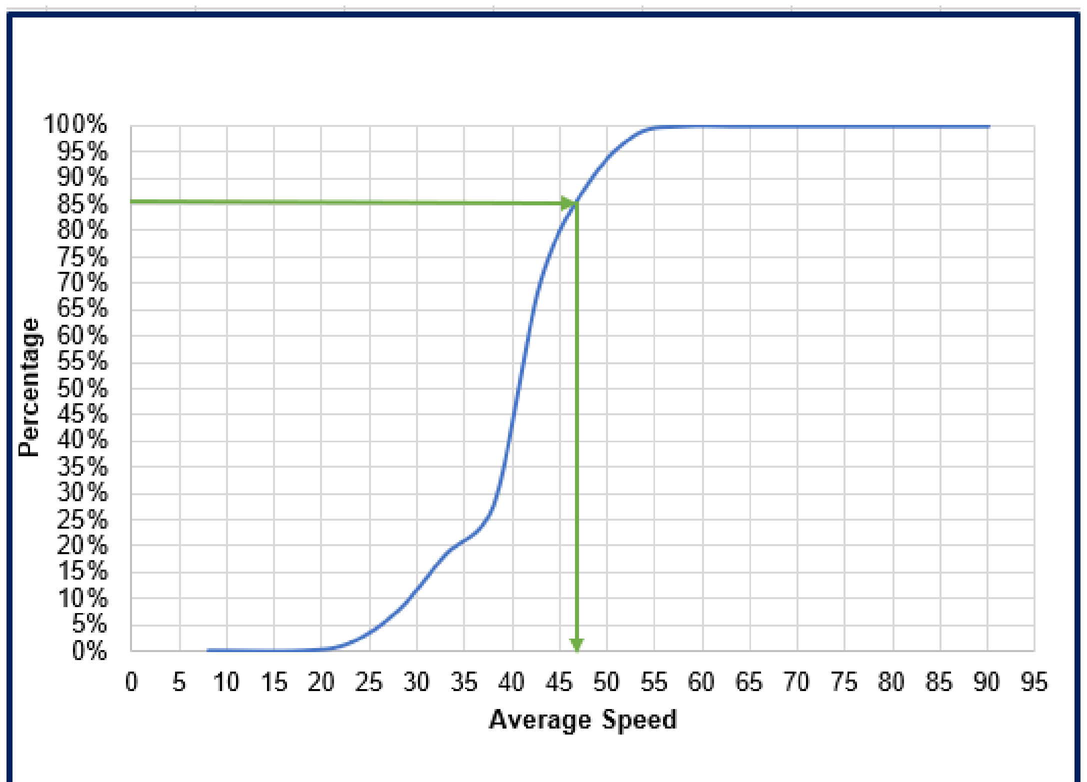
Speed Data:

Average Speed	Speed Bin / Range	Northbound Lane	Individual %	Cumulative Sum	Cumulative %
8	1-15	0	0%	0	0.00%
18	16-20	1	3%	1	2.63%
23	21-25	0	0%	1	2.63%
28	26-30	2	5%	3	7.89%
33	31-35	4	11%	7	18.42%
38	36-40	7	18%	14	36.84%
43	41-45	11	29%	25	65.79%
48	46-50	6	16%	31	81.58%
53	51-55	6	16%	37	97.37%
58	56-60	1	3%	38	100.00%
63	61-65	0	0%	38	100.00%
68	66-70	0	0%	38	100.00%
73	71-75	0	0%	38	100.00%
90	76-999	0	0%	38	100.00%

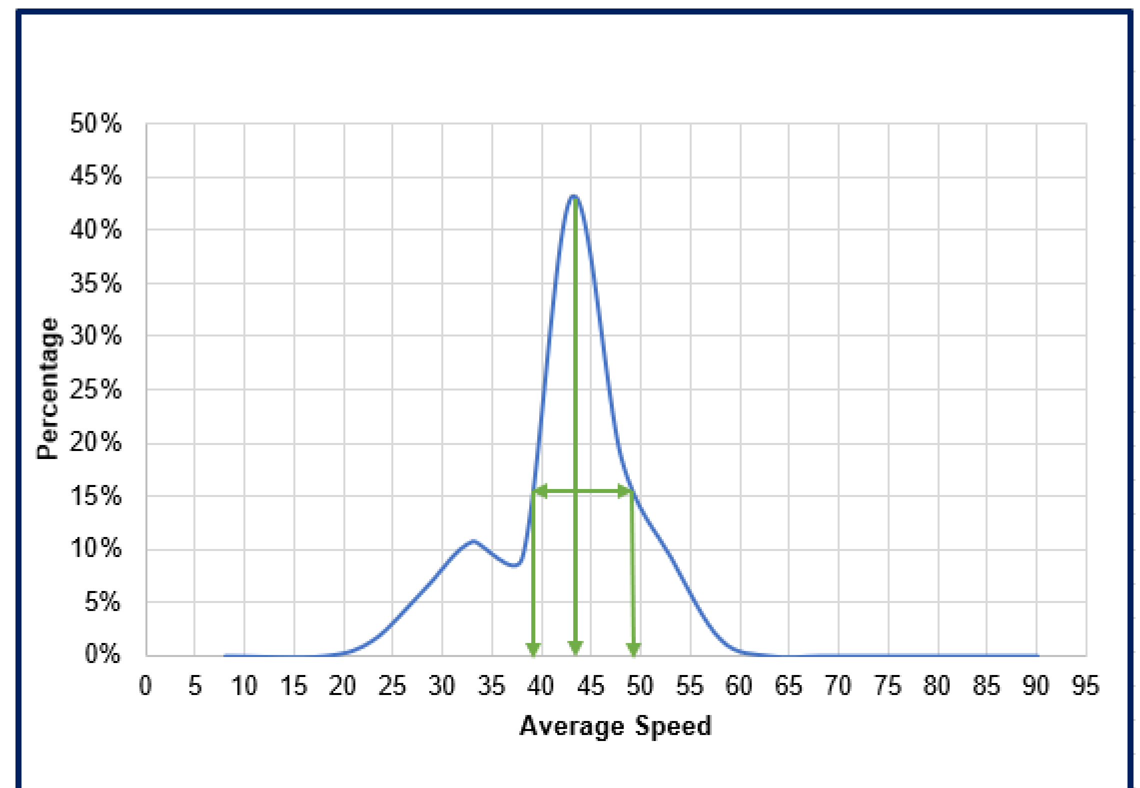
Northbound I-25 to US 380 Exit Ramp – Midday

Speed Data:

Average Speed	Speed Bin / Range	Northbound Lane	Individual %	Cumulative Sum	Cumulative %
8	1-15	0	0%	0	0.00%
18	16-20	0	0%	0	0.00%
23	21-25	1	2%	1	1.54%
28	26-30	4	6%	5	7.69%
33	31-35	7	11%	12	18.46%
38	36-40	6	9%	18	27.69%
43	41-45	28	43%	46	70.77%
48	46-50	12	18%	58	89.23%
53	51-55	6	9%	64	98.46%
58	56-60	1	2%	65	100.00%
63	61-65	0	0%	65	100.00%
68	66-70	0	0%	65	100.00%
73	71-75	0	0%	65	100.00%
90	76-999	0	0%	65	100.00%



Cumulative Speed Distribution and 85th Percentile Speed

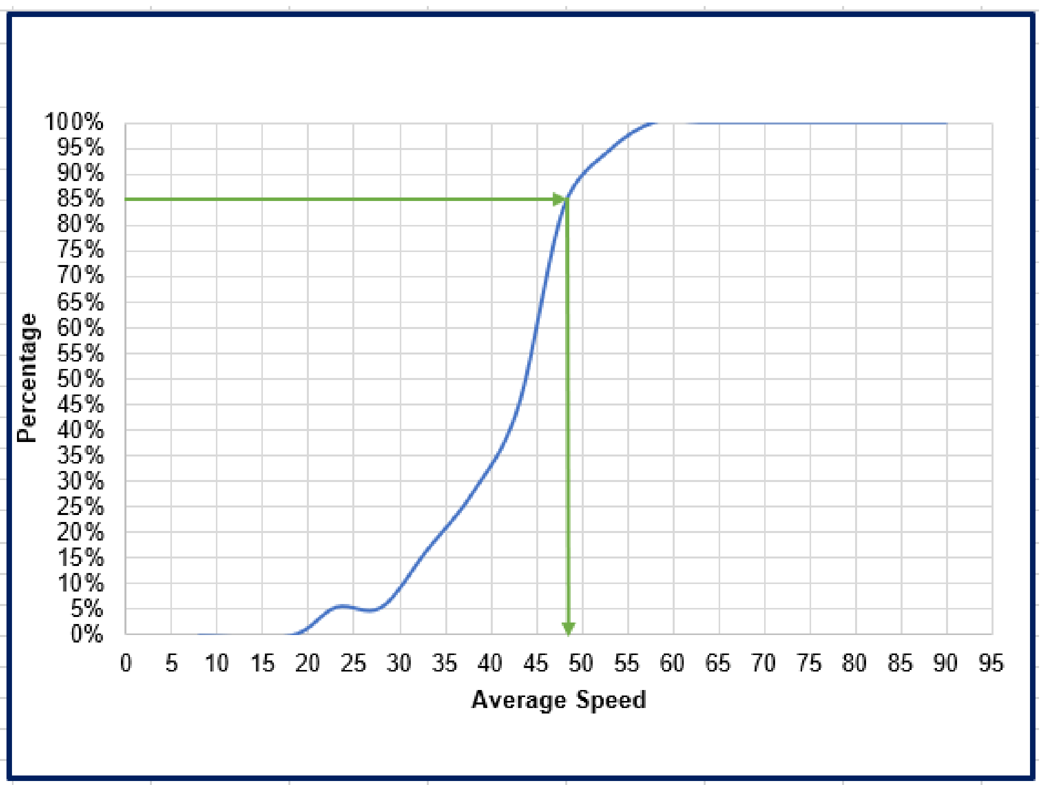


Speed Distribution, and Pace and Mode Speed

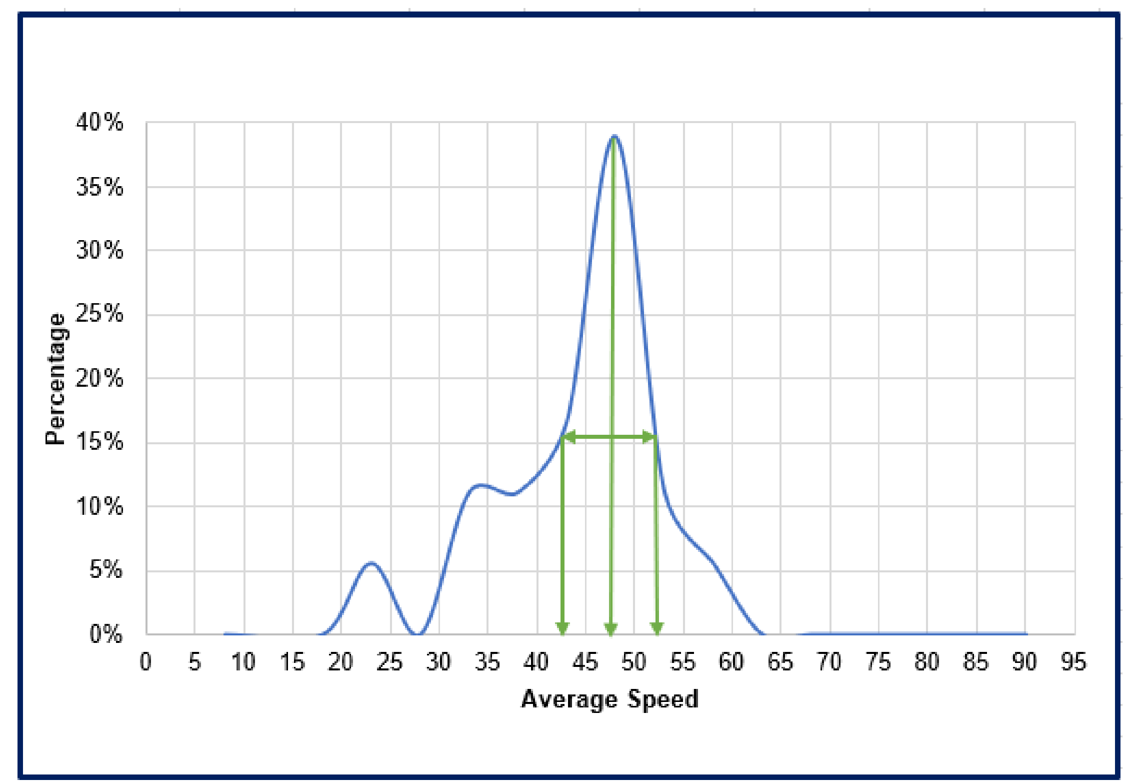
Northbound I-25 to US 380 Exit Ramp – Nighttime

Speed Data:

Average Speed	Speed Bin / Range	Northbound Lane	Individual %	Cumulative Sum	Cumulative %
8	1-15	0	0%	0	0.00%
18	16-20	0	0%	0	0.00%
23	21-25	1	6%	1	5.56%
28	26-30	0	0%	1	5.56%
33	31-35	2	11%	3	16.67%
38	36-40	2	11%	5	27.78%
43	41-45	3	17%	8	44.44%
48	46-50	7	39%	15	83.33%
53	51-55	2	11%	17	94.44%
58	56-60	1	6%	18	100.00%
63	61-65	0	0%	18	100.00%
68	66-70	0	0%	18	100.00%
73	71-75	0	0%	18	100.00%
90	76-999	0	0%	18	100.00%



Cumulative Speed Distribution and 85th Percentile Speed



Speed Distribution, and Pace and Mode Speed

Westbound US 380 to Northbound I-25 Entrance Ramp – 24-Hour

Speed Data:

Average Speed	Speed Bin / Range	Westbound Lane	Individual %	Cumulative Sum	Cumulative %
8	1-15	4	0%	4	0.37%
18	16-20	5	0%	9	0.84%
23	21-25	2	0%	11	1.03%
28	26-30	27	3%	38	3.56%
33	31-35	81	8%	119	11.15%
38	36-40	257	24%	376	35.24%
43	41-45	343	32%	719	67.39%
48	46-50	238	22%	957	89.69%
53	51-55	89	8%	1046	98.03%
58	56-60	17	2%	1063	99.63%
63	61-65	4	0%	1067	100.00%
68	66-70	0	0%	1067	100.00%
73	71-75	0	0%	1067	100.00%
90	76-999	0	0%	1067	100.00%

Westbound US 380 to Northbound I-25 Entrance Ramp – AM and PM

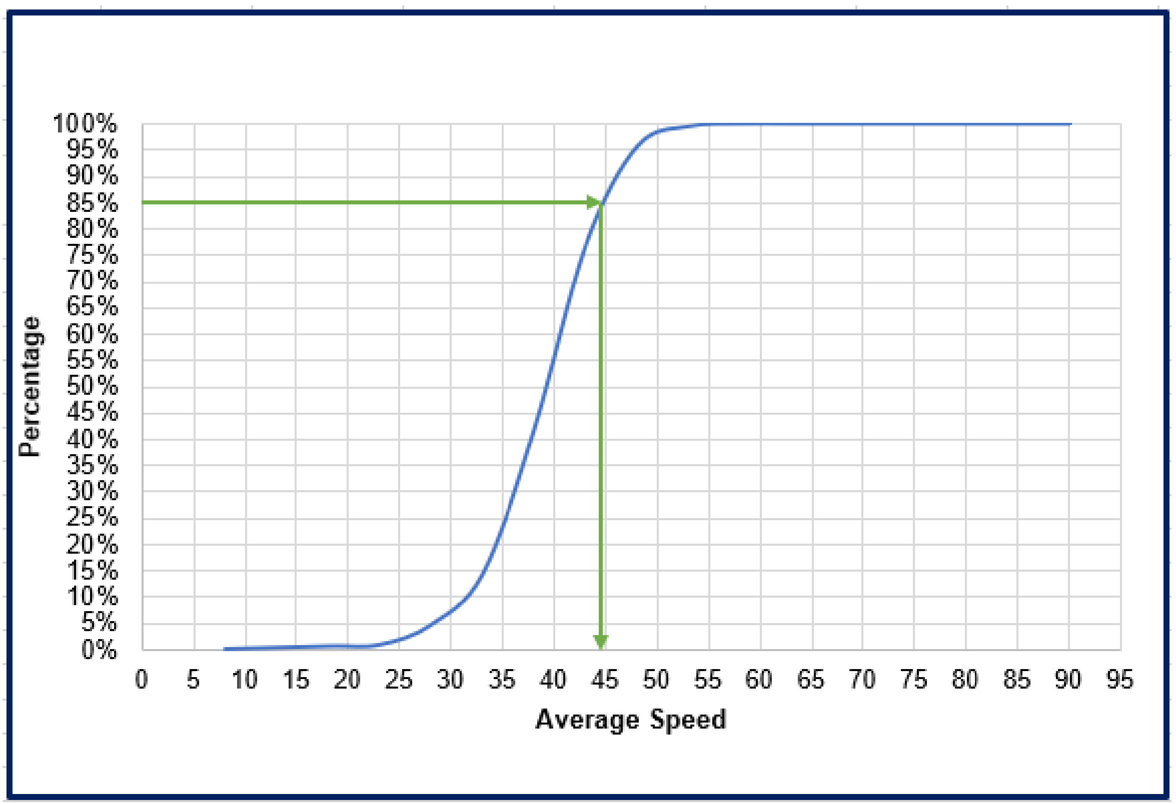
Speed Data:

Average Speed	Speed Bin / Range	Westbound Lane	Individual %	Cumulative Sum	Cumulative %
8	1-15	3	1%	3	0.95%
18	16-20	1	0%	4	1.26%
23	21-25	0	0%	4	1.26%
28	26-30	4	1%	8	2.52%
33	31-35	14	4%	22	6.94%
38	36-40	59	19%	81	25.55%
43	41-45	111	35%	192	60.57%
48	46-50	75	24%	267	84.23%
53	51-55	39	12%	306	96.53%
58	56-60	10	3%	316	99.68%
63	61-65	1	0%	317	100.00%
68	66-70	0	0%	317	100.00%
73	71-75	0	0%	317	100.00%
90	76-999	0	0%	317	100.00%

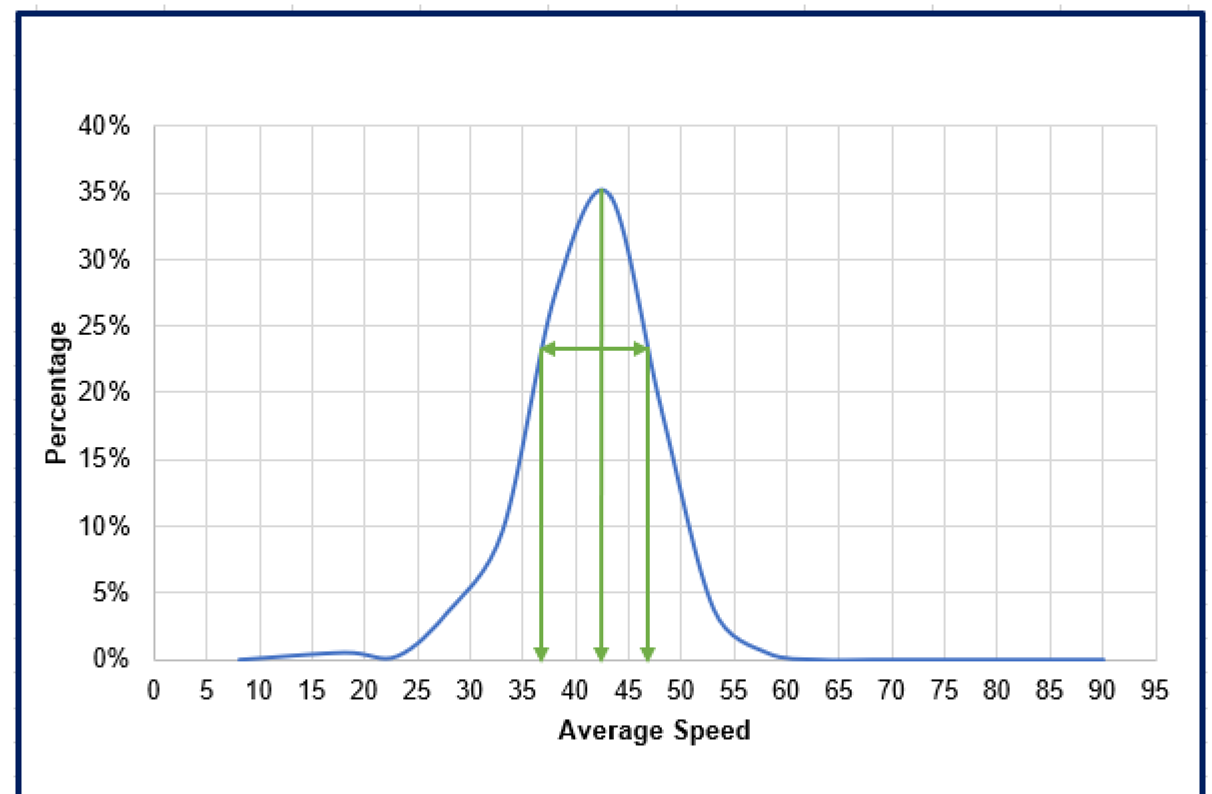
Westbound US 380 to Northbound I-25 Entrance Ramp – Midday

Speed Data:

Average Speed	Speed Bin / Range	Westbound Lane	Individual %	Cumulative Sum	Cumulative %
8	1-15	0	0%	0	0.00%
18	16-20	2	1%	2	0.54%
23	21-25	1	0%	3	0.81%
28	26-30	14	4%	17	4.58%
33	31-35	36	10%	53	14.29%
38	36-40	102	27%	155	41.78%
43	41-45	130	35%	285	76.82%
48	46-50	70	19%	355	95.69%
53	51-55	14	4%	369	99.46%
58	56-60	2	1%	371	100.00%
63	61-65	0	0%	371	100.00%
68	66-70	0	0%	371	100.00%
73	71-75	0	0%	371	100.00%
90	76-999	0	0%	371	100.00%



Cumulative Speed Distribution and 85th Percentile Speed

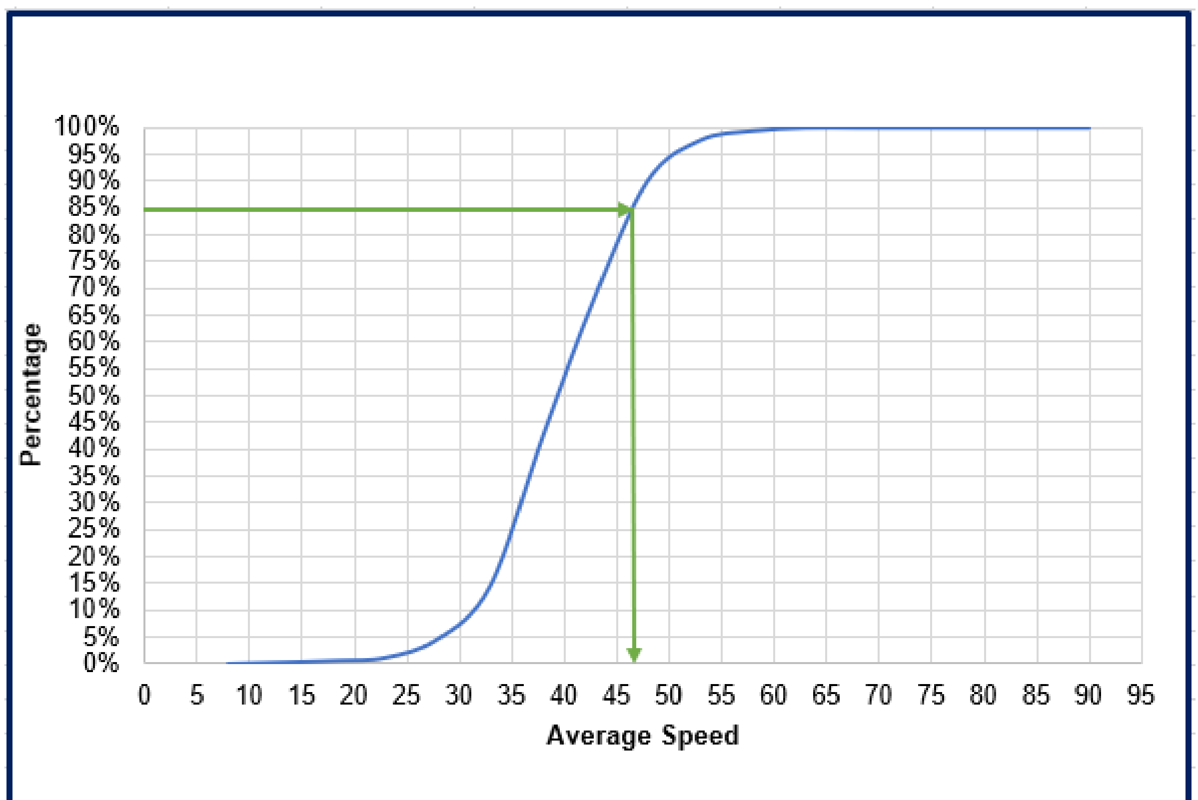


Speed Distribution, and Pace and Mode Speed

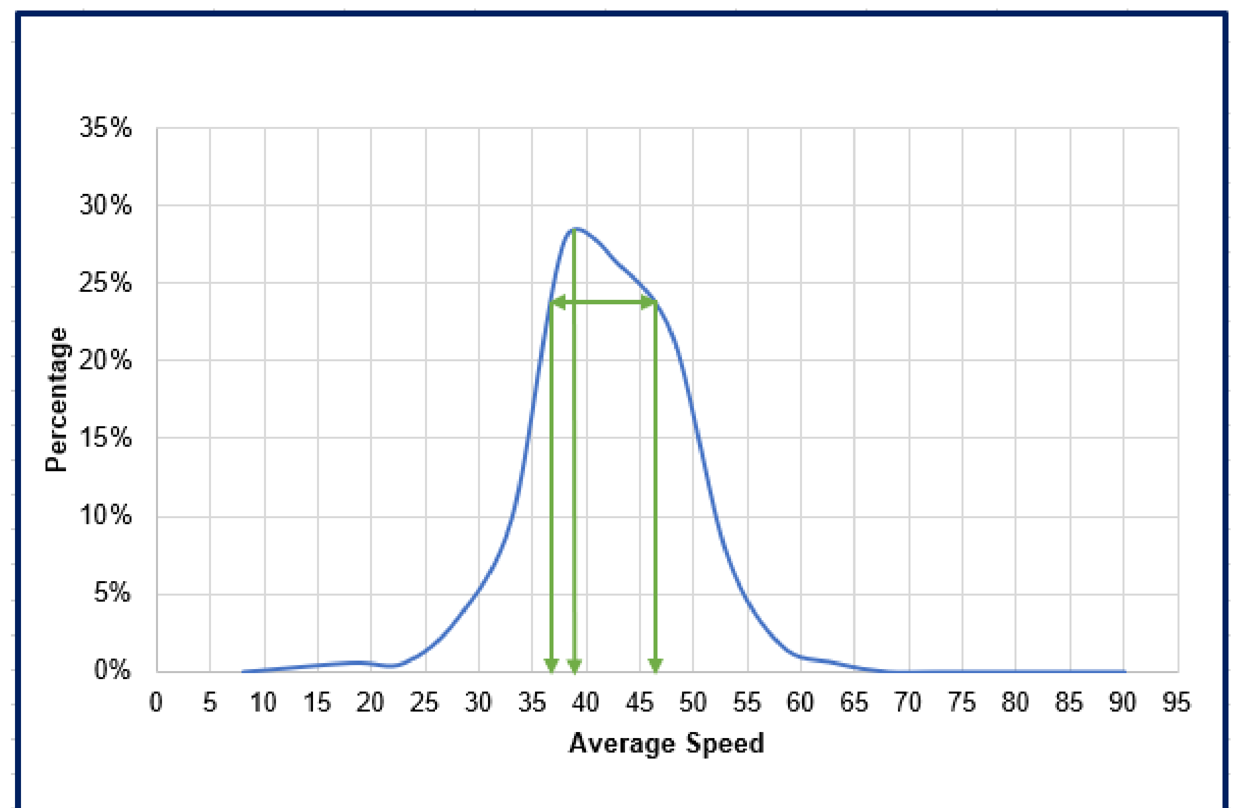
Westbound US 380 to Northbound I-25 Entrance Ramp – Nighttime

Speed Data:

Average Speed	Speed Bin / Range	Westbound Lane	Individual %	Cumulative Sum	Cumulative %
8	1-15	0	0%	0	0.00%
18	16-20	1	1%	1	0.58%
23	21-25	1	1%	2	1.16%
28	26-30	6	3%	8	4.65%
33	31-35	17	10%	25	14.53%
38	36-40	48	28%	73	42.44%
43	41-45	45	26%	118	68.60%
48	46-50	37	22%	155	90.12%
53	51-55	13	8%	168	97.67%
58	56-60	3	2%	171	99.42%
63	61-65	1	1%	172	100.00%
68	66-70	0	0%	172	100.00%
73	71-75	0	0%	172	100.00%
90	76-999	0	0%	172	100.00%



Cumulative Speed Distribution and 85th Percentile Speed



Speed Distribution, and Pace and Mode Speed

I-25 Mainline – 24-Hour

Speed Data:

Average Speed	Speed Bin / Range	Both Approach	Individual %	Cumulative Sum	Cumulative %
8	1-15	1	0%	1	0.01%
18	16-20	0	0%	1	0.01%
23	21-25	1	0%	2	0.02%
28	26-30	1	0%	3	0.04%
33	31-35	0	0%	3	0.04%
38	36-40	0	0%	3	0.04%
43	41-45	1	0%	4	0.05%
48	46-50	7	0%	11	0.13%
53	51-55	65	1%	76	0.90%
58	56-60	215	3%	291	3.45%
63	61-65	651	8%	942	11.16%
68	66-70	1204	14%	2146	25.43%
73	71-75	1646	20%	3792	44.94%
90	76-999	4646	55%	8438	100.00%

I-25 Mainline – AM and PM

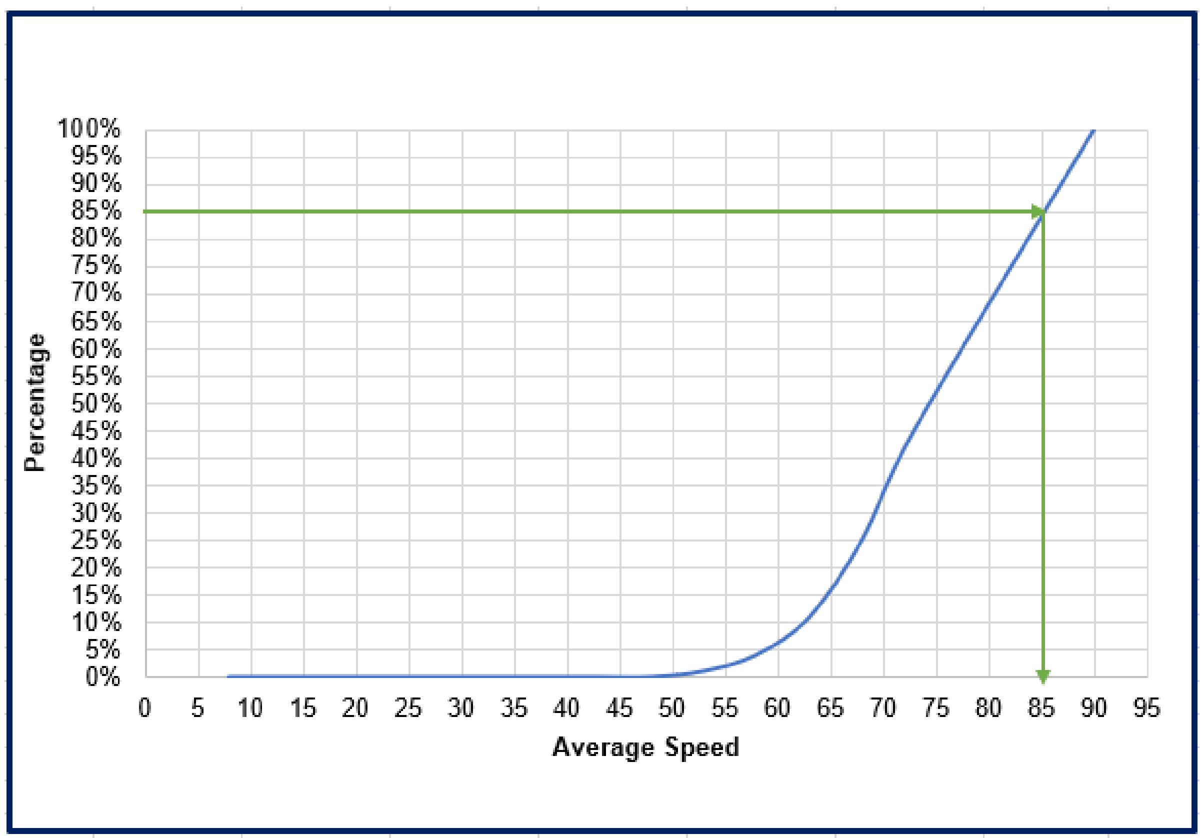
Speed Data:

Average Speed	Speed Bin / Range	Both Approach	Individual %	Cumulative Sum	Cumulative %
8	1-15	0	0%	0	0.00%
18	16-20	0	0%	0	0.00%
23	21-25	1	0%	1	0.05%
28	26-30	0	0%	1	0.05%
33	31-35	0	0%	1	0.05%
38	36-40	0	0%	1	0.05%
43	41-45	0	0%	1	0.05%
48	46-50	0	0%	1	0.05%
53	51-55	12	1%	13	0.59%
58	56-60	44	2%	57	2.59%
63	61-65	126	6%	183	8.30%
68	66-70	271	12%	454	20.60%
73	71-75	433	20%	887	40.25%
90	76-999	1317	60%	2204	100.00%

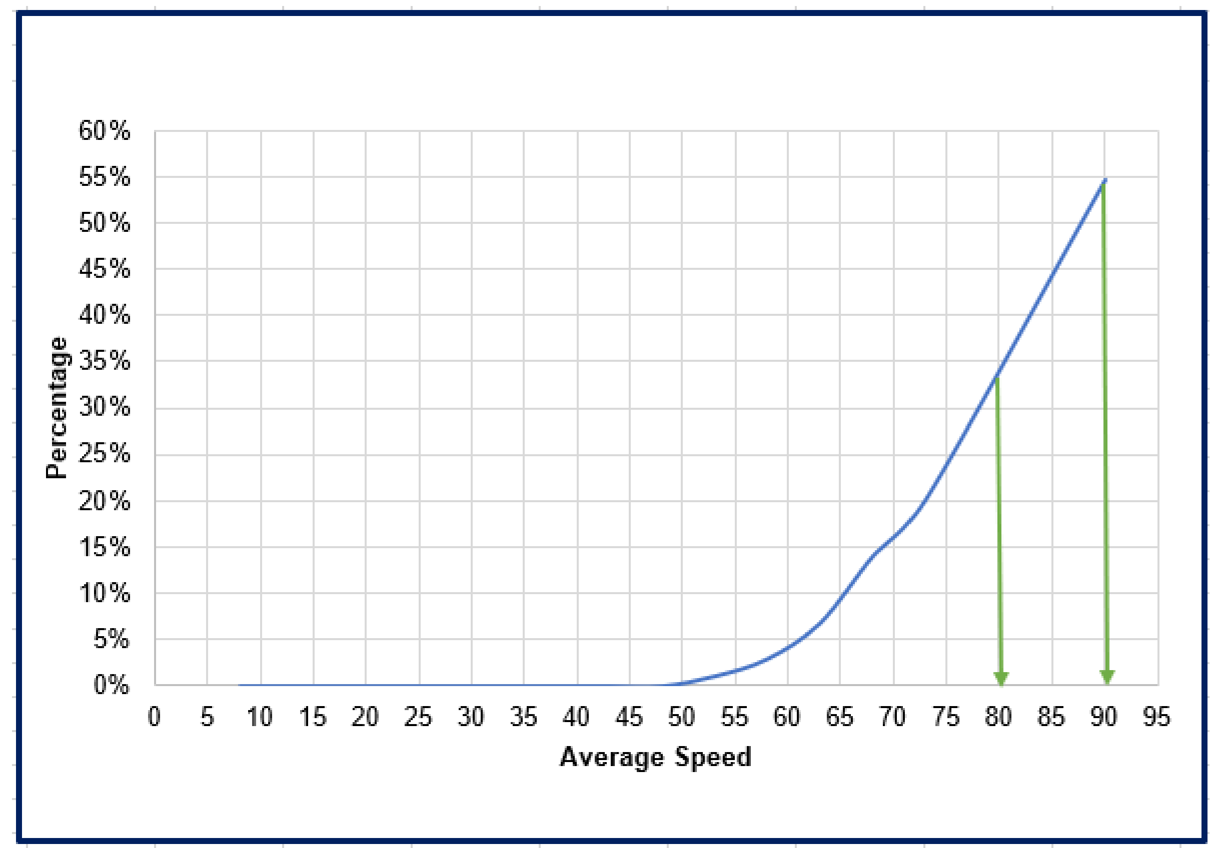
I-25 Mainline – Midday

Speed Data:

Average Speed	Speed Bin / Range	Both Approach	Individual %	Cumulative Sum	Cumulative %
8	1-15	0	0%	0	0.00%
18	16-20	0	0%	0	0.00%
23	21-25	0	0%	0	0.00%
28	26-30	0	0%	0	0.00%
33	31-35	0	0%	0	0.00%
38	36-40	0	0%	0	0.00%
43	41-45	0	0%	0	0.00%
48	46-50	0	0%	0	0.00%
53	51-55	30	1%	30	1.08%
58	56-60	82	3%	112	4.04%
63	61-65	190	7%	302	10.89%
68	66-70	391	14%	693	24.98%
73	71-75	562	20%	1255	45.24%
90	76-999	1519	55%	2774	100.00%



Cumulative Speed Distribution and 85th Percentile Speed

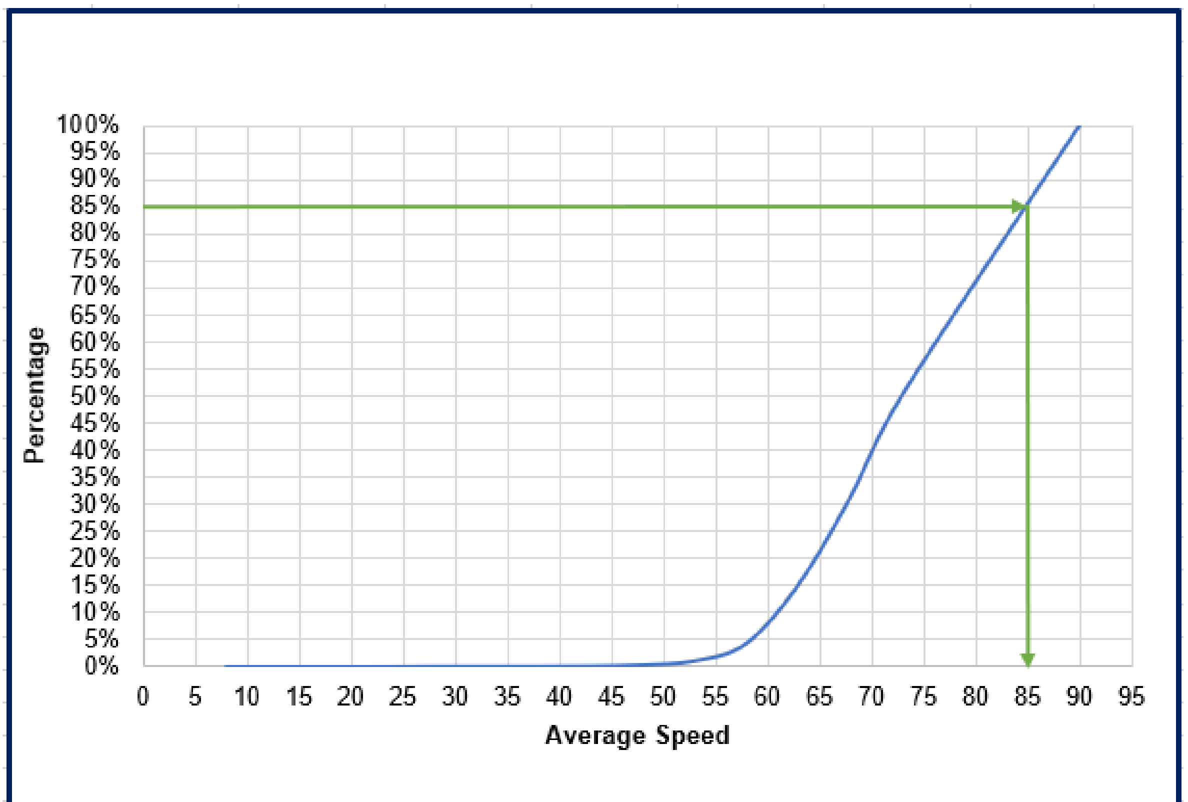


Speed Distribution, and Pace and Mode Speed

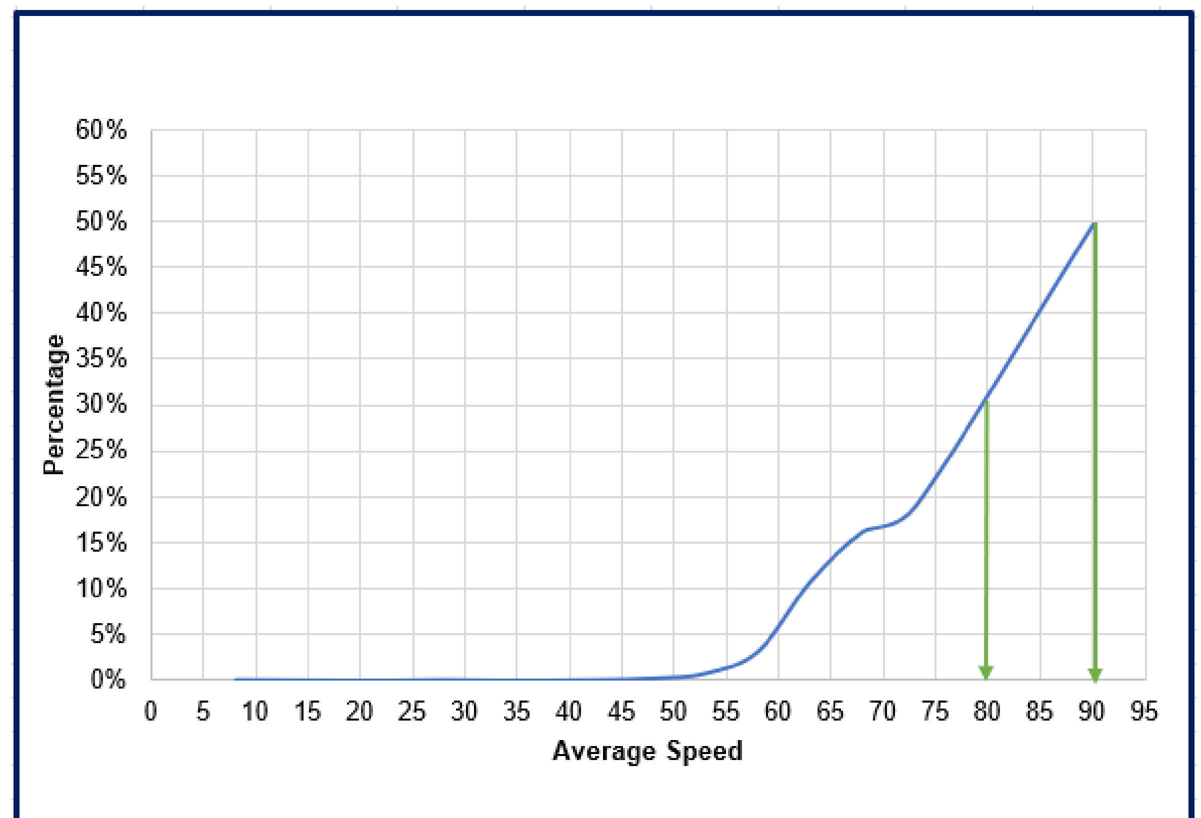
I-25 Mainline – Nighttime

Speed Data:

Average Speed	Speed Bin / Range	Both Approach	Individual %	Cumulative Sum	Cumulative %
8	1-15	1	0%	1	0.05%
18	16-20	0	0%	1	0.05%
23	21-25	0	0%	1	0.05%
28	26-30	1	0%	2	0.11%
33	31-35	0	0%	2	0.11%
38	36-40	0	0%	2	0.11%
43	41-45	1	0%	3	0.16%
48	46-50	4	0%	7	0.38%
53	51-55	14	1%	21	1.15%
58	56-60	59	3%	80	4.38%
63	61-65	198	11%	278	15.21%
68	66-70	296	16%	574	31.40%
73	71-75	346	19%	920	50.33%
90	76-999	908	50%	1828	100.00%



Cumulative Speed Distribution and 85th Percentile Speed



Speed Distribution, and Pace and Mode Speed

Appendix H – Crash Data

CRASH REPORT NUMBER	CRASH DATE	CRASH YEAR	MONTH	TIME OF CRASH	HOUR OF CRASH	DAY OF WEEK	LAW ENFORCEMENT AGENCY	COUNTY	CITY	PRIMARY STREET
710375430	5/25/2017	2017	May	3:44	3 a.m.	Thursday	NEW MEXICO STATE POLICE (NMSP)	SOCORRO	SAN ANTONITO (SOCORRO)	I 25 SOUTH-BD FW
23374923	9/29/2017	2017	September	18:50	6 p.m.	Friday	SOCORRO COUNTY SHERIFFS OFFICE	SOCORRO	SAN ANTONITO (SOCORRO)	INTERSTATE 25 NB
710384661	12/1/2017	2017	December	16:54	4 p.m.	Friday	NEW MEXICO STATE POLICE (NMSP)	SOCORRO	SAN ANTONITO (SOCORRO)	I-25
26	3/8/2019	2019	March	19:52	7 p.m.	Friday	NEW MEXICO STATE POLICE (NMSP)	SOCORRO	NONE	I 25
710613925	10/19/2019	2019	October	9:01	9 a.m.	Saturday	NEW MEXICO STATE POLICE (NMSP)	SOCORRO	NONE	HIGHWAY I-25

CRASH REPORT NUMBER	SECONDARY STREET	LANDMARK/LOCATION	GIS-DERIVED ROUTE NAME	GIS-DERIVED MILEPOST	CRASH DIRECTION	DIRECTION FROM INTERSECTION OR LANDMARK	DISTANCE FROM LANDMARK	DISTANCE FROM LANDMARK MEASUREMENT UNIT	NUMBER OF PEOPLE KILLED IN CRASH	NUMBER OF PEOPLE WITH SUSPECTED SERIOUS INJURIES (CLASS A) IN CRASH
710375430	NONE	MP139	I 25	139	S	N	0.1	MI	0	0
23374923	NA	MILE MARKER 140	I 25	140	N	E			0	0
710384661			I 25	139	N	N			0	0
26	IX 2139	IX 2139	I 25	140	N	N	1832	FT	0	0
710613925	NONE	US 380 ON/OFF RAMP	I 25	140	S	S	0	FT	0	0

CRASH REPORT NUMBER	NUMBER OF PEOPLE WITH SUSPECTED MINOR INJURIES (CLASS B) IN CRASH	NUMBER OF PEOPLE WITH POSSIBLE INJURIES (CLASS C) IN CRASH	NUMBER OF PEOPLE INJURED (CLASS A+B+C) IN CRASH	NUMBER OF PEOPLE NOT INJURED (CLASS O) IN CRASH	TOTAL NUMBER OF PEOPLE IN CRASH	NUMBER OF VEHICLES, BICYCLES, AND PEDESTRIANS INVOLVED	NUMBER OF PEOPLE IN MOTOR VEHICLES	NUMBER OF PEOPLE NOT IN MOTOR VEHICLES	NUMBER OF MOTOR VEHICLES INVOLVED	CRASH SEVERITY
710375430	0	0	0	1	1	1	1	0	1	Property Damage Only Crash
23374923	0	0	0	2	2	2	2	0	2	Property Damage Only Crash
710384661	0	0	0	1	1	1	1	0	1	Property Damage Only Crash
26	1	1	2	1	3	2	3	0	2	Injury Crash
710613925	0	0	0	1	1	1	1	0	1	Property Damage Only Crash

CRASH REPORT NUMBER	CRASH CLASSIFICATION	CRASH ANALYSIS	HIGHEST FACTOR CONTRIBUTING TO CRASH	WEATHER	LIGHTING	HIT AND RUN CRASH	ALCOHOL INVOLVEMENT	DRUG INVOLVEMENT	PEDESTRIAN INVOLVEMENT
710375430	Animal	Animal - Deer	Other - No Driver Error	Clear	Dark-Not Lighted	No	Not Involved	Not Involved	Not Involved
23374923	Other Vehicle	Left Blank	Avoid No Contact - Other	Other	Daylight	No	Not Involved	Not Involved	Not Involved
710384661	Animal	Animal - Dog	Avoid No Contact - Other	Clear	Dusk	No	Not Involved	Not Involved	Not Involved
26	Other Vehicle	Other Vehicle - One Left Turn/Entering At Angle	Driver Inattention	Wind	Dark-Not Lighted	No	Not Involved	Not Involved	Not Involved
710613925	Fixed Object	Fixed Object - Guard Rail	Drove Left Of Center	Clear	Daylight	No	Not Involved	Not Involved	Not Involved

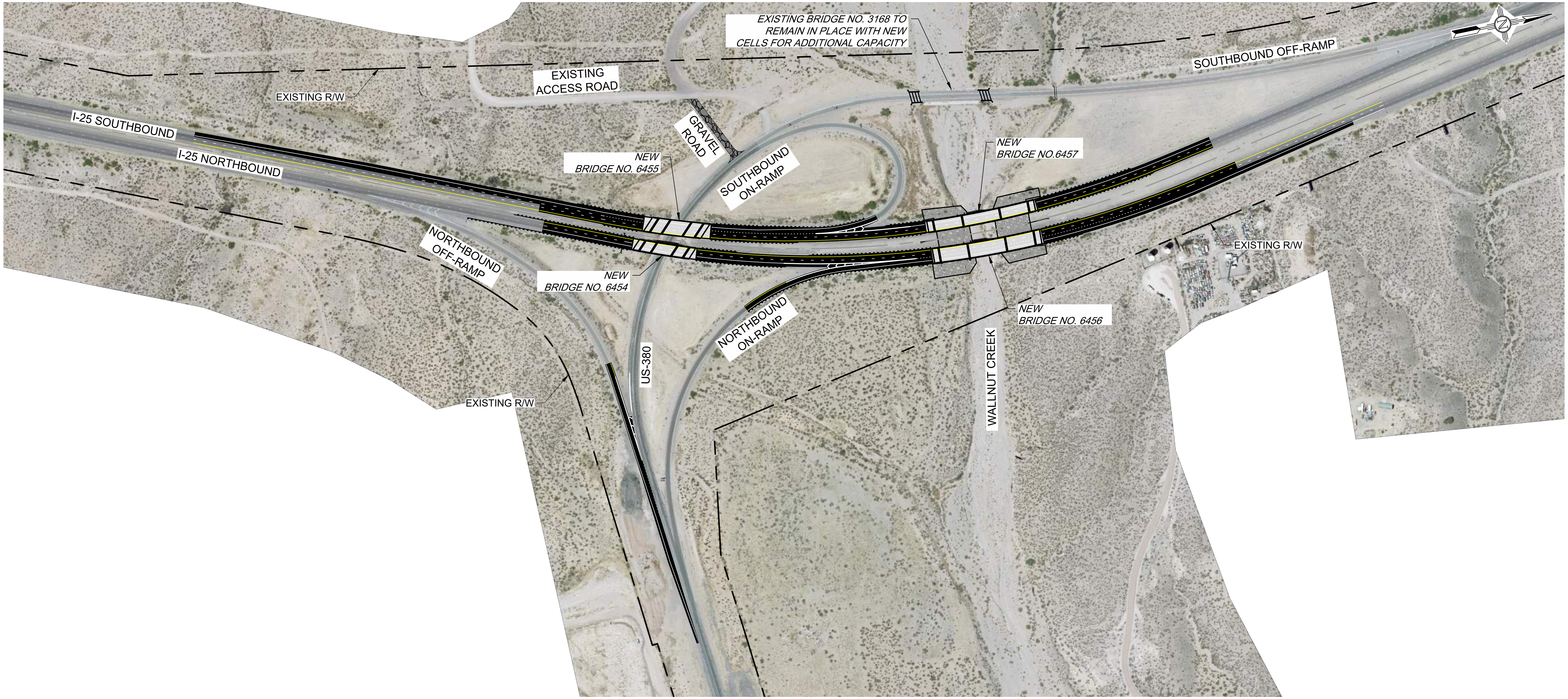
CRASH REPORT NUMBER	MOTORCYCLE INVOLVEMENT	PEDALCYCLE INVOLVEMENT	HEAVY TRUCK INVOLVEMENT	HAZARDOUS MATERIAL INVOLVEMENT	STATE HIGHWAY DEPT. PROPERTY	INVOLVEMENT OF NON-LOCAL DRIVER	ROAD SYSTEM: URBAN, RURAL OR RURAL INTERSTATE	MAXIMUM VEHICLE DAMAGE	FIRST HARMFUL EVENT OCCURRED	ROAD CHARACTER
710375430	Not Involved	Not Involved	Not Involved	Not Involved		Out Of State	Rural Interstate	Appearance	On Roadway	Straight
23374923	Not Involved	Not Involved	Involved	Not Involved		Both Local and Out Of State	Rural Interstate	Disabling	On Roadway	Straight
710384661	Not Involved	Not Involved	Not Involved	Not Involved		Local Drivers	Rural Interstate	Appearance	On Roadway	Curve
26	Not Involved	Not Involved	Involved	Not Involved		Out Of State	Rural Interstate	Disabling	Left Blank	Straight
710613925	Not Involved	Not Involved	Not Involved	Not Involved		Out Of State	Rural Non-Interstate	Disabling	On Roadway	Curve

CRASH REPORT NUMBER	ROAD GRADE	TRIBAL JURISDICTION	GIS-DERIVED RESERVATION	GIS-DERIVED STATE HIGHWAY TRANSPORTATION DISTRICT	GIS-DERIVED STATE POLICE DISTRICT	GIS-DERIVED STATE HIGHWAY MAINTENANCE DISTRICT	GIS-DERIVED UTM X COORDINATE	GIS-DERIVED UTM Y COORDINATE	GIS-DERIVED LATITUDE COORDINATE	GIS-DERIVED LONGITUDE COORDINATE	ORIGINAL LATITUDE
710375430	Level	No		1	11	1	326051.3581	3754201.188	33.91388	-106.8816	NA
23374923	Hillcrest	No		1	11	1	326245.539	3755704.24	33.92746	-106.8798	
710384661	Level	No		1	11	1	326065.8391	3754191.176	33.91379	-106.88144	33.92
26	Level	No		1	11	1	326283.5662	3755472.165	33.925375	-106.87934	33.9253802
710613925	Level	No		1	11	1	326290.4054	3754633.471	33.917816	-106.8791	33.917816

CRASH REPORT NUMBER	ORIGINAL LONGITUDE	ORIGINAL UCR NUMBER	CASE NUMBER	STATION REPORT	TRACS DATA
710375430	NA		710375430	Left Blank	Yes
23374923				No	No
710384661	-106.87		710384661	Left Blank	Yes
26	-106.87935		26	Left Blank	Yes
710613925	-106.8791		710613925	Left Blank	Yes

Appendix C. Alternative Exhibits

Alternative No. 1



ADVANTAGES

- MINIMIZED CONSTRUCTION COST
- NO ROW ACQUISITIONS
- MAINTAINS EXISTING USER EXPECTATIONS
- NO INTERSTATE ACCESS CHANGE REQUEST (IACR) REQUIRED
- ELIMINATES MERGE ISSUES WITH NORTHBOUND AND SOUTHBOUND ENTRANCE RAMPS
- REPLACES I-25 BRIDGES
- IMPROVES DRAINAGE CONVEYANCE OF WALNUT CREEK UNDER I-25 BRIDGES

DISADVANTAGES

- AN OUT-OF-DATE INTERCHANGE CONFIGURATION DOES NOT MEET THE NEW USER EXPECTATION
- BRIDGE NO.3168 REMAINS ON THE INVENTORY LIST
- CONCRETE BOX CULVERT (BRIDGE NO. 3168) IN WALNUT CREEK INCREASES RISK IN FUTURE FLOODS
- INCREASED DRAINAGE IMPROVEMENT COSTS TO EXPAND BRIDGE NO. 3168 TO MEET DESIGN STANDARDS

LEGEND

- NEW PAVEMENT
- NEW GRAVEL ROAD
- NEW BRIDGE
- RIPRAP

DATE: 6 Feb 2023 - 2:29pm USER: DBEAN

NMDOT

I-25/US-380 (SAN ANTONIO) INTERCHANGE PROJECT
CN 1102060

ALTERNATIVE-1 ENHANCED EXISTING INTERCHANGE

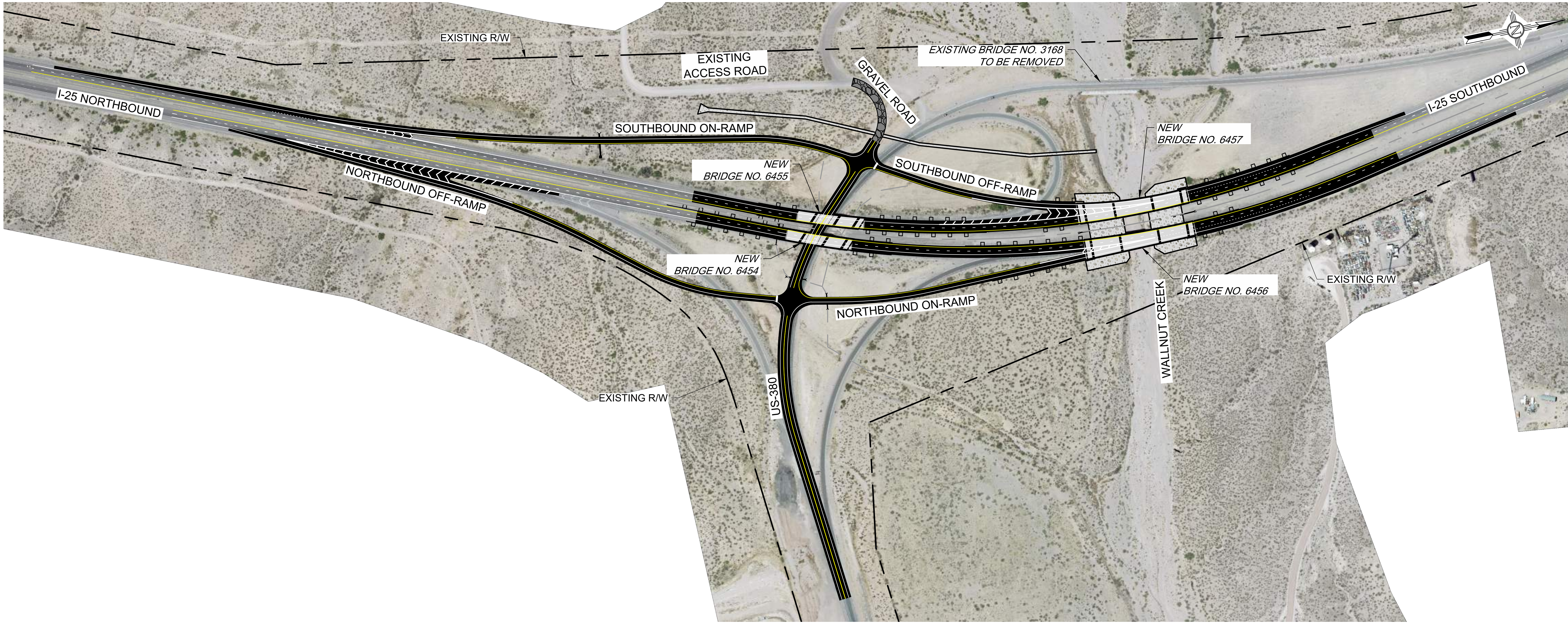
DATE

FIGURE

EXH-1

DRAWING FILE: 10340805/6.0_CAD_BIM/6.2_WIP/_Study Phase CN 1102060/Exhibits/Roadway Alternative Exhibits/DWG/1102060_EXHIBIT_ALT 1.dwg LAYOUT: EXHIBIT ALT 1

Alternative No. 2



ADVANTAGES

- INTERCHANGE CONFIGURATION MEETS TYPICAL USER EXPECTATIONS
- REMOVES BRIDGE NO. 3168 FROM THE INVENTORY
- REMOVAL OF BRIDGE NO. 3168 REDUCES RISK OF FLOODING BY REMOVING STRUCTURE FROM WATERWAY
- REPLACES I-25 BRIDGE OVER US 380 AND OVER WALNUT CREEK
- IMPROVES DRAINAGE CONVEYANCE OF WALNUT GREEK UNDER THE I-25 BRIDGES

DISADVANTAGES

- AN INCREASED CONSTRUCTION COST WHEN COMPARED TO ALT. NO. 1
- AN INTERSTATE ACCESS CHANGE REQUEST (IACR) REQUIRED
- STOP CONTROLLED INTERSECTION FOR RAMPS
- REQUIRES TEMPORARY CLOSURES OF US 380 DURING CONSTRUCTION OF THE BRIDGES.

LEGEND

- NEW PAVEMENT
- NEW GRAVEL ROAD
- NEW BRIDGE
- RIPRAP

DATE: 6 Feb 2023 - 2:42pm USER: DBEAN

NMDOT

UNITED STATES OF AMERICA ★ DEPARTMENT OF TRANSPORTATION

I-25/US-380 (SAN ANTONIO) INTERCHANGE PROJECT
CN 1102060

ALTERNATIVE 2: DIAMOND INTERCHANGE MAINTAINING US 380 ALIGNMENT

HDR

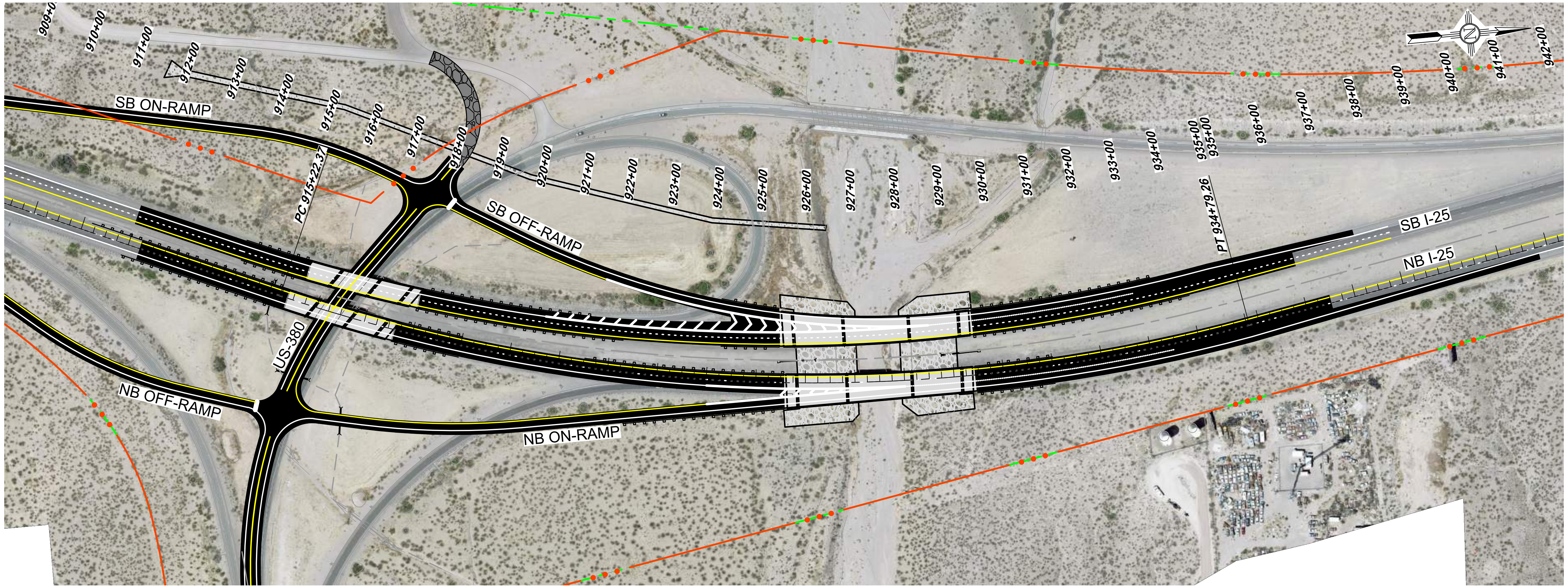
DATE

FIGURE

EXH-2

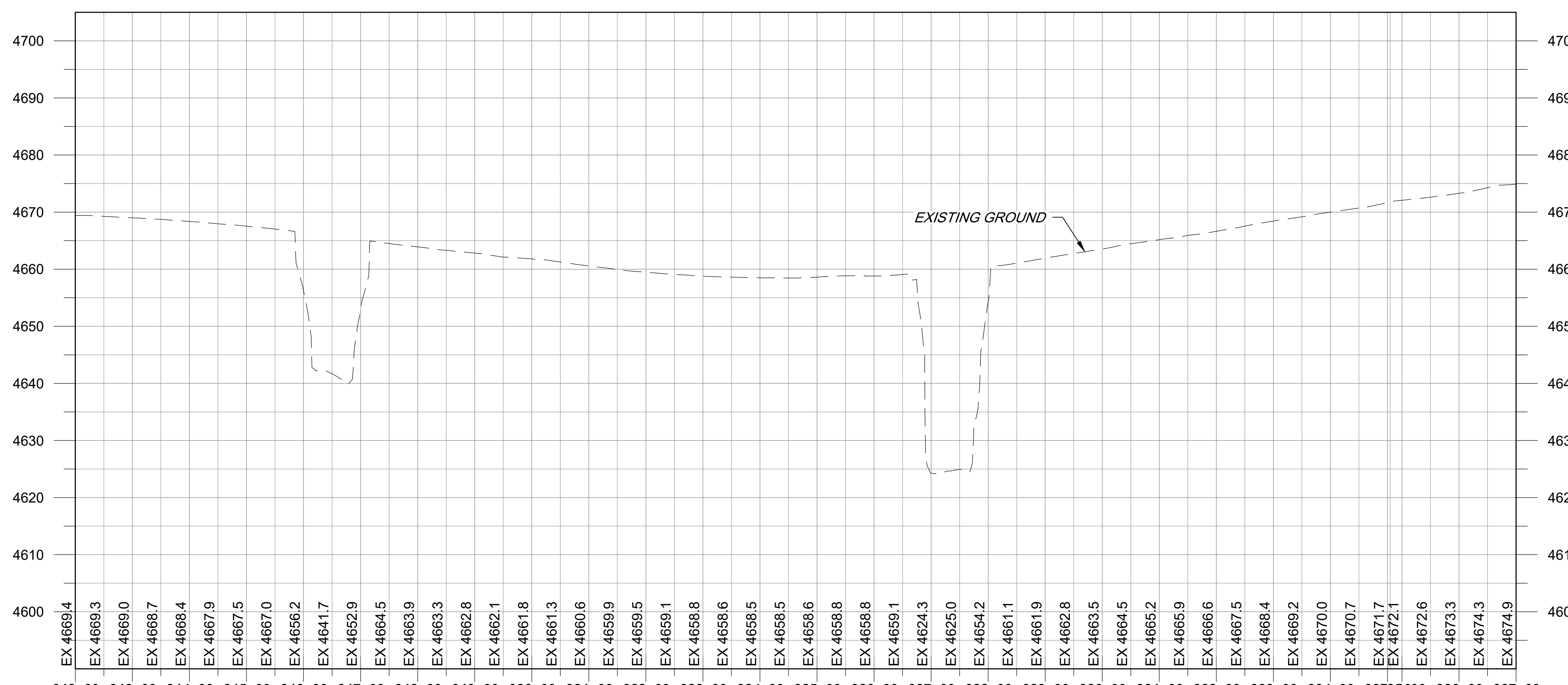
DRAWING FILE: 10340805/6.0_CAD_BIM/6.2_WIP/_Study Phase CN 1102060/Exhibits/Roadway Alternative Exhibits/DWG/1102060_EXHIBIT_ALT 2.dwg LAYOUT: EXHIBIT ALT 2

PROJECT CONTROL NUMBER: 1102060



ALTERNATIVE 2 - NB I-25

HORIZONTAL SCALE: 1"=250' VERTICAL SCALE: 1"=5'



LEGEND

- NEW PAVEMENT
- NEW GRAVEL ROAD
- NEW BRIDGE
- RIPRAP
- EXISTING ROW
- EXISTING ACCESS CONTROL
- CUT AND FILL
- METAL BARRIER

GENERAL NOTES

1.

NMDOT

NEW MEXICO DEPARTMENT OF TRANSPORTATION

NO.	DESCRIPTION	DATE	BY
1			
2			
3			
4			

CN 1102060
I-25 & SAN ANTONIO INTERCHANGE
ALTERNATIVE 2 - NB I-25

HDR
2155 LOUISIANA BLVD NE,
SUITE 3000
ALBUQUERQUE, NM 87110
(505) 830-5400

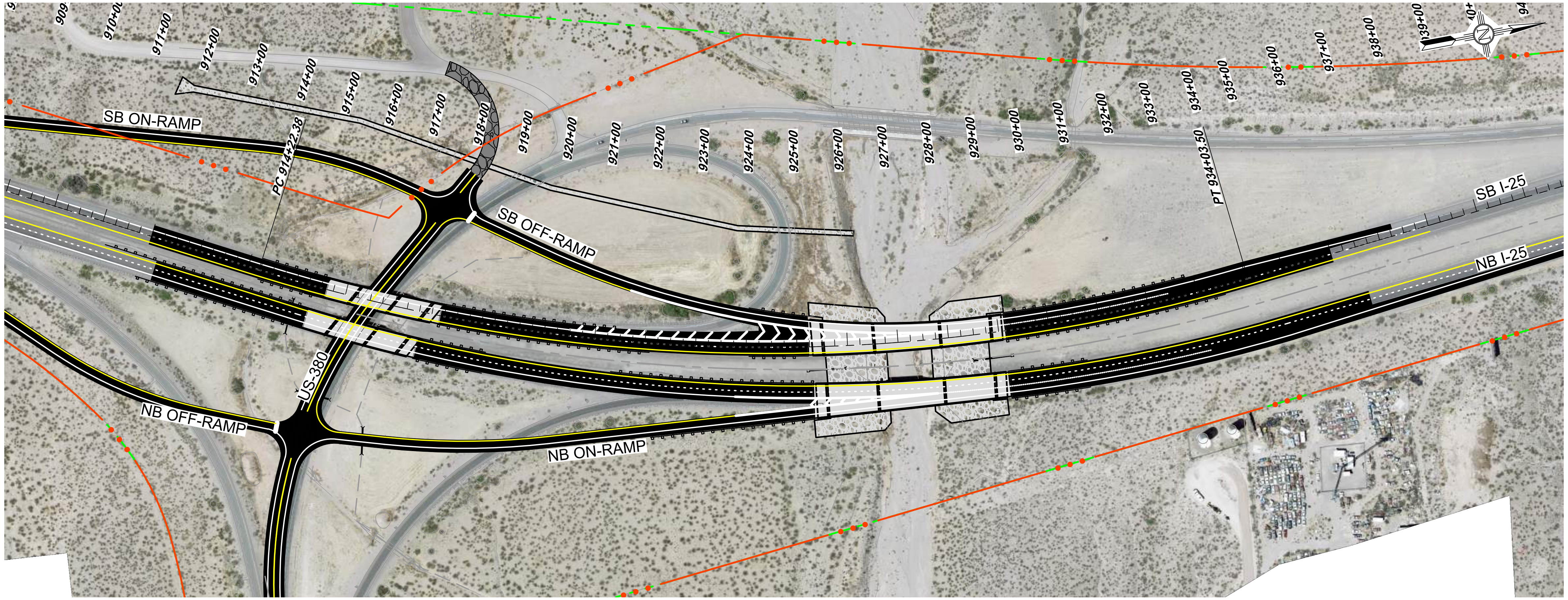
DATE: 24 Jan 2023 - 10:08am USER: ANGONZALEZ

DRAWING FILE: 1102060_PP02A.dwg LAYOUT: PP02A-01

PROJECT DEVELOPED BY: DB

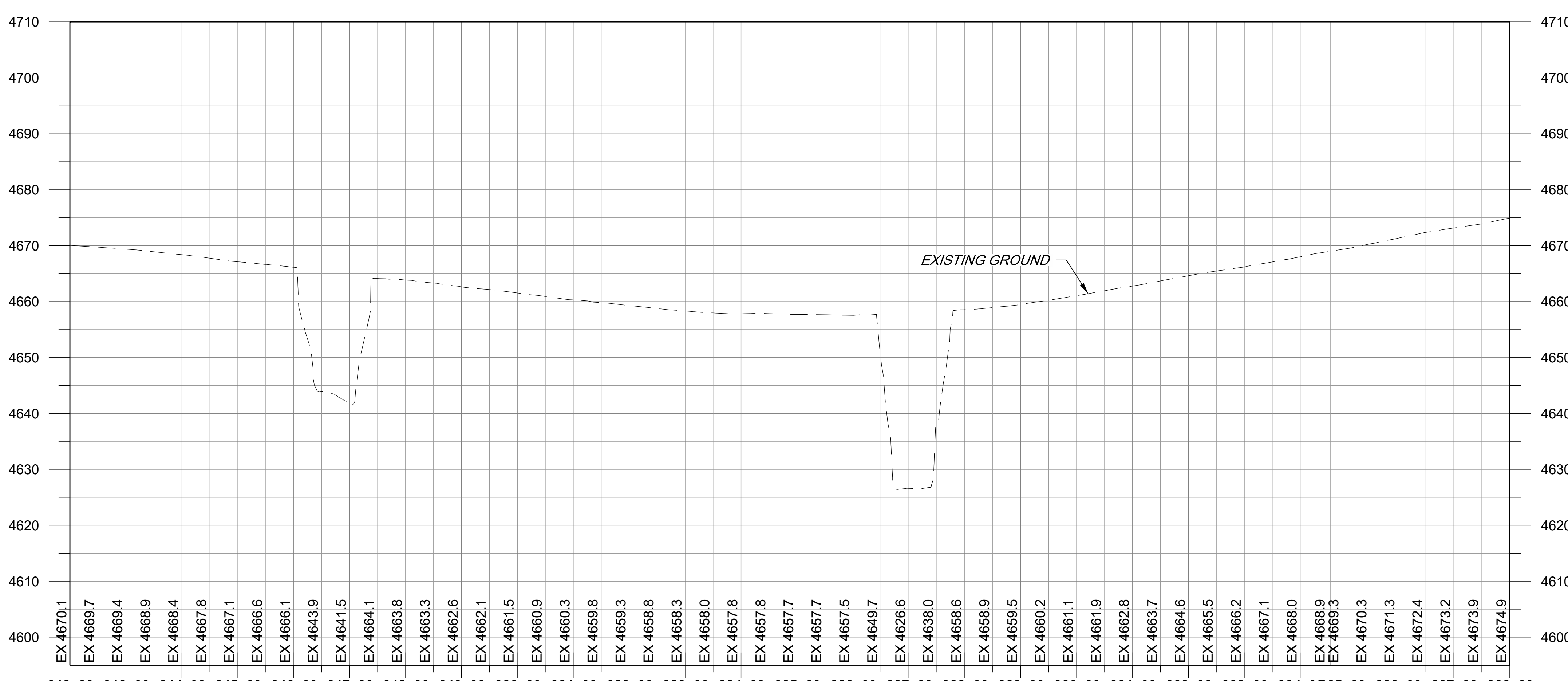
SHEET NO. 1

PROJECT CONTROL NUMBER: 1102060



ALTERNATIVE 2 - SB I-25

HORIZONTAL SCALE: 1"=250' VERTICAL SCALE: 1"=5'



LEGEND

- NEW PAVEMENT
- NEW GRAVEL ROAD
- NEW BRIDGE
- RIPRAP
- EXISTING ROW
- EXISTING ACCESS CONTROL
- CUT AND FILL
- METAL BARRIER

GENERAL NOTES

1.

NMDOT

NEW MEXICO DEPARTMENT OF TRANSPORTATION

NO.	DESCRIPTION	DATE	BY
1			
2			
3			
4			

CN 1102060
I-25 & SAN ANTONIO INTERCHANGE
ALTERNATIVE 2 - SB I-25

HDR
2155 LOUISIANA BLVD NE,
SUITE 3000
ALBUQUERQUE, NM 87110
(505) 830-5400

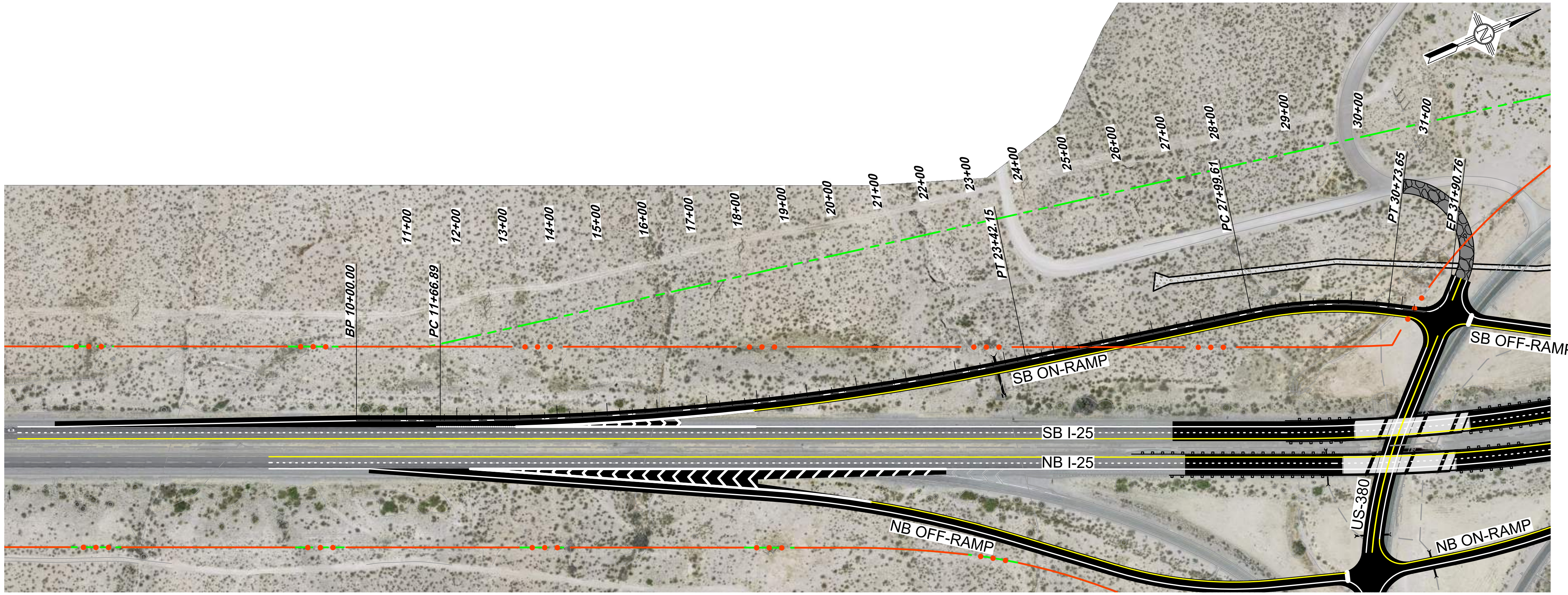
DATE: 24 Jan 2023 - 10:09am USER: ANGONZALEZ

DRAWING FILE: 1102060_PP02B.dwg LAYOUT: PP02B-01

PROJECT DEVELOPED BY: DB

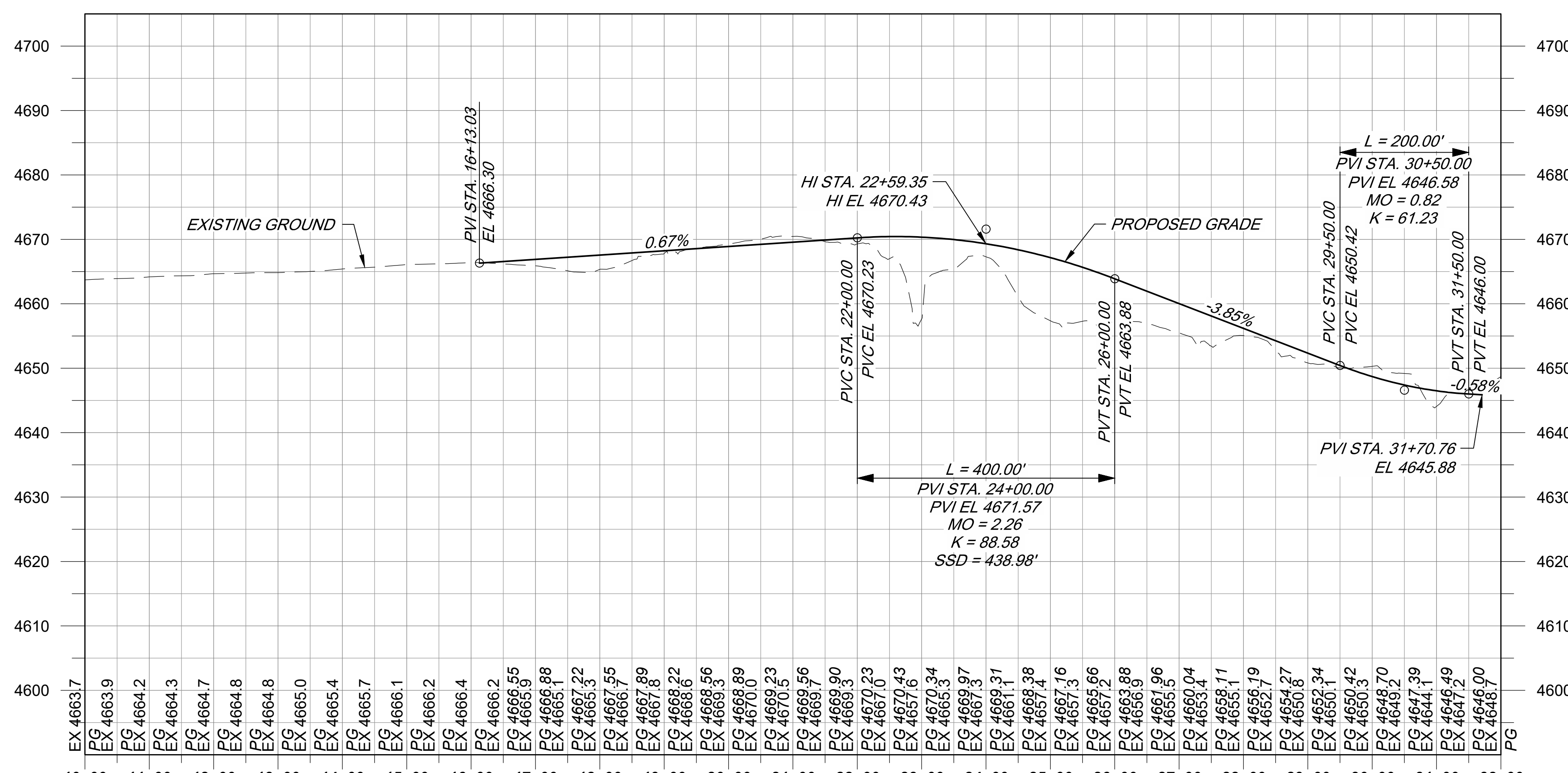
SHEET NO. 2

PROJECT CONTROL NUMBER: 1102060



ALTERNATIVE 2 - SB ON-RAMP

HORIZONTAL SCALE: 1"=250' VERTICAL SCALE: 1"=5'



LEGEND

- NEW PAVEMENT
- NEW GRAVEL ROAD
- NEW BRIDGE
- RIPRAP
- EXISTING ROW
- EXISTING ACCESS CONTROL
- CUT AND FILL
- METAL BARRIER

GENERAL NOTES

1.

NMDOT

NEW MEXICO DEPARTMENT OF TRANSPORTATION

NO.	DESCRIPTION	DATE	BY
1			
2			
3			
4			

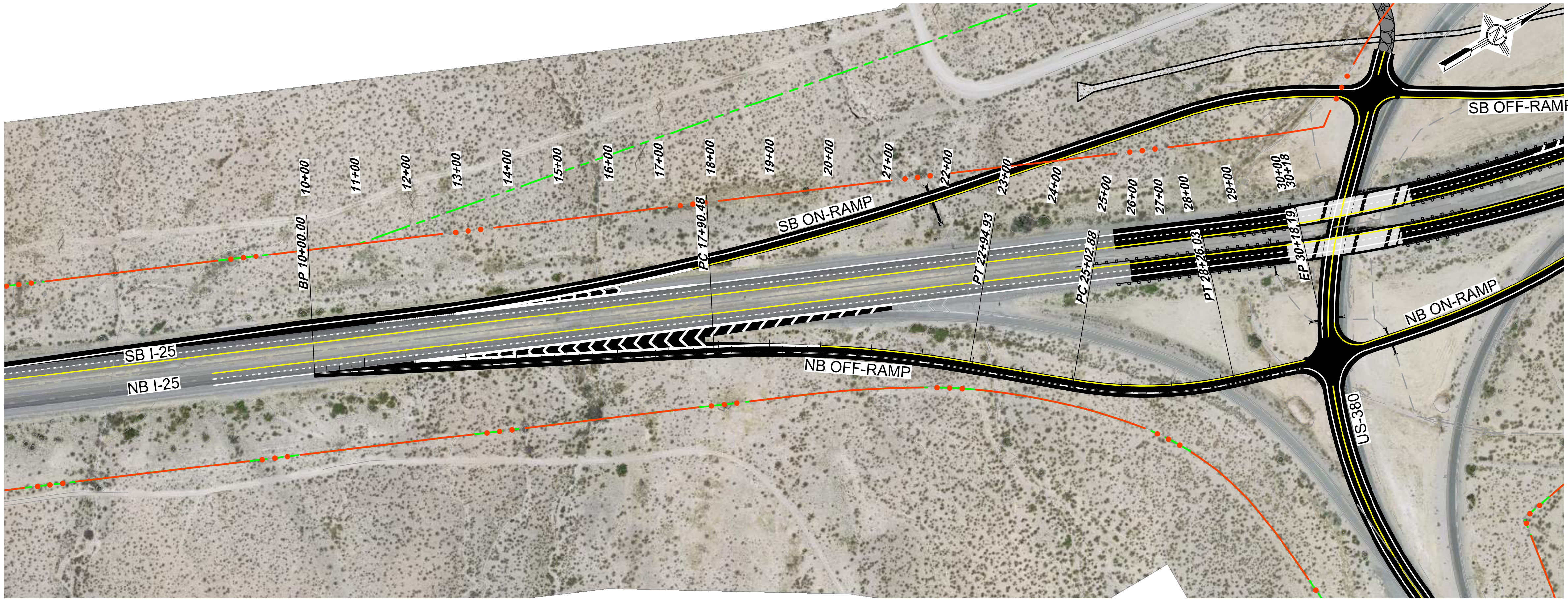
CN 1102060
I-25 & SAN ANTONIO INTERCHANGE
ALTERNATIVE 2 - SB ON-RAMP

HDR
2155 LOUISIANA BLVD NE, SUITE 3000
ALBUQUERQUE, NM 87110
(505) 830-5400

DATE: 24 Jan 2023 - 10:09am USER: ANGONZALEZ

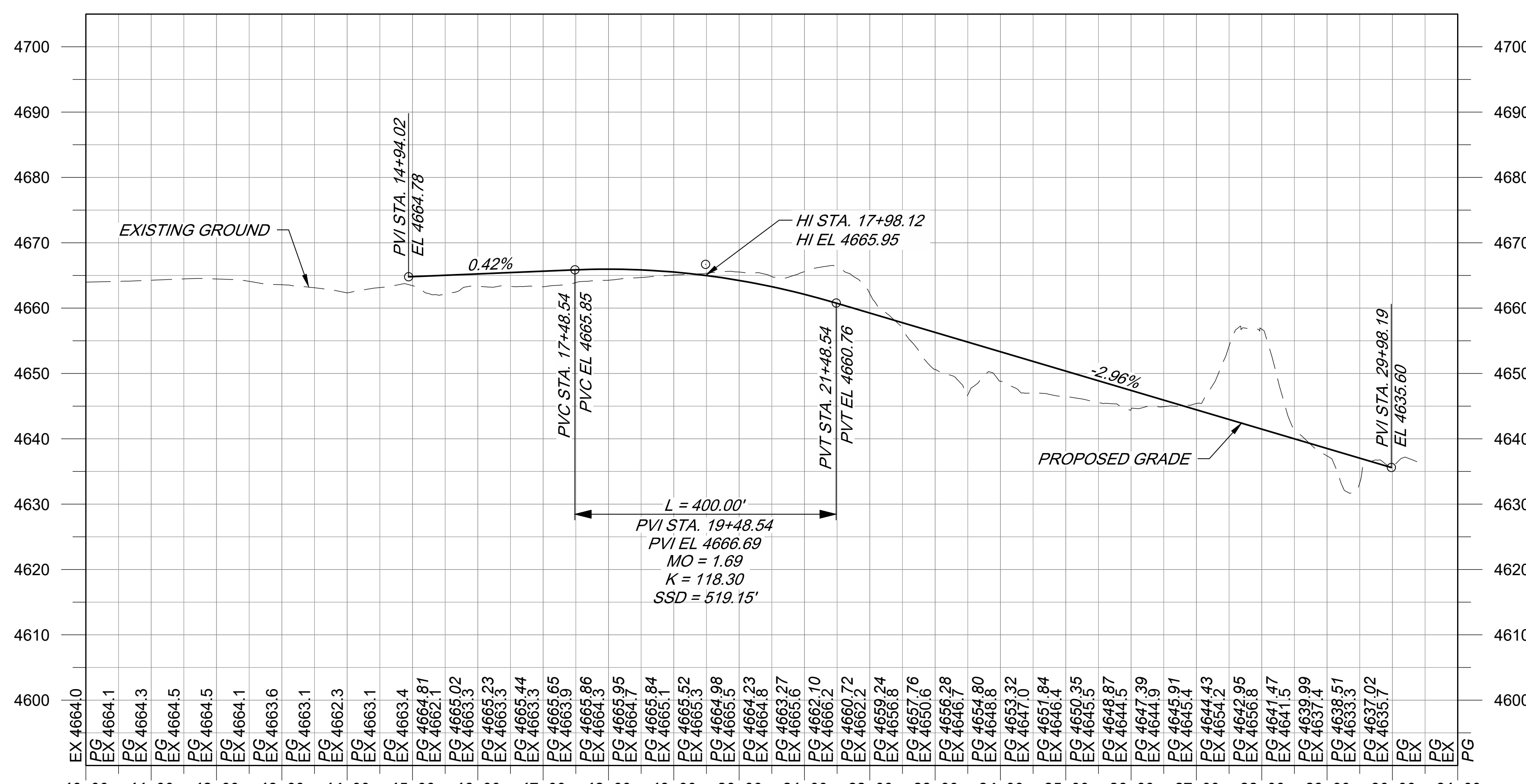
DRAWING FILE: 1102060_PP02C.dwg LAYOUT: PP02C-01

PROJECT DEVELOPED BY: DB



ALTERNATIVE 2 - NB OFF-RAMP

HORIZONTAL SCALE: 1"=250' VERTICAL SCALE: 1"=5'



LEGEND

- NEW PAVEMENT
- NEW GRAVEL ROAD
- NEW BRIDGE
- RIPRAP
- EXISTING ROW
- EXISTING ACCESS CONTROL
- CUT AND FILL
- METAL BARRIER

GENERAL NOTES

1.

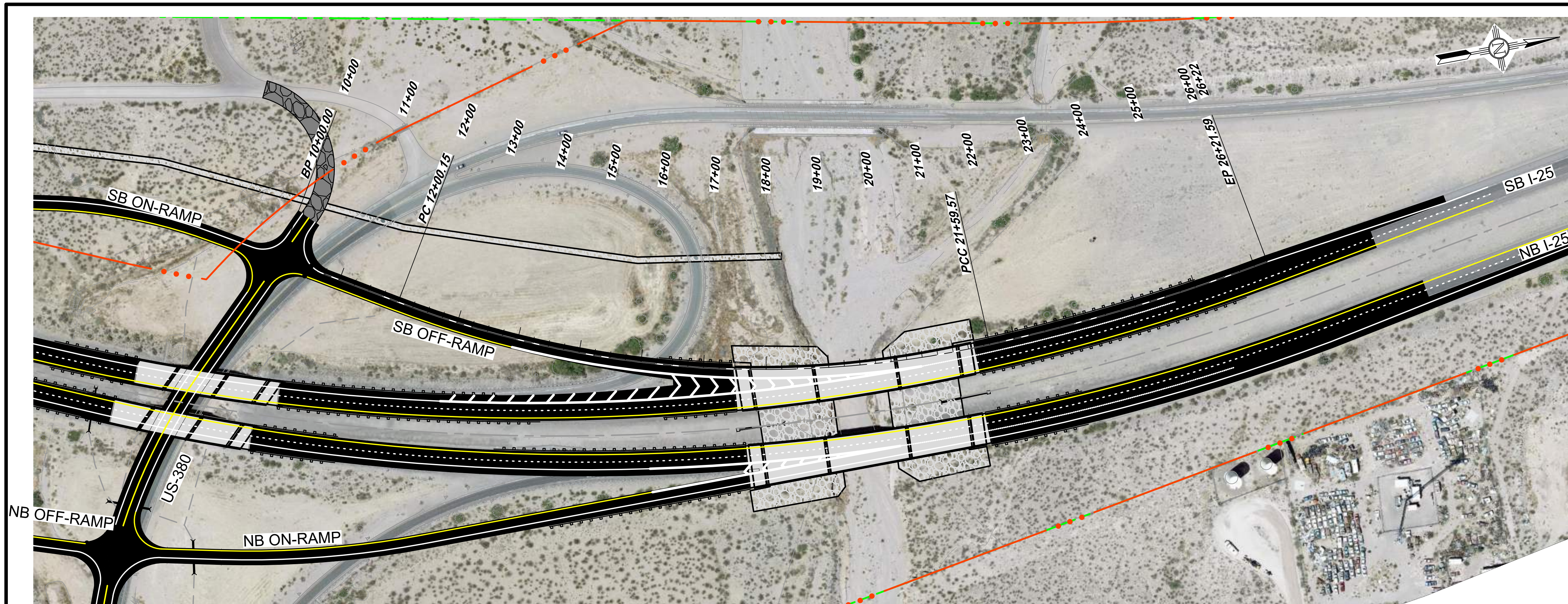
NMDOT

NEW MEXICO DEPARTMENT OF TRANSPORTATION

NO.	DESCRIPTION	DATE	BY
1			
2			
3			
4			

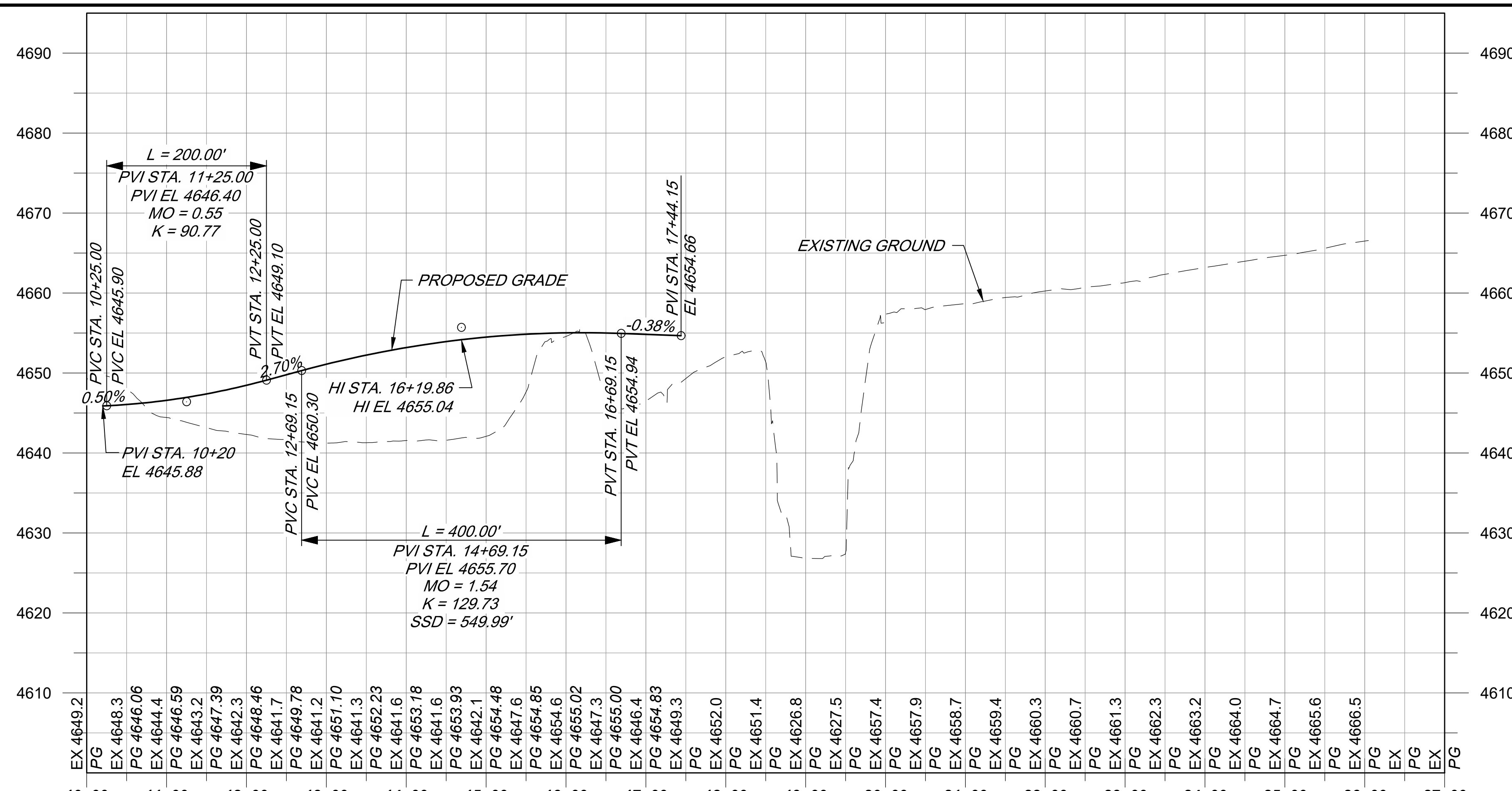
HDR
2155 LOUISIANA BLVD NE,
SUITE 3000
ALBUQUERQUE, NM 87110
(505) 830-5400

CN 1102060
I-25 & SAN ANTONIO INTERCHANGE
ALTERNATIVE 2 - NB OFF-RAMP



ALTERNATIVE 2 - SB OFF-RAMP

HORIZONTAL SCALE: 1"=200' VERTICAL SCALE: 1"=5'



LEGEND

- NEW PAVEMENT
- NEW GRAVEL ROAD
- NEW BRIDGE
- RIPRAP
- EXISTING ROW
- EXISTING ACCESS CONTROL
- CUT AND FILL
- METAL BARRIER

GENERAL NOTES

1.

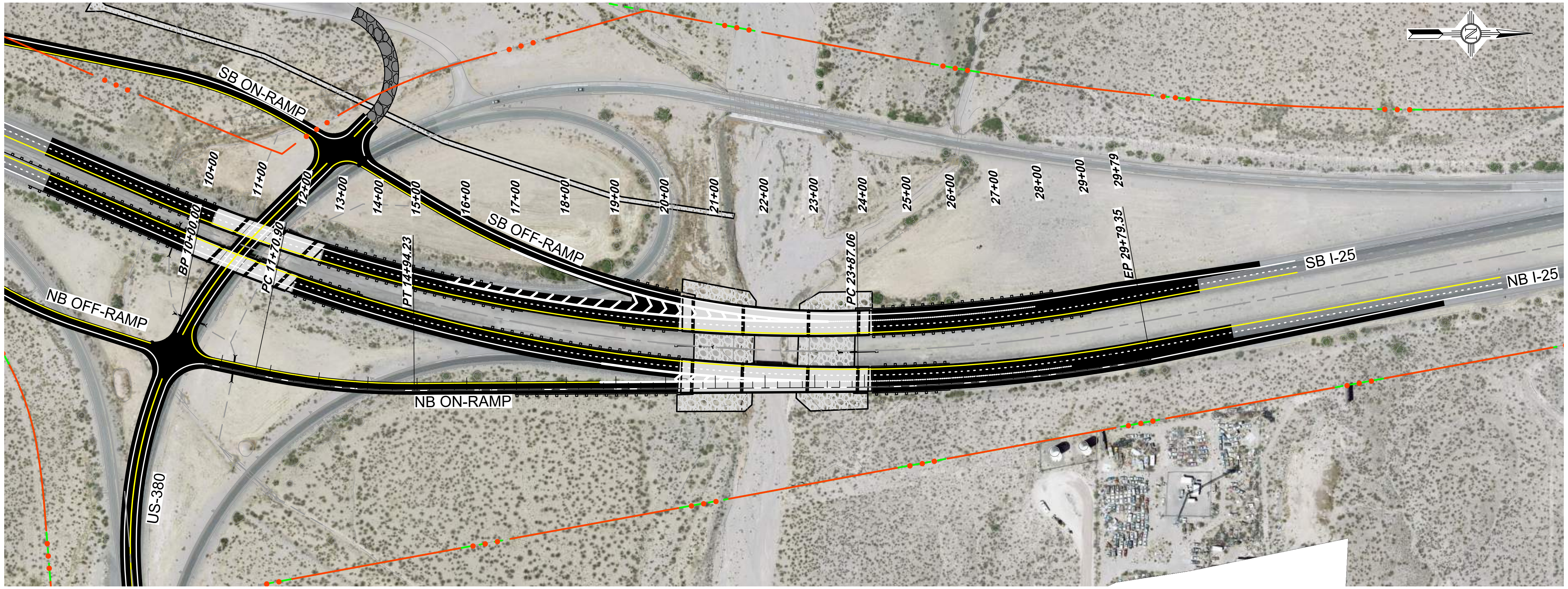
NMDOT

NEW MEXICO DEPARTMENT OF TRANSPORTATION

NO.	DESCRIPTION	DATE	BY
1			
2			
3			
4			

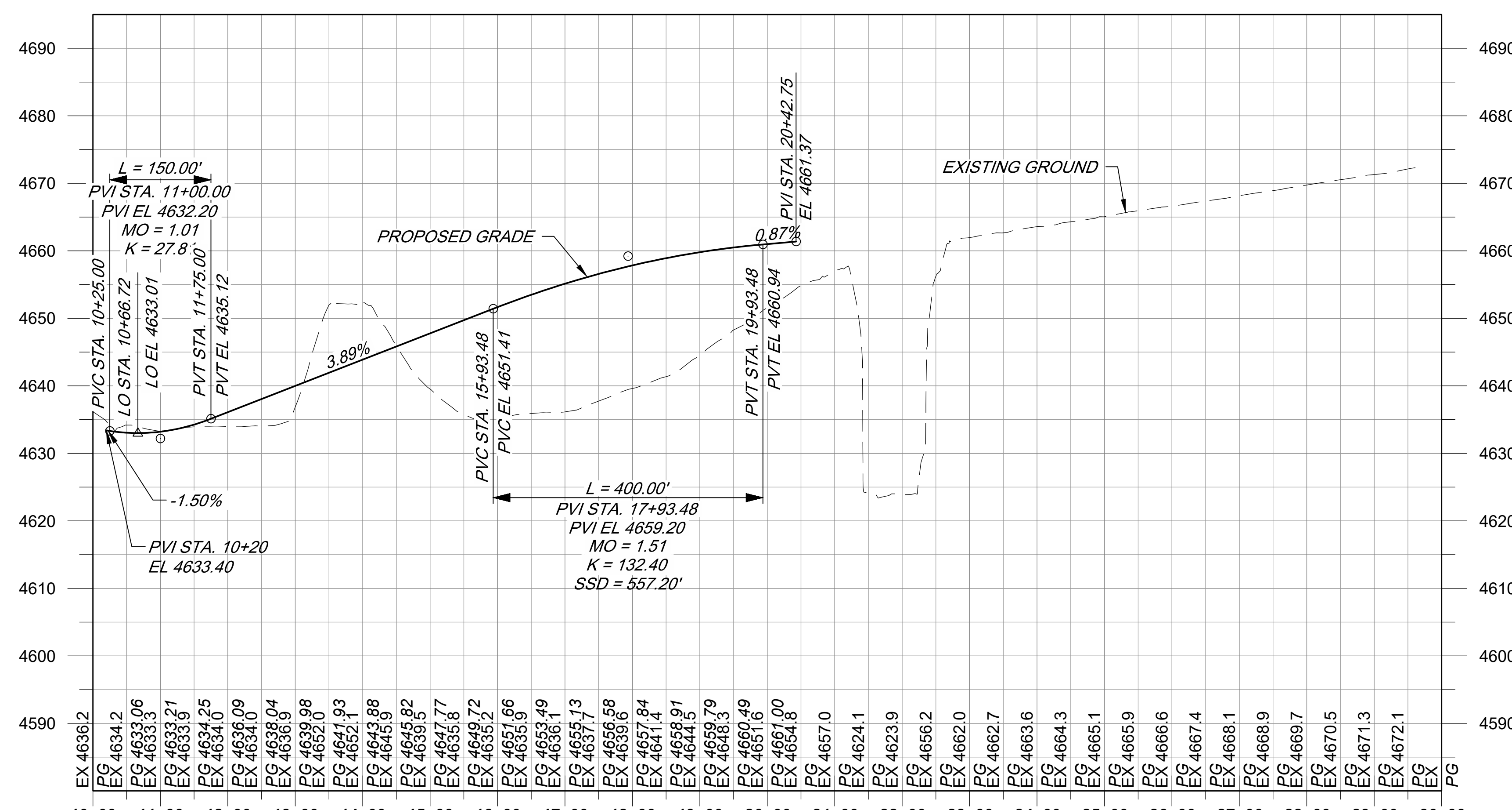
CN 1102060
I-25 & SAN ANTONIO INTERCHANGE
ALTERNATIVE 2 - SB OFF-RAMP

HDR
2155 LOUISIANA BLVD NE, SUITE 3000
ALBUQUERQUE, NM 87110
(505) 830-5400



ALTERNATIVE 2 - NB ON-RAMP

HORIZONTAL SCALE: 1"=250' VERTICAL SCALE: 1"=5'



LEGEND

- NEW PAVEMENT
- NEW GRAVEL ROAD
- NEW BRIDGE
- RIPRAP
- EXISTING ROW
- EXISTING ACCESS CONTROL
- CUT AND FILL
- METAL BARRIER

GENERAL NOTES

1.

NMDOT

NEW MEXICO DEPARTMENT OF TRANSPORTATION

NO.	DATE	BY	DESCRIPTION
1			
2			
3			
4			

CN 1102060
I-25 & SAN ANTONIO INTERCHANGE
ALTERNATIVE 2 - NB ON-RAMP

HDR
2155 LOUISIANA BLVD NE,
SUITE 3000
ALBUQUERQUE, NM 87110
(505) 830-5400

DATE: 24 Jan 2023 - 10:10am USER: ANGONZALEZ

DRAWING FILE: 1102060_PP02F.dwg LAYOUT: PP02F-01

PROJECT DEVELOPED BY: DB

LEGEND

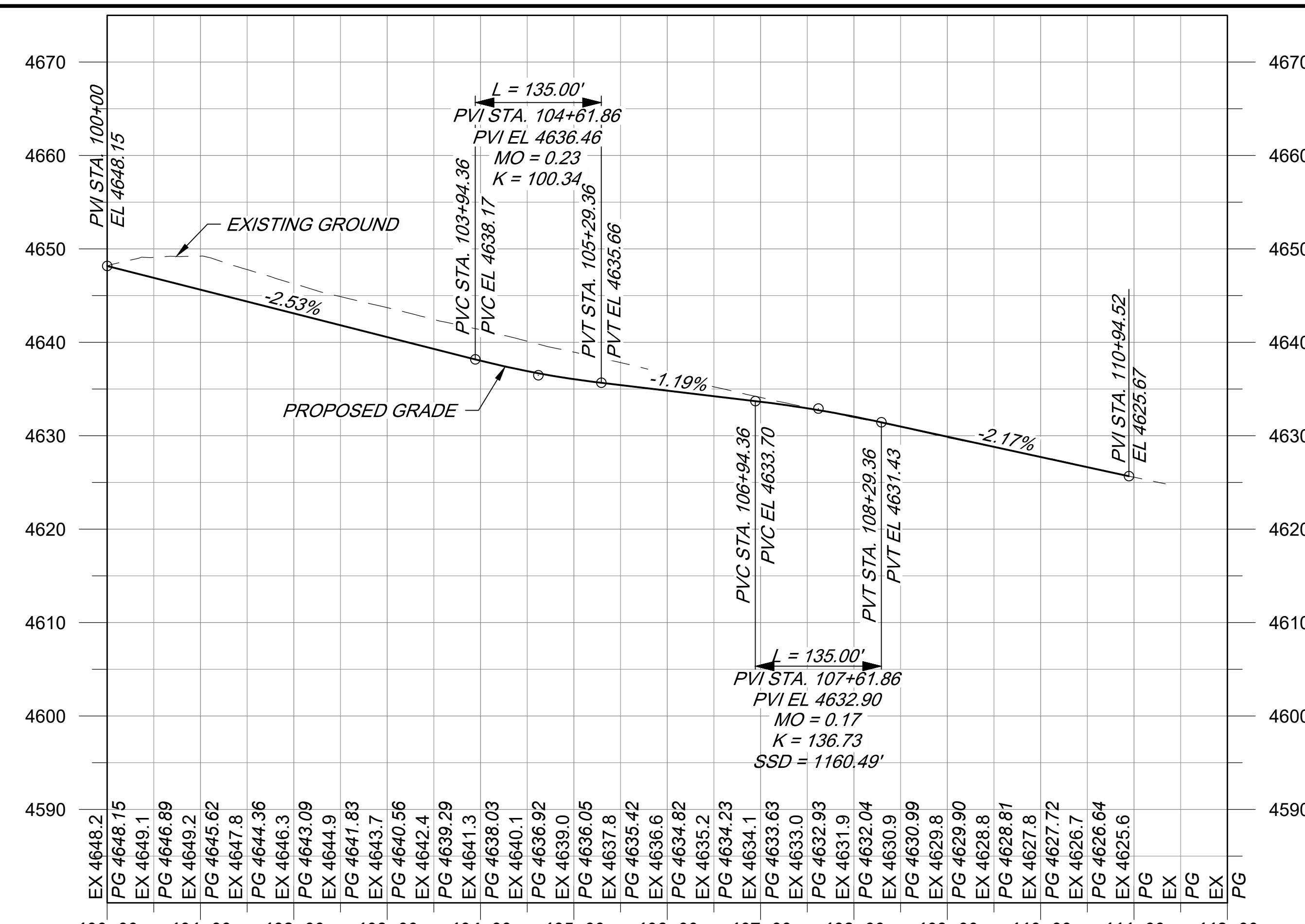
- NEW PAVEMENT
- NEW GRAVEL ROAD
- NEW BRIDGE
- RIPRAP
- EXISTING ROW
- EXISTING ACCESS CONTROL
- CUT AND FILL
- METAL BARRIER

GENERAL NOTES

1.

ALTERNATIVE 2 - US 380

HORIZONTAL SCALE: 1"=200' VERTICAL SCALE: 1"=5'



NMDOT

NEW MEXICO DEPARTMENT OF TRANSPORTATION

NO.	DESCRIPTION	DATE	BY
1			
2			
3			
4			

CN 1102060
I-25 & SAN ANTONIO INTERCHANGE
ALTERNATIVE 2 - US 380

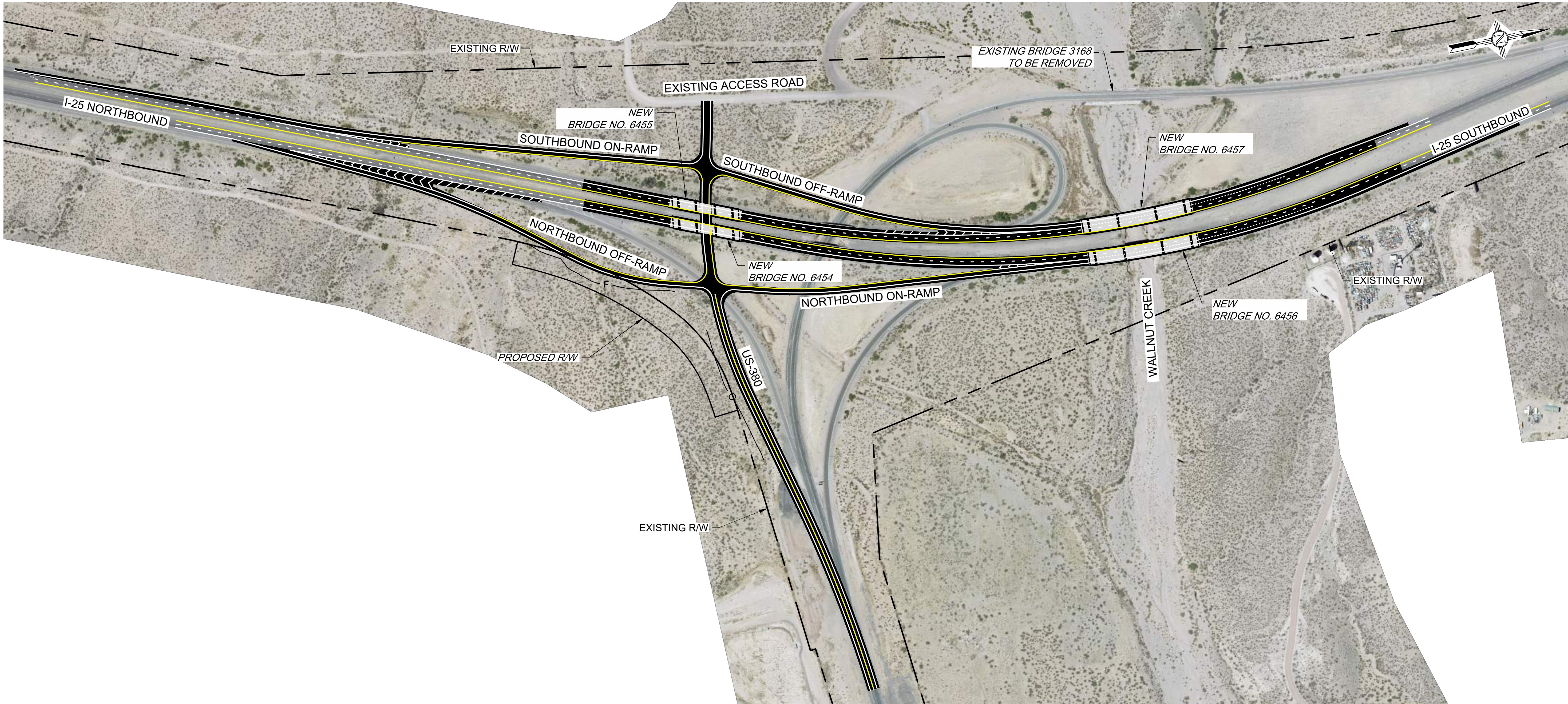
HDR
2155 LOUISIANA BLVD NE,
SUITE 3000
ALBUQUERQUE, NM 87110
(505) 830-5400

DATE: 24 Jan 2023 - 10:10am USER: ANGONZALEZ

DRAWING FILE: 1102060_PP02G.dwg LAYOUT: PP02G-01

PROJECT DEVELOPED BY: DB

Alternative No. 3



ADVANTAGES

- INTERCHANGE CONFIGURATION MEETS TYPICAL USER EXPECTATIONS
- REMOVES BRIDGE NO. 3168 FROM THE INVENTORY
- REMOVAL OF BRIDGE NO. 3168 REDUCES RISK OF FLOODING BY REMOVING STRUCTURE FROM WATERWAY
- REPLACES I-25 BRIDGES OVER US 380 AND OVER WALNUT CREEK
- IMPROVES DRAINAGE CONVEYANCE OF WALNUT CREEK UNDER THE I-25 BRIDGES
- DOES NOT REQUIRE US 380 CLOSURES DURING CONSTRUCTION

DISADVANTAGES

- AN INCREASED CONSTRUCTION COST WHEN COMPARED TO ALT. NO. 1 AND ALT. NO. 2
- AN INTERSTATE ACCESS CHANCE REQUEST (IACR) REQUIRED
- STOP CONTROLLED INTERSECTION FOR RAMPS

LEGEND

- NEW PAVEMENT
- NEW BRIDGE
- FILL LINE
- CUT LINE

USER: ANGONZALEZ
DATE: 18 Apr 2023 - 10:35am

NMDOT

I-25/US-380 (SAN ANTONIO) INTERCHANGE PROJECT
CN 1102060

ALTERNATIVE 3: DIAMOND INTERCHANGE WITH OFFSET US 380 ALIGNMENT

HDR

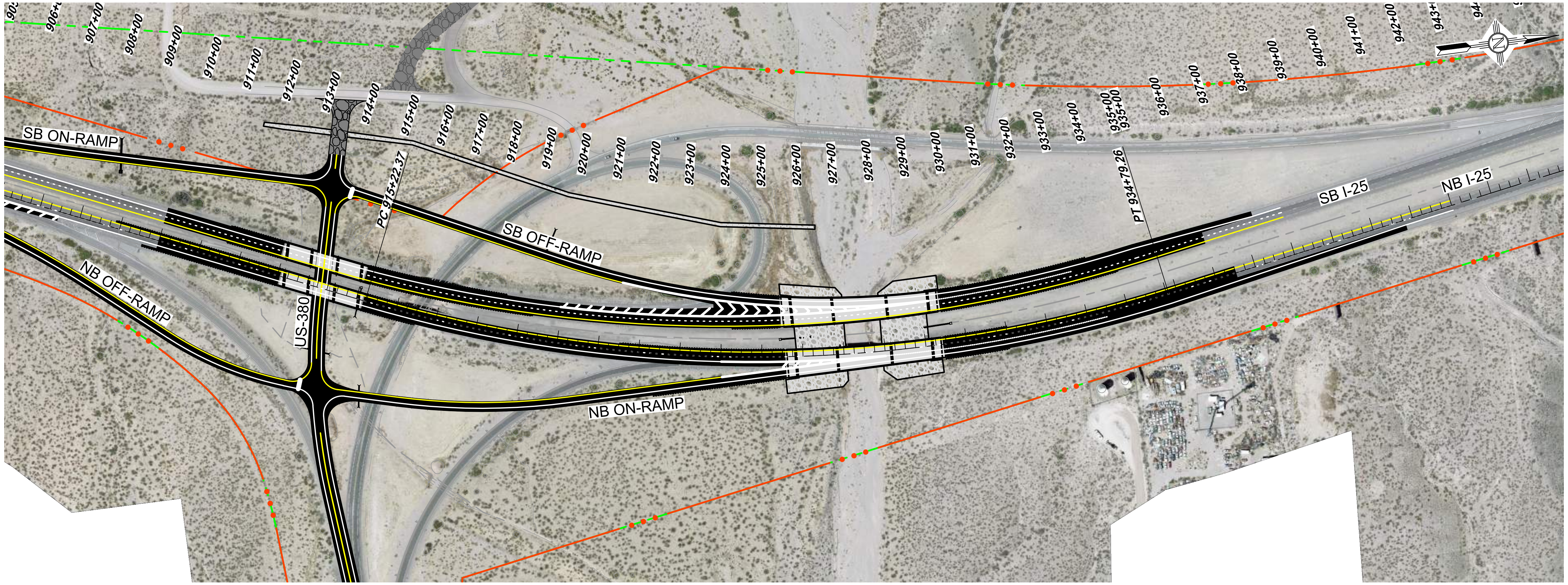
DATE

FIGURE

EXH-3A

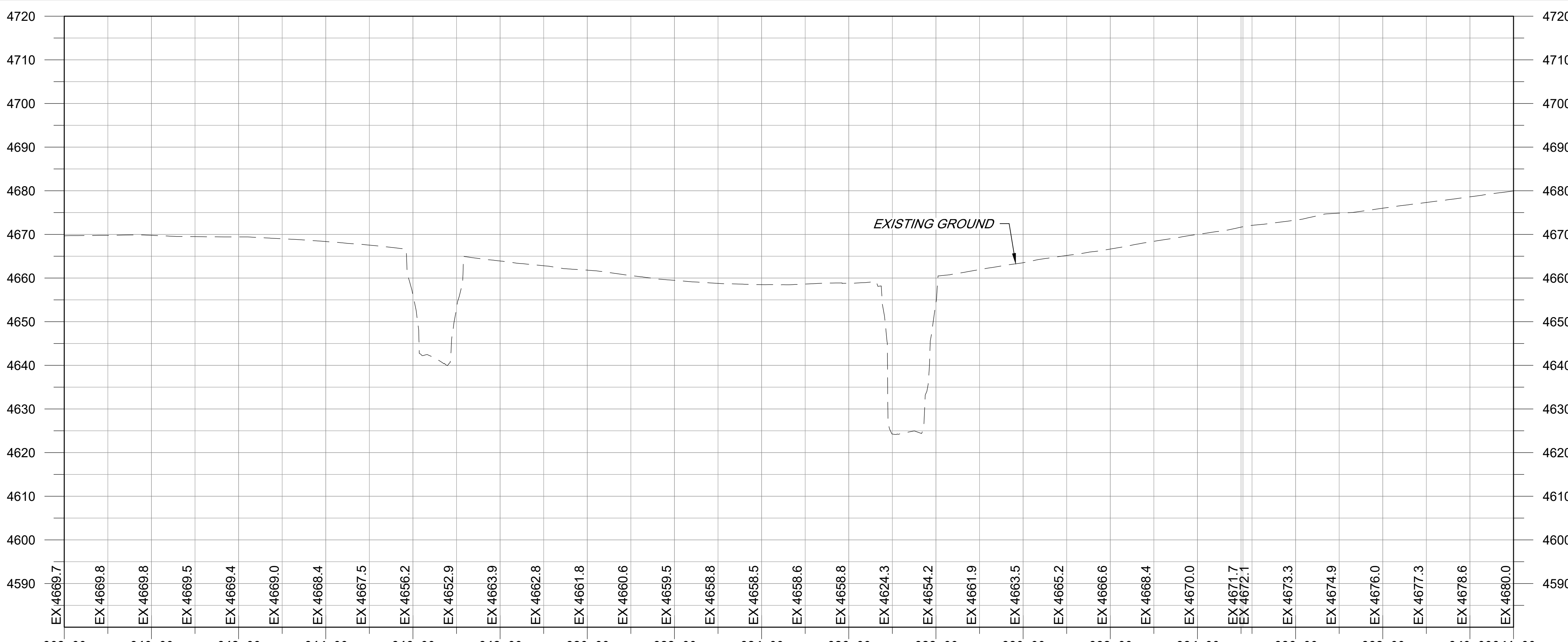
DRAWING FILE: 1102060_EXHIBIT_ALT 3A.dwg LAYOUT: EXHIBIT ALT 3A

PROJECT CONTROL NUMBER: 1102060



ALTERNATIVE 3 - NB I-25

HORIZONTAL SCALE: 1"=300' VERTICAL SCALE: 1"=5'



LEGEND

- NEW PAVEMENT
- NEW GRAVEL ROAD
- NEW BRIDGE
- EXISTING ROW
- EXISTING ROW ACCESS
- CUT AND FILL
- METAL BARRIER

GENERAL NOTES

1.

NMDOT

NEW MEXICO DEPARTMENT OF TRANSPORTATION

NO.	DESCRIPTION	DATE	BY
1			
2			
3			
4			

HDR
2155 LOUISIANA BLVD NE,
SUITE 3000
ALBUQUERQUE, NM 87110
(505) 830-5400

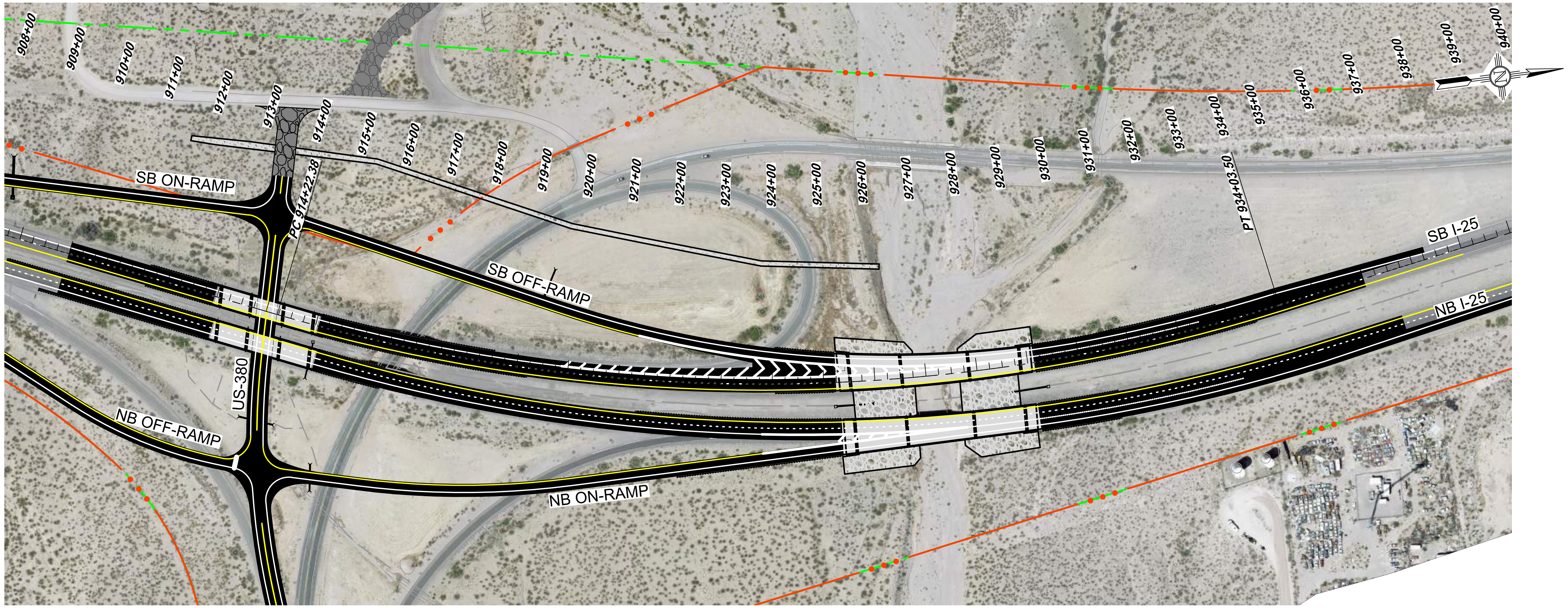
CN 1102060
I-25 & SAN ANTONIO INTERCHANGE
ALTERNATIVE 3 - NB I-25

DATE: 24 Jan 2023 - 10:37am USER: ANGONZALEZ

DRAWING FILE: 1102060_PP03A.dwg LAYOUT: PP03A-01

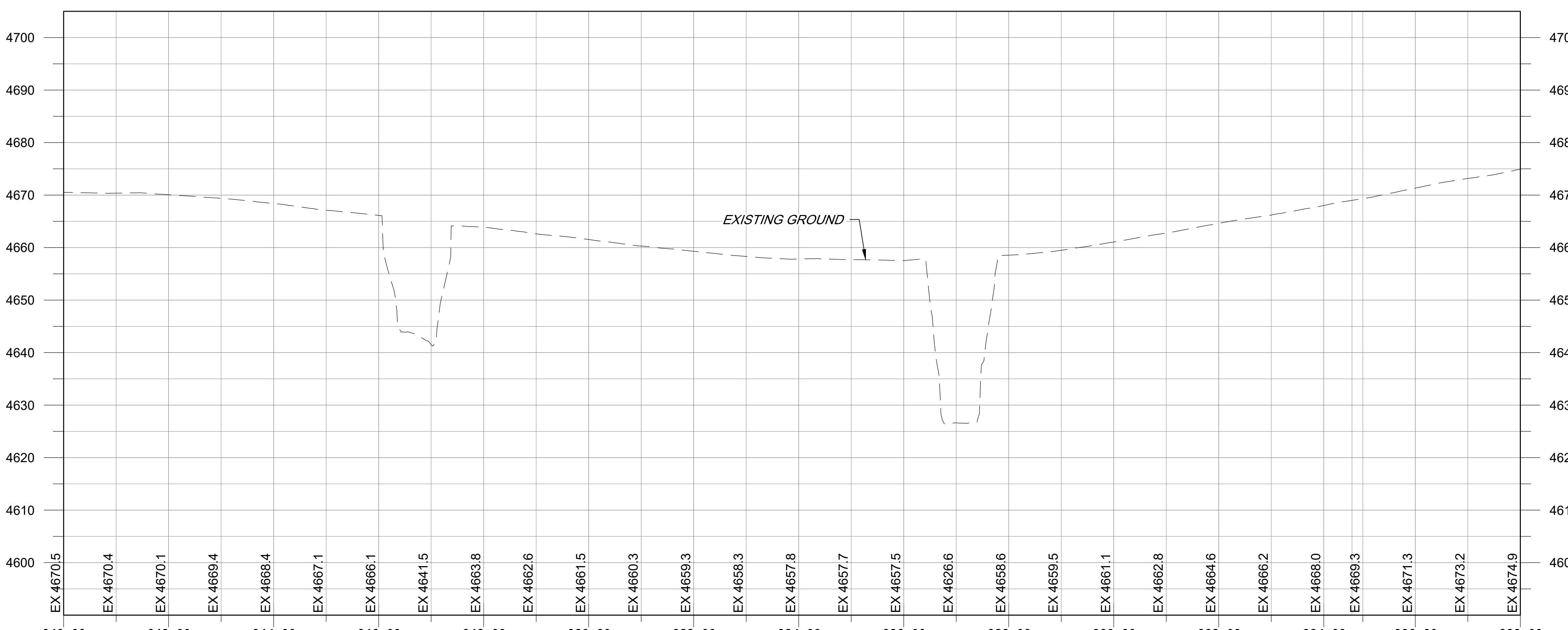
PROJECT DEVELOPED BY: DB

SHEET NO. 1



ALTERNATIVE 3 - SB I-25

HORIZONTAL SCALE: 1"=250' VERTICAL SCALE: 1"=5'



LEGEND

- NEW PAVEMENT
- NEW GRAVEL ROAD
- NEW BRIDGE
- EXISTING ROW
- EXISTING ROW ACCESS
- CUT AND FILL
- METAL BARRIER

GENERAL NOTES

1.

NMDOT

NEW MEXICO DEPARTMENT OF TRANSPORTATION

NO.	DESCRIPTION	DATE	BY
1			
2			
3			
4			

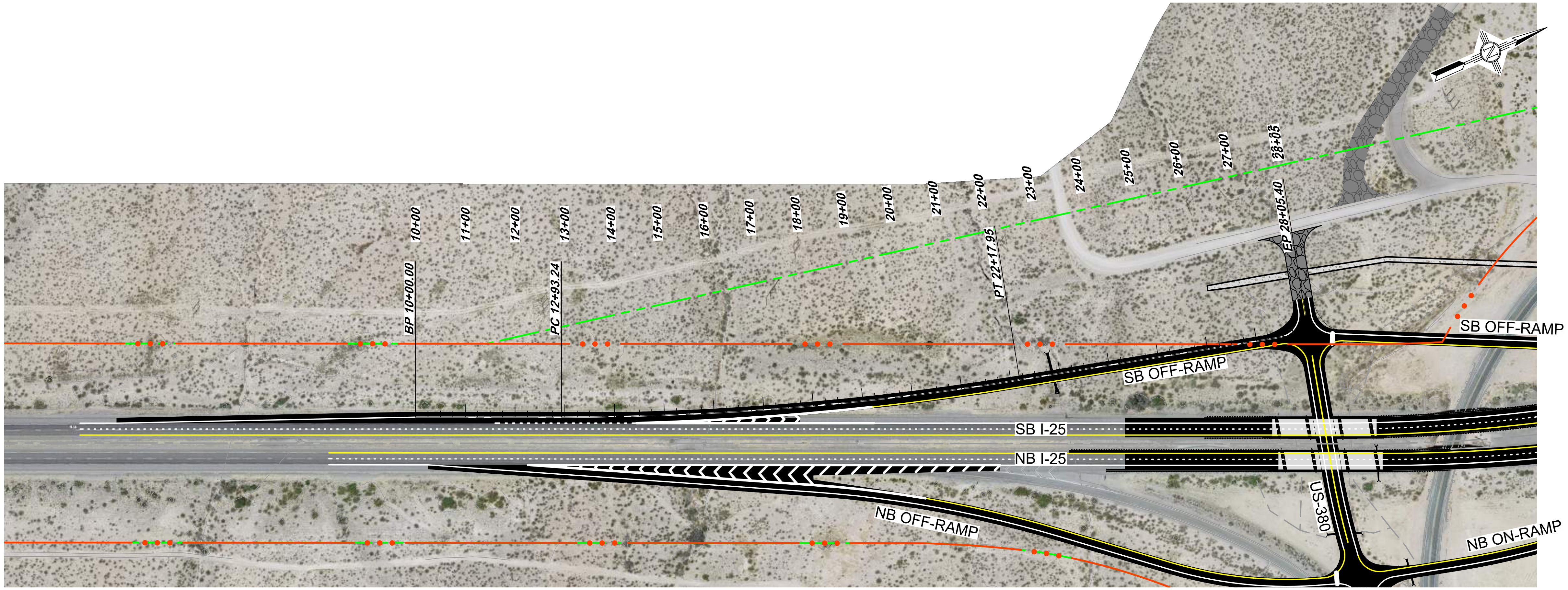
CN 1102060
I-25 & SAN ANTONIO INTERCHANGE
ALTERNATIVE 3 - SB I-25

HDR
2155 LOUISIANA BLVD NE,
SUITE 3000
ALBUQUERQUE, NM 87110
(505) 830-5400

DATE: 24 Jan 2023 - 10:38am USER: ANGONZALEZ

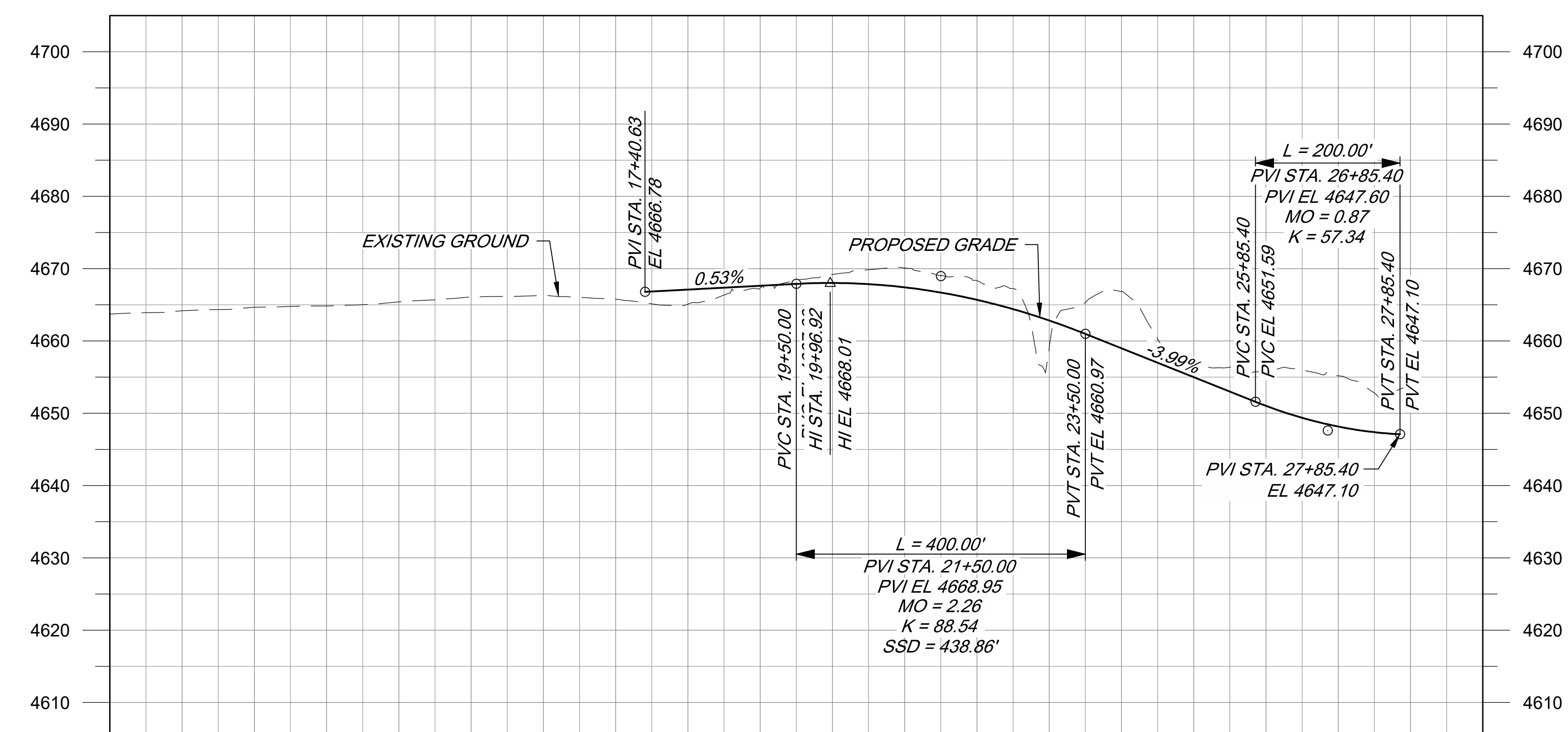
DRAWING FILE: 1102060_PP03B.dwg LAYOUT: PP03B-01

PROJECT DEVELOPED BY: DB



ALTERNATIVE 3 - SB ON-RAMP

HORIZONTAL SCALE: 1"=250' VERTICAL SCALE: 1"=5'



	PG	EX
10+00		4663.7
10+50		4663.9
11+00		4664.2
11+50		4664.3
12+00		4664.7
12+50		4664.8
13+00		4664.8
13+50		4665.0
14+00		4665.4
14+50		4665.7
15+00		4666.1
15+50		4666.2
16+00		4666.3
16+50		4666.0
17+00		4665.8
17+50		4665.1
18+00	4666.83	4665.1
18+50	4667.09	4666.3
19+00	4667.36	4667.3
19+50	4667.62	4668.2
20+00	4667.89	4669.2
20+50	4668.01	4669.8
21+00	4667.85	4670.1
21+50	4667.41	4669.0
22+00	4666.69	4668.3
22+50	4665.68	4667.2
23+00	4664.40	4659.1
23+50	4662.83	4665.3
24+00	4660.97	4666.8
24+50	4658.98	4660.3
25+00	4656.99	4656.7
25+50	4654.99	4656.4
26+00	4653.00	4655.9
26+50	4651.02	4656.0
27+00	4649.37	4655.2
27+50	4648.16	4652.8
28+00	4647.38	4653.8
28+50		
29+00		

LEGEND

- NEW PAVEMENT
- NEW GRAVEL ROAD
- NEW BRIDGE
- EXISTING ROW
- EXISTING ROW ACCESS
- CUT AND FILL
- METAL BARRIER

GENERAL NOTES

1.

NO.	DESCRIPTION	DATE	BY
1			
2			
3			
4			

NMDOT

NEW MEXICO DEPARTMENT OF TRANSPORTATION

CN 1102060
I-25 & SAN ANTONIO INTERCHANGE
ALTERNATIVE 3 - SB ON-RAMP

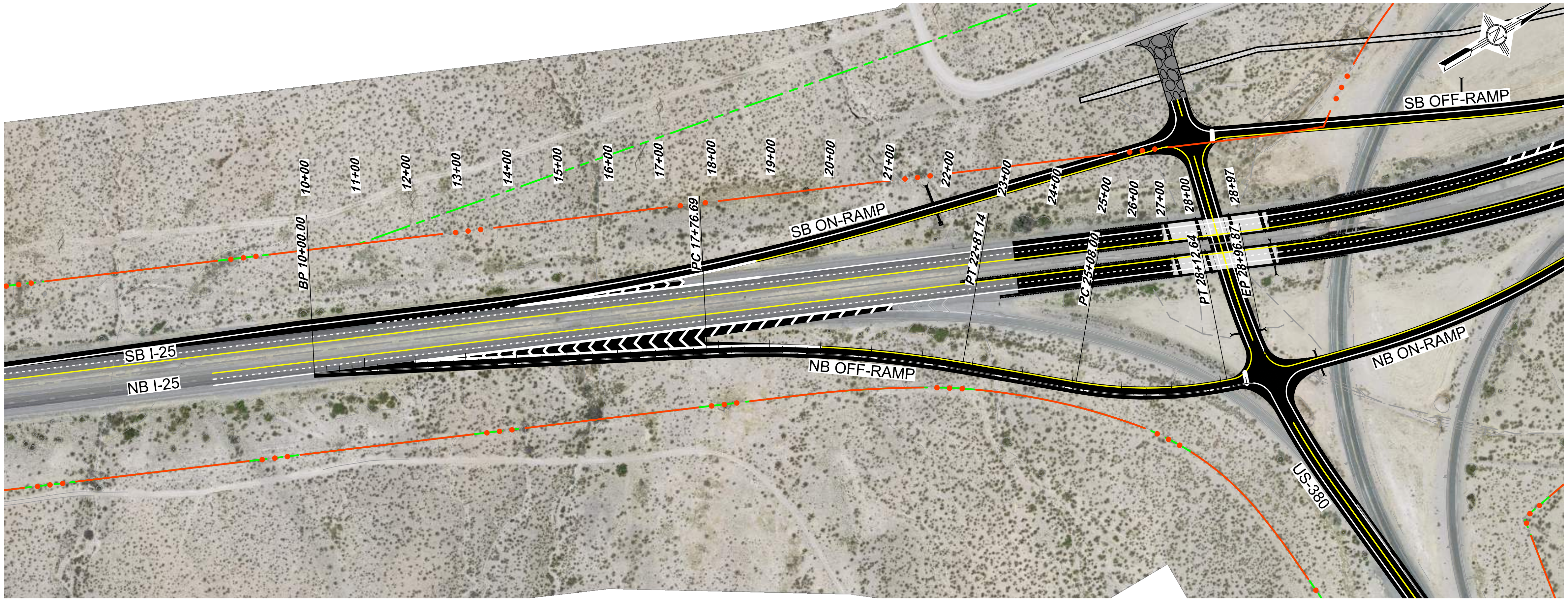
HDR
2155 LOUISIANA BLVD NE,
SUITE 3000
ALBUQUERQUE, NM 87110
(505) 830-5400

DATE: 24 Jan 2023 - 10:38am USER: ANGONZALEZ

DRAWING FILE: 1102060_PP03C.dwg LAYOUT: PP03C-01

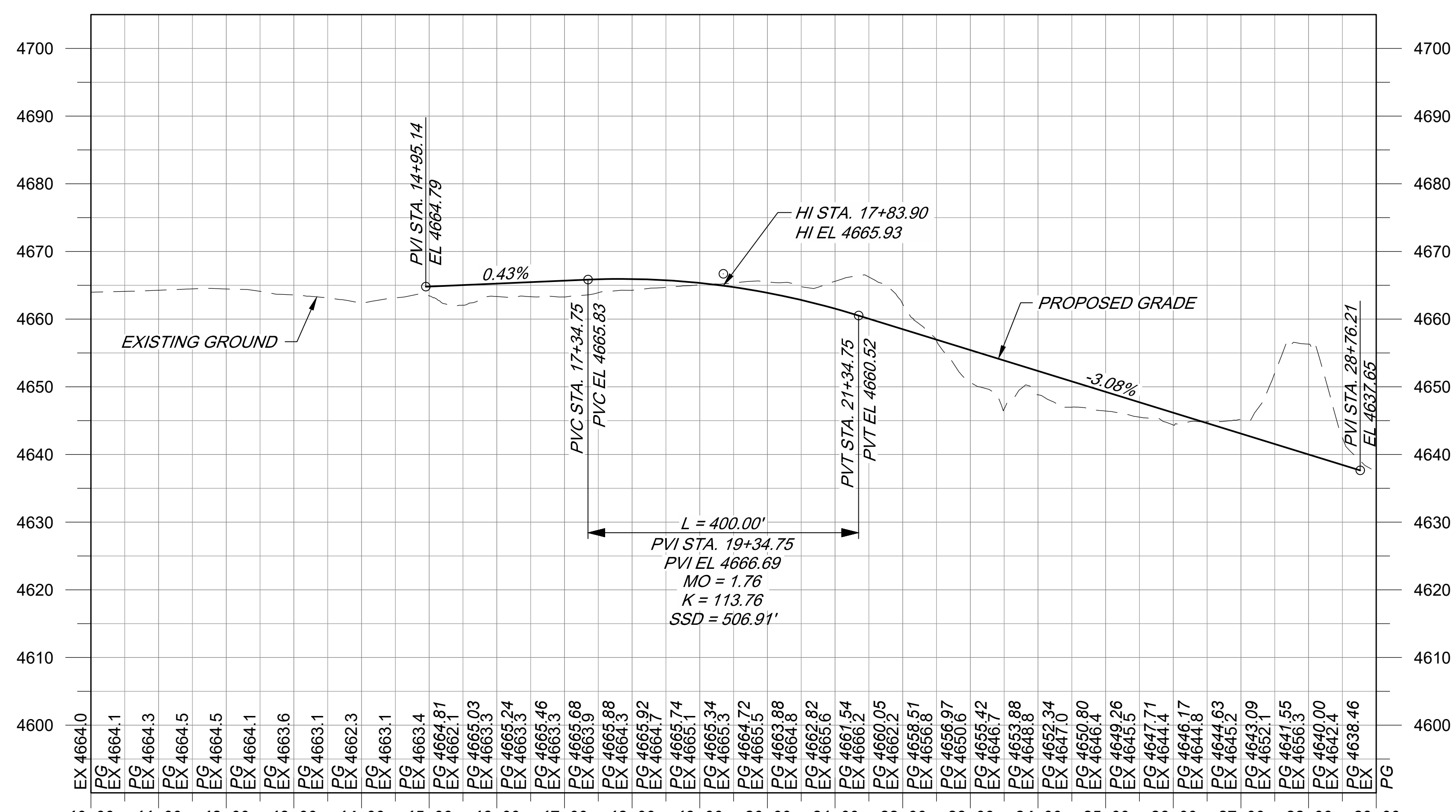
PROJECT DEVELOPED BY: DB

PROJECT CONTROL NUMBER: 1102060



ALTERNATIVE 3 - NB OFF-RAMP

HORIZONTAL SCALE: 1"=250' VERTICAL SCALE: 1"=5'



LEGEND

- NEW PAVEMENT
- NEW GRAVEL ROAD
- NEW BRIDGE
- EXISTING ROW
- EXISTING ROW ACCESS
- CUT AND FILL
- METAL BARRIER

GENERAL NOTES

1.

NMDOT

NEW MEXICO DEPARTMENT OF TRANSPORTATION

NO.	DESCRIPTION	DATE	BY
1			
2			
3			
4			

HDR
2155 LOUISIANA BLVD NE,
SUITE 3000
ALBUQUERQUE, NM 87110
(505) 830-5400

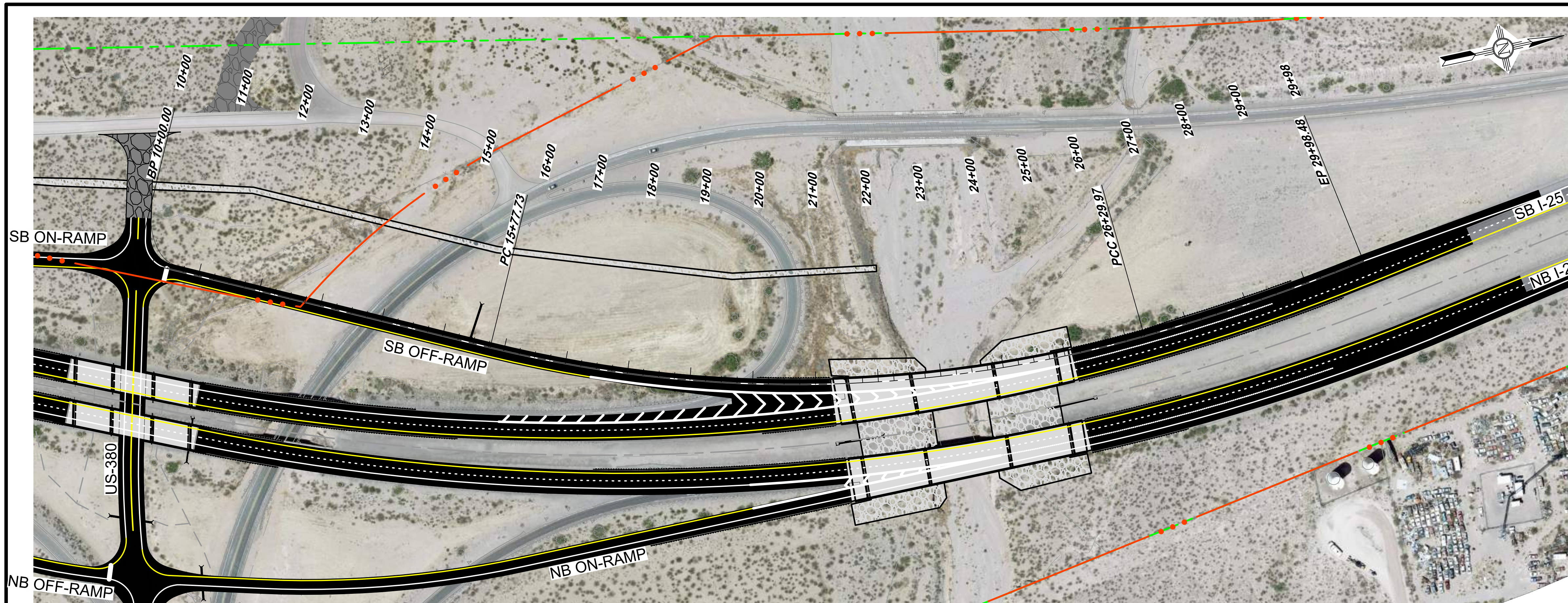
CN 1102060
I-25 & SAN ANTONIO INTERCHANGE
ALTERNATIVE 3 - NB OFF-RAMP

DATE: 24 Jan 2023 - 10:38am USER: ANGONZALEZ

DRAWING FILE: 1102060_PP03D.dwg LAYOUT: PP03D-01

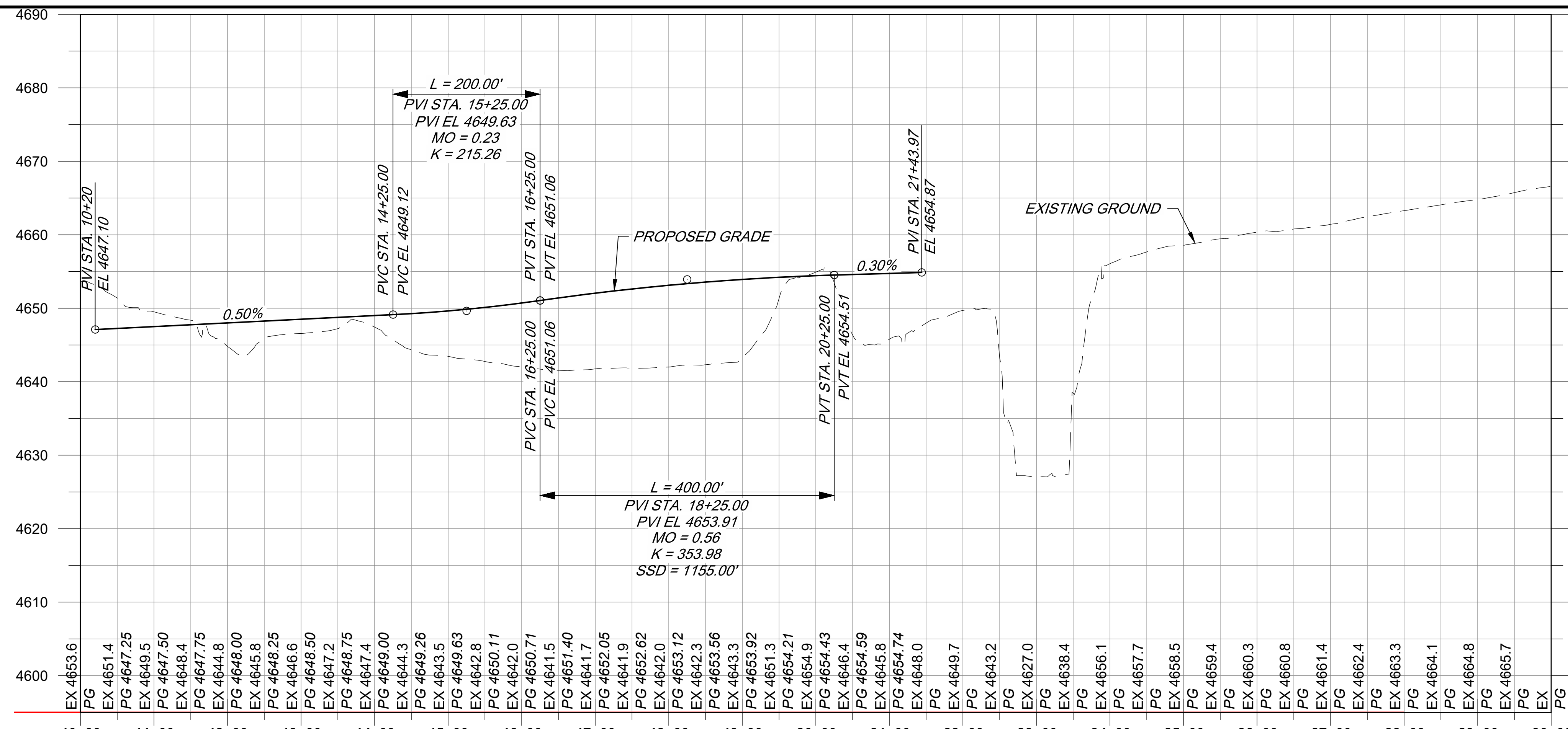
PROJECT DEVELOPED BY: DB

PROJECT CONTROL NUMBER: 1102060



ALTERNATIVE 3 - SB OFF-RAMP

HORIZONTAL SCALE: 1"=200' VERTICAL SCALE: 1"=5'



LEGEND

- NEW PAVEMENT
- NEW GRAVEL ROAD
- NEW BRIDGE
- EXISTING ROW
- EXISTING ROW ACCESS
- CUT AND FILL
- METAL BARRIER

NMDOT

NEW MEXICO DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

1.

NO.	DESCRIPTION	DATE	BY
1			
2			
3			
4			

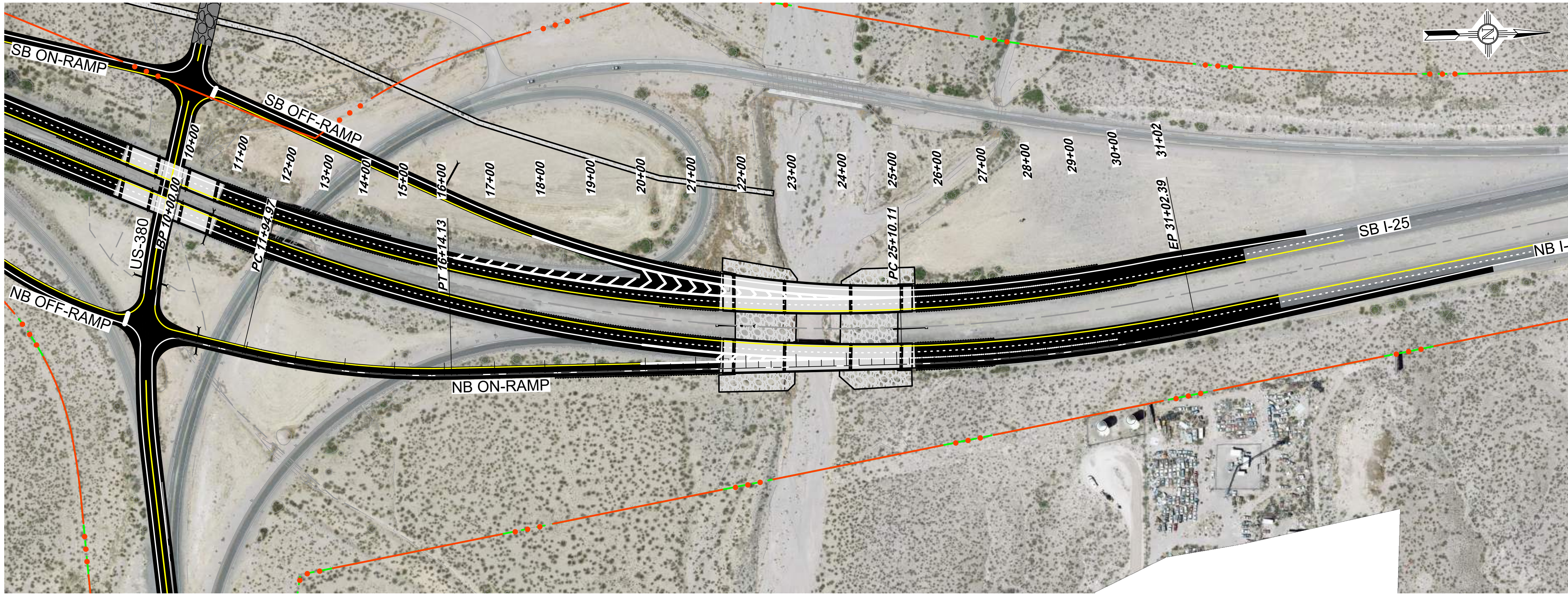
CN 1102060
I-25 & SAN ANTONIO INTERCHANGE
ALTERNATIVE 3 - SB OFF-RAMP

HDR
2155 LOUISIANA BLVD NE,
SUITE 3000
ALBUQUERQUE, NM 87110
(505) 830-5400

DATE: 24 Jan 2023 - 10:38am USER: ANGONZALEZ

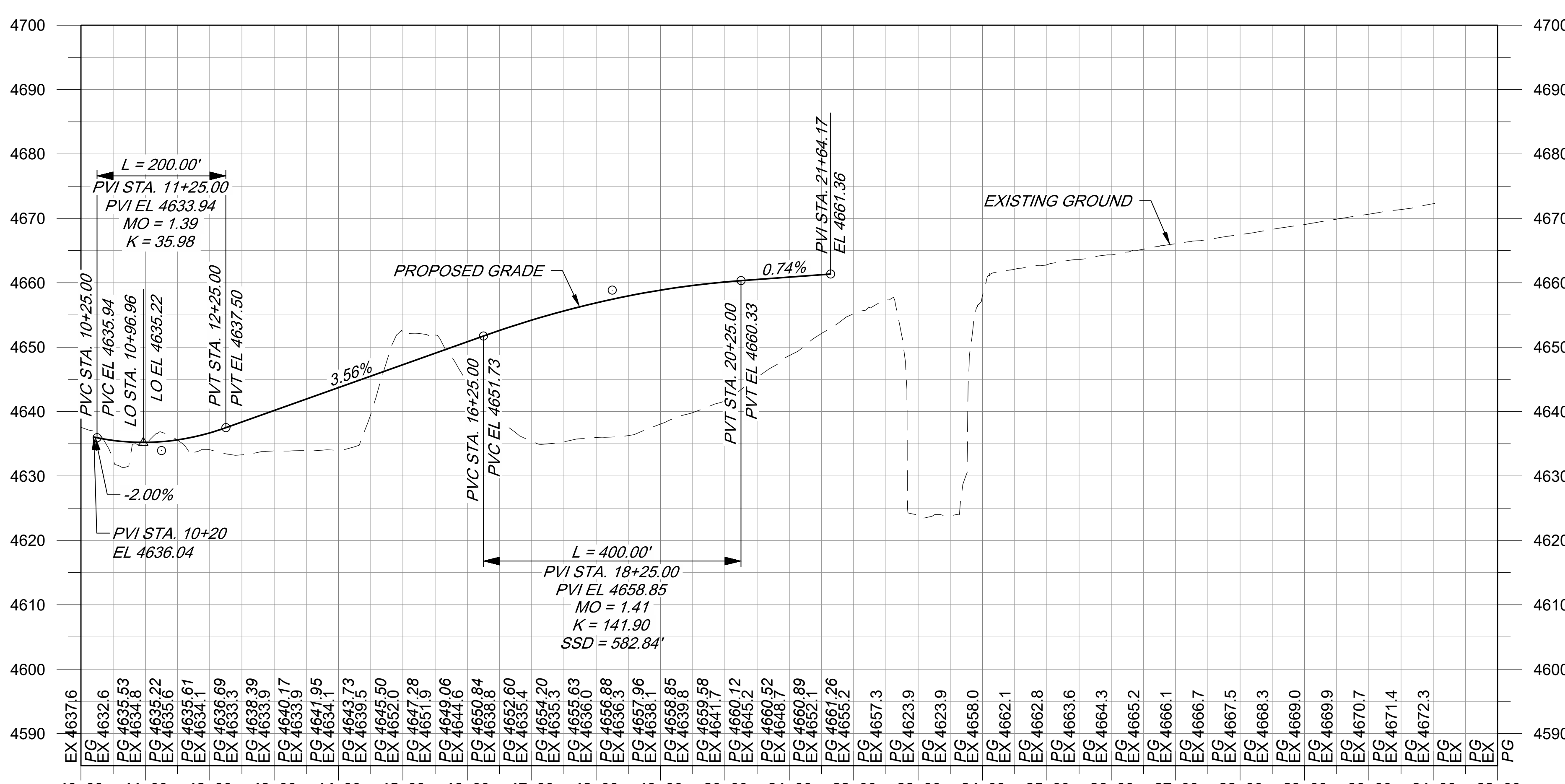
DRAWING FILE: 1102060_PP03E.dwg LAYOUT: PP03E-01

PROJECT DEVELOPED BY: DB



ALTERNATIVE 3 - NB ON-RAMP

HORIZONTAL SCALE: 1"=250' VERTICAL SCALE: 1"=5'



LEGEND

- NEW PAVEMENT
- NEW GRAVEL ROAD
- NEW BRIDGE
- EXISTING ROW
- EXISTING ROW ACCESS
- CUT AND FILL
- METAL BARRIER

GENERAL NOTES

1.

NMDOT

NEW MEXICO DEPARTMENT OF TRANSPORTATION

NO.	DESCRIPTION	DATE	BY
1			
2			
3			
4			

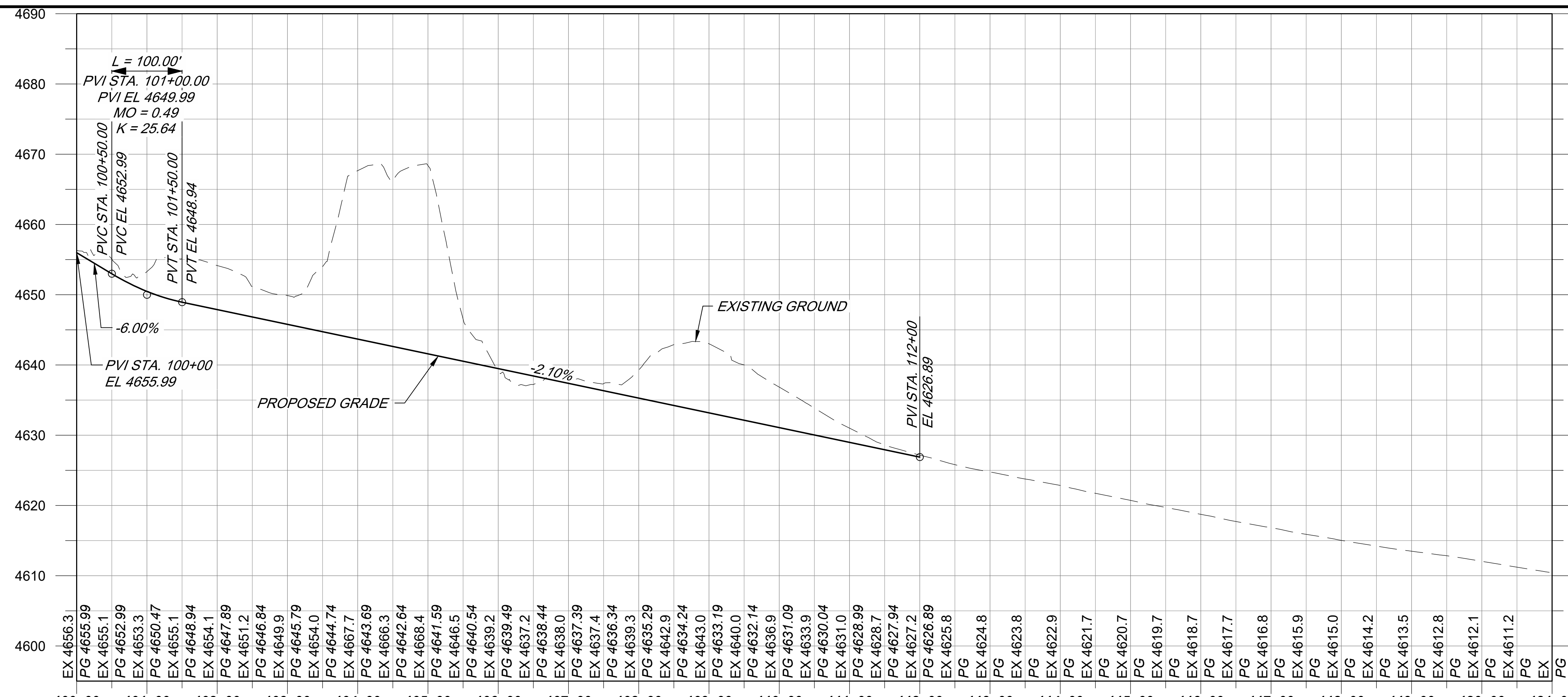
CN 1102060
I-25 & SAN ANTONIO INTERCHANGE
ALTERNATIVE 3 - NB ON-RAMP

HDR
2155 LOUISIANA BLVD NE,
SUITE 3000
ALBUQUERQUE, NM 87110
(505) 830-5400

PROJECT CONTROL NUMBER: 1102060

ALTERNATIVE 3 - US 380

HORIZONTAL SCALE: 1"=200' VERTICAL SCALE: 1"=5'



DATE: 24 Jan 2023 - 10:39am USER: ANGONZALEZ

LEGEND

- NEW PAVEMENT
- NEW GRAVEL ROAD
- NEW BRIDGE
- EXISTING ROW
- EXISTING ROW ACCESS
- CUT AND FILL (F / C)
- METAL BARRIER

NMDOT

NEW MEXICO DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

1.

NO.	DESCRIPTION	DATE	BY
1			
2			
3			
4			

CN 1102060
I-25 & SAN ANTONIO INTERCHANGE
ALTERNATIVE 3 - US 380

HDR
2155 LOUISIANA BLVD NE, SUITE 3000
ALBUQUERQUE, NM 87110
(505) 830-5400

DRAWING FILE: 1102060_PP03G.dwg LAYOUT: PP03G-01

PROJECT DEVELOPED BY: DB

SHEET NO. 7

Appendix D. Engineer's Opinion of Possible Construction Cost Estimates

COMPUTATION SHEET

Subject:	NMDOT: I25 San Antonio Interchange Project	Made by:	DB
	Alternative 1	Date:	January 23, 2023
	Estimated Quantities and Cost Estimate	Checked :	
		Date:	

ESTIMATED QUANTITIES

BID NO	ITEM NO.	DESCRIPTION	UNITS	TOTAL QUANTITY	UNIT PRICE	COST
1	201000	CLEARING AND GRUBBING	LS	LS	$66,342.75	$66,342.75
2	203000	UNCLASSIFIED EXCAVATION	C.Y.	7,000	$18.70	$130,900.00
3	203100	BORROW	C.Y.	4,380	$23.80	$104,244.00
4	207000	SUBGRADE PREPARATION	S.Y.	34,200	$2.50	$85,500.00
5	303000	BASE COURSE	TON	14,600	$45.00	$657,000.00
6	403701	OPEN GRADED FRICTION COURSE COMPLETE	TON	700	$150.00	$105,000.00
7	407000	ASPHALT MATERIAL FOR TACK COAT	TON	30	$1,260.00	$37,800.00
8	408100	PRIME COAT MATERIAL	TON	60	$1,460.00	$87,600.00
9	423283	HMA SP-IV COMPLETE	TON	13,200	$144.00	$1,900,800.00
10	511030	STRUCTURAL CONCRETE, CLASS AA	C.Y.	300	$1,450.00	$435,000.00
11	540060	REINFORCING BARS GRADE 60	LB	75,000	$2.00	$150,000.00
12	570437	24" STORM DRAIN CULVERT PIPE	L.F.	212	$214.00	$45,368.00
13	570441	24" STORM DRAIN CULVERT PIPE END SECTION	EACH	3	$214.00	$642.00
14	601000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS	LS	$750,000.00	$750,000.00
15	601110	REMOVAL OF SURFACING	S.Y.	16,830	$11.75	$197,752.50
15	602060	RIPRAP CLASS G	S.Y.	7,000	$61.90	$433,300.00
16	602110	CONCRETE BLOCK REVETMENT	S.Y.	6,700	$143.00	$958,100.00
17	603100	TEMPORARY SOIL STABILANT	ACRE	49	$615.00	$30,196.50
18	603262	COMPOSTED MULCH SOCKS	L.F.	14,120	$3.80	$53,656.00
19	603281	SWPPP PLAN PREPARATION AND MAINTENANCE	LS	LS	$75,000.00	$75,000.00
20	606001	SINGLE FACE W-BEAM GUARDRAIL	L.F.	4,480	$46.20	$206,976.00
21	606051	END TREATMENT TL-3 END TERMINAL	EACH	8	$4,500.00	$36,000.00
22	606053	END TREATMENT W-BEAM END ANCHOR	EACH	8	$1,890.00	$15,120.00
23	606062	TRANSITION METAL BARRIER TO RIGID BARRIER	EACH	16	$4,100.00	$65,600.00
24	607010	BARBED WIRE FENCE (GAME FENCE) 4'	L.F.	8,200	$29.30	$240,260.00
25	618000	TRAFFIC CONTROL MANAGEMENT	LS	LS	$265,400.00	$265,400.00
26	621000	MOBILIZATION	LS	LS	$3,973,000.00	$3,973,000.00
27	622002	FIELD LABORATORY, TYPE II	EACH	1	$68,450.00	$68,450.00
28	622100	SUPPLEMENTAL FIELD LABORATORY	EACH	1	$33,650.00	$33,650.00
29	623105	MEDIAN DROP INLET 5'X5' (URBAN) H=3'1" TO 6'0"	EACH	3	$12,000.00	$36,000.00
30	631000	RUMBLE STRIPS	L.F.	9,600	$0.40	$3,840.00
31	632000	CLASS A SEEDING	ACRE	47	$9,600.00	$448,320.00
32	632020	CLASS C SEEDING	ACRE	2	$28,000.00	$67,200.00
33	801000	CONSTRUCTION STAKING BY THE CONTRACTOR	LS	LS	$132,685.50	$132,685.50
34	802000	POST CONSTRUCTION PLANS	LS	LS	$100,000.00	$100,000.00
35		BRIDGE ($650/SQ.FT)	LS	1	$30,187,950.00	$30,187,950.00
36		CONSTRUCTION SIGNING	LS	1	$265,400.00	$265,400.00
37		DETOUR	LS	1	$1,000,000.00	$1,000,000.00
38		PERMANENT SIGNING AND STRIPING	LS	1	$250,000.00	$250,000.00

SUBTOTAL =	$43,700,053.25
CONTINGENCY (30%) =	$13,110,015.98
SUBTOTAL WITH CONTINGENCY =	$56,810,069.23
NMGRT @ 6.3750% =	$3,621,641.91
TOTAL =	**$60,431,711.14**

COMPUTATION SHEET

Subject:	NMDOT: I25 San Antonio Interchange Project Alternative 2 - Diamond Interchange with US 380 alignment on existing Estimated Quantities and Cost Estimate	**Made by:** **Date:** **Checked :** **Date:**	DB January 23, 2023

ESTIMATED QUANTITIES

BID NO	ITEM NO.	DESCRIPTION	UNITS	TOTAL QUANTITY	UNIT PRICE	COST
1	201000	CLEARING AND GRUBBING	LS	LS	$104,300.00	$104,300.00
2	203000	UNCLASSIFIED EXCAVATION	C.Y.	84,000	$18.70	$1,570,800.00
3	203100	BORROW	C.Y.	0	$23.80	$0.00
4	207000	SUBGRADE PREPARATION	S.Y.	67,900	$2.50	$169,750.00
5	303000	BASE COURSE	TON	28,900	$45.00	$1,300,500.00
6	403701	OPEN GRADED FRICTION COURSE COMPLETE	TON	1,250	$150.00	$187,500.00
7	407000	ASPHALT MATERIAL FOR TACK COAT	TON	50	$1,260.00	$63,000.00
8	408100	PRIME COAT MATERIAL	TON	110	$1,460.00	$160,600.00
9	423283	HMA SP-IV COMPLETE	TON	24,900	$144.00	$3,585,600.00
10	570437	24" STORM DRAIN CULVERT PIPE	L.F.	212	$214.00	$45,368.00
11	570441	24" STORM DRAIN CULVERT PIPE END SECTION	EACH	3	$214.00	$642.00
12	570461	36" STORM DRAIN CULVERT PIPE	L.F.	123	$214.00	$26,322.00
13	570465	36" STORM DRAIN CULVERT PIPE END SECTION	EACH	4	$2,500.00	$10,000.00
14	570479	54" STORM DRAIN CULVERT PIPE	L.F.	75	$2,500.00	$187,500.00
15	570484	54" STORM DRAIN CULVERT PIPE END SECTION	EACH	1	$2,500.00	$2,500.00
16	601000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS	LS	$1,000,000.00	$1,000,000.00
17	601110	REMOVAL OF SURFACING	S.Y.	33,380	$11.75	$392,215.00
17	602060	RIPRAP CLASS G	S.Y.	11,000	$61.90	$680,900.00
18	602110	CONCRETE BLOCK REVETMENT	S.Y.	6,700	$143.00	$958,100.00
19	603100	TEMPORARY SOIL STABILANT	ACRE	49	$615.00	$30,196.50
20	603262	COMPOSTED MULCH SOCKS	L.F.	14,120	$3.80	$53,656.00
21	603281	SWPPP PLAN PREPARATION AND MAINTENANCE	LS	LS	$75,000.00	$75,000.00
22	606001	SINGLE FACE W-BEAM GUARDRAIL	L.F.	3,300	$46.20	$152,460.00
23	606051	END TREATMENT TL-3 END TERMINAL	EACH	8	$4,500.00	$36,000.00
24	606053	END TREATMENT W-BEAM END ANCHOR	EACH	8	$1,890.00	$15,120.00
25	606062	TRANSITION METAL BARRIER TO RIGID BARRIER	EACH	16	$4,100.00	$65,600.00
26	607010	BARBED WIRE FENCE (GAME FENCE) 4'	L.F.	2,360	$29.30	$69,148.00
27	618000	TRAFFIC CONTROL MANAGEMENT	LS	LS	$833,800.00	$833,800.00
28	621000	MOBILIZATION	LS	LS	$4,886,000.00	$4,886,000.00
29	622002	FIELD LABORATORY, TYPE II	EACH	1	$68,450.00	$68,450.00
30	622100	SUPPLEMENTAL FIELD LABORATORY	EACH	1	$33,650.00	$33,650.00
31	623105	MEDIAN DROP INLET 5'X5' (URBAN) H=3'1" TO 6'0"	EACH	3	$12,000.00	$36,000.00
32	631000	RUMBLE STRIPS	L.F.	10,400	$0.40	$4,160.00
33	632000	CLASS A SEEDING	ACRE	47	$9,600.00	$448,320.00
34	632020	CLASS C SEEDING	ACRE	2	$28,000.00	$67,200.00
35	801000	CONSTRUCTION STAKING BY THE CONTRACTOR	LS	LS	$260,531.44	$260,531.44
36	802000	POST CONSTRUCTION PLANS	LS	LS	$100,000.00	$100,000.00
37		BRIDGE ($650/SQ.FT)	LS	1	$32,706,700.00	$32,706,700.00
38		CONSTRUCTION SIGNING	LS	1	$2,100,000.00	$2,100,000.00
39		DETOUR	LS	1	$1,000,000.00	$1,000,000.00
40		PERMANENT SIGNING AND STRIPING	LS	1	$250,000.00	$250,000.00

SUBTOTAL =	**$53,737,588.94**
CONTINGENCY (30%) =	**$16,121,276.68**
SUBTOTAL WITH CONTINGENCY =	**$69,858,865.62**
NMGRT @ 6.3750% =	**$4,453,502.68**
TOTAL =	**$74,312,368.30**

ENGINEER'S ESTIMATE

COMPUTATION SHEET

Subject:	NMDOT: I25 San Antonio Interchange Project Alternative 3 - Diamond Interchange with offset US 380 alignment Estimated Quantities and Cost Estimate	**Made by:** **Date:** **Checked :** **Date:**	DB January 23, 2023

ESTIMATED QUANTITIES

BID NO	ITEM NO.	DESCRIPTION	UNITS	TOTAL QUANTITY	UNIT PRICE	COST
1	201000	CLEARING AND GRUBBING	LS	LS	$110,100.00	$110,100.00
2	203000	UNCLASSIFIED EXCAVATION	C.Y.	102,000	$18.70	$1,907,400.00
3	203100	BORROW	C.Y.	0	$23.80	$0.00
4	207000	SUBGRADE PREPARATION	S.Y.	70,400	$2.50	$176,000.00
5	303000	BASE COURSE	TON	30,100	$45.00	$1,354,500.00
6	403701	OPEN GRADED FRICTION COURSE COMPLETE	TON	1,300	$150.00	$195,000.00
7	407000	ASPHALT MATERIAL FOR TACK COAT	TON	60	$1,260.00	$75,600.00
8	408100	PRIME COAT MATERIAL	TON	120	$1,460.00	$175,200.00
9	423283	HMA SP-IV COMPLETE	TON	26,000	$144.00	$3,744,000.00
10	570437	24" STORM DRAIN CULVERT PIPE	L.F.	212	$214.00	$45,368.00
11	570441	24" STORM DRAIN CULVERT PIPE END SECTION	EACH	3	$214.00	$642.00
12	570461	36" STORM DRAIN CULVERT PIPE	L.F.	123	$214.00	$26,322.00
13	570465	36" STORM DRAIN CULVERT PIPE END SECTION	EACH	4	$2,500.00	$10,000.00
14	570479	54" STORM DRAIN CULVERT PIPE	L.F.	75	$2,500.00	$187,500.00
15	570484	54" STORM DRAIN CULVERT PIPE END SECTION	EACH	1	$2,500.00	$2,500.00
14	601000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS	LS	$1,000,000.00	$1,000,000.00
15	601110	REMOVAL OF SURFACING	S.Y.	33,670	$11.75	$395,622.50
15	602060	RIPRAP CLASS G	S.Y.	11,000	$61.90	$680,900.00
16	602110	CONCRETE BLOCK REVETMENT	S.Y.	6,700	$143.00	$958,100.00
17	603100	TEMPORARY SOIL STABILANT	ACRE	49	$615.00	$30,196.50
18	603262	COMPOSTED MULCH SOCKS	L.F.	14,120	$3.80	$53,656.00
19	603281	SWPPP PLAN PREPARATION AND MAINTENANCE	LS	LS	$75,000.00	$75,000.00
20	606001	SINGLE FACE W-BEAM GUARDRAIL	L.F.	3,300	$46.20	$152,460.00
21	606051	END TREATMENT TL-3 END TERMINAL	EACH	8	$4,500.00	$36,000.00
22	606053	END TREATMENT W-BEAM END ANCHOR	EACH	8	$1,890.00	$15,120.00
23	606062	TRANSITION METAL BARRIER TO RIGID BARRIER	EACH	16	$4,100.00	$65,600.00
24	607010	BARBED WIRE FENCE (GAME FENCE) 4'	L.F.	2,170	$29.30	$63,581.00
25	618000	TRAFFIC CONTROL MANAGEMENT	LS	LS	$880,800.00	$880,800.00
26	621000	MOBILIZATION	LS	LS	$4,954,000.00	$4,954,000.00
27	622002	FIELD LABORATORY, TYPE II	EACH	1	$68,450.00	$68,450.00
28	622100	SUPPLEMENTAL FIELD LABORATORY	EACH	1	$33,650.00	$33,650.00
29	623105	MEDIAN DROP INLET 5'X5' (URBAN) H=3'1" TO 6'0"	EACH	3	$12,000.00	$36,000.00
30	631000	RUMBLE STRIPS	L.F.	10,400	$0.40	$4,160.00
31	632000	CLASS A SEEDING	ACRE	47	$9,600.00	$448,320.00
32	632020	CLASS C SEEDING	ACRE	2	$28,000.00	$67,200.00
33	801000	CONSTRUCTION STAKING BY THE CONTRACTOR	LS	LS	$275,226.20	$275,226.20
34	802000	POST CONSTRUCTION PLANS	LS	LS	$100,000.00	$100,000.00
35		BRIDGE ($650/SQ.FT)	LS	1	$32,736,600.00	$32,736,600.00
36		CONSTRUCTION SIGNING	LS	1	$2,100,000.00	$2,100,000.00
37		DETOUR	LS	1	$1,000,000.00	$1,000,000.00
38		PERMANENT SIGNING AND STRIPING	LS	1	$250,000.00	$250,000.00

SUBTOTAL =	**$54,490,774.20**
CONTINGENCY (30%) =	**$16,347,232.26**
SUBTOTAL WITH CONTINGENCY =	**$70,838,006.46**
NMGRT @ 6.3750% =	**$4,515,922.91**
TOTAL =	**$75,353,929.37**