Appendix A-Minutes from Public Involvement

Meeting Minutes
US 550 Safety and Operations Corridor Study, Project Manager Meeting 2 of 2
for US 550, NM 313 Paseo del Volcan (CN/PN A301230)
May 7, 2014 @ 8:30AM . New Mexico Workforce Connection

Meeting was attended by 18 project Stakeholders. (*Sign in sheet attached*)

Presentation and discussion was led by Paul Barricklow of Lee Engineering. (*Presentation attached*)

The following questions and comments were received during the meeting:

Slide: Safety Operations Report Short Term Improvements
Question/Comment: Has an adaptive system been considered?

Paraphrased Response: Yes, adaptive is included in the alternatives. Since, adaptive cannot be efficiently simulated and/or evaluated it is referenced as an option with potential benefits in the 5-10% range. Since, the capacity issues experienced on US 550 are significantly deficient, adaptive is not considered in the long-term big picture alternatives. Potential exists on this corridor primarily since it has multi-jurisdictional nature and that observation and maintenance crews are not locally present.

Slide: Near Term Improvements
Question/Comment: Don Tomas?

Paraphrased Response: Due to funding cycles, Don Tomas Highway Safety Improvements are moving forward without the NB capacity improvements.

Slide: Introduction of Potential Long Term Alternatives
Question/Comment: What are the assumptions at intersections on through sections?

Paraphrased Response: The 3-lane and 4-lane sections are just in reference to the through traffic lanes. Intersections will be appropriately sized with auxiliary lanes during the detailed design phase.

Question/Comment: Are the projected number sited using the modified option? (LR)

Paraphrased Response: No. These are the straight 2035 projections. It will be recommended that the detailed design phase consider using the modified projections for the region.

Question/Comment: Preliminary 2040 projected numbers anticipated less growth. The numbers are comparable to 2025 so they are ran 2025 data on 2035 roadway network. Some numbers change, some don't. There is opportunity here.

Paraphrased Response: The numbers will likely come down.

Slide: Introduction of Potential Long Term Alternatives, #6, Arterial Super Street

Question/Comment: NM: Are we considering other big picture alternatives.

Paraphrased Response: This study is concentrating on the US 550 corridor and will discuss issues and contingencies outside of the study are; however, the goal of the study is to provide direction for the department for the corridor.

Slide: Introduction of Potential Long Term Alternatives, Super Street Configuration
Question/Comment: What is the treatment for pedestrians?

Paraphrased Response: Z intersection crossings. This option is more challenging for pedestrians.

Paraphrased Response: In many cases, pedestrian crossings are handled outside of the intersection area.

Slide: Bridge Alternatives
Question/Comment: Flyovers on work on other alternative sections?

Paraphrased Response: Yes, although the combination of alternatives will each have their own challenges both in capacity and ROW.

Slide: Questions
Question/Comment: Demand studies should consider the collection of alternatives.

Paraphrased Response: Agreed within the purview of the study a multi-faceted options will be considered. However, many of the components of a complete plan are not in the purview of the NMDOT and the study cannot obligate others.

CN: A301230

US 550 CORRIDOR STUDY

THURSDAY: SEPTEMBER 26, 2013

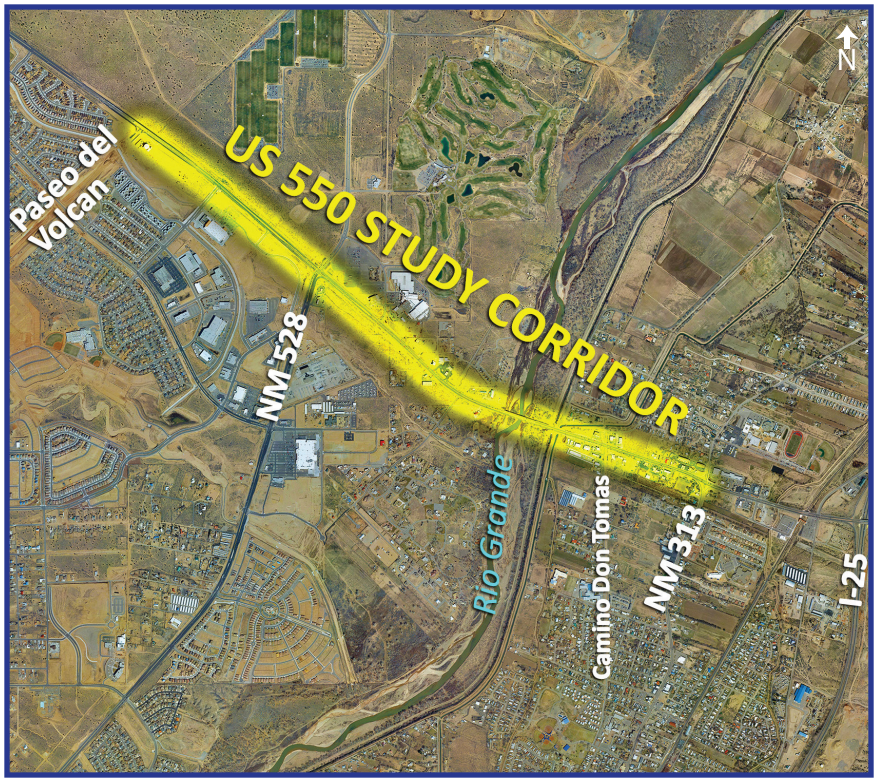
Stakeholder Meetings

Meeting Purpose:

Stakeholder Meetings will be held for adjacent business owners to discuss issues of circulation, access, and multi-modal facilities. It will be an opportunity for you to provide input on proposed improvements along US 550.

Two meetings will be held. The overall discussion will be the same, but one will focus on issues east of the Rio Grande and one will focus on issues west of Rio Grande. You are welcome to come for one or both.

Please join us!



Map of project corridor

Details:

Date:

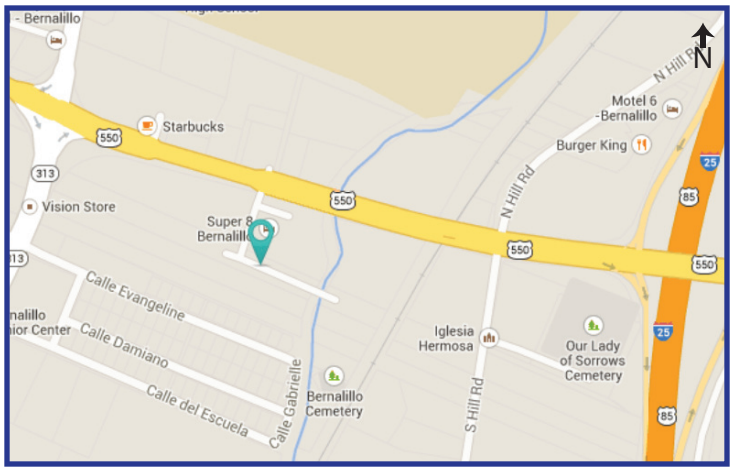
Thursday – September 26, 2013

Time:

9:00 – 10:00am ***(Focus: east of Rio Grande)***
10:30 – 11:30am ***(Focus: west of Rio Grande)***

Location:

New Mexico Workforce Connection
301 Rail Runner Ave.
Bernalillo, NM 87005



Map of meeting location (© Google Maps)

If you have questions or comments, please contact Paul Barricklow at (505) 338-0988 or pbarricklow@lee-eng.com.

To Request Americans with Disabilities Act (ADA)-related accommodations for the meeting, contact Denise Weston at (505) 823-1000 at least 2 days before the meeting.

M E M O R A N D U M

DATE: November 23, 2015

TO: Joseph Casares, NMDOT

FROM: Kristen Woods

SUBJECT: **Minutes of US 550 NM 313 to NM 528 Stakeholder Meeting**

A Stakeholder meeting was held November 18, 2015 for the US 550 corridor study from NM 313 to NM 528. The sign-in sheet is attached. The following items were discussed:

1. Project Overview
   The presenters did a quick overview of the project so far. The overview consisted of"
   a. The Project Corridor is from NM 528 to NM 313 (Camino del Pueblo). It is regionally significant because it provides access to the Farmington Area and East Wets access. So far the project team looked at five alternatives and divided those into the three alternatives being discussed at this meeting. They also looked at options for the 558/ 550 intersection and at options for the river crossing.
   b. Project Schedule
      i. The team will follow the following schedule:
         1. Draft Phase I-B Report – Early December
         2. Public Information Meeting – December 2015
         3. Final Phase I-B Report – January 2016
         4. Preliminary Design – April 2016
         5. Corridor Categorical Exclusion – March 2016

   a) Project Purpose and Need:
      a. US 550 must continue to function for local, commuter, and regional traffic. Improved capacity is needed for the 2035 projected traffic and to enhance the economic development potential in the Town of Bernalillo, Santa Ana Pueblo, Rio Rancho, and the communities in northwest New Mexico. Facilities are needed for bicycles and pedestrians

   b) Environmental Process
      ii. The Project is Federally funded so it will follow NEPA regulations.
         1. Will require a no-build alternative as well as an analysis of the proposed alternatives.

a. The project will also adhere to the NMDOT Location Study Procedures. The project is currently in Phase B and will move forward into Phase C.
b. Field Studies have been conducted, especially near the River, which is a sensitive site.
c. There are Categorical Exclusions the project in the following locations:
    i. For geotechnical boring at the River. It is wrapping up and in preparation for the next phase.
    ii. NM 313 to NM 528. Phase 1 will be bridge reconstruction.
d. There are also Cultural resources along the project including potential Archaeological sites, historic buildings, and traditional cultural properties that will be considered

c) Socioeconomics
d) Questions:

- Were all of these studies conducted within the Right-of-way, or do they look at the bigger picture?
  Response: It looks at the area of potential impact.
- Have you gotten in contact with the archaeological representatives from the tribes?
  Response: Yes, we have done some initial contact, but have not formally started. We have contacted representatives from the offices.
- There is a burial site that needs to be assessed near the northeast corner of NM 528.
  Response: That site has been considered. We also understand that the area is out of the ROW for this project. Right now the plan is to avoid encroachment on that area.

2. Discussion of Detailed Analysis of Alternatives – The presentation reviewed the following alternatives. The discussion of each alternative included a VISSIM simulation, all of which can be seen in the PowerPoint presentation. The project team has already conducted traffic counts, projections and a safety analysis. There were boards around the room demonstrating the details of each of the alternatives.
    a) No Build
    b) Six lane Super Street
    c) Six Lane with medial
    d) Six Lane with Reversible Lane
    e) NM 528 Intersection Options

    Questions:

    - Is there an example of another roadway that has a reversible lane? How will it affect traffic? Right now if there is an accident traffic is backed up for a long time.
      Response: Yes, there is, we used this strategy on South Eubank going into the Base. There are also examples in Arizona and Texas. There is not a huge increase in accidents, since it controls left turn movements and doesn't allow them during peak times. Most residents are injured by left turn accidents (such as a t-bone etc.) Everything else is designed to be turn-in turn out in a reversible lane.

- There is no median which is less safe, since there is no pedestrian refuge. There is also no way to control access, which can cause accidents. This came out of Phase 1-A as a suggested alternative. However, because of access and pedestrian issues we feel this is not the right location for this alternative.
- Can you cross US 550 at Jemez in the afternoon? Is there going to be a signal.
  Response: Through traffic will be diverted. In this case a cross movement would take an alternative to the right to take a U-turn.
- On the Super Street Option, how much time would be required for one complete cycle?
  Response: Times could actually be shortened from the current times, even into the 120 second range.
- Santa Ana Road (East side) of the river needs to be looked at because the Pueblo only has two entrances – one off of 313 and the Santa Ana Road. How will ambulances or fire trucks travel?
  Response: That is a public, small road that will need access. We will need to look at that.
- There are two MRGCD ditch facilities that need access for maintenance. The Levy also needs access for flood management and emergency access. The Army Corps of Engineers, Town of Bernalillo, East SCAFCA and MRGCD are in the process of conducting a study of the levy and it may be raised for flood management.
  Response: As we get into the design we will need to talk to you in more depth.
- Will there be any improvement made on the Old Santa Ana Road?
  Response: There are no plans at the moment.
- When you say this alternative is safer for U-turns, is that in terms of fatalities or in terms of accidents?
  Response: There is a study from the National Highway Cooperative that talked about this. The summary conclusion says that [a Super Street] where facilities are specifically designed for this the rate of crashes is lower than a traditional left turn system.
- Does the analysis take into account the traffic on side streets? It almost looks like 235 or similar routes could become relief routes.
  Response: Traffic counts were performed as part of the study.
- Would the whole street have to be shut down to change the structure of the road?
  Response: One or two lanes in each direction would be maintained during construction.
- Is there any way, on a median or curb, for emergency services to get though the traffic?
  Response: For all of these alternatives there is a potential for a bike lane that will continue over the bridge., which could be used by emergency vehicles. Medians will be similar to those out there at the moment so vehicles can jump the curb at slow speeds.
- Are there any plans for lighting? Where are you getting your 2035 projections?
  Response: Projections come from MRCOG 2035 projections. This is published

every 5 years. Lighting is under consideration. It will most likely be outside in along the whole corridor. It will comply with the night skies act.

- What is the likelihood of a construction process that will be developed in phases?
  Response: The first phase will most likely be bridge construction and will begin next summer. The other phases are uncertain. There is no funding identified for the next phase. However, this is a top priority project.
- Is there a deceleration lane at the turn at Santa Ana?
  Response: Right now it has not been decided but it is being studied.

3. Traffic Modelling Results - The Presenters discussed the traffic modelling results for each of the alternative routes. Super streets performed slightly better on traffic and safety than the other alternatives. There were three options, with the Continuous Flow Option being the preferred option.
   a. NM 528 Super Street Option
   b. NM 528 Flyover Option
   c. NM 528 Continuous Flow Option

   Questions:
   - Does this model account for alternate routes like turns and small roads?
     Response: They were taken into account based on traffic counts.
   - Turning school buses and Semis have a large turning radius. How do you account for that?
     Response: The radius for a turn movement needs to be as large as a truck, so we will design the U-turns for that.
   - Does the model take into account the change ins local traffic? If I were a school bus driver or something like that I might go down NM 313 instead of US 550.
     Response: The model has taken this into account. We tried to estimate diversions for each alternative. We looked at each driveway and asked what alternate routes they will take. There were trips apportioned to a variety of scenarios. This model allows for rerouting traffic.
   - Will the information from this meeting be available?
     Response: Yes. The project has a website and all of the information from this meeting will be on it: keepmoving550.com
   - At the end of Camino Don Tomas there are two schools and this could cause a lot of conflict. Right now a lot of people are using it as an alternate route. This alternative will discourage drivers from using alternate routes.
   - Will this project include signal control?
     Response: Yes, the DOT just installed Adaptive signals throughout the corridor so they will work with this scenario.

4. Rio Grande Bridge Options - There were four options considered. The options are being considered as part of a report with the DOT.
   a. Pre-stressed Concrete with matching girders
   b. Pre-stressed concrete with longer girders
   c. Hybrid Concrete and Steel

d. Steel girders

Questions:

- Will the new bridge only be used by East bound traffic?
  Response: Yes, it will accommodate Eastbound traffic with space for a pedestrian park and a bike lane. The existing bridge is designed to last another 30 years.
- Do you have any information on the project for Paseo de Volcan to I-40? Did you analysis include that? Construction funds for the project were identified but it project is not listed in the TIP. If it is not accounted for the numbers for the study will be off.
  Response: MRCOG did include that in their model, which is the basis for our model.
- Is there a superstreet concept anywhere near us? Response: Texas and one in Alabama. Look at www.alternativeintersections.org for examples.

Bohannan Huston

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MEMORANDUM

TO: **Joseph Casares, NMDOT**

FROM: **Jeanette Walther**

DATE: **November 10, 2015**

SUBJECT: **Minutes of US 550 NM 313 to NM 528 Meeting with the Town of Bernalillo**

A meeting was held with Town of Bernalillo representatives on November 6, 2015 for the US 550 corridor study from NM 313 to NM 528. The sign-in sheet is attached. The following items were discussed:

1. Schedule – There is a stakeholder meeting for local government agencies November 18, 2015. The Draft Detailed Analysis of Alternatives (Phase IB) will be completed in early December. A public involvement meeting will be held in mid-December to early January.
2. Detailed Analysis of Alternatives
    a. Intersection options at NM 528 and US 550, as well as, bridge options will be discussed at the stakeholder meeting.
    b. Roadway alternatives include
        i. Super Street
        ii. Six Lane with Median
        iii. Six Lane with Reversible Lane
    c. The preferred option at this time seems to be a combination of the Super Street west of the Rio Grande and the Six Lane with Median east of the Rio Grande.
3. Once the Phase B Report is complete in early December the design team will complete a preliminary design in order to determine the right-of-way impacts. During this phase, the NMDOT will coordinate with the individual businesses and property owners.
4. Access – If it is determined that a six lane roadway with a raised median is recommended, then left turn access will be limited.
5. Construction – This project will be built in phases. The first phase will include constructing the River Bridge and a third through lane westbound. This is scheduled to be completed in March 2018. The second phase will most likely be right-of-way acquisition. The third phase has not yet been determined.
6. Access Management – NMDOT will be working on an Access Management Plan within one year. Input is requested from the Town of Bernalillo. NMDOT would like the Town to consider long term planning for backage roads. Backage roads can only be provided with the US 550 project if they are needed for the development of the project.
7. Town Concerns:
    a. Chief of Police, Tom Romero, is concerned with incident management west of Don Tomas. Currently emergency vehicles experience difficulty responding to incidents west of Don Tomas during peak hour traffic congestion. Median curbs are a concern. They may create a physical barrier for emergency vehicles to have to navigate around.

b. The Town asked about a Mass Transit Lane. We informed the Town that the traffic density is 1/3 local, 1/3 commuter, and 1/3 long distance travel.
c. The Town asked if planned to align Sherriff's Posse Rd. and place signal. The Town feels like phase 1 of project is an ideal time to make intersection improvements if building to the west. A new subdivision is being constructed south of the existing housing. The Venada Plaza Drive connection to NM 528 will be improved. It has not yet been determined what the preferred option is at Sheriff's Posse Rd.
d. Campers leaving Coronado State Park usually turn left towards the interstate. This is a concern if southbound lefts are not allowed. UNM has an agreement to manage the park with the Department of the Interior. It would be difficult to realign their entrance. NMDOT will provide the Town with a copy of the agreement.
e. The Town has a newsletter which could be used to advertise the website and the public meeting. Submittals are due by the 10th of the month.
f. Jack Torres asked if the NMDOT traffic analysis considered the planned loop and route for Paseo Del Volcan to I-40. He stated that this will need to be evaluated do to the project having a strong political push. BHI will check to see what is included in the MRCOG model.
g. The Town had concerns that there would not be enough gaps for U-turns.
h. Mayor, Jack Torres, asked if the NMDOT had data from the smart technology signal system recently installed and if the Town could access traffic count data, also what traffic data the NMDOT is using for traffic analysis and design. MRCOG data was used. NMDOT will provide the Town with data from the Weigh-in Motion station.
i. The Town asked how the economic Quality of Life will be affected. The Town stated that the local concerns should not to be ignored and the importance of maintaining the economic core of the town.
j. The Town Planner asked if the flow of the river will be affected. A subdivision on the west side of the bank is losing land to the river. BHI responded that the new bridge piers will line up with existing piers so as not to disrupt the hydrology of the river.
k. The Town asked if NMDOT has an idea on the amount of ROW takes. The project will most likely require many short retaining walls to tie grade differences and minimize ROW. The Town has requirements that businesses have a certain amount of parking spaces in order to operate.
l. The Town was concerned about that SSI and Santa Ana Casino were invited to the Stakeholder Meeting, but not local businesses. Jack Torres considers private property and business owners stakeholders in the project. Jack asked why they would not be invited to the stakeholder meeting. The NMDOT plans to meet separately with local government and private owners to maintain progress and the focus in gathering each parties concerns. Private owners will have a chance to attend the Public Information Meeting and comment on the alternatives before the report is finalized.
m. The Town does not support eliminating driveways however do support safety. Also the elimination of business parking spaces will be an issue for the Town. The town has regulations for the amount of parking spaces a business must provide.
n. The Town asked if the project considered improvements north of NM 313. This location will see development of a new school. Also if the project addresses an additional left turn lane at Don Tomas for 2 schools and park.

o. TOB asked if project will improve Rail Runner Ave backups during rail runner arrivals. This is currently out of the scope of project.
p. The Town has a planned sewer line expansion project from the southeast corner of NM 528 to the east across the river. Cobb Fendley will be collecting this type of information for the project.
q. The Town was concerned that the reversible lane would hurt businesses if left turns are not allowed.
r. There is a significant amount of drainage in the ditches on the west side of the river that will have to be addressed.

Action Items:

1. Notify Town of Bernalillo time, date and location of Stakeholder Meeting.

2. Send weigh in motion traffic data to Police Chief, Tom Romero and TOB. Weigh in motion machine on existing 550 Bridge. Determine if machine was kept in place from previous deck repair project.

3. Send the Town UNM land agreement.

4. Inform the Town of Public Meeting. Mayor Jack Torres offered to assist in distributing notification to the public via newsletters. PDEs will need to submit a month prior to meeting and by the 10th.

JW/jma

US 550 MEETING, NOV. 6 ATTENDANCE

NAME	AFFILIATION	EMAIL
GWYNETH DUNCAN	NMDOT - ENVIRONMENTAL	gwyneth.duncan@state.nm.us
Jeanette Walther	Bohannan Huston	jwalther@bhinc.com
Joe Casares	NMDOT - Central Region	Joseph.Casares@state.nm.us
Janet Cunningham-Stephens	ToB - Planning & Zoning	jcunningham@townofbernalillo.org
Maria Rivera	ToB	mriveraltictownhall@townofbernalillo.org
Andy Edmondson	ToB	~~AEdmondson@TOB~~ AEdmondson@TownofBernalillo.org
Jack Torres	ToB	mayortorres@townofbernalillo.org
Tom Romero	ToB	tromero@townofbernalillo.org
Esteven Gonzales	NMDOT - CRD	esteven.gonzales@state.nm.us

Appendix B-Rio Grande (No. 8537 & 8540) Bridge Inspection Reports

New Mexico Department Of Transportation
Bridge Management Section — Bridge Inspection Report

Bridge Number: 000000000008537 **Inspection Date (90): 4/27/2011**

NMDOT District No. = District 3	(3) County = 43 SANDOVAL	Sufficiency Rating = 79
(4)Town/City = Bernalillo	(91) Frequency = 24 months	Next Inspection = 04/27/2013
(7) Facility Carried US-550 SBL (11) Mile Post = 1.537 mi	Patrol No. 4353	Deficiency Status Not Deficient
(49) Structure Length = 692.9 ft	(19) Detour Length = 24.9 mi	(112) NBIS Length = Long Enough
(102) Direction of Traffic = 1 1-way traffic	(28A) Lanes on = 2	(28B) Lanes Under = 0
(41) Posting Status = A Open, no restriction	(34) Skew = 0.00 °	(104) Highway System = 1 On the NHS
(9) Location = 1.4 MI NW OF JCT I-25		
(6) Feature Intersected = RIO GRANDE		

DESCRIPTION:

Two 4 span units at 79.25', 90.5', 90.5', and 79.25' each (continuous for live load). AASHTO prestressed concrete girders, CIP concrete deck, concrete stub abutments and concrete pier caps on concrete pier shafts.
Deck was sealed with HMWM in 1999.

CONDITION

Deck (58) = 6 Satisfactor **Super (59) =** 7 Good **Sub (60) =** 6 Satisfactory

Channel/Channel Protection (61) = 7 Minor Damage **Culvert (62) =** N N/A (NBI)

APPRAISAL

Str. Evaluation (67) = 6 **Deck Geometry (68) =** 5 Above Tolerable

Waterway Adequacy (71) = 9 Above Desirabl **Approach Alignment (72) =** 8 Equal Desirable Crit

Underclearance, Vertical and Horizontal (69) = N **Scour Critical (113) =** 5 Stable w/in footing

LOAD RATING AND POSTING

Inventory Rating (66) = HS19.8 **Operating Rating (64) = HS29.8**

Posting status (41) = A Open, no restriction Posting (70) = 5 At/Above Legal Loads

Inventory Rating Method (65) = 1 LF Load Factor Operating Rating Method (63) = 1 LF Load Factor

Design Load (31) = 5 MS 18 (HS 20)

(29) ADT = 20,819	(114) Future ADT = 50,278	(109) Truck ADT = 15 %
(30) Year of ADT = 2011	(115) Year of Future ADT = 2031	Route Posted Speed Limit =

Team Leader ***Date*** ***Reviewed By*** ***Date***

New Mexico Department Of Transportation
Bridge Management Section — Bridge Inspection Report

(16) Latitude = 35d 19' 24"	(17) Longitude = 106d 33' 30"	(27) Year Built =1986
(22) Owner = State Highway Agency	(21) Custodian = State Highway Agency	(106) Year Reconstruct=Unknown
(42A) Type of Service on = 1 Highway	(42B)Type Service under= 5 Waterway	(35) Structure Flared = 0 No flare

(26) Functional Class = 14 Urban Other Princ	(100) Defense Highway = 1 Interstate STRAHNET
(37) Historical Significance =5 Not eligible for NRHP	(45) No. Of Spans In Main Unit = 8
(43A) Main Span Material/Design = 6 P/S Conc Continuous	(43B) Main Span Material/Design = 02 Stringer/Girder
(48) Length Max Span = 90.9 ft	(46) Number of Approach Spans = 0
(44A) Approach Span Material =	(44B) Approach Span Material =
(107) Deck Type = 1 Concrete-Cast-in-Place	(108C) Deck Protection = 1 Epoxy Coated Reinforci
(108A) Wearing Surface = 0 None	(108B) Membrane = 0 None
Min. Vertical Clearance Minus= 0	Min. Vertical 10' Selected Minus= 9999
Min. Vertical Clearance Plus= 0	Min. Vertical 10' Selected Plus= 0
(55) Minimum Lateral Undrclearance R = 0.0 ft	(56) Minimum Lateral Undrclearance L = 0.0 ft

Project No. = SR-GRF-033-1(204)	Old Bridge No. =	(47) Total Horiz. Clearance =72.0 ft
(51) Width Curb to Curb =34.5 ft	(52) Width Out to Out = 34.4 ft	(33) Median =2 Closed Med w/o Barrie
(32) Approach Roadway Width (w/ shoulders) = 37.0 ft		Known Utilities = C

Special Inspections:

(92A) FC Frequency =NA	(93A) FC Inspection Date = NA	Next UW Inspection = NA
(92B) UW Frequency = NA	(93B) UW Inspection Date = NA	Next FC Inspection = NA
(92C) SI Frequency =NA	(93C) SI Date = NA	Next SI = NA

TRAFFIC SAFETY FEATURES

Bridge Rail (36A) =	1 Meets Standards	Approach Rail (36C) =	1 Meets Standards
Transition (36B) =	1 Meets Standards	Approach Rail Ends (36D) =	1 Meets Standards

Stay In Place Forms =No	Stay In Place Form Type =N\A	Overlay Thickness =
Culver Fill = 0		

SIP Notes:
No SIP forms.

New Mexico Department Of Transportation
Bridge Management Section Bridge Inspection Report

Approach Roadway Condition:
PMBP with OGFC. A few cracks up to 1/8" Asphalt shoulders. Natural fill embankemtns. Bridge signing: Rio Grande.

Channel and Channel Protection:
Meandering, sandy bottom channel, generally on a tangent at bridge. Water flowing fast around west pier. Around 3' of undrmining under west abutment. Wire enclosed rip-rap at abutments. East abutment rip-rap: top wire not tied to bottom wire. West abutment rip-rap not replaced.

Recommendations and Inspection Notes:
Long Term: 1. Clear vegetation under bridge. 2. Paint over graffiti. 3. Correct rip-rap deficiences.

Str Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
0	26/2	Conc Deck/Coatd Bars	(SF)	23,840	100 %	23,840	0 %	0	0 %	0	0 %	0	0 %	0
0	109/2	P/S Conc Open Girder	(LF)	2,748	100 %	2,748	0 %	0	0 %	0	0 %	0	0 %	0
0	210/2	R/Conc Pier Wall	(LF)	239	100 %	239	0 %	0	0 %	0	0 %	0	0 %	0
0	215/2	R/Conc Abutment	(LF)	70	100 %	70	0 %	0	0 %	0	0 %	0	0 %	0
0	219/2	CONC WINGWALL	(LF)	24	100 %	24	0 %	0	0 %	0	0 %	0	0 %	0
0	234/2	R/Conc Cap	(LF)	239	100 %	239	0 %	0	0 %	0	0 %	0	0 %	0
0	300/2	Strip Seal Exp Joint	(LF)	35	100 %	35	0 %	0	0 %	0	0 %	0	0 %	0
0	301/2	Pourable Joint Seal	(LF)	69	33 %	23	67 %	46	0 %	0	0 %	0	0 %	0
0	310/2	Elastomeric Bearing	(EA)	64	100 %	64	0 %	0	0 %	0	0 %	0	0 %	0
0	329/2	GUARDRAIL (standard)	(LF)	600	100 %	600	0 %	0	0 %	0	0 %	0	0 %	0
0	331/2	Conc Bridge Railing	(LF)	694	100 %	694	0 %	0	0 %	0	0 %	0	0 %	0
0	336/2	RIP RAP AND GABIONS	(SF)	3,220	77 %	2,491	11 %	360	11 %	369	0 %	0	0 %	0
0	358/2	Deck Cracking SmFlag	(EA)	1	0 %	0	0 %	0	100 %	1	0 %	0	0 %	0

Str Unit	Elem/Env	Description	Element Notes
0	26/2	Concrete Deck - Protected w/ Coate	Many full-depth transverse cracks up to 1/4" through-out. Underside shows efflorescence at same. Minor amount of traffic abrasion. Raised concrete median separated from deck: intentional, as per plan "bond-breaker". Much dirt and debris on deck.
0	109/2	P/S Conc Open Girder/Beam	Girders are in very good condition
0	210/2	Reinforced Conc Pier Wall	All units show vertical stem wall cracks up to 1/16", some extend into caps. Lateral displacement up to 1" taking place, away from NB piers.
0	215/2	Reinforced Conc Abutment	Backwalls have vertical and horizontal cracks up to 1/16" with light leaching. A few lateral cracks up to 1/16" on tops of backwalls. Seats have moderate debris build-up. Breastwalls have vertical and map cracks up to 1/16".
0	219/2	REINFORCED CONC WINGWALL/I	Wingwalls have vertical and horizontal cracks up to 1/16" and minor spalls.
0	234/2	Reinforced Conc Cap	Extension of pier caps have cracks up to 1/16".

New Mexico Department Of Transportation
Bridge Management Section — Bridge Inspection Report

Str Unit	Elem/Env	Description	Element Notes
0	300/2	Strip Seal Expansion Joint	Joint at Pier 4 is Watson-Bowman extrusions and strip seal in good condition. Joint measures 4".
0	301/2	Pourable Joint Seal	Abutment joints are poured sealant in good condition. Joints measured from S>N: 2 1/2" and 1".
0	310/2	Elastomeric Bearing	Sole plates with moderate rust and anchor bolts corroded.
0	329/2	GUARDRAIL (STANDARD)	12" W rail on steel posts with Type C anchors to Thrie rail.
0	331/2	Reinforced Conc Bridge Railing	3'-0" CBR has random vertical cracks up to 1/16".
0	336/2	WIRE ENCLOSED RIPRAP, RIPRA	Wire enclosed rip-rap localized settlement. PNM gas line contractor disturbed rip-rap. Top of wire not tied to bottom wire at easterly abutment. Rip-rap not replaced at westerly abutment. Undermining excessive 10' to 15' at west abutment, needs repair.
0	358/2	Deck Cracking	Many full-depth transverse cracks up to 1/4" through-out.

PAST INSPECTION

Inspection Date: 04/27/2011 Type: 1 Regular NBI

Inspector: RSAMP00 Pontis User Key: RSAMP00 - REYNALDO SAMPAGA

Scope:

NBI: ☑ Other: ☐ Element: ☑

Underwater: ☐ Fracture Critical: ☐

INSPECTION NOTES

1. Weather Conditions: Windy, 42 degrees F. 2. NMSU Bridge Inspection team members: Reynaldo E. Sampaga, Ramses S. Ortega and Andrew J. Giesler. 3. Work Done Since Last Inspection: Deck cleaned, joints repaired with Dow Corning 902. 4. Traffic Safety Features: 12" W rail on steel posts with Type C anchors bolted to CBR.

New Mexico Department Of Transportation
Bridge Management Section — Bridge Inspection Report

PAST INSPECTION

Inspection Date: 04/29/2009 Type: 1 Regular NBI

Inspector: WDODG03 Pontis User Key: WDODG03 - WILL DODGE

Scope:

NBI: ☑ Other: ☐ Element: ☑

Underwater: ☐ Fracture Critical: ☐

INSPECTION NOTES

Inspection Performed by:Will Dodge Weather conditions at time of inspection Sunny, warm, 58F
Work Done Since Last Inspection : none evident
Recommendations:
Immediate: replace pourable seals with evazote
Short Term: Correct riprap deficiencies. Clean and flush deck.
Long Term: address undermining at abut 1 Wingwall

PAST INSPECTION

Inspection Date: 04/03/2007 Type: 1 Regular NBI

Inspector: WDODG03 Pontis User Key: WDODG03 - WILL DODGE

Scope:

NBI: ☑ Other: ☐ Element: ☑

Underwater: ☐ Fracture Critical: ☐

INSPECTION NOTES

Inspection Performed by:Will Dodge / Leroy Molina Weather conditions at time of inspection Sunny, warm, 58F
Work Done Since Last Inspection : none evident
Recommendations:
Immediate: Paint over graffiti.
Short Term: Correct riprap deficiencies. Clean and flush deck.
Long Term: address undermining at abut 1 Wingwall

New Mexico Department Of Transportation
Bridge Management Section — Bridge Inspection Report

PAST INSPECTION

Inspection Date: 04/28/2005 Type: 1 Regular NBI

Inspector: WDODG03 Pontis User Key: WDODG03 - WILL DODGE

Scope:

NBI: ☑ Other: ☐ Element: ☑

Underwater: ☐ Fracture Critical: ☐

INSPECTION NOTES

WDODG03 inspection comments - Structure 000000000008537 - Date 2005-04-28 -
Inspection Performed by:Leroy Molina Weather conditions at time of inspection Sunny, warm, 74° F:
Work Done Since Last Inspection Deck was cleaned, joints repaired with Dow Corning 902
Recommendations:
Immediate: Paint over graffiti.
Short Term: Correct riprap deficiencies.
Long Term: None

Previous comments > CHUGH03 inspection comments - Structure 000000000008537 - Date 2003-04-03 -
Work Done Since Last Inspection: None Apparent.
Inspection Performed by: Conrad Hughes Weather conditions: Sunny, windy, 60d F?
Recommendations:
Immediate:Clean deck drains. Clean and flush deck. Retreat deck with HMWM
Short Term: Correct riprap deficiencies.
Long Term: None

PAST INSPECTION

Inspection Date: 04/03/2003 Type: 1 Regular NBI

Inspector: CHUGH03 Pontis User Key: CHUGH03 - CONRAD HUGHES

Scope:

NBI: ☑ Other: ☐ Element: ☑

Underwater: ☐ Fracture Critical: ☐

INSPECTION NOTES

CHUGH03 inspection comments - Structure 000000000008537 - Date 2003-04-03 -
Work Done Since Last Inspection: None Apparent.
Inspection Performed by: Conrad Hughes Weather conditions: Sunny, windy, 60d F?
Recommendations:
Immediate:Clean deck drains. Clean and flush deck. Retreat deck with HMWM
Short Term: Correct riprap deficiencies.
Long Term: None

New Mexico Department Of Transportation
Bridge Management Section — Bridge Inspection Report

PAST INSPECTION

Inspection Date: 04/17/2001 Type: 1 Regular NBI

Inspector: PONTIS Pontis User Key: PONTIS - Pontis Pontis

Scope:

NBI: ☑ Other: ☐ Element: ☑

Underwater: ☐ Fracture Critical: ☐

INSPECTION NOTES

PONTIS inspection comments - Structure 000000000008537 - Date 4/17/01
Work Done Since Last Inspection: None Apparent.
Inspection Performed by: Will Dodge Weather conditions: Sunny, warm, 69d F?
Recommendations:
Immediate Clean deck drains. Clean and flush deck.
Short Term Correct riprap deficiencies.
Long Term None

PAST INSPECTION

Inspection Date: 03/01/1999 Type: 1 Regular NBI

Inspector: PONTIS Pontis User Key: SYS

Scope:

NBI: ☑ Other: ☐ Element: ☑

Underwater: ☐ Fracture Critical: ☐

INSPECTION NOTES

New Mexico Department Of Transportation
Bridge Management Section — Bridge Inspection Report

PAST INSPECTION

Inspection Date: 02/01/1997 Type: 1 Regular NBI

Inspector: PONTIS Pontis User Key: SYS

Scope:

NBI: ☑ Other: ☐ Element: ☑

Underwater: ☐ Fracture Critical: ☐

INSPECTION NOTES

INSPECTOR WORK CANDIDATES

New Mexico Department Of Transportation
Bridge Management Section — Bridge Inspection Report

Bridge Number: 000000000008540 **Inspection Date (90): 4/27/2011**

NMDOT District No. = District 3	(3) County = 43 SANDOVAL	Sufficiency Rating = 85
(4)Town/City = Bernalillo	(91) Frequency = 24 months	Next Inspection = 04/27/2013
(7) Facility Carried US-550 NBL (11) Mile Post = 1.527 mi	Patrol No. 4353	Deficiency Status Not Deficient
(49) Structure Length = 692.9 ft	(19) Detour Length = 24.9 mi	(112) NBIS Length = Long Enough
(102) Direction of Traffic = 1 1-way traffic	(28A) Lanes on = 2	(28B) Lanes Under = 0
(41) Posting Status = A Open, no restriction	(34) Skew = 0.00 °	(104) Highway System = 1 On the NHS
(9) Location = 1.4 MI NW OF JCT I-25		
(6) Feature Intersected = RIO GRANDE		

DESCRIPTION:

NM 550 NBL / Rio Grande MP 1.4 Patrol 4353
1.4 miles west of junction I-25 / US-550, Bernalillo.
Two units of 4 spans @ 79.25', 90.5', 90.5', and 79.25' (continuous for live load). AASHTO prestressed concrete girders, CIP concrete deck, concrete stub abutments and concrete pier caps on concrete pier shafts.

CONDITION

Deck (58) = 6 Satisfactor **Super (59) =** 7 Good **Sub (60) =** 6 Satisfactory

Channel/Channel Protection (61) = 7 Minor Damage **Culvert (62) =** N N/A (NBI)

APPRAISAL

Str. Evaluation (67) = 6 **Deck Geometry (68) =** 7 Above Min Criteri

Waterway Adequacy (71) = 9 Above Desirabl **Approach Alignment (72) =** 8 Equal Desirable Crit

Underclearance, Vertical and Horizontal (69) = N **Scour Critical (113) =** 5 Stable w/in footing

LOAD RATING AND POSTING

Inventory Rating (66) = HS19.8 **Operating Rating (64) = HS29.8**

Posting status (41) = A Open, no restriction Posting (70) = 5 At/Above Legal Loads

Inventory Rating Method (65) = 1 LF Load Factor Operating Rating Method (63) = 1 LF Load Factor

Design Load (31) = 5 MS 18 (HS 20)

(29) ADT = 20,427	(114) Future ADT = 50,278	(109) Truck ADT = 15 %
(30) Year of ADT = 2011	(115) Year of Future ADT = 2031	Route Posted Speed Limit =

Team Leader ***Date*** ***Reviewed By*** ***Date***

New Mexico Department Of Transportation
Bridge Management Section — Bridge Inspection Report

(16) Latitude = 35d 19' 24"	(17) Longitude = 106d 33' 30"	(27) Year Built =1986
(22) Owner = State Highway Agency	(21) Custodian = State Highway Agency	(106) Year Reconstruct=Unknown
(42A) Type of Service on = 1 Highway	(42B)Type Service under= 5 Waterway	(35) Structure Flared = 0 No flare

(26) Functional Class = 14 Urban Other Princ	(100) Defense Highway = 1 Interstate STRAHNET
(37) Historical Significance =5 Not eligible for NRHP	(45) No. Of Spans In Main Unit = 8
(43A) Main Span Material/Design = 6 P/S Conc Continuous	(43B) Main Span Material/Design = 02 Stringer/Girder
(48) Length Max Span = 90.9 ft	(46) Number of Approach Spans = 0
(44A) Approach Span Material =	(44B) Approach Span Material =
(107) Deck Type = 1 Concrete-Cast-in-Place	(108C) Deck Protection = 1 Epoxy Coated Reinforci
(108A) Wearing Surface = 0 None	(108B) Membrane = 0 None
Min. Vertical Clearance Minus= 0	Min. Vertical 10' Selected Minus= 0
Min. Vertical Clearance Plus= 0	Min. Vertical 10' Selected Plus= 9999
(55) Minimum Lateral Undrclearance R = 0.0 ft	(56) Minimum Lateral Undrclearance L = 0.0 ft

Project No. = SR-GRF-033-1(204)	Old Bridge No. =	(47) Total Horiz. Clearance =39.0 ft
(51) Width Curb to Curb =39.0 ft	(52) Width Out to Out = 46.9 ft	(33) Median = 1 Open median
(32) Approach Roadway Width (w/ shoulders) = 36.0 ft		Known Utilities = C

Special Inspections:

(92A) FC Frequency =NA	(93A) FC Inspection Date = NA	Next UW Inspection = NA
(92B) UW Frequency = NA	(93B) UW Inspection Date = NA	Next FC Inspection = NA
(92C) SI Frequency =NA	(93C) SI Date = NA	Next SI = NA

TRAFFIC SAFETY FEATURES

Bridge Rail (36A) =	1 Meets Standards	Approach Rail (36C) =	1 Meets Standards
Transition (36B) =	1 Meets Standards	Approach Rail Ends (36D) =	1 Meets Standards

Stay In Place Forms =No	Stay In Place Form Type =N\A	Overlay Thickness =
Culver Fill = 0		

SIP Notes:
No SIP foms.

New Mexico Department Of Transportation
Bridge Management Section Bridge Inspection Report

Approach Roadway Condition:
PMBP with OGFC has transverse and longitudinal cracks up to 1/2" wide with some bleeding and light rutting. Asphalt shoulders Nateral filled embankments. Bridge signing: Rio Grande.

Channel and Channel Protection:
Natural, meandering, sandy bottom channel generally on a tangent at the bridge. Water flow isat the lowest point in many years. Wire enclosed rip-rap has localized settrlement.

Recommendations and Inspection Notes:
Long Term: 1. Replace all missing tie rod and anchor bolt nuts and washers and tighten existing. 2. Paint over graffiti. 3. Clean and flush deck and median. 4. Clear vegetation under bridge. 5. Repair joints.

Str Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
1	26/2	Conc Deck/Coatd Bars	(SF)	31,440	100 %	31,440	0 %	0	0 %	0	0 %	0	0 %	0
1	109/2	P/S Conc Open Girder	(LF)	3,435	100 %	3,435	0 %	0	0 %	0	0 %	0	0 %	0
1	210/2	R/Conc Pier Wall	(LF)	318	100 %	318	0 %	0	0 %	0	0 %	0	0 %	0
1	215/2	R/Conc Abutment	(LF)	92	100 %	92	0 %	0	0 %	0	0 %	0	0 %	0
1	219/2	CONC WINGWALL	(LF)	26	100 %	26	0 %	0	0 %	0	0 %	0	0 %	0
1	234/2	R/Conc Cap	(LF)	318	100 %	318	0 %	0	0 %	0	0 %	0	0 %	0
1	300/2	Strip Seal Exp Joint	(LF)	48	100 %	48	0 %	0	0 %	0	0 %	0	0 %	0
1	301/2	Pourable Joint Seal	(LF)	96	33 %	32	0 %	0	67 %	64	0 %	0	0 %	0
1	310/2	Elastomeric Bearing	(EA)	80	100 %	80	0 %	0	0 %	0	0 %	0	0 %	0
1	330/2	Metal Rail Uncoated	(LF)	699	100 %	699	0 %	0	0 %	0	0 %	0	0 %	0
1	331/2	Conc Bridge Railing	(LF)	700	100 %	700	0 %	0	0 %	0	0 %	0	0 %	0
1	336/2	RIP RAP AND GABIONS	(SF)	6,200	100 %	6,200	0 %	0	0 %	0	0 %	0	0 %	0
1	358/2	Deck Cracking SmFlag	(EA)	1	0 %	0	0 %	0	100 %	1	0 %	0	0 %	0

Str Unit	Elem/Env	Description	Element Notes
1	26/2	Concrete Deck - Protected w/ Coate	Numerous full-depth transverse cracks throughout up to 1/4" with moderate leaching on underside. Moderate traffic abrasion. Raised mountable median is largely delaminated from deck: intentional, as per plan "bond-breaker". Minor trash and debris build-up on surface of bridge.
1	109/2	P/S Conc Open Girder/Beam	Girders are in good condition.
1	210/2	Reinforced Conc Pier Wall	All units show vertical, horizontal and map cracks up to 1/8", some extend into caps. Up to 1" of horizontal) movement away from SB piers.
1	215/2	Reinforced Conc Abutment	Backwalls have random vertical cracks up to 1/8" with light leaching. A few wide transverse cracks across tops of backwalls. Facia walls show considerable honeycomb, some cracking. Breast walls have some vertical and horizontal cracking up to 1/16" with light leaching.
1	219/2	REINFORCED CONC WINGWALL/	Vertical and horizontal cracking on tops and sides of wingwalls
1	234/2	Reinforced Conc Cap	Cap at Pier 4 is heavily water stained.

New Mexico Department Of Transportation
Bridge Management Section Bridge Inspection Report

Str Unit	Elem/Env	Description	Element Notes
1	300/2	Strip Seal Expansion Joint	Joint at Pier 4 is Watson-Bowman extrusions and strip seal, good condition.
1	301/2	Pourable Joint Seal	Abutment joints are poured sealant. East joint has tear 4' long near south edge and 3' at the north edge. West abutment joint debonded along entire length of joint, 27' long.
1	310/2	Elastomeric Bearing	Bearing pads have been realigned. All sole plates corroded along with anchor bolts. Some anchor bolt nuts are loose.
1	330/2	Metal Bridge Railing - Uncoated	Painted steel pedestrian handrail has minor rust behind CBR with exposed rusted rebar in CBR.
1	331/2	Reinforced Conc Bridge Railing	CBR, right edge of driving lane has numerous vertical cracks.
1	336/2	WIRE ENCLOSED RIPRAP, RIPRA	Wire enclosed rip-rap with localized settlement.
1	358/2	Deck Cracking	Numerous full-depth transverse cracks throughout up to 1/4". Moderate traffic abrasion. Raised mountable median is largely delaminated from deck: intentional, as per plan "bond-breaker". Minor trash and debris build-up on surface of bridge.

PAST INSPECTION

Inspection Date: 04/27/2011 Type: 1 Regular NBI

Inspector: RSAMP00 Pontis User Key: RSAMP00 - REYNALDO SAMPAGA

Scope:

NBI: ☑ Other: ☐ Element: ☑

Underwater: ☐ Fracture Critical: ☐

INSPECTION NOTES

1. Weather Conditions: Clear, 60 degrees F. 2. NMSU Bridge Inspection team members: Reynaldo E. Sampaga, Andrew J. Giesler and Ramses S. Ortega. 3. Work Done Since Last Inspection: CBR has been patched. 4. Traffic Safety Features: Continuous CBR with tapered end sections.

New Mexico Department Of Transportation
Bridge Management Section — Bridge Inspection Report

PAST INSPECTION

Inspection Date: 04/27/2009 Type: 1 Regular NBI

Inspector: WDODG03 Pontis User Key: WDODG03 - WILL DODGE

Scope:

NBI: ☑ Other: ☐ Element: ☑

Underwater: ☐ Fracture Critical: ☐

INSPECTION NOTES

Inspection Performed by: Will Dodge Weather conditions at time of inspection Sunny, warm, 74° F±
Work Done Since Last Inspection: none
Immediate: Paint over graffiti, replace joints from 902 to evazote.
Short Term: paint railing, Thin deck epoxy overyay.
Long Term:: Replace all missing tie rod and anchor bolt nuts and washers. Tighten same.

PAST INSPECTION

Inspection Date: 04/03/2007 Type: 1 Regular NBI

Inspector: WDODG03 Pontis User Key: WDODG03 - WILL DODGE

Scope:

NBI: ☑ Other: ☐ Element: ☑

Underwater: ☐ Fracture Critical: ☐

INSPECTION NOTES

LMOLI03 inspection comments - Structure 000000000008540 - Date 2005-04-27 -
Inspection Performed by: Leroy Molina Weather conditions at time of inspection Sunny, warm, 74° F:
Work Done Since Last Inspection: none
Immediate: Paint over graffiti, replace joints from 902 to evazote.
Short Term: paint railing, Thin deck epoxy overyay.
Long Term:: Replace all missing tie rod and anchor bolt nuts and washers. Tighten same.

New Mexico Department Of Transportation
Bridge Management Section — Bridge Inspection Report

PAST INSPECTION

Inspection Date: 04/27/2005 Type: 1 Regular NBI

Inspector: LMOLI03 Pontis User Key: RSAMP00 - REYNALDO SAMPAGA

Scope:

NBI: ☑ Other: ☐ Element: ☑

Underwater: ☐ Fracture Critical: ☐

INSPECTION NOTES

LMOLI03 inspection comments - Structure 000000000008540 - Date 2005-04-27 -
Inspection Performed by: Leroy Molina Weather conditions at time of inspection Sunny, warm, 74° F:
Work Done Since Last Inspection Deck was cleaned, joints repaired with Dow Corning 902
Immediate: Paint over graffiti.
Short Term: Clean / flush deck and median.
Long Term:: Replace all missing tie rod and anchor bolt nuts and washers. Tighten same.

Previous comments > CHUGH03 inspection comments - Structure 000000000008540 - Date 2003-04-03 -
Work Done Since Last Inspection: None Apparent
Inspection Performed by: Conrad Hughes Weather conditions: Sunny, windy, 60d F
Recommendations:
Immediate: Repair both abutment joints. Retreat deck with HMWM.
Short Term: Clean / flush deck and median.
Long Term: Replace all missing tie rod and anchor bolt nuts and washers. Tighten same.

PAST INSPECTION

Inspection Date: 04/03/2003 Type: 1 Regular NBI

Inspector: CHUGH03 Pontis User Key: CHUGH03 - CONRAD HUGHES

Scope:

NBI: ☑ Other: ☐ Element: ☑

Underwater: ☐ Fracture Critical: ☐

INSPECTION NOTES

CHUGH03 inspection comments - Structure 000000000008540 - Date 2003-04-03 -
Work Done Since Last Inspection: None Apparent
Inspection Performed by: Conrad Hughes Weather conditions: Sunny, windy, 60d F
Recommendations:
Immediate: Repair both abutment joints. Retreat deck with HMWM.
Short Term: Clean / flush deck and median.
Long Term: Replace all missing tie rod and anchor bolt nuts and washers. Tighten same.

New Mexico Department Of Transportation
Bridge Management Section — Bridge Inspection Report

PAST INSPECTION

Inspection Date: 04/17/2001 Type: 1 Regular NBI

Inspector: PONTIS Pontis User Key: PONTIS - Pontis Pontis

Scope:

NBI: ☑ Other: ☐ Element: ☑

Underwater: ☐ Fracture Critical: ☐

INSPECTION NOTES

PONTIS inspection comments - Structure 000000000008540 - Date 4/17/01 -
Work Done Since Last Inspection: None Apparent
Inspection Performed by: Will Dodge Weather conditions: Sunny, warm, 69d F?
Recommendations:
Immediate Repair both abutment joints.
Short Term Clean / flush deck and median.
Long Term Replace all missing tie rod and anchor bolt nuts and washers.Tighten same.

PAST INSPECTION

Inspection Date: 03/01/1999 Type: 1 Regular NBI

Inspector: PONTIS Pontis User Key: SYS

Scope:

NBI: ☑ Other: ☐ Element: ☑

Underwater: ☐ Fracture Critical: ☐

INSPECTION NOTES

New Mexico Department Of Transportation
Bridge Management Section — Bridge Inspection Report

PAST INSPECTION

Inspection Date: 02/01/1997 Type: 1 Regular NBI

Inspector: PONTIS Pontis User Key: SYS

Scope:

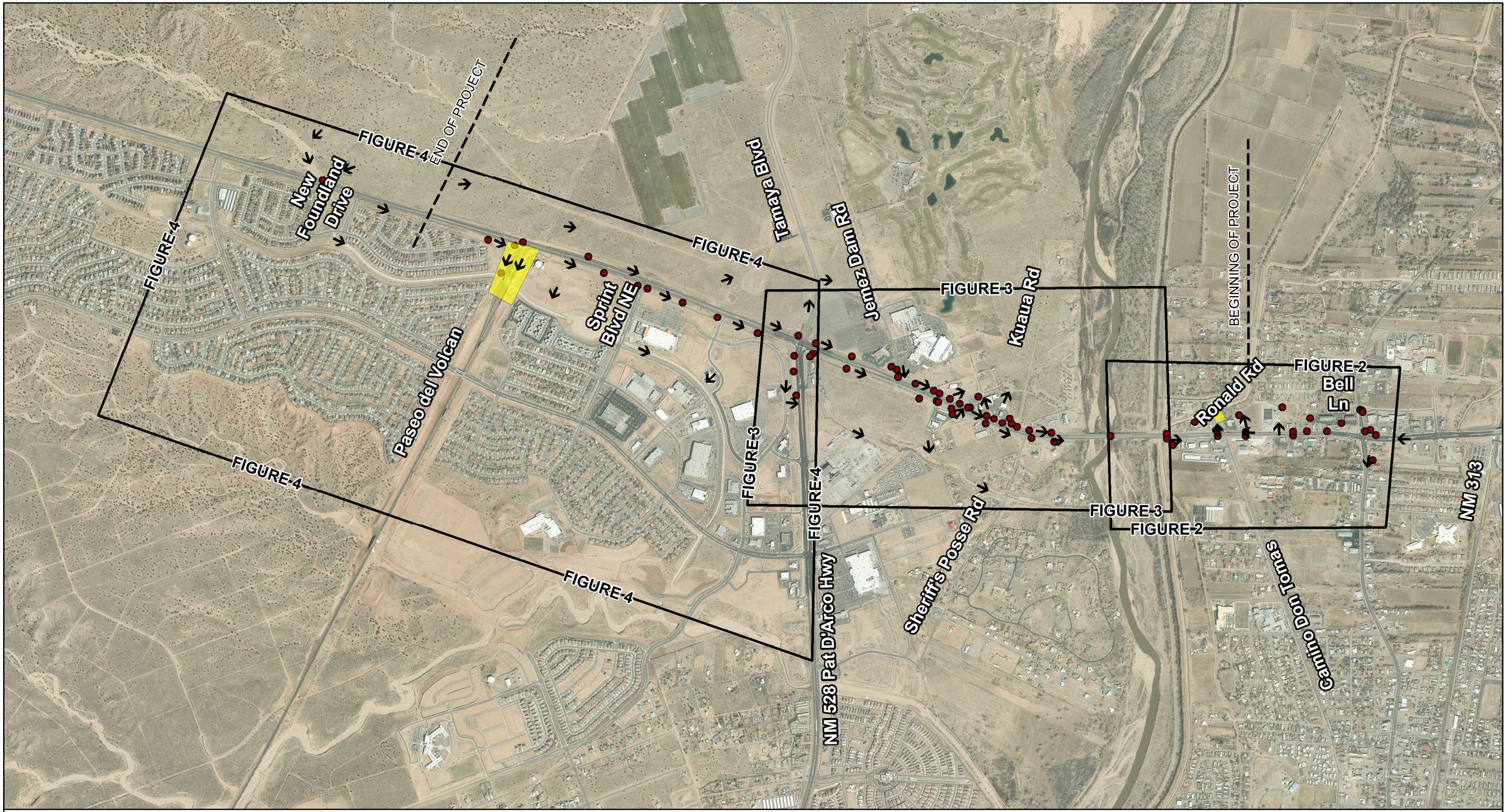
NBI: ☑ Other: ☐ Element: ☑

Underwater: ☐ Fracture Critical: ☐

INSPECTION NOTES

INSPECTOR WORK CANDIDATES

Appendix C-Existing Drainage Analysis



New Mexico DEPARTMENT OF TRANSPORTATION

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N W E S

0 750 1,500 3,000 Feet

Legend

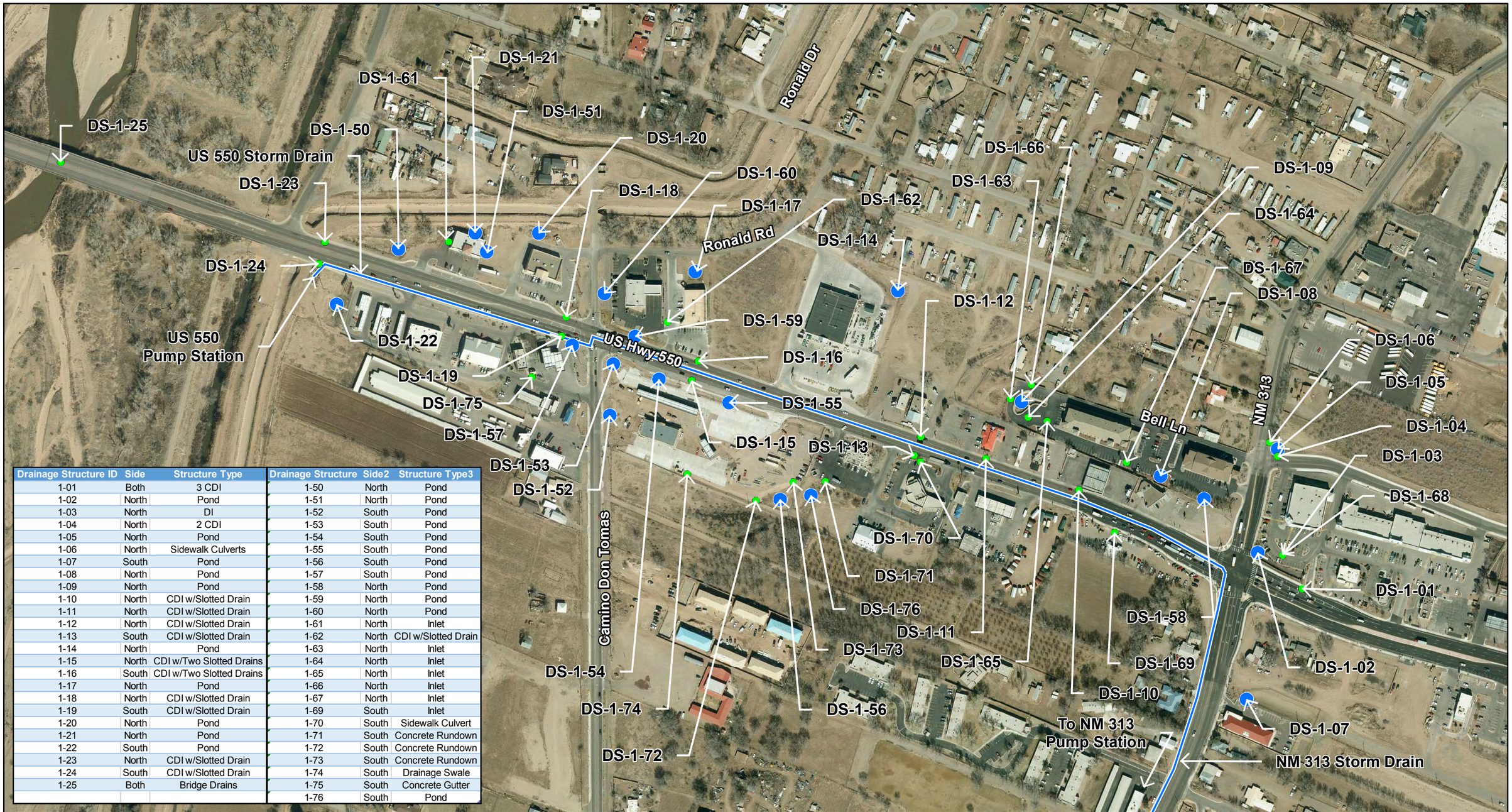
- Existing Runoff Flow Direction
- NMDOT Existing Areas of Concern
- Drainage Structures and Ponding Areas
- Figure Boundary

US 550 PHASE B REPORT

FIGURE 1
EXISTING DRAINAGE STRUCTURES
KEY MAP

P:\20150343\NMDOT-A301232\Existing\Drainage\Existing Drainage Figures\Figure1_KeyMap.mxd
Author: gmaynard

March, 2016



Drainage Structure ID	Side	Structure Type
1-01	Both	3 CDI
1-02	North	Pond
1-03	North	DI
1-04	North	2 CDI
1-05	North	Pond
1-06	North	Sidewalk Culverts
1-07	South	Pond
1-08	North	Pond
1-09	North	Pond
1-10	North	CDI w/Slotted Drain
1-11	North	CDI w/Slotted Drain
1-12	North	CDI w/Slotted Drain
1-13	South	CDI w/Slotted Drain
1-14	North	Pond
1-15	North	CDI w/Two Slotted Drains
1-16	South	CDI w/Two Slotted Drains
1-17	North	Pond
1-18	North	CDI w/Slotted Drain
1-19	South	CDI w/Slotted Drain
1-20	North	Pond
1-21	North	Pond
1-22	South	Pond
1-23	North	CDI w/Slotted Drain
1-24	South	CDI w/Slotted Drain
1-25	Both	Bridge Drains

Drainage Structure	Side2	Structure Type3
1-50	North	Pond
1-51	North	Pond
1-52	South	Pond
1-53	South	Pond
1-54	South	Pond
1-55	South	Pond
1-56	South	Pond
1-57	South	Pond
1-58	North	Pond
1-59	North	Pond
1-60	North	Pond
1-61	North	Inlet
1-62	North	CDI w/Slotted Drain
1-63	North	Inlet
1-64	North	Inlet
1-65	North	Inlet
1-66	North	Inlet
1-67	North	Inlet
1-69	South	Inlet
1-70	South	Sidewalk Culvert
1-71	South	Concrete Rundown
1-72	South	Concrete Rundown
1-73	South	Concrete Rundown
1-74	South	Drainage Swale
1-75	South	Concrete Gutter
1-76	South	Pond

New Mexico DEPARTMENT OF TRANSPORTATION

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N W E S

0 150 300 600 Feet

Legend
- Drainage Features
- Ponds
- Storm Drain

US 550 PHASE B REPORT

FIGURE 2
EXISTING DRAINAGE STUCTURES
RIO GRANDE to NM 313

P:\20150343\NMDOT-A301232\Existing\Drainage\Existing Drainage Figures\Figure2_NM313-RGR.mxd
Author: gmaynard

March, 2016

Drainage Structure-Location Related to US 550

Drainage Structure ID	Approx. Station	Side	Structure Type
2-01	134+50	South	1-18" CMP
2-02	130+00 to 138+00	South	Ditch
2-03	128+50 to 139+50	North	Ditch
2-04	134+25 to 135+00	North	1-24" CMP
2-05	128+00 to 128+50	North	1-Arch CMP
2-06	126+00 to 128+00	North	Ditch
2-07	125+40 to 126+00	North	1-24" CMP
2-08	126+00 to 127+00	North	Pond
2-09	123+00 to 125+40	North	Ditch
2-10	122+50 to 123+00	North	1-24" CMP
2-11	122+75 to 123+25	South	1-18" CMP
2-12	118+50 to 122+50	North	Ditch
2-13	120+00 to 121+00	North	Pond
2-14	119+75	Crossing	1-6' x 4' CBC
2-15	119+00 to 120+50	South	Pond
2-16	118+00 to 118+50	North	1-24" CMP
2-17	117+50	South	2-42" CMP
2-18	115+00	South	Concrete Rundown
2-19	114+50	South	2-42" CMP
2-20	115+25 to 118+00	North	Ditch
2-21	114+25 to 115+25	North	1-30" CMP
2-22	112+50 to 114+25	North	3 Drop Structures
2-23	108+25 to 112+50	North	Ditch
2-24	108+00 to 114+50	South	Ditch
2-25	107+25 to 108+25	North	3-Arch CMP
2-26	107+25	North	Ditch
2-27	105+00 to 107+00	North	Pond
2-28	94+60 to 104+75	North	24" HDPE Culvert
2-29	94+00 to 107+00	South	Ditch
2-30	92+25 to 94+60	North	Ditch
2-31	93+50	South	1-36" CMP
2-32	94+00	South	Rundown

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N W E S

0 200 400 800 Feet

Legend
- Existing Pond
- Existing Ditches

US 550 PHASE B REPORT

FIGURE 3
EXISTING DRAINAGE STUCTURES
NM 528 to RIO GRANDE

P:\20150343\NMDOT-A301232\Existing\Drainage\Existing Drainage Figures\Figure3_RGR-NM528.mxd
Author: gmaynard

March, 2016

Drainage Structure-Location Related to US 550

Drainage Structure ID	Approx. Station	Side	Structure Type
3-01	91+50	South	RCP
3-02	90+50	South	Ditch
3-03	91+00 to 93+00	South	1-36" CMP
3-04	90+50 to 92+50	North	1-18" CMP
3-05	79+00 to 91+00	South	Ditch
3-06	78+00 to 79+00	South	1-30" CMP
3-07	65+50 to 78+00	South	Ditch
3-08	65+25	South	Concrete Rundown
3-09	64+00 to 65+50	South	1-24" CMP
3-10	47+00 to 64+00	South	Ditch
3-11	42+50 to 90+50	North	Ditch
3-12	43+00	South	Drop Inlets
3-13	43+50	South	Riprap Rundown
3-14	43+50	Roadway	Inlets
3-15	18+00 to 44+00	South	Ditch
3-16	11+50	Crossing	CBC

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N E S W

0 250 500 1,000 Feet

Legend

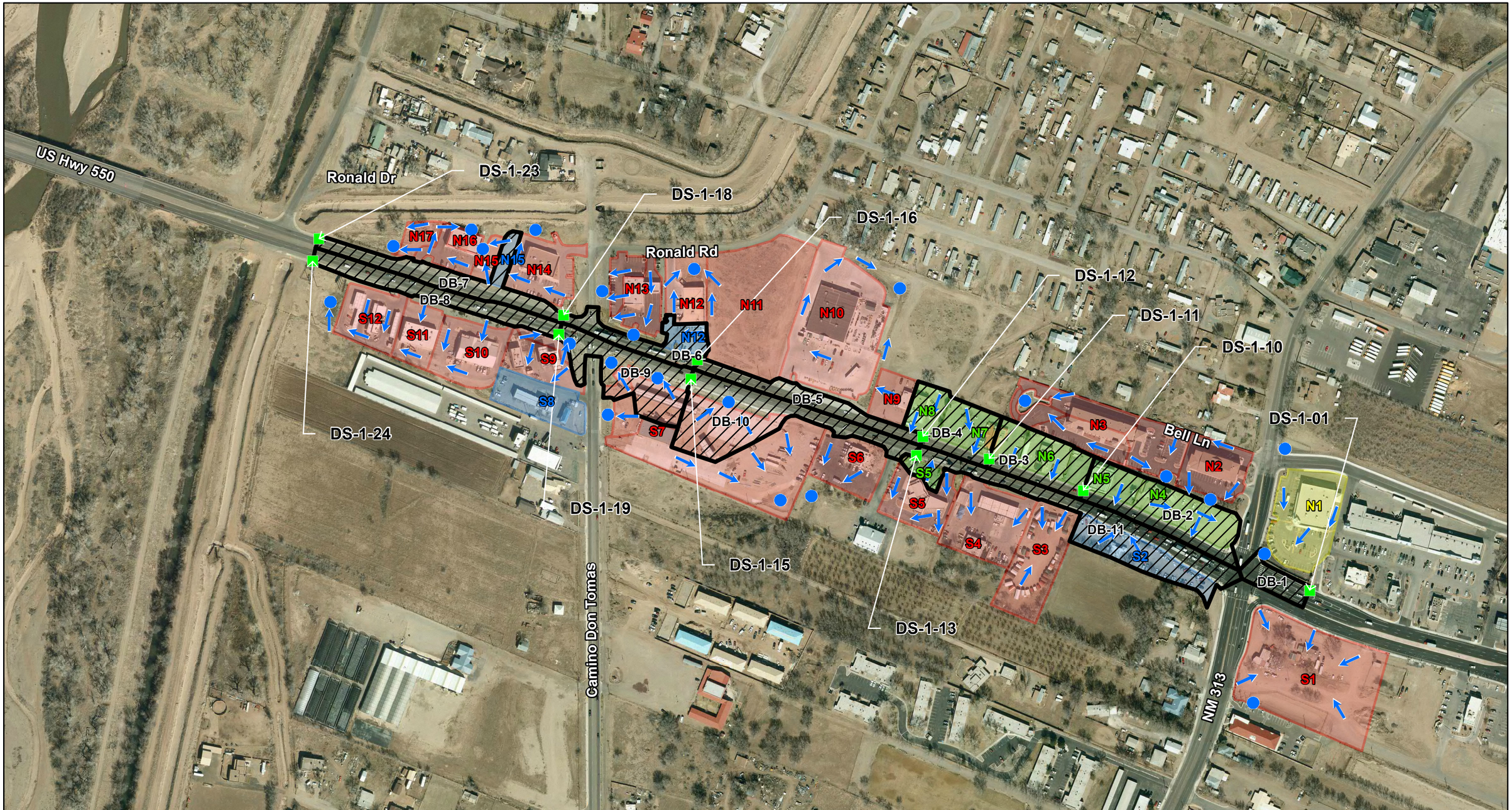
Existing Ditches

US 550 PHASE B REPORT

FIGURE 4
EXISTING DRAINAGE STUCTURES
PASEO DEL VOLCAN to NM 528

P:\20150343\NMDOT-A301232\Existing\Drainage\Existing Drainage Figures\Figure4_NM528-PDV.mxd
Author: gmaynard

March, 2016



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N W E S

0 150 300 600 Feet

Legend

Drainage Structure Points
- Storm Drain Inlets
- Pond
- Flow Direction
- US550 Basins

Type of Drainage
- Retention
- Detention
- Drains to Hwy 550
- Private Inlet w/ Unknown Outlet

X0 - Lot ID (See Detailed Evaluation of Alternatives for Discussion)

US 550 PHASE B REPORT

FIGURE 5
DRAINAGE PATTERNS
AND BASIN MAP
RIO GRANDE to NM 313

P:\20150343\NMDOT-A301232\Existing\Drainage\Existing Drainage Figures\Figure5_Flow.mxd
Author: gmaynard

March, 2016

Project Title: US Hwy 550 Frontage Pond Reconnaissance
Project #: 20151343
Engineer: Cameron Herrington
Date 2/17/2016

Evaluation of Potential Right-of-Way Takes on Existing Drainage Infrastructure

Location	Sub-Basin ID	Type of Ponding	Pond Location (s)	Notes	Potential Impacts by ROW Expansion
Northside Lots Facing US Hwy 550					
Walgreens	N1	Detention/Retention	Pond #1-South of pkg. lot; Pond #2 - North of bldg.	Pond #1 is a detention pond with riser that accepts flow from the west side of Hwy 313, the Walgreens pkg. lot via a drop inlet, drains a portion of the pkg. lot to the east and has a fourth pipe penetration that leads out to the southeast to an unknown location. Pond #2 is a retention pond that accepts flows from Bell Ln. and Hwy 313 through a series of sidewalk culverts.	Traffic lanes have already been extended in this location; impacts to ponding areas are not expected.
Days Inn	N2	Retention[1]	Pond #1 - South boundary of lot. Pond #2 - West side bordering Holiday Inn Express.	Pond #1 is a retention pond that accepts flows from the Days Inn pkg. lot via a curb cut at the southwest end of the parking area. Pond is fairly shallow (~3 to 4 ft. deep) and overgrown with vegetation. Pond #2 is a retention pond that has a single pipe penetration leading into it from a drop inlet in the Holiday Inn Express pkg. lot. Flows from Days Inn do not enter this pond.	Neither of these ponds would be encroached upon by a ROW expansion.
Holiday Inn Express	N3	Retention[1]	Pond #1 - East side bordering Days Inn. Pond #2 - West side of lot.	Pond #1 is the same retention pond discussed in the Days Inn notes above (Pond #2). Pond #2 is a large retention pond with four pipe penetrations leading into it from the Holiday Inn Express pkg. lot via drop inlets installed in the parking area.	Neither of these ponds would be encroached upon by a ROW expansion.
Metro PCS	N4	None	Not applicable.	This lot is located on the northwest corner of Hwy 550 and Hwy 313. There is no ponding on the lot and water appears to sheet flow through the drive entrance.	Lot drainage is not impacted by ROW expansion.
Cash 4 Titles	N4	None	Not applicable.	No ponding along the frontage of Hwy 550 and flows appear to remain on site. No storm drain facilities on site.	Lot drainage is not impacted by ROW expansion.
Ice Machine - Vacant Lot	N5	None	Not applicable.	Landscape strip along Hwy 550 frontage is depressed and collects rainwater but does not allow sheet flow into the depression (no curb cut). Building is vacant.	Lot drainage is not impacted by ROW expansion.
Filiberto's	N6	None	Not applicable.	Lot is flat on the eastside and water remains onsite. Lot is graded on the westside to drain out of the drive entrance and into Hwy 550. The bldg. footprint lies within approx. 12 feet of the back-of-sidewalk and would limit ROW.	ROW expansion will likely encroach upon the building footprint at this location, however drainage patterns are not likely to change.
Pizza Hut	N7	None	Not applicable.	Lot is graded to sheet flow south towards drive entrances on each side of the building. This building is setback further than Filiberto's from the sidewalk. Flow appears to concentrate in southwest corner of the parking lot.	Lot drainage is not impacted by ROW expansion.
Ranch Market	N8	None	Not applicable.	Flows may remain onsite but appear to be directed to the drive entrance once they accumulate. Lot does not contain any drainage features.	Lot drainage is not impacted by ROW expansion.
Subway	N9	Retention[1]	Pond is located to the west of the lot and extends northwards then westwards behind Tractor Supply.	Sheet flow runs west and south from parking lot and enters the pond as sheet flow through a gravel lined pond edge. Flows then move northwards into the larger ponding area that is contained in sub-basin N10.	ROW expansion may impact the size of this pond at its southern extent (minimal impact).
Tractor Supply	N10	Retention[1]	Pond is located at the northeast corner behind the building.	Sheet flow runs west and north around the building then to the east and enters the retention pond behind the buildings footprint. Water here joins flows from the Subway parking lot and from the vacant lot that is north of subway and adjacent to this pond.	This retention pond seems to be sized sufficiently but might lose some volume at its southernmost extent due to ROW expansion (same pond that is referred to above, N-9).
Vacant Lot	N11	None	Not applicable.	Sheet flows towards pond in N12.	Lot drainage is not impacted by ROW expansion.
AutoZone	N12	Retention[1]	Pond is located on the northside of the building.	The retention pond collects roof flow from the building that enters via a series of roof drains into a concrete gutter system on the east side of the building. Flows to the west of the building are collected in a storm drain drop inlet that is located in the parking lot between AutoZone and US West bank. Flow in the south parking lot is collected by a separate storm drain drop inlet in the parking lot with an unknown outfall.	Lot drainage is not impacted by ROW expansion.
US Bank	N13	Retention[1]	Pond is located on the western and southern boundary of the lot with Hwy 550.	Flows on the eastern half of the lot are directed to the storm drain drop inlet between this lot and AutoZone. Flows on the western side of the lot are directed into a ponding area via curb cuts that runs along the western boundary (continuous pond with the southern ponding area). Flows in the south parking lot enter the ponding area along Hwy 550 via curb cuts in the southwest and southeast corners of the parking lot.	ROW expansion would likely result in the loss of the southern ponding area of this lot based on estimated ROW takes.
O'Reilly	N14	Retention[1]	Pond is located on northern boundary of the lot.	Sheet flow is directed north to a concrete rundown at the northwest corner of the lot where it enters a retention pond.	Lot drainage is not impacted by ROW expansion.
Church's Chicken	N15	Retention[1]	Pond #1 - Sheet flow enters pond through curb penetration and combines with O'Reilly pond to the northeast. Pond #2 - Located on the northwest portion of the lot.	Flows on the east side flow north to the O'Reilly detention pond. South and west parking lots are graded to flow northwest to the second retention pond via curb cuts. Drive thru flows enter this same pond also through curb cuts.	Lot drainage is not impacted by ROW expansion.

Kelly's Liquor	N16	Retention[1]	Not applicable.	Flows are directed west and north to a storm drain drop inlet in the parking lot to the west of the building.	Lot drainage is not impacted by ROW expansion.
Little Ceasar's	N17	Retention[1]	Pond is located on the western boundary of the lot.	Flows are directed to the retention pond via curb cuts in the southwest and northwest portions of the lot.	ROW expansion may result in a loss of pond volume at the pond's southern extent.
Southside Lots Facing US Hwy 550					
Sonic	S12	Retention[1]	Pond is located on the western boundary of the lot.	Water flows south through the lot and enters the retention pond via a concrete rundown at the southwest corner. Landscape barrier along Hwy 550 frontage is not graded to accept flows.	Lot drainage is not impacted by ROW expansion.
Wash Tub Laundromat	S11	None	Not applicable.	Landscape strip along Hwy 550 frontage is depressed and collects rainwater but does not allow sheet flow into the depression (no curb cut). Sheet flow is conveyed south to the alley way and carried west to the Sonic pond.	Lot drainage is not impacted by ROW expansion.
Guang Dong/Pharmacy	S10	None	Not applicable.	Landscape strip along Hwy 550 frontage is depressed and collects rainwater but does not allow sheet flow into the depression (no curb cut). Sheet flow is conveyed south to the alley way and carried west to the Sonic pond.	Lot drainage is not impacted by ROW expansion.
Conoco	S9	Retention[1]	Pond is located on the northeast corner at Hwy 550 and Camino Don Tomas.	Majority of site drains south to a concrete gutter that flows into the car wash area. There is a small detention pond located on the northeast corner of the lot at Camino Don Tomas that accepts a small portion of flow from the gas station lot via a curb cut.	ROW expansion may impact a portion of the retention pond's volume.
Car Wash	S8	None	Not applicable.	Flows are directed west through curb cuts and eventually outfall into the Sonic pond. Car wash stalls are all outfitted with a storm drain drop inlet (7 total); the outfall of these inlets is unknown, however, the lot is setback considerably from HWY 550 and flows are not believed to be discharged to the 550 storm drain system.	Lot drainage is not impacted by ROW expansion.
Valero	S7	Retention[1]	Pond #1 is located on the western edge of the lot. Pond #2 is located on the northwest edge. Pond #3 and #4 are located on the northern edge. Pond #5 is located at the southeast corner.	A portion of the western site flows enter Pond #1 via a series of curb cuts. Flows south of Pond 1, (the southwest portion of lot) are directed east to Pond #5 and enter through a concrete rundown. Sheet flow at the northern portion of the lot flows into Ponds #3 and #4 via curb cuts. Flow at the eastern side both flows northwest to Pond #4 and southeast to Pond #5 entering through a concrete rundown that ties to the parking lot. There is an additional depressed landscaping area at the northeast corner of the lot that has no curb cuts and does not accept sheet flow.	Ponds #2, #3 and #4 have the possibility of being impacted by ROW expansion.
Blake's Lotaburger	S6	Retention[1]	Pond located at the southwest edge of the lot.	Flows are directed south and west to the retention pond and enter via a concrete rundown. Landscaped areas along the Hwy 550 frontage are elevated and will not accept flow.	Lot drainage is not impacted by ROW expansion.
Wells Fargo	S5	None	Not applicable.	The northern parking area drains directly to Hwy 550 via a sidewalk culvert through the landscape area. All other flows are directed south towards a laundromat that is behind the building.	Lot drainage is not impacted by ROW expansion.
Chevron	S4	None	Not applicable.	Flows pond onsite in the parking area and south to mechanics building behind the gas station.	Lot drainage is not impacted by ROW expansion.
Weather King Buildings	S3	None	Not applicable.	Flows pond onsite and site is not graded to drain.	Lot drainage is not impacted by ROW expansion.
Car Dealership	S2	None	Not applicable.	Flows drain to a storm drain drop inlet that is located in the parking lot to the north of the building. The outfall of this inlet is unknown, however, given its proximity to HWY 550 it is believed that they could be discharged into the 550 storm drain system.	Lot drainage is not impacted by ROW expansion.
Open - Vacant Lot	S1	Retention[1]	Pond is located along southern-western edge of lot.	Flows pond onsite. The retention pond on the site accepts flows from a pipe penetration underneath Hwy 313 to the west but does not accept site flows.	Lot drainage is not impacted by ROW expansion.

Notes:
1. These ponds are labeled as "retention" since there was no visible outlet pipe or riser contained within them; as-built construction drawings were not available to confirm their operation.

Appendix D-Rio Grande Existing Bridge Scour Analysis

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MEMORANDUM

DATE: July 15, 2015

TO: Joe Casares, NMDOT

FROM: Scott Armstrong, PE

SUBJECT: **US 550 Rio Grande Bridge Scour Analysis**

Introduction

Total scour at a bridge considers three primary components: long-term degradation of the riverbed, contraction scour at the bridge, and local scour at the piers or abutments. The analysis presented in this memo looks at the contraction scour and local pier and abutment scour for the existing US 550 Bridge. This analysis does not include the first component, long-term degradation, or aggradation, of the Rio Grande in the vicinity of the US 550 Bridge since that is beyond the scope of this project.

The goal of this analysis is to determine the extent of anticipated scour at the existing US 550 Bridge and determine if the calculated scour is greater than the bridge, design allows.

Hydrology

The HEC-RAS model for the US 550 Bridge scour analysis uses the hydrology provided to BHI by the U.S. Army Corps of Engineers (USACE) from a report titled "Middle Rio Grande Flow Frequency Study Combined Peak Flow Frequency Curve Rio Grande near Bernalillo," March 2010. In this report, "Peak flows in the Middle Rio Grande are caused by snowmelt and rainfall upstream of Cochiti dam and from intense rainfall on areas downstream of the dam" (p. 1). From this report, the estimated Combined Peak Flow Frequency Curve at the Rio Grande near Bernalillo Gage for the 100-year event (1 percent chance exceedance) is 19,900 cfs and for the 500-year event (0.2 percent chance exceedance) is 27,800 cfs. In accordance with New Mexico Department of Transportation (NMDOT) Design Criteria, these two flow rates were used to model the scour at the US 550 Bridge.

Initial Hydraulics Model for the Rio Grande at the US 550 Bridge

The HEC-RAS model provided by NMDOT for the Rio Grande had an upstream limit about 4,000 feet downstream of the US 550 Bridge. There was difficultly obtaining a HEC-RAS model for the Rio Grande in the vicinity of the US 550 Bridge due to Pueblo ownership/control of the information. As a result, BHI was required to locate and review a 2002 HEC-RAS model of the Rio Grande. This 2002 model was originally obtained from the USACE with river cross sections based on U.S. Bureau of Reclamation (USBOR) 2002 survey lines and extends from the Isleta Diversion Dam to two to three miles upstream of Angostura Diversion Dam. River cross sections in this HEC-RAS model are based on the NAD83 / NAVD88 datum. No edits were made to the 2002 model regarding Manning's n values, channel bank stations, or contraction/expansion

coefficients. BHI compared this model to the model supplied by NMDOT for similar cross-sections downstream of the bridge. Given that the 2002 model included the reach of the river including the bridge, and that the downstream cross-section comparison indicated the models were relatively consistent, BHI recommended using the 2002 model. The NMDOT concurred and directed BHI to utilize the 2002 HEC-RAS model.

Existing Bridge Information

The US 550 Bridge was added to the HEC-RAS model using the bridge as-built plans provided by NMDOT. The as-built plans are for "SR44 over Rio Grande," NMP, SP-GRF-033-1(204), Bridges 8537 and 8540. The seven (7) bridge piers and two abutments were added to the model based on the as-built plans. The datum is not listed on the plan set, but based on the design time frame (1984) and as-built year (1986), NAD27 / NGVD29 was assumed as the bridge datum. Bridge as-built elevations (deck/roadway data, pier, and pile cap elevations) were converted to the NAD83 / NAVD88 datum by adding 2.8 feet to the as-built elevations before adding the bridge elevations to the HEC-RAS model.

Old Bridge Pier Remnants

A site visit and discussions with NMDOT revealed that several old bridge pier remnants remain in place at the US 550 Bridge. Two of the old piers are visible, see photo below. Several plan sets provided by the NMDOT provided information on the location and general configuration of the old bridge piers. The locations of the original construction of the old piers are shown on sheets 4-24 and 4-26 of the bridge as-built plans as well as on several of the pier detail sheets. However, no documentation was provided from NMDOT that identifies which, if any, piers were removed during construction of the existing bridge.

Photo 1: US 550 Bridge Looking Upstream at Piers 3 and 4

The existence of these old piers has the potential to impact scour at the bridge. As a result, all of the old piers, with an assumed remnant height, were added to the HEC-RAS US 550 bridge. The following information was used for modeling the old bridge piers in HEC-RAS.

- Old piers spaced 49 feet apart (center to center).
- Spacing relative to existing piers determined from as-built plans of existing bridge and site visit photos.
- HEC RAS models the old pier and pile cap width as a consistent 5-foot width. Actual pier width is 3 feet and actual pile cap width is 7 feet per the old bridge (bridge 1736) as-builts. This minor discrepancy will have minimal impact on the velocity profiles. BHI used the actual as-built widths for the spreadsheet pier scour analysis calculations.
- Bottom of the pile cap determined to be at elevation 5039.8 feet NGVD29 based on as-built plans provided by NMDOT and were converted to 5042.6 feet NAVD88.
- Remnant pier height / elevations were estimated from recent photos showing the exposed pile cap of pier #3 with respect to the water surface elevation (WSEL). WSEL was assumed to be 1.5 feet below the top of pier # 3's pile cap, which allows an estimate of the WSEL during the site visit of 5048.7 feet. Maximum height of remnant piers is assumed to be 4 feet above the WSEL such that the maximum remnant pier elevation is 5052.7 feet for modeling purposes.

Bed Material Parameters

At this point in the US 550 project, specific soil gradation for the Rio Grande at the US 550 Bridge has not been obtained. Review of the as-built bridge plans (by BHI and Terracon) revealed that the bridge boring logs are too general to determine soil gradation. BHI located bed material gradation data for the Rio Grande at Bernalillo in the "Geomorphic and Sedimentologic Investigation of the Middle Rio Grande Between Cochiti Dam and Elephant Butte Reservoir," Mussetter Engineering, Inc., June 2002. Table 3.4 (p. 3.53) has a D_{50} value at Bernalillo in 1998 as 6.13 mm. The report shows the trend from 1970 to 1998 of bed material coarsening from Cochiti Dam to Bernalillo. Scour analysis also requires a value for D_{95}. A D_{95} value of 9 mm was assumed based on information in the above referenced report. A sensitivity analysis for the scour analysis to the soil gradation was performed using D_{50} and D_{95} values +/- 15 percent. Scour analysis HEC-RAS results were insensitive to a +/- 15 percent change in D_{95} and the D_{50} as shown in Table 1 below for the critical location.

Table 1: Scour D_{50} and D_{95} Sensitivity Results

D_{50} (mm)	Contraction Scour (ft.)	Abutment Scour (ft.)
5.21	1.9	16.1
6.13	1.9	16.1
7.05	1.5	16.1
D_{95} (mm)	Contraction Scour (ft.)	Abutment Scour (ft.)
7.65	1.9	16.1
9.00	1.9	16.1
10.35	1.9	16.1

*For D_{50} sensitivity, D_{95} was held constant at 9.00mm, and for D_{95} sensitivity, D_{50} was held constant at 6.13mm.

Bridge Scour Analysis Methods and Assumptions

The HEC-RAS model 4.1.0 was used for the scour analysis. HEC-RAS uses the methods and equation from the Hydraulic Engineering Circular No. 18 (HEC No. 18, FHWA, 2001) to calculate scour. In addition, BHI reviewed and utilized the equations in the April 2012 Publication No. FHWA-HIF-12-003, Hydraulic Engineering Circular No. 18 (HEC No. 18), Evaluating Scour at Bridges, Fifth Edition. Contraction scour is calculated the same between both the 2001 (4th Edition) and 2012 (5th Edition) HEC No. 18 versions. Pier scour is also calculated using the same equations in the 2001 and 2012 HEC No. 18 versions, though the 2012 version presents the Florida DOT bridge scour method that is not included in the current HEC-RAS version. Similarly, local scour at abutments is calculated using the same equations in the 2001 and 2012 HEC No. 18 versions, though the 2012 version presents a NCHRP 24-20 Abutment Scour Approach that is not available in HEC-RAS program.

It is important to remember that the equations used for bridge scour analysis in HEC No. 18 are a one-dimensional modeling of a complex, dynamic, three-dimensional system and therefore must be evaluated understanding the limitations of the analysis.

HEC-RAS was used to compute contraction and abutment scour, whereas the pier scour was computed using a spreadsheet. The pier scour spreadsheet is based on Section 7.5 of the HEC No. 18 2012 version methodology to compute scour for a complex pier with scour occurring along the pier stem, pile cap, and pier piles. Within this method, there are two cases available for pile cap scour where, Case 1 – bottom of the pile cap is in the flow and above the riverbed and Case 2 – bottom of the pile cap is located on or below the riverbed. Case 2 was selected as the preferred method as a result of the field investigation that revealed an exposed pile cap.

Flow distribution was utilized in HEC-RAS to obtain more representative velocity and flow depth distributions along the approach section of the model. Flow distributions were oriented such that each of the existing bridge piers (not the remnant piers) was centered along a uniform velocity profile. The following assumptions were populated into the Bridge Scour Hydraulic Design Function of HEC-RAS.

- D_{50} = 6.13mm (Assuming one soil horizon for the entire scour depth)
- D_{95} = 9.00mm
- Water temperature assumed to be 60° F based on reviewed records
- Contraction scour
    - Equation set to default to compute the most conservative result
    - Remaining information populated by HEC-RAS based on modeling results
- Abutment scour
    - K1 set to 1.00 – Representing a vertical abutment
    - Skew set to 90
    - Equation set to default to compute the most conservative result
    - Remaining information populated by HEC-RAS based on modeling results
- No debris was modeled in the HEC-RAS or spreadsheet scour calculations

Following the flow distribution modeling, the maximum velocity and associated water depth were populated in the spreadsheet to compute pier scour. Pier #4 was determined to be the most critical pier for scour analysis as a result of site investigations that revealed an adjacent remnant partial pier that would result in a larger effective width of the pier during computations. For assumptions related to pier scour, see the attached spreadsheet results.

Bridge Scour Analysis Results

Contraction scour results from HEC-RAS with the assumptions mentioned above are shown in Table 2 below. Abutment scour depths are shown below in Table 3. Based on guidance provided in HEC No. 18, contraction scour and abutment scour are additive, and the additive values are shown below in Table 4.

Table 2: Contraction Scour Results from HEC-RAS

	100-yr			500-yr		
Contraction Location	Left Overbank	Channel	Right Overbank	Left Overbank	Channel	Right Overbank
Scour Depth (ft.)	0.0	1.9	--	0.0	2.3	--
Controlling Equation	Clear Water	Live Bed	No Conveyance – Ineffective Flow Area	Clear Water	Live Bed	No Conveyance – Ineffective Flow Area

Table 3: Abutment Scour Results from HEC-RAS

	100-yr		500-yr	
Abutment	Left	Right	Left	Right
Scour Depth (ft.)	10.7	16.1	16.4	18.4
Controlling Equation	HIRE	Froelich	HIRE	Froelich

Table 4: Total Additive Abutment Scour Results from HEC-RAS

	100-yr		500-yr	
Abutment	Left	Right	Left	Right
Scour Depth (ft.)	12.6	18.0	18.7	20.7

Based on guidance in HEC No. 18 for complex pier scour, total complex pier scour is additive of pier, pile cap, and pile group scour depths. Total pier scour results for the 100-year event from the spreadsheet show the maximum scour expected from the bottom of the pile cap is 12.2 feet. To obtain the total expected scour, contraction scour and local pier scour should be added to obtain a total scour depth of 14.1 feet for the 100-yr event. This total scour depth does not include long-term bed degradation or aggradation. Results for complex pier scour analysis are presented below in Table 5.

Table 5: Complex Pier Scour Results from Spreadsheet

	100-yr			500-yr		
Scour Location	Pier Stem	Pile Cap	Pile Group	Pier Stem	Pile Cap	Pile Group
Scour Depth (ft.)	0.1	8.6	3.5	0.1	8.9	3.6
Total Complex Pier Scour (ft)	12.2			12.6		
Total Additive Scour Including Contraction (ft)	14.1			14.9		

Results Compared to Existing Bridge As-Builts

The existing bridge as-built plans have "Waterway Data" provided on sheets 4-25 and 4-26. The plans state scour is 17.4 feet. There is not any additional information on how this was calculated or where it applies. Therefore, we have assumed that this applies to the whole bridge (each pier and each abutment) and is relative to the finished ground elevation under the bridge shown in the as-built plan set. Given this information and assumptions, we assume that the bridge was structurally and hydraulically designed to accommodate the listed 17.4 feet of scour.

Based on site visit observations, the left (east) abutment is intact with no apparent scour. The scour calculations are assumed to occur from the ground elevation, matching the assumptions of the as-built plans. As a result, the scour depths listed in Table 4 are directly comparable to the as-built bridge scour depth. The 100-year scour depth (12.6 feet) is less than, and the 500-year scour depth (18.7 feet) is within 10 percent, an acceptable range, of the as-built bridge scour of 17.4 feet.

The right (west) abutment was not inspected for this project; however, review of the NMDOT 2015 Bridge Inspection Report notes that there is undermining in the Northwest corner of the abutment. The river thalweg does not currently flow adjacent to this abutment and this undermining could be a function of roadway ditch drainage flowing from the west toward the river. This issue was not investigated or modeled as part of this bridge scour analysis. For this analysis, it is assumed that NMDOT will correct the noted undermining in their inspection report and the scour calculations are assumed to occur from ground elevation, matching the assumptions of the as-built plans. As a result, the scour depths listed in Table 4 are directly comparable to the as-built bridge scour depth and the 100-year (18 feet) and 500-year (20.7 feet) scour depths are within 10-20 percent, an acceptable range, of the as-built bridge scour of 17.4 feet.

For the piers, site visit observations showed the pile cap exposed at one pier. The as-built plans were reviewed to determine the ground elevation under the bridge. Review of the profiles on sheets 4-24, 4-25, and 4-26 were used to estimate 5 feet of ground cover above the bottom of the pile cap (2.5 feet for the pile cap height and 2.5 feet of the pier is buried). Using the as-built scour value of 17.4 feet, this would imply that in as-built conditions, the bridge design assumed scour would extend 12.4 feet below the bottom of the pile cap. Based on site visit observations and to be conservative in the calculations, the scour calculations for this analysis are assumed to

occur from the bottom of the pile cap. The calculated values in this analysis (Table 5) are within 15 to 20 percent, an acceptable range, of the as-built bridge scour of 12.4 feet below the pile cap.

Recommendations

The scour analysis calculations performed for the existing US 550 bridge are within 10 to 20 percent of the as-built listed scour depth of 17.4 feet. Therefore, assuming that the existing bridge was correctly designed and built to accommodate the stated 17.4 feet of scour, the calculations from this analysis show that scour is within the acceptable range for the existing US 550 Bridge.

As the US 550 project progresses, NMDOT should keep in mind that scour analysis of a new US 550 bridge will be required. Even if the existing bridge remains with a new bridge added upstream, a change in hydraulic conditions would warrant a re-evaluation of the scour for the existing bridge. Future scour analysis can be improved with site-specific soil gradation data through the entire bridge foundation horizon and the addition of a review of long-term degradation/aggradation scour component at the US 550 Bridge.

SA/le
Attachments

cc: Jeanette Walther, BHI
Sarah Ganley, BHI

ATTACHMENT 1

Hydrology Report Used for US 550 Existing Bridge Scour Analysis

US Army Corps of Engineers
Hydrologic Engineering Center

Mar 2010

Middle Rio Grande
Flow Frequency Study
Combined Peak Flow Frequency Curve
Rio Grande near Bernalillo

Prepared By:
Hydrologic Engineering Center

Prepared For:
Albuquerque District
US Army Corps of Engineers

Table 4. Combined peak flow frequency curves at the Rio Grande at Albuquerque and Rio Grande near Bernalillo gages.

Percent Chance Exceedance	Combined Peak Flow Frequency Curve at the Rio Grande at Albuquerque Gage (cfs)	Estimated Combined Peak Flow Frequency Curve at the Rio Grande near Bernalillo Gage (cfs)
50	6890	7170
20	8220	8550
10	10500	10900
2	16300	17000
1	19100	19900
0.5	22100	23000
0.2	26700	27800

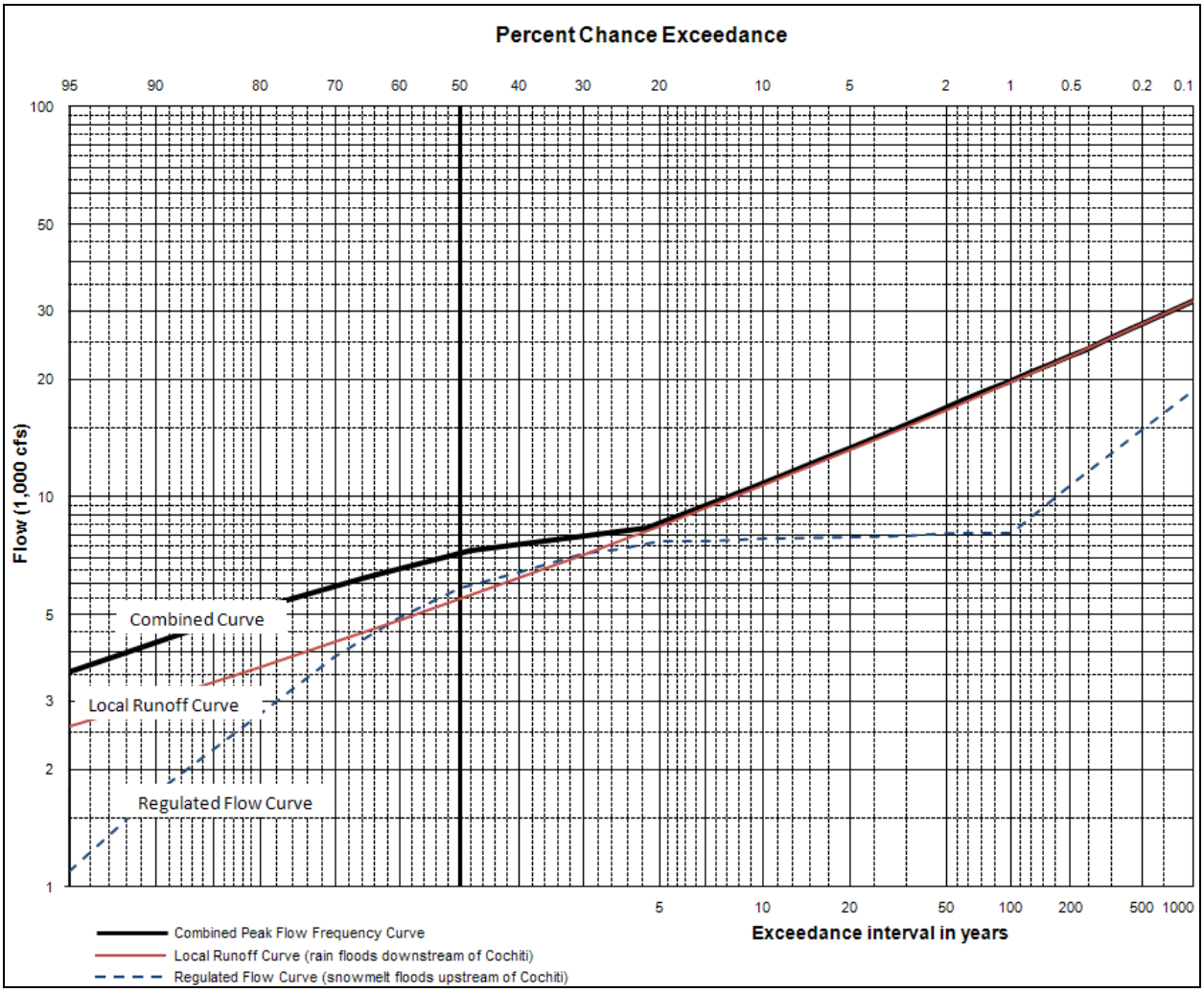


Figure 4. Local runoff (rain floods downstream of Cochiti), regulated flow (snowmelt floods upstream of Cochiti) and the combined peak flow frequency curve at the Rio Grande near Bernalillo gage.

ATTACHMENT 2

US 550 Bridge
As-builts - 1986 (design in 1982-1984)
Datum not listed - based on time frame - assume NGVD29

Convert to NAVD88 to add to HEC-RAS model for bridge scour
Conversion from Survey - Tim Solinski
Add 2.8 feet to as-built plans to convert to NAVD88

Office

Project

INPUT	OUTPUT
Geographic, NAD83	State Plane, NAD27
Vertical - NAVD88, U.S. Feet	3002 - New Mexico Central, U.S. Feet
	Vertical - NGVD29 (Vertcon94), U.S. Feet

Accuracies of conversions from NAD 83 to NAD 27 are typically 12 to 18 cm.

550_at_RG 1/1

Latitude:	35 19 19.64	**Northing/Y:**	1572609.264
Longitude:	106 33 26.73	**Easting/X:**	408468.518
Elevation/Z:	5000	**Elevation/Z:**	4997.198
		Convergence:	-0 10 38.67345
		Scale Factor:	0.999909589
		Combined Factor:	0.999670636

Datum Shift (m.): Delta Lat. = -4.343, Delta Lon = -52.907

ATTACHMENT 3

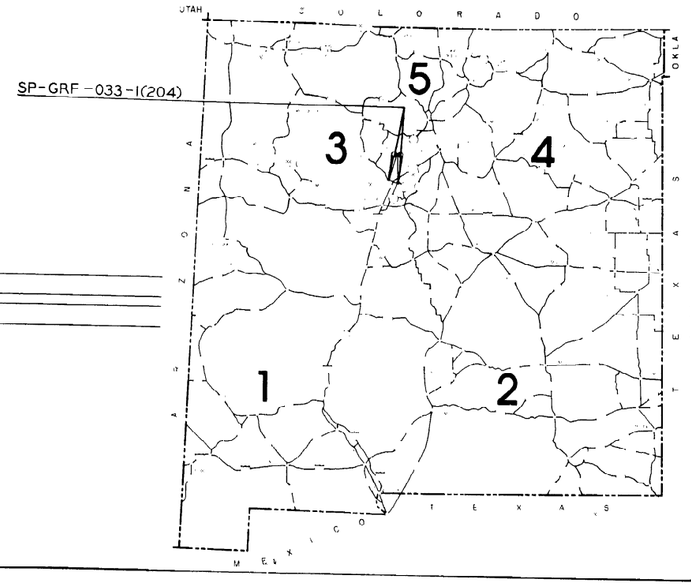
AS - BUILT

NEW MEXICO STATE HIGHWAY DEPARTMENT

CONSTRUCTION PLANS

SP-GRF-033-1(204)

SANDOVAL COUNTY



Date 3-15-86

I certify that the contents of this book have been checked under my supervision and the quantities contained herein are to the best of my knowledge and belief.

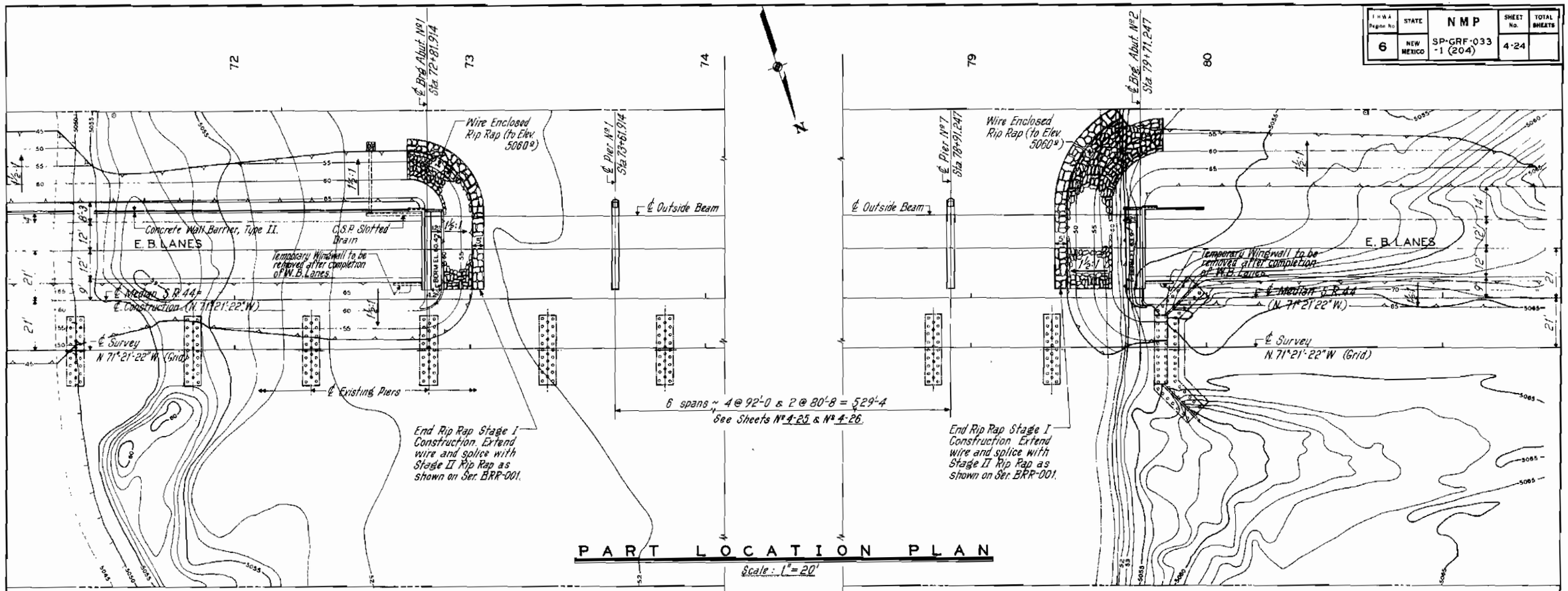
PROJECT ENGINEER

APPROVED: _____ DATE: _____

CHIEF HIGHWAY ADMINISTRATOR

P.E. No. 5403

FHWA Region No.	STATE	NMP	SHEET No.	TOTAL SHEETS
6	NEW MEXICO	SP-GRF-033 -1 (204)	4-24	



PART STRUCTURE SECTION
Scale: 1"=20' (ALONG ℄ E.B. LANES)

No.	DESCRIPTION	DATE	BY
3			
2			
1			

REVISIONS (OR CHANGE NOTICES)

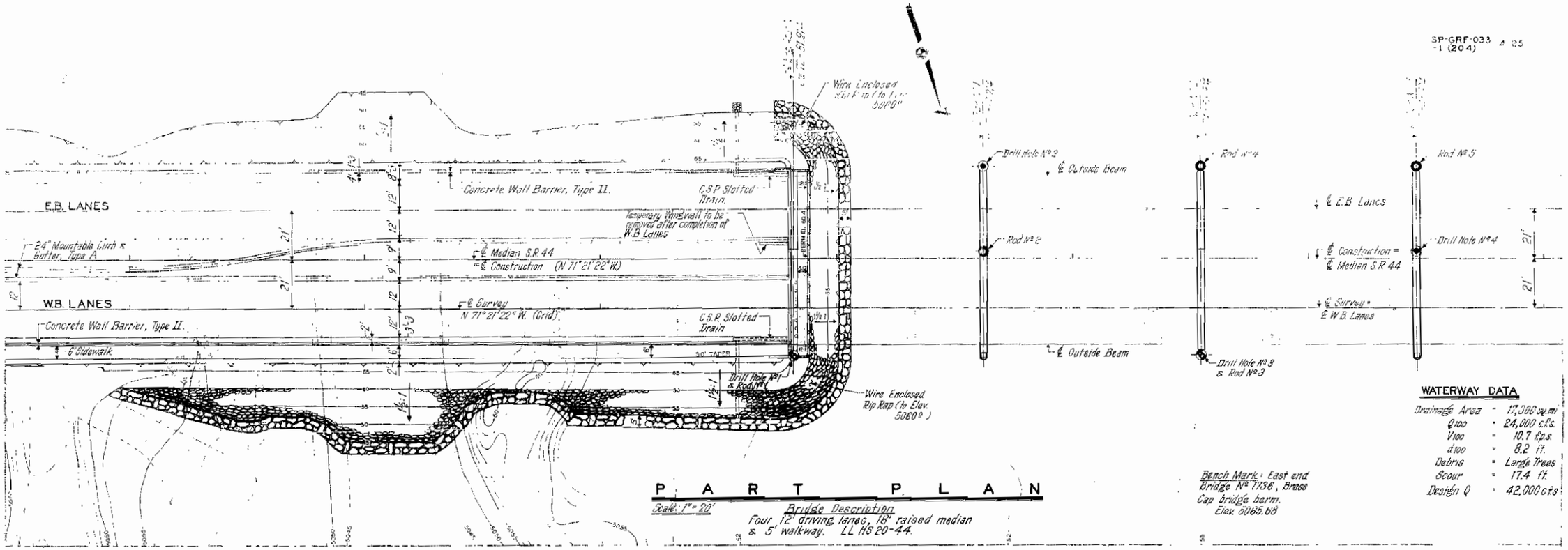
GORDON HERKENHOFF & ASSOCIATES
CONSULTING ENGINEERS
1221 LUISA ST. SANTA FE, NEW MEXICO

NEW MEXICO STATE HIGHWAY DEPARTMENT
S. R. 44 OVER RIO GRANDE
STAGE - I
STRUCTURE LOCATION SHEET
STA. 76+26.58

APPROVED _____ HIGHWAY ENGINEER

N.M.P. SP-GRF-033-1 (204) SHEET 4-24

DRAWN ____ TRACED ____ CHECKED ____
JOB NO. ____ DESIGNED DFS CHECKED ____



PART PLAN

Scale: 1" = 20'

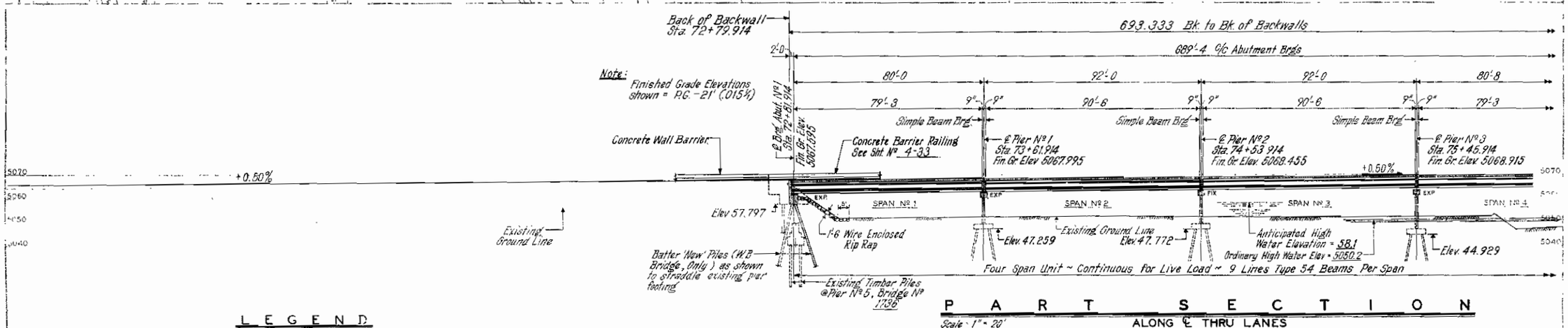
Bridge Description

Four 12' driving lanes, 18' raised median & 5' walkway. LL HS 20-44.

Bench Mark: East end Bridge No 1736, Brass Cap bridge berm. Elev. 5065.68

WATERWAY DATA

Drainage Area	= 17,000 sq.mi
Q100	= 24,000 c.f.s.
V100	= 10.7 f.p.s.
d100	= 8.2 ft.
Debris	= Large Trees
Scour	= 17.4 ft.
Design Q	= 42,000 c.f.s



PART SECTION ALONG ℄ THRU LANES

Scale: 1" = 20'

LEGEND

- ⊕ - Drove 1¾" O.D. Pointed Pipe. Drilled Test Hole.
- ⊕ - Drilled Test Hole ~ Only.
- ⊂ - Drove 1¾" O.D. Pointed Pipe ~ Only.

*** FREEBOARD**

Min. @ Abut. No 1 = 3.9'
Max. @ Abut. No 2 = 7.4'

* From bottom of low beam

GORDON HERKENHOFF & ASSOCIATES
CONSULTING ENGINEERS

NEW MEXICO STATE HIGHWAY DEPARTMENT

S.R. 44 OVER RIO GRANDE
STAGE II

STRUCTURE LOCATION SHEET

STA. 76+26.58

E.B. BRIDGE No 8537
W.B. BRIDGE No 8540

APPROVED _____ STATE ENGINEER

N.M.P. SP-GRF-033-1 (204) 4-25

	STATE	NMP	
6	NEW MEXICO	SP-GRF-033 -1 (204)	4 26

76 77 78 79 80

Sta 75+45.914 | Sta 76+26.580 | Sta 77+07.247 | Sta 77+99.247 | Sta 78+91.247

Wire Enclosed Rip Rap (To Elev 5068.0)

Drill Hole No 6 & Rod No 9

20' Barrier Railing

E.B. LANES

Temporary Retaining Wall to be removed after completion of W.B. Lanes

℄ Median S.R. 44 (N 71° 21' 22" W)

W.B. LANES N 71° 21' 22" W (Grid)

℄ Survey S.R. 44

20' Taper Barrier Railing

℄ Outside Beam

℄ E.B. Lanes

℄ W.B. Lanes

℄ Outside Beam

Drill Hole No 4

Drill Hole No 5

Rod No 6

Rod No 7

Rod No 8

℄ Median S.R. 44 ℄ Construction

℄ Survey ℄ W.B. Lanes (N 71° 21' 22" W) (Grid)

℄ Survey ℄ W.B. Lanes

℄ Construction ℄ Median S.R. 44

Existing Piers

RIO GRANDE

WATERWAY DATA

Drainage Area = 17,300 sq mi
Q100 = 24,000 cfs
V100 = 10.7 f.p.s
d100 = 8.2 ft.
Debris = Large Trees
Scour = 17.4 ft
Design Q = 42,000 cfs

Bench Mark : East end Bridge No 1736, Brass Cap bridge berm Elev 5065.68

PART PLAN

Scale : 1" = 20'

693.333 Bk. to Bk of Backwalls

669-4 % Abutment Bridge

Back of Backwall Sta. 79+73.247

92'-0 | 80'-8 | 80'-8 | 92'-0 | 92'-0 | 80'-0

90'-6 | 9" | 9" | 79'-3 | 6" | 8" | 79'-3 | 9" | 9" | 90'-6 | 9" | 9" | 90'-6 | 9" | 9" | 79'-3

Simple Beam Brg | ℄ Bridge | Simple Beam Brg | Simple Beam Brg | Simple Beam Brg

℄ Pier No 3 Sta 75+45.914 Fin Gr Elev 5068.915

℄ Pier No 4 Sta 76+26.580 Fin Gr Elev 5069.318

℄ Pier No 5 - Sta 77+07.247 Fin Gr Elev 5069.721

℄ Pier No 6 Sta 77+99.247 Fin Gr Elev 5070.181

℄ Pier No 7 Sta 78+91.247 Fin Gr Elev 5070.641

Concrete Barrier Rail See Sht No 4-33

℄ Brg Abut No 2 Sta. 79+71.247 Fin Gr Elev. 5071.041

20' Barrier Railing

Thrie Beam Guard Fence

0.50%

EXP | FIX | EXP

SPAN No 3 | SPAN No 4 | SPAN No 5 | SPAN No 6 | SPAN No 7 | SPAN No 8

Elev 67.244

Four Span (93'-3") Continuous [illegible] Type 54 Beams

PART SECTION

Scale : 1" = 20'

ALONG ℄ THRU LANES

LEGEND

* Existing Timber Piles may interfere with New Piles, and may need to be removed by the Contractor.

E.B. BRIDGE No 8537
W.B. BRIDGE No 8540

GORDON KIRKENHOFF & ASSOCIATES
CONSULTING ENGINEERS

NEW MEXICO STATE HIGHWAY DEPT

SR 44 OVER RIO GRANDE

STAGE II

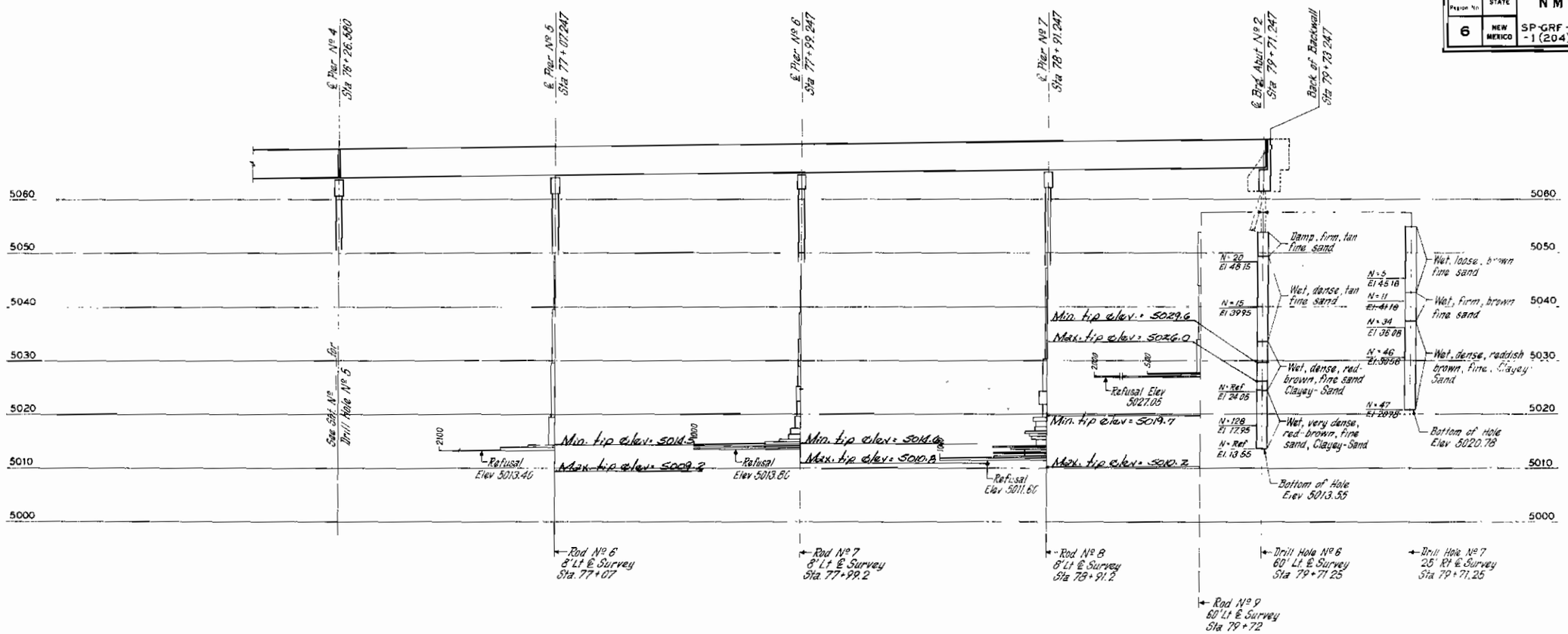
STRUCTURE LOCATION SHEET

STA 76+26.58

APPROVED [signature] BRIDGE ENGINEER

NMP SP-GRF-033-1(204) SHEET

F.H.W.A. Region No.	STATE	NMP	SHEET No	TOTAL SHEETS
6	NEW MEXICO	SP-GRF-033-1(204)	4-28	



DRAWN ____ Date ____
TRACED ____ Plotted ____
CHECKED ____
JOB NO. ____ 1:40 ''
DESIGNED ____ 5" grids
CHECKED ____

TABULATION OF PILING

LOCATION	NUMBER REQUIRED		BOTH BRIDGES			
	E.B. BRIDGE	W.B. BRIDGE	LENGTH 16" O.D. PIPE PILE	LENGTH 14" SQ. PRE-STRESSED	MINIMUM PENETRATION ELEVATION	
ABUT. Nº 1	8	8	52'	55'	5012	5016.4
PIER Nº 1	14	16	44'	47'	5012	5015.0
PIER Nº 2	12	14	44'	47'	5012	5013.0
PIER Nº 3	16	18	42'	45'	5011	5012.4
PIER Nº 4	10	12	43'	46'	5009	5014.0
PIER Nº 5	16	18	43'	46'	5010	5014.5
PIER Nº 6	12	14	42'	45'	5011	5014.6
PIER Nº 7	16	20	43'	45'	5009	5019.7
ABUT. Nº 2	8	8	39'	43'	5030	5029.6

PILE NOTES

1. The contractor shall be allowed to bid on either 16" O.D. x ¼" thick walled pipe pile filled with concrete or 14" square prestressed concrete pile.
2. All piles shall be driven to a computed bearing capacity of 65 Tons/Pile at or below minimum penetration elevation shown
3. At Abutments only, piles shall be driven through 16" diameter holes drilled through the compacted fill to natural ground.

N = Standard Penetration Number

Note: See Sht. Nº 4-27 for rod sounding scale.

Foundation data shown on plans are for designers only. The Highway Department is not responsible for any interpretation or assumptions made by Contractor based on this information.

E.B. BRIDGE Nº 8537
W.B. BRIDGE Nº 8540

APPROVED _____ BRIDGE ENGINEER

NO.	DESCRIPTION	DATE	BY
6			
5			
4			
3			
2			
1			

REVISIONS (OR CHANGE NOTICES)

GORDON HERKENHOFF & ASSOCIATES
CONSULTING ENGINEERS
1221 LUISA ST SANTA FE, NEW MEXICO

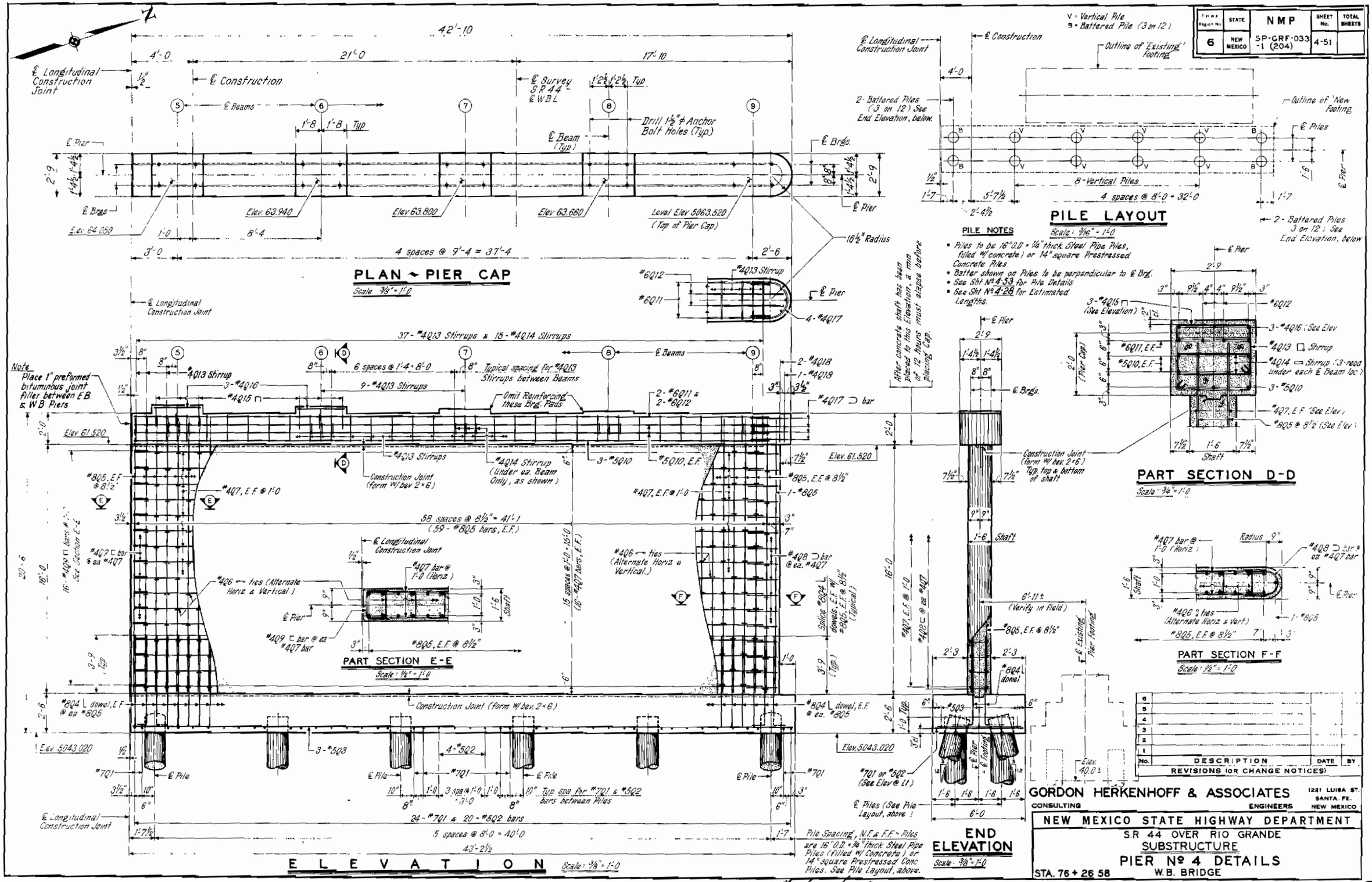
NEW MEXICO STATE HIGHWAY DEPARTMENT
S.R. 44 OVER RIO GRANDE
FOUNDATION DATA
STA. 76+26.58

N.M.P. SP-GRF-033-1 (204) SHEET 4-28

64

FHWA Region No.	STATE	NMP	SHEET No.	TOTAL SHEETS
6	NEW MEXICO	SP-GRF-033-1 (204)	4-51	

V = Vertical Pile
B = Battered Pile (3 on 12)



PLAN ~ PIER CAP

Scale 3/8" = 1'-0

E L E V A T I O N

Scale: 3/8" = 1'-0

PART SECTION E-E

Scale: ½" = 1'-0

PILE LAYOUT

Scale: 3/16" = 1'-0

PILE NOTES

- Piles to be 16" O.D. × ¼" thick Steel Pipe Piles, filled w/ concrete) or 14" square Prestressed Concrete Piles
- Batter shown on Piles to be perpendicular to ℄ Brg.
- See Sht No. 4-53 for Pile Details
- See Sht No. 4-28 for Estimated Lengths.

After concrete shaft has been placed to this Elevation, a min of 12 hours must elapse before placing Cap.

PART SECTION D-D

Scale: ¾" = 1'-0

PART SECTION F-F

Scale: ½" = 1'-0

END ELEVATION

Scale: 3/8" = 1'-0

Pile Spacing, N.E. & F.F. = Piles are 16" O.D. × ¼" thick Steel Pipe Piles (Filled w/ Concrete) or 14" square Prestressed Conc Piles. See Pile Layout, above.

No.	DESCRIPTION	DATE	BY
6			
5			
4			
3			
2			
1			

REVISIONS (OR CHANGE NOTICES)

GORDON HERKENHOFF & ASSOCIATES
CONSULTING ENGINEERS
1221 LUISA ST. SANTA FE, NEW MEXICO

NEW MEXICO STATE HIGHWAY DEPARTMENT
S.R 44 OVER RIO GRANDE
SUBSTRUCTURE
PIER Nº 4 DETAILS
STA. 76 + 26 58 W.B. BRIDGE

APPROVED _____ BRIDGE ENGINEER

DRAWN _____ TRACED _____ CHECKED _____
JOB NO. _____ DESIGNED _____ CHECKED _____

N.M.P. SP-GRF-033-1 (204) SHEET 4-51

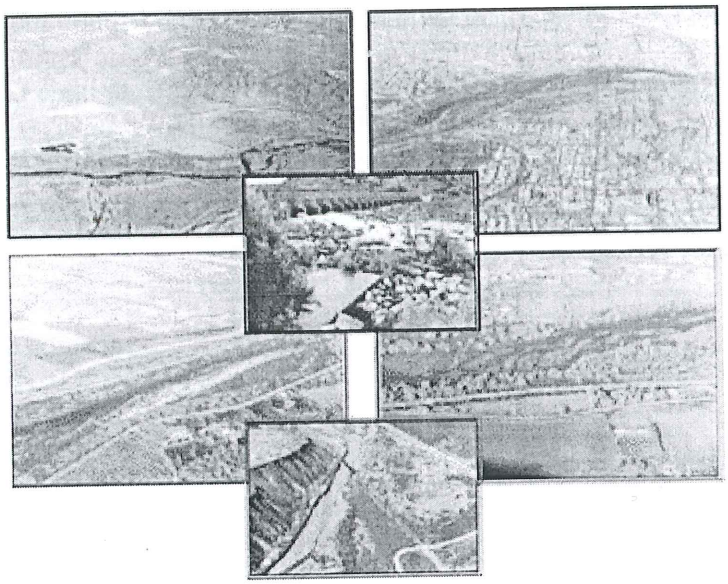
ATTACHMENT 4

Geomorphic and Sedimentologic Investigations of the Middle Rio Grande Between Cochiti Dam and Elephant Butte Reservoir

June 2002

Last Modified: 10/31/2002

GEOMORPHIC AND SEDIMENTOLOGIC INVESTIGATIONS
OF THE MIDDLE RIO GRANDE BETWEEN COCHITI DAM
AND ELEPHANT BUTTE RESERVOIR



Submitted to:

New Mexico Interstate Stream Commission
121 Tijeras NE, Suite 2000
Albuquerque, New Mexico 87102

Submitted by:

Mussetter Engineering, Inc.
1730 S. College Avenue, Suite 100
Fort Collins, Colorado 80525

June 2002

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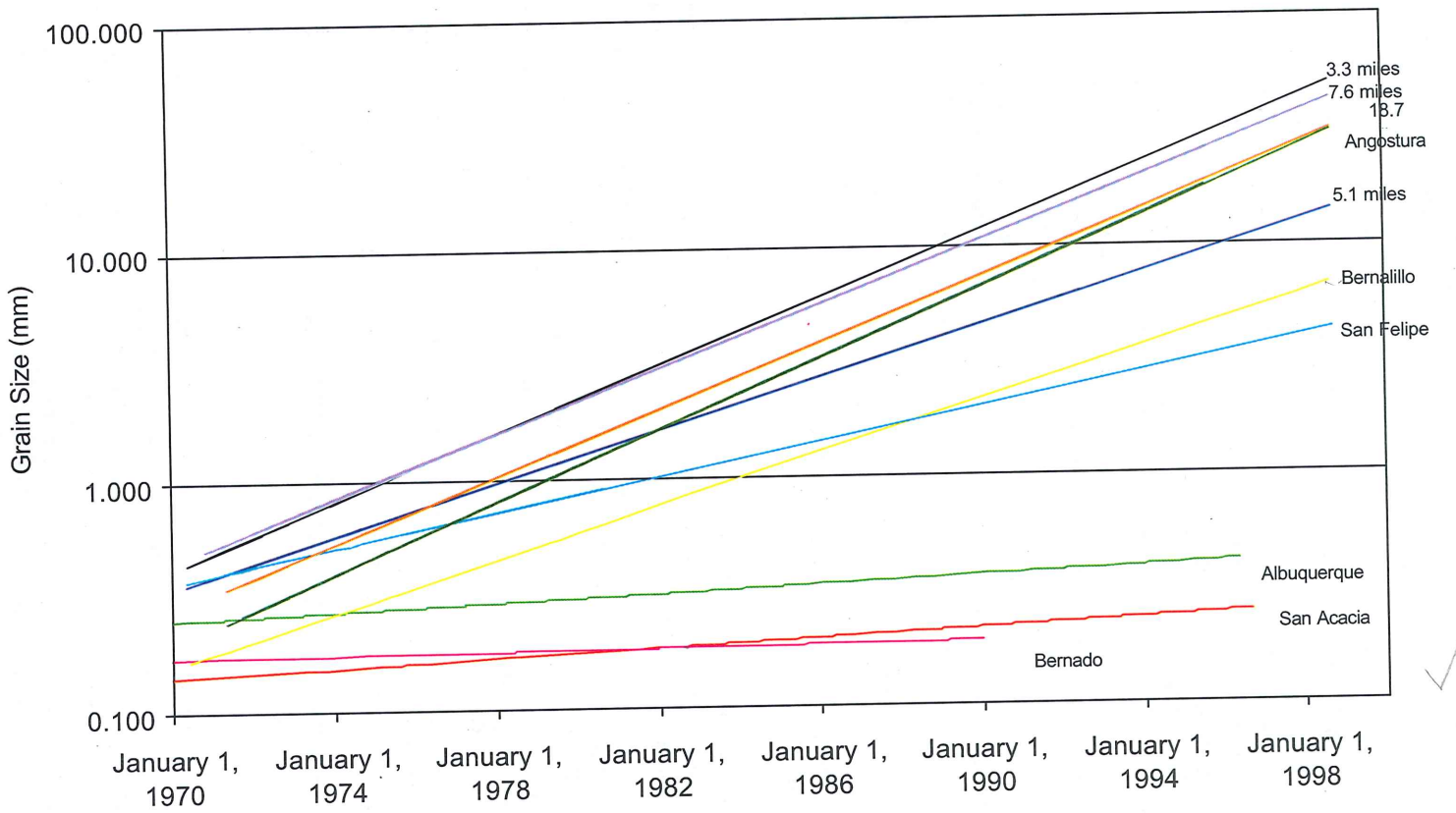


Figure 3.41. Regression lines showing changes of the D_{50} of the bed material between 1970 and 1998 for gage locations and other identified USBR range lines within the project reach of the Rio Grande. Data collected after 1992 represent averages of 3 samples taken on the range line.

Table 3.4. Summary of bed material D_{50} values derived from regression equations (Figure 3.41) for identified locations on the Rio Grande between 1970 and 1998. Data collected after 1992 represent averages of 3 samples taken on the range lines; whereas, the data collected before 1992 represent a single sample on the range lines.

Location	D_{50} (mm)			
	1970	1976	1986	1998
3.3*	0.42	1.14	6.07	45.31
5.1*	0.34	0.74	2.72	12.94
7.6*	0.44	1.15	5.61	37.69
San Felipe	0.36	0.61	1.43	3.98
18.7*	0.27	0.73	3.82	27.71
Angostura	0.19	0.56	3.27	27.23
Bernalillo	0.16	0.35	1.28	6.13
Albuquerque	0.25	0.28	0.34	0.43
Bernardo	0.17	0.18	0.19	0.20
San Acacia	0.14	0.16	0.20	0.26

*River miles below Cochiti Dam.

ATTACHMENT 5

Contraction Scour

		Left	Channel	Right
Input Data				
	Average Depth (ft):	3.06	8.06	1.69
	Approach Velocity (ft/s):	0.87	4.41	0.58
	Br Average Depth (ft):	3.00	7.15	
	BR Opening Flow (cfs):	1169.56	18730.44	
	BR Top WD (ft):	231.82	431.87	
	Grain Size D50 (mm):	6.13	6.13	6.13
	Approach Flow (cfs):	1239.80	18647.25	12.95
	Approach Top WD (ft):	464.49	525.16	13.25
	K1 Coefficient:	0.590	0.590	0.590
Results				
	Scour Depth Ys (ft):	0.00	1.93	
	Critical Velocity (ft/s):	3.67	4.31	
	Equation:	Clear	Live	

Pier Scour

Pier: #1 (CL = 296.9)

Input Data

	Pier Shape:	Square nose
	Pier Width (ft):	5.00
	Grain Size D50 (mm):	6.13000
	Depth Upstream (ft):	9.43
	Velocity Upstream (ft/s):	7.22
	K1 Nose Shape:	1.10
	Pier Angle:	0.00
	Pier Length (ft):	80.60
	K2 Angle Coef:	1.00
	K3 Bed Cond Coef:	1.10
	Grain Size D90 (mm):	9.00000
	K4 Armouring Coef:	1.00

Results

	Scour Depth Ys (ft):	10.35
	Froude #:	0.41
	Equation:	CSU equation

Pier: #2 (CL = 345.9)

Input Data

	Pier Shape:	Square nose
	Pier Width (ft):	5.00
	Grain Size D50 (mm):	6.13000
	Depth Upstream (ft):	9.43
	Velocity Upstream (ft/s):	7.22
	K1 Nose Shape:	1.10
	Pier Angle:	0.00
	Pier Length (ft):	80.60
	K2 Angle Coef:	1.00
	K3 Bed Cond Coef:	1.10

Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.35
Froude #:	0.41
Equation:	CSU equation

Pier: #3 (CL = 361.9)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	1.50
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	9.43
Velocity Upstream (ft/s):	7.22
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	3.60
Froude #:	0.41
Equation:	CSU equation
Pier Scour Limited to Maximum of Ys = 2.4 * a	

Pier: #4 (CL = 394.9)

Input Data

Pier Shape:	Square nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	9.43
Velocity Upstream (ft/s):	7.22
K1 Nose Shape:	1.10
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.35
Froude #:	0.41
Equation:	CSU equation

Pier: #5 (CL = 443.9)

Input Data

Pier Shape:	Square nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000

Depth Upstream (ft):	9.43
Velocity Upstream (ft/s):	7.22
K1 Nose Shape:	1.10
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.35
Froude #:	0.41
Equation:	CSU equation

Pier: #6 (CL = 453.9)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	1.50
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	9.43
Velocity Upstream (ft/s):	7.22
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	3.60
Froude #:	0.41
Equation:	CSU equation

Pier Scour Limited to Maximum of Ys = 2.4 * a

Pier: #7 (CL = 492.9)

Input Data

Pier Shape:	Square nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	9.43
Velocity Upstream (ft/s):	7.22
K1 Nose Shape:	1.10
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.35

Froude #:	0.41
Equation:	CSU equation

Pier: #8 (CL = 541.9)

Input Data

Pier Shape:	Square nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	9.43
Velocity Upstream (ft/s):	7.22
K1 Nose Shape:	1.10
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.35
Froude #:	0.41
Equation:	CSU equation

Pier: #9 (CL = 545.9)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	1.75
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	9.43
Velocity Upstream (ft/s):	7.22
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	4.20
Froude #:	0.41
Equation:	CSU equation

Pier Scour Limited to Maximum of Ys = 2.4 * a

Pier: #10 (CL = 590.9)

Input Data

Pier Shape:	Square nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	9.43
Velocity Upstream (ft/s):	7.22
K1 Nose Shape:	1.10
Pier Angle:	0.00

Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.35
Froude #:	0.41
Equation:	CSU equation

Pier: #11 (CL = 626.57)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	1.50
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	9.43
Velocity Upstream (ft/s):	7.22
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	3.60
Froude #:	0.41
Equation:	CSU equation
Pier Scour Limited to Maximum of Ys = 2.4 * a	

Pier: #12 (CL = 639.9)

Input Data

Pier Shape:	Square nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	9.43
Velocity Upstream (ft/s):	7.22
K1 Nose Shape:	1.10
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.35
Froude #:	0.41
Equation:	CSU equation

Pier: #13 (CL = 688.9)

Input Data

Pier Shape:	Square nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	9.43
Velocity Upstream (ft/s):	7.22
K1 Nose Shape:	1.10
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.35
Froude #:	0.41
Equation:	CSU equation

Pier: #14 (CL = 707.24)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	1.75
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	9.43
Velocity Upstream (ft/s):	7.22
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	4.20
Froude #:	0.41
Equation:	CSU equation
Pier Scour Limited to Maximum of Ys = 2.4 * a	

Pier: #15 (CL = 737.9)

Input Data

Pier Shape:	Square nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	9.43
Velocity Upstream (ft/s):	7.22
K1 Nose Shape:	1.10
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000

K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.35
Froude #:	0.41
Equation:	CSU equation

Pier: #16 (CL = 786.9)

Input Data

Pier Shape:	Square nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	9.43
Velocity Upstream (ft/s):	7.22
K1 Nose Shape:	1.10
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.35
Froude #:	0.41
Equation:	CSU equation

Pier: #17 (CL = 799.24)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	1.50
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	9.43
Velocity Upstream (ft/s):	7.22
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	3.60
Froude #:	0.41
Equation:	CSU equation
Pier Scour Limited to Maximum of Ys = 2.4 * a	

Pier: #18 (CL = 835.9)

Input Data

Pier Shape:	Square nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	9.43

Velocity Upstream (ft/s):	7.22
K1 Nose Shape:	1.10
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.35
Froude #:	0.41
Equation:	CSU equation

Pier: #19 (CL = 884.9)

Input Data

Pier Shape:	Square nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	9.43
Velocity Upstream (ft/s):	7.22
K1 Nose Shape:	1.10
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.35
Froude #:	0.41
Equation:	CSU equation

Pier: #20 (CL = 891.24)

Input Data

Pier Shape:	Square nose
Pier Width (ft):	7.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	9.43
Velocity Upstream (ft/s):	7.22
K1 Nose Shape:	1.10
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	12.87
Froude #:	0.41
Equation:	CSU equation

Pier: #21 (CL = 933.9)

Input Data

Pier Shape:	Square nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	9.43
Velocity Upstream (ft/s):	7.22
K1 Nose Shape:	1.10
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.35
Froude #:	0.41
Equation:	CSU equation

Abutment Scour

	Left	Right
Input Data		
Station at Toe (ft):	281.47	971.22
Toe Sta at appr (ft):	246.81	997.92
Abutment Length (ft):	222.30	29.49
Depth at Toe (ft):	2.90	5.30
K1 Shape Coef:	1.00 - Vertical abutment	
Degree of Skew (degrees):	90.00	90.00
K2 Skew Coef:	1.00	1.00
Projected Length L' (ft):	222.30	29.49
Avg Depth Obstructed Ya (ft):	3.09	4.88
Flow Obstructed Qe (cfs):	603.98	516.00
Area Obstructed Ae (sq ft):	687.78	143.86
Results		
Scour Depth Ys (ft):	10.74	16.07
Qe/Ae = Ve:	0.00	3.59
Froude #:	0.13	0.29
Equation:	HIRE	Froehlich

Combined Scour Depths

Pier : #1 (CL = 296.9) (Contr + Pier) (ft):	10.35
Pier : #2 (CL = 345.9) (Contr + Pier) (ft):	10.35
Pier : #3 (CL = 361.9) (Contr + Pier) (ft):	3.60
Pier : #4 (CL = 394.9) (Contr + Pier) (ft):	10.35
Pier : #5 (CL = 443.9) (Contr + Pier) (ft):	10.35
Pier : #6 (CL = 453.9) (Contr + Pier) (ft):	3.60
Pier : #7 (CL = 492.9) (Contr + Pier) (ft):	10.35

Pier : #8 (CL = 541.9) (Contr + Pier) (ft):	12.28
Pier : #9 (CL = 545.9) (Contr + Pier) (ft):	6.13
Pier : #10 (CL = 590.9) (Contr + Pier) (ft):	12.28
Pier : #11 (CL = 626.57) (Contr + Pier) (ft):	5.53
Pier : #12 (CL = 639.9) (Contr + Pier) (ft):	12.28
Pier : #13 (CL = 688.9) (Contr + Pier) (ft):	12.28
Pier : #14 (CL = 707.24) (Contr + Pier) (ft):	6.13
Pier : #15 (CL = 737.9) (Contr + Pier) (ft):	12.28
Pier : #16 (CL = 786.9) (Contr + Pier) (ft):	12.28
Pier : #17 (CL = 799.24) (Contr + Pier) (ft):	5.53
Pier : #18 (CL = 835.9) (Contr + Pier) (ft):	12.28
Pier : #19 (CL = 884.9) (Contr + Pier) (ft):	12.28
Pier : #20 (CL = 891.24) (Contr + Pier) (ft):	14.80
Pier : #21 (CL = 933.9) (Contr + Pier) (ft):	12.28

Left abutment scour + contraction scour (ft):	10.74
Right abutment scour + contraction scour (ft):	18.00

Contraction Scour

		Left	Channel	Right
Input Data				
	Average Depth (ft):	4.46	9.49	2.41
	Approach Velocity (ft/s):	1.16	5.09	0.75
	Br Average Depth (ft):	4.30	8.48	
	BR Opening Flow (cfs):	2240.74	25559.26	
	BR Top WD (ft):	233.50	431.82	
	Grain Size D50 (mm):	6.13	6.13	6.13
	Approach Flow (cfs):	2422.38	25343.36	34.27
	Approach Top WD (ft):	468.50	525.16	18.84
	K1 Coefficient:	0.590	0.590	0.590
Results				
	Scour Depth Ys (ft):	0.00	2.25	
	Critical Velocity (ft/s):	3.90	4.43	
	Equation:	Clear	Live	

Pier Scour

Pier: #1 (CL = 296.9)

Input Data

	Pier Shape:	Round nose
	Pier Width (ft):	5.00
	Grain Size D50 (mm):	6.13000
	Depth Upstream (ft):	10.79
	Velocity Upstream (ft/s):	8.33
	K1 Nose Shape:	1.00
	Pier Angle:	0.00
	Pier Length (ft):	80.60
	K2 Angle Coef:	1.00
	K3 Bed Cond Coef:	1.10
	Grain Size D90 (mm):	9.00000
	K4 Armouring Coef:	1.00

Results

	Scour Depth Ys (ft):	10.18
	Froude #:	0.45
	Equation:	CSU equation

Pier: #2 (CL = 345.9)

Input Data

	Pier Shape:	Round nose
	Pier Width (ft):	5.00
	Grain Size D50 (mm):	6.13000
	Depth Upstream (ft):	10.79
	Velocity Upstream (ft/s):	8.33
	K1 Nose Shape:	1.00
	Pier Angle:	0.00
	Pier Length (ft):	80.60
	K2 Angle Coef:	1.00
	K3 Bed Cond Coef:	1.10

Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.18
Froude #:	0.45
Equation:	CSU equation

Pier: #3 (CL = 361.9)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	1.50
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	10.79
Velocity Upstream (ft/s):	8.33
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	3.60
Froude #:	0.45
Equation:	CSU equation

Pier Scour Limited to Maximum of Ys = 2.4 * a

Pier: #4 (CL = 394.9)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	10.79
Velocity Upstream (ft/s):	8.33
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.18
Froude #:	0.45
Equation:	CSU equation

Pier: #5 (CL = 443.9)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000

Depth Upstream (ft):	10.79
Velocity Upstream (ft/s):	8.33
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.18
Froude #:	0.45
Equation:	CSU equation

Pier: #6 (CL = 453.9)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	1.50
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	10.79
Velocity Upstream (ft/s):	8.33
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	3.60
Froude #:	0.45
Equation:	CSU equation

Pier Scour Limited to Maximum of Ys = 2.4 * a

Pier: #7 (CL = 492.9)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	10.79
Velocity Upstream (ft/s):	8.33
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.18

Froude #:	0.45
Equation:	CSU equation

Pier: #8 (CL = 541.9)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	10.79
Velocity Upstream (ft/s):	8.33
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.18
Froude #:	0.45
Equation:	CSU equation

Pier: #9 (CL = 545.9)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	1.75
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	10.79
Velocity Upstream (ft/s):	8.33
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	4.20
Froude #:	0.45
Equation:	CSU equation

Pier Scour Limited to Maximum of Ys = 2.4 * a

Pier: #10 (CL = 590.9)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	10.79
Velocity Upstream (ft/s):	8.33
K1 Nose Shape:	1.00
Pier Angle:	0.00

Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.18
Froude #:	0.45
Equation:	CSU equation

Pier: #11 (CL = 626.57)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	1.50
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	10.79
Velocity Upstream (ft/s):	8.33
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	3.60
Froude #:	0.45
Equation:	CSU equation
Pier Scour Limited to Maximum of Ys = 2.4 * a	

Pier: #12 (CL = 639.9)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	10.79
Velocity Upstream (ft/s):	8.33
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.18
Froude #:	0.45
Equation:	CSU equation

Pier: #13 (CL = 688.9)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	10.79
Velocity Upstream (ft/s):	8.33
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.18
Froude #:	0.45
Equation:	CSU equation

Pier: #14 (CL = 707.24)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	1.75
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	10.79
Velocity Upstream (ft/s):	8.33
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	4.20
Froude #:	0.45
Equation:	CSU equation

Pier Scour Limited to Maximum of Ys = 2.4 * a

Pier: #15 (CL = 737.9)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	10.79
Velocity Upstream (ft/s):	8.33
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000

K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.18
Froude #:	0.45
Equation:	CSU equation

Pier: #16 (CL = 786.9)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	10.79
Velocity Upstream (ft/s):	8.33
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.18
Froude #:	0.45
Equation:	CSU equation

Pier: #17 (CL = 799.24)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	1.50
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	10.79
Velocity Upstream (ft/s):	8.33
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	3.60
Froude #:	0.45
Equation:	CSU equation
Pier Scour Limited to Maximum of Ys = 2.4 * a	

Pier: #18 (CL = 835.9)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	10.79

Velocity Upstream (ft/s):	8.33
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.18
Froude #:	0.45
Equation:	CSU equation

Pier: #19 (CL = 884.9)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	10.79
Velocity Upstream (ft/s):	8.33
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.18
Froude #:	0.45
Equation:	CSU equation

Pier: #20 (CL = 891.24)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	7.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	10.79
Velocity Upstream (ft/s):	8.33
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	12.67
Froude #:	0.45
Equation:	CSU equation

Pier: #21 (CL = 933.9)

Input Data

Pier Shape:	Round nose
Pier Width (ft):	5.00
Grain Size D50 (mm):	6.13000
Depth Upstream (ft):	10.79
Velocity Upstream (ft/s):	8.33
K1 Nose Shape:	1.00
Pier Angle:	0.00
Pier Length (ft):	80.60
K2 Angle Coef:	1.00
K3 Bed Cond Coef:	1.10
Grain Size D90 (mm):	9.00000
K4 Armouring Coef:	1.00

Results

Scour Depth Ys (ft):	10.18
Froude #:	0.45
Equation:	CSU equation

Abutment Scour

	Left	Right
Input Data		
Station at Toe (ft):	281.47	971.22
Toe Sta at appr (ft):	246.81	997.92
Abutment Length (ft):	226.31	35.08
Depth at Toe (ft):	4.26	6.65
K1 Shape Coef:	1.00 - Vertical abutment	
Degree of Skew (degrees):	90.00	90.00
K2 Skew Coef:	1.00	1.00
Projected Length L' (ft):	226.31	35.08
Avg Depth Obstructed Ya (ft):	4.46	5.42
Flow Obstructed Qe (cfs):	1168.89	734.36
Area Obstructed Ae (sq ft):	1008.58	190.03
Results		
Scour Depth Ys (ft):	16.39	18.40
Qe/Ae = Ve:	0.00	3.86
Froude #:	0.15	0.29
Equation:	HIRE	Froehlich

Combined Scour Depths

Pier : #1 (CL = 296.9) (Contr + Pier) (ft):	10.18
Pier : #2 (CL = 345.9) (Contr + Pier) (ft):	10.18
Pier : #3 (CL = 361.9) (Contr + Pier) (ft):	3.60
Pier : #4 (CL = 394.9) (Contr + Pier) (ft):	10.18
Pier : #5 (CL = 443.9) (Contr + Pier) (ft):	10.18
Pier : #6 (CL = 453.9) (Contr + Pier) (ft):	3.60
Pier : #7 (CL = 492.9) (Contr + Pier) (ft):	10.18

Pier : #8 (CL = 541.9) (Contr + Pier) (ft):	12.43
Pier : #9 (CL = 545.9) (Contr + Pier) (ft):	6.45
Pier : #10 (CL = 590.9) (Contr + Pier) (ft):	12.43
Pier : #11 (CL = 626.57) (Contr + Pier) (ft):	5.85
Pier : #12 (CL = 639.9) (Contr + Pier) (ft):	12.43
Pier : #13 (CL = 688.9) (Contr + Pier) (ft):	12.43
Pier : #14 (CL = 707.24) (Contr + Pier) (ft):	6.45
Pier : #15 (CL = 737.9) (Contr + Pier) (ft):	12.43
Pier : #16 (CL = 786.9) (Contr + Pier) (ft):	12.43
Pier : #17 (CL = 799.24) (Contr + Pier) (ft):	5.85
Pier : #18 (CL = 835.9) (Contr + Pier) (ft):	12.43
Pier : #19 (CL = 884.9) (Contr + Pier) (ft):	12.43
Pier : #20 (CL = 891.24) (Contr + Pier) (ft):	14.92
Pier : #21 (CL = 933.9) (Contr + Pier) (ft):	12.43

Left abutment scour + contraction scour (ft):	16.39
Right abutment scour + contraction scour (ft):	20.65

ATTACHMENT 6

US 550 EXISTING BRIDGE
PIER SCOUR-CSU EQUATION

*Updated by: K Saint-Lot 6/22/2015

Reference: "Evaluating Scour at Bridges" Fifth Edition. April 2012
Hydraulic Engineering Circular No. 18, FHWA, NHI; Publication No. FHWA-NHI-12-003
Sections 7.2; (pages 7.2-7.5)

General Use: Local scour at a pier

$$y_{s\ pier} = K_{hpier} 2.0 y_1 ((K_1 K_2 K_3 (Fr_1^{0.43})(a_{pier}/y_1)^{0.65})$$ *HEC-18 Equation 7.23*

where, $y_{s\ pier}$ = (ft) Scour Depth

and, a_{pier} = (ft) Pier width

V_1 = (ft/s) Upstream Velocity

y_1 = (ft) Average Upstream Flow Depth

K_1 = (--) Correction factor for pier shape (Table 7.1)

K_2 = (--) Correction factor for angle of flow attack (Table 7.2)

K_3 = (--) Correction factor for bed condition (Table 7.3)

f = (ft) Distance between front edge of pile cap or footing and pier

h_0 = (ft) Height of the pile cap above the bed at beginning of computation

T= (ft) Thickness of pile cap or footing

h_1 = (ft) $=h_0+T$

$$K_{h\ pier} = (.4075 - .0669 f/a_{pier}) - (.4271 - .0778 f/a_{pier}) h_1/a_{pier} + (.1615 - .0455 f/a_{pier})(h_1/a_{pier})^2 - (.0269 - .012 f/a_{pier})(h_1/a_{pier})^3$$

HEC-18 Equation in Figure 7.6

K_{hpier} = (--) Coefficient to account for height of pier stem above bed and shielding effect by pile cap overhang distance "f" in front of pier stem (Figure 7.6)

Fr_1 = $V_1/(gy_1)^{1/2}$ Upstream Froude #

Scour Calculation:

		Input from HEC-RAS model.				User input											
100yr Design Event	**Crossing Structure**	**River Station[1]**	**a_{pier}[1]**	**V_1[1]**	**y_1[1]**	**K_1**	**K_2**	**K_3**	**f**	**h_0**	**T**	**h_1/a_{pier}**	**f/a_{pier}**	**K_{hpier}**	**Fr_1**	**(a/y_1)**	**$y_{s\ pier}$**
	US 550 Existing Bridge	179285	1.50	7.22	9.43	1.00	1.00	1.10	1.00	0.00	2.50	1.67	0.67	0.01	0.41	0.159067	0.06

		Input from HEC-RAS model.				User input											
500yr Design Event	**Crossing Structure**	**River Station[1]**	**a_{pier}[1]**	**V_1[1]**	**y_1[1]**	**K_1**	**K_2**	**K_3**	**f**	**h_0**	**T**	**h_1/a_{pier}**	**f/a_{pier}**	**K_{hpier}**	**Fr_1**	**(a/y_1)**	**$y_{s\ pier}$**
	US 550 Existing Bridge	179285	1.50	8.33	10.79	1.00	1.00	1.10	1.00	0.00	2.50	1.67	0.67	0.01	0.45	0.139018	0.07

Notes:

1. Data from: add HEC-RAS file path
   HEC-RAS Geometry: \\a-abq-fs2\projects\20150343\NMDOT-A301232\Study and Conceptual Design\PHASE B\Drainage\Work\HEC-RAS\2002 RG Model\US550BrdigeScour.g01
   HEC-RAS Flow: \\a-abq-fs2\projects\20150343\NMDOT-A301232\Study and Conceptual Design\PHASE B\Drainage\Work\HEC-RAS\2002 RG Model\US550BrdigeScour.f03
   HEC-RAS Plan: \\a-abq-fs2\projects\20150343\NMDOT-A301232\Study and Conceptual Design\PHASE B\Drainage\Work\HEC-RAS\2002 RG Model\US550BrdigeScour.p03
2. Per HEC-18, Section 7.2:

   As a Rule of Thumb, the maximum scour depth for round nose piers aligned with the flow is:

   $y_s \leq 2.4$ times the pier width (a) for $Fr \leq 0.8$ (7.2)
   $y_s \leq 3.0$ times the pier width (a) for $Fr > 0.8$

   which leads to a "baseline" maximum scour depth of (**y_s=2.4*1.5ft=3.6ft**)
3. Pier geometry entered is for pier #4 (See sheet 4-51 of as-builts)

US 550 EXISTING BRIDGE
PILE CAP SCOUR-CSU EQUATION

*Updated by: K Saint-Lot 6/22/2015

Reference: "Evaluating Scour at Bridges" Fifth Edition. April 2012
Hydraulic Engineering Circular No. 18, FHWA, NHI; Publication No. FHWA-NHI-12-003
Sections 7.2; (pages 7.2-7.5)

General Use: Local scour at a pier cap assuming bottom of pile cap is above the bed and in the flow (Case 1)

$$y_{s\,pc} = 2.0y_2((K_1K_2K_3K_W(Fr_2^{0.43})(a^*_{pc}/y_2)^{0.65})$$ *HEC-18 Equation 7.24 (Assumes Case 1 for Pile Cap Scour)*

where,

	$y_{s\,pc}$ =	(ft)	Scour Depth
and,	a_{pc} =	(ft)	Width of original pile cap
	a^*_{pc} =	(ft)	With of the equivalent pier to be used for scour computations
	V_1 =	(ft/s)	Original approach velocity at the beginning of computations before scour
	y_1 =	(ft)	Original flow depth at the beginning of computations before scour
	K_1 =	(--)	Correction factor for pier shape (Table 7.1)
	K_2 =	(--)	Correction factor for angle of flow attack (Table 7.2)
	K_3 =	(--)	Correction factor for bed condition (Table 7.3)
	K_W =	(ft)	Wide pier factor
	h_0 =	(ft)	Height of the pile cap above the bed at beginning of computation
	h_2 =	(ft)	$=h_0 + y_{s\,pier}/2$
	T=	(ft)	Thickness of pile cap or footing exposed to flow
	K_W =	(--)	Coefficient to account for height of pier stem above bed and shielding effect by pile cap overhang distance "f" in front of pier stem (Figure 7.6)
	Fr_2 =	$V_2/(gy_2)^{1/2}$	Upstream Froude #
	y_2 =	(ft)	Adjusted flow depth $=y_1 + y_{s\,pier}/2$
	V_2 =	(ft/s)	Adjusted flow velocity $=V_1(y_1/y_2)$

$$a^*_{pc}/a_{pc}=EXP\{ - 2.705 + 0.51Ln(T/y_2) - 2.783(h_2/y_2)^3 + 1.751/EXP(h_2/y_2)\}$$ *HEC-18 Equation in Figure 7.7*

Scour Calculation:

		Import/ Calculated from Pier Scour Tab				User input								
	Crossing Structure	River Station	V_2	y_2	h_2	K_1	K_2	K_3	a_{pc}	T	a^*_{pc}	Fr_2	(a^*_{pc}/y_2)	$y_{s\,pc}$
100yr Design Event	US 550 Existing Bridge	179285	7.20	9.46	0.03	1.10	1.00	1.10	13.00	5.50	3.78	0.41	0.399096	8.61

		Import/ Calculated from Pier Scour				User input								
	Crossing Structure	River Station	V_2	y_2	h_2	K_1	K_2	K_3	a_{pc}	T	a^*_{pc}	Fr_2	(a^*_{pc}/y_2)	$y_{s\,pc}$
500yr Design Event	US 550 Existing Bridge	179285	8.30	10.82	0.03	1.10	1.00	1.10	13.00	5.50	3.53	0.44	0.325817	8.92

Notes:

1. K_W applies only if $y_2 < 0.8a^*_{pc}$, FR < 1, and $a^*_{pc} > 50D_{50}$
2. Check that $y_2 \leq 3.5a_{pc}$
3. Per HEC-18, Section 7.2:

> As a Rule of Thumb, the maximum scour depth for round nose piers aligned with the flow is:
>
> $y_s \leq 2.4$ times the pier width (a) for Fr ≤ 0.8 (7.2)
> $y_s \leq 3.0$ times the pier width (a) for Fr > 0.8

   which leads to a "baseline" maximum scour depth of (y_s**=2.4*3.78ft=9.1ft**)
4. Pier geometry entered is for pier #4 (See sheet 4-51 of as-builts)
5. Effective width of cap (a_{pc}) includes 6' for existing cap and 7' for old remnant pier cap
6. Thickness (T) adjusted to 5.5' to account for 3' old remnant pier cap extending below existing cap

US 550 EXISTING BRIDGE
PILE GROUP SCOUR-CSU EQUATION

*Updated by: K Saint-Lot 6/22/2015

Reference: "Evaluating Scour at Bridges" Fifth Edition. April 2012
Hydraulic Engineering Circular No. 18, FHWA, NHI; Publication No. FHWA-NHI-12-003
Sections 7.2; (pages 7.2-7.5)

General Use: Local scour at a pier

$$y_{s\,pg} = K_{hpg}2.0y_3((K_1K_3(Fr_3^{0.43})(a^*_{pg}/y_3)^{0.65}) \quad \textit{HEC-18 Equation 7.31}$$

where,

	$y_{s\,pg}$ =	(ft)	Scour Depth
and,	a_{proj} =	(ft)	Sum of non-overlapping projected widths of piles
	a^*_{pg} =	(ft)	Effective width of an equivalent full depth pier = $a_{proj}K_{sp}K_m$
	m =	(ft)	# of pile rows in flow direction
	S =	(ft)	Pile spacing perpendicular to flow
	V_1 =	(ft/s)	Original approach velocity at the beginning of computations before scour
	y_1 =	(ft)	Original flow depth at the beginning of computations before scour
	K_1 =	(--)	Correction factor for pier shape (Table 7.1)
	K_3 =	(--)	Correction factor for bed condition (Table 7.3)
	K_{hpg} =	(--)	Pile group height factor *HEC-18 Equation in Figure 7.13*
	K_m =	(--)	Coefficient for # of aligned rows *HEC-18 Equation in Figure 7.12*
	K_{sp} =	(--)	Coefficient for pile spacing *HEC-18 Equation in Figure 7.11*
	h_0 =	(ft)	Height of the pile cap above the bed at beginning of computation
	T=	(ft)	Thickness of pile cap or footing exposed to flow
	K_W =	(--)	Coefficient to account for height of pier stem above bed and shielding effect by pile cap overhang distance "f" in front of pier stem (Figure 7.6)
	Fr_3 =	$V_3/(gy_3)^{1/2}$	Upstream Froude #
	y_3 =	(ft)	Adjusted flow depth $=y_1 + y_{s\,pier}/2 + y_{c\,pc}/2$
	V_3 =	(ft/s)	Adjusted flow velocity $=V_1(y_1/y_3)$
	h_3 =	(ft)	$=h_0 + y_{s\,pier}/2 + y_{s\,pc}/2$

$$K_m = 0.9 + 0.10m - 0.0714(m-1)[2.4 - 1.1(S/a) + 0.1(S/a)^2]$$

$$K_{h\,pg} = \{3.08(h_3/y_3) - 5.23(h_3/y_3)^2 + 5.25(h_3/y_3)^3 - 2.10(h_3/y_3)^4\}^{1/0.65}$$

$$K_{SP} = 1 - 4/3[1 - 1/(a_{proj}/a)][1 - (S/a)^{-0.6}]$$

Scour Calculation:

		Import/ Calculated from Cap Scour				User input													
100yr Design Event	**Crossing Structure**	**River Station**	**V_3**	**y_3**	**h_3**	**K_1**	**K_3**	**a**	**a_{proj}**	**m**	**S**	**K_{sp}**	**K_m**	**h_3/y_3**	**$K_{h\,pg}$**	**a^*_{pg}**	**Fr_3**	**(a^*_{pg}/y_3)**	**$y_{s\,pg}$**
	US 550 Existing Bridge	179285	4.95	13.77	4.34	1.00	1.10	1.33	5.33	6.00	3.00	0.61	1.35	0.31	0.45	4.41	0.23	0.320588	3.49

		Import/ Calculated from Cap Scour				User input													
500yr Design Event	**Crossing Structure**	**River Station**	**V_3**	**y_3**	**h_3**	**K_1**	**K_3**	**a**	**a_{proj}**	**m**	**S**	**K_{sp}**	**K_m**	**h_3/y_3**	**$K_{h\,pg}$**	**a^*_{pg}**	**Fr_3**	**(a^*_{pg}/y_3)**	**$y_{s\,pg}$**
	US 550 Existing Bridge	179285	5.88	15.28	4.49	1.00	1.10	1.33	5.33	6.00	3.00	0.61	1.35	0.29	0.42	4.41	0.27	0.288759	3.58

Notes:

1. K_W applies only if $y_2 < 0.8a^*_{pc}$, FR < 1, and $a^*_{pc} > 50D_{50}$
2. Per HEC-18, Section 7.2:

> As a Rule of Thumb, the maximum scour depth for round nose piers aligned with the flow is:
>
> $y_s \leq 2.4$ times the pier width (a) for $Fr \leq 0.8$ (7.2)
> $y_s \leq 3.0$ times the pier width (a) for $Fr > 0.8$

   which leads to a "baseline" maximum scour depth of (**y_s=2.4*5.17ft=12.4ft**)
3. Pier geometry entered is for pier #4 (See sheet 4-51 of as-builts)
4. Projected width of pile group (a_{proj}) includes 2 existing piles and assumes same diameter for the 2 old remnant piles. Spacing is assumed to be equivalent for all piles

Appendix E-2013 Turning Movement Counts

2013 Raw Traffic Data

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - NM 313
Site Code: 9
Start Date: 05/09/2013

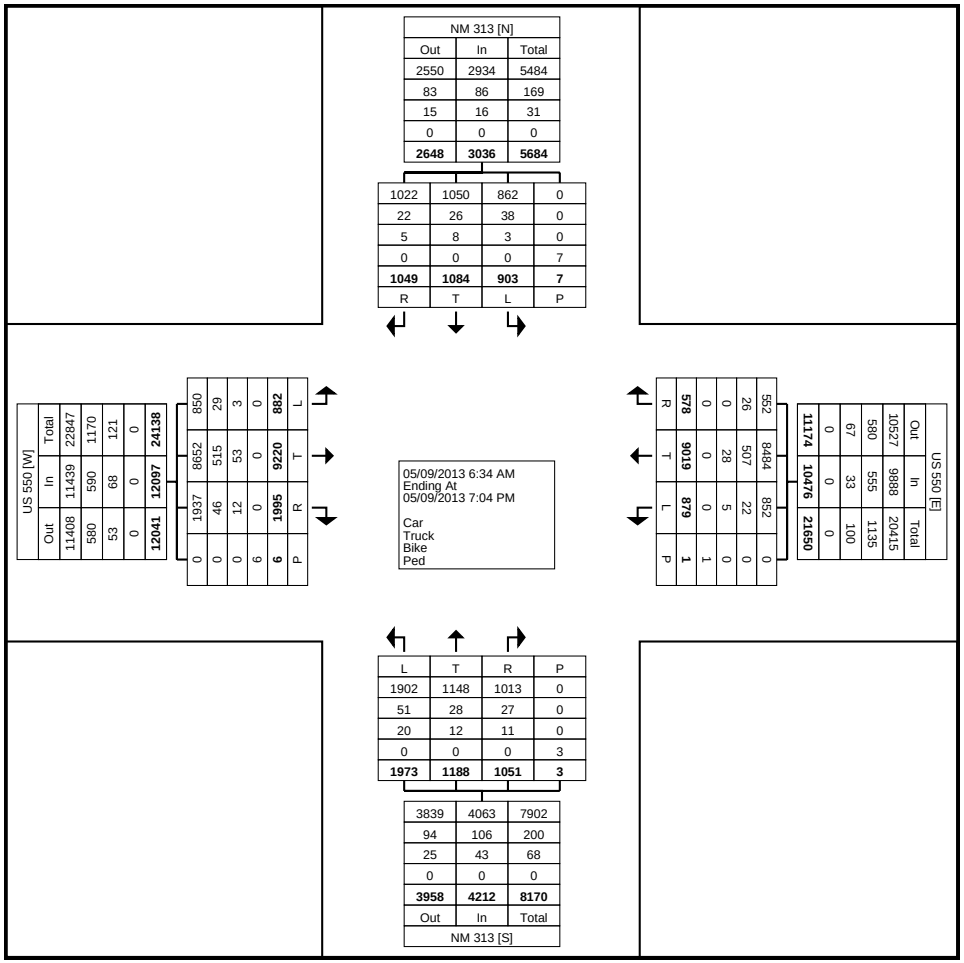
Turning Movement Data

Start Time	NM 313 Southbound					US 550 Westbound					NM 313 Northbound					US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
6:34 AM	24	17	20	0	61	11	151	7	0	169	22	7	21	1	50	20	453	36	0	509	789
6:49 AM	15	18	18	0	51	15	149	9	0	173	28	13	10	0	51	15	443	27	0	485	760
7:04 AM	37	30	22	0	89	17	153	35	0	205	29	58	19	0	106	29	434	49	0	512	912
7:19 AM	39	48	28	0	115	23	167	47	0	237	19	67	24	0	110	23	441	33	0	497	959
7:34 AM	28	59	17	0	104	19	195	23	0	237	25	30	20	0	75	18	410	42	0	470	886
7:49 AM	36	43	28	0	107	28	204	22	0	254	38	16	23	0	77	18	406	72	0	496	934
8:04 AM	31	32	19	0	82	29	178	21	0	228	51	31	41	0	123	26	306	68	0	400	833
8:19 AM	21	22	30	0	73	27	197	14	0	238	45	39	33	0	117	26	280	35	0	341	769
8:34 AM	36	34	39	0	109	28	192	8	0	228	47	36	25	0	108	19	245	49	0	313	758
8:49 AM	30	30	21	0	81	33	181	6	0	220	51	24	37	0	112	19	221	37	0	277	690
9:04 AM	20	18	22	0	60	21	189	11	0	221	35	21	40	0	96	16	221	59	0	296	673
9:19 AM	18	26	25	0	69	18	113	5	0	136	29	17	13	0	59	22	186	29	2	237	501
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10:49 AM	2	8	8	0	18	9	59	5	0	73	11	5	8	0	24	6	56	18	0	80	195
11:04 AM	30	20	25	1	75	32	186	8	0	226	65	24	23	0	112	22	194	57	0	273	686
11:19 AM	19	25	26	0	70	28	174	17	0	219	48	17	20	0	85	27	193	68	0	288	662
11:34 AM	29	17	37	2	83	33	187	14	0	234	67	33	28	0	128	21	215	63	0	299	744
11:49 AM	15	29	29	2	73	50	168	16	0	234	67	24	36	0	127	28	170	73	0	271	705
12:04 PM	28	31	35	0	94	36	191	16	0	243	83	42	49	0	174	26	215	64	0	305	816
12:19 PM	19	34	25	0	78	34	216	12	0	262	60	31	33	0	124	28	223	79	0	330	794
12:34 PM	21	31	25	0	77	26	219	13	0	258	56	35	28	0	119	15	199	54	0	268	722
12:49 PM	13	30	20	0	63	38	205	13	0	256	58	20	26	0	104	23	206	85	0	314	737
1:04 PM	21	29	35	1	85	25	181	18	1	224	59	34	39	0	132	25	238	45	0	308	749
1:19 PM	21	22	24	0	67	28	222	9	0	259	47	24	40	0	111	35	245	76	0	356	793
1:34 PM	26	19	26	0	71	38	210	20	0	268	58	29	35	2	122	30	212	43	0	285	746
1:49 PM	7	19	16	1	42	27	155	13	0	195	43	31	27	0	101	19	149	58	0	226	564
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:49 PM	11	9	8	0	28	2	82	3	0	87	23	15	13	0	51	9	67	13	1	89	255
4:04 PM	23	22	31	0	76	27	358	27	0	412	77	36	32	0	145	26	227	77	0	330	963
4:19 PM	33	50	27	0	110	23	368	15	0	406	66	40	40	0	146	28	277	60	0	365	1027
4:34 PM	35	41	37	0	113	13	410	14	0	437	61	52	24	0	137	25	282	65	0	372	1059
4:49 PM	31	34	43	0	108	26	362	20	0	408	80	41	42	0	163	39	230	74	0	343	1022
5:04 PM	27	30	35	0	92	19	431	11	0	461	66	31	38	0	135	25	277	51	3	353	1041
5:19 PM	17	26	40	0	83	11	377	10	0	398	79	39	30	0	148	32	259	49	0	340	969
5:34 PM	22	31	40	0	93	14	410	11	0	435	65	48	35	0	148	29	213	71	0	313	989
5:49 PM	27	38	42	0	107	9	377	14	0	400	75	61	23	0	159	24	216	48	0	288	954
6:04 PM	30	44	44	0	118	14	410	19	0	443	73	47	24	0	144	27	171	39	0	237	942
6:19 PM	17	34	35	0	86	18	406	14	0	438	73	25	24	0	122	25	202	58	0	285	931

6:34 PM	20	19	24	0	63	14	422	31	0	467	58	25	11	0	94	23	132	42	0	197	821
6:49 PM	24	15	23	0	62	16	164	7	0	187	36	20	17	0	73	14	106	29	0	149	471
Grand Total	903	1084	1049	7	3036	879	9019	578	1	10476	1973	1188	1051	3	4212	882	9220	1995	6	12097	29821
Approach %	29.7	35.7	34.6	-	-	8.4	86.1	5.5	-	-	46.8	28.2	25.0	-	-	7.3	76.2	16.5	-	-	-
Total %	3.0	3.6	3.5	-	10.2	2.9	30.2	1.9	-	35.1	6.6	4.0	3.5	-	14.1	3.0	30.9	6.7	-	40.6	-
Car	862	1050	1022	-	2934	852	8484	552	-	9888	1902	1148	1013	-	4063	850	8652	1937	-	11439	28324
% Car	95.5	96.9	97.4	-	96.6	96.9	94.1	95.5	-	94.4	96.4	96.6	96.4	-	96.5	96.4	93.8	97.1	-	94.6	95.0
Truck	38	26	22	-	86	22	507	26	-	555	51	28	27	-	106	29	515	46	-	590	1337
% Truck	4.2	2.4	2.1	-	2.8	2.5	5.6	4.5	-	5.3	2.6	2.4	2.6	-	2.5	3.3	5.6	2.3	-	4.9	4.5
Bike	3	8	5	-	16	5	28	0	-	33	20	12	11	-	43	3	53	12	-	68	160
% Bike	0.3	0.7	0.5	-	0.5	0.6	0.3	0.0	-	0.3	1.0	1.0	1.0	-	1.0	0.3	0.6	0.6	-	0.6	0.5
Ped	-	-	-	7	-	-	-	-	1	-	-	-	-	3	-	-	-	-	6	-	-
% Ped	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - NM 313
Site Code: 9
Start Date: 05/09/2013



Turning Movement Data Plot

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

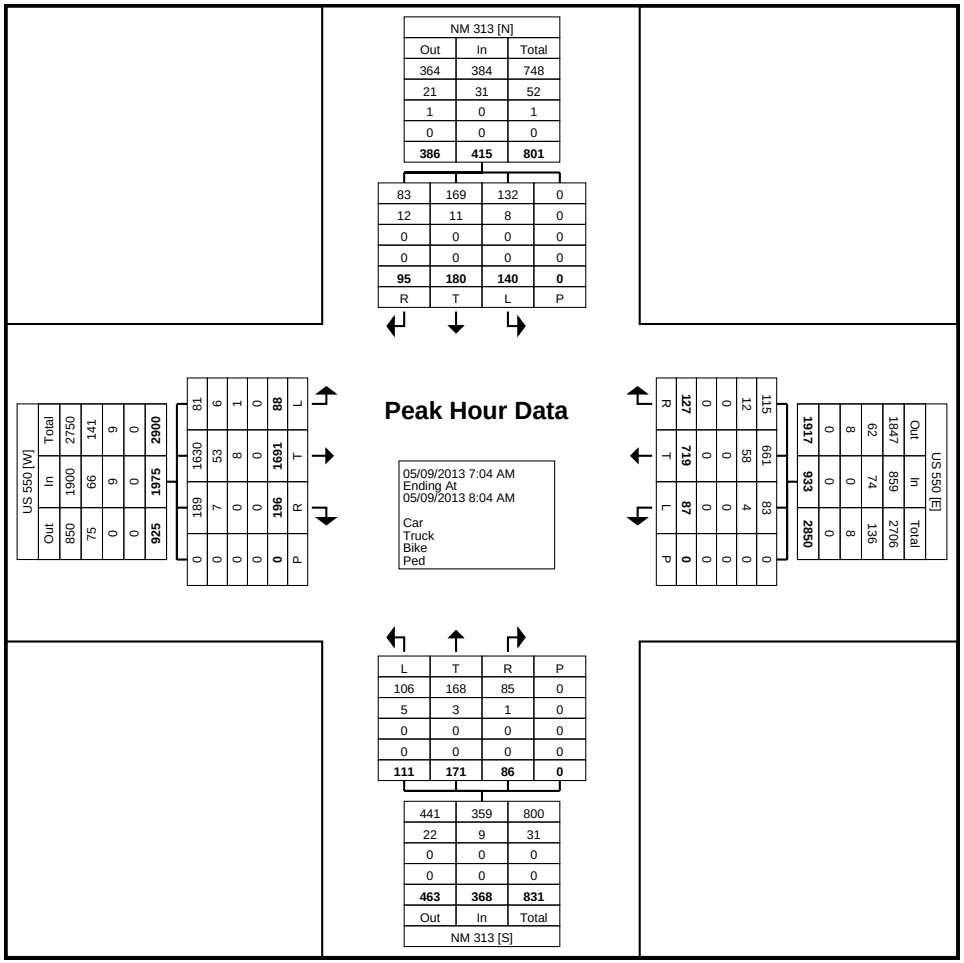
Count Name: US 550 - NM 313
Site Code: 9
Start Date: 05/09/2013

Turning Movement Peak Hour Data (7:04 AM)

Start Time	NM 313 Southbound					US 550 Westbound					NM 313 Northbound					US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:04 AM	37	30	22	0	89	17	153	35	0	205	29	58	19	0	106	29	434	49	0	512	912
7:19 AM	39	48	28	0	115	23	167	47	0	237	19	67	24	0	110	23	441	33	0	497	959
7:34 AM	28	59	17	0	104	19	195	23	0	237	25	30	20	0	75	18	410	42	0	470	886
7:49 AM	36	43	28	0	107	28	204	22	0	254	38	16	23	0	77	18	406	72	0	496	934
Total	140	180	95	0	415	87	719	127	0	933	111	171	86	0	368	88	1691	196	0	1975	3691
Approach %	33.7	43.4	22.9	-	-	9.3	77.1	13.6	-	-	30.2	46.5	23.4	-	-	4.5	85.6	9.9	-	-	-
Total %	3.8	4.9	2.6	-	11.2	2.4	19.5	3.4	-	25.3	3.0	4.6	2.3	-	10.0	2.4	45.8	5.3	-	53.5	-
PHF	0.897	0.763	0.848	-	0.902	0.777	0.881	0.676	-	0.918	0.730	0.638	0.896	-	0.836	0.759	0.959	0.681	-	0.964	0.962
Car	132	169	83	-	384	83	661	115	-	859	106	168	85	-	359	81	1630	189	-	1900	3502
% Car	94.3	93.9	87.4	-	92.5	95.4	91.9	90.6	-	92.1	95.5	98.2	98.8	-	97.6	92.0	96.4	96.4	-	96.2	94.9
Truck	8	11	12	-	31	4	58	12	-	74	5	3	1	-	9	6	53	7	-	66	180
% Truck	5.7	6.1	12.6	-	7.5	4.6	8.1	9.4	-	7.9	4.5	1.8	1.2	-	2.4	6.8	3.1	3.6	-	3.3	4.9
Bike	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	1	8	0	-	9	9
% Bike	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	1.1	0.5	0.0	-	0.5	0.2
Ped	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - NM 313
Site Code: 9
Start Date: 05/09/2013



Turning Movement Peak Hour Data Plot (7:04 AM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - NM 313
Site Code: 9
Start Date: 05/09/2013

Turning Movement Peak Hour Data (11:04 AM)

Start Time	NM 313 Southbound					US 550 Westbound					NM 313 Northbound					US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
11:04 AM	30	20	25	1	75	32	186	8	0	226	65	24	23	0	112	22	194	57	0	273	686
11:19 AM	19	25	26	0	70	28	174	17	0	219	48	17	20	0	85	27	193	68	0	288	662
11:34 AM	29	17	37	2	83	33	187	14	0	234	67	33	28	0	128	21	215	63	0	299	744
11:49 AM	15	29	29	2	73	50	168	16	0	234	67	24	36	0	127	28	170	73	0	271	705
Total	93	91	117	5	301	143	715	55	0	913	247	98	107	0	452	98	772	261	0	1131	2797
Approach %	30.9	30.2	38.9	-	-	15.7	78.3	6.0	-	-	54.6	21.7	23.7	-	-	8.7	68.3	23.1	-	-	-
Total %	3.3	3.3	4.2	-	10.8	5.1	25.6	2.0	-	32.6	8.8	3.5	3.8	-	16.2	3.5	27.6	9.3	-	40.4	-
PHF	1.033	1.046	1.054	-	1.209	0.953	1.275	1.078	-	1.301	1.229	0.990	0.991	-	1.177	1.167	1.197	1.192	-	1.261	1.253
Car	89	88	117	-	294	137	640	54	-	831	240	97	99	-	436	94	703	246	-	1043	2604
% Car	95.7	96.7	100.0	-	97.7	95.8	89.5	98.2	-	91.0	97.2	99.0	92.5	-	96.5	95.9	91.1	94.3	-	92.2	93.1
Truck	4	1	0	-	5	5	73	1	-	79	6	1	6	-	13	4	66	12	-	82	179
% Truck	4.3	1.1	0.0	-	1.7	3.5	10.2	1.8	-	8.7	2.4	1.0	5.6	-	2.9	4.1	8.5	4.6	-	7.3	6.4
Bike	0	2	0	-	2	1	2	0	-	3	1	0	2	-	3	0	3	3	-	6	14
% Bike	0.0	2.2	0.0	-	0.7	0.7	0.3	0.0	-	0.3	0.4	0.0	1.9	-	0.7	0.0	0.4	1.1	-	0.5	0.5
Ped	-	-	-	5	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Ped	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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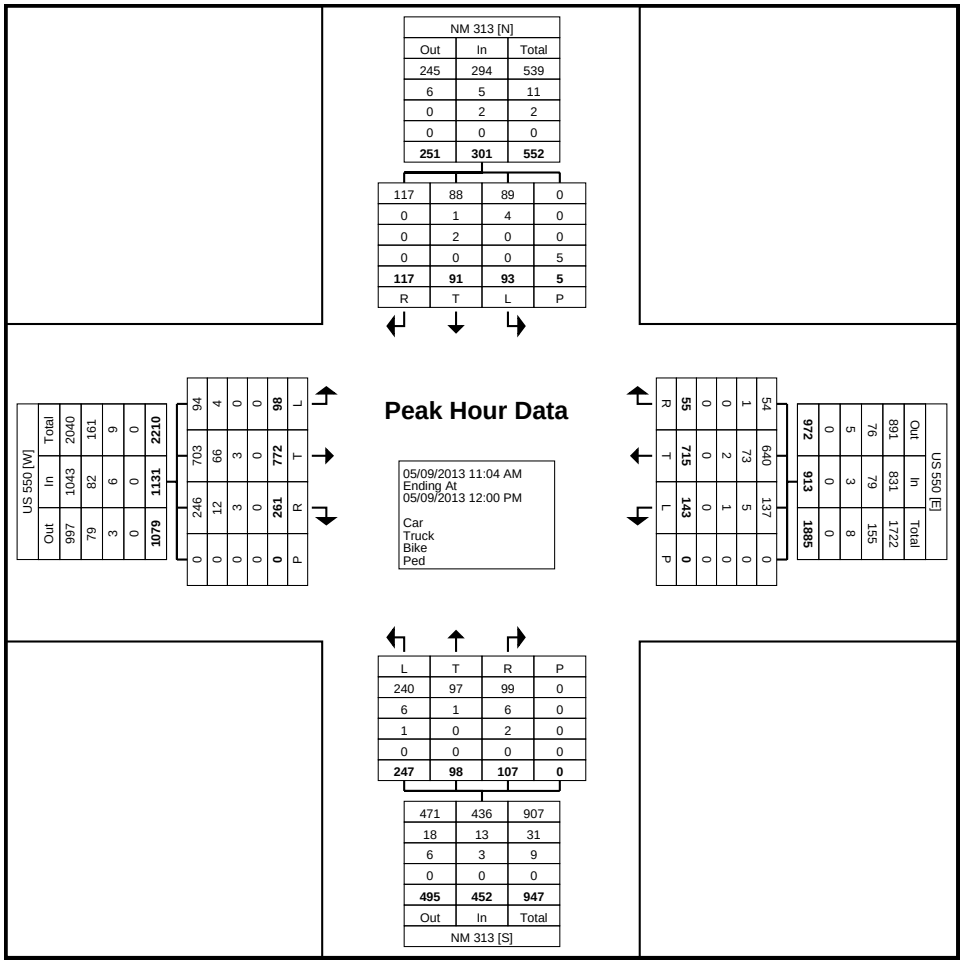

Turning Movement Peak Hour Data Plot (11:04 AM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - NM 313
Site Code: 9
Start Date: 05/09/2013

Turning Movement Peak Hour Data (12:04 PM)

Start Time	NM 313 Southbound					US 550 Westbound					NM 313 Northbound					US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:04 PM	28	31	35	0	94	36	191	16	0	243	83	42	49	0	174	26	215	64	0	305	816
12:19 PM	19	34	25	0	78	34	216	12	0	262	60	31	33	0	124	28	223	79	0	330	794
12:34 PM	21	31	25	0	77	26	219	13	0	258	56	35	28	0	119	15	199	54	0	268	722
12:49 PM	13	30	20	0	63	38	205	13	0	256	58	20	26	0	104	23	206	85	0	314	737
Total	81	126	105	0	312	134	831	54	0	1019	257	128	136	0	521	92	843	282	0	1217	3069
Approach %	26.0	40.4	33.7	-	-	13.2	81.6	5.3	-	-	49.3	24.6	26.1	-	-	7.6	69.3	23.2	-	-	-
Total %	2.6	4.1	3.4	-	10.2	4.4	27.1	1.8	-	33.2	8.4	4.2	4.4	-	17.0	3.0	27.5	9.2	-	39.7	-
PHF	0.723	0.926	0.750	-	0.830	0.882	0.949	0.844	-	0.972	0.774	0.762	0.694	-	0.749	0.821	0.945	0.829	-	0.922	0.940
Car	78	124	103	-	305	130	746	53	-	929	250	123	130	-	503	92	769	275	-	1136	2873
% Car	96.3	98.4	98.1	-	97.8	97.0	89.8	98.1	-	91.2	97.3	96.1	95.6	-	96.5	100.0	91.2	97.5	-	93.3	93.6
Truck	3	2	1	-	6	2	84	1	-	87	6	3	5	-	14	0	71	5	-	76	183
% Truck	3.7	1.6	1.0	-	1.9	1.5	10.1	1.9	-	8.5	2.3	2.3	3.7	-	2.7	0.0	8.4	1.8	-	6.2	6.0
Bike	0	0	1	-	1	2	1	0	-	3	1	2	1	-	4	0	3	2	-	5	13
% Bike	0.0	0.0	1.0	-	0.3	1.5	0.1	0.0	-	0.3	0.4	1.6	0.7	-	0.8	0.0	0.4	0.7	-	0.4	0.4
Ped	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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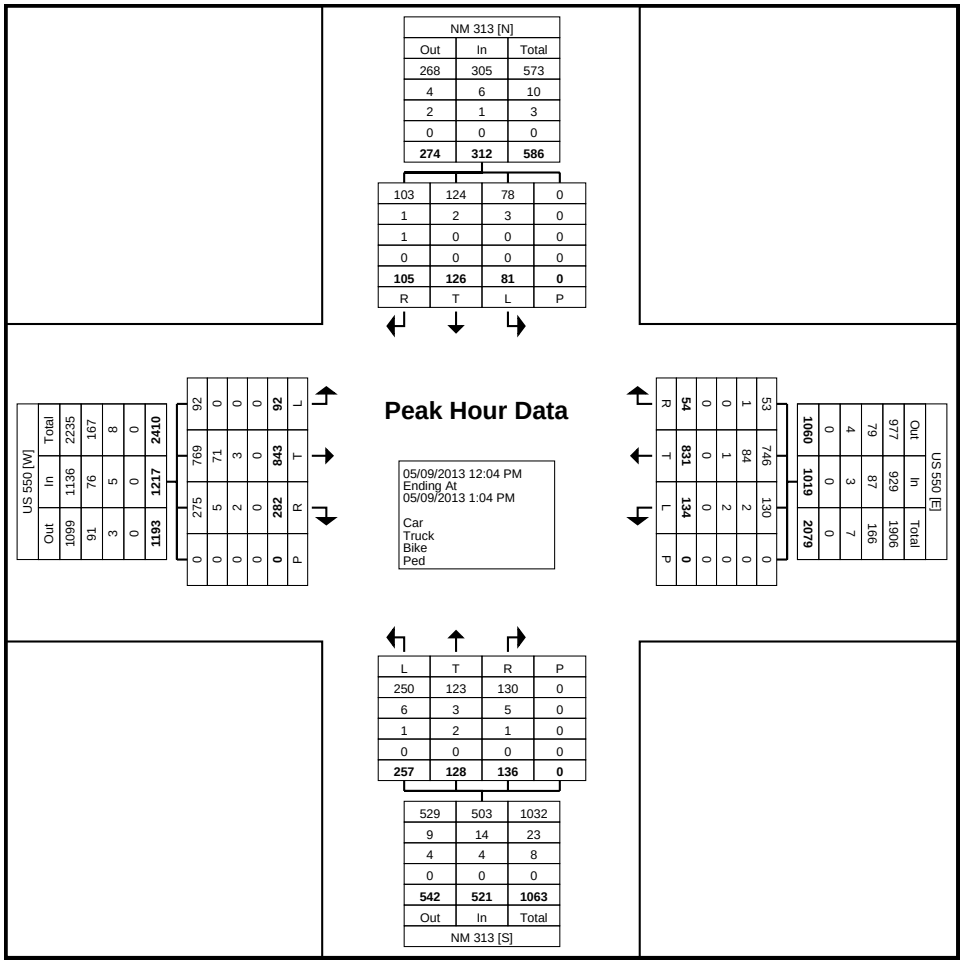
Count Name: US 550 - NM 313
Site Code: 9
Start Date: 05/09/2013



Turning Movement Peak Hour Data Plot (12:04 PM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - NM 313
Site Code: 9
Start Date: 05/09/2013

Turning Movement Peak Hour Data (4:19 PM)

Start Time	NM 313 Southbound					US 550 Westbound					NM 313 Northbound					US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:19 PM	33	50	27	0	110	23	368	15	0	406	66	40	40	0	146	28	277	60	0	365	1027
4:34 PM	35	41	37	0	113	13	410	14	0	437	61	52	24	0	137	25	282	65	0	372	1059
4:49 PM	31	34	43	0	108	26	362	20	0	408	80	41	42	0	163	39	230	74	0	343	1022
5:04 PM	27	30	35	0	92	19	431	11	0	461	66	31	38	0	135	25	277	51	3	353	1041
Total	126	155	142	0	423	81	1571	60	0	1712	273	164	144	0	581	117	1066	250	3	1433	4149
Approach %	29.8	36.6	33.6	-	-	4.7	91.8	3.5	-	-	47.0	28.2	24.8	-	-	8.2	74.4	17.4	-	-	-
Total %	3.0	3.7	3.4	-	10.2	2.0	37.9	1.4	-	41.3	6.6	4.0	3.5	-	14.0	2.8	25.7	6.0	-	34.5	-
PHF	0.900	0.775	0.826	-	0.936	0.779	0.911	0.750	-	0.928	0.853	0.788	0.857	-	0.891	0.750	0.945	0.845	-	0.963	0.979
Car	119	151	140	-	410	80	1529	58	-	1667	268	158	140	-	566	114	1003	243	-	1360	4003
% Car	94.4	97.4	98.6	-	96.9	98.8	97.3	96.7	-	97.4	98.2	96.3	97.2	-	97.4	97.4	94.1	97.2	-	94.9	96.5
Truck	4	0	1	-	5	1	31	2	-	34	3	6	3	-	12	2	52	4	-	58	109
% Truck	3.2	0.0	0.7	-	1.2	1.2	2.0	3.3	-	2.0	1.1	3.7	2.1	-	2.1	1.7	4.9	1.6	-	4.0	2.6
Bike	3	4	1	-	8	0	11	0	-	11	2	0	1	-	3	1	11	3	-	15	37
% Bike	2.4	2.6	0.7	-	1.9	0.0	0.7	0.0	-	0.6	0.7	0.0	0.7	-	0.5	0.9	1.0	1.2	-	1.0	0.9
Ped	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	3	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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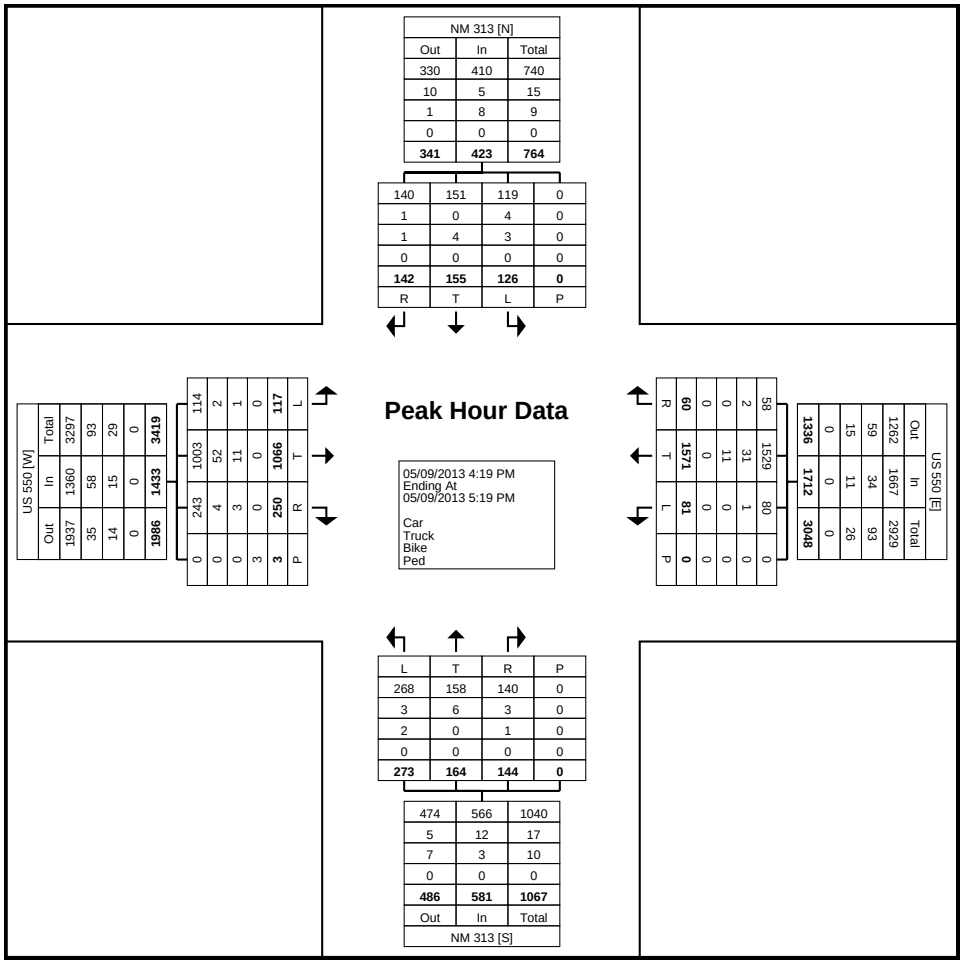

Turning Movement Peak Hour Data Plot (4:19 PM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US550-Don Tomas
Site Code: 8
Start Date: 05/09/2013

Turning Movement Data

Start Time	Camino Don Tomas Southbound					US 550 Westbound					Camino Don Tomas Northbound					US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
6:30 AM	1	2	1	0	4	2	170	0	0	172	21	1	15	0	37	0	489	18	0	507	720
6:45 AM	0	1	2	0	3	4	179	1	0	184	17	2	8	0	27	2	466	27	0	495	709
7:00 AM	2	3	0	0	5	12	180	0	0	192	18	1	17	0	36	0	537	37	0	574	807
7:15 AM	0	14	2	0	16	26	188	1	0	215	30	3	17	0	50	1	492	46	0	539	820
7:30 AM	1	3	2	0	6	9	203	1	0	213	39	7	20	0	66	1	461	34	0	496	781
7:45 AM	1	2	2	0	5	10	261	1	0	272	27	4	11	0	42	1	445	44	0	490	809
8:00 AM	2	4	1	0	7	12	212	0	0	224	20	0	12	0	32	1	384	23	0	408	671
8:15 AM	1	5	2	0	8	16	245	0	0	261	38	6	22	0	66	2	325	19	0	346	681
8:30 AM	0	1	2	0	3	13	238	2	0	253	26	0	14	0	40	2	298	21	0	321	617
8:45 AM	2	1	2	0	5	9	248	0	0	257	32	2	23	0	57	1	264	17	0	282	601
9:00 AM	4	1	4	0	9	9	216	1	0	226	25	0	9	0	34	8	256	17	0	281	550
9:15 AM	8	3	8	0	19	8	217	1	0	226	28	1	14	0	43	6	311	21	1	338	626
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	6	2	3	0	11	13	237	1	0	251	19	5	16	0	40	4	242	18	0	264	566
11:15 AM	4	3	4	0	11	11	234	0	0	245	40	3	16	0	59	6	278	17	0	301	616
11:30 AM	9	3	5	0	17	10	250	3	0	263	21	3	17	0	41	4	287	21	0	312	633
11:45 AM	3	5	3	2	11	15	258	1	0	274	45	2	23	0	70	11	241	20	0	272	627
12:00 PM	4	9	4	0	17	21	281	2	0	304	42	3	18	0	63	4	283	29	0	316	700
12:15 PM	8	3	5	0	16	17	280	1	0	298	39	2	19	0	60	7	301	21	0	329	703
12:30 PM	5	3	3	0	11	19	282	1	0	302	25	3	12	0	40	14	255	27	0	296	649
12:45 PM	9	4	3	0	16	12	284	0	0	296	27	1	26	0	54	9	303	35	0	347	713
1:00 PM	7	4	4	0	15	9	249	1	0	259	33	3	17	0	53	7	304	25	0	336	663
1:15 PM	5	6	2	0	13	10	279	3	0	292	33	1	14	0	48	4	304	32	0	340	693
1:30 PM	7	1	5	1	13	14	284	2	1	300	28	4	14	0	46	11	259	24	0	294	653
1:45 PM	6	2	7	0	15	10	293	1	0	304	32	3	19	0	54	5	298	28	0	331	704
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	7	9	6	0	22	21	422	1	0	444	66	7	19	2	92	6	290	33	0	329	887
4:15 PM	1	7	6	0	14	9	493	1	0	503	39	3	13	0	55	4	363	33	0	400	972
4:30 PM	5	4	5	0	14	7	460	0	0	467	58	2	15	0	75	0	336	30	0	366	922
4:45 PM	4	13	2	0	19	6	504	0	2	510	51	5	26	0	82	9	325	40	0	374	985
5:00 PM	5	6	11	0	22	15	468	1	0	484	77	4	25	0	106	3	307	35	0	345	957
5:15 PM	4	16	9	0	29	9	497	2	0	508	76	8	22	0	106	7	325	37	0	369	1012
5:30 PM	8	6	9	1	23	6	495	1	0	502	96	3	15	0	114	5	282	34	0	321	960
5:45 PM	2	3	8	1	13	8	479	4	1	491	79	8	15	0	102	5	262	37	0	304	910
6:00 PM	4	5	7	0	16	9	549	1	0	559	60	2	18	0	80	3	222	30	0	255	910
6:15 PM	5	3	2	0	10	7	479	2	0	488	53	3	16	0	72	1	243	29	0	273	843
6:30 PM	2	4	3	0	9	13	514	4	0	531	44	3	12	0	59	1	194	17	0	212	811
6:45 PM	3	3	4	0	10	10	348	0	0	358	42	1	13	0	56	3	185	15	0	203	627

Grand Total	145	164	148	5	457	411	11476	41	4	11928	1446	109	602	2	2157	158	11417	991	1	12566	27108
Approach %	31.7	35.9	32.4	-	-	3.4	96.2	0.3	-	-	67.0	5.1	27.9	-	-	1.3	90.9	7.9	-	-	-
Total %	0.5	0.6	0.5	-	1.7	1.5	42.3	0.2	-	44.0	5.3	0.4	2.2	-	8.0	0.6	42.1	3.7	-	46.4	-
Car	140	163	148	-	451	388	10867	38	-	11293	1426	107	574	-	2107	155	10784	983	-	11922	25773
% Car	96.6	99.4	100.0	-	98.7	94.4	94.7	92.7	-	94.7	98.6	98.2	95.3	-	97.7	98.1	94.5	99.2	-	94.9	95.1
Truck	3	1	0	-	4	21	565	1	-	587	14	1	27	-	42	3	569	7	-	579	1212
% Truck	2.1	0.6	0.0	-	0.9	5.1	4.9	2.4	-	4.9	1.0	0.9	4.5	-	1.9	1.9	5.0	0.7	-	4.6	4.5
Bike	2	0	0	-	2	2	44	2	-	48	6	1	1	-	8	0	64	1	-	65	123
% Bike	1.4	0.0	0.0	-	0.4	0.5	0.4	4.9	-	0.4	0.4	0.9	0.2	-	0.4	0.0	0.6	0.1	-	0.5	0.5
Ped	-	-	-	5	-	-	-	-	4	-	-	-	-	2	-	-	-	-	1	-	-
% Ped	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

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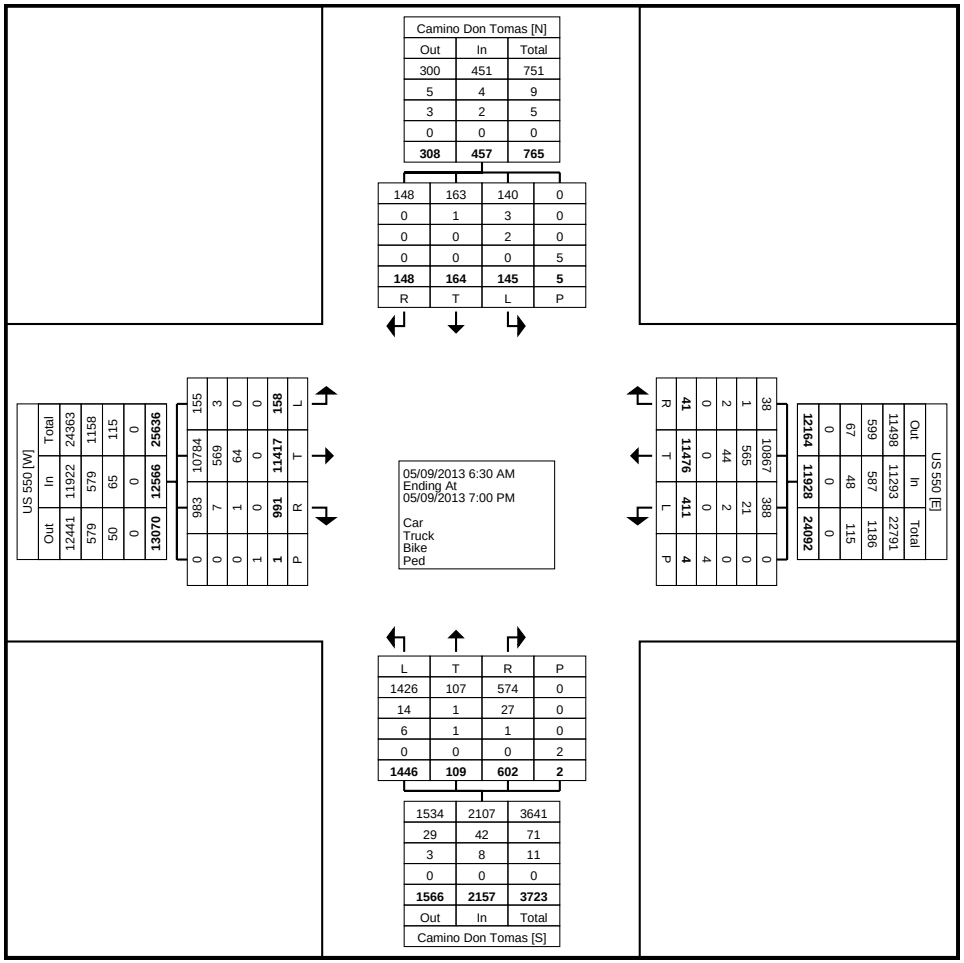
Count Name: US550-Don Tomas
Site Code: 8
Start Date: 05/09/2013



Turning Movement Data Plot

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US550-Don Tomas
Site Code: 8
Start Date: 05/09/2013

Turning Movement Peak Hour Data (7:00 AM)

Start Time	Camino Don Tomas Southbound					US 550 Westbound					Camino Don Tomas Northbound					US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	2	3	0	0	5	12	180	0	0	192	18	1	17	0	36	0	537	37	0	574	807
7:15 AM	0	14	2	0	16	26	188	1	0	215	30	3	17	0	50	1	492	46	0	539	820
7:30 AM	1	3	2	0	6	9	203	1	0	213	39	7	20	0	66	1	461	34	0	496	781
7:45 AM	1	2	2	0	5	10	261	1	0	272	27	4	11	0	42	1	445	44	0	490	809
Total	4	22	6	0	32	57	832	3	0	892	114	15	65	0	194	3	1935	161	0	2099	3217
Approach %	12.5	68.8	18.8	-	-	6.4	93.3	0.3	-	-	58.8	7.7	33.5	-	-	0.1	92.2	7.7	-	-	-
Total %	0.1	0.7	0.2	-	1.0	1.8	25.9	0.1	-	27.7	3.5	0.5	2.0	-	6.0	0.1	60.1	5.0	-	65.2	-
PHF	0.500	0.393	0.750	-	0.500	0.548	0.797	0.750	-	0.820	0.731	0.536	0.813	-	0.735	0.750	0.901	0.875	-	0.914	0.981
Car	4	22	6	-	32	47	766	3	-	816	112	15	58	-	185	3	1871	161	-	2035	3068
% Car	100.0	100.0	100.0	-	100.0	82.5	92.1	100.0	-	91.5	98.2	100.0	89.2	-	95.4	100.0	96.7	100.0	-	97.0	95.4
Truck	0	0	0	-	0	10	63	0	-	73	2	0	7	-	9	0	57	0	-	57	139
% Truck	0.0	0.0	0.0	-	0.0	17.5	7.6	0.0	-	8.2	1.8	0.0	10.8	-	4.6	0.0	2.9	0.0	-	2.7	4.3
Bike	0	0	0	-	0	0	3	0	-	3	0	0	0	-	0	0	7	0	-	7	10
% Bike	0.0	0.0	0.0	-	0.0	0.0	0.4	0.0	-	0.3	0.0	0.0	0.0	-	0.0	0.0	0.4	0.0	-	0.3	0.3
Ped	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
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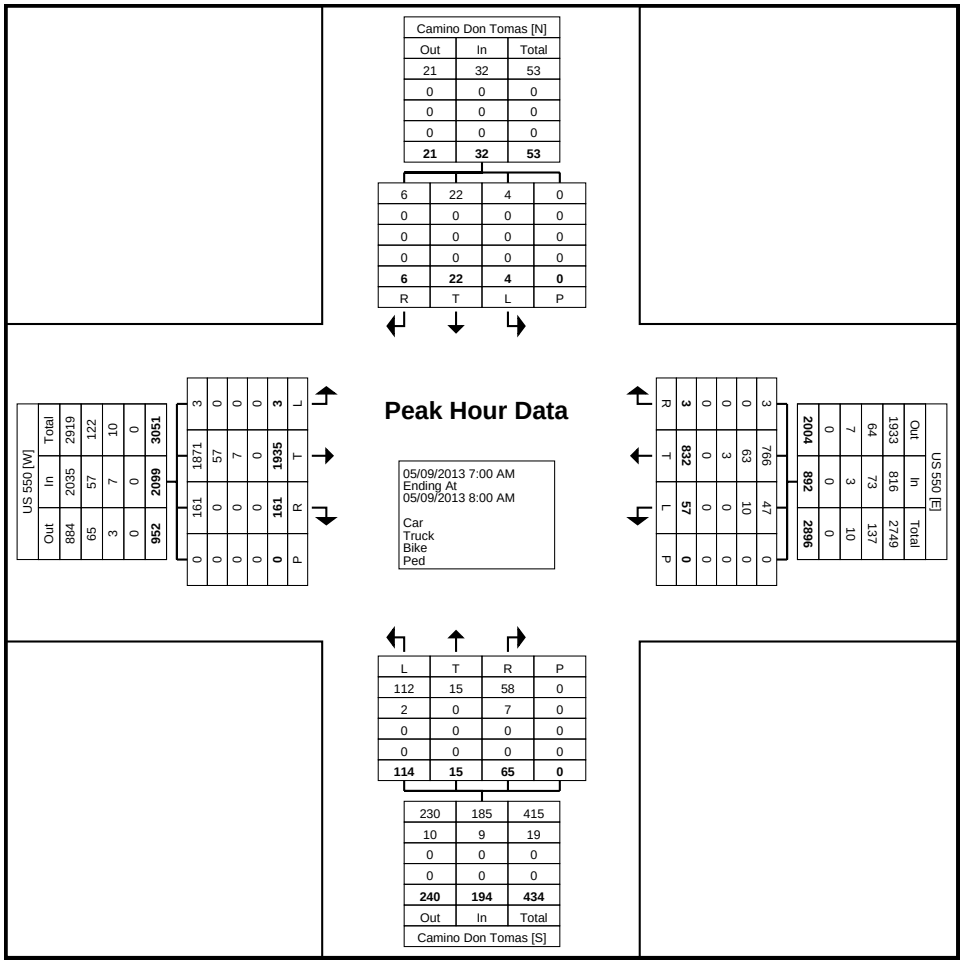
Count Name: US550-Don Tomas
Site Code: 8
Start Date: 05/09/2013



Turning Movement Peak Hour Data Plot (7:00 AM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US550-Don Tomas
Site Code: 8
Start Date: 05/09/2013

Turning Movement Peak Hour Data (11:00 AM)

Start Time	Camino Don Tomas Southbound					US 550 Westbound					Camino Don Tomas Northbound					US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
11:00 AM	6	2	3	0	11	13	237	1	0	251	19	5	16	0	40	4	242	18	0	264	566
11:15 AM	4	3	4	0	11	11	234	0	0	245	40	3	16	0	59	6	278	17	0	301	616
11:30 AM	9	3	5	0	17	10	250	3	0	263	21	3	17	0	41	4	287	21	0	312	633
11:45 AM	3	5	3	2	11	15	258	1	0	274	45	2	23	0	70	11	241	20	0	272	627
Total	22	13	15	2	50	49	979	5	0	1033	125	13	72	0	210	25	1048	76	0	1149	2442
Approach %	44.0	26.0	30.0	-	-	4.7	94.8	0.5	-	-	59.5	6.2	34.3	-	-	2.2	91.2	6.6	-	-	-
Total %	0.9	0.5	0.6	-	2.0	2.0	40.1	0.2	-	42.3	5.1	0.5	2.9	-	8.6	1.0	42.9	3.1	-	47.1	-
PHF	0.611	0.650	0.750	-	0.735	0.817	0.949	0.417	-	0.943	0.694	0.650	0.783	-	0.750	0.568	0.913	0.905	-	0.921	0.964
Car	22	13	15	-	50	48	898	5	-	951	123	12	67	-	202	24	969	75	-	1068	2271
% Car	100.0	100.0	100.0	-	100.0	98.0	91.7	100.0	-	92.1	98.4	92.3	93.1	-	96.2	96.0	92.5	98.7	-	93.0	93.0
Truck	0	0	0	-	0	1	78	0	-	79	2	1	5	-	8	1	72	1	-	74	161
% Truck	0.0	0.0	0.0	-	0.0	2.0	8.0	0.0	-	7.6	1.6	7.7	6.9	-	3.8	4.0	6.9	1.3	-	6.4	6.6
Bike	0	0	0	-	0	0	3	0	-	3	0	0	0	-	0	0	7	0	-	7	10
% Bike	0.0	0.0	0.0	-	0.0	0.0	0.3	0.0	-	0.3	0.0	0.0	0.0	-	0.0	0.0	0.7	0.0	-	0.6	0.4
Ped	-	-	-	2	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Ped	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Lee Engineering, LLC
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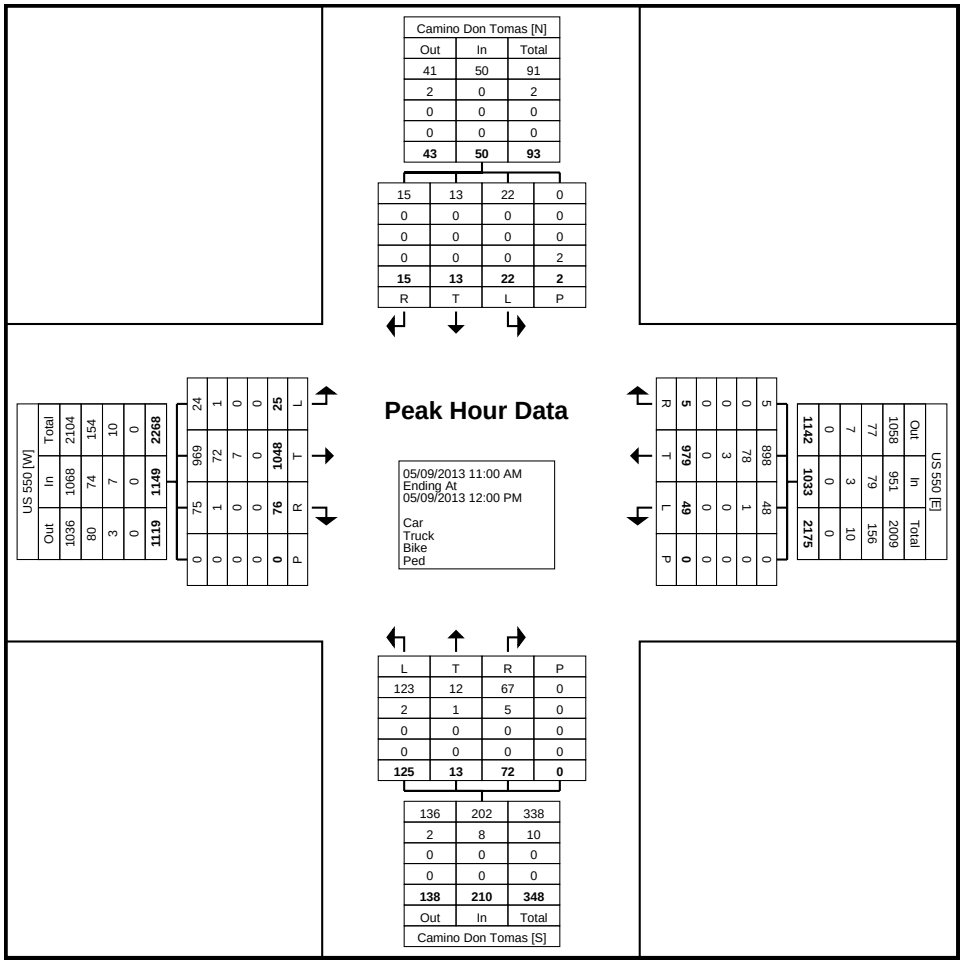
Count Name: US550-Don Tomas
Site Code: 8
Start Date: 05/09/2013



Turning Movement Peak Hour Data Plot (11:00 AM)

Lee Engineering, LLC
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jnorby@lee-eng.com

Count Name: US550-Don Tomas
Site Code: 8
Start Date: 05/09/2013

Turning Movement Peak Hour Data (12:00 PM)

Start Time	Camino Don Tomas Southbound					US 550 Westbound					Camino Don Tomas Northbound					US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 PM	4	9	4	0	17	21	281	2	0	304	42	3	18	0	63	4	283	29	0	316	700
12:15 PM	8	3	5	0	16	17	280	1	0	298	39	2	19	0	60	7	301	21	0	329	703
12:30 PM	5	3	3	0	11	19	282	1	0	302	25	3	12	0	40	14	255	27	0	296	649
12:45 PM	9	4	3	0	16	12	284	0	0	296	27	1	26	0	54	9	303	35	0	347	713
Total	26	19	15	0	60	69	1127	4	0	1200	133	9	75	0	217	34	1142	112	0	1288	2765
Approach %	43.3	31.7	25.0	-	-	5.8	93.9	0.3	-	-	61.3	4.1	34.6	-	-	2.6	88.7	8.7	-	-	-
Total %	0.9	0.7	0.5	-	2.2	2.5	40.8	0.1	-	43.4	4.8	0.3	2.7	-	7.8	1.2	41.3	4.1	-	46.6	-
PHF	0.722	0.528	0.750	-	0.882	0.821	0.992	0.500	-	0.987	0.792	0.750	0.721	-	0.861	0.607	0.942	0.800	-	0.928	0.969
Car	24	19	15	-	58	67	1038	4	-	1109	132	9	75	-	216	33	1057	110	-	1200	2583
% Car	92.3	100.0	100.0	-	96.7	97.1	92.1	100.0	-	92.4	99.2	100.0	100.0	-	99.5	97.1	92.6	98.2	-	93.2	93.4
Truck	1	0	0	-	1	2	88	0	-	90	1	0	0	-	1	1	81	2	-	84	176
% Truck	3.8	0.0	0.0	-	1.7	2.9	7.8	0.0	-	7.5	0.8	0.0	0.0	-	0.5	2.9	7.1	1.8	-	6.5	6.4
Bike	1	0	0	-	1	0	1	0	-	1	0	0	0	-	0	0	4	0	-	4	6
% Bike	3.8	0.0	0.0	-	1.7	0.0	0.1	0.0	-	0.1	0.0	0.0	0.0	-	0.0	0.0	0.4	0.0	-	0.3	0.2
Ped	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Lee Engineering, LLC
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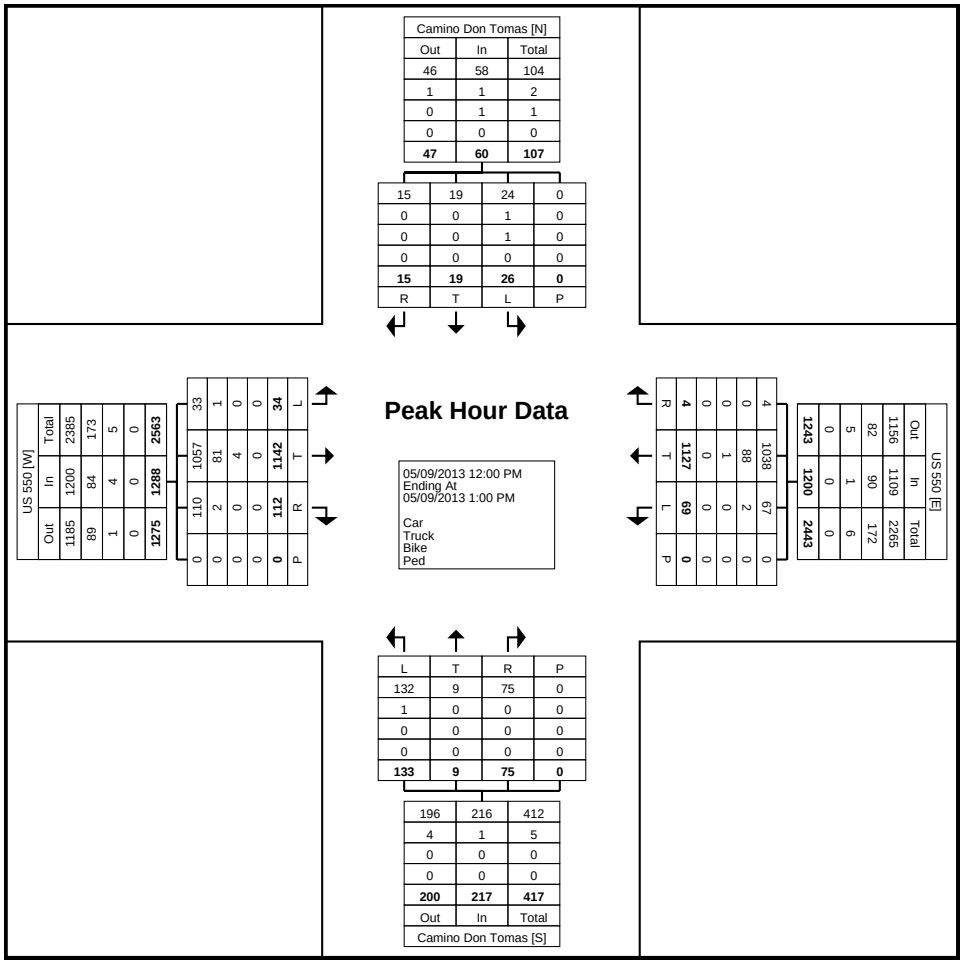
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US550-Don Tomas
Site Code: 8
Start Date: 05/09/2013



Camino Don Tomas [N]		
Out	In	Total
46	58	104
1	1	2
0	1	1
0	0	0
47	**60**	**107**

15	19	24	0
0	0	1	0
0	0	1	0
0	0	0	0
15	**19**	**26**	**0**
R	T	L	P

US 550 [W]							
Out	1185	89	1	0	0	**1275**	
In	1200	84	4	0	**1288**		
Total	2385	173	5	0	**2563**		

110	2	0	0	**112**	R	
1057	81	4	0	**1142**	T	
33	1	0	0	**34**	L	
0	0	0	0	**0**	P	

R	**4**	0	0	0	4	
T	**1127**	0	1	88	1038	
L	**69**	0	0	2	67	
P	**0**	0	0	0	0	

US 550 [E]							
Out	1156	82	5	0	**1243**		
In	1109	90	1	0	**1200**		
Total	2265	172	6	0	**2443**		

L	T	R	P
132	9	75	0
1	0	0	0
0	0	0	0
0	0	0	0
133	**9**	**75**	**0**

196	216	412
4	1	5
0	0	0
0	0	0
200	**217**	**417**
Out	In	Total
Camino Don Tomas [S]		

Turning Movement Peak Hour Data Plot (12:00 PM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US550-Don Tomas
Site Code: 8
Start Date: 05/09/2013

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Camino Don Tomas Southbound					US 550 Westbound					Camino Don Tomas Northbound					US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:45 PM	4	13	2	0	19	6	504	0	2	510	51	5	26	0	82	9	325	40	0	374	985
5:00 PM	5	6	11	0	22	15	468	1	0	484	77	4	25	0	106	3	307	35	0	345	957
5:15 PM	4	16	9	0	29	9	497	2	0	508	76	8	22	0	106	7	325	37	0	369	1012
5:30 PM	8	6	9	1	23	6	495	1	0	502	96	3	15	0	114	5	282	34	0	321	960
Total	21	41	31	1	93	36	1964	4	2	2004	300	20	88	0	408	24	1239	146	0	1409	3914
Approach %	22.6	44.1	33.3	-	-	1.8	98.0	0.2	-	-	73.5	4.9	21.6	-	-	1.7	87.9	10.4	-	-	-
Total %	0.5	1.0	0.8	-	2.4	0.9	50.2	0.1	-	51.2	7.7	0.5	2.2	-	10.4	0.6	31.7	3.7	-	36.0	-
PHF	0.656	0.641	0.705	-	0.802	0.600	0.974	0.500	-	0.982	0.781	0.625	0.846	-	0.895	0.667	0.953	0.913	-	0.942	0.967
Car	20	41	31	-	92	36	1928	4	-	1968	298	20	86	-	404	24	1175	146	-	1345	3809
% Car	95.2	100.0	100.0	-	98.9	100.0	98.2	100.0	-	98.2	99.3	100.0	97.7	-	99.0	100.0	94.8	100.0	-	95.5	97.3
Truck	1	0	0	-	1	0	30	0	-	30	0	0	1	-	1	0	59	0	-	59	91
% Truck	4.8	0.0	0.0	-	1.1	0.0	1.5	0.0	-	1.5	0.0	0.0	1.1	-	0.2	0.0	4.8	0.0	-	4.2	2.3
Bike	0	0	0	-	0	0	6	0	-	6	2	0	1	-	3	0	5	0	-	5	14
% Bike	0.0	0.0	0.0	-	0.0	0.0	0.3	0.0	-	0.3	0.7	0.0	1.1	-	0.7	0.0	0.4	0.0	-	0.4	0.4
Ped	-	-	-	1	-	-	-	-	2	-	-	-	-	0	-	-	-	-	0	-	-
% Ped	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

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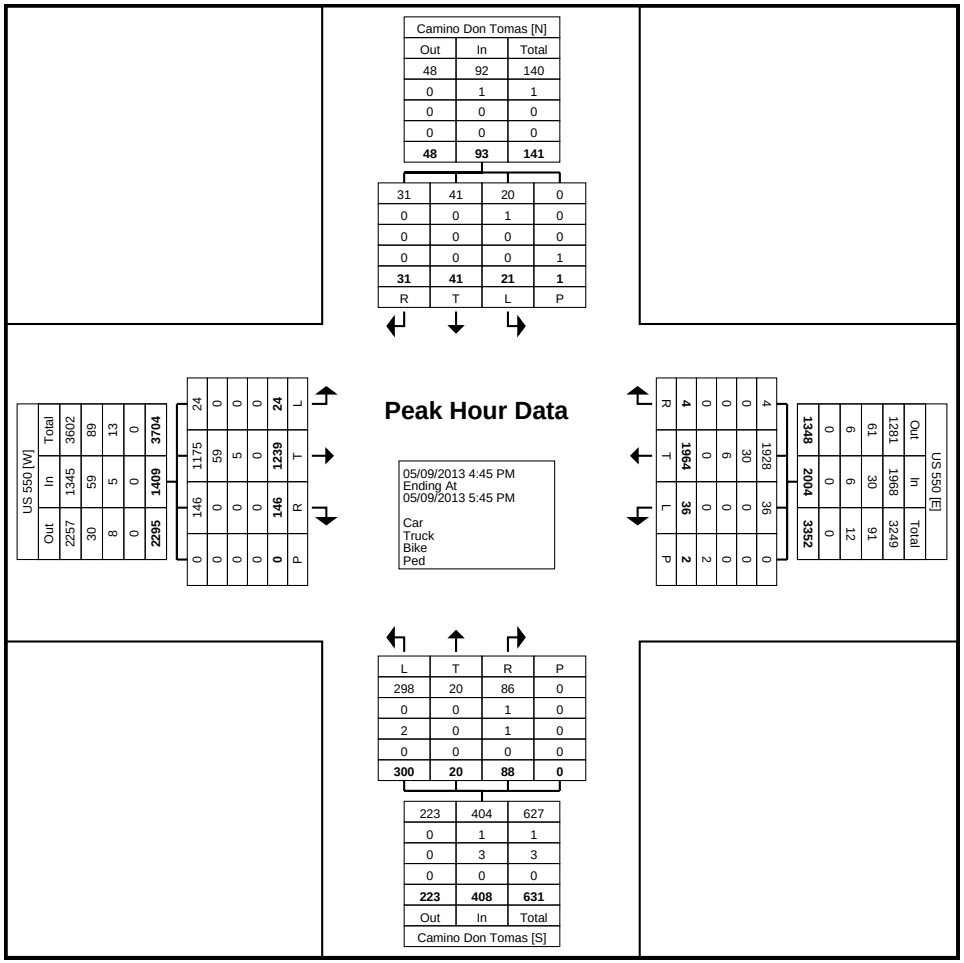

Turning Movement Peak Hour Data Plot (4:45 PM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Sheriff Posse Rd
Site Code: 7
Start Date: 05/08/2013

Turning Movement Data

Start Time	US 550 Westbound				Sheriff Posse Rd Northbound				US 550 Eastbound				
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
6:30 AM	3	185	0	188	0	22	0	22	508	0	2	508	718
6:45 AM	5	224	0	229	0	26	1	26	505	4	1	509	764
7:00 AM	2	203	0	205	0	44	0	44	627	1	0	628	877
7:15 AM	4	241	0	245	0	45	0	45	557	1	0	558	848
7:30 AM	2	251	0	253	0	20	0	20	474	0	2	474	747
7:45 AM	3	292	0	295	1	28	0	29	261	3	0	264	588
8:00 AM	4	221	0	225	0	35	0	35	399	3	0	402	662
8:15 AM	6	231	0	237	0	12	0	12	385	1	0	386	635
8:30 AM	9	265	0	274	0	10	0	10	435	3	0	438	722
8:45 AM	7	261	0	268	0	14	0	14	298	1	0	299	581
9:00 AM	11	258	0	269	2	11	0	13	301	0	0	301	583
9:15 AM	10	241	0	251	0	9	0	9	288	2	0	290	550
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	13	268	0	281	2	7	0	9	281	2	0	283	573
11:15 AM	12	273	0	285	0	9	0	9	283	1	0	284	578
11:30 AM	14	271	0	285	0	15	0	15	275	2	0	277	577
11:45 AM	13	282	0	295	1	23	0	24	295	0	0	295	614
12:00 PM	12	282	0	294	0	9	1	9	292	2	0	294	597
12:15 PM	14	277	0	291	2	18	0	20	296	3	0	299	610
12:30 PM	16	312	0	328	2	11	0	13	323	2	0	325	666
12:45 PM	20	286	0	306	0	14	0	14	265	8	0	273	593
1:00 PM	15	328	0	343	0	18	0	18	326	4	0	330	691
1:15 PM	13	305	0	318	0	20	0	20	309	4	0	313	651
1:30 PM	14	300	0	314	0	14	0	14	309	2	0	311	639
1:45 PM	8	282	0	290	0	10	0	10	300	3	0	303	603
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	24	446	0	470	1	24	0	25	309	1	0	310	805
4:15 PM	32	481	0	513	0	17	0	17	310	4	0	314	844
4:30 PM	31	523	0	554	0	13	0	13	366	7	0	373	940
4:45 PM	28	536	0	564	0	25	0	25	364	4	0	368	957
5:00 PM	33	555	0	588	0	33	0	33	379	0	0	379	1000
5:15 PM	39	554	0	593	0	25	0	25	389	6	0	395	1013
5:30 PM	35	541	0	576	0	12	0	12	310	6	0	316	904
5:45 PM	43	519	0	562	0	17	0	17	287	3	0	290	869
6:00 PM	35	562	0	597	1	14	0	15	265	4	0	269	881
6:15 PM	33	479	0	512	0	14	0	14	275	6	1	281	807
6:30 PM	25	353	0	378	0	10	0	10	220	4	0	224	612
6:45 PM	16	306	0	322	0	13	0	13	210	1	0	211	546

Grand Total	604	12194	0	12798	12	661	2	673	12276	98	6	12374	25845
Approach %	4.7	95.3	-	-	1.8	98.2	-	-	99.2	0.8	-	-	-
Total %	2.3	47.2	-	49.5	0.0	2.6	-	2.6	47.5	0.4	-	47.9	-
Car	587	11581	-	12168	10	652	-	662	11655	93	-	11748	24578
% Car	97.2	95.0	-	95.1	83.3	98.6	-	98.4	94.9	94.9	-	94.9	95.1
Truck	14	562	-	576	2	4	-	6	570	5	-	575	1157
% Truck	2.3	4.6	-	4.5	16.7	0.6	-	0.9	4.6	5.1	-	4.6	4.5
Bike	3	51	-	54	0	5	-	5	51	0	-	51	110
% Bike	0.5	0.4	-	0.4	0.0	0.8	-	0.7	0.4	0.0	-	0.4	0.4
Ped	-	-	0	-	-	-	2	-	-	-	6	-	-
% Ped	-	-	-	-	-	-	100.0	-	-	-	100.0	-	-

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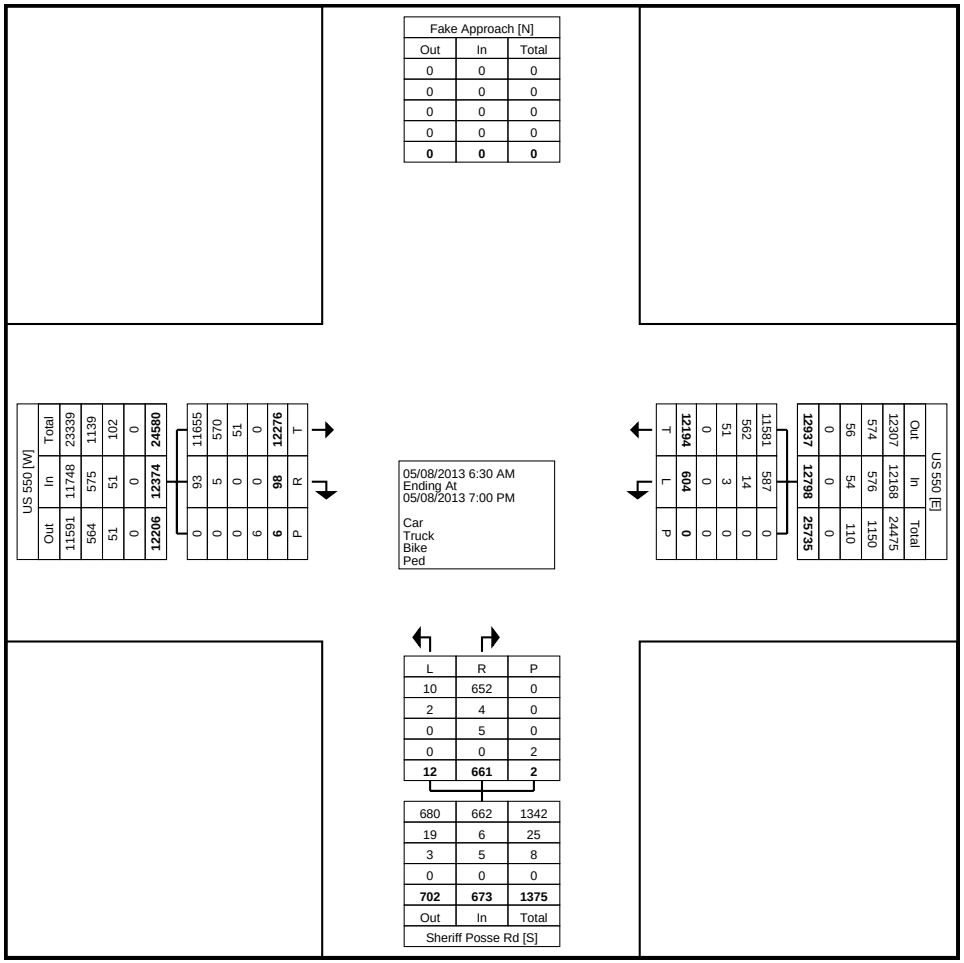
Count Name: US 550 - Sheriff Posse Rd
Site Code: 7
Start Date: 05/08/2013



Turning Movement Data Plot

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Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Sheriff Posse Rd
Site Code: 7
Start Date: 05/08/2013

Turning Movement Peak Hour Data (6:45 AM)

Start Time	US 550 Westbound				Sheriff Posse Rd Northbound				US 550 Eastbound				
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
6:45 AM	5	224	0	229	0	26	1	26	505	4	1	509	764
7:00 AM	2	203	0	205	0	44	0	44	627	1	0	628	877
7:15 AM	4	241	0	245	0	45	0	45	557	1	0	558	848
7:30 AM	2	251	0	253	0	20	0	20	474	0	2	474	747
Total	13	919	0	932	0	135	1	135	2163	6	3	2169	3236
Approach %	1.4	98.6	-	-	0.0	100.0	-	-	99.7	0.3	-	-	-
Total %	0.4	28.4	-	28.8	0.0	4.2	-	4.2	66.8	0.2	-	67.0	-
PHF	0.650	0.915	-	0.921	0.000	0.750	-	0.750	0.862	0.375	-	0.863	0.922
Car	13	848	-	861	0	132	-	132	2122	6	-	2128	3121
% Car	100.0	92.3	-	92.4	-	97.8	-	97.8	98.1	100.0	-	98.1	96.4
Truck	0	70	-	70	0	1	-	1	38	0	-	38	109
% Truck	0.0	7.6	-	7.5	-	0.7	-	0.7	1.8	0.0	-	1.8	3.4
Bike	0	1	-	1	0	2	-	2	3	0	-	3	6
% Bike	0.0	0.1	-	0.1	-	1.5	-	1.5	0.1	0.0	-	0.1	0.2
Ped	-	-	0	-	-	-	1	-	-	-	3	-	-
% Ped	-	-	-	-	-	-	100.0	-	-	-	100.0	-	-

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
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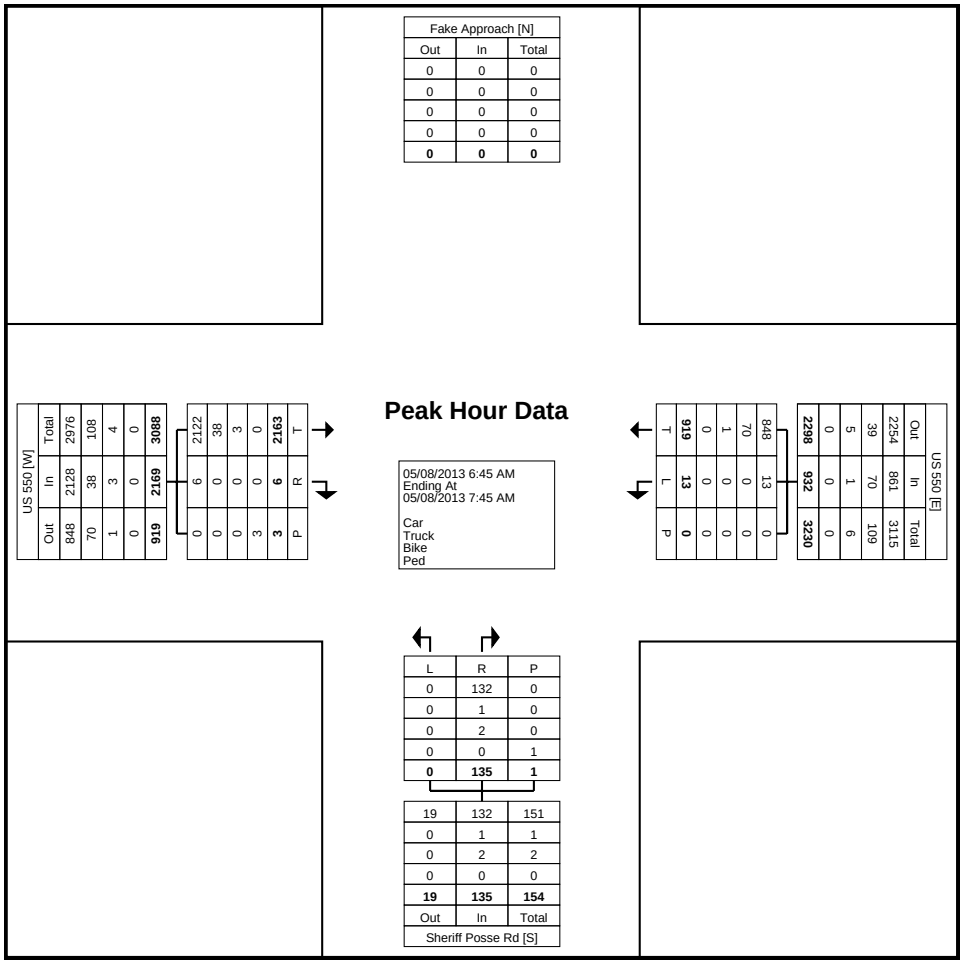
Count Name: US 550 - Sheriff Posse Rd
Site Code: 7
Start Date: 05/08/2013



Turning Movement Peak Hour Data Plot (6:45 AM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Sheriff Posse Rd
Site Code: 7
Start Date: 05/08/2013

Turning Movement Peak Hour Data (11:00 AM)

Start Time	US 550 Westbound				Sheriff Posse Rd Northbound				US 550 Eastbound				
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
11:00 AM	13	268	0	281	2	7	0	9	281	2	0	283	573
11:15 AM	12	273	0	285	0	9	0	9	283	1	0	284	578
11:30 AM	14	271	0	285	0	15	0	15	275	2	0	277	577
11:45 AM	13	282	0	295	1	23	0	24	295	0	0	295	614
Total	52	1094	0	1146	3	54	0	57	1134	5	0	1139	2342
Approach %	4.5	95.5	-	-	5.3	94.7	-	-	99.6	0.4	-	-	-
Total %	2.2	46.7	-	48.9	0.1	2.3	-	2.4	48.4	0.2	-	48.6	-
PHF	0.929	0.970	-	0.971	0.375	0.587	-	0.594	0.961	0.625	-	0.965	0.954
Car	50	1004	-	1054	2	53	-	55	1050	5	-	1055	2164
% Car	96.2	91.8	-	92.0	66.7	98.1	-	96.5	92.6	100.0	-	92.6	92.4
Truck	1	85	-	86	1	0	-	1	73	0	-	73	160
% Truck	1.9	7.8	-	7.5	33.3	0.0	-	1.8	6.4	0.0	-	6.4	6.8
Bike	1	5	-	6	0	1	-	1	11	0	-	11	18
% Bike	1.9	0.5	-	0.5	0.0	1.9	-	1.8	1.0	0.0	-	1.0	0.8
Ped	-	-	0	-	-	-	0	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-

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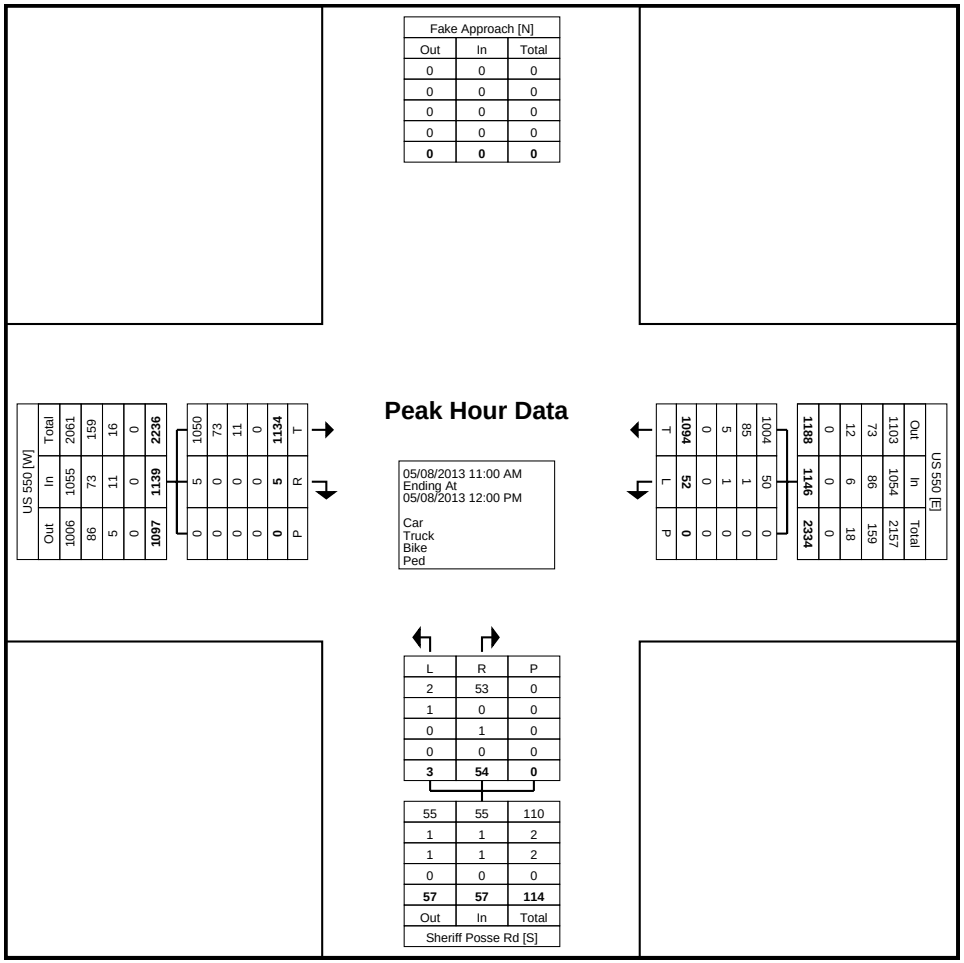
Count Name: US 550 - Sheriff Posse Rd
Site Code: 7
Start Date: 05/08/2013



Turning Movement Peak Hour Data Plot (11:00 AM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Sheriff Posse Rd
Site Code: 7
Start Date: 05/08/2013

Turning Movement Peak Hour Data (12:30 PM)

Start Time	US 550 Westbound				Sheriff Posse Rd Northbound				US 550 Eastbound				
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
12:30 PM	16	312	0	328	2	11	0	13	323	2	0	325	666
12:45 PM	20	286	0	306	0	14	0	14	265	8	0	273	593
1:00 PM	15	328	0	343	0	18	0	18	326	4	0	330	691
1:15 PM	13	305	0	318	0	20	0	20	309	4	0	313	651
Total	64	1231	0	1295	2	63	0	65	1223	18	0	1241	2601
Approach %	4.9	95.1	-	-	3.1	96.9	-	-	98.5	1.5	-	-	-
Total %	2.5	47.3	-	49.8	0.1	2.4	-	2.5	47.0	0.7	-	47.7	-
PHF	0.800	0.938	-	0.944	0.250	0.788	-	0.813	0.938	0.563	-	0.940	0.941
Car	61	1138	-	1199	2	61	-	63	1118	18	-	1136	2398
% Car	95.3	92.4	-	92.6	100.0	96.8	-	96.9	91.4	100.0	-	91.5	92.2
Truck	3	81	-	84	0	2	-	2	101	0	-	101	187
% Truck	4.7	6.6	-	6.5	0.0	3.2	-	3.1	8.3	0.0	-	8.1	7.2
Bike	0	12	-	12	0	0	-	0	4	0	-	4	16
% Bike	0.0	1.0	-	0.9	0.0	0.0	-	0.0	0.3	0.0	-	0.3	0.6
Ped	-	-	0	-	-	-	0	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-

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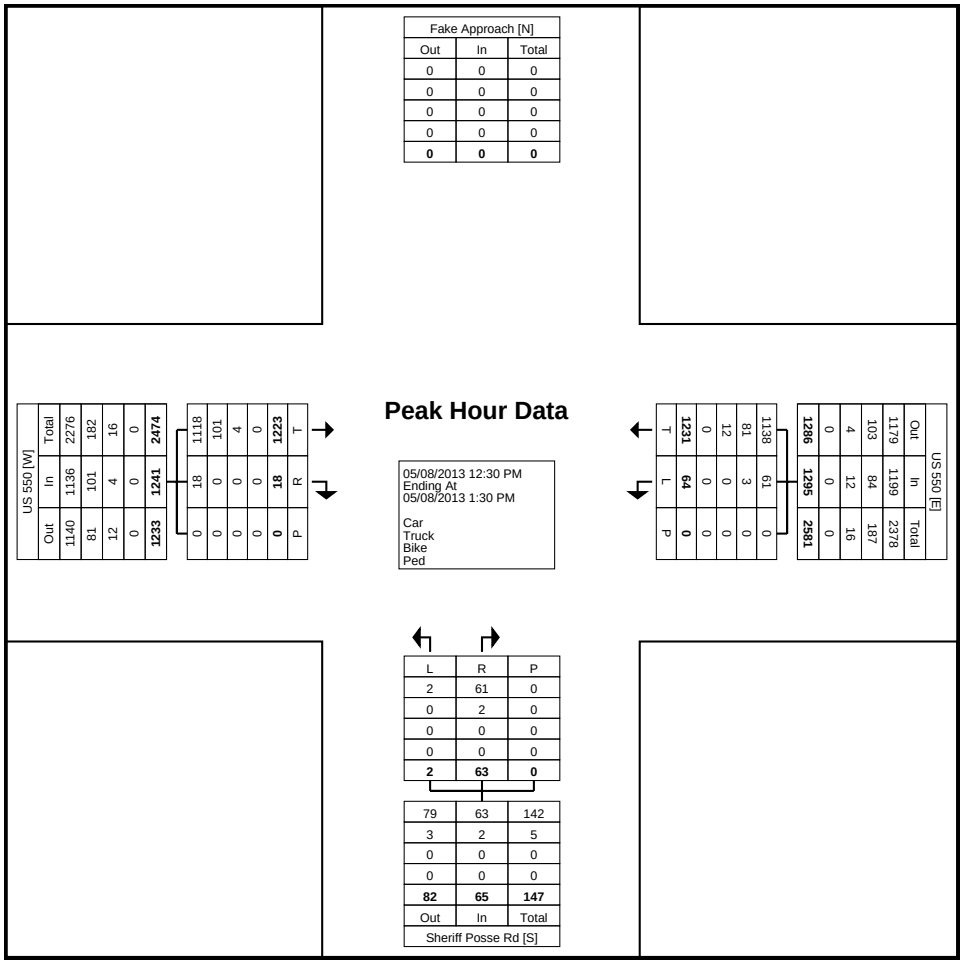

Turning Movement Peak Hour Data Plot (12:30 PM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Sheriff Posse Rd
Site Code: 7
Start Date: 05/08/2013

Turning Movement Peak Hour Data (4:30 PM)

Start Time	US 550 Westbound				Sheriff Posse Rd Northbound				US 550 Eastbound				
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
4:30 PM	31	523	0	554	0	13	0	13	366	7	0	373	940
4:45 PM	28	536	0	564	0	25	0	25	364	4	0	368	957
5:00 PM	33	555	0	588	0	33	0	33	379	0	0	379	1000
5:15 PM	39	554	0	593	0	25	0	25	389	6	0	395	1013
Total	131	2168	0	2299	0	96	0	96	1498	17	0	1515	3910
Approach %	5.7	94.3	-	-	0.0	100.0	-	-	98.9	1.1	-	-	-
Total %	3.4	55.4	-	58.8	0.0	2.5	-	2.5	38.3	0.4	-	38.7	-
PHF	0.840	0.977	-	0.969	0.000	0.727	-	0.727	0.963	0.607	-	0.959	0.965
Car	130	2135	-	2265	0	95	-	95	1440	17	-	1457	3817
% Car	99.2	98.5	-	98.5	-	99.0	-	99.0	96.1	100.0	-	96.2	97.6
Truck	0	22	-	22	0	0	-	0	48	0	-	48	70
% Truck	0.0	1.0	-	1.0	-	0.0	-	0.0	3.2	0.0	-	3.2	1.8
Bike	1	11	-	12	0	1	-	1	10	0	-	10	23
% Bike	0.8	0.5	-	0.5	-	1.0	-	1.0	0.7	0.0	-	0.7	0.6
Ped	-	-	0	-	-	-	0	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-

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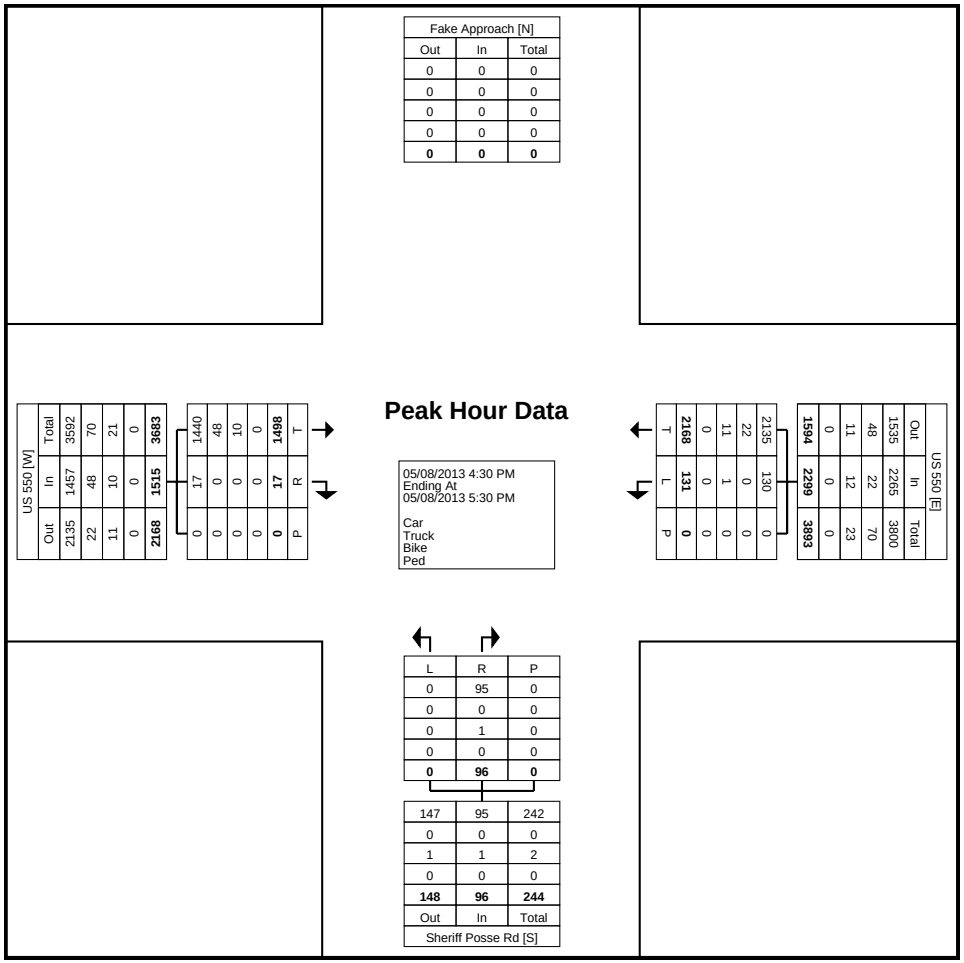
Count Name: US 550 - Sheriff Posse Rd
Site Code: 7
Start Date: 05/08/2013



Turning Movement Peak Hour Data Plot (4:30 PM)

Lee Engineering, LLC
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Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Kuaua Rd
Site Code: 6
Start Date: 05/08/2013

Turning Movement Data

Start Time	Kuaua Rd Southbound				US 550 Westbound					US 550 Eastbound				
	Left	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
6:30 AM	1	0	0	1	0	187	0	2	187	1	500	0	501	689
6:45 AM	1	1	0	2	0	217	0	1	217	0	519	0	519	738
7:00 AM	0	0	0	0	0	213	0	0	213	1	615	0	616	829
7:15 AM	0	1	0	1	0	216	0	0	216	0	590	0	590	807
7:30 AM	0	0	0	0	0	258	0	2	258	0	480	0	480	738
7:45 AM	0	3	0	3	0	290	0	0	290	3	266	0	269	562
8:00 AM	0	2	0	2	0	217	2	0	219	2	394	0	396	617
8:15 AM	0	0	0	0	0	238	1	0	239	3	394	0	397	636
8:30 AM	1	0	0	1	0	252	0	0	252	1	415	0	416	669
8:45 AM	0	1	0	1	0	278	1	0	279	0	298	0	298	578
9:00 AM	0	1	2	1	0	240	1	0	241	2	302	0	304	546
9:15 AM	0	2	0	2	0	255	1	0	256	2	269	0	271	529
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	3	0	3	1	278	0	0	279	2	288	0	290	572
11:15 AM	0	2	0	2	0	264	1	0	265	4	318	0	322	589
11:30 AM	1	1	2	2	0	271	2	0	273	1	269	0	270	545
11:45 AM	0	1	0	1	0	265	0	0	265	0	294	0	294	560
12:00 PM	0	6	1	6	0	294	0	0	294	0	277	0	277	577
12:15 PM	1	1	0	2	0	281	1	0	282	1	308	0	309	593
12:30 PM	1	1	0	2	0	301	2	0	303	1	326	0	327	632
12:45 PM	1	5	0	6	0	288	1	0	289	2	284	0	286	581
1:00 PM	1	1	0	2	0	313	6	0	319	0	325	0	325	646
1:15 PM	2	1	0	3	0	308	3	0	311	3	307	0	310	624
1:30 PM	1	0	0	1	0	299	0	0	299	2	299	0	301	601
1:45 PM	1	2	0	3	0	287	0	0	287	1	309	0	310	600
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	0	0	0	453	0	0	453	0	301	0	301	754
4:15 PM	0	1	0	1	0	480	3	0	483	1	324	0	325	809
4:30 PM	1	3	0	4	0	533	0	0	533	2	355	0	357	894
4:45 PM	0	1	0	1	1	553	1	0	555	1	383	0	384	940
5:00 PM	1	0	0	1	1	528	0	0	529	1	382	0	383	913
5:15 PM	0	2	0	2	0	585	0	0	585	1	368	0	369	956
5:30 PM	0	0	0	0	0	534	1	0	535	2	327	0	329	864
5:45 PM	0	0	0	0	0	539	0	1	539	1	285	0	286	825
6:00 PM	1	0	0	1	0	562	1	0	563	2	259	0	261	825
6:15 PM	0	0	0	0	0	498	2	0	500	2	275	0	277	777
6:30 PM	1	2	0	3	0	389	1	0	390	1	222	0	223	616
6:45 PM	0	1	0	1	0	312	1	0	313	1	213	0	214	528

Grand Total	16	45	5	61	3	12276	32	6	12311	47	12340	0	12387	24759
Approach %	26.2	73.8	-	-	0.0	99.7	0.3	-	-	0.4	99.6	-	-	-
Total %	0.1	0.2	-	0.2	0.0	49.6	0.1	-	49.7	0.2	49.8	-	50.0	-
Car	15	40	-	55	3	11692	27	-	11722	44	11754	-	11798	23575
% Car	93.8	88.9	-	90.2	100.0	95.2	84.4	-	95.2	93.6	95.3	-	95.2	95.2
Truck	1	5	-	6	0	527	5	-	532	3	537	-	540	1078
% Truck	6.3	11.1	-	9.8	0.0	4.3	15.6	-	4.3	6.4	4.4	-	4.4	4.4
Bike	0	0	-	0	0	57	0	-	57	0	49	-	49	106
% Bike	0.0	0.0	-	0.0	0.0	0.5	0.0	-	0.5	0.0	0.4	-	0.4	0.4
Ped	-	-	5	-	-	-	-	6	-	-	-	0	-	-
% Ped	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-

Lee Engineering, LLC
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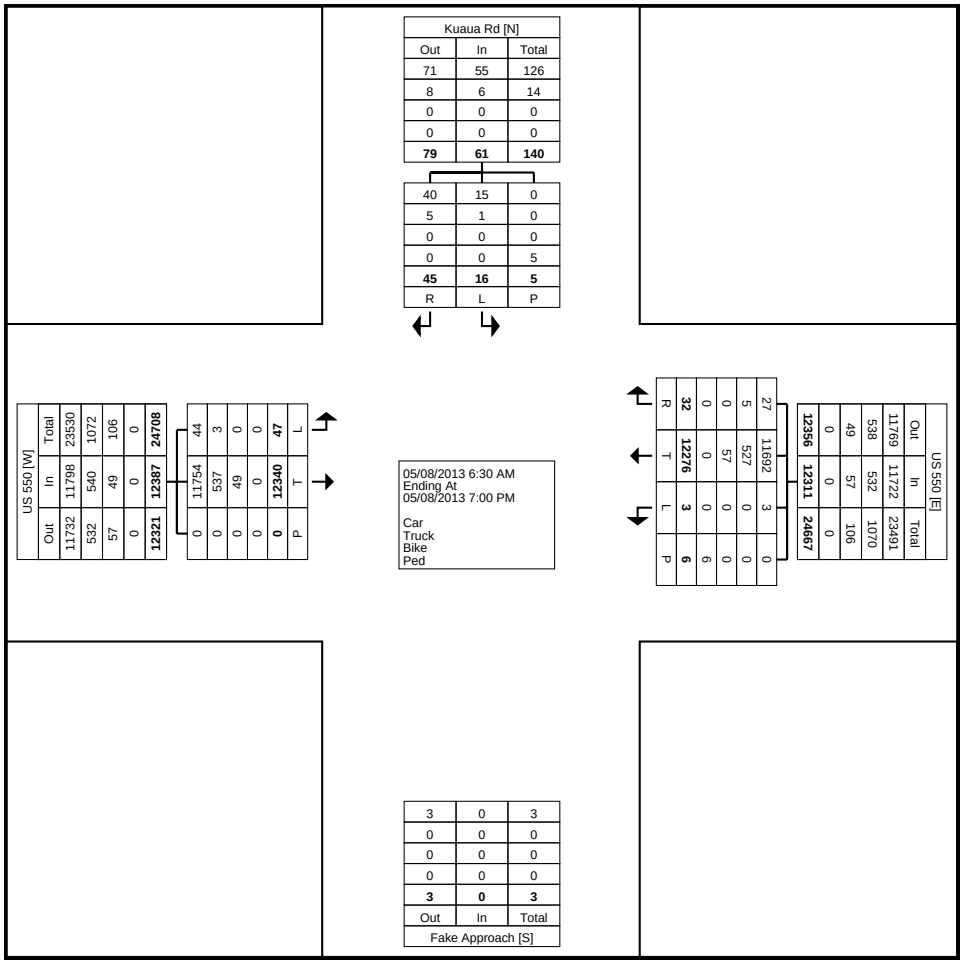
Count Name: US 550 - Kuaua Rd
Site Code: 6
Start Date: 05/08/2013



Turning Movement Data Plot

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Albuquerque, New Mexico, United States
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Count Name: US 550 - Kuaua Rd
Site Code: 6
Start Date: 05/08/2013

Turning Movement Peak Hour Data (6:45 AM)

Start Time	Kuaua Rd Southbound				US 550 Westbound					US 550 Eastbound				
	Left	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
6:45 AM	1	1	0	2	0	217	0	1	217	0	519	0	519	738
7:00 AM	0	0	0	0	0	213	0	0	213	1	615	0	616	829
7:15 AM	0	1	0	1	0	216	0	0	216	0	590	0	590	807
7:30 AM	0	0	0	0	0	258	0	2	258	0	480	0	480	738
Total	1	2	0	3	0	904	0	3	904	1	2204	0	2205	3112
Approach %	33.3	66.7	-	-	0.0	100.0	0.0	-	-	0.0	100.0	-	-	-
Total %	0.0	0.1	-	0.1	0.0	29.0	0.0	-	29.0	0.0	70.8	-	70.9	-
PHF	0.250	0.500	-	0.375	0.000	0.876	0.000	-	0.876	0.250	0.896	-	0.895	0.938
Car	1	2	-	3	0	837	0	-	837	1	2163	-	2164	3004
% Car	100.0	100.0	-	100.0	-	92.6	-	-	92.6	100.0	98.1	-	98.1	96.5
Truck	0	0	-	0	0	66	0	-	66	0	36	-	36	102
% Truck	0.0	0.0	-	0.0	-	7.3	-	-	7.3	0.0	1.6	-	1.6	3.3
Bike	0	0	-	0	0	1	0	-	1	0	5	-	5	6
% Bike	0.0	0.0	-	0.0	-	0.1	-	-	0.1	0.0	0.2	-	0.2	0.2
Ped	-	-	0	-	-	-	-	3	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-

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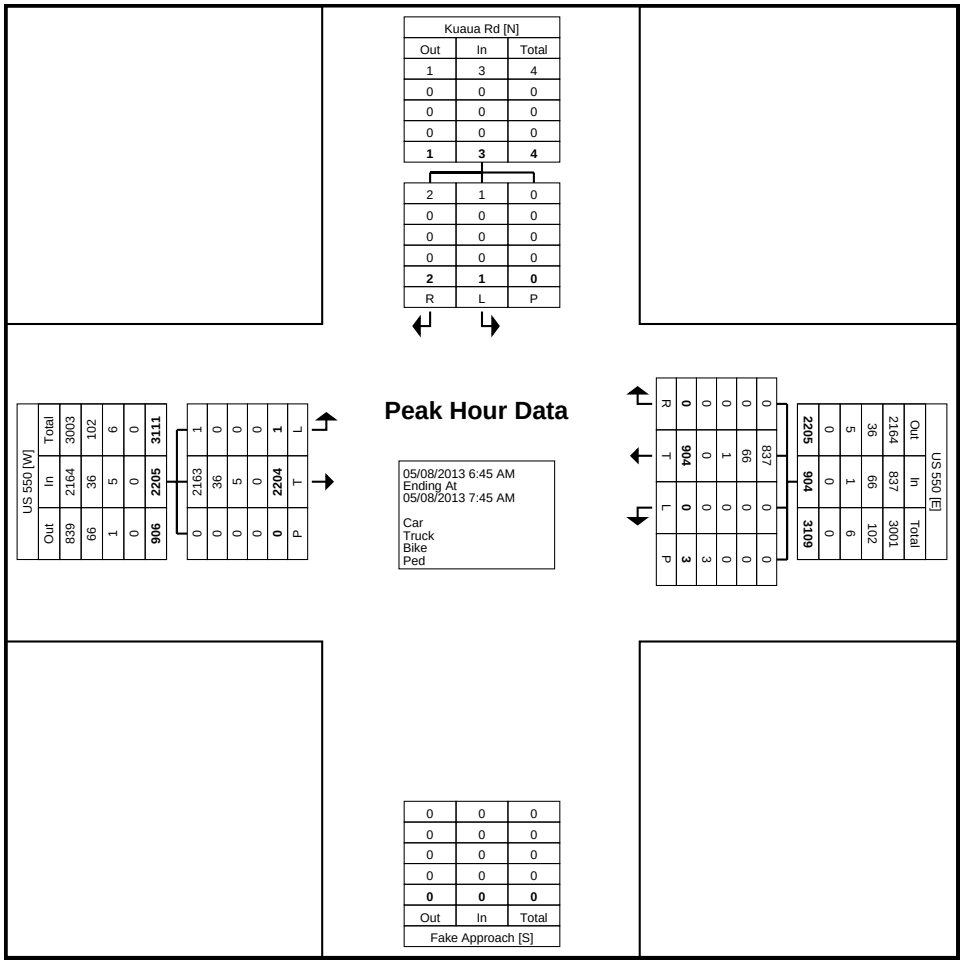

Turning Movement Peak Hour Data Plot (6:45 AM)

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Count Name: US 550 - Kuaua Rd
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Start Date: 05/08/2013

Turning Movement Peak Hour Data (11:00 AM)

Start Time	Kuaua Rd Southbound				US 550 Westbound					US 550 Eastbound				
	Left	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
11:00 AM	0	3	0	3	1	278	0	0	279	2	288	0	290	572
11:15 AM	0	2	0	2	0	264	1	0	265	4	318	0	322	589
11:30 AM	1	1	2	2	0	271	2	0	273	1	269	0	270	545
11:45 AM	0	1	0	1	0	265	0	0	265	0	294	0	294	560
Total	1	7	2	8	1	1078	3	0	1082	7	1169	0	1176	2266
Approach %	12.5	87.5	-	-	0.1	99.6	0.3	-	-	0.6	99.4	-	-	-
Total %	0.0	0.3	-	0.4	0.0	47.6	0.1	-	47.7	0.3	51.6	-	51.9	-
PHF	0.250	0.583	-	0.667	0.250	0.969	0.375	-	0.970	0.438	0.919	-	0.913	0.962
Car	1	7	-	8	1	1006	2	-	1009	7	1087	-	1094	2111
% Car	100.0	100.0	-	100.0	100.0	93.3	66.7	-	93.3	100.0	93.0	-	93.0	93.2
Truck	0	0	-	0	0	70	1	-	71	0	72	-	72	143
% Truck	0.0	0.0	-	0.0	0.0	6.5	33.3	-	6.6	0.0	6.2	-	6.1	6.3
Bike	0	0	-	0	0	2	0	-	2	0	10	-	10	12
% Bike	0.0	0.0	-	0.0	0.0	0.2	0.0	-	0.2	0.0	0.9	-	0.9	0.5
Ped	-	-	2	-	-	-	-	0	-	-	-	0	-	-
% Ped	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-

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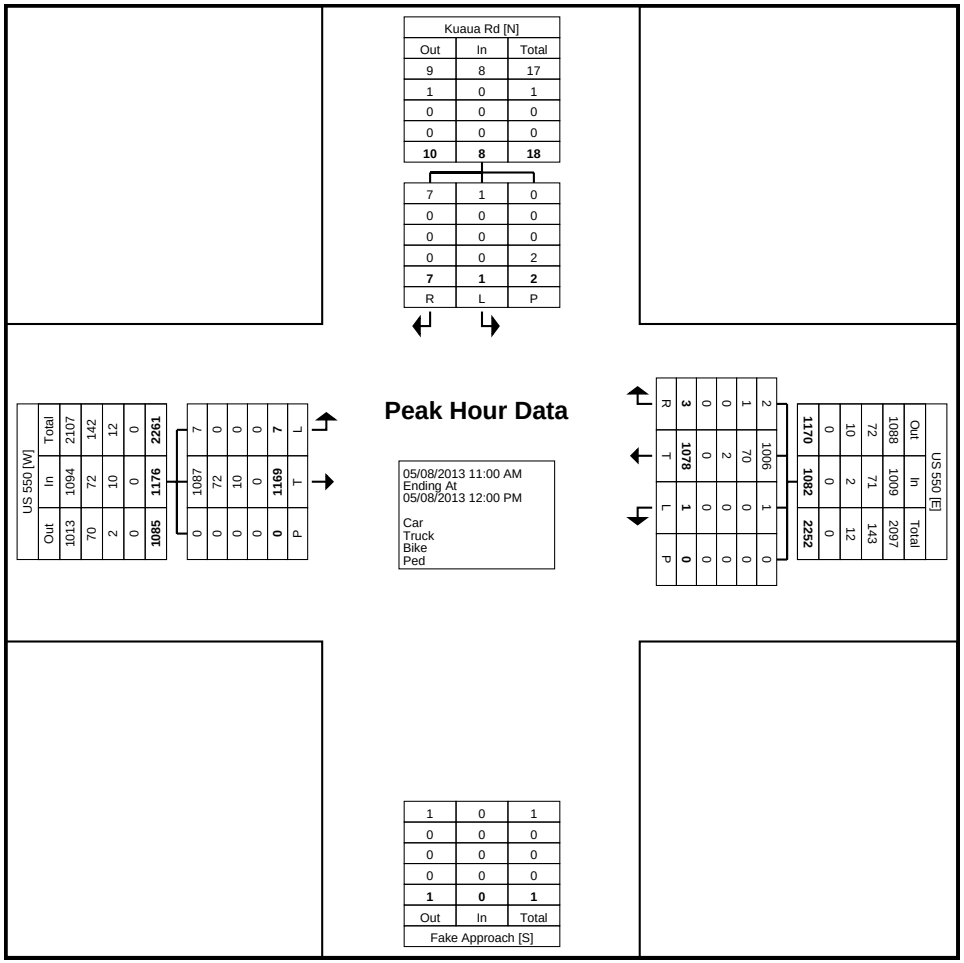

Turning Movement Peak Hour Data Plot (11:00 AM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Kuaua Rd
Site Code: 6
Start Date: 05/08/2013

Turning Movement Peak Hour Data (12:30 PM)

Start Time	Kuaua Rd Southbound				US 550 Westbound					US 550 Eastbound				
	Left	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
12:30 PM	1	1	0	2	0	301	2	0	303	1	326	0	327	632
12:45 PM	1	5	0	6	0	288	1	0	289	2	284	0	286	581
1:00 PM	1	1	0	2	0	313	6	0	319	0	325	0	325	646
1:15 PM	2	1	0	3	0	308	3	0	311	3	307	0	310	624
Total	5	8	0	13	0	1210	12	0	1222	6	1242	0	1248	2483
Approach %	38.5	61.5	-	-	0.0	99.0	1.0	-	-	0.5	99.5	-	-	-
Total %	0.2	0.3	-	0.5	0.0	48.7	0.5	-	49.2	0.2	50.0	-	50.3	-
PHF	0.625	0.400	-	0.542	0.000	0.966	0.500	-	0.958	0.500	0.952	-	0.954	0.961
Car	4	7	-	11	0	1125	9	-	1134	5	1155	-	1160	2305
% Car	80.0	87.5	-	84.6	-	93.0	75.0	-	92.8	83.3	93.0	-	92.9	92.8
Truck	1	1	-	2	0	76	3	-	79	1	85	-	86	167
% Truck	20.0	12.5	-	15.4	-	6.3	25.0	-	6.5	16.7	6.8	-	6.9	6.7
Bike	0	0	-	0	0	9	0	-	9	0	2	-	2	11
% Bike	0.0	0.0	-	0.0	-	0.7	0.0	-	0.7	0.0	0.2	-	0.2	0.4
Ped	-	-	0	-	-	-	-	0	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
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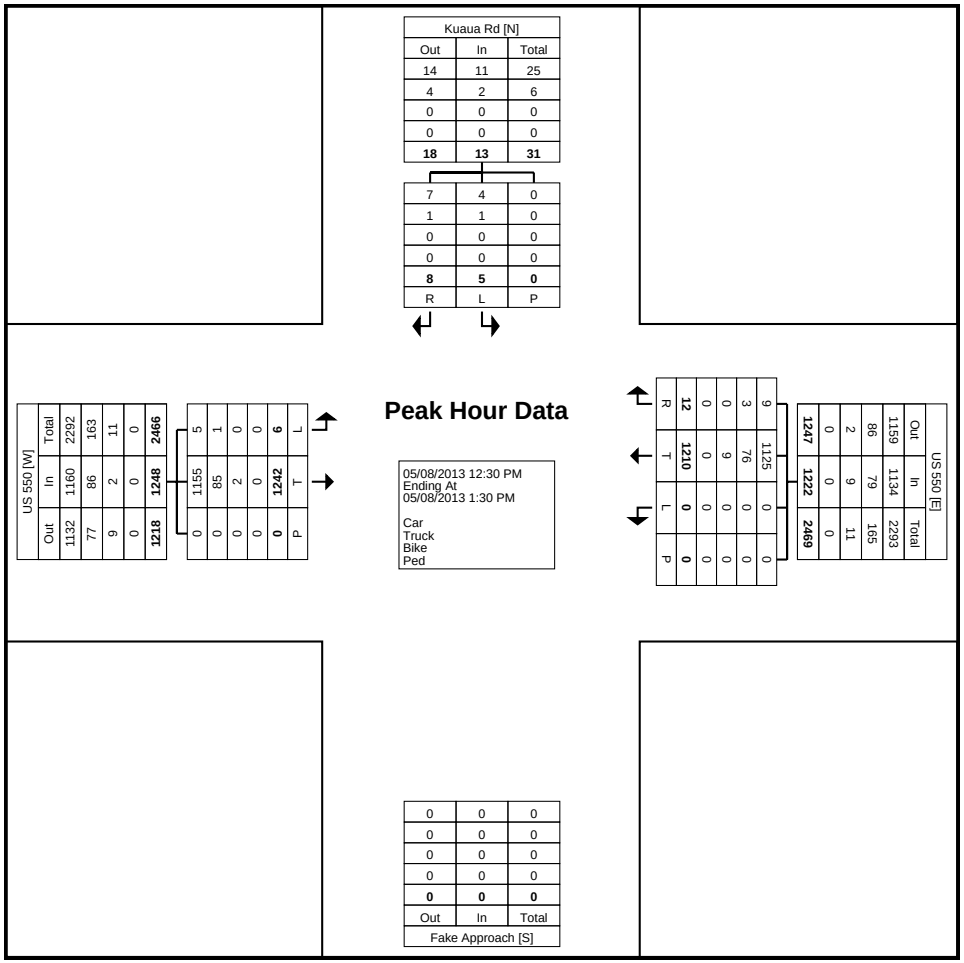


Turning Movement Peak Hour Data Plot (12:30 PM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

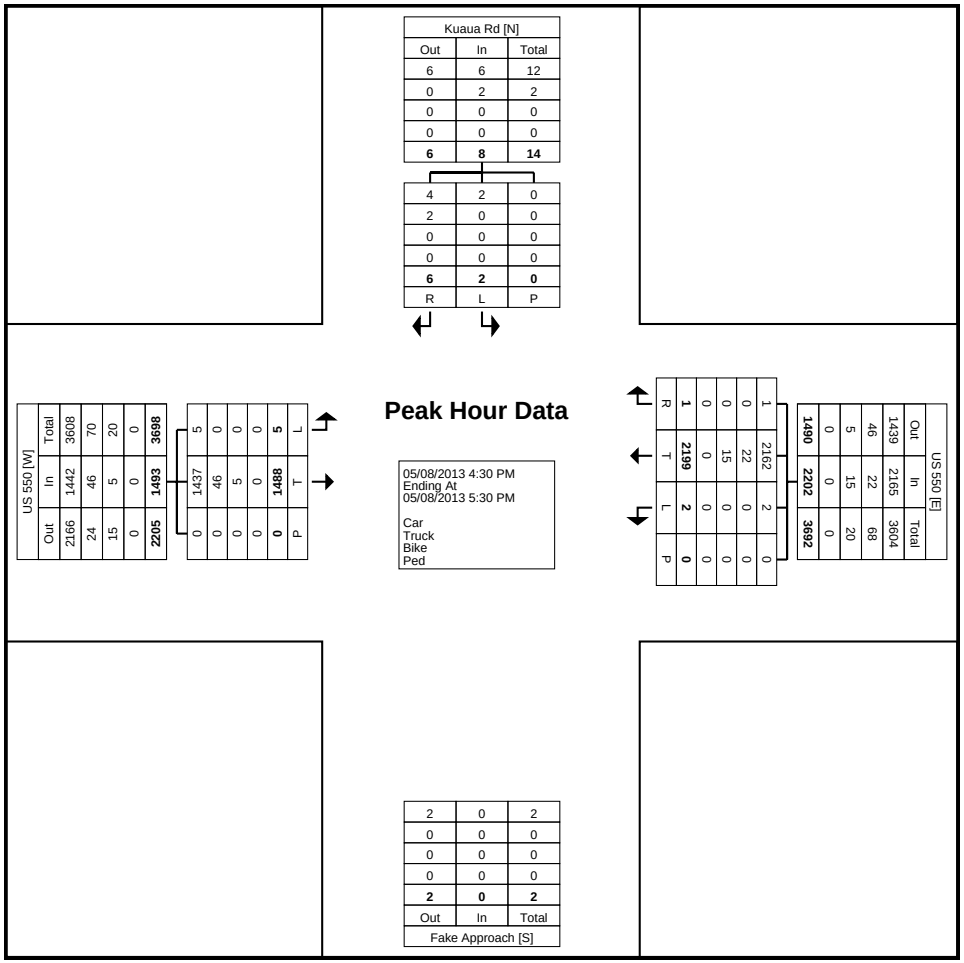
Count Name: US 550 - Kuaua Rd
Site Code: 6
Start Date: 05/08/2013

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Kuaua Rd Southbound				US 550 Westbound					US 550 Eastbound				
	Left	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
4:30 PM	1	3	0	4	0	533	0	0	533	2	355	0	357	894
4:45 PM	0	1	0	1	1	553	1	0	555	1	383	0	384	940
5:00 PM	1	0	0	1	1	528	0	0	529	1	382	0	383	913
5:15 PM	0	2	0	2	0	585	0	0	585	1	368	0	369	956
Total	2	6	0	8	2	2199	1	0	2202	5	1488	0	1493	3703
Approach %	25.0	75.0	-	-	0.1	99.9	0.0	-	-	0.3	99.7	-	-	-
Total %	0.1	0.2	-	0.2	0.1	59.4	0.0	-	59.5	0.1	40.2	-	40.3	-
PHF	0.500	0.500	-	0.500	0.500	0.940	0.250	-	0.941	0.625	0.971	-	0.972	0.968
Car	2	4	-	6	2	2162	1	-	2165	5	1437	-	1442	3613
% Car	100.0	66.7	-	75.0	100.0	98.3	100.0	-	98.3	100.0	96.6	-	96.6	97.6
Truck	0	2	-	2	0	22	0	-	22	0	46	-	46	70
% Truck	0.0	33.3	-	25.0	0.0	1.0	0.0	-	1.0	0.0	3.1	-	3.1	1.9
Bike	0	0	-	0	0	15	0	-	15	0	5	-	5	20
% Bike	0.0	0.0	-	0.0	0.0	0.7	0.0	-	0.7	0.0	0.3	-	0.3	0.5
Ped	-	-	0	-	-	-	-	0	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Kuaua Rd
Site Code: 6
Start Date: 05/08/2013



Turning Movement Peak Hour Data Plot (4:30 PM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Edmond/Homestead
Site Code: 5
Start Date: 05/09/2013

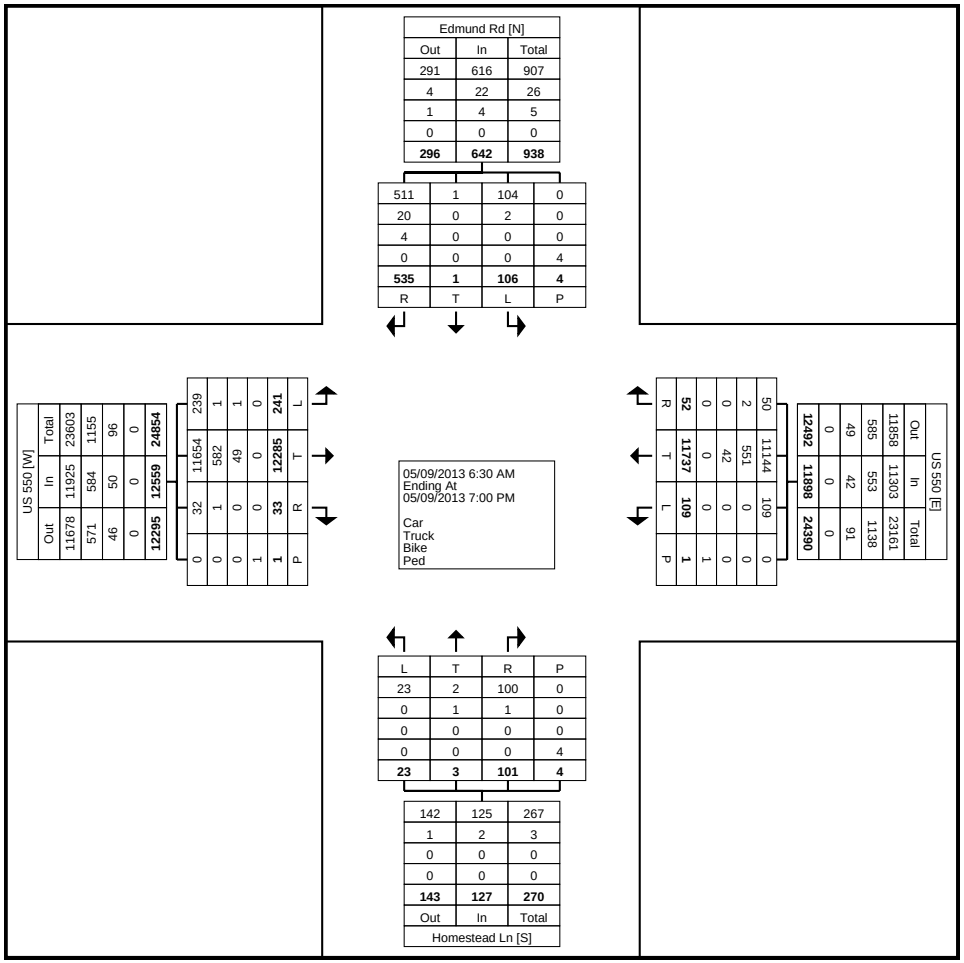
Turning Movement Data

Start Time	Edmund Rd Southbound					US 550 Westbound					Homestead Ln Northbound					US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
6:30 AM	2	0	14	0	16	0	158	0	0	158	0	0	1	0	1	6	487	1	0	494	669
6:45 AM	0	0	17	0	17	1	191	0	0	192	0	0	2	0	2	5	499	0	0	504	715
7:00 AM	0	0	9	0	9	2	176	1	0	179	0	0	4	0	4	2	623	0	0	625	817
7:15 AM	3	0	13	0	16	5	174	2	0	181	0	0	4	0	4	7	571	1	0	579	780
7:30 AM	2	0	14	0	16	3	227	1	1	231	0	1	6	2	7	6	534	1	0	541	795
7:45 AM	2	0	19	0	21	1	279	4	0	284	0	0	5	0	5	2	385	0	0	387	697
8:00 AM	3	0	11	0	14	6	201	3	0	210	0	0	0	0	0	3	404	0	0	407	631
8:15 AM	3	0	15	0	18	4	263	1	0	268	1	0	0	0	1	6	328	0	0	334	621
8:30 AM	5	0	8	0	13	2	258	4	0	264	3	0	2	0	5	5	287	3	0	295	577
8:45 AM	5	0	11	0	16	4	260	2	0	266	1	0	3	0	4	14	281	1	0	296	582
9:00 AM	2	0	4	0	6	1	227	2	0	230	0	0	3	0	3	8	278	1	0	287	526
9:15 AM	3	0	12	0	15	2	235	1	0	238	2	0	4	0	6	11	323	2	0	336	595
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	6	0	13	2	19	5	227	1	0	233	1	1	1	0	3	4	259	1	1	264	519
11:15 AM	3	0	20	0	23	3	254	4	0	261	2	0	3	0	5	5	284	1	0	290	579
11:30 AM	4	0	13	0	17	1	226	1	0	228	1	0	4	0	5	6	315	2	0	323	573
11:45 AM	5	0	16	0	21	3	279	1	0	283	0	0	2	0	2	10	292	0	0	302	608
12:00 PM	5	0	16	1	21	5	297	1	0	303	0	0	3	0	3	7	305	0	0	312	639
12:15 PM	6	0	8	0	14	6	283	1	0	290	2	0	1	0	3	9	314	1	0	324	631
12:30 PM	6	0	15	0	21	4	293	1	0	298	1	0	7	0	8	7	272	3	0	282	609
12:45 PM	5	0	17	0	22	5	288	1	0	294	1	0	4	0	5	11	329	2	0	342	663
1:00 PM	7	1	17	0	25	3	265	1	0	269	2	1	6	0	9	8	320	1	0	329	632
1:15 PM	6	0	10	0	16	3	281	4	0	288	0	0	2	0	2	6	309	0	0	315	621
1:30 PM	0	0	22	0	22	4	256	2	0	262	0	0	2	0	2	4	282	1	0	287	573
1:45 PM	7	0	11	0	18	3	300	2	0	305	0	0	3	0	3	8	286	1	0	295	621
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	10	0	10	4	479	0	0	483	1	0	3	0	4	6	344	3	0	353	850
4:15 PM	3	0	20	0	23	5	463	0	0	468	1	0	2	0	3	3	390	0	0	393	887
4:30 PM	1	0	15	0	16	2	477	1	0	480	0	0	1	0	1	9	377	3	0	389	886
4:45 PM	0	0	22	0	22	4	502	2	0	508	0	0	1	0	1	7	372	0	0	379	910
5:00 PM	3	0	17	0	20	4	471	0	0	475	0	0	3	0	3	7	344	2	0	353	851
5:15 PM	3	0	15	0	18	1	506	3	0	510	1	0	5	2	6	5	359	0	0	364	898
5:30 PM	1	0	24	1	25	2	485	0	0	487	0	0	6	0	6	5	302	1	0	308	826
5:45 PM	1	0	20	0	21	1	507	1	0	509	1	0	3	0	4	4	304	0	0	308	842
6:00 PM	1	0	23	0	24	1	535	3	0	539	0	0	3	0	3	13	254	1	0	268	834
6:15 PM	2	0	21	0	23	7	505	0	0	512	1	0	2	0	3	6	257	0	0	263	801
6:30 PM	1	0	11	0	12	2	507	1	0	510	1	0	0	0	1	10	199	0	0	209	732
6:45 PM	0	0	12	0	12	0	402	0	0	402	0	0	0	0	0	6	216	0	0	222	636

Grand Total	106	1	535	4	642	109	11737	52	1	11898	23	3	101	4	127	241	12285	33	1	12559	25226
Approach %	16.5	0.2	83.3	-	-	0.9	98.6	0.4	-	-	18.1	2.4	79.5	-	-	1.9	97.8	0.3	-	-	-
Total %	0.4	0.0	2.1	-	2.5	0.4	46.5	0.2	-	47.2	0.1	0.0	0.4	-	0.5	1.0	48.7	0.1	-	49.8	-
Car	104	1	511	-	616	109	11144	50	-	11303	23	2	100	-	125	239	11654	32	-	11925	23969
% Car	98.1	100.0	95.5	-	96.0	100.0	94.9	96.2	-	95.0	100.0	66.7	99.0	-	98.4	99.2	94.9	97.0	-	95.0	95.0
Truck	2	0	20	-	22	0	551	2	-	553	0	1	1	-	2	1	582	1	-	584	1161
% Truck	1.9	0.0	3.7	-	3.4	0.0	4.7	3.8	-	4.6	0.0	33.3	1.0	-	1.6	0.4	4.7	3.0	-	4.7	4.6
Bike	0	0	4	-	4	0	42	0	-	42	0	0	0	-	0	1	49	0	-	50	96
% Bike	0.0	0.0	0.7	-	0.6	0.0	0.4	0.0	-	0.4	0.0	0.0	0.0	-	0.0	0.4	0.4	0.0	-	0.4	0.4
Ped	-	-	-	4	-	-	-	-	1	-	-	-	-	4	-	-	-	-	1	-	-
% Ped	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Edmond/Homestead
Site Code: 5
Start Date: 05/09/2013



Turning Movement Data Plot

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

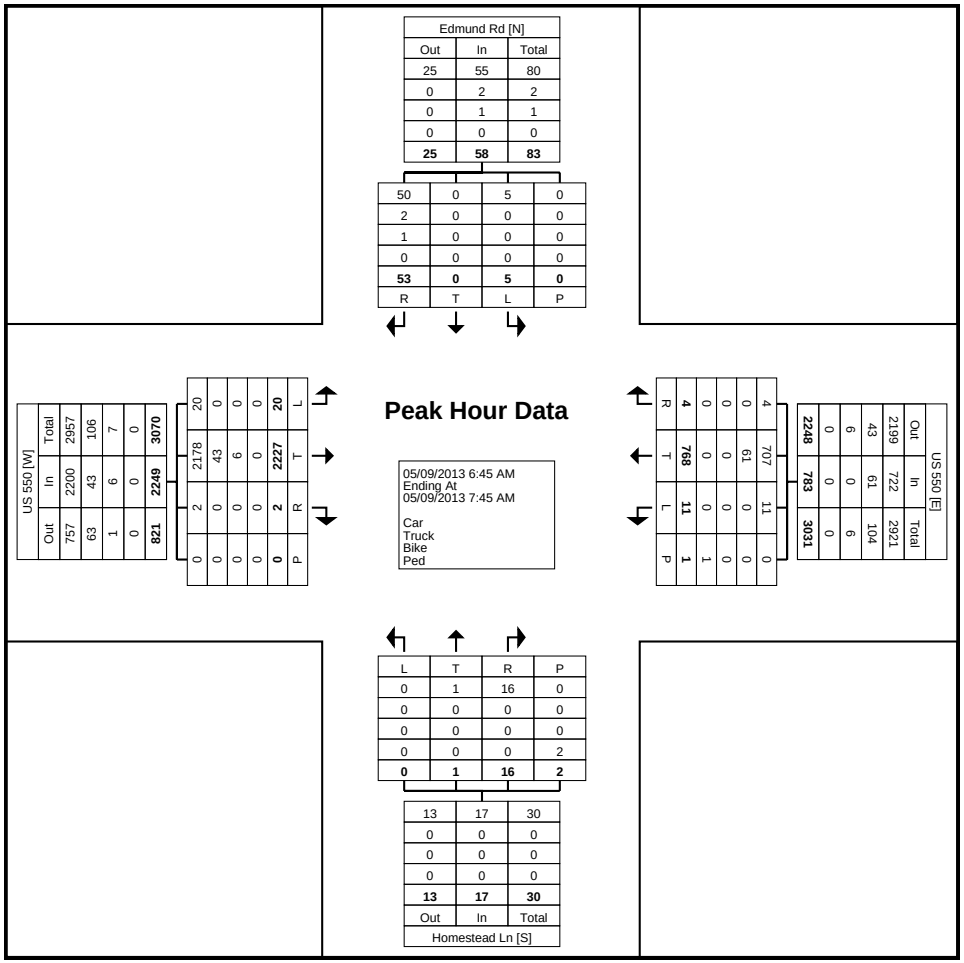
Count Name: US 550 - Edmond/Homestead
Site Code: 5
Start Date: 05/09/2013

Turning Movement Peak Hour Data (6:45 AM)

Start Time	Edmund Rd Southbound					US 550 Westbound					Homestead Ln Northbound					US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
6:45 AM	0	0	17	0	17	1	191	0	0	192	0	0	2	0	2	5	499	0	0	504	715
7:00 AM	0	0	9	0	9	2	176	1	0	179	0	0	4	0	4	2	623	0	0	625	817
7:15 AM	3	0	13	0	16	5	174	2	0	181	0	0	4	0	4	7	571	1	0	579	780
7:30 AM	2	0	14	0	16	3	227	1	1	231	0	1	6	2	7	6	534	1	0	541	795
Total	5	0	53	0	58	11	768	4	1	783	0	1	16	2	17	20	2227	2	0	2249	3107
Approach %	8.6	0.0	91.4	-	-	1.4	98.1	0.5	-	-	0.0	5.9	94.1	-	-	0.9	99.0	0.1	-	-	-
Total %	0.2	0.0	1.7	-	1.9	0.4	24.7	0.1	-	25.2	0.0	0.0	0.5	-	0.5	0.6	71.7	0.1	-	72.4	-
PHF	0.417	0.000	0.779	-	0.853	0.550	0.846	0.500	-	0.847	0.000	0.250	0.667	-	0.607	0.714	0.894	0.500	-	0.900	0.951
Car	5	0	50	-	55	11	707	4	-	722	0	1	16	-	17	20	2178	2	-	2200	2994
% Car	100.0	-	94.3	-	94.8	100.0	92.1	100.0	-	92.2	-	100.0	100.0	-	100.0	100.0	97.8	100.0	-	97.8	96.4
Truck	0	0	2	-	2	0	61	0	-	61	0	0	0	-	0	0	43	0	-	43	106
% Truck	0.0	-	3.8	-	3.4	0.0	7.9	0.0	-	7.8	-	0.0	0.0	-	0.0	0.0	1.9	0.0	-	1.9	3.4
Bike	0	0	1	-	1	0	0	0	-	0	0	0	0	-	0	0	6	0	-	6	7
% Bike	0.0	-	1.9	-	1.7	0.0	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0	0.3	0.0	-	0.3	0.2
Ped	-	-	-	0	-	-	-	-	1	-	-	-	-	2	-	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Edmond/Homestead
Site Code: 5
Start Date: 05/09/2013



Turning Movement Peak Hour Data Plot (6:45 AM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Edmond/Homestead
Site Code: 5
Start Date: 05/09/2013

Turning Movement Peak Hour Data (11:00 AM)

Start Time	Edmund Rd Southbound					US 550 Westbound					Homestead Ln Northbound					US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
11:00 AM	6	0	13	2	19	5	227	1	0	233	1	1	1	0	3	4	259	1	1	264	519
11:15 AM	3	0	20	0	23	3	254	4	0	261	2	0	3	0	5	5	284	1	0	290	579
11:30 AM	4	0	13	0	17	1	226	1	0	228	1	0	4	0	5	6	315	2	0	323	573
11:45 AM	5	0	16	0	21	3	279	1	0	283	0	0	2	0	2	10	292	0	0	302	608
Total	18	0	62	2	80	12	986	7	0	1005	4	1	10	0	15	25	1150	4	1	1179	2279
Approach %	22.5	0.0	77.5	-	-	1.2	98.1	0.7	-	-	26.7	6.7	66.7	-	-	2.1	97.5	0.3	-	-	-
Total %	0.8	0.0	2.7	-	3.5	0.5	43.3	0.3	-	44.1	0.2	0.0	0.4	-	0.7	1.1	50.5	0.2	-	51.7	-
PHF	0.750	0.000	0.775	-	0.870	0.600	0.884	0.438	-	0.888	0.500	0.250	0.625	-	0.750	0.625	0.913	0.500	-	0.913	0.937
Car	17	0	62	-	79	12	910	7	-	929	4	0	10	-	14	25	1067	4	-	1096	2118
% Car	94.4	-	100.0	-	98.8	100.0	92.3	100.0	-	92.4	100.0	0.0	100.0	-	93.3	100.0	92.8	100.0	-	93.0	92.9
Truck	1	0	0	-	1	0	72	0	-	72	0	1	0	-	1	0	75	0	-	75	149
% Truck	5.6	-	0.0	-	1.3	0.0	7.3	0.0	-	7.2	0.0	100.0	0.0	-	6.7	0.0	6.5	0.0	-	6.4	6.5
Bike	0	0	0	-	0	0	4	0	-	4	0	0	0	-	0	0	8	0	-	8	12
% Bike	0.0	-	0.0	-	0.0	0.0	0.4	0.0	-	0.4	0.0	0.0	0.0	-	0.0	0.0	0.7	0.0	-	0.7	0.5
Ped	-	-	-	2	-	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Ped	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Lee Engineering, LLC
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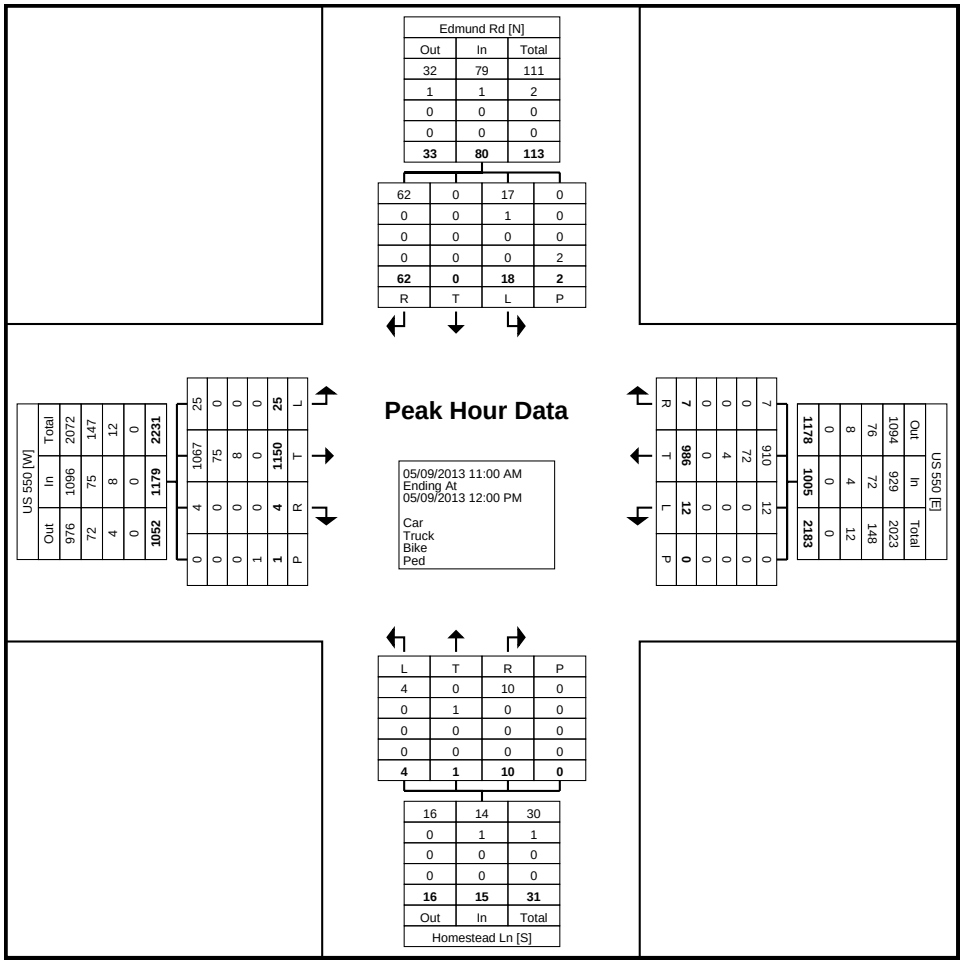
jnorby@lee-eng.com

Count Name: US 550 - Edmond/Homestead
Site Code: 5
Start Date: 05/09/2013



Turning Movement Peak Hour Data Plot (11:00 AM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

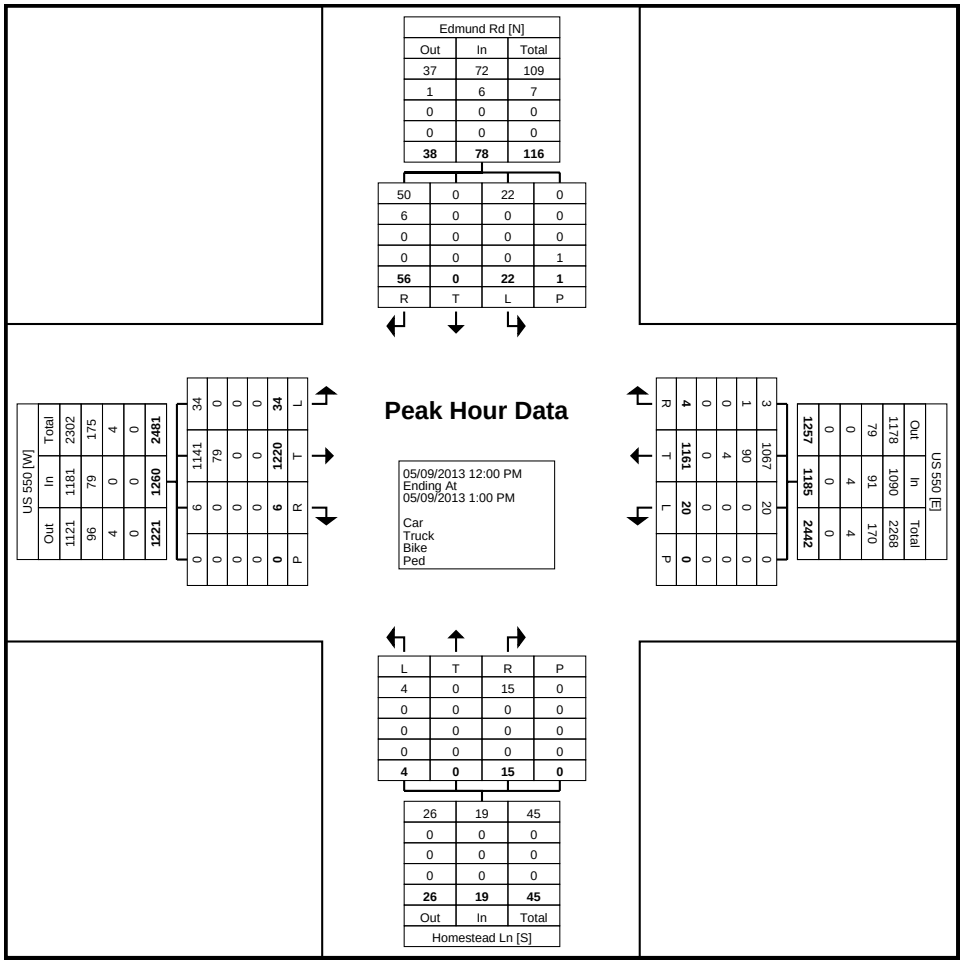
Count Name: US 550 - Edmond/Homestead
Site Code: 5
Start Date: 05/09/2013

Turning Movement Peak Hour Data (12:00 PM)

Start Time	Edmund Rd Southbound					US 550 Westbound					Homestead Ln Northbound					US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 PM	5	0	16	1	21	5	297	1	0	303	0	0	3	0	3	7	305	0	0	312	639
12:15 PM	6	0	8	0	14	6	283	1	0	290	2	0	1	0	3	9	314	1	0	324	631
12:30 PM	6	0	15	0	21	4	293	1	0	298	1	0	7	0	8	7	272	3	0	282	609
12:45 PM	5	0	17	0	22	5	288	1	0	294	1	0	4	0	5	11	329	2	0	342	663
Total	22	0	56	1	78	20	1161	4	0	1185	4	0	15	0	19	34	1220	6	0	1260	2542
Approach %	28.2	0.0	71.8	-	-	1.7	98.0	0.3	-	-	21.1	0.0	78.9	-	-	2.7	96.8	0.5	-	-	-
Total %	0.9	0.0	2.2	-	3.1	0.8	45.7	0.2	-	46.6	0.2	0.0	0.6	-	0.7	1.3	48.0	0.2	-	49.6	-
PHF	0.917	0.000	0.824	-	0.886	0.833	0.977	1.000	-	0.978	0.500	0.000	0.536	-	0.594	0.773	0.927	0.500	-	0.921	0.959
Car	22	0	50	-	72	20	1067	3	-	1090	4	0	15	-	19	34	1141	6	-	1181	2362
% Car	100.0	-	89.3	-	92.3	100.0	91.9	75.0	-	92.0	100.0	-	100.0	-	100.0	100.0	93.5	100.0	-	93.7	92.9
Truck	0	0	6	-	6	0	90	1	-	91	0	0	0	-	0	0	79	0	-	79	176
% Truck	0.0	-	10.7	-	7.7	0.0	7.8	25.0	-	7.7	0.0	-	0.0	-	0.0	0.0	6.5	0.0	-	6.3	6.9
Bike	0	0	0	-	0	0	4	0	-	4	0	0	0	-	0	0	0	0	-	0	4
% Bike	0.0	-	0.0	-	0.0	0.0	0.3	0.0	-	0.3	0.0	-	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.2
Ped	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Ped	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Edmond/Homestead
Site Code: 5
Start Date: 05/09/2013



Turning Movement Peak Hour Data Plot (12:00 PM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

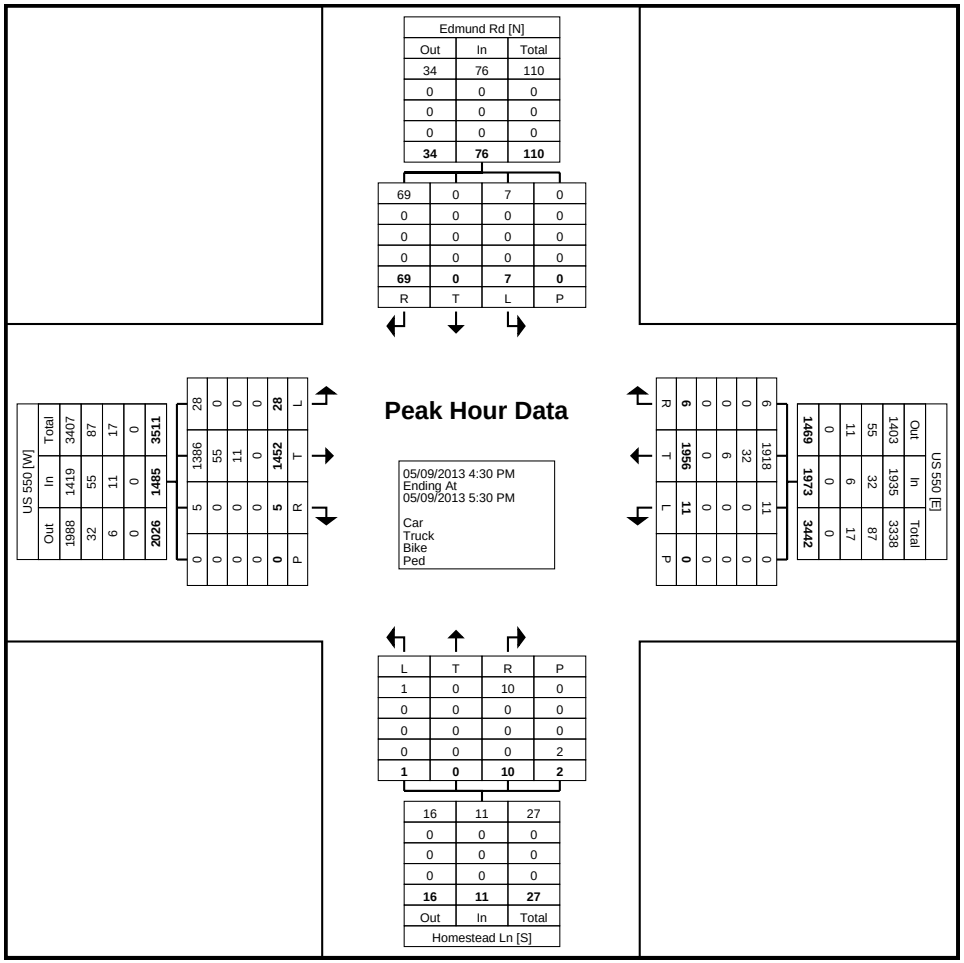
Count Name: US 550 - Edmond/Homestead
Site Code: 5
Start Date: 05/09/2013

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Edmund Rd Southbound					US 550 Westbound					Homestead Ln Northbound					US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:30 PM	1	0	15	0	16	2	477	1	0	480	0	0	1	0	1	9	377	3	0	389	886
4:45 PM	0	0	22	0	22	4	502	2	0	508	0	0	1	0	1	7	372	0	0	379	910
5:00 PM	3	0	17	0	20	4	471	0	0	475	0	0	3	0	3	7	344	2	0	353	851
5:15 PM	3	0	15	0	18	1	506	3	0	510	1	0	5	2	6	5	359	0	0	364	898
Total	7	0	69	0	76	11	1956	6	0	1973	1	0	10	2	11	28	1452	5	0	1485	3545
Approach %	9.2	0.0	90.8	-	-	0.6	99.1	0.3	-	-	9.1	0.0	90.9	-	-	1.9	97.8	0.3	-	-	-
Total %	0.2	0.0	1.9	-	2.1	0.3	55.2	0.2	-	55.7	0.0	0.0	0.3	-	0.3	0.8	41.0	0.1	-	41.9	-
PHF	0.583	0.000	0.784	-	0.864	0.688	0.966	0.500	-	0.967	0.250	0.000	0.500	-	0.458	0.778	0.963	0.417	-	0.954	0.974
Car	7	0	69	-	76	11	1918	6	-	1935	1	0	10	-	11	28	1386	5	-	1419	3441
% Car	100.0	-	100.0	-	100.0	100.0	98.1	100.0	-	98.1	100.0	-	100.0	-	100.0	100.0	95.5	100.0	-	95.6	97.1
Truck	0	0	0	-	0	0	32	0	-	32	0	0	0	-	0	0	55	0	-	55	87
% Truck	0.0	-	0.0	-	0.0	0.0	1.6	0.0	-	1.6	0.0	-	0.0	-	0.0	0.0	3.8	0.0	-	3.7	2.5
Bike	0	0	0	-	0	0	6	0	-	6	0	0	0	-	0	0	11	0	-	11	17
% Bike	0.0	-	0.0	-	0.0	0.0	0.3	0.0	-	0.3	0.0	-	0.0	-	0.0	0.0	0.8	0.0	-	0.7	0.5
Ped	-	-	-	0	-	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Edmond/Homestead
Site Code: 5
Start Date: 05/09/2013



Turning Movement Peak Hour Data Plot (4:30 PM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Jemez Dam Rd
Site Code: 4
Start Date: 05/08/2013

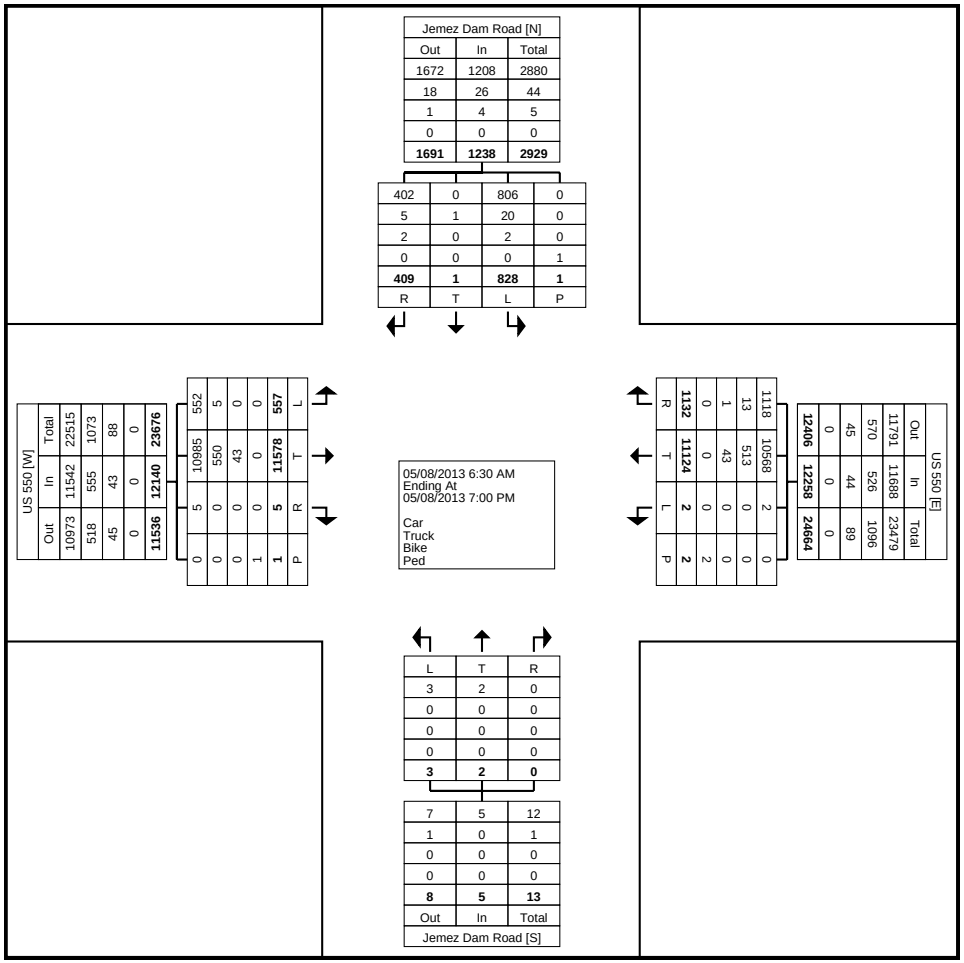
Turning Movement Data

Start Time	Jemez Dam Road Southbound					US 550 Westbound					Jemez Dam Road Northbound				US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
6:30 AM	5	0	0	0	5	0	172	8	0	180	0	0	0	0	1	519	0	0	520	705
6:45 AM	1	0	0	0	1	0	185	11	0	196	0	0	0	0	2	513	0	0	515	712
7:00 AM	6	0	5	0	11	0	209	8	0	217	0	0	0	0	2	619	0	0	621	849
7:15 AM	2	0	1	0	3	0	205	9	0	214	0	0	0	0	2	610	0	1	612	829
7:30 AM	6	0	1	1	7	0	247	7	0	254	0	0	0	0	1	496	1	0	498	759
7:45 AM	3	0	0	0	3	0	285	22	0	307	1	1	0	2	6	294	1	0	301	613
8:00 AM	11	0	3	0	14	0	207	17	2	224	0	0	0	0	10	363	1	0	374	612
8:15 AM	8	0	2	0	10	0	215	22	0	237	0	0	0	0	12	410	0	0	422	669
8:30 AM	5	0	1	0	6	0	219	39	0	258	0	0	0	0	13	336	0	0	349	613
8:45 AM	13	0	3	0	16	0	239	28	0	267	0	0	0	0	20	280	0	0	300	583
9:00 AM	19	0	4	0	23	0	212	32	0	244	0	0	0	0	13	276	0	0	289	556
9:15 AM	16	0	6	0	22	0	247	31	0	278	0	0	0	0	12	261	0	0	273	573
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	14	0	8	0	22	0	231	33	0	264	0	0	0	0	19	269	0	0	288	574
11:15 AM	25	0	10	0	35	0	235	29	0	264	0	0	0	0	28	270	0	0	298	597
11:30 AM	20	0	17	0	37	0	241	34	0	275	0	0	0	0	17	250	0	0	267	579
11:45 AM	19	0	12	0	31	0	217	46	0	263	0	0	0	0	18	267	0	0	285	579
12:00 PM	34	0	24	0	58	0	274	46	0	320	0	1	0	1	17	262	0	0	279	658
12:15 PM	23	0	20	0	43	0	260	34	0	294	0	0	0	0	17	300	0	0	317	654
12:30 PM	29	0	4	0	33	0	267	37	0	304	0	0	0	0	21	284	0	0	305	642
12:45 PM	22	0	14	0	36	0	268	35	0	303	0	0	0	0	25	257	0	0	282	621
1:00 PM	39	0	14	0	53	0	262	43	0	305	0	0	0	0	24	279	0	0	303	661
1:15 PM	34	0	23	0	57	0	252	35	0	287	0	0	0	0	23	275	0	0	298	642
1:30 PM	34	0	17	0	51	0	276	40	0	316	0	0	0	0	17	265	0	0	282	649
1:45 PM	40	1	24	0	65	1	250	30	0	281	0	0	0	0	22	267	0	0	289	635
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	38	0	17	0	55	0	374	45	0	419	1	0	0	1	17	257	0	0	274	749
4:15 PM	36	0	11	0	47	0	470	46	0	516	0	0	0	0	12	308	0	0	320	883
4:30 PM	50	0	19	0	69	0	457	48	0	505	0	0	0	0	19	303	1	0	323	897
4:45 PM	42	0	21	0	63	0	523	49	0	572	0	0	0	0	19	343	0	0	362	997
5:00 PM	39	0	24	0	63	0	505	24	0	529	0	0	0	0	18	327	1	0	346	938
5:15 PM	32	0	11	0	43	0	548	30	0	578	0	0	0	0	26	351	0	0	377	998
5:30 PM	23	0	6	0	29	1	518	33	0	552	1	0	0	1	14	299	0	0	313	895
5:45 PM	44	0	16	0	60	0	465	38	0	503	0	0	0	0	20	260	0	0	280	843
6:00 PM	26	0	17	0	43	0	517	46	0	563	0	0	0	0	19	247	0	0	266	872
6:15 PM	31	0	23	0	54	0	459	44	0	503	0	0	0	0	20	250	0	0	270	827
6:30 PM	17	0	19	0	36	0	346	27	0	373	0	0	0	0	14	209	0	0	223	632
6:45 PM	22	0	12	0	34	0	267	26	0	293	0	0	0	0	17	202	0	0	219	546

Grand Total	828	1	409	1	1238	2	11124	1132	2	12258	3	2	0	5	557	11578	5	1	12140	25641
Approach %	66.9	0.1	33.0	-	-	0.0	90.7	9.2	-	-	60.0	40.0	0.0	-	4.6	95.4	0.0	-	-	-
Total %	3.2	0.0	1.6	-	4.8	0.0	43.4	4.4	-	47.8	0.0	0.0	0.0	0.0	2.2	45.2	0.0	-	47.3	-
Car	806	0	402	-	1208	2	10568	1118	-	11688	3	2	0	5	552	10985	5	-	11542	24443
% Car	97.3	0.0	98.3	-	97.6	100.0	95.0	98.8	-	95.3	100.0	100.0	-	100.0	99.1	94.9	100.0	-	95.1	95.3
Truck	20	1	5	-	26	0	513	13	-	526	0	0	0	0	5	550	0	-	555	1107
% Truck	2.4	100.0	1.2	-	2.1	0.0	4.6	1.1	-	4.3	0.0	0.0	-	0.0	0.9	4.8	0.0	-	4.6	4.3
Bike	2	0	2	-	4	0	43	1	-	44	0	0	0	0	0	43	0	-	43	91
% Bike	0.2	0.0	0.5	-	0.3	0.0	0.4	0.1	-	0.4	0.0	0.0	-	0.0	0.0	0.4	0.0	-	0.4	0.4
Ped	-	-	-	1	-	-	-	-	2	-	-	-	-	-	-	-	-	1	-	-
% Ped	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-	-	100.0	-	-

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Jemez Dam Rd
Site Code: 4
Start Date: 05/08/2013



Turning Movement Data Plot

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Jemez Dam Rd
Site Code: 4
Start Date: 05/08/2013

Turning Movement Peak Hour Data (6:45 AM)

Start Time	Jemez Dam Road Southbound					US 550 Westbound					Jemez Dam Road Northbound				US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
6:45 AM	1	0	0	0	1	0	185	11	0	196	0	0	0	0	2	513	0	0	515	712
7:00 AM	6	0	5	0	11	0	209	8	0	217	0	0	0	0	2	619	0	0	621	849
7:15 AM	2	0	1	0	3	0	205	9	0	214	0	0	0	0	2	610	0	1	612	829
7:30 AM	6	0	1	1	7	0	247	7	0	254	0	0	0	0	1	496	1	0	498	759
Total	15	0	7	1	22	0	846	35	0	881	0	0	0	0	7	2238	1	1	2246	3149
Approach %	68.2	0.0	31.8	-	-	0.0	96.0	4.0	-	-	NaN	NaN	NaN	-	0.3	99.6	0.0	-	-	-
Total %	0.5	0.0	0.2	-	0.7	0.0	26.9	1.1	-	28.0	0.0	0.0	0.0	0.0	0.2	71.1	0.0	-	71.3	-
PHF	0.625	0.000	0.350	-	0.500	0.000	0.856	0.795	-	0.867	0.000	0.000	0.000	0.000	0.875	0.904	0.250	-	0.904	0.927
Car	12	0	6	-	18	0	778	35	-	813	0	0	0	0	7	2197	1	-	2205	3036
% Car	80.0	-	85.7	-	81.8	-	92.0	100.0	-	92.3	-	-	-	-	100.0	98.2	100.0	-	98.2	96.4
Truck	3	0	1	-	4	0	68	0	-	68	0	0	0	0	0	37	0	-	37	109
% Truck	20.0	-	14.3	-	18.2	-	8.0	0.0	-	7.7	-	-	-	-	0.0	1.7	0.0	-	1.6	3.5
Bike	0	0	0	-	0	0	0	0	-	0	0	0	0	0	0	4	0	-	4	4
% Bike	0.0	-	0.0	-	0.0	-	0.0	0.0	-	0.0	-	-	-	-	0.0	0.2	0.0	-	0.2	0.1
Ped	-	-	-	1	-	-	-	-	0	-	-	-	-	-	-	-	-	1	-	-
% Ped	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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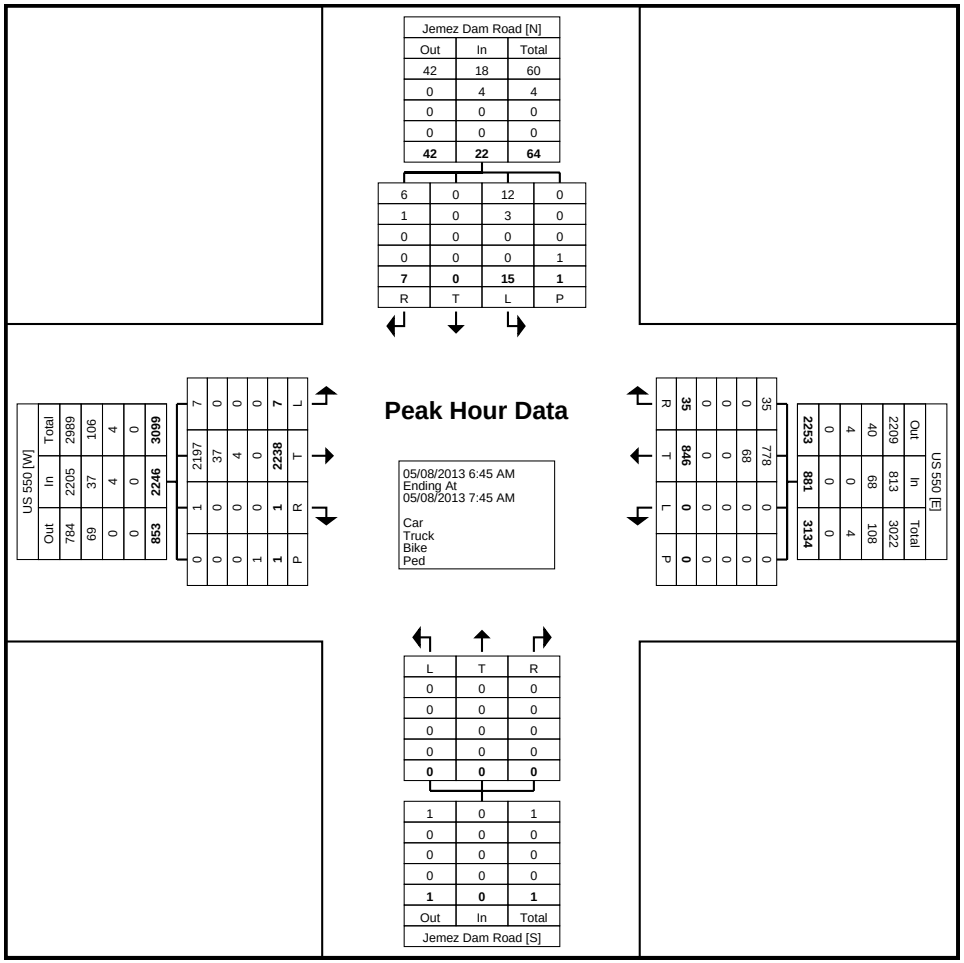

Turning Movement Peak Hour Data Plot (6:45 AM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Jemez Dam Rd
Site Code: 4
Start Date: 05/08/2013

Turning Movement Peak Hour Data (11:00 AM)

Start Time	Jemez Dam Road Southbound					US 550 Westbound					Jemez Dam Road Northbound				US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
11:00 AM	14	0	8	0	22	0	231	33	0	264	0	0	0	0	19	269	0	0	288	574
11:15 AM	25	0	10	0	35	0	235	29	0	264	0	0	0	0	28	270	0	0	298	597
11:30 AM	20	0	17	0	37	0	241	34	0	275	0	0	0	0	17	250	0	0	267	579
11:45 AM	19	0	12	0	31	0	217	46	0	263	0	0	0	0	18	267	0	0	285	579
Total	78	0	47	0	125	0	924	142	0	1066	0	0	0	0	82	1056	0	0	1138	2329
Approach %	62.4	0.0	37.6	-	-	0.0	86.7	13.3	-	-	NaN	NaN	NaN	-	7.2	92.8	0.0	-	-	-
Total %	3.3	0.0	2.0	-	5.4	0.0	39.7	6.1	-	45.8	0.0	0.0	0.0	0.0	3.5	45.3	0.0	-	48.9	-
PHF	0.780	0.000	0.691	-	0.845	0.000	0.959	0.772	-	0.969	0.000	0.000	0.000	0.000	0.732	0.978	0.000	-	0.955	0.975
Car	76	0	46	-	122	0	835	140	-	975	0	0	0	0	81	978	0	-	1059	2156
% Car	97.4	-	97.9	-	97.6	-	90.4	98.6	-	91.5	-	-	-	-	98.8	92.6	-	-	93.1	92.6
Truck	2	0	1	-	3	0	85	2	-	87	0	0	0	0	1	71	0	-	72	162
% Truck	2.6	-	2.1	-	2.4	-	9.2	1.4	-	8.2	-	-	-	-	1.2	6.7	-	-	6.3	7.0
Bike	0	0	0	-	0	0	4	0	-	4	0	0	0	0	0	7	0	-	7	11
% Bike	0.0	-	0.0	-	0.0	-	0.4	0.0	-	0.4	-	-	-	-	0.0	0.7	-	-	0.6	0.5
Ped	-	-	-	0	-	-	-	-	0	-	-	-	-	-	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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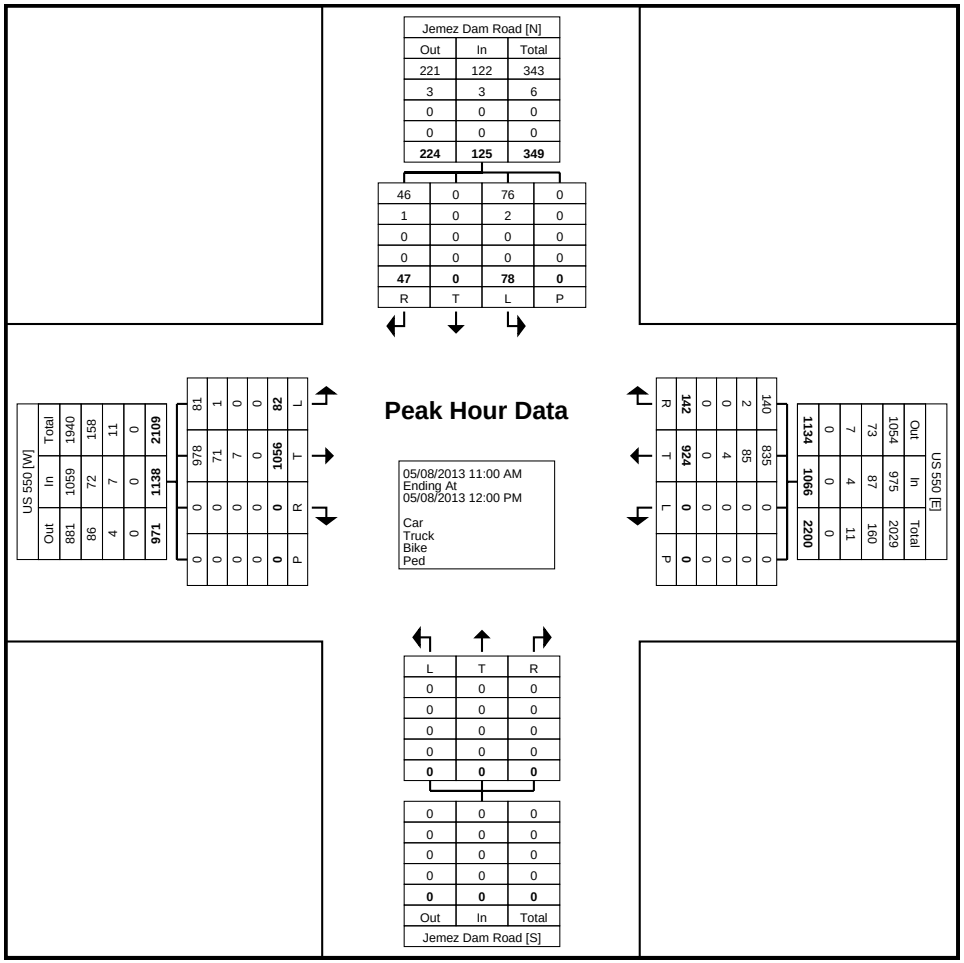


Turning Movement Peak Hour Data Plot (11:00 AM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

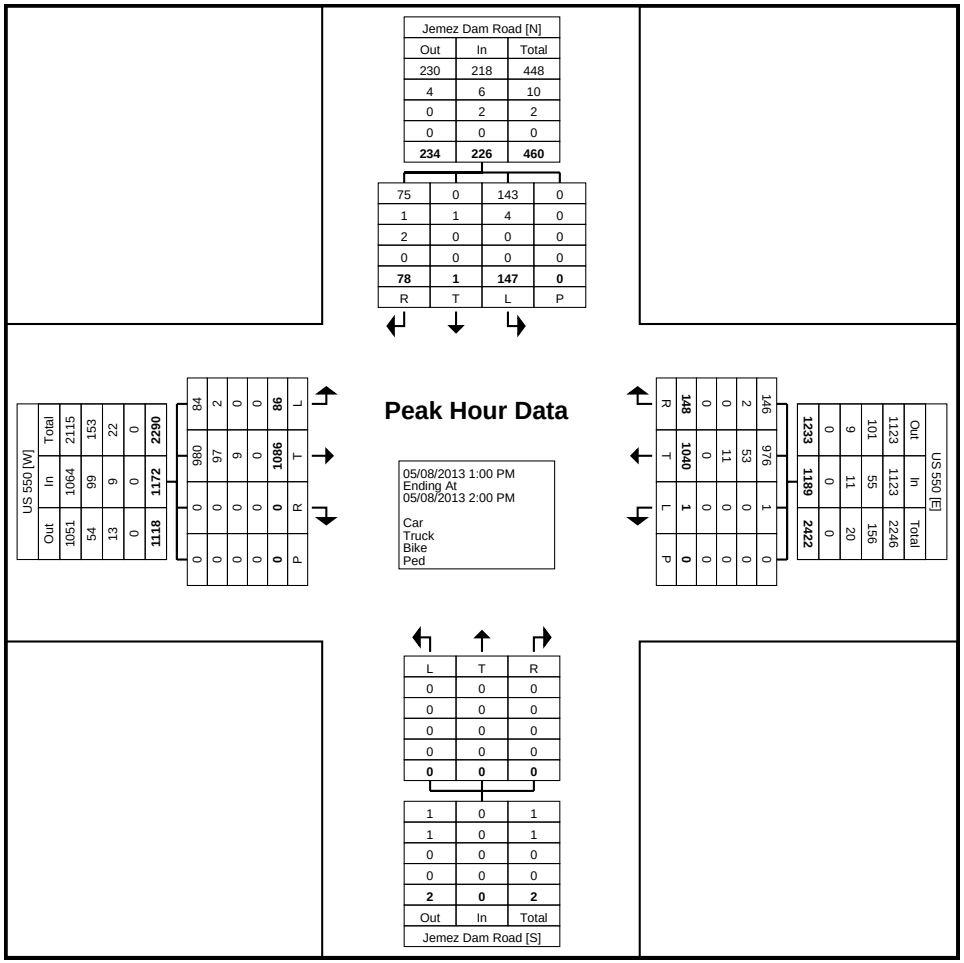
Count Name: US 550 - Jemez Dam Rd
Site Code: 4
Start Date: 05/08/2013

Turning Movement Peak Hour Data (1:00 PM)

Start Time	Jemez Dam Road Southbound					US 550 Westbound					Jemez Dam Road Northbound				US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
1:00 PM	39	0	14	0	53	0	262	43	0	305	0	0	0	0	24	279	0	0	303	661
1:15 PM	34	0	23	0	57	0	252	35	0	287	0	0	0	0	23	275	0	0	298	642
1:30 PM	34	0	17	0	51	0	276	40	0	316	0	0	0	0	17	265	0	0	282	649
1:45 PM	40	1	24	0	65	1	250	30	0	281	0	0	0	0	22	267	0	0	289	635
Total	147	1	78	0	226	1	1040	148	0	1189	0	0	0	0	86	1086	0	0	1172	2587
Approach %	65.0	0.4	34.5	-	-	0.1	87.5	12.4	-	-	NaN	NaN	NaN	-	7.3	92.7	0.0	-	-	-
Total %	5.7	0.0	3.0	-	8.7	0.0	40.2	5.7	-	46.0	0.0	0.0	0.0	0.0	3.3	42.0	0.0	-	45.3	-
PHF	0.919	0.250	0.813	-	0.869	0.250	0.942	0.860	-	0.941	0.000	0.000	0.000	0.000	0.896	0.973	0.000	-	0.967	0.978
Car	143	0	75	-	218	1	976	146	-	1123	0	0	0	0	84	980	0	-	1064	2405
% Car	97.3	0.0	96.2	-	96.5	100.0	93.8	98.6	-	94.4	-	-	-	-	97.7	90.2	-	-	90.8	93.0
Truck	4	1	1	-	6	0	53	2	-	55	0	0	0	0	2	97	0	-	99	160
% Truck	2.7	100.0	1.3	-	2.7	0.0	5.1	1.4	-	4.6	-	-	-	-	2.3	8.9	-	-	8.4	6.2
Bike	0	0	2	-	2	0	11	0	-	11	0	0	0	0	0	9	0	-	9	22
% Bike	0.0	0.0	2.6	-	0.9	0.0	1.1	0.0	-	0.9	-	-	-	-	0.0	0.8	-	-	0.8	0.9
Ped	-	-	-	0	-	-	-	-	0	-	-	-	-	-	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Jemez Dam Rd
Site Code: 4
Start Date: 05/08/2013



Turning Movement Peak Hour Data Plot (1:00 PM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Jemez Dam Rd
Site Code: 4
Start Date: 05/08/2013

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Jemez Dam Road Southbound					US 550 Westbound					Jemez Dam Road Northbound				US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:30 PM	50	0	19	0	69	0	457	48	0	505	0	0	0	0	19	303	1	0	323	897
4:45 PM	42	0	21	0	63	0	523	49	0	572	0	0	0	0	19	343	0	0	362	997
5:00 PM	39	0	24	0	63	0	505	24	0	529	0	0	0	0	18	327	1	0	346	938
5:15 PM	32	0	11	0	43	0	548	30	0	578	0	0	0	0	26	351	0	0	377	998
Total	163	0	75	0	238	0	2033	151	0	2184	0	0	0	0	82	1324	2	0	1408	3830
Approach %	68.5	0.0	31.5	-	-	0.0	93.1	6.9	-	-	NaN	NaN	NaN	-	5.8	94.0	0.1	-	-	-
Total %	4.3	0.0	2.0	-	6.2	0.0	53.1	3.9	-	57.0	0.0	0.0	0.0	0.0	2.1	34.6	0.1	-	36.8	-
PHF	0.815	0.000	0.781	-	0.862	0.000	0.927	0.770	-	0.945	0.000	0.000	0.000	0.000	0.788	0.943	0.500	-	0.934	0.959
Car	160	0	75	-	235	0	1998	151	-	2149	0	0	0	0	82	1273	2	-	1357	3741
% Car	98.2	-	100.0	-	98.7	-	98.3	100.0	-	98.4	-	-	-	-	100.0	96.1	100.0	-	96.4	97.7
Truck	3	0	0	-	3	0	24	0	-	24	0	0	0	0	0	45	0	-	45	72
% Truck	1.8	-	0.0	-	1.3	-	1.2	0.0	-	1.1	-	-	-	-	0.0	3.4	0.0	-	3.2	1.9
Bike	0	0	0	-	0	0	11	0	-	11	0	0	0	0	0	6	0	-	6	17
% Bike	0.0	-	0.0	-	0.0	-	0.5	0.0	-	0.5	-	-	-	-	0.0	0.5	0.0	-	0.4	0.4
Ped	-	-	-	0	-	-	-	-	0	-	-	-	-	-	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Lee Engineering, LLC
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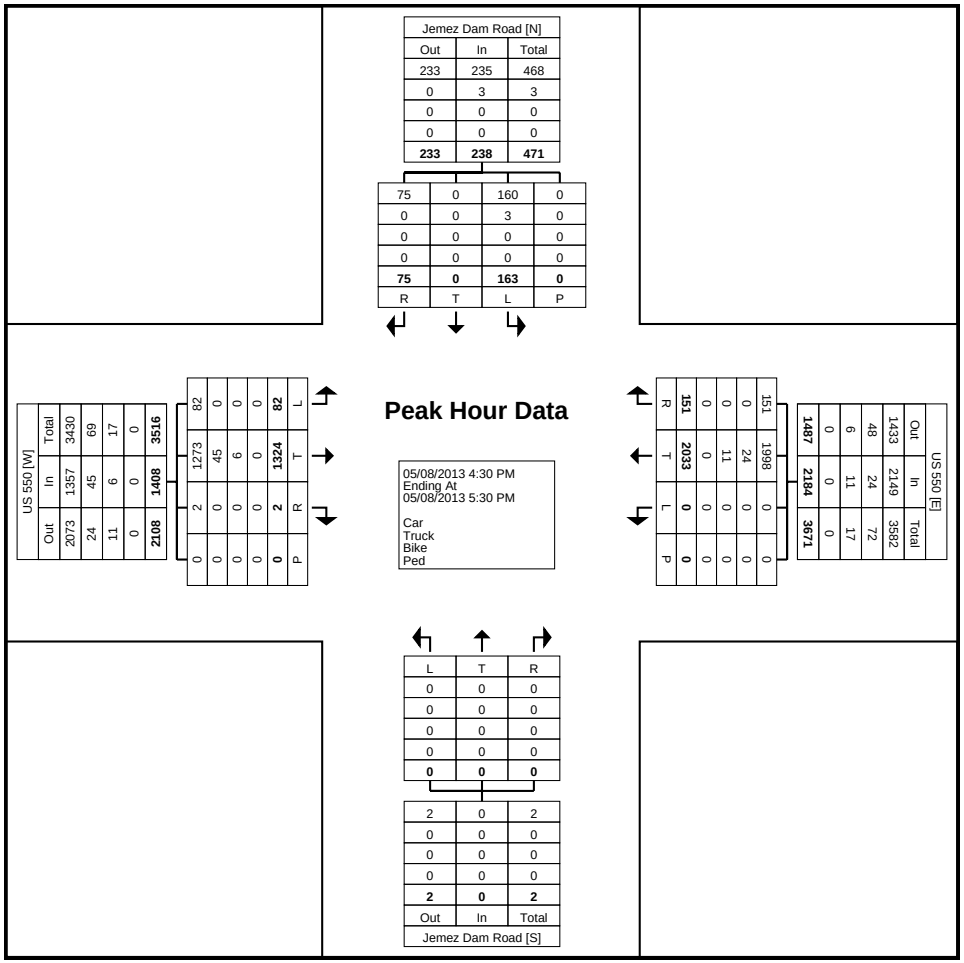


Turning Movement Peak Hour Data Plot (4:30 PM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - NM 528
Site Code: 3
Start Date: 05/09/2013

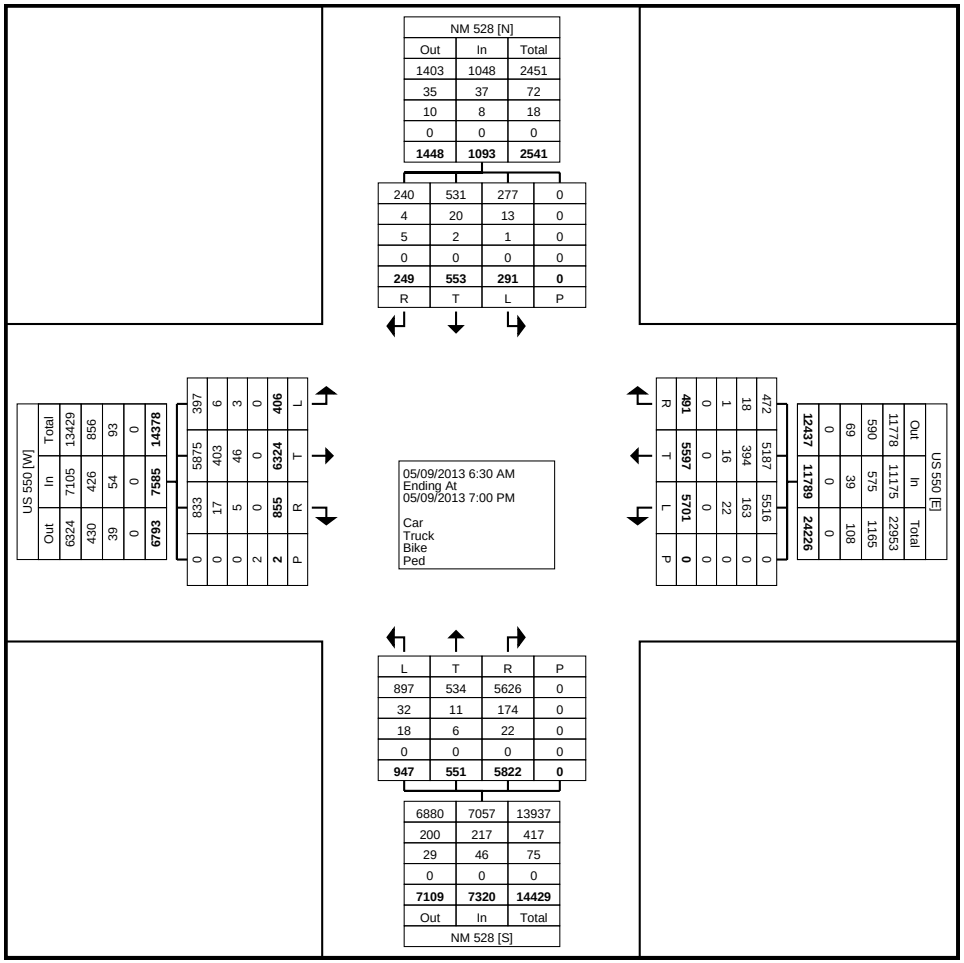
Turning Movement Data

Start Time	NM 528 Southbound					US 550 Westbound					NM 528 Northbound					US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
6:30 AM	2	1	2	0	5	55	93	12	0	160	8	6	199	0	213	7	315	22	0	344	722
6:45 AM	2	1	0	0	3	83	128	5	0	216	14	13	190	0	217	7	319	20	0	346	782
7:00 AM	0	2	2	0	4	61	104	5	0	170	17	9	267	0	293	5	355	21	0	381	848
7:15 AM	2	0	3	0	5	96	108	7	0	211	18	11	266	0	295	5	384	19	0	408	919
7:30 AM	4	3	1	0	8	101	104	14	0	219	25	12	239	0	276	14	271	19	0	304	807
7:45 AM	4	1	1	0	6	133	135	20	0	288	18	26	170	0	214	19	214	25	0	258	766
8:00 AM	5	2	3	0	10	103	84	9	0	196	15	19	187	0	221	12	210	9	0	231	658
8:15 AM	4	3	2	0	9	104	138	12	0	254	13	10	152	0	175	10	184	21	0	215	653
8:30 AM	3	3	1	0	7	116	102	21	0	239	10	10	148	0	168	11	148	19	0	178	592
8:45 AM	2	4	2	0	8	118	99	21	0	238	17	16	148	0	181	8	148	28	0	184	611
9:00 AM	2	5	3	0	10	97	106	24	0	227	14	13	157	0	184	5	161	18	0	184	605
9:15 AM	9	5	0	0	14	110	87	18	0	215	9	17	151	0	177	10	144	21	0	175	581
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	5	14	4	0	23	123	100	9	0	232	28	15	137	0	180	15	115	21	0	151	586
11:15 AM	7	6	1	0	14	162	103	16	0	281	18	10	174	0	202	14	116	23	0	153	650
11:30 AM	4	11	5	0	20	112	100	6	0	218	21	17	190	0	228	18	129	24	0	171	637
11:45 AM	10	20	3	0	33	145	97	10	0	252	24	22	149	0	195	9	140	21	0	170	650
12:00 PM	10	23	5	0	38	152	101	9	0	262	35	14	175	0	224	10	137	31	0	178	702
12:15 PM	14	26	12	0	52	147	119	8	0	274	40	20	150	0	210	9	142	25	0	176	712
12:30 PM	7	12	7	0	26	179	129	7	0	315	34	16	134	0	184	13	135	26	0	174	699
12:45 PM	14	30	6	0	50	149	111	6	0	266	50	12	155	0	217	11	143	21	0	175	708
1:00 PM	17	22	5	0	44	132	109	12	0	253	26	17	151	0	194	8	178	20	1	206	697
1:15 PM	19	24	13	0	56	156	118	5	0	279	40	12	152	0	204	6	137	33	0	176	715
1:30 PM	10	16	9	0	35	132	116	11	0	259	36	23	146	0	205	6	136	22	0	164	663
1:45 PM	9	32	10	0	51	150	124	10	0	284	24	22	140	0	186	12	127	19	0	158	679
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	14	23	12	0	49	233	215	14	0	462	36	7	140	0	183	11	182	28	0	221	915
4:15 PM	5	29	17	0	51	221	233	5	0	459	51	15	169	0	235	9	187	29	0	225	970
4:30 PM	16	31	15	0	62	254	261	9	0	524	32	9	174	0	215	13	170	27	0	210	1011
4:45 PM	17	26	14	0	57	250	250	12	0	512	37	18	134	0	189	12	199	25	0	236	994
5:00 PM	10	27	13	0	50	273	253	17	0	543	36	11	184	0	231	13	161	29	1	203	1027
5:15 PM	14	32	15	0	61	232	235	8	0	475	34	11	160	0	205	15	177	34	0	226	967
5:30 PM	12	22	12	0	46	267	275	12	0	554	29	17	140	0	186	12	153	25	0	190	976
5:45 PM	8	26	11	0	45	228	286	9	0	523	31	10	126	0	167	12	177	29	0	218	953
6:00 PM	11	25	12	0	48	224	289	16	0	529	24	31	136	0	191	10	115	36	0	161	929
6:15 PM	9	17	12	0	38	232	255	32	0	519	36	13	130	0	179	21	128	22	0	171	907
6:30 PM	5	17	7	0	29	179	215	51	0	445	27	32	92	0	151	22	92	20	0	134	759
6:45 PM	5	12	9	0	26	192	215	29	0	436	20	15	110	0	145	12	95	23	0	130	737

Grand Total	291	553	249	0	1093	5701	5597	491	0	11789	947	551	5822	0	7320	406	6324	855	2	7585	27787
Approach %	26.6	50.6	22.8	-	-	48.4	47.5	4.2	-	-	12.9	7.5	79.5	-	-	5.4	83.4	11.3	-	-	-
Total %	1.0	2.0	0.9	-	3.9	20.5	20.1	1.8	-	42.4	3.4	2.0	21.0	-	26.3	1.5	22.8	3.1	-	27.3	-
Car	277	531	240	-	1048	5516	5187	472	-	11175	897	534	5626	-	7057	397	5875	833	-	7105	26385
% Car	95.2	96.0	96.4	-	95.9	96.8	92.7	96.1	-	94.8	94.7	96.9	96.6	-	96.4	97.8	92.9	97.4	-	93.7	95.0
Truck	13	20	4	-	37	163	394	18	-	575	32	11	174	-	217	6	403	17	-	426	1255
% Truck	4.5	3.6	1.6	-	3.4	2.9	7.0	3.7	-	4.9	3.4	2.0	3.0	-	3.0	1.5	6.4	2.0	-	5.6	4.5
Bike	1	2	5	-	8	22	16	1	-	39	18	6	22	-	46	3	46	5	-	54	147
% Bike	0.3	0.4	2.0	-	0.7	0.4	0.3	0.2	-	0.3	1.9	1.1	0.4	-	0.6	0.7	0.7	0.6	-	0.7	0.5
Ped	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	2	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - NM 528
Site Code: 3
Start Date: 05/09/2013



Turning Movement Data Plot

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

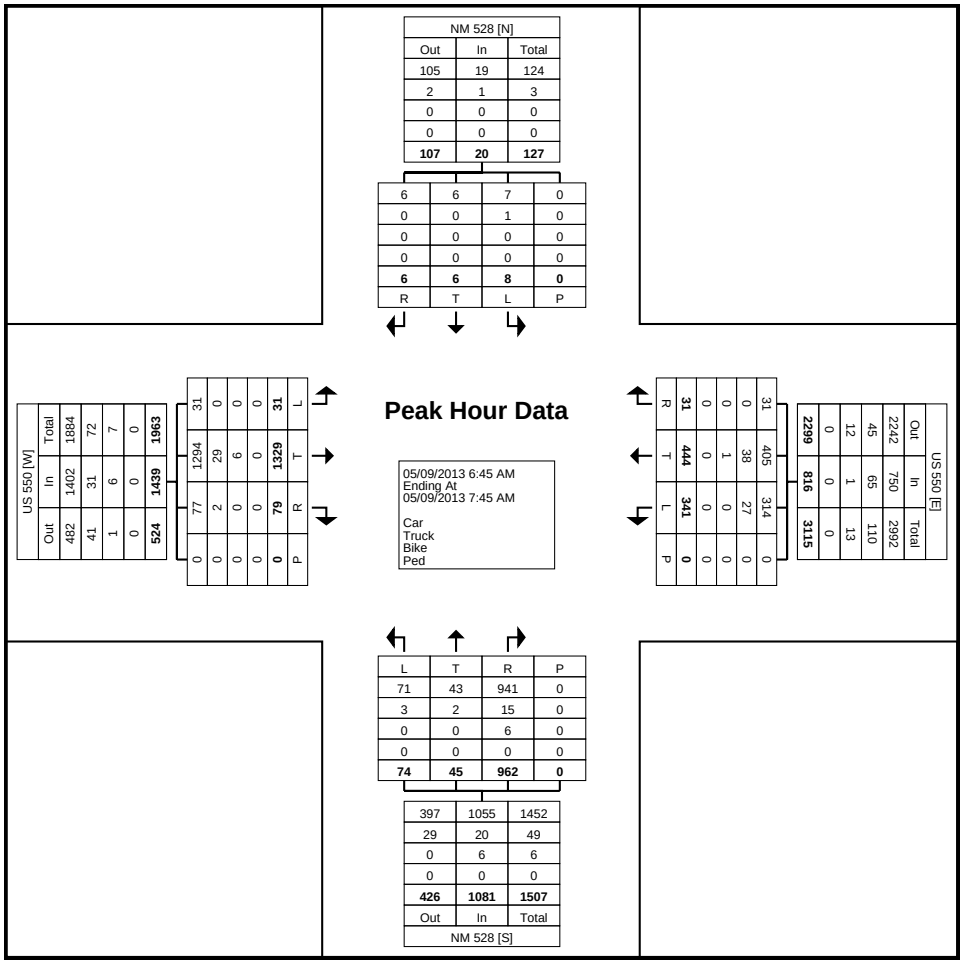
Count Name: US 550 - NM 528
Site Code: 3
Start Date: 05/09/2013

Turning Movement Peak Hour Data (6:45 AM)

Start Time	NM 528 Southbound					US 550 Westbound					NM 528 Northbound					US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
6:45 AM	2	1	0	0	3	83	128	5	0	216	14	13	190	0	217	7	319	20	0	346	782
7:00 AM	0	2	2	0	4	61	104	5	0	170	17	9	267	0	293	5	355	21	0	381	848
7:15 AM	2	0	3	0	5	96	108	7	0	211	18	11	266	0	295	5	384	19	0	408	919
7:30 AM	4	3	1	0	8	101	104	14	0	219	25	12	239	0	276	14	271	19	0	304	807
Total	8	6	6	0	20	341	444	31	0	816	74	45	962	0	1081	31	1329	79	0	1439	3356
Approach %	40.0	30.0	30.0	-	-	41.8	54.4	3.8	-	-	6.8	4.2	89.0	-	-	2.2	92.4	5.5	-	-	-
Total %	0.2	0.2	0.2	-	0.6	10.2	13.2	0.9	-	24.3	2.2	1.3	28.7	-	32.2	0.9	39.6	2.4	-	42.9	-
PHF	0.500	0.500	0.500	-	0.625	0.844	0.867	0.554	-	0.932	0.740	0.865	0.901	-	0.916	0.554	0.865	0.940	-	0.882	0.913
Car	7	6	6	-	19	314	405	31	-	750	71	43	941	-	1055	31	1294	77	-	1402	3226
% Car	87.5	100.0	100.0	-	95.0	92.1	91.2	100.0	-	91.9	95.9	95.6	97.8	-	97.6	100.0	97.4	97.5	-	97.4	96.1
Truck	1	0	0	-	1	27	38	0	-	65	3	2	15	-	20	0	29	2	-	31	117
% Truck	12.5	0.0	0.0	-	5.0	7.9	8.6	0.0	-	8.0	4.1	4.4	1.6	-	1.9	0.0	2.2	2.5	-	2.2	3.5
Bike	0	0	0	-	0	0	1	0	-	1	0	0	6	-	6	0	6	0	-	6	13
% Bike	0.0	0.0	0.0	-	0.0	0.0	0.2	0.0	-	0.1	0.0	0.0	0.6	-	0.6	0.0	0.5	0.0	-	0.4	0.4
Ped	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - NM 528
Site Code: 3
Start Date: 05/09/2013



Turning Movement Peak Hour Data Plot (6:45 AM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - NM 528
Site Code: 3
Start Date: 05/09/2013

Turning Movement Peak Hour Data (11:00 AM)

Start Time	NM 528 Southbound					US 550 Westbound					NM 528 Northbound					US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
11:00 AM	5	14	4	0	23	123	100	9	0	232	28	15	137	0	180	15	115	21	0	151	586
11:15 AM	7	6	1	0	14	162	103	16	0	281	18	10	174	0	202	14	116	23	0	153	650
11:30 AM	4	11	5	0	20	112	100	6	0	218	21	17	190	0	228	18	129	24	0	171	637
11:45 AM	10	20	3	0	33	145	97	10	0	252	24	22	149	0	195	9	140	21	0	170	650
Total	26	51	13	0	90	542	400	41	0	983	91	64	650	0	805	56	500	89	0	645	2523
Approach %	28.9	56.7	14.4	-	-	55.1	40.7	4.2	-	-	11.3	8.0	80.7	-	-	8.7	77.5	13.8	-	-	-
Total %	1.0	2.0	0.5	-	3.6	21.5	15.9	1.6	-	39.0	3.6	2.5	25.8	-	31.9	2.2	19.8	3.5	-	25.6	-
PHF	0.650	0.638	0.650	-	0.682	0.836	0.971	0.641	-	0.875	0.813	0.727	0.855	-	0.883	0.778	0.893	0.927	-	0.943	0.970
Car	26	46	13	-	85	522	337	40	-	899	86	59	623	-	768	55	445	88	-	588	2340
% Car	100.0	90.2	100.0	-	94.4	96.3	84.3	97.6	-	91.5	94.5	92.2	95.8	-	95.4	98.2	89.0	98.9	-	91.2	92.7
Truck	0	5	0	-	5	19	60	1	-	80	5	4	21	-	30	1	52	1	-	54	169
% Truck	0.0	9.8	0.0	-	5.6	3.5	15.0	2.4	-	8.1	5.5	6.3	3.2	-	3.7	1.8	10.4	1.1	-	8.4	6.7
Bike	0	0	0	-	0	1	3	0	-	4	0	1	6	-	7	0	3	0	-	3	14
% Bike	0.0	0.0	0.0	-	0.0	0.2	0.8	0.0	-	0.4	0.0	1.6	0.9	-	0.9	0.0	0.6	0.0	-	0.5	0.6
Ped	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Lee Engineering, LLC
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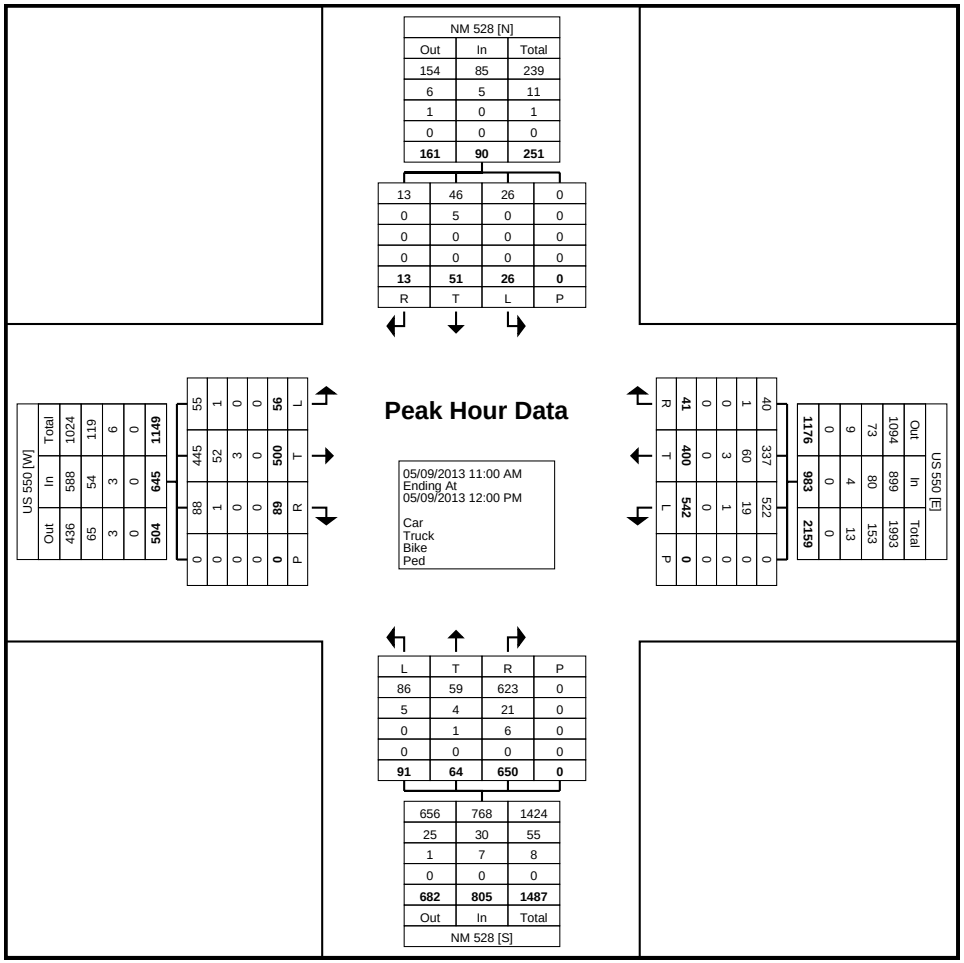

Turning Movement Peak Hour Data Plot (11:00 AM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - NM 528
Site Code: 3
Start Date: 05/09/2013

Turning Movement Peak Hour Data (12:00 PM)

Start Time	NM 528 Southbound					US 550 Westbound					NM 528 Northbound					US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 PM	10	23	5	0	38	152	101	9	0	262	35	14	175	0	224	10	137	31	0	178	702
12:15 PM	14	26	12	0	52	147	119	8	0	274	40	20	150	0	210	9	142	25	0	176	712
12:30 PM	7	12	7	0	26	179	129	7	0	315	34	16	134	0	184	13	135	26	0	174	699
12:45 PM	14	30	6	0	50	149	111	6	0	266	50	12	155	0	217	11	143	21	0	175	708
Total	45	91	30	0	166	627	460	30	0	1117	159	62	614	0	835	43	557	103	0	703	2821
Approach %	27.1	54.8	18.1	-	-	56.1	41.2	2.7	-	-	19.0	7.4	73.5	-	-	6.1	79.2	14.7	-	-	-
Total %	1.6	3.2	1.1	-	5.9	22.2	16.3	1.1	-	39.6	5.6	2.2	21.8	-	29.6	1.5	19.7	3.7	-	24.9	-
PHF	0.804	0.758	0.625	-	0.798	0.876	0.891	0.833	-	0.887	0.795	0.775	0.877	-	0.932	0.827	0.974	0.831	-	0.987	0.991
Car	43	83	28	-	154	597	395	25	-	1017	139	60	589	-	788	40	498	100	-	638	2597
% Car	95.6	91.2	93.3	-	92.8	95.2	85.9	83.3	-	91.0	87.4	96.8	95.9	-	94.4	93.0	89.4	97.1	-	90.8	92.1
Truck	2	8	2	-	12	30	63	5	-	98	5	2	25	-	32	2	57	1	-	60	202
% Truck	4.4	8.8	6.7	-	7.2	4.8	13.7	16.7	-	8.8	3.1	3.2	4.1	-	3.8	4.7	10.2	1.0	-	8.5	7.2
Bike	0	0	0	-	0	0	2	0	-	2	15	0	0	-	15	1	2	2	-	5	22
% Bike	0.0	0.0	0.0	-	0.0	0.0	0.4	0.0	-	0.2	9.4	0.0	0.0	-	1.8	2.3	0.4	1.9	-	0.7	0.8
Ped	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Lee Engineering, LLC
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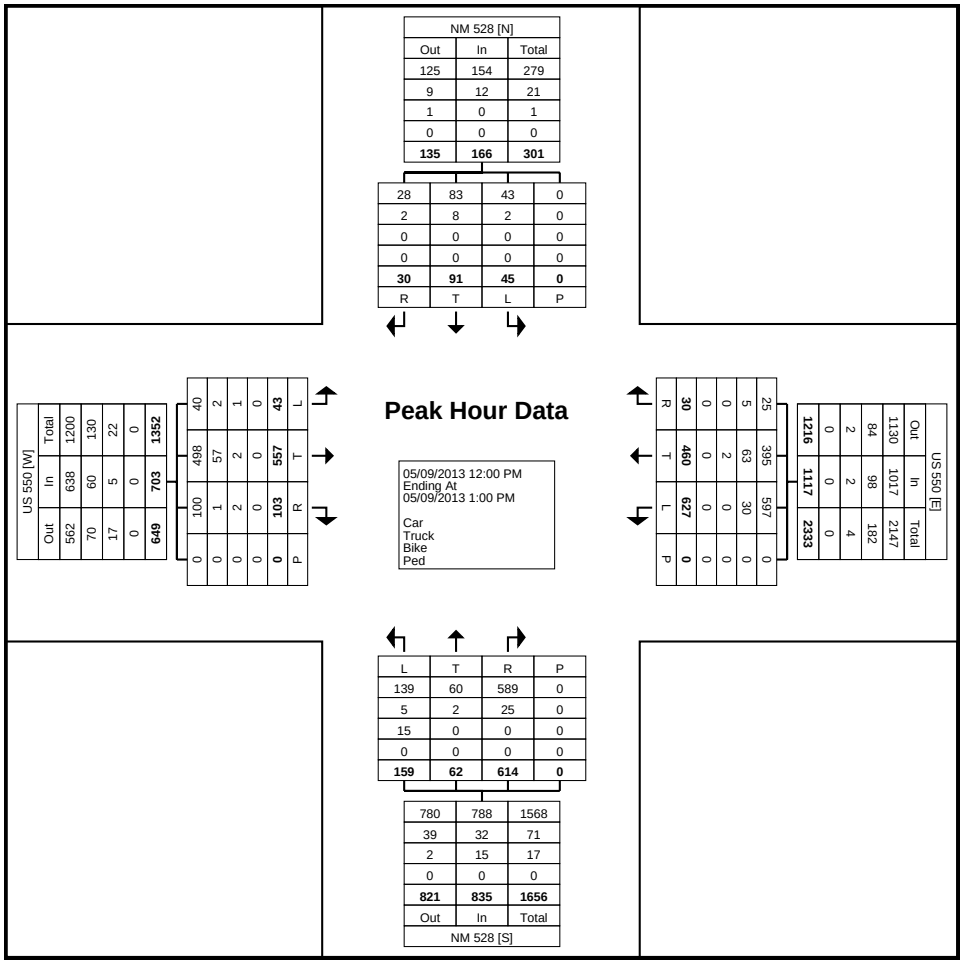
jnorby@lee-eng.com



Turning Movement Peak Hour Data Plot (12:00 PM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - NM 528
Site Code: 3
Start Date: 05/09/2013

Turning Movement Peak Hour Data (4:15 PM)

Start Time	NM 528 Southbound					US 550 Westbound					NM 528 Northbound					US 550 Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:15 PM	5	29	17	0	51	221	233	5	0	459	51	15	169	0	235	9	187	29	0	225	970
4:30 PM	16	31	15	0	62	254	261	9	0	524	32	9	174	0	215	13	170	27	0	210	1011
4:45 PM	17	26	14	0	57	250	250	12	0	512	37	18	134	0	189	12	199	25	0	236	994
5:00 PM	10	27	13	0	50	273	253	17	0	543	36	11	184	0	231	13	161	29	1	203	1027
Total	48	113	59	0	220	998	997	43	0	2038	156	53	661	0	870	47	717	110	1	874	4002
Approach %	21.8	51.4	26.8	-	-	49.0	48.9	2.1	-	-	17.9	6.1	76.0	-	-	5.4	82.0	12.6	-	-	-
Total %	1.2	2.8	1.5	-	5.5	24.9	24.9	1.1	-	50.9	3.9	1.3	16.5	-	21.7	1.2	17.9	2.7	-	21.8	-
PHF	0.706	0.911	0.868	-	0.887	0.914	0.955	0.632	-	0.938	0.765	0.736	0.898	-	0.926	0.904	0.901	0.948	-	0.926	0.974
Car	47	112	59	-	218	978	964	43	-	1985	151	50	640	-	841	43	671	109	-	823	3867
% Car	97.9	99.1	100.0	-	99.1	98.0	96.7	100.0	-	97.4	96.8	94.3	96.8	-	96.7	91.5	93.6	99.1	-	94.2	96.6
Truck	1	0	0	-	1	13	27	0	-	40	4	0	18	-	22	2	40	1	-	43	106
% Truck	2.1	0.0	0.0	-	0.5	1.3	2.7	0.0	-	2.0	2.6	0.0	2.7	-	2.5	4.3	5.6	0.9	-	4.9	2.6
Bike	0	1	0	-	1	7	6	0	-	13	1	3	3	-	7	2	6	0	-	8	29
% Bike	0.0	0.9	0.0	-	0.5	0.7	0.6	0.0	-	0.6	0.6	5.7	0.5	-	0.8	4.3	0.8	0.0	-	0.9	0.7
Ped	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
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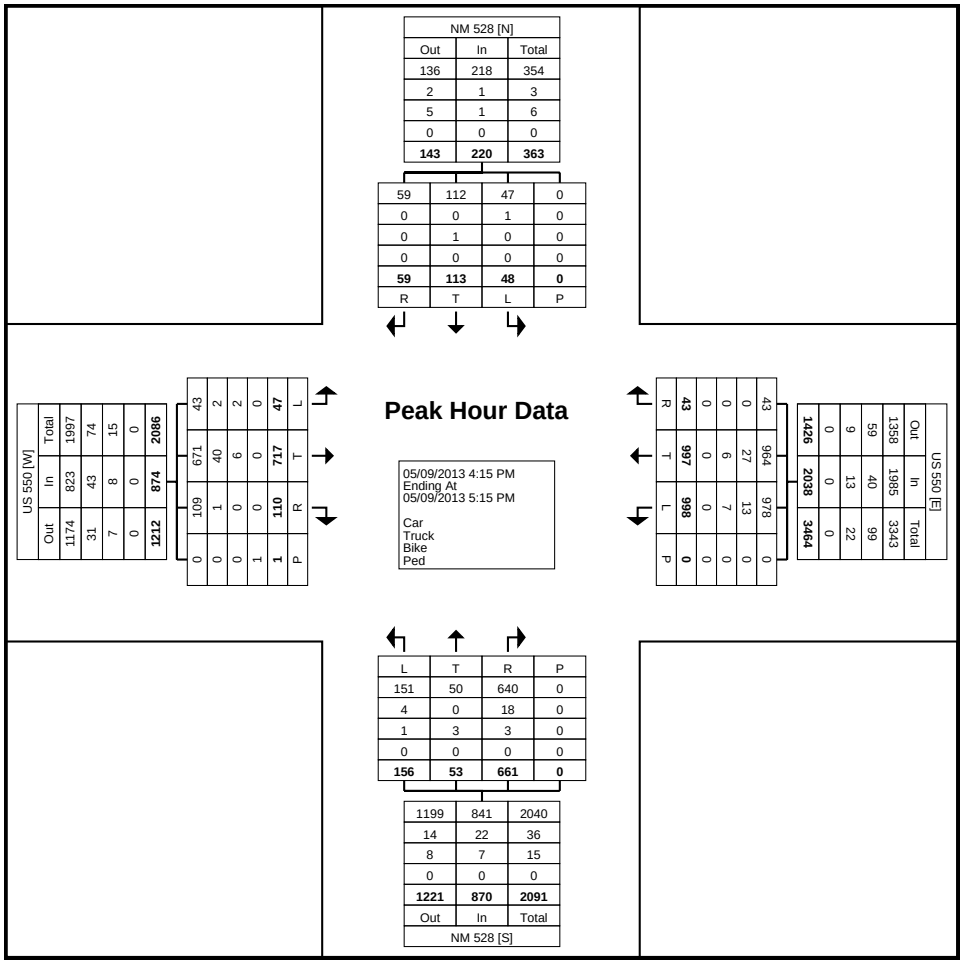


Turning Movement Peak Hour Data Plot (4:15 PM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Sprint
Site Code: 2
Start Date: 05/08/2013

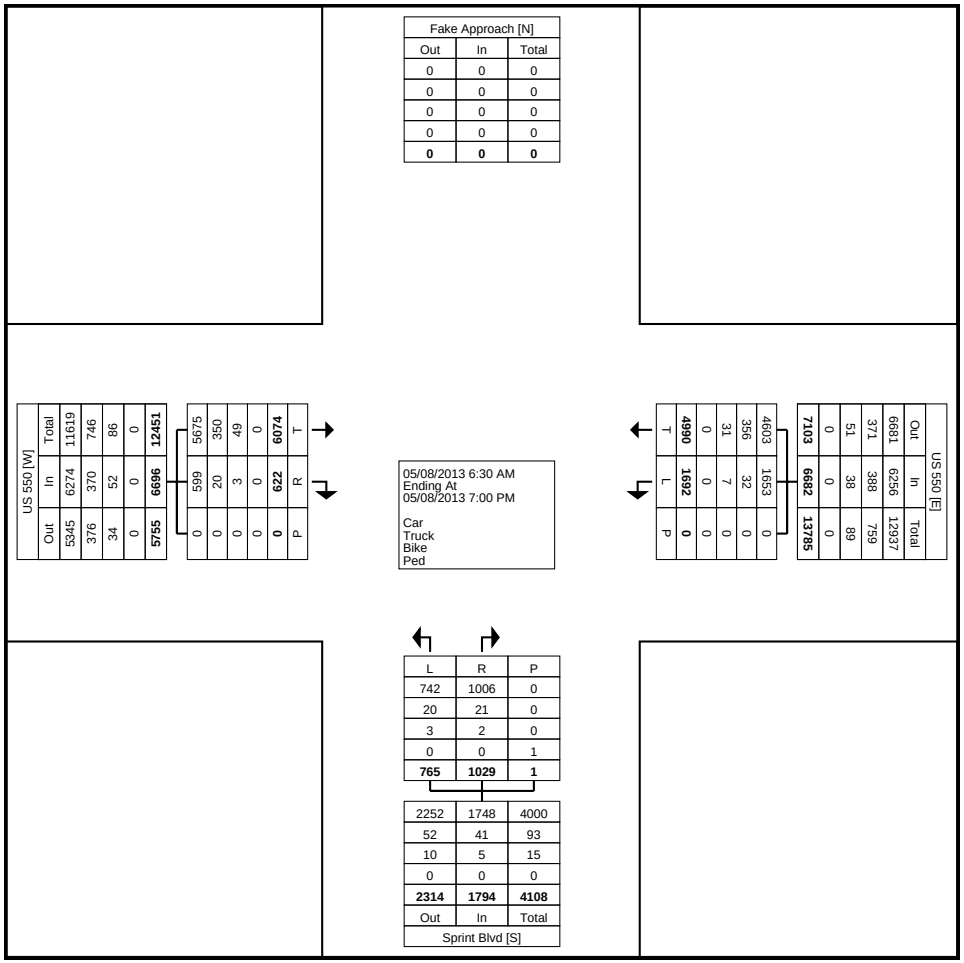
Turning Movement Data

Start Time	US 550 Westbound				Sprint Blvd Northbound				US 550 Eastbound				
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
6:30 AM	21	75	0	96	16	55	0	71	295	16	0	311	478
6:45 AM	44	83	0	127	31	42	0	73	293	26	0	319	519
7:00 AM	38	114	0	152	26	49	0	75	359	22	0	381	608
7:15 AM	28	87	0	115	13	53	0	66	360	36	0	396	577
7:30 AM	25	114	0	139	13	28	0	41	229	18	0	247	427
7:45 AM	36	122	0	158	15	38	0	53	241	34	0	275	486
8:00 AM	38	103	0	141	23	34	0	57	168	16	0	184	382
8:15 AM	36	95	0	131	12	29	0	41	167	15	0	182	354
8:30 AM	40	92	0	132	12	27	0	39	175	16	0	191	362
8:45 AM	39	108	0	147	13	18	0	31	160	17	0	177	355
9:00 AM	24	88	0	112	9	21	0	30	138	12	0	150	292
9:15 AM	36	115	0	151	18	24	0	42	131	12	0	143	336
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	38	103	0	141	8	24	0	32	119	11	0	130	303
11:15 AM	49	82	0	131	19	15	0	34	123	10	0	133	298
11:30 AM	55	101	0	156	12	19	0	31	133	18	0	151	338
11:45 AM	45	102	0	147	21	24	0	45	130	11	0	141	333
12:00 PM	71	100	0	171	16	34	0	50	135	14	0	149	370
12:15 PM	58	109	0	167	16	26	0	42	122	18	0	140	349
12:30 PM	50	118	0	168	20	25	0	45	141	18	0	159	372
12:45 PM	72	138	0	210	10	24	0	34	112	10	0	122	366
1:00 PM	55	117	0	172	12	30	0	42	143	17	0	160	374
1:15 PM	58	133	0	191	23	14	0	37	162	19	0	181	409
1:30 PM	47	111	0	158	18	24	0	42	132	17	0	149	349
1:45 PM	57	115	0	172	20	23	0	43	133	32	0	165	380
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	73	159	0	232	22	21	0	43	156	11	0	167	442
4:15 PM	74	219	0	293	35	47	0	82	158	20	0	178	553
4:30 PM	61	195	0	256	37	36	0	73	159	24	0	183	512
4:45 PM	45	197	0	242	32	36	0	68	185	20	0	205	515
5:00 PM	60	241	0	301	37	32	0	69	154	12	0	166	536
5:15 PM	57	222	0	279	25	32	0	57	183	21	0	204	540
5:30 PM	58	259	0	317	39	23	0	62	150	17	0	167	546
5:45 PM	53	233	0	286	30	23	0	53	162	12	0	174	513
6:00 PM	41	241	0	282	28	24	0	52	134	18	0	152	486
6:15 PM	47	210	0	257	35	22	0	57	125	10	0	135	449
6:30 PM	32	150	0	182	24	13	1	37	106	5	0	111	330
6:45 PM	31	139	0	170	25	20	0	45	101	17	0	118	333

Grand Total	1692	4990	0	6682	765	1029	1	1794	6074	622	0	6696	15172
Approach %	25.3	74.7	-	-	42.6	57.4	-	-	90.7	9.3	-	-	-
Total %	11.2	32.9	-	44.0	5.0	6.8	-	11.8	40.0	4.1	-	44.1	-
Car	1653	4603	-	6256	742	1006	-	1748	5675	599	-	6274	14278
% Car	97.7	92.2	-	93.6	97.0	97.8	-	97.4	93.4	96.3	-	93.7	94.1
Truck	32	356	-	388	20	21	-	41	350	20	-	370	799
% Truck	1.9	7.1	-	5.8	2.6	2.0	-	2.3	5.8	3.2	-	5.5	5.3
Bike	7	31	-	38	3	2	-	5	49	3	-	52	95
% Bike	0.4	0.6	-	0.6	0.4	0.2	-	0.3	0.8	0.5	-	0.8	0.6
Ped	-	-	0	-	-	-	1	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	100.0	-	-	-	-	-	-

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Sprint
Site Code: 2
Start Date: 05/08/2013



Turning Movement Data Plot

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

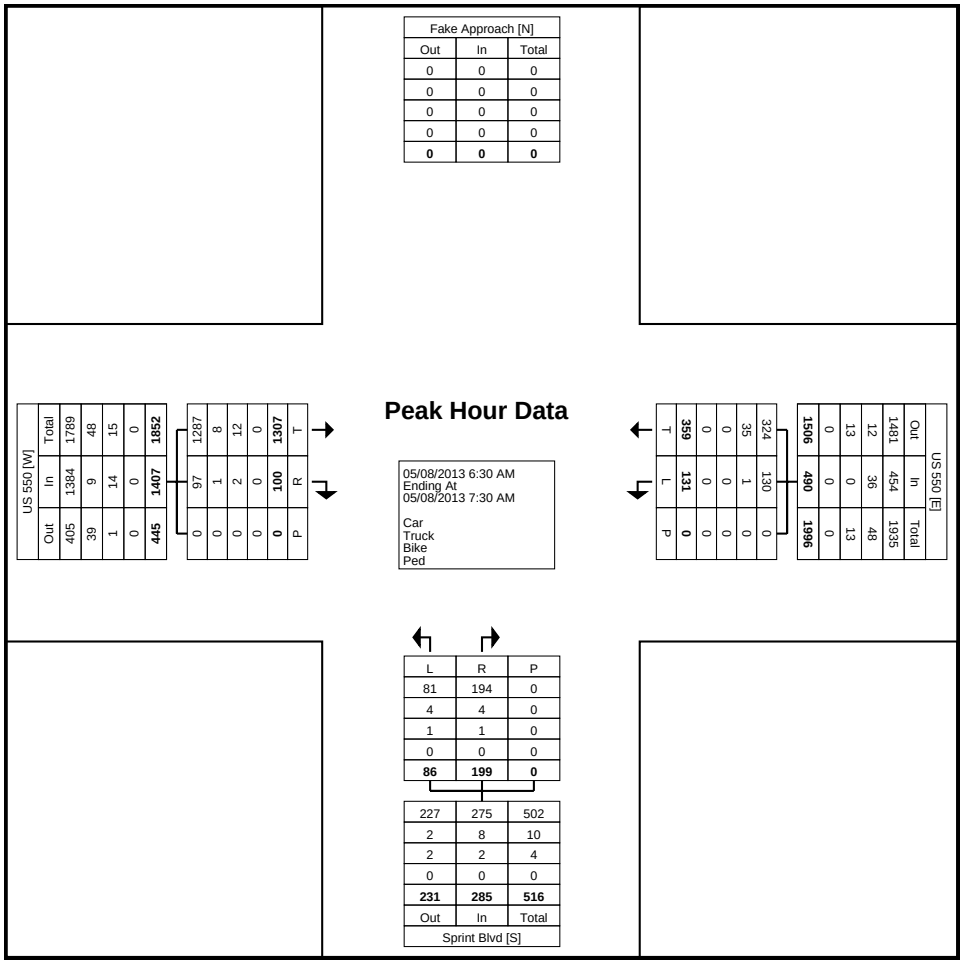
Count Name: US 550 - Sprint
Site Code: 2
Start Date: 05/08/2013

Turning Movement Peak Hour Data (6:30 AM)

Start Time	US 550 Westbound				Sprint Blvd Northbound				US 550 Eastbound				
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
6:30 AM	21	75	0	96	16	55	0	71	295	16	0	311	478
6:45 AM	44	83	0	127	31	42	0	73	293	26	0	319	519
7:00 AM	38	114	0	152	26	49	0	75	359	22	0	381	608
7:15 AM	28	87	0	115	13	53	0	66	360	36	0	396	577
Total	131	359	0	490	86	199	0	285	1307	100	0	1407	2182
Approach %	26.7	73.3	-	-	30.2	69.8	-	-	92.9	7.1	-	-	-
Total %	6.0	16.5	-	22.5	3.9	9.1	-	13.1	59.9	4.6	-	64.5	-
PHF	0.744	0.787	-	0.806	0.694	0.905	-	0.950	0.908	0.694	-	0.888	0.897
Car	130	324	-	454	81	194	-	275	1287	97	-	1384	2113
% Car	99.2	90.3	-	92.7	94.2	97.5	-	96.5	98.5	97.0	-	98.4	96.8
Truck	1	35	-	36	4	4	-	8	8	1	-	9	53
% Truck	0.8	9.7	-	7.3	4.7	2.0	-	2.8	0.6	1.0	-	0.6	2.4
Bike	0	0	-	0	1	1	-	2	12	2	-	14	16
% Bike	0.0	0.0	-	0.0	1.2	0.5	-	0.7	0.9	2.0	-	1.0	0.7
Ped	-	-	0	-	-	-	0	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Sprint
Site Code: 2
Start Date: 05/08/2013



Turning Movement Peak Hour Data Plot (6:30 AM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

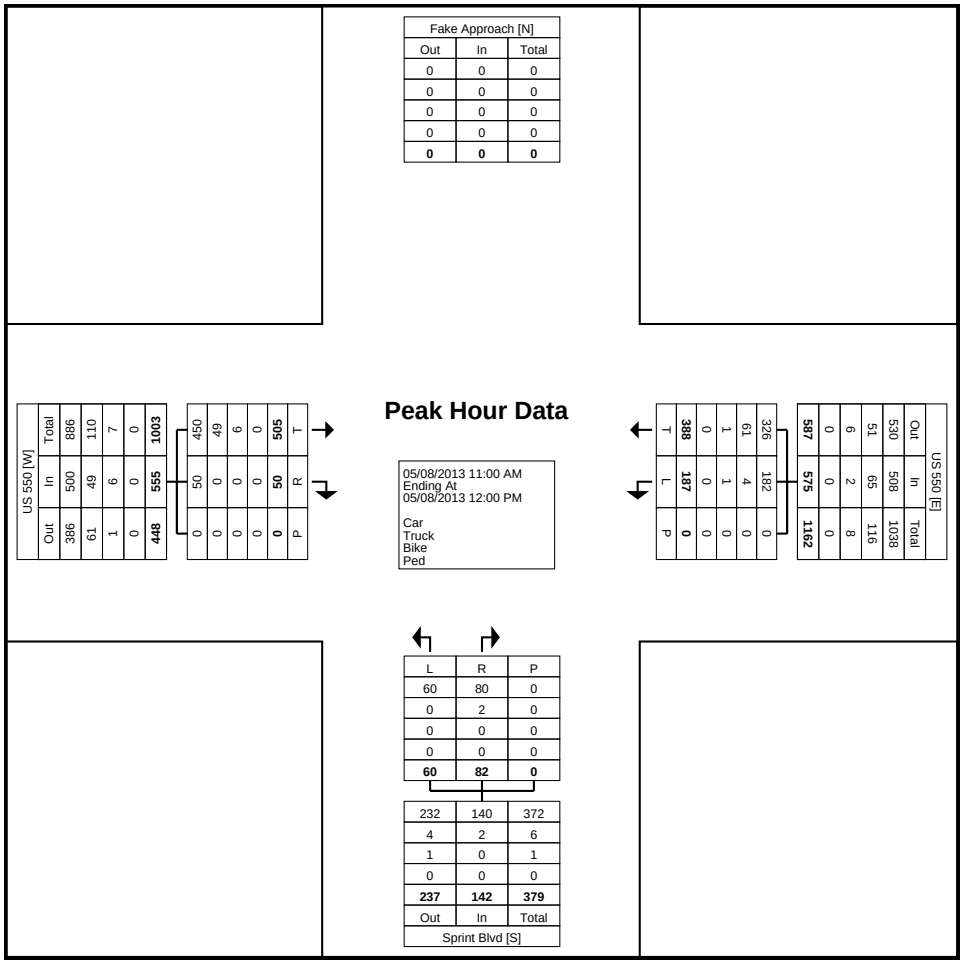
Count Name: US 550 - Sprint
Site Code: 2
Start Date: 05/08/2013

Turning Movement Peak Hour Data (11:00 AM)

Start Time	US 550 Westbound				Sprint Blvd Northbound				US 550 Eastbound				
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
11:00 AM	38	103	0	141	8	24	0	32	119	11	0	130	303
11:15 AM	49	82	0	131	19	15	0	34	123	10	0	133	298
11:30 AM	55	101	0	156	12	19	0	31	133	18	0	151	338
11:45 AM	45	102	0	147	21	24	0	45	130	11	0	141	333
Total	187	388	0	575	60	82	0	142	505	50	0	555	1272
Approach %	32.5	67.5	-	-	42.3	57.7	-	-	91.0	9.0	-	-	-
Total %	14.7	30.5	-	45.2	4.7	6.4	-	11.2	39.7	3.9	-	43.6	-
PHF	0.850	0.942	-	0.921	0.714	0.854	-	0.789	0.949	0.694	-	0.919	0.941
Car	182	326	-	508	60	80	-	140	450	50	-	500	1148
% Car	97.3	84.0	-	88.3	100.0	97.6	-	98.6	89.1	100.0	-	90.1	90.3
Truck	4	61	-	65	0	2	-	2	49	0	-	49	116
% Truck	2.1	15.7	-	11.3	0.0	2.4	-	1.4	9.7	0.0	-	8.8	9.1
Bike	1	1	-	2	0	0	-	0	6	0	-	6	8
% Bike	0.5	0.3	-	0.3	0.0	0.0	-	0.0	1.2	0.0	-	1.1	0.6
Ped	-	-	0	-	-	-	0	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Sprint
Site Code: 2
Start Date: 05/08/2013



Turning Movement Peak Hour Data Plot (11:00 AM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

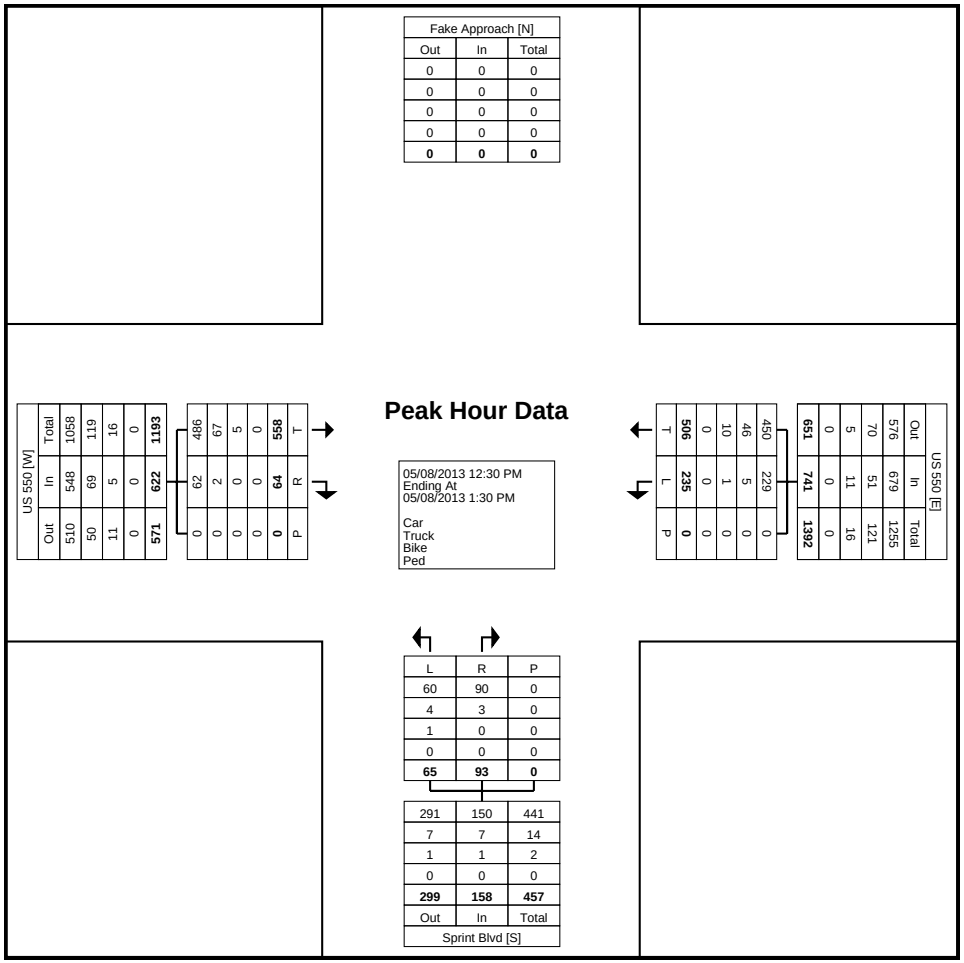
Count Name: US 550 - Sprint
Site Code: 2
Start Date: 05/08/2013

Turning Movement Peak Hour Data (12:30 PM)

Start Time	US 550 Westbound				Sprint Blvd Northbound				US 550 Eastbound				
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
12:30 PM	50	118	0	168	20	25	0	45	141	18	0	159	372
12:45 PM	72	138	0	210	10	24	0	34	112	10	0	122	366
1:00 PM	55	117	0	172	12	30	0	42	143	17	0	160	374
1:15 PM	58	133	0	191	23	14	0	37	162	19	0	181	409
Total	235	506	0	741	65	93	0	158	558	64	0	622	1521
Approach %	31.7	68.3	-	-	41.1	58.9	-	-	89.7	10.3	-	-	-
Total %	15.5	33.3	-	48.7	4.3	6.1	-	10.4	36.7	4.2	-	40.9	-
PHF	0.816	0.917	-	0.882	0.707	0.775	-	0.878	0.861	0.842	-	0.859	0.930
Car	229	450	-	679	60	90	-	150	486	62	-	548	1377
% Car	97.4	88.9	-	91.6	92.3	96.8	-	94.9	87.1	96.9	-	88.1	90.5
Truck	5	46	-	51	4	3	-	7	67	2	-	69	127
% Truck	2.1	9.1	-	6.9	6.2	3.2	-	4.4	12.0	3.1	-	11.1	8.3
Bike	1	10	-	11	1	0	-	1	5	0	-	5	17
% Bike	0.4	2.0	-	1.5	1.5	0.0	-	0.6	0.9	0.0	-	0.8	1.1
Ped	-	-	0	-	-	-	0	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Sprint
Site Code: 2
Start Date: 05/08/2013



Turning Movement Peak Hour Data Plot (12:30 PM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Sprint
Site Code: 2
Start Date: 05/08/2013

Turning Movement Peak Hour Data (4:45 PM)

Start Time	US 550 Westbound				Sprint Blvd Northbound				US 550 Eastbound				
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
4:45 PM	45	197	0	242	32	36	0	68	185	20	0	205	515
5:00 PM	60	241	0	301	37	32	0	69	154	12	0	166	536
5:15 PM	57	222	0	279	25	32	0	57	183	21	0	204	540
5:30 PM	58	259	0	317	39	23	0	62	150	17	0	167	546
Total	220	919	0	1139	133	123	0	256	672	70	0	742	2137
Approach %	19.3	80.7	-	-	52.0	48.0	-	-	90.6	9.4	-	-	-
Total %	10.3	43.0	-	53.3	6.2	5.8	-	12.0	31.4	3.3	-	34.7	-
PHF	0.917	0.887	-	0.898	0.853	0.854	-	0.928	0.908	0.833	-	0.905	0.978
Car	217	899	-	1116	130	122	-	252	637	66	-	703	2071
% Car	98.6	97.8	-	98.0	97.7	99.2	-	98.4	94.8	94.3	-	94.7	96.9
Truck	2	17	-	19	2	1	-	3	28	4	-	32	54
% Truck	0.9	1.8	-	1.7	1.5	0.8	-	1.2	4.2	5.7	-	4.3	2.5
Bike	1	3	-	4	1	0	-	1	7	0	-	7	12
% Bike	0.5	0.3	-	0.4	0.8	0.0	-	0.4	1.0	0.0	-	0.9	0.6
Ped	-	-	0	-	-	-	0	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
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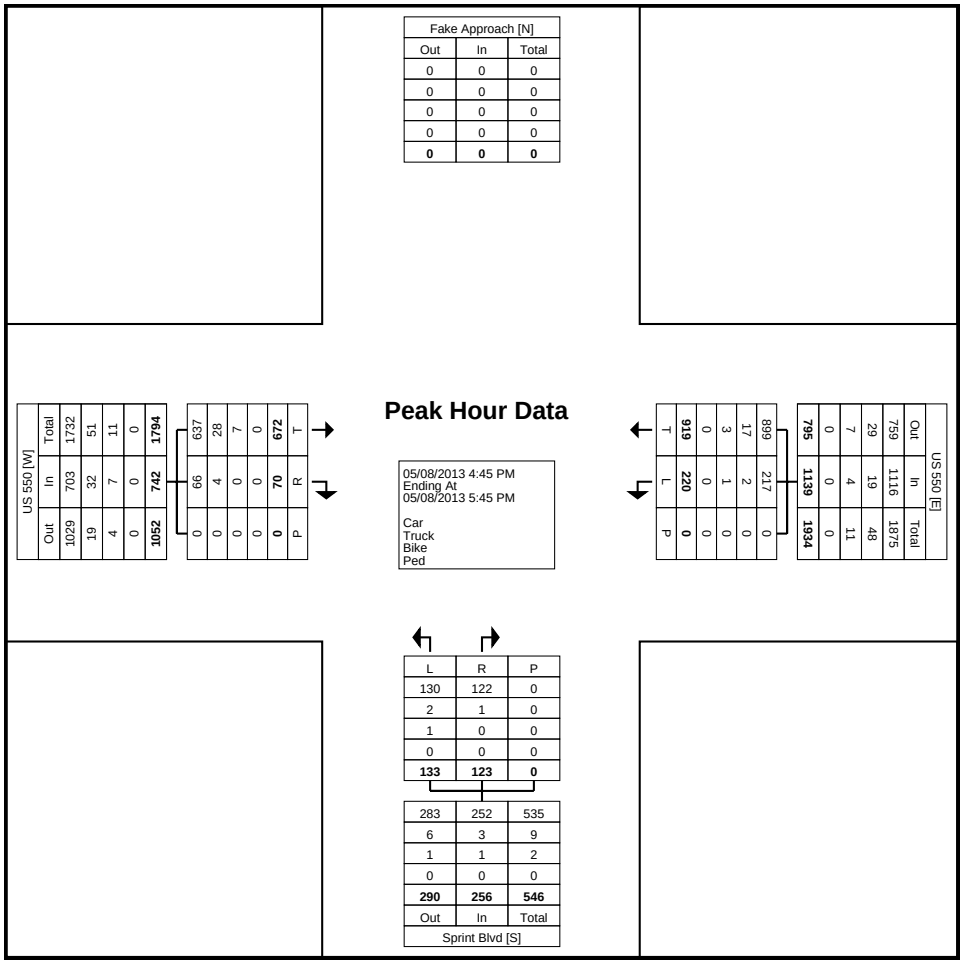
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - Sprint
Site Code: 2
Start Date: 05/08/2013



Turning Movement Peak Hour Data Plot (4:45 PM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - PDV
Site Code: 1
Start Date: 05/08/2013

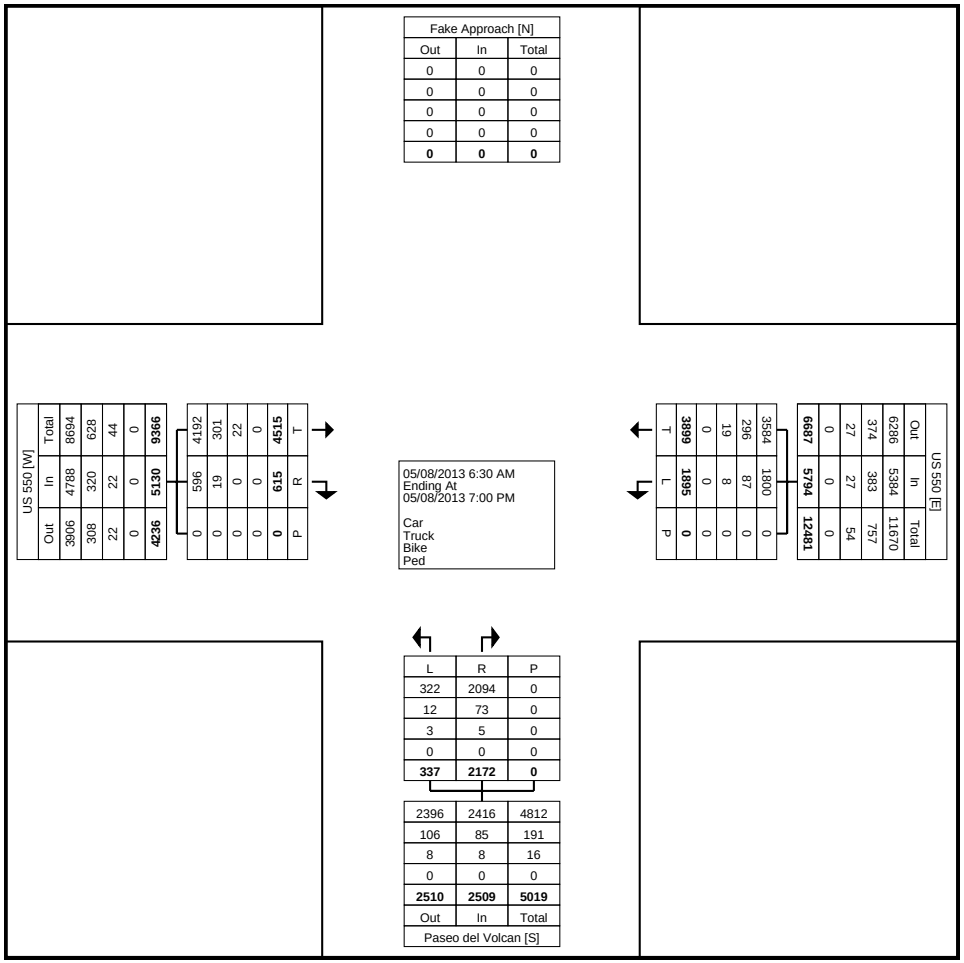
Turning Movement Data

Start Time	US 550 Westbound				Paseo del Volcan Northbound				US 550 Eastbound				
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
6:30 AM	41	46	0	87	4	113	0	117	197	30	0	227	431
6:45 AM	67	45	0	112	6	132	0	138	182	74	0	256	506
7:00 AM	73	69	0	142	16	154	0	170	232	82	0	314	626
7:15 AM	39	69	0	108	10	169	0	179	211	24	0	235	522
7:30 AM	55	78	0	133	16	105	0	121	152	15	0	167	421
7:45 AM	51	89	0	140	8	117	0	125	149	25	0	174	439
8:00 AM	46	77	0	123	9	85	0	94	106	17	0	123	340
8:15 AM	33	74	0	107	4	63	0	67	126	11	0	137	311
8:30 AM	24	84	0	108	7	62	0	69	130	14	0	144	321
8:45 AM	30	96	0	126	4	57	0	61	122	9	0	131	318
9:00 AM	22	74	0	96	8	30	0	38	115	11	0	126	260
9:15 AM	40	97	0	137	3	32	0	35	115	8	0	123	295
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	26	86	0	112	5	35	0	40	90	6	0	96	248
11:15 AM	30	73	0	103	6	43	0	49	99	3	0	102	254
11:30 AM	27	78	0	105	10	38	0	48	109	8	0	117	270
11:45 AM	33	88	0	121	5	32	0	37	111	3	0	114	272
12:00 PM	30	82	0	112	4	47	0	51	101	6	0	107	270
12:15 PM	31	86	0	117	9	42	0	51	92	2	0	94	262
12:30 PM	35	107	0	142	7	36	0	43	124	7	0	131	316
12:45 PM	44	110	0	154	5	25	0	30	95	12	0	107	291
1:00 PM	42	87	0	129	13	41	0	54	129	14	0	143	326
1:15 PM	53	98	0	151	5	42	0	47	137	21	0	158	356
1:30 PM	44	87	0	131	14	49	0	63	104	19	0	123	317
1:45 PM	46	90	0	136	21	57	0	78	95	12	0	107	321
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	64	128	0	192	10	45	0	55	121	10	0	131	378
4:15 PM	86	165	0	251	14	52	0	66	128	16	0	144	461
4:30 PM	75	141	0	216	17	59	0	76	125	21	0	146	438
4:45 PM	92	175	0	267	10	62	0	72	136	14	0	150	489
5:00 PM	75	181	0	256	6	49	0	55	125	16	0	141	452
5:15 PM	77	184	0	261	17	68	0	85	127	10	0	137	483
5:30 PM	108	174	0	282	12	45	0	57	121	8	0	129	468
5:45 PM	79	193	0	272	18	49	0	67	123	12	0	135	474
6:00 PM	91	183	0	274	7	38	0	45	111	23	0	134	453
6:15 PM	81	162	0	243	9	39	0	48	97	19	0	116	407
6:30 PM	65	134	0	199	7	28	0	35	89	19	0	108	342
6:45 PM	40	109	0	149	11	32	0	43	89	14	0	103	295

Grand Total	1895	3899	0	5794	337	2172	0	2509	4515	615	0	5130	13433
Approach %	32.7	67.3	-	-	13.4	86.6	-	-	88.0	12.0	-	-	-
Total %	14.1	29.0	-	43.1	2.5	16.2	-	18.7	33.6	4.6	-	38.2	-
Car	1800	3584	-	5384	322	2094	-	2416	4192	596	-	4788	12588
% Car	95.0	91.9	-	92.9	95.5	96.4	-	96.3	92.8	96.9	-	93.3	93.7
Truck	87	296	-	383	12	73	-	85	301	19	-	320	788
% Truck	4.6	7.6	-	6.6	3.6	3.4	-	3.4	6.7	3.1	-	6.2	5.9
Bike	8	19	-	27	3	5	-	8	22	0	-	22	57
% Bike	0.4	0.5	-	0.5	0.9	0.2	-	0.3	0.5	0.0	-	0.4	0.4
Ped	-	-	0	-	-	-	0	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - PDV
Site Code: 1
Start Date: 05/08/2013



Turning Movement Data Plot

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - PDV
Site Code: 1
Start Date: 05/08/2013

Turning Movement Peak Hour Data (6:30 AM)

Start Time	US 550 Westbound				Paseo del Volcan Northbound				US 550 Eastbound				
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
6:30 AM	41	46	0	87	4	113	0	117	197	30	0	227	431
6:45 AM	67	45	0	112	6	132	0	138	182	74	0	256	506
7:00 AM	73	69	0	142	16	154	0	170	232	82	0	314	626
7:15 AM	39	69	0	108	10	169	0	179	211	24	0	235	522
Total	220	229	0	449	36	568	0	604	822	210	0	1032	2085
Approach %	49.0	51.0	-	-	6.0	94.0	-	-	79.7	20.3	-	-	-
Total %	10.6	11.0	-	21.5	1.7	27.2	-	29.0	39.4	10.1	-	49.5	-
PHF	0.753	0.830	-	0.790	0.563	0.840	-	0.844	0.886	0.640	-	0.822	0.833
Car	216	190	-	406	33	565	-	598	805	206	-	1011	2015
% Car	98.2	83.0	-	90.4	91.7	99.5	-	99.0	97.9	98.1	-	98.0	96.6
Truck	4	38	-	42	3	3	-	6	14	4	-	18	66
% Truck	1.8	16.6	-	9.4	8.3	0.5	-	1.0	1.7	1.9	-	1.7	3.2
Bike	0	1	-	1	0	0	-	0	3	0	-	3	4
% Bike	0.0	0.4	-	0.2	0.0	0.0	-	0.0	0.4	0.0	-	0.3	0.2
Ped	-	-	0	-	-	-	0	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-

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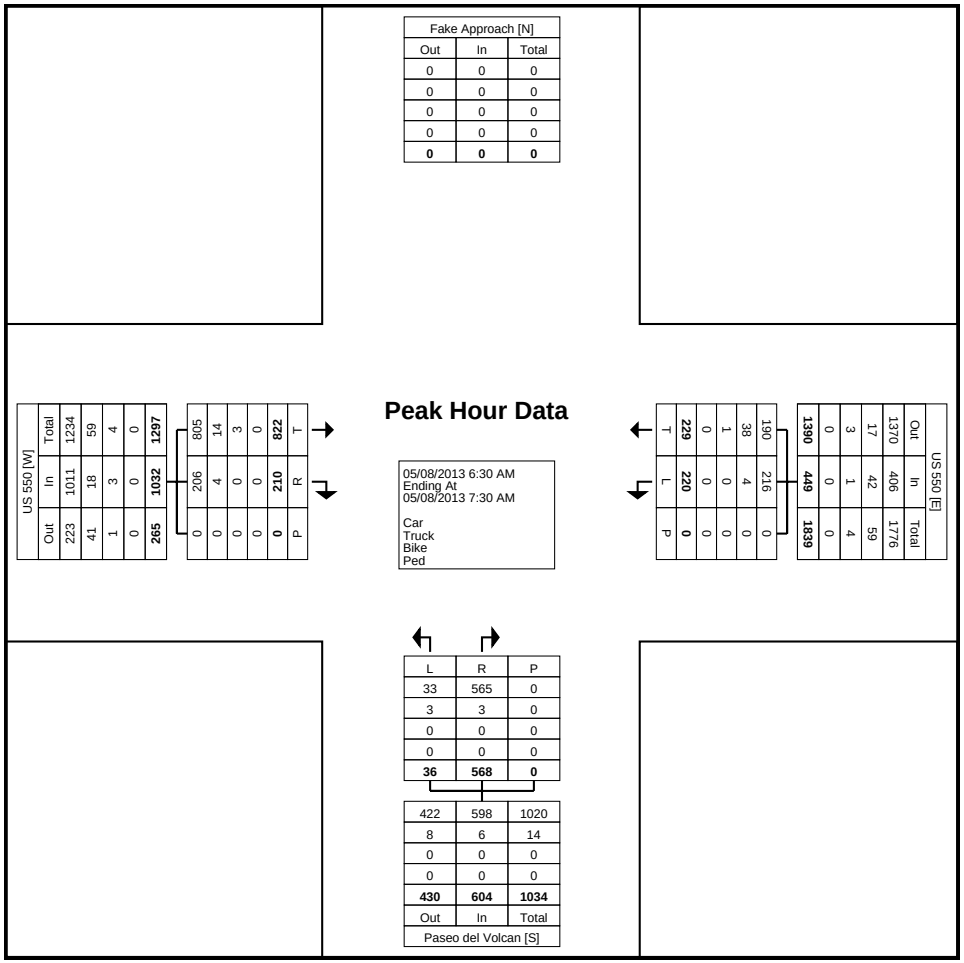

Turning Movement Peak Hour Data Plot (6:30 AM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - PDV
Site Code: 1
Start Date: 05/08/2013

Turning Movement Peak Hour Data (11:00 AM)

Start Time	US 550 Westbound				Paseo del Volcan Northbound				US 550 Eastbound				
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
11:00 AM	26	86	0	112	5	35	0	40	90	6	0	96	248
11:15 AM	30	73	0	103	6	43	0	49	99	3	0	102	254
11:30 AM	27	78	0	105	10	38	0	48	109	8	0	117	270
11:45 AM	33	88	0	121	5	32	0	37	111	3	0	114	272
Total	116	325	0	441	26	148	0	174	409	20	0	429	1044
Approach %	26.3	73.7	-	-	14.9	85.1	-	-	95.3	4.7	-	-	-
Total %	11.1	31.1	-	42.2	2.5	14.2	-	16.7	39.2	1.9	-	41.1	-
PHF	0.879	0.923	-	0.911	0.650	0.860	-	0.888	0.921	0.625	-	0.917	0.960
Car	99	279	-	378	26	140	-	166	365	19	-	384	928
% Car	85.3	85.8	-	85.7	100.0	94.6	-	95.4	89.2	95.0	-	89.5	88.9
Truck	17	46	-	63	0	8	-	8	42	1	-	43	114
% Truck	14.7	14.2	-	14.3	0.0	5.4	-	4.6	10.3	5.0	-	10.0	10.9
Bike	0	0	-	0	0	0	-	0	2	0	-	2	2
% Bike	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.5	0.0	-	0.5	0.2
Ped	-	-	0	-	-	-	0	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-

Lee Engineering, LLC
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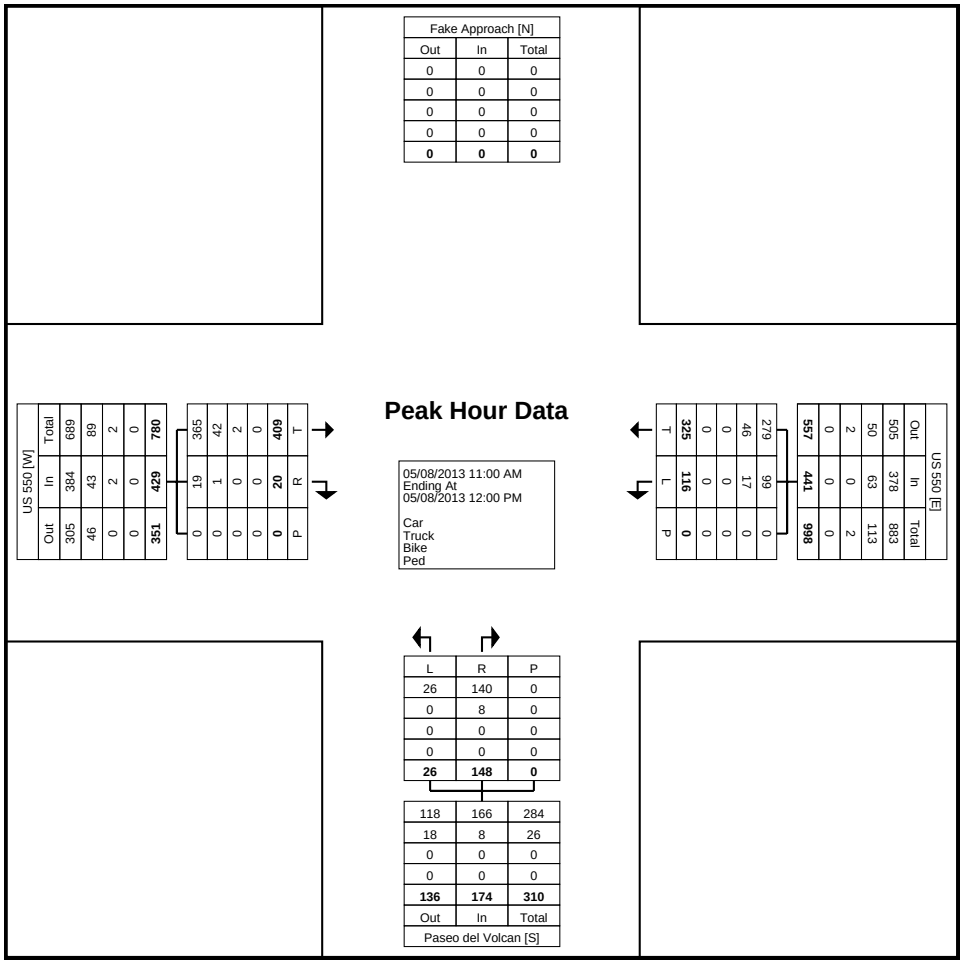
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - PDV
Site Code: 1
Start Date: 05/08/2013



Turning Movement Peak Hour Data Plot (11:00 AM)

Lee Engineering, LLC
Phoenix, Arizona - Dallas, Texas
Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - PDV
Site Code: 1
Start Date: 05/08/2013

Turning Movement Peak Hour Data (1:00 PM)

Start Time	US 550 Westbound				Paseo del Volcan Northbound				US 550 Eastbound				
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
1:00 PM	42	87	0	129	13	41	0	54	129	14	0	143	326
1:15 PM	53	98	0	151	5	42	0	47	137	21	0	158	356
1:30 PM	44	87	0	131	14	49	0	63	104	19	0	123	317
1:45 PM	46	90	0	136	21	57	0	78	95	12	0	107	321
Total	185	362	0	547	53	189	0	242	465	66	0	531	1320
Approach %	33.8	66.2	-	-	21.9	78.1	-	-	87.6	12.4	-	-	-
Total %	14.0	27.4	-	41.4	4.0	14.3	-	18.3	35.2	5.0	-	40.2	-
PHF	0.873	0.923	-	0.906	0.631	0.829	-	0.776	0.849	0.786	-	0.840	0.927
Car	165	331	-	496	48	174	-	222	409	60	-	469	1187
% Car	89.2	91.4	-	90.7	90.6	92.1	-	91.7	88.0	90.9	-	88.3	89.9
Truck	19	24	-	43	4	15	-	19	53	6	-	59	121
% Truck	10.3	6.6	-	7.9	7.5	7.9	-	7.9	11.4	9.1	-	11.1	9.2
Bike	1	7	-	8	1	0	-	1	3	0	-	3	12
% Bike	0.5	1.9	-	1.5	1.9	0.0	-	0.4	0.6	0.0	-	0.6	0.9
Ped	-	-	0	-	-	-	0	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-

Lee Engineering, LLC
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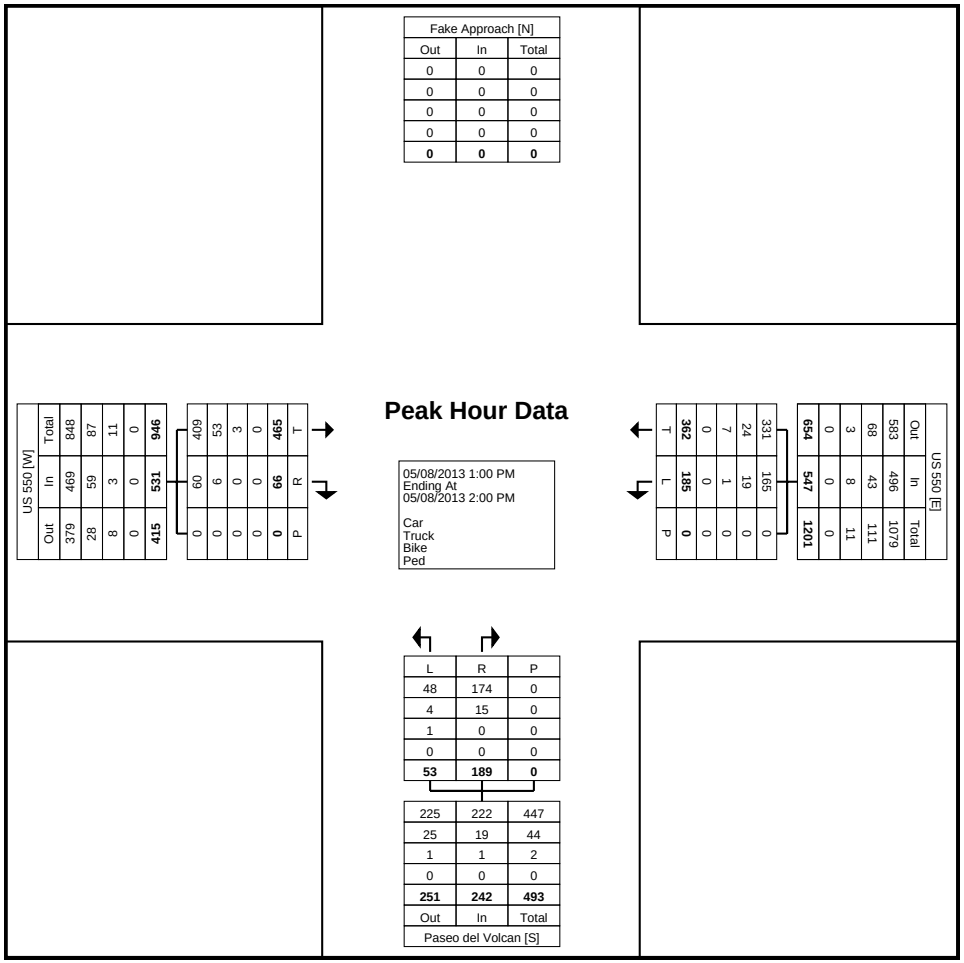
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - PDV
Site Code: 1
Start Date: 05/08/2013



Turning Movement Peak Hour Data Plot (1:00 PM)

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Oklahoma City, Oklahoma - San Antonio, Texas
Albuquerque, New Mexico, United States
jnorby@lee-eng.com

Count Name: US 550 - PDV
Site Code: 1
Start Date: 05/08/2013

Turning Movement Peak Hour Data (4:45 PM)

Start Time	US 550 Westbound				Paseo del Volcan Northbound				US 550 Eastbound				
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
4:45 PM	92	175	0	267	10	62	0	72	136	14	0	150	489
5:00 PM	75	181	0	256	6	49	0	55	125	16	0	141	452
5:15 PM	77	184	0	261	17	68	0	85	127	10	0	137	483
5:30 PM	108	174	0	282	12	45	0	57	121	8	0	129	468
Total	352	714	0	1066	45	224	0	269	509	48	0	557	1892
Approach %	33.0	67.0	-	-	16.7	83.3	-	-	91.4	8.6	-	-	-
Total %	18.6	37.7	-	56.3	2.4	11.8	-	14.2	26.9	2.5	-	29.4	-
PHF	0.815	0.970	-	0.945	0.662	0.824	-	0.791	0.936	0.750	-	0.928	0.967
Car	346	698	-	1044	45	220	-	265	479	48	-	527	1836
% Car	98.3	97.8	-	97.9	100.0	98.2	-	98.5	94.1	100.0	-	94.6	97.0
Truck	4	13	-	17	0	4	-	4	29	0	-	29	50
% Truck	1.1	1.8	-	1.6	0.0	1.8	-	1.5	5.7	0.0	-	5.2	2.6
Bike	2	3	-	5	0	0	-	0	1	0	-	1	6
% Bike	0.6	0.4	-	0.5	0.0	0.0	-	0.0	0.2	0.0	-	0.2	0.3
Ped	-	-	0	-	-	-	0	-	-	-	0	-	-
% Ped	-	-	-	-	-	-	-	-	-	-	-	-	-

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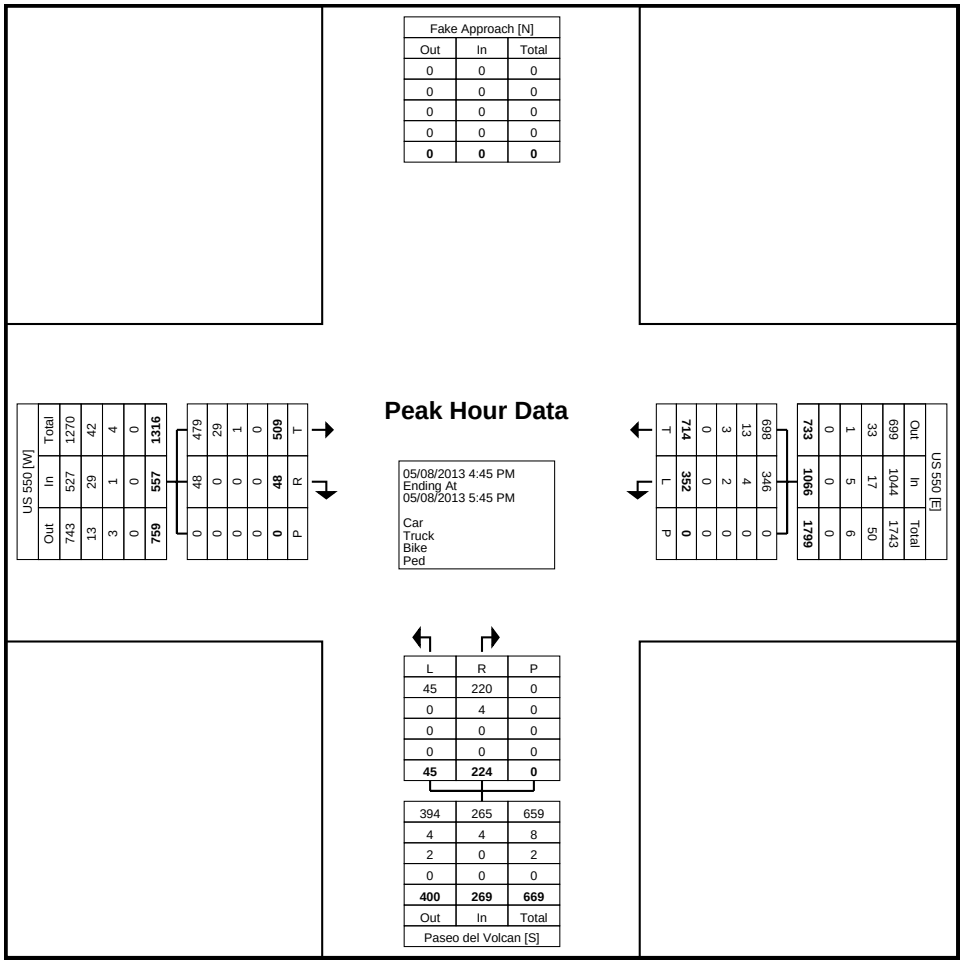
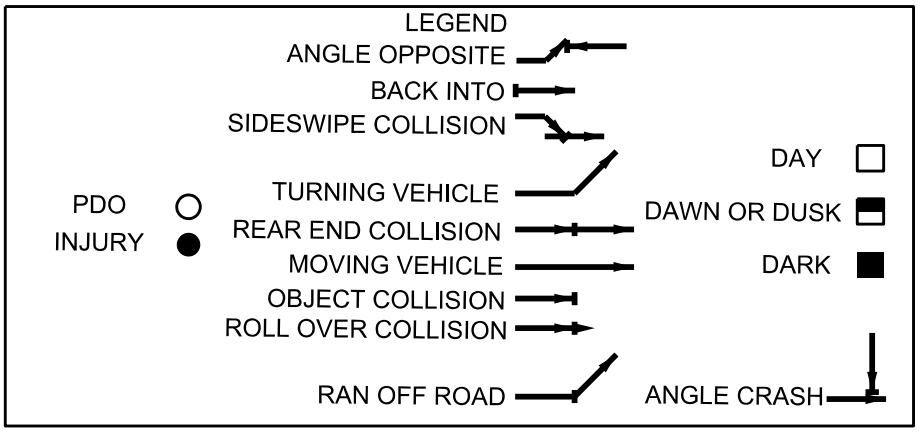
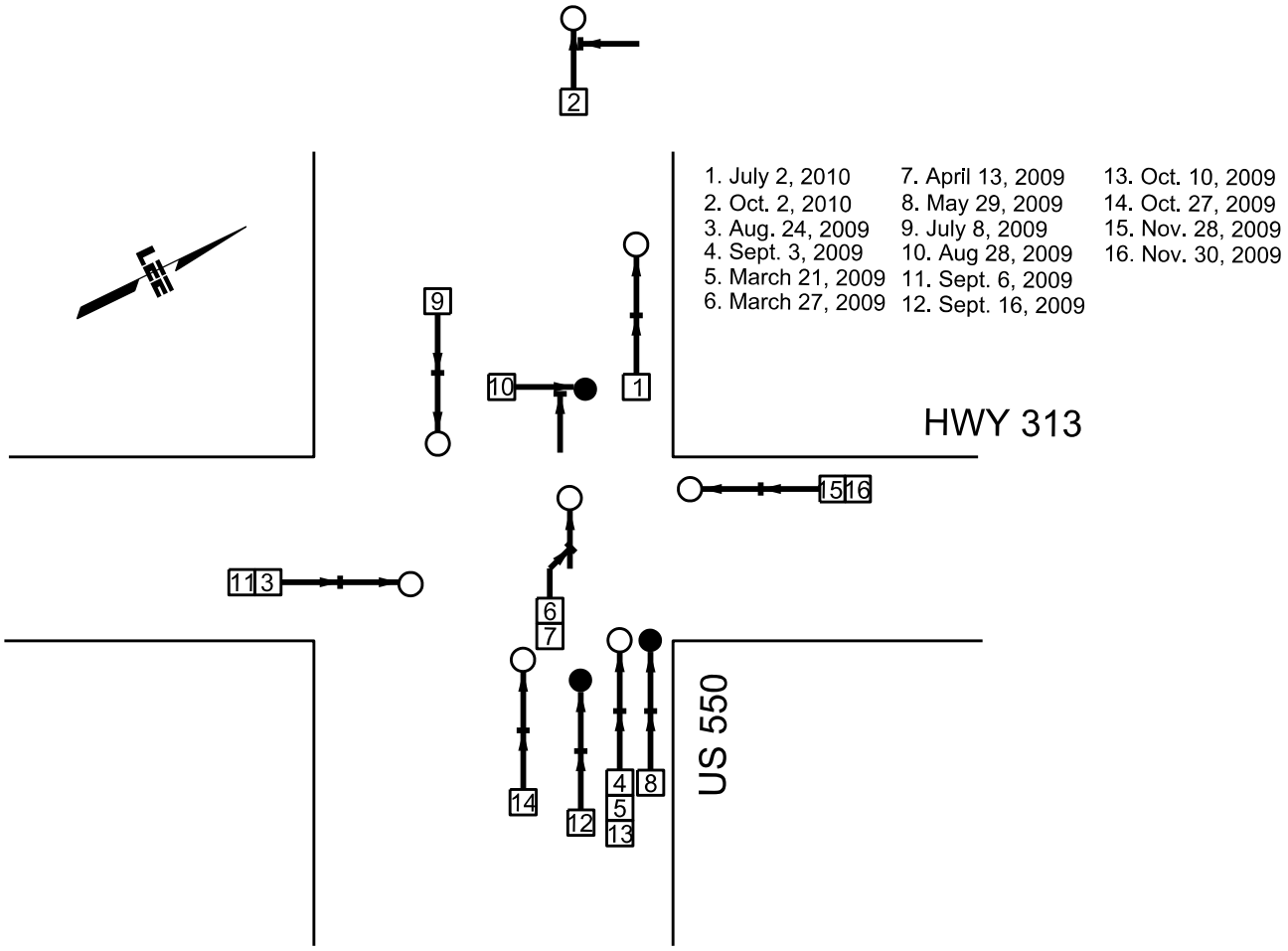


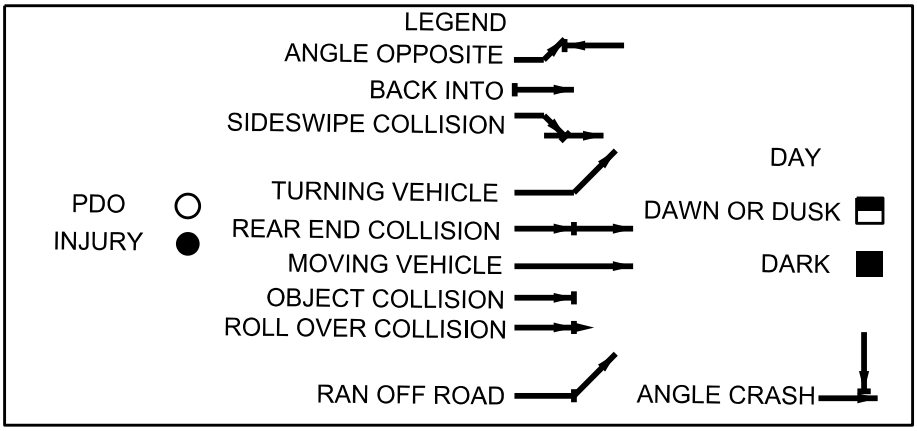
Turning Movement Peak Hour Data Plot (4:45 PM)

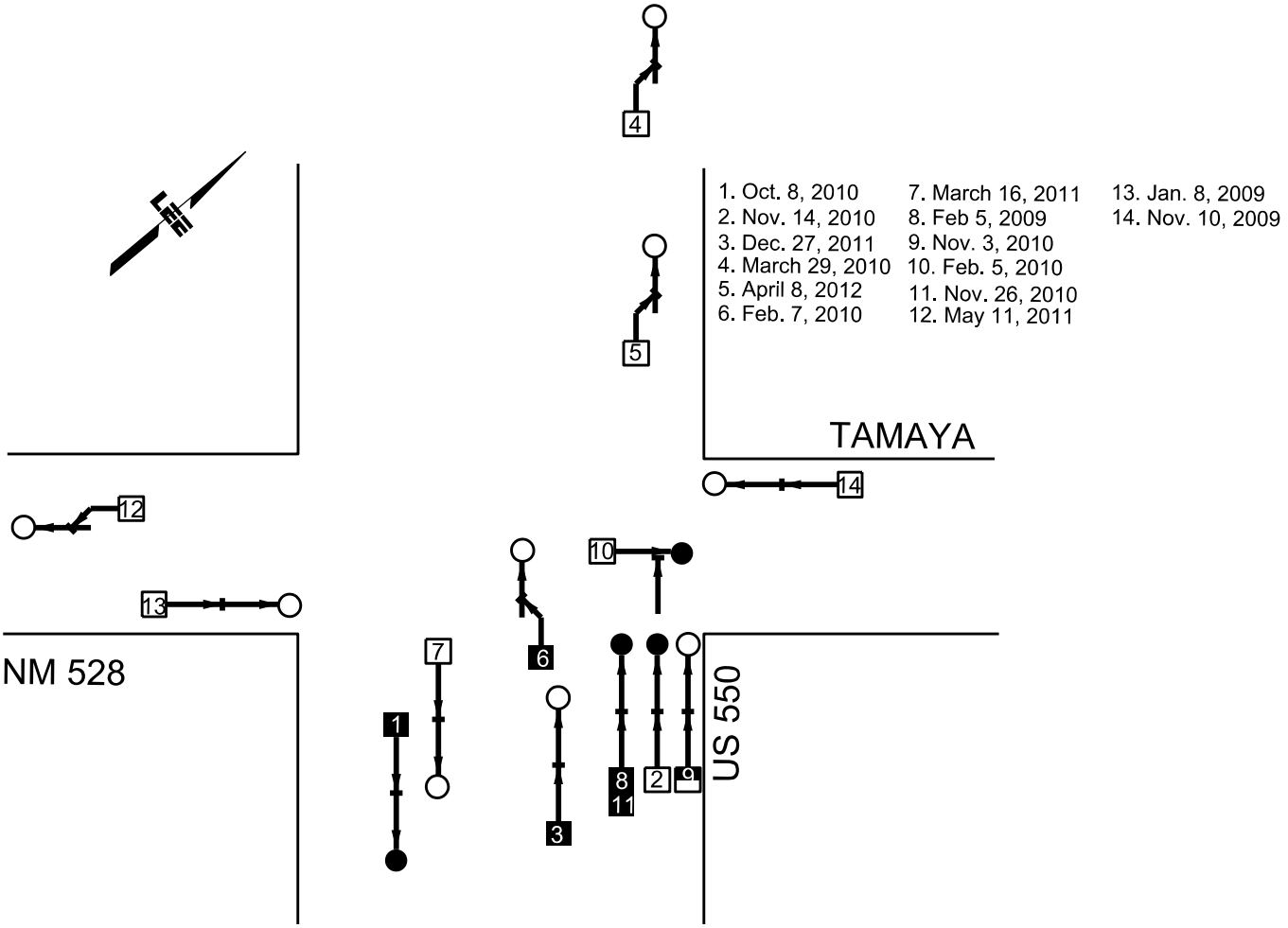
Appendix F-US 550 Crash Diagrams



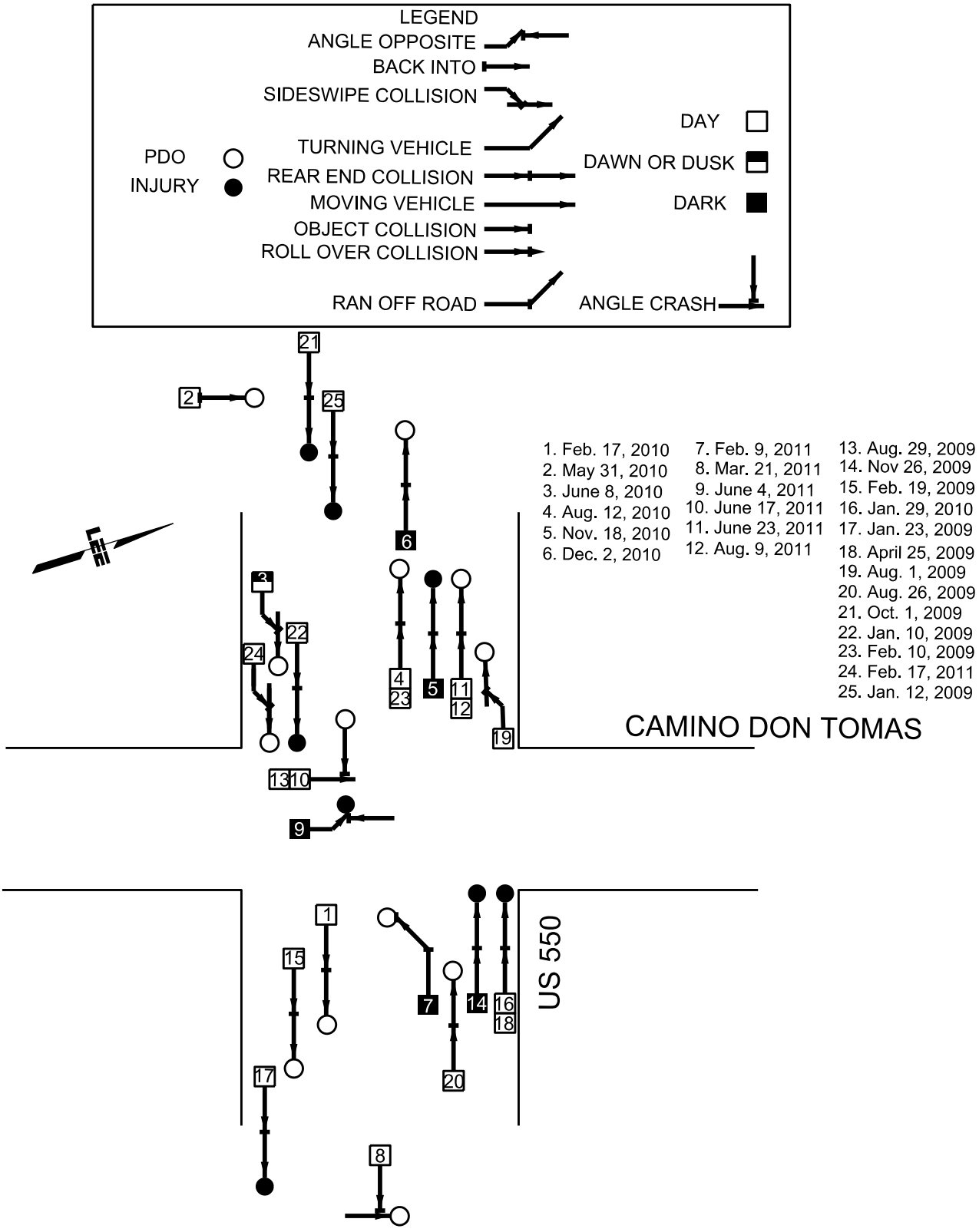


COLLISION DIAGRAM 2009-2011

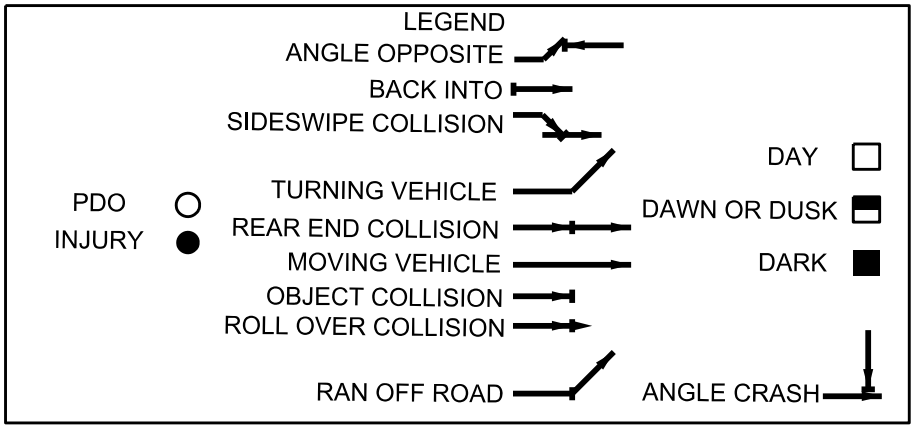


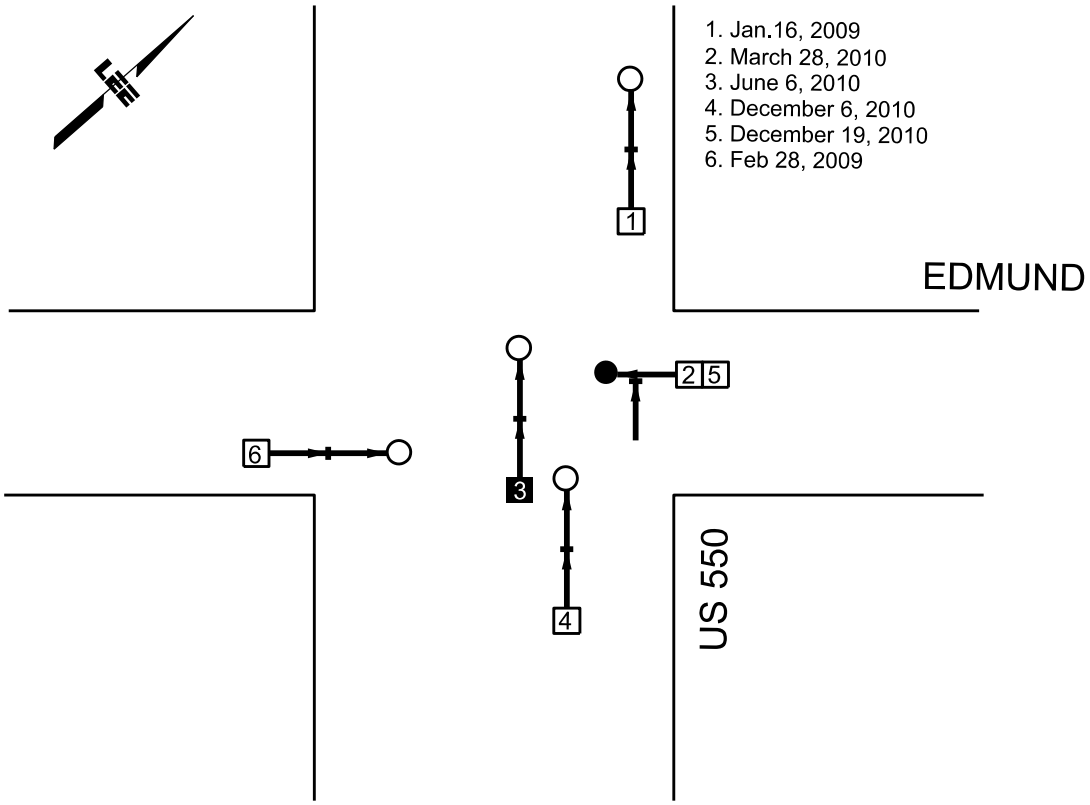


COLLISION DIAGRAM 2009-2011

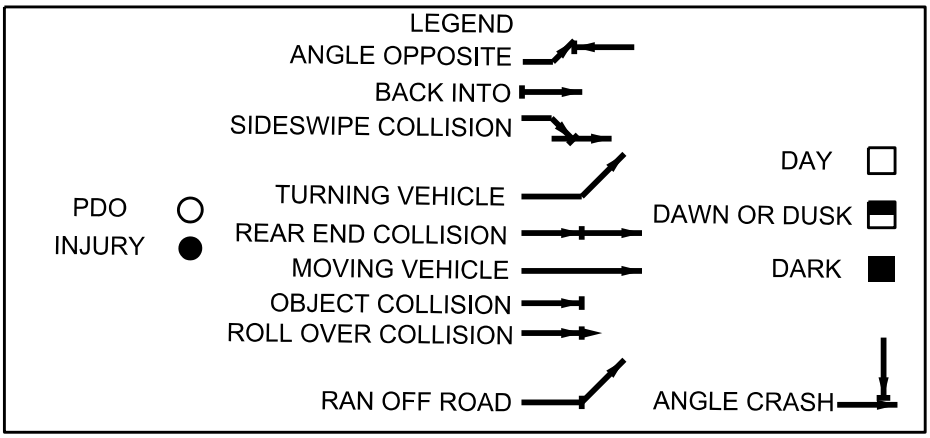


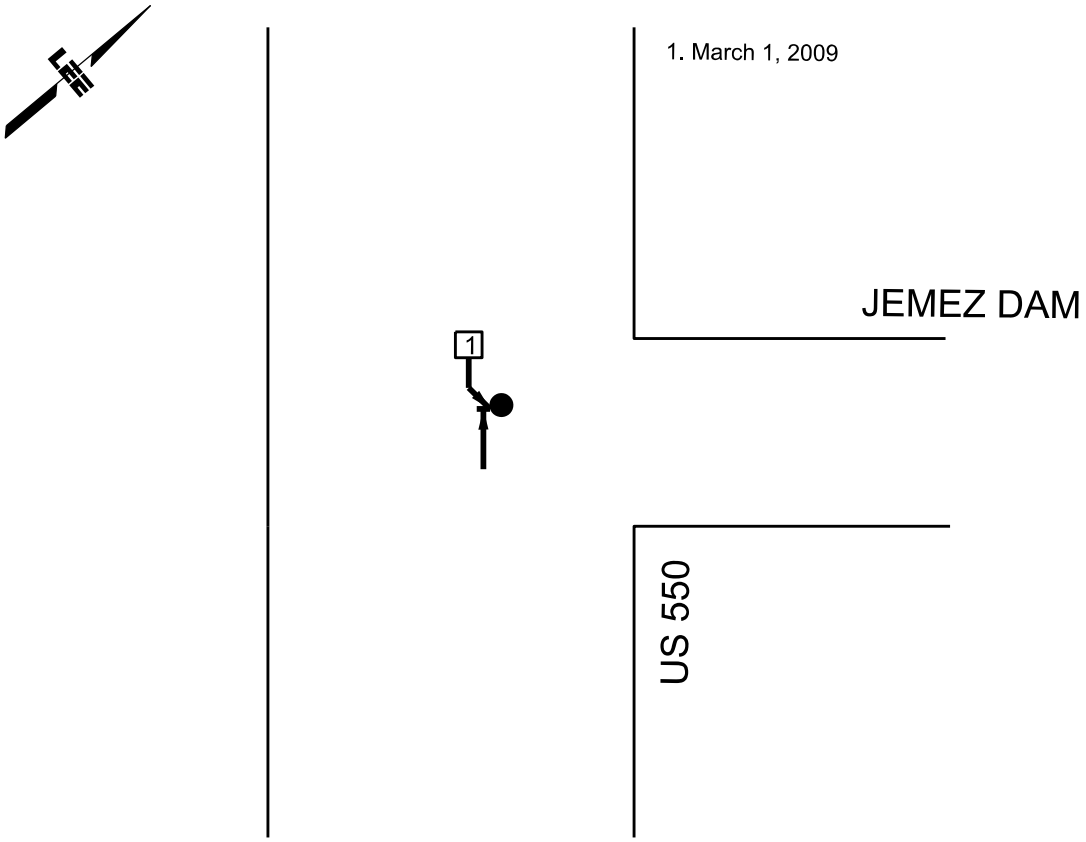
COLLISION DIAGRAM 2009-2011



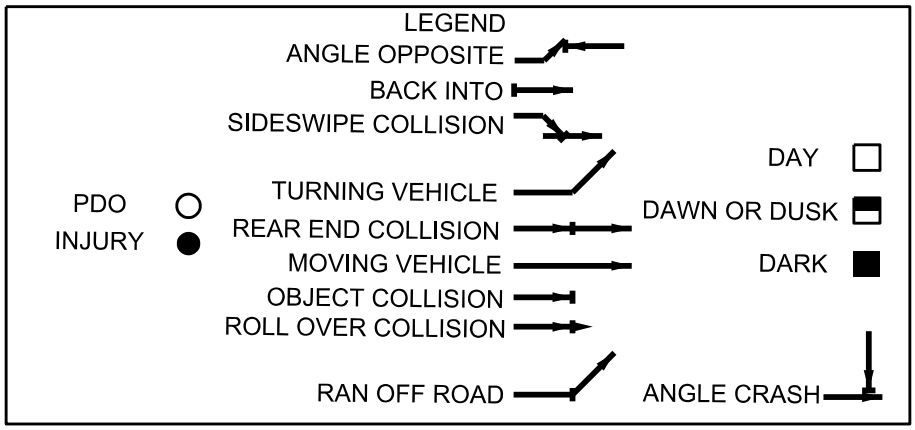


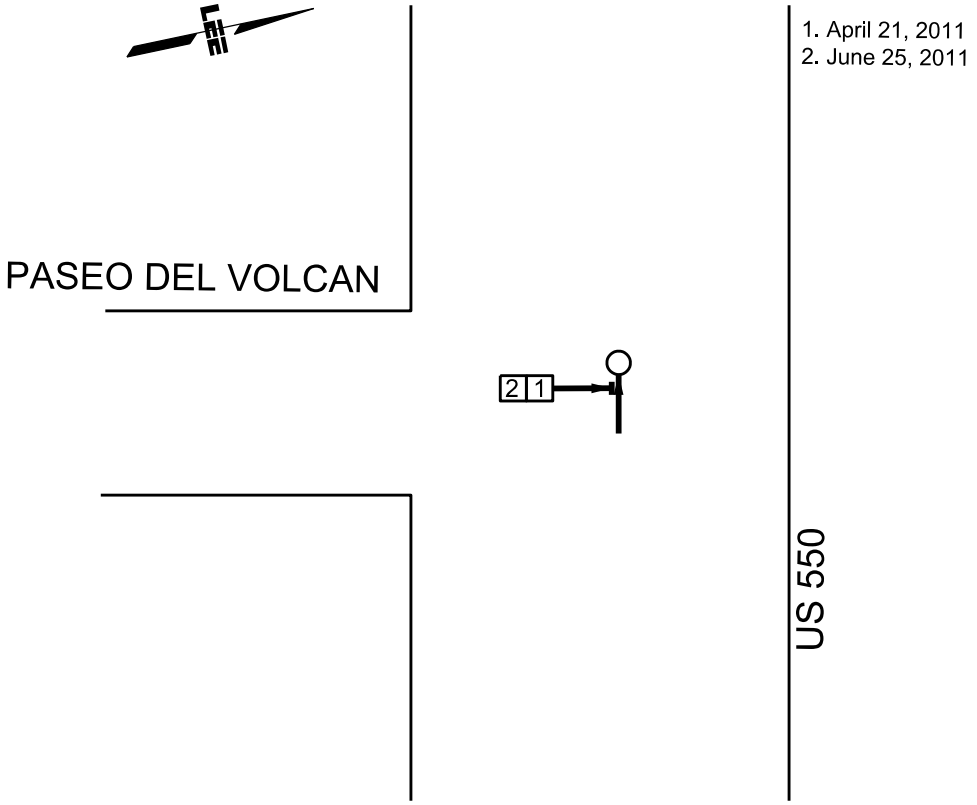
COLLISION DIAGRAM 2009-2011



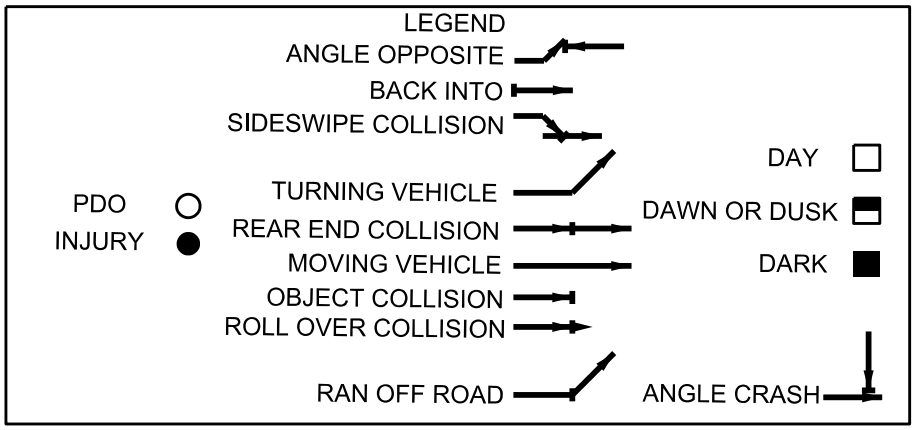


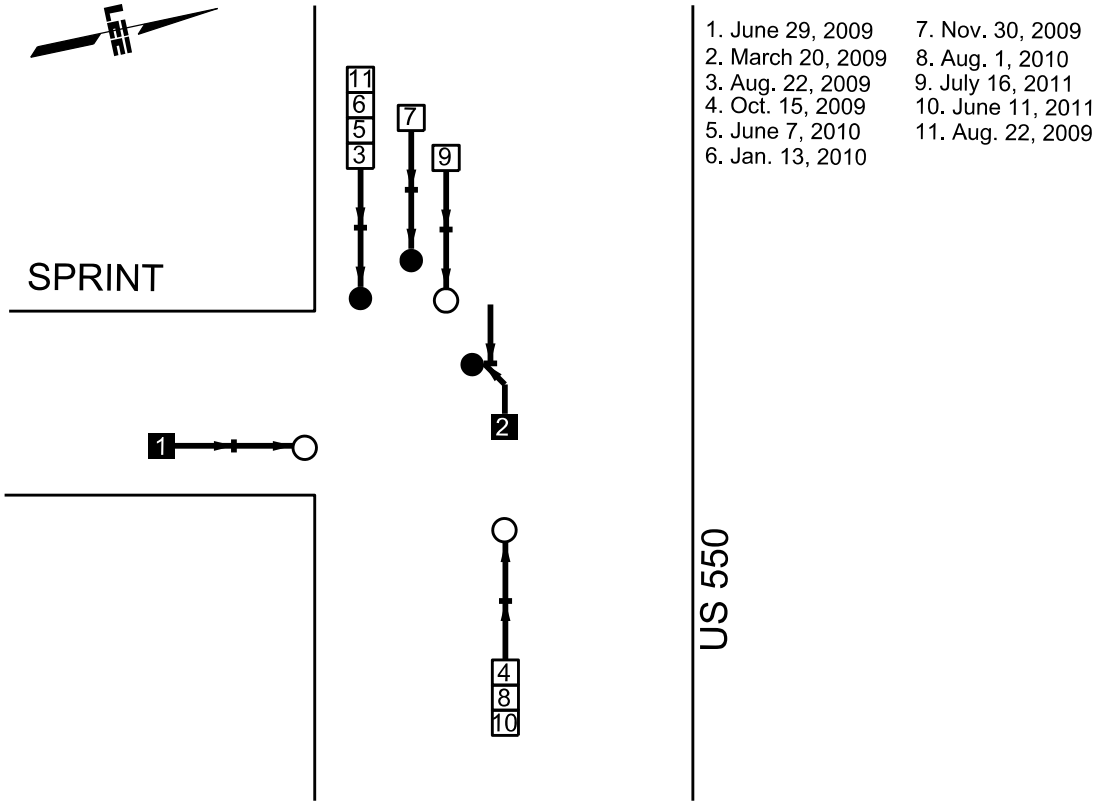
COLLISION DIAGRAM 2009-2011





COLLISION DIAGRAM 2009-2011



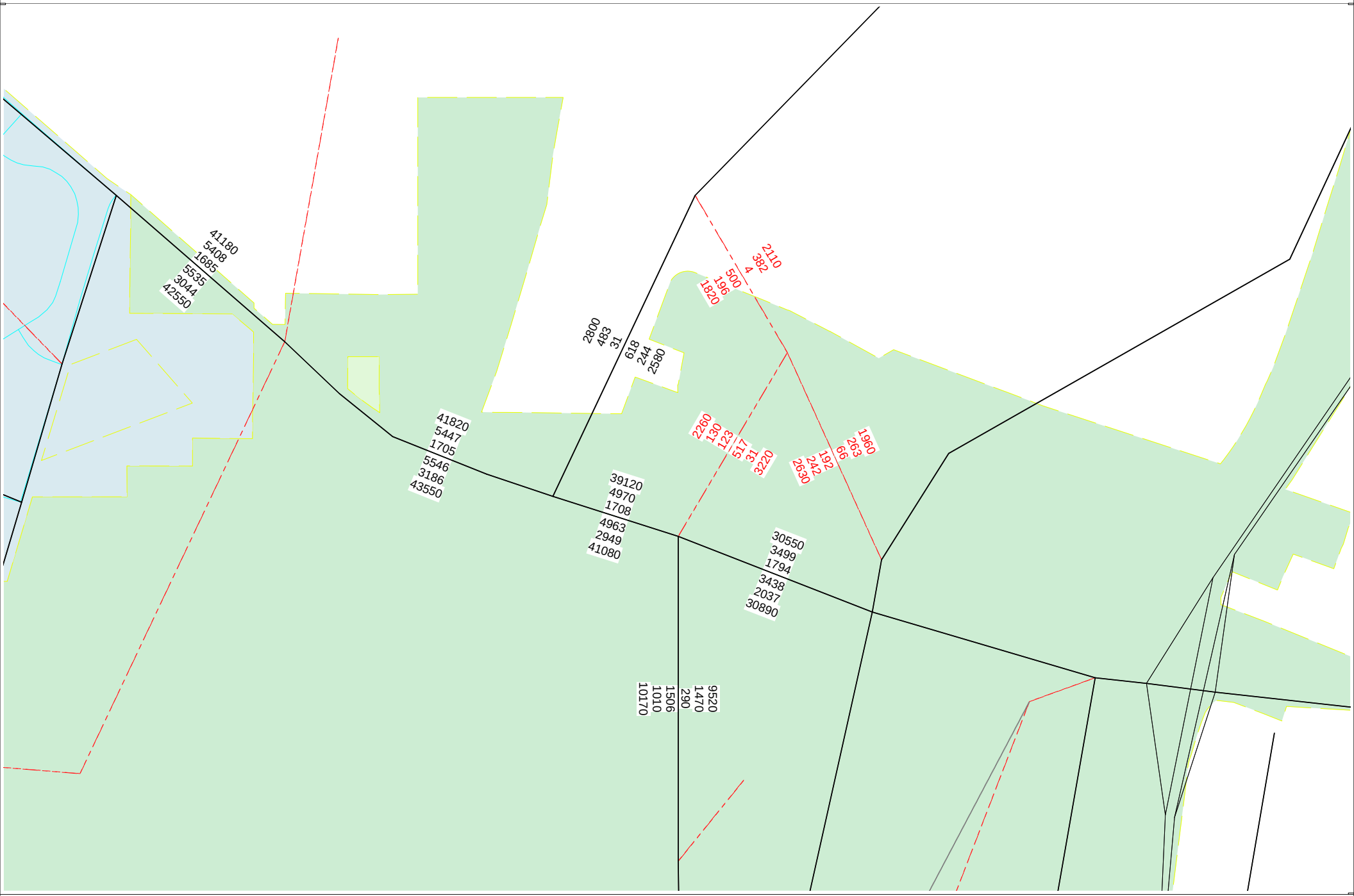


1. June 29, 2009
2. March 20, 2009
3. Aug. 22, 2009
4. Oct. 15, 2009
5. June 7, 2010
6. Jan. 13, 2010
7. Nov. 30, 2009
8. Aug. 1, 2010
9. July 16, 2011
10. June 11, 2011
11. Aug. 22, 2009

COLLISION DIAGRAM 2009-2011

Appendix G-2035 Projected Peak Hour Directional Traffic Demands

2035 MTP Dataset, Raw Model Output
AM Pk Hr, PM Pk Hr, and Daily Volumes
AM stat closest to link



cube

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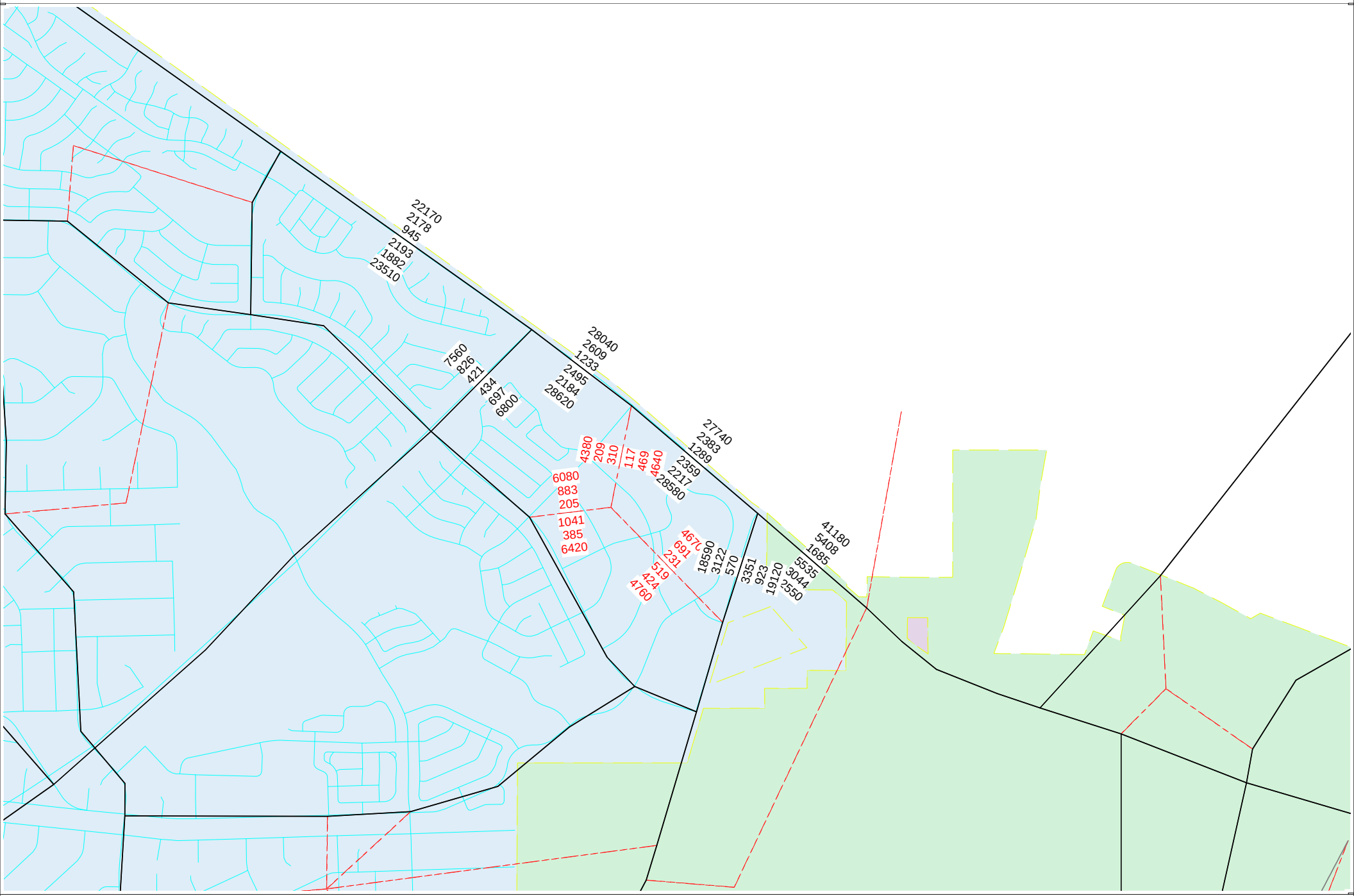
2035 MTP Dataset, Raw Model Output
AM Pk Hr, PM Pk Hr, and Daily Volumes
AM stat closest to link



cube

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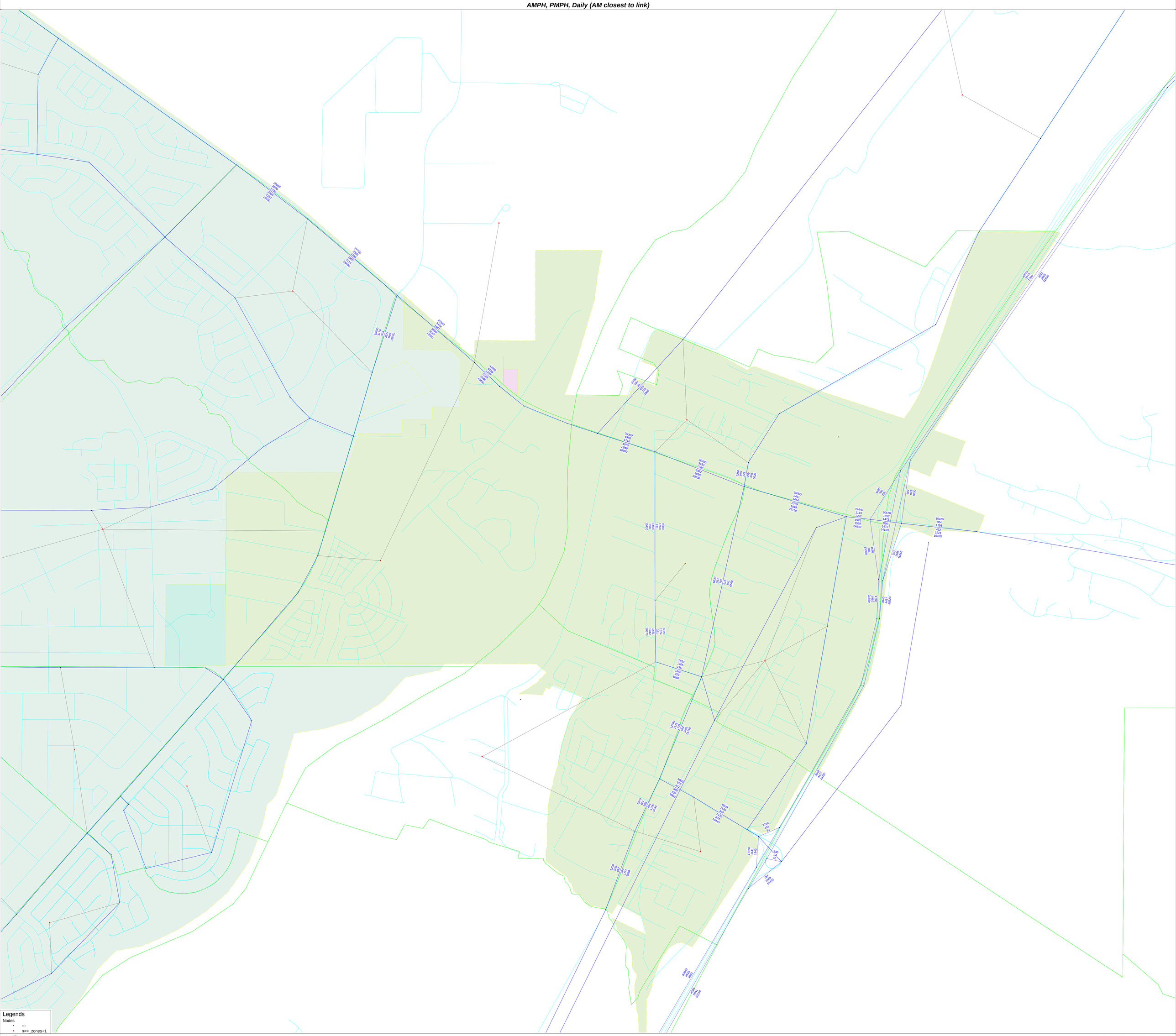
2035 MTP Dataset, Raw Model Output
Year: 2035
AMPH, PMPH, Daily (AM closest to link)



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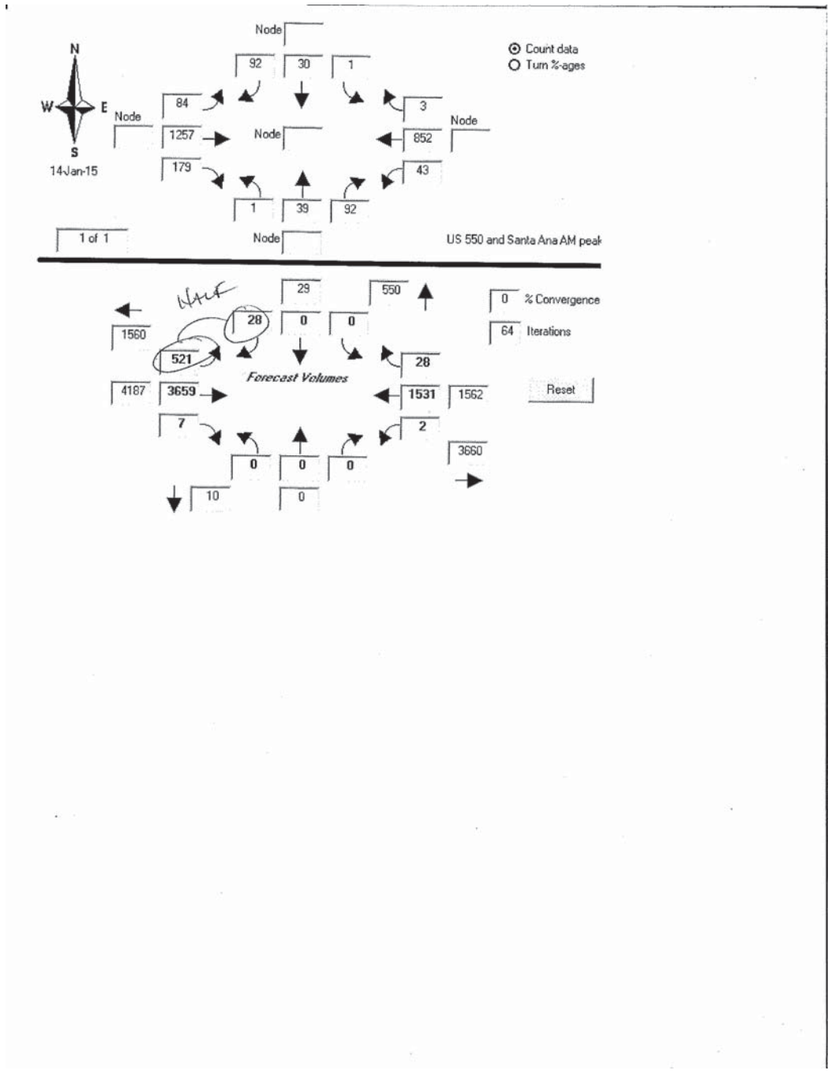
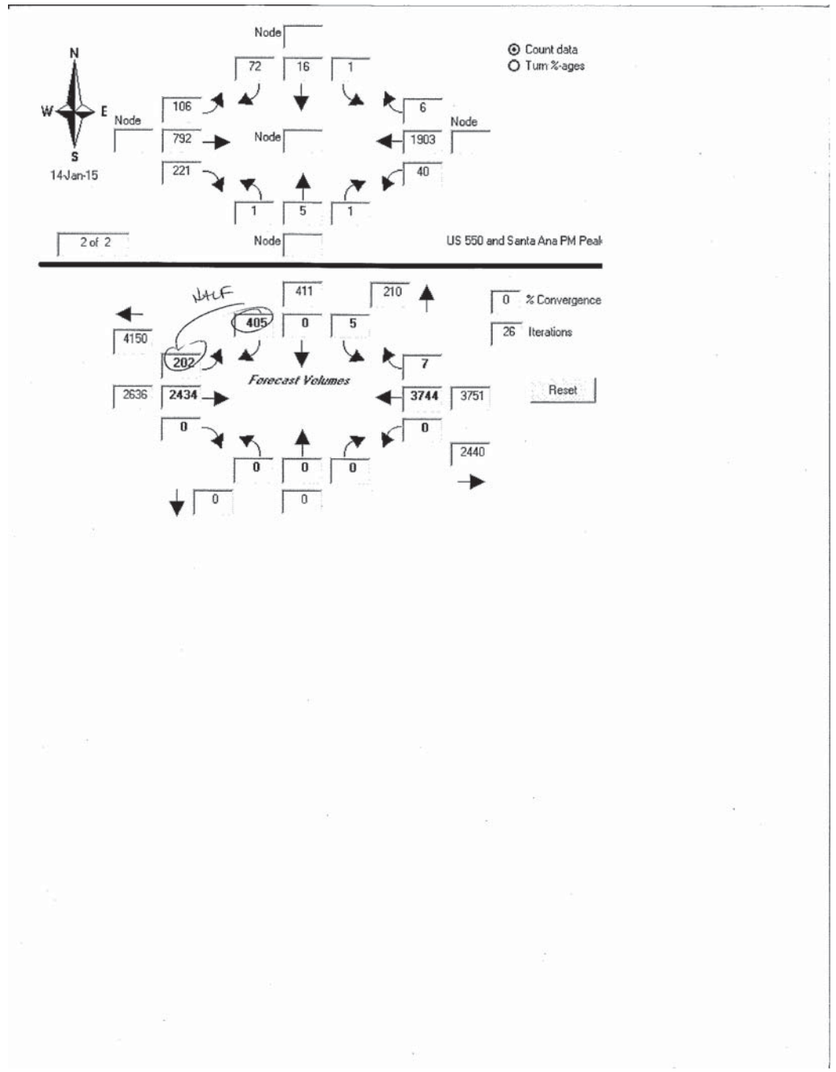
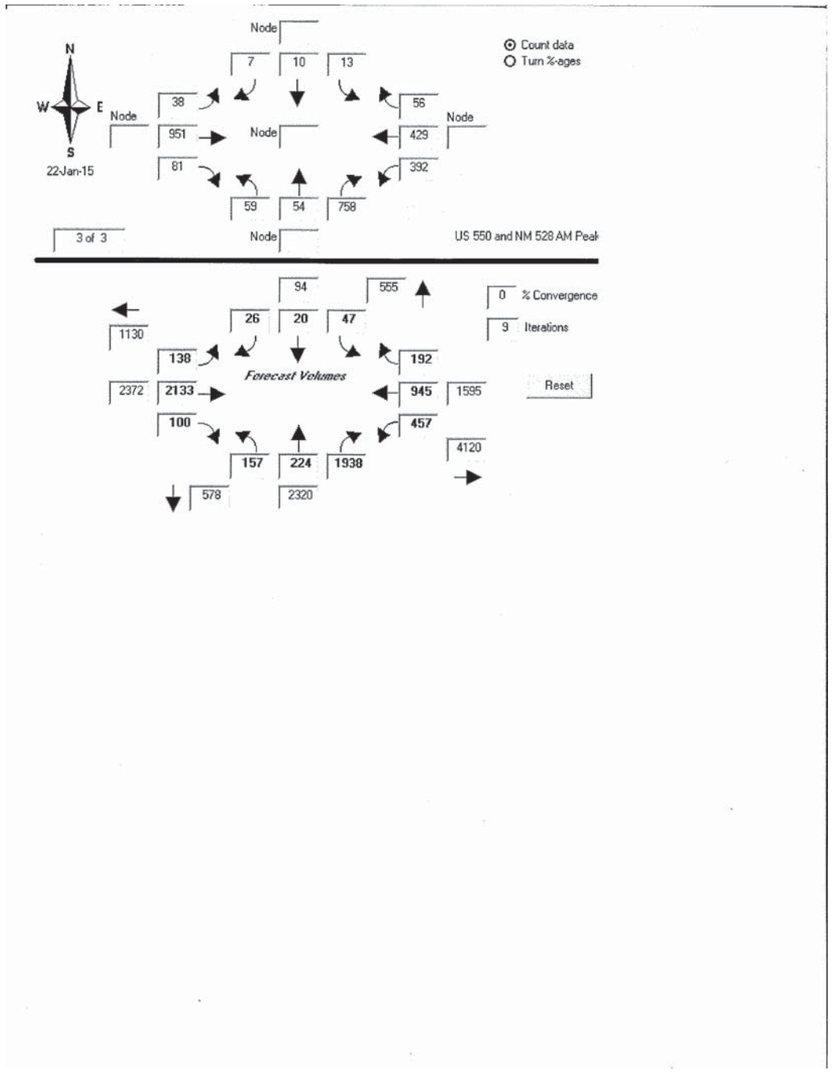
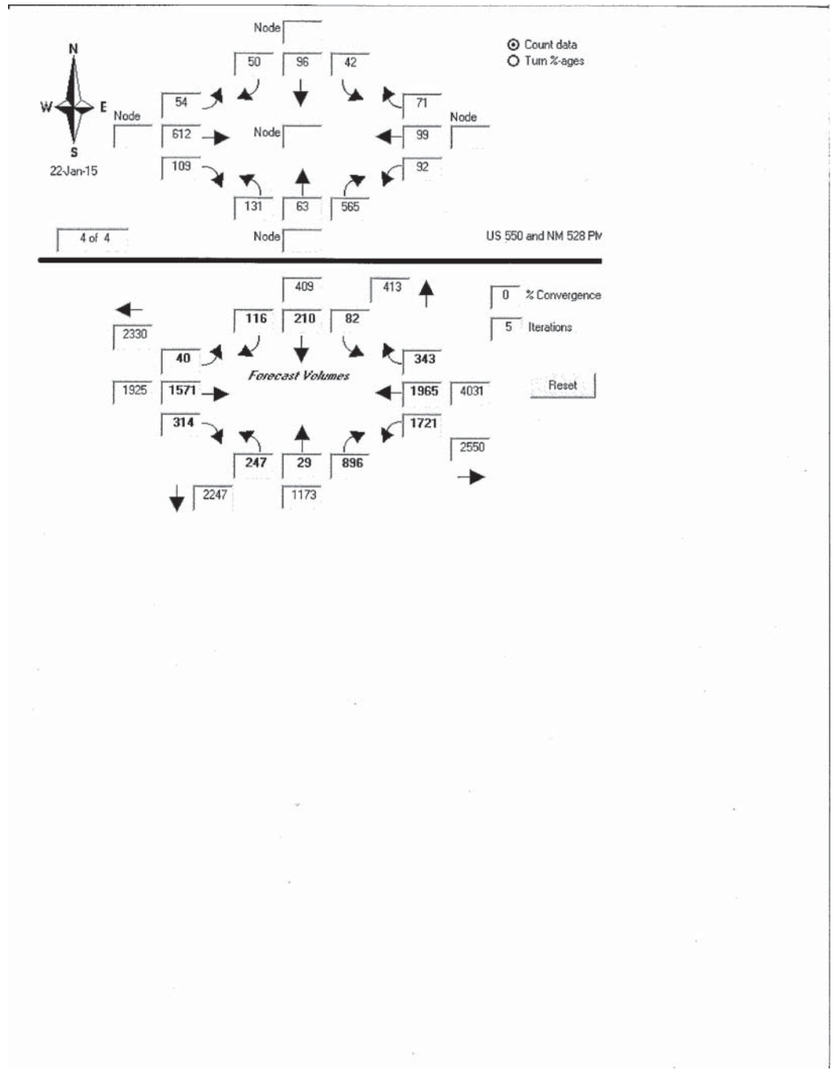
Appendix H-2035 Projected Turning Movements

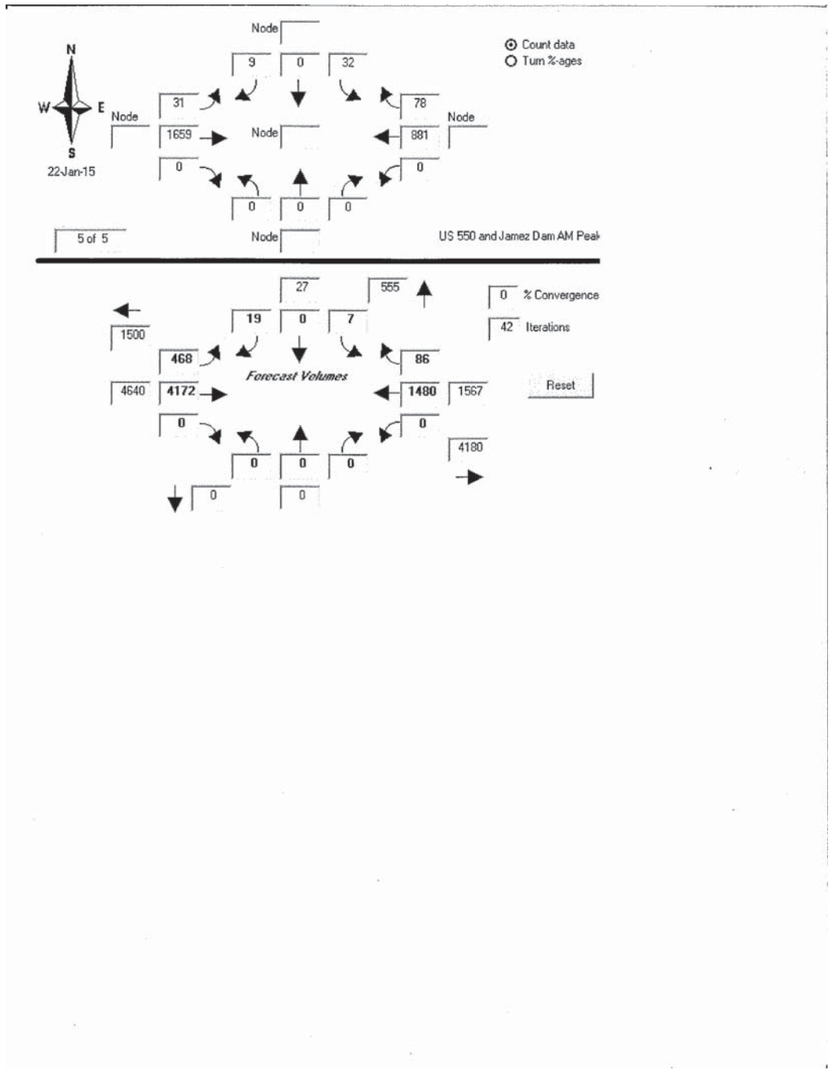
Fratar Output

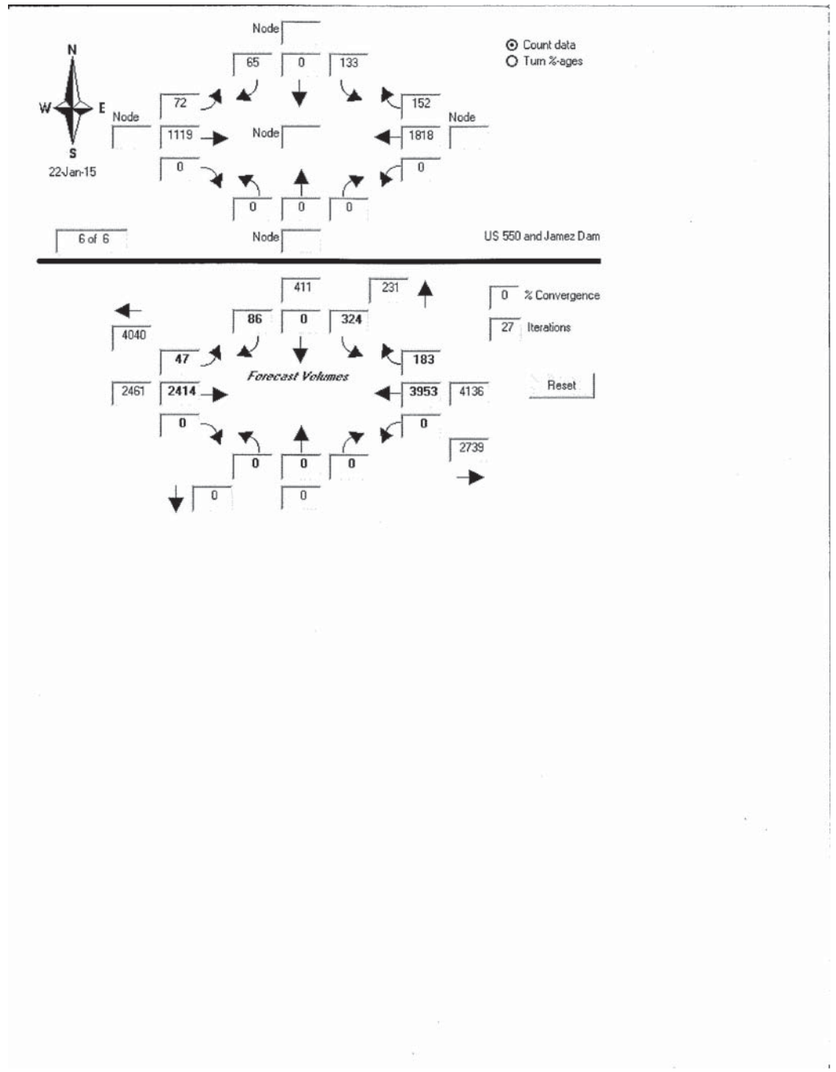

Node
92
30
1
Count data
Turn %-ages
N
W
E
S
Node
84
3
Node
1257
Node
852
Node
179
43
14-Jan-15
1
39
92
1 of 1
Node
US 550 and Santa Ana AM peak
Half
29
550
0 % Convergence
1560
28
0
0
64 Iterations
521
28
Forecast Volumes
4187
3659
1531
1562
Reset
7
2
3660
0
0
0
10
0

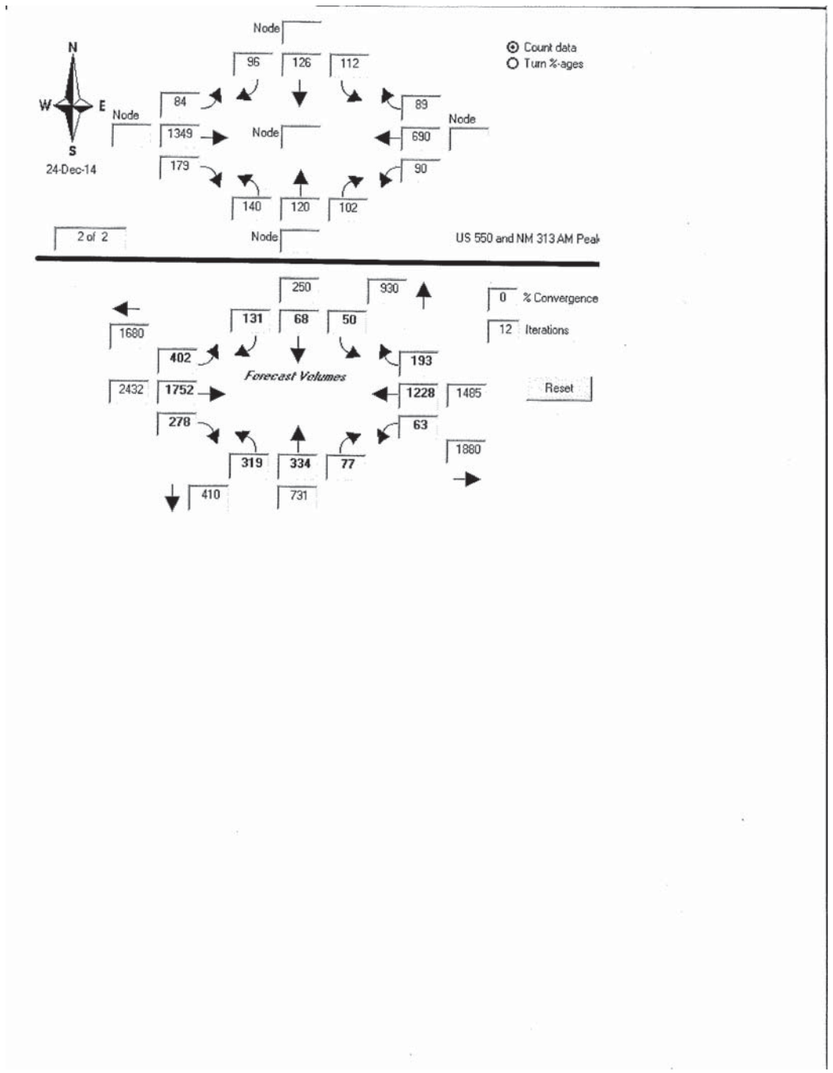

Node
72
16
1
Count data
Turn %-ages
N
W
E
S
Node
106
6
Node
792
Node
1903
221
40
14-Jan-15
1
5
1
2 of 2
Node
US 550 and Santa Ana PM Peak
Half
411
210
0 % Convergence
4150
405
0
5
26 Iterations
202
7
Forecast Volumes
2636
2434
3744
3751
Reset
0
0
2440
0
0
0
0
0

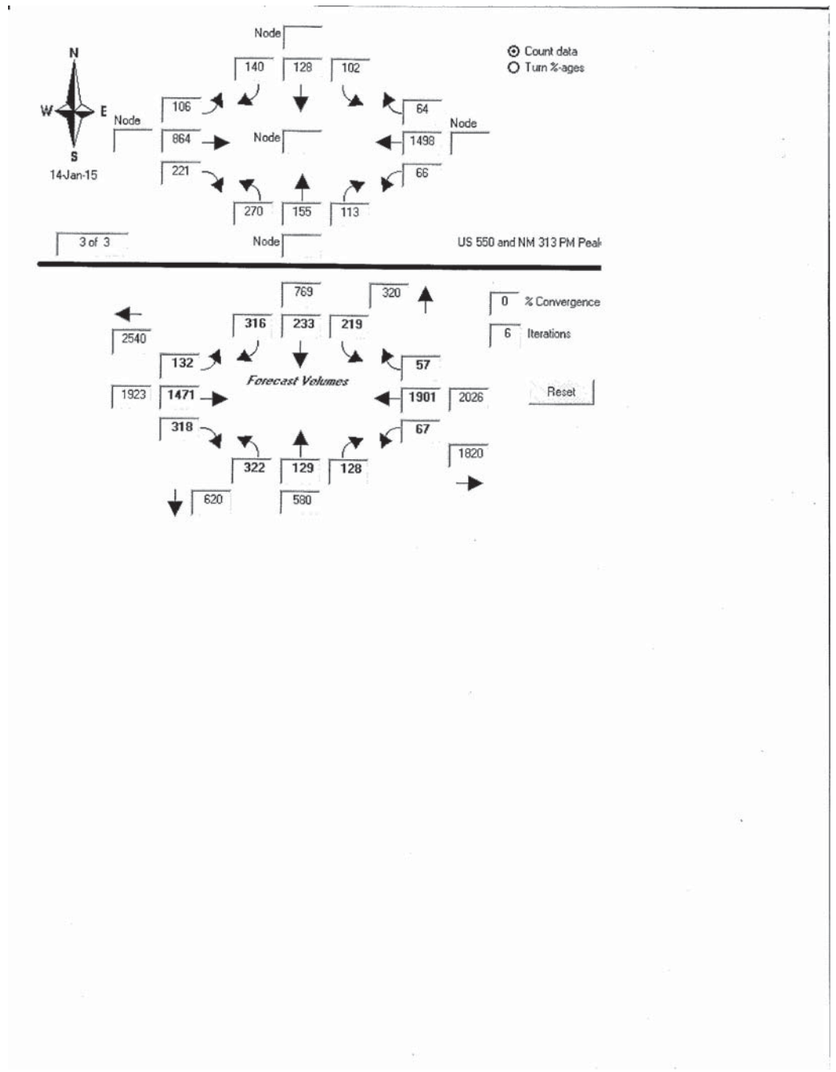

N
W
E
S
22-Jan-15
Node
Count data
Turn %-ages
7
10
13
38
56
951
429
81
392
59
54
758
3 of 3
US 550 and NM 528 AM Peak
94
555
0 % Convergence
26
20
47
9 Iterations
1130
138
192
Forecast Volumes
2372
2133
945
1595
Reset
100
457
4120
157
224
1938
578
2320

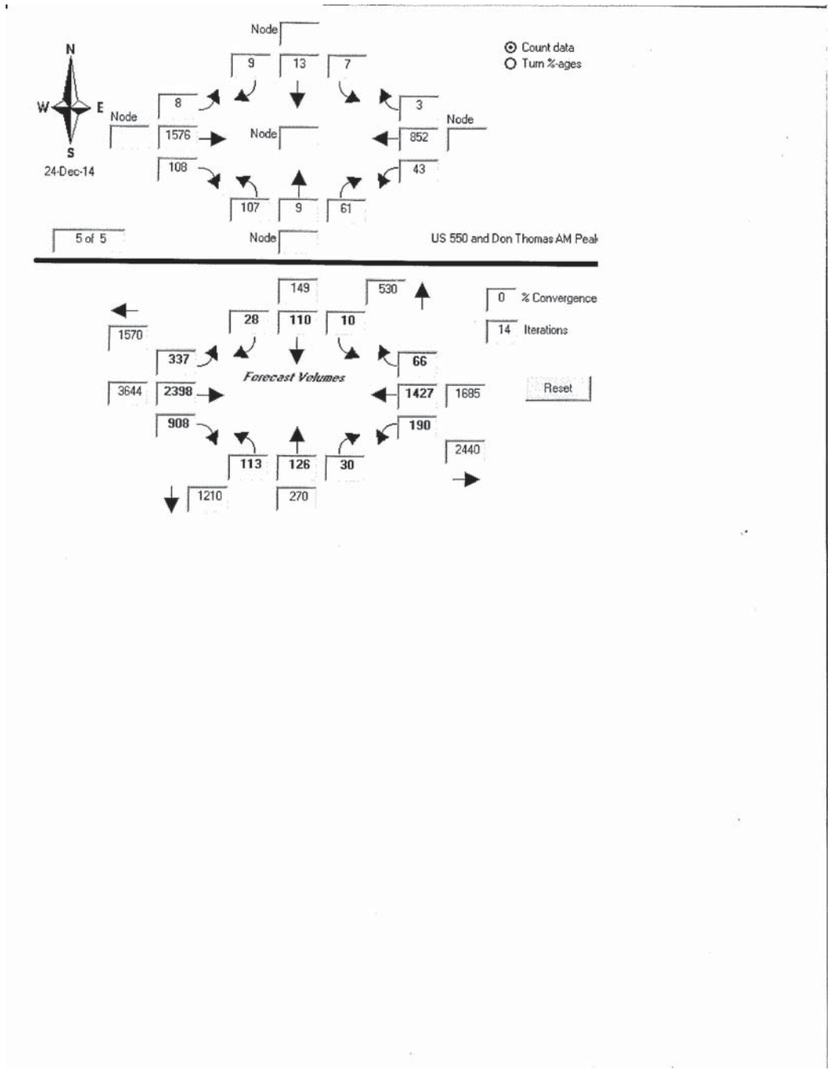

N
W
E
S
22-Jan-15
Node
Count data
Turn %-ages
50
96
42
54
71
612
99
109
92
131
63
565
4 of 4
US 550 and NM 528 PM
409
413
0 % Convergence
116
210
82
5 Iterations
2330
40
343
Forecast Volumes
1925
1571
1965
4031
Reset
314
1721
2550
247
29
896
2247
1173

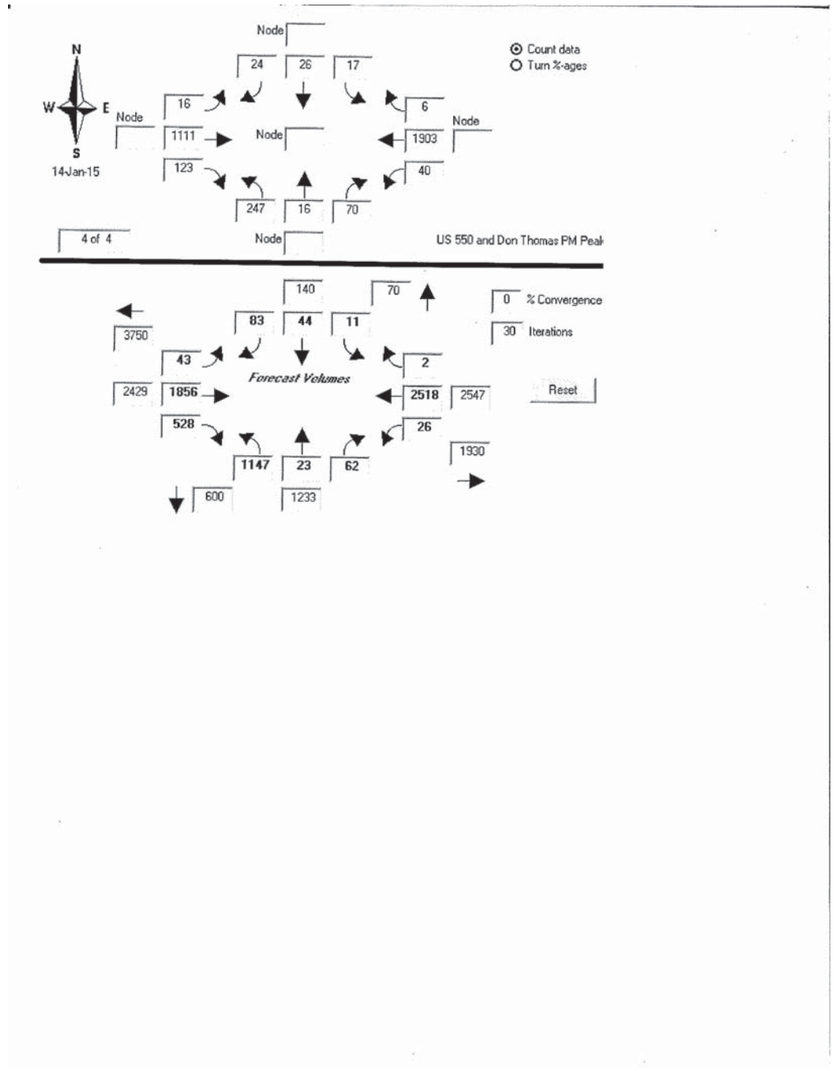

Node
9
0
32
31
78
Node
Node
1659
Node
881
0
0
0
0
0
0
Node
5 of 5
US 550 and Jamez Dam AM Peak
22-Jan-15
Count data
Turn %-ages
27
555
0 % Convergence
19
0
7
42 Iterations
1500
468
86
Forecast Volumes
4640
4172
1480
1567
Reset
0
0
0
0
0
0
4180
0
0


Node
65
0
133
72
152
Node
Node
1119
Node
1818
0
0
0
0
0
0
Node
6 of 6
US 550 and Jamez Dam
22-Jan-15
Count data
Turn %-ages
411
231
0 % Convergence
86
0
324
27 Iterations
4040
47
183
Forecast Volumes
2461
2414
3953
4136
Reset
0
0
0
0
0
0
2739
0
0


Node
96
126
112
Count data
Turn %-ages
N
W
E
S
Node
84
89
Node
1349
Node
690
179
90
24-Dec-14
140
120
102
2 of 2
Node
US 550 and NM 313 AM Peak
250
930
0
% Convergence
131
68
50
12
Iterations
1680
402
193
Forecast Volumes
2432
1752
1228
1485
Reset
278
63
1880
319
334
77
410
731


Node
140
128
102
Count data
Turn %-ages
N
W
E
S
Node
106
64
Node
864
Node
1498
221
66
14-Jan-15
270
155
113
3 of 3
Node
US 550 and NM 313 PM Peak
769
320
0
% Convergence
316
233
219
6
Iterations
2540
132
57
Forecast Volumes
1923
1471
1901
2026
Reset
318
67
1820
322
129
128
620
590


N
W
E
S
24-Dec-14
Node
Count data
Turn %-ages
9
13
7
8
3
1576
852
108
43
107
9
61
5 of 5
US 550 and Don Thomas AM Peak
149
530
0 % Convergence
28
110
10
14 Iterations
1570
337
66
Forecast Volumes
3644
2398
1427
1685
Reset
908
190
2440
113
126
30
1210
270


N
W
E
S
14-Jan-15
Node
Count data
Turn %-ages
24
26
17
16
6
1111
1903
123
40
247
16
70
4 of 4
US 550 and Don Thomas PM Peak
140
70
0 % Convergence
83
44
11
30 Iterations
3750
43
2
Forecast Volumes
2429
1856
2518
2547
Reset
528
26
1930
1147
23
62
600
1233

Appendix I-Trip Generation Calculations

2035 Modified Trip Generation Memo

ARIZONA
TEXAS
NEW MEXICO
OKLAHOMA

May 29, 2015

Joseph Casares, PE
NMDOT

Re: Final Projected 2035 Modified Turning Movement Volumes (US 550 Phase 1B Study)

Mr. Casares,

The following letter is to provide the NMDOT with the assumptions and procedures in developing the horizon year traffic demands for use in the US 550 Phase 1B alternative analyses.

Per scoping, it was agreed upon to a use the 2035 modified traffic demands models as provided by MRCOG. Therefore 2035 modified projected peak hour directional traffic demands for the study area were obtained from the MRCOG traffic model. Raw data and directional demands were converted to intersection turning movements using an algorithm known as the "Fratar" or "Furness" method. This algorithm maintains 2035 entering and exiting demands and finds a unique algebraic solution for left, through, and right-turn movements on each approach that match existing turning proportions as closely as possible. Resulting unadjusted 2035 AM and PM peak hour projected turning movement demands are depicted in the attached Figure 1. As indicated, a fourth leg at Jemez Dam Road was assumed and Kuaua Road was assumed to be aligned with Sheriff's Posse Road at a signalized intersection per Phase 1A findings.

The initial turning movement demands were then adjusted in the following manner:

1. Some through movements on were adjusted along the US 550 corridor to provide balance of entering and exiting traffic between intersections.
2. An unrealistic amount of NB left-turn (1,147 in the PM) and EB right-turn (908 in the AM) demands are observed at the Camino Don Tomas intersection while the same movements at NM 313 are much lower. Therefore, 50% of these movements at Don Tomas were reassigned to the corresponding movements at NM 313.
3. It has been verified with MRCOG that the 2035 modified model projects minimal land use growth for the Santa Ana Pueblo on the north quadrants of the NM 528 intersection. It was therefore decided that commercial trips should be generated for undeveloped lands on the northeast and northwest quadrants of the NM 528 intersection using a 20% floor to area ratio (FAR). Resulting trip generation including land use assumptions, trip generation rates, and internal capture and pass-by accommodations are attached as Tables 1 and 2.
4. Santa Ana Pueblo north development site trips were then assigned to and from the north legs at NM 528, Jemez Dam, and Edmund Road based on unadjusted 2035 turning percentages.
5. Since the regional model from MRCOG is based on total population and commercial support ceilings, it was assumed that the new development would take away from allotted commercial attractions that were assumed to be south of US 550. Therefore trips assigned to and from the north side of US 550 were subtracted from movements to and from the south leg of the NM 528 intersection for an approximate zero net gain of trips on US 550. It should be noted that this subtraction was conducted for only the point that would leave reasonable demands at those movements (ie reducing movements to existing demands were avoided to maintain some observed growth, especially on major movements).
6. Additionally, the Santa Ana Pueblo is anticipated to construct a commercial development on the southeast quadrant of the NM 528 intersection. Trips were thus generated similarly to Item #2 with trip generation summarized in the attached Table 3 and 4.
7. It was ascertained from MRCOG that the model does account for a development at the southeast quadrant of the NM 528 intersection. However, the MRCOG model does not account for a south leg at the Jemez Dam intersection thereby loading all trips to NM 528. It was assumed that a significant portion of trips (60%) will use Jemez Dam, and therefore this portion of assigned trips were subtracted from movements to and from the south leg at NM 528.
8. It was noted that a significantly large amount of traffic (especially to and from the west) are projected to use Santa Ana Road to access US 550 per the 2035 modified model. Since this will never be signalized, due to spacing requirements and the local road classification, loading of demands via this location seems unrealistic. Therefore, a significant proportion (66%) of traffic demands to and from this access point were reassigned to and from the west/north legs of Camino Don Tomas and NM 313.

Final adjusted 2035 model turning movement demands are summarized in the attached Figure 2. It should be noted that the resulting 2035 turning movement demands are assuming a no-build scenario. Further adjustments will be made to these demands for the alternatives analysis to account for alternative design features that impact access.

Please review the procedures and methodologies outlined in this letter and reply to the team by June 5, 2015 with any concurrences and/or requested adjustments so that we can proceed with alternatives analyses.

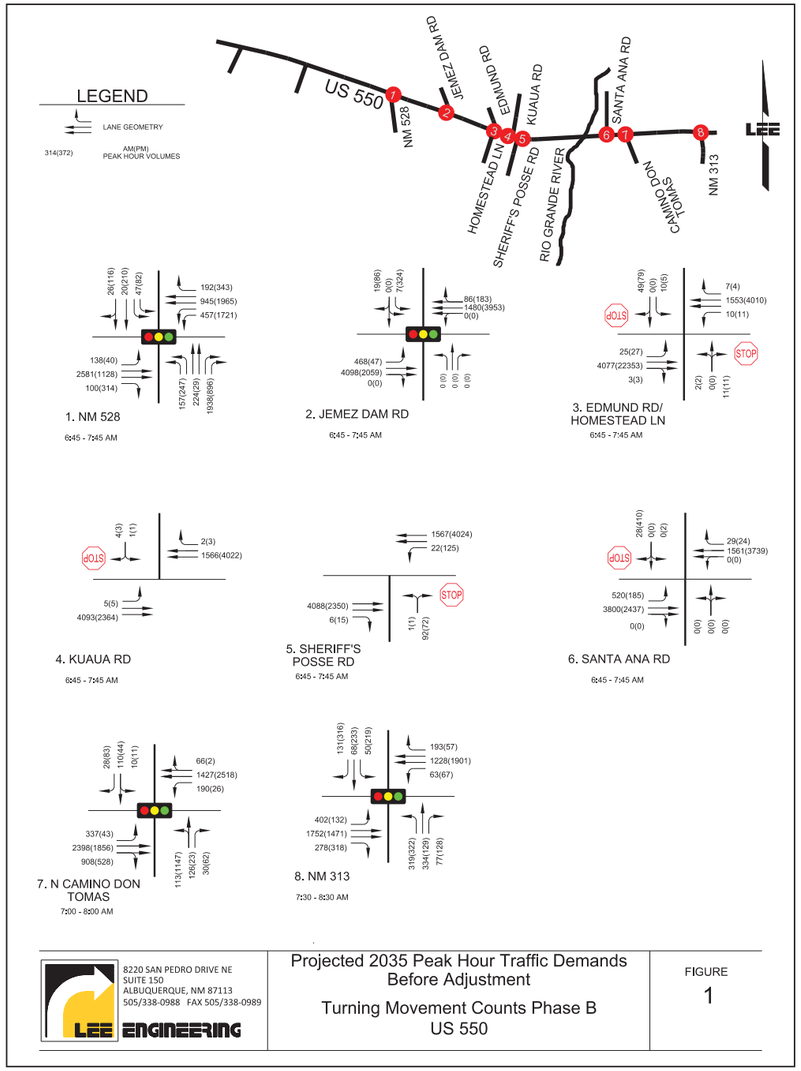
Thank you for your input and please let me know if you have any further comments or questions.

Sincerely,

Patrick Byrd, P.E. PTOE

Attachments:

Figure 1
Tables 1 through 4
Figure 2



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ALBUQUERQUE, NM 87113
505/338-0988 FAX 505/338-0989
LEE ENGINEERING

Projected 2035 Peak Hour Traffic Demands
Before Adjustment

Turning Movement Counts Phase B
US 550

FIGURE
1

Table 1: Santa Ana Pueblo Commercial Trip Generation North Side of US 550

Use	Units		TRIP GENERATION							TRIPS				
			Daily Rate	AM Peak			PM Peak			Daily	AM Peak		PM Peak	
				Rate	Enter	Exit	Rate	Enter	Exit		In	Out	In	Out
General Office Building (710)	189.5	KSF	54.30	1.68	88%	12%	1.54	17%	83%	10289	281	38	49	242
Shopping Center (820)	1073.7	KSF	29.59	0.62	62%	38%	2.74	48%	52%	31770	411	252	1411	1528
Total	-	-	-	-	-	-	-	-	-	42059	692	290	1460	1770

Notes:

Shopping Center
Daily Rate: Ln (T)= 0.65 Ln (X)+5.83
AM Rate: Ln (T)=0.61 Ln(X)+2.24
PM Rate: Ln (T)= 0.67 Ln (X)+3.31
General Office Building
Daily Rate: Ln (T)=.76 Ln(X)+3.68
AM Rate: Ln (T)= 0.80 Ln (X)+1.57
PM Rate: T = 1.12 (X)+78.45

Table 2: Santa Ana Pueblo Commercial Trip Generation North Side of US 550 External Trips

Use	Units	TOTAL TRIPS					EXTERNAL TRIPS					Pass-By %			PRIMARY EXTERNAL TRIPS				
		Daily	AM Peak		PM Peak		Daily	AM Peak		PM Peak					Daily	AM Peak		PM Peak	
			In	Out	In	Out		In	Out	In	Out	Daily	AM	PM		In	Out	In	Out
General Office Building (710)		10,289	281	38	49	242	9,177	273	30	34	214	0%	0%	0%	9,177	273	30	34	214
Shopping Center (820)	450	31,770	411	252	1,411	1,528	30,658	403	244	1,383	1,513	20%	0%	20%	24,526	403	244	1,106	1,210
Total	-	42,059	692	290	1,460	1,770	39,835	676	274	1,417	1,727	-	-	-	33,703	676	274	1,140	1,424

Table 3: Santa Ana Pueblo Commercial Trip Generation South Side of US 550

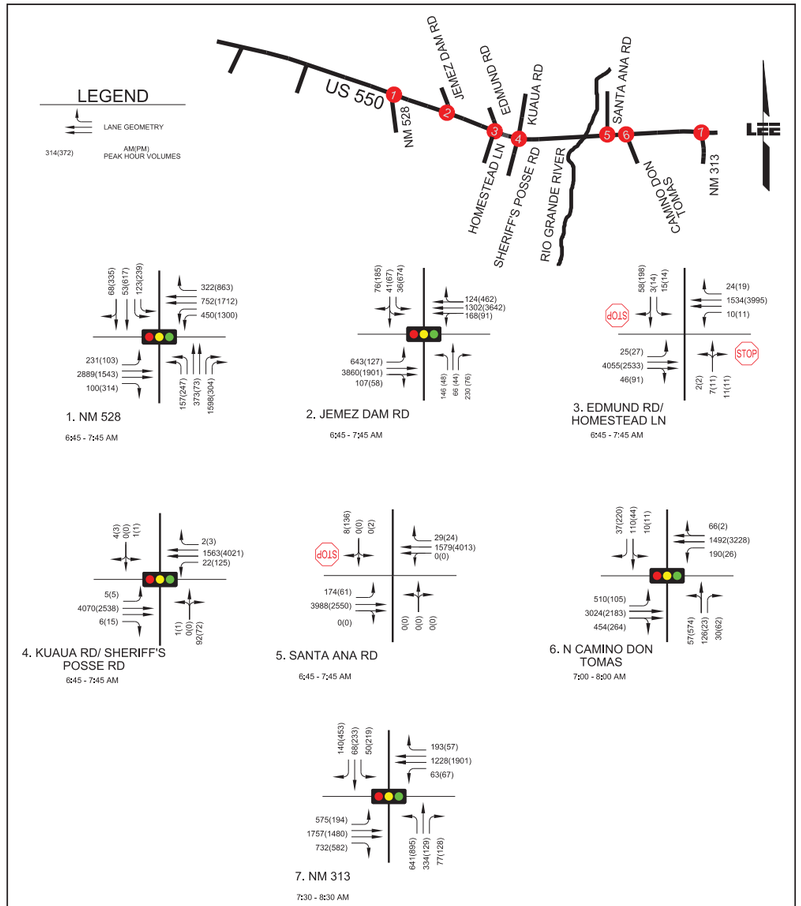
Use	Units		TRIP GENERATION							TRIPS				
			Daily Rate	AM Peak			PM Peak			Daily	AM Peak		PM Peak	
				Rate	Enter	Exit	Rate	Enter	Exit		In	Out	In	Out
Shopping Center (820)	314.9	KSF	45.46	1.00	62%	38%	4.10	48%	52%	14,314	195	119	620	672
High-Turnover Restaurant (932)	40	KSF	127.15	10.80	55%	45%	9.85	60%	40%	5,086	238	194	236	158
Fast Food (934)	25	KSf	196.12	45.44	51%	49%	32.64	52%	48%	4,903	579	557	424	392
Total	-		-	-	-	-	-	-	-	24,303	1,012	870	1,280	1,222

Notes:

Shopping Center
Daily Rate: Ln (T)= 0.65 Ln (X)+5.83
AM Rate: Ln (T)=0.61 Ln(X)+2.24
PM Rate: Ln (T)= 0.67 Ln (X)+3.31
High Trunover Restaurant
Daily Rate: Average = 127.15
AM Rate: Average = 10.81
PM Rate: Average = 9.85
Fast Food
Daily Rate: Average = 496.12
AM Rate: Average = 45.42
PM Rate: Average = 32.65

Table 4: Santa Ana Pueblo Commercial Trip Generation South Side of US 550 Exterma; Trips

Use	Units	TOTAL TRIPS					EXTERNAL TRIPS					Pass-By %			PRIMARY EXTERNAL TRIPS				
		Daily	AM Peak		PM Peak		Daily	AM Peak		PM Peak					Daily	AM Peak		PM Peak	
			In	Out	In	Out		In	Out	In	Out	Daily	AM	PM		In	Out	In	Out
Shopping Center (820)	314.9	14,314	195	119	620	672	11,417	140	83	510	540	20%	0%	20%	9134	140	83	408	432
High-Turnover Restaurant (932)	40	5,086	238	194	236	158	3,611	227	181	190	128	43%	0%	43%	2058	227	181	108	73
Fast Food (934)	25	4,903	579	557	424	392	3,481	554	515	338	313	49%	49%	50%	1775	283	515	169	157
Total	-	24,303	1,012	870	1,280	1,222	18,509	921	779	1,038	981	-	-	-	3833	510	696	277	230



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Projected 2035 Peak Hour Traffic Demands
After Adjustment

Turning Movement Counts Phase B
US 550

FIGURE
2

Trip Generation For Driveways

Detailed Land Use Data
For 20 Vehicle Fueling Positions of Twin Worrier 2
(945) Gas/Service Station with Convenience Market

Project: US 550
Phase: Phase 1
Description:

Open Date: 6/24/2015
Analysis Date: 6/24/2015

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	3256	0	162.78	90.67	299.5	68.16	12	50	50	False		
Weekday AM Peak Hour of Generator	211	0	10.56	3.5	33.4	6.15	11	50	50	False		
Weekday AM Peak Hour of Adjacent Street Traffic	203	126	10.16	3.5	33.4	6.01	11	50	50	False		
Weekday PM Peak Hour of Generator	271	0	13.57	4.25	57.8	7.94	10	50	50	False		
Weekday PM Peak Hour of Adjacent Street Traffic	270	151	13.51	4.25	57.8	7.91	10	50	50	False		

Detailed Land Use Data
For 16 Vehicle Fueling Positions of Valero
(945) Gas/Service Station with Convenience Market

Project: US 550
Phase: Phase 1
Description:

Open Date: 6/24/2015
Analysis Date: 6/24/2015

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	2604	0	162.78	90.67	299.5	68.16	12	50	50	False		
Weekday AM Peak Hour of Generator	169	0	10.56	3.5	33.4	6.15	11	50	50	False		
Weekday AM Peak Hour of Adjacent Street Traffic	163	101	10.16	3.5	33.4	6.01	11	50	50	False		
Weekday PM Peak Hour of Generator	217	0	13.57	4.25	57.8	7.94	10	50	50	False		
Weekday PM Peak Hour of Adjacent Street Traffic	216	121	13.51	4.25	57.8	7.91	10	50	50	False		

Detailed Land Use Data
For 3.85 Gross Floor Area 1000 SF of Mexican Grill
(932) High-Turnover (Sit-Down) Restaurant

Project: US 550
Phase: Phase 1
Description:

Open Date: 6/24/2015
Analysis Date: 6/24/2015

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	490	0	127.15	73.51	246	41.77	7	50	50	False		
Weekday AM Peak Hour of Generator	51	0	13.33	3	54.09	9.44	7	53	47	False		
Weekday AM Peak Hour of Adjacent Street Traffic	42	0	10.81	2.32	25.6	6.59	6	55	45	False		
Weekday PM Peak Hour of Generator	71	0	18.49	5.6	69.2	13.32	5	54	46	False		
Weekday PM Peak Hour of Adjacent Street Traffic	38	16	9.85	0.92	62	8.54	6	60	40	False		

Detailed Land Use Data
For 1.7 Gross Floor Area 1000 SF of Coffee Shop
(937) Coffee/Donut Shop with Drive-Thru

Project: US 550
Phase: Phase 1
Description:

Open Date: 6/24/2015
Analysis Date: 6/24/2015

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	1392	0	818.58	734.34	869		2	50	50	False		
Weekday AM Peak Hour of Generator	172	0	101.4	18.23	275	45.9	2	49	51	False		
Weekday AM Peak Hour of Adjacent Street Traffic	171	0	100.58	18.23	349.41	49.38	2	51	49	False		
Weekday PM Peak Hour of Adjacent Street Traffic	73	0	42.8	2.08	90	18.06	2	50	50	False		
Saturday Peak Hour of Generator	144	0	84.52	48.33	137.62	33.38	2	50	50	False	Ln(T) = 0.64 Ln(X) + 4.68	0.59

Detailed Land Use Data
For 4.7 Gross Leasable Area 1000 SF of Cricket
(826) Specialty Retail Center

Project: US 550
Phase: Phase 1
Description:

Open Date: 6/24/2015
Analysis Date: 6/24/2015

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	208	0	44.32	21.3	64.21	15.52	25	50	50	False	T = 42.78(X) + 37.66	0.69
Weekday AM Peak Hour of Generator	32	0	6.84	5.33	14.08	3.55	60	48	52	False	T = 4.91(X) + 115.59	0.9
Weekday PM Peak Hour of Generator	24	0	5.02	4.59	6.18	2.31	75	56	44	False		
Weekday PM Peak Hour of Adjacent Street Traffic	13	0	2.71	2.03	5.16	1.83	69	44	56	False	T = 2.40(X) + 21.48	0.98

Detailed Land Use Data
For 2.9 Gross Floor Area 1000 SF of Chicken RESTAURANT
(932) High-Turnover (Sit-Down) Restaurant

Project: US 550
Phase: Phase 1
Description:

Open Date: 6/24/2015
Analysis Date: 6/24/2015

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	369	0	127.15	73.51	246	41.77	7	50	50	False		
Weekday AM Peak Hour of Generator	39	0	13.33	3	54.09	9.44	7	53	47	False		
Weekday AM Peak Hour of Adjacent Street Traffic	31	0	10.81	2.32	25.6	6.59	6	55	45	False		
Weekday PM Peak Hour of Generator	54	0	18.49	5.6	69.2	13.32	5	54	46	False		
Weekday PM Peak Hour of Adjacent Street Traffic	29	12	9.85	0.92	62	8.54	6	60	40	False		

Detailed Land Use Data
For 11 Gross Floor Area 1000 SF of NURSERYGARDEN Zack
(817) Nursery (Garden Center)

Project: US 550
Phase: Phase 1
Description:

Open Date: 6/24/2015
Analysis Date: 6/24/2015

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday AM Peak Hour of Generator	88	0	8	2.08	27.25	7.01	5	52	48	False		
Weekday AM Peak Hour of Adjacent Street Traffic	27	0	2.43	0.38	10	2.92	5	50	50	False		
Weekday PM Peak Hour of Generator	99	0	9.04	2.46	30.25	7.66	5	49	51	False		
Weekday PM Peak Hour of Adjacent Street Traffic	76	0	6.94	0.5	20.75	5.8	5	50	50	False		
Sunday Average Daily Trips	1168	0	106.2	2.75	265.25	87.83	5	50	50	False		

Detailed Land Use Data
For 4 Gross Leasable Area 1000 SF of CENTERSPECIALTY 1
(826) Specialty Retail Center

Project: US 550
Phase: Phase 1
Description:

Open Date: 6/24/2015
Analysis Date: 6/24/2015

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	177	0	44.32	21.3	64.21	15.52	25	50	50	False	T = 42.78(X) + 37.66	0.69
Weekday AM Peak Hour of Generator	27	0	6.84	5.33	14.08	3.55	60	48	52	False	T = 4.91(X) + 115.59	0.9
Weekday PM Peak Hour of Generator	20	0	5.02	4.59	6.18	2.31	75	56	44	False		
Weekday PM Peak Hour of Adjacent Street Traffic	11	0	2.71	2.03	5.16	1.83	69	44	56	False	T = 2.40(X) + 21.48	0.98

Detailed Land Use Data
For 6 Acres of Coronado Historic Site MO
(418) National Monument

Project: US 550
Phase: Phase 1
Description:

Open Date: 6/24/2015
Analysis Date: 6/24/2015

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	32	0	5.37	2.35	15.92		323	50	50	False		
Weekday AM Peak Hour of Generator	1	0	0.23				502	50	50	False		
Weekday PM Peak Hour of Generator	3	0	0.42				502	50	50	False		
Saturday Average Daily Trips	50	0	8.28	3.27	25.76		323	50	50	False		
Saturday Peak Hour of Generator	3	0	0.47				502	50	50	False		

Detailed Land Use Data
For 7.8 Gross Floor Area 1000 SF of O` Reilly
(843) Automobile Parts Sales

Project: US 550
Phase: Phase 1
Description:

Open Date: 6/24/2015
Analysis Date: 6/24/2015

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	483	0	61.91	42.17	70.67	12.97	8	50	50	False	T = 81.02(X) - 150.75	0.98
Weekday AM Peak Hour of Generator	34	0	4.41	2.47	5.8	2.39	8	50	50	False	T = 6.60(X) - 17.31	0.89
Weekday AM Peak Hour of Adjacent Street Traffic	17	0	2.21	1.17	2.55	1.49	8	50	50	False	T = 2.76(X) - 4.34	0.93
Weekday PM Peak Hour of Generator	50	0	6.44	4.33	7.6	2.72	8	51	49	False	T = 8.92(X) - 19.61	0.98
Weekday PM Peak Hour of Adjacent Street Traffic	47	20	5.98	3.83	6.87	2.57	8	49	51	False	T = 7.87(X) - 14.86	0.97

Detailed Land Use Data
For 8 Vehicle Fueling Positions of Conoco GASMARKETWASH 1
(946) Gas/Service Station with Convenience Market and Car Wash

Project: US 550
Phase: Phase 1
Description:

Open Date: 6/24/2015
Analysis Date: 6/24/2015

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	1223	0	152.84	97.2	250.88	45.8	12	50	50	False		
Weekday AM Peak Hour of Generator	107	0	13.32	6.08	29	6.6	11	51	49	False		
Weekday AM Peak Hour of Adjacent Street Traffic	95	0	11.84	4.33	29	6.95	11	51	49	False		
Weekday PM Peak Hour of Generator	116	0	14.52	7	26.71	5.87	11	50	50	False		
Weekday PM Peak Hour of Adjacent Street Traffic	111	0	13.86	7	29.63	6.31	11	51	49	False		

Trip Generation Summary - Alternative 1

Project: US 550 Open Date: 6/23/2015
Alternative: Alternative 1 Analysis Date: 6/23/2015

ITE	Land Use	Average Daily Trips Enter	Exit	Total	AM Peak Hour of Adjacent Street Traffic Enter	Exit	Total	PM Peak Hour of Adjacent Street Traffic Enter	Exit	Total
843	AutoZone	212	212	424	8	7	15	20	21	41
	7.1 Gross Floor Area 1000 SF									
911	US Bank							26	33	59
	4.9 Gross Floor Area 1000 SF									
912	US Bank ATM	100	100	200	9	7	16	17	16	33
	1.35 Gross Floor Area 1000 SF									
Unadjusted Volume		312	312	624	17	14	31	63	70	133
Internal Capture Trips		0	0	0	0	0	0	0	0	0
Pass-By Trips		0	0	0	0	0	0	17	17	34
Volume Added to Adjacent Streets		312	312	624	17	14	31	46	53	99

Total AM Peak Hour Internal Capture = 0 Percent

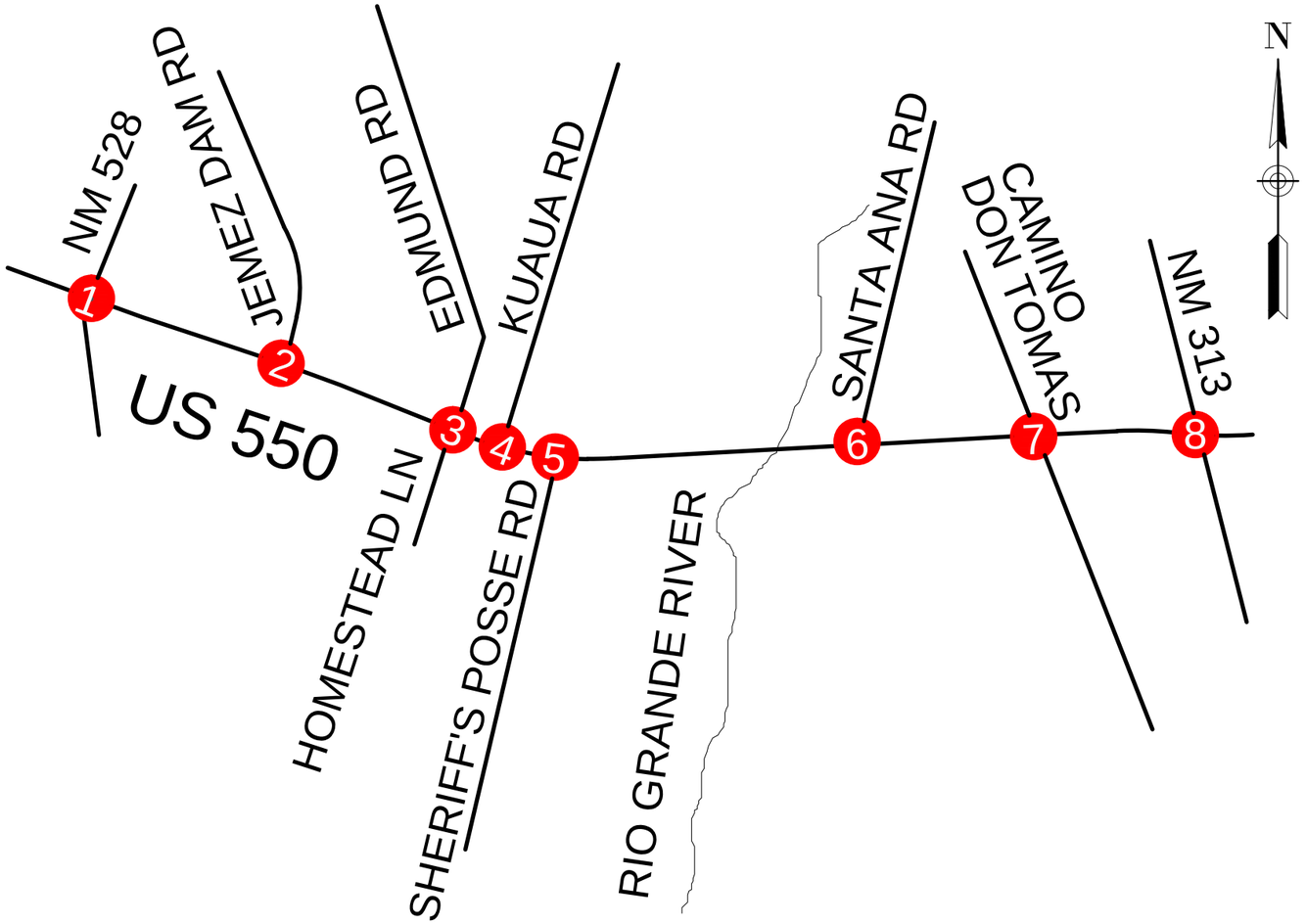
Total PM Peak Hour Internal Capture = 0 Percent

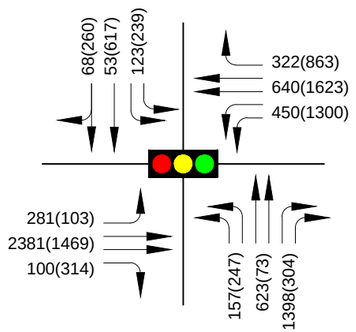
Source: Institute of Transportation Engineers, Trip Generation Manual 9th Edition, 2012

Appendix J-Modified 2035 Traffic Projections

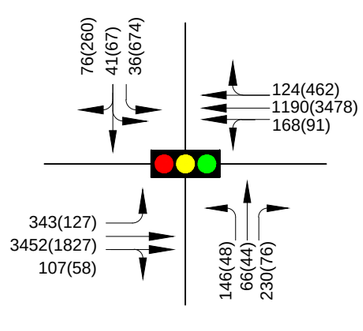
Traffic Volumes

(Adjusted for Design Alternatives)

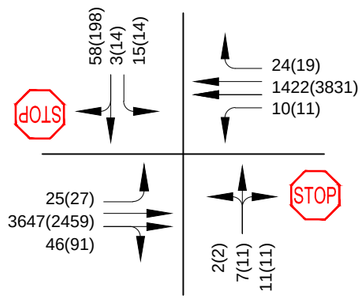




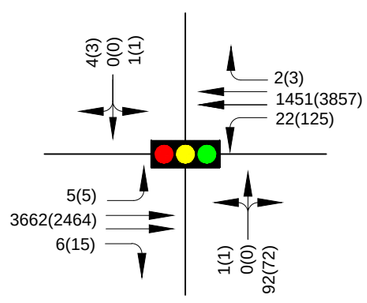
1. NM 528



2. JEMEZ DAM RD



3. EDMUND RD / HOMESTEAD LN



4. KUAUA RD / SHERIFF'S POSSE RD

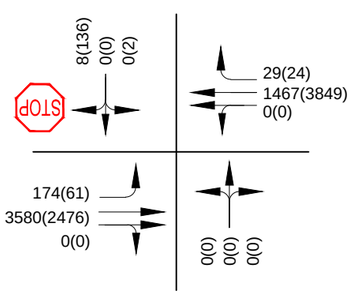
Projected 2035 Peak Hour Traffic Demands
After Adjustment

Turning Movement Counts Phase B
US 550

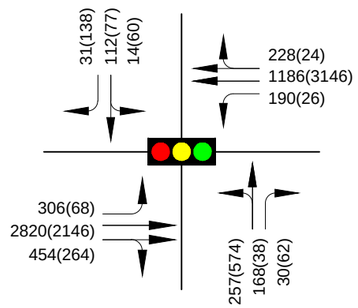
LEGEND

LANE GEOMETRY

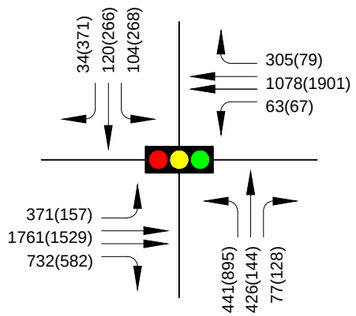
XX(XX) AM(PM) PEAK HOUR VOLUMES



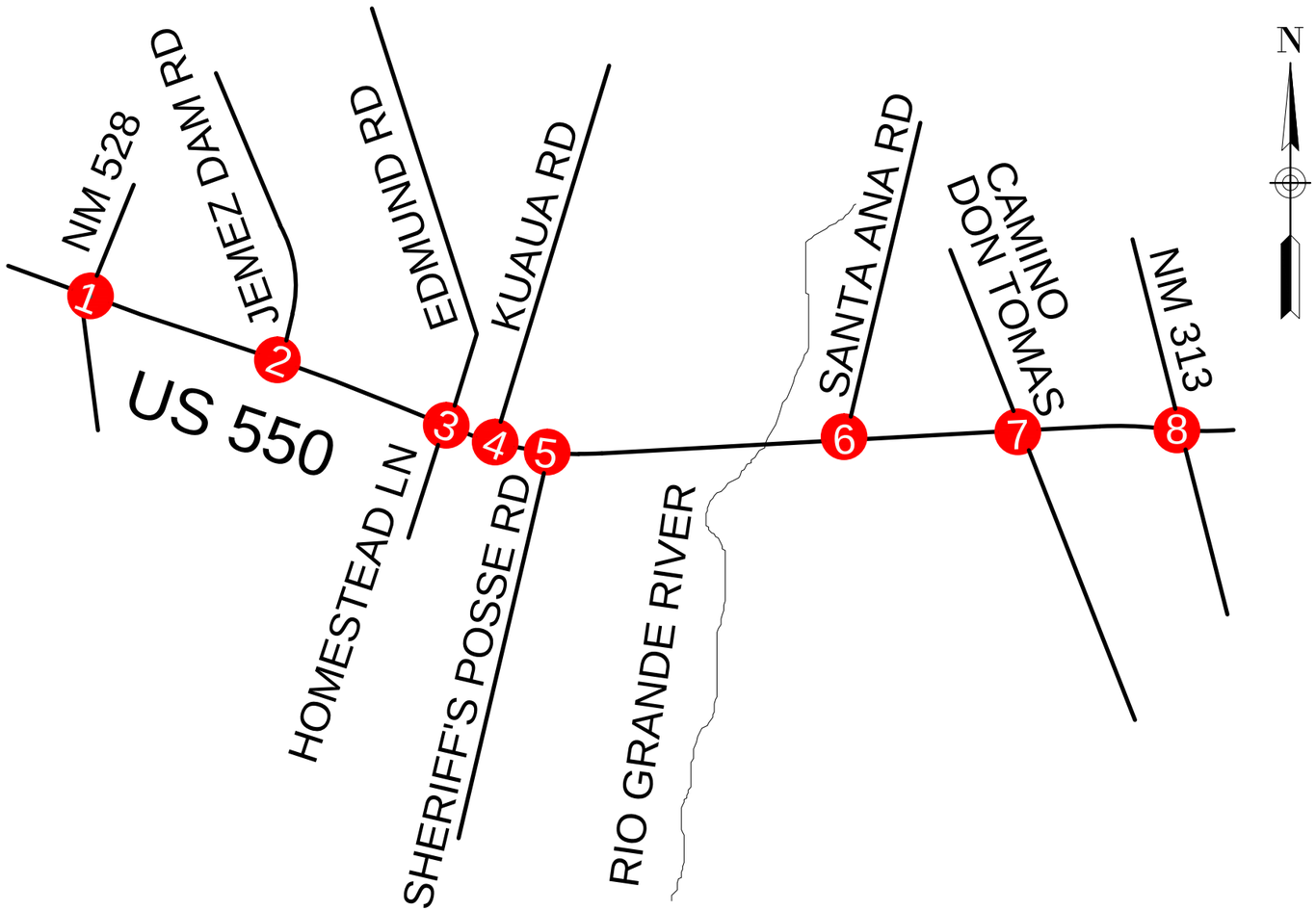
5. SANTA ANA RD

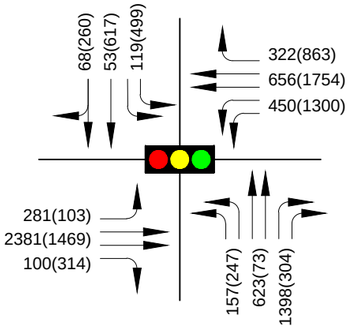


6. N CAMINO DON TOMAS



7. NM 313





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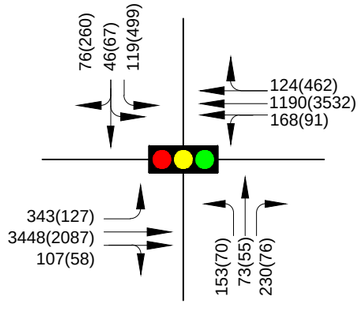
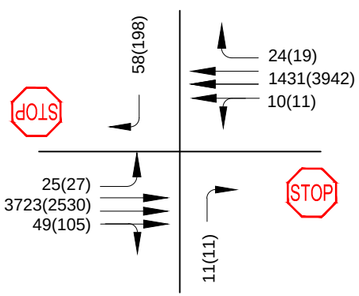
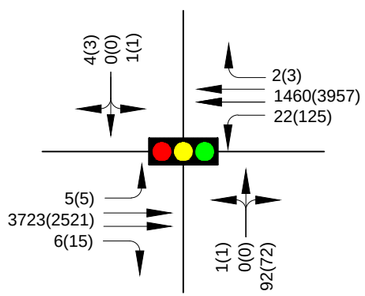


2. JEMEZ DAM RD



3. EDMUND RD / HOMESTEAD LN



4. KUAUA RD / SHERIFF'S POSSE RD

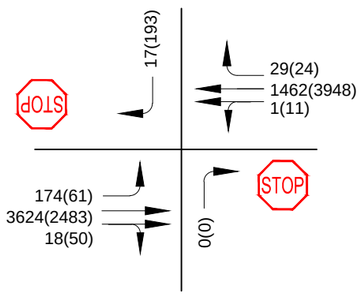
Projected 2035 Peak Hour Traffic Demands
6 Lane Alternative

Turning Movement Counts Phase B
US 550

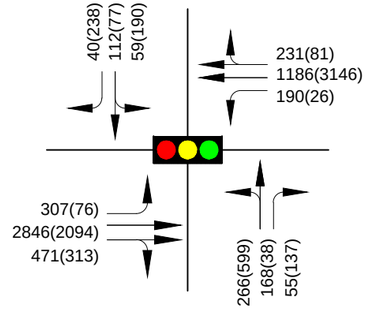
LEGEND

LANE GEOMETRY

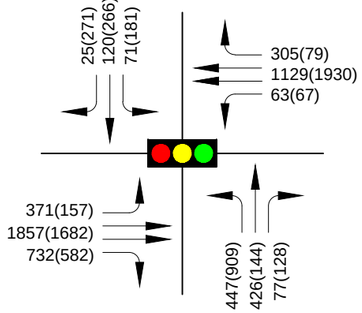
XX(XX) AM(PM) PEAK HOUR VOLUMES



5. SANTA ANA RD



6. N CAMINO DON TOMAS



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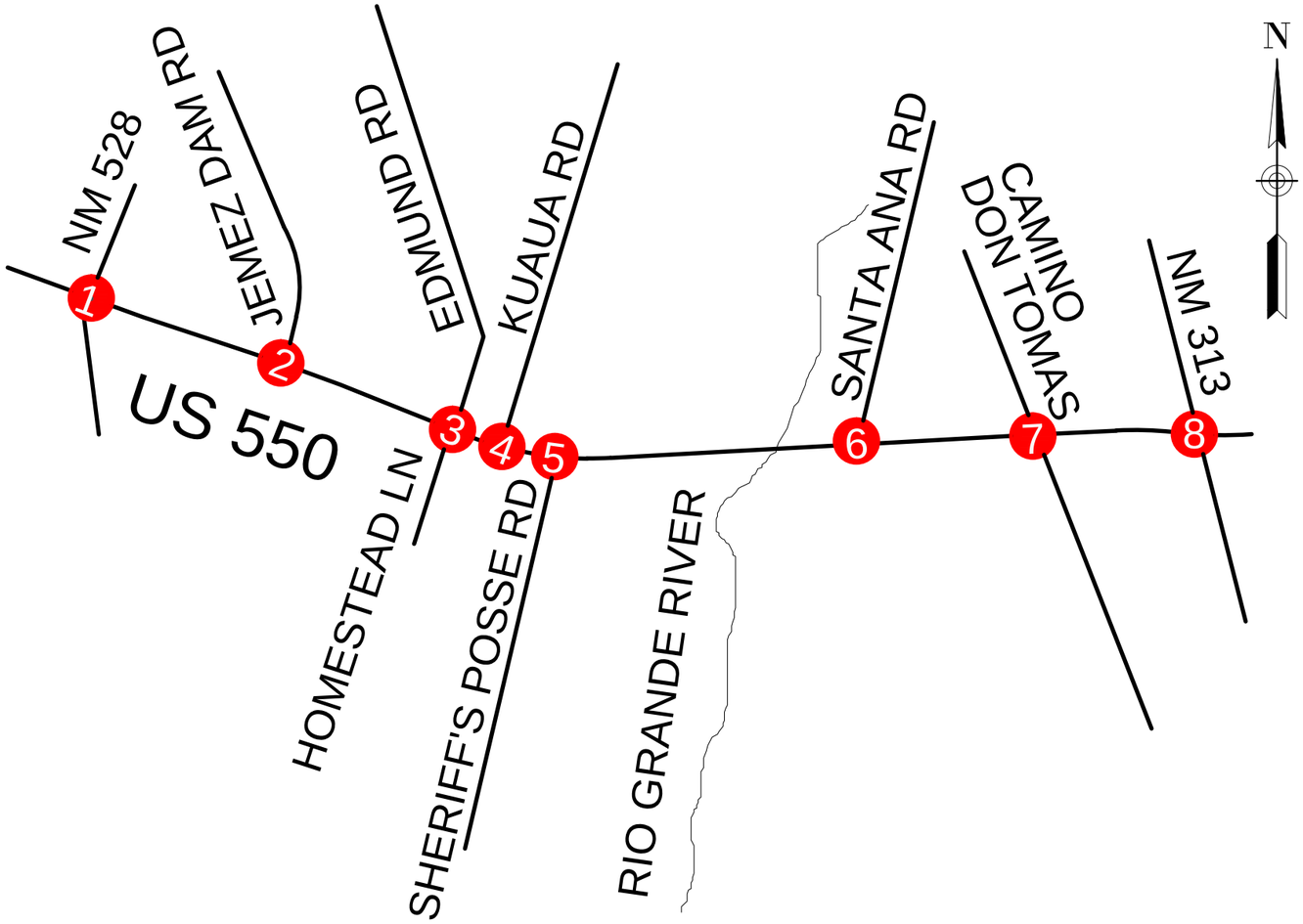


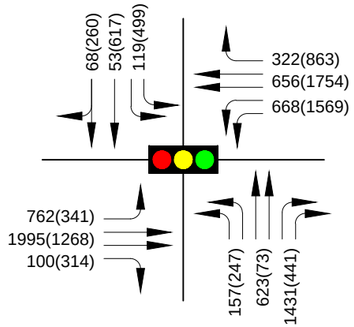
Projected 2035 Peak Hour Traffic Demands
Reversible Lane Alternative

Turning Movement Counts Phase B
US 550

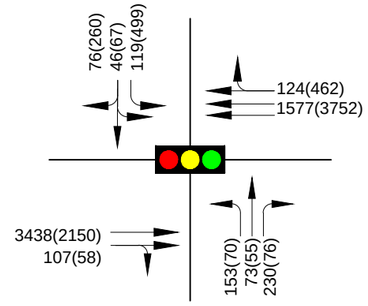
LEGEND

LANE GEOMETRY

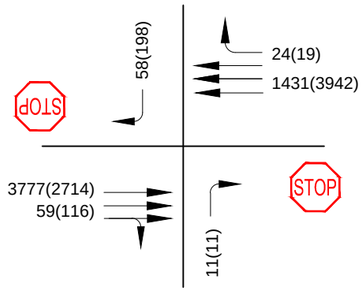
XX(XX) AM(PM) PEAK HOUR VOLUMES



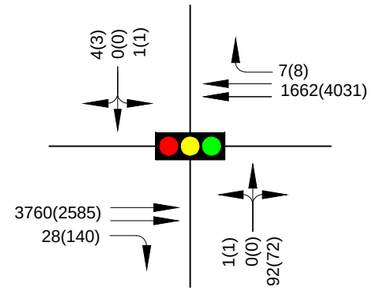
1. NM 528



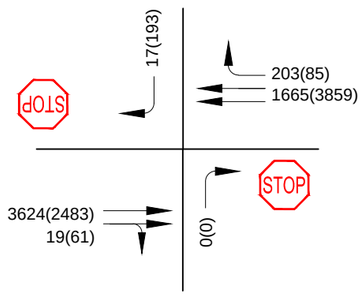
2. JEMEZ DAM RD



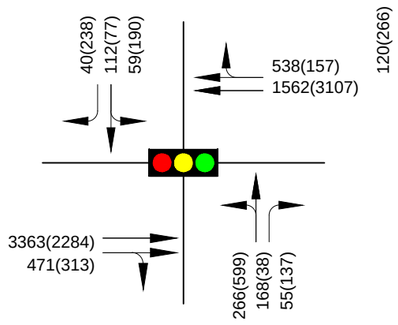
3. EDMUND RD / HOMESTEAD LN



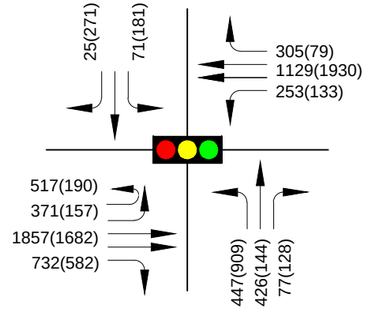
4. KUAUA RD/ SHERIFF'S POSSE RD



5. SANTA ANA RD



6. N CAMINO DON TOMAS



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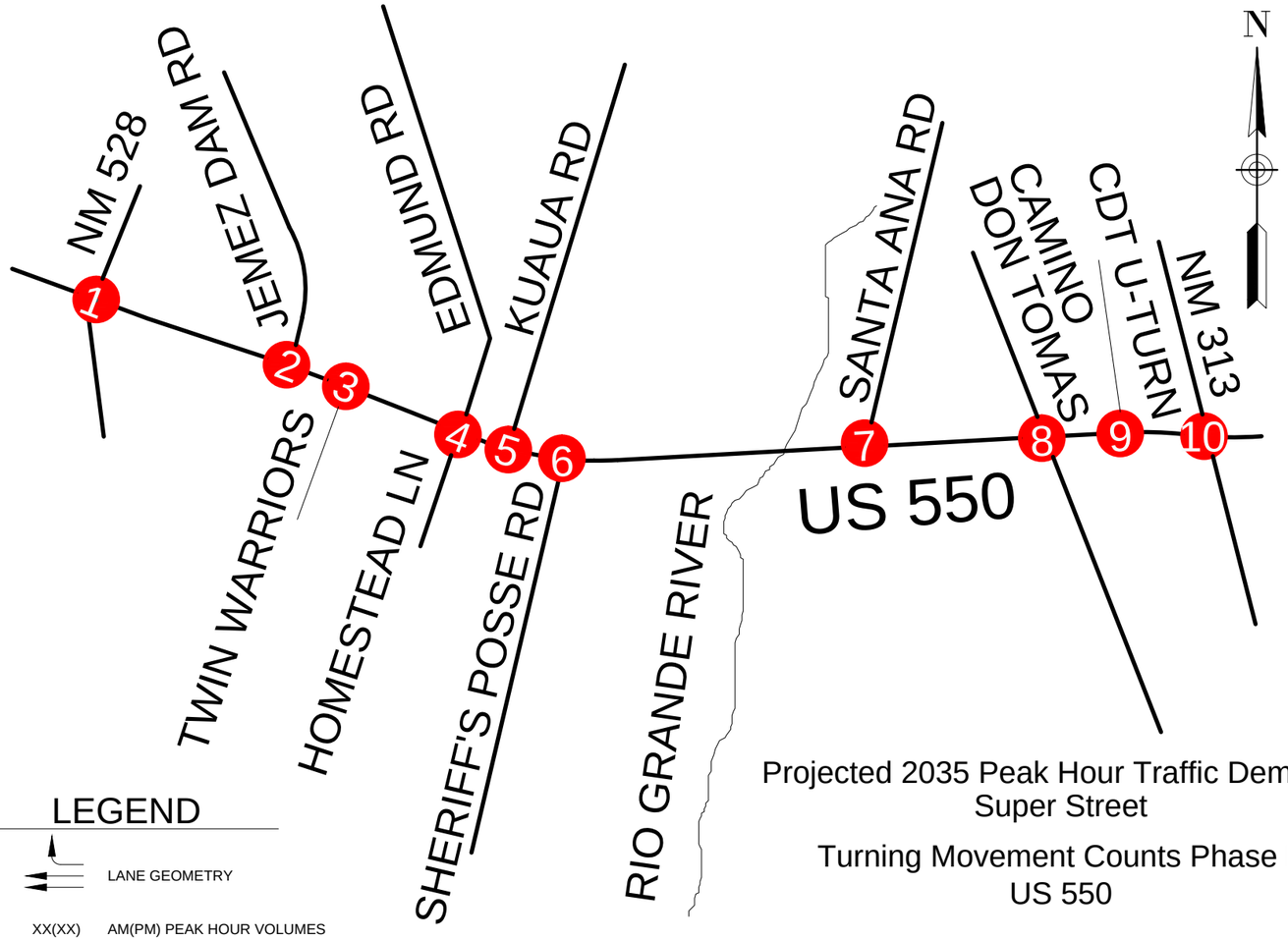


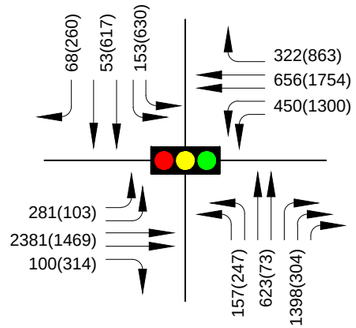
Projected 2035 Peak Hour Traffic Demands
Super Street

Turning Movement Counts Phase B
US 550

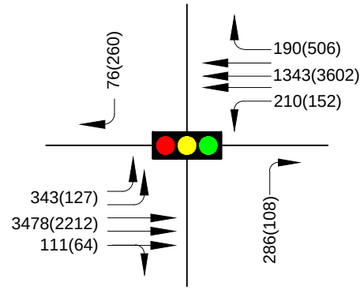
LEGEND

LANE GEOMETRY

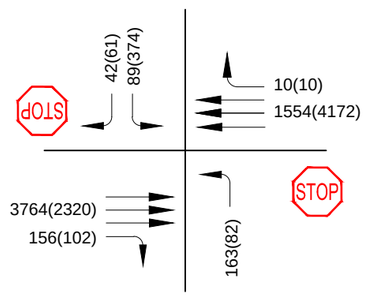
XX(XX) AM(PM) PEAK HOUR VOLUMES



1. NM 528



2. JEMEZ DAM RD



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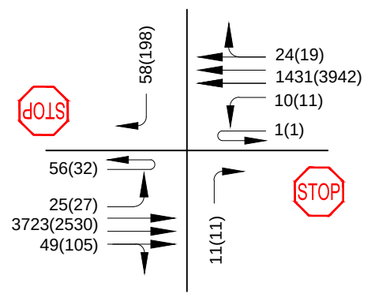
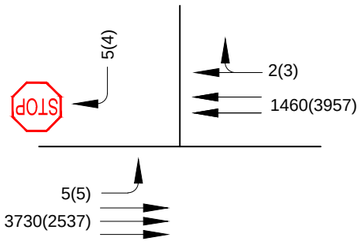


4. EDMUND RD / HOMESTEAD LN



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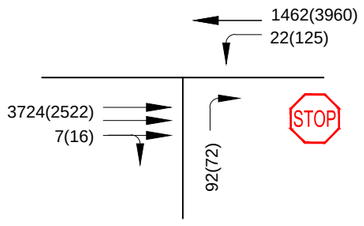
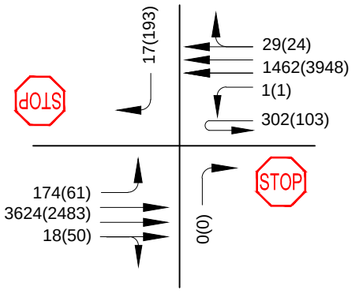
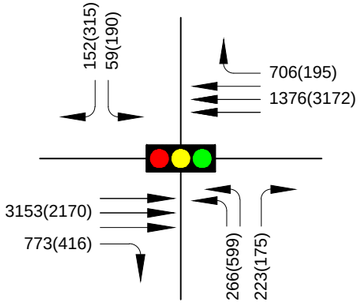


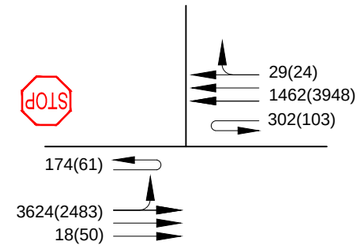
6. SHERIFF'S POSSE



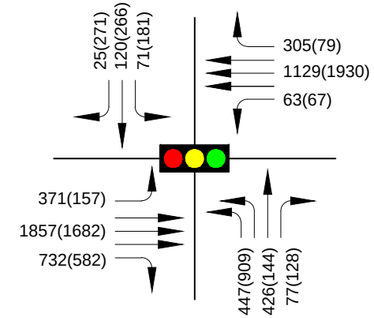
7. SANTA ANA RD



8. N CAMINO DON TOMAS



9. DON TOMAS U-TURN



10. NM 313

Appendix K-VISSIM Level of Service Summary Tables

Level of Services Summary Tables

2015 Existing AM Peak

Intersection with US 550	Movement	Direction	Simulation Delay (s)	Simulation Volume	Demand	Simulation LOS	Simulation Delay	Simulation LOS	Synchro Delay	Synchro LOS
NM 528	SBL	NE-SE	60.2	10	8	E	22.52	C	28.8	C
	SBT	NE-S	110.9	7	6	F				
	SBR	NE-NW	0.9	6	6	A				
	EBL	NW-NE	52.2	33	31	D				
	EBT	NW-SE	17.5	1366	1329	B				
	EBR	NW-S	1.6	80	79	A				
	WBL	SE-S	44.7	469	341	D				
	WBT	SE-NW	10.8	619	444	B				
	WBR	SE-NE	1.3	43	31	A				
	NBL	S-NW	52.0	74	74	D				
	NBT	S-NE	50.0	44	45	D				
	NBR	S-SE	23.6	971	962	C				
Jemez Dam Rd	SBL	NE-SE	33.7	3	15	C	5.85	A	3.3	A
	SBR	NE-NW	51.1	19	7	D				
	WBT	SE-NW	7.0	1113	846	A				
	WBR	SE-NE	4.8	44	35	A				
	EBT	NW-SE	4.9	2332	2238	A				
	EBL	NW-NE	9.8	7	1	A				
Edmund Homestead	SBL	NE-SE	6.9	5	5	A	9.88	A	3.5	A
	SBR	NE-NW	13.5	56	53	B				
	WBL	SE-SW	46.5	15	11	D				
	WBT	SE-NW	3.4	1167	768	A				
	WBR	SE-NE	2.3	5	4	A				
	EBL	NW-NE	28.8	16	20	C				
	EBT	NW-SE	12.7	2255	2227	B				
	EBR	NW-SW	6.8	3	2	A				
	NBL	SW-NE	19.6	1	0	B				
	NBR	SW-SE	20.5	15	16	C				
Kuaua/Sherrifs Posse	SBL	NE-SE	2.8	1	1	A	8.52	A	0.2	A
	WBL	SE-SW	22.1	17	13	C				
	WBT	SE-NW	6.4	1198	919	A				
	WBR	SW-NW	26.9	2	1	C				
	EBL	NW-NE	11.3	1	1	B				
	EBT	NW-SE	4.5	2271	2163	A				
	NBR	SW-SE	96.4	130	135	F				
Camino Don Tomas	WBL	E-S	50.5	19	57	D	21.63	C	26	C
	WBT	E-W	14.2	996	832	B				
	WBR	E-N	10.4	4	3	B				
	SBL	N-E	55.7	4	4	E				
	SBT	N-S	49.2	21	22	D				
	SBR	N-W	11.6	5	6	B				
	NBL	S-W	52.4	113	114	D				
	NBT	S-N	47.4	15	15	D				
	NBR	S-E	12.7	64	65	B				
	EBL	W-N	24.4	3	3	C				
	EBT	W-E	23.1	2200	1935	C				
	EBR	W-S	20.0	176	161	C				
NM 313	WBL	SE-S	31.7	88	87	C	30.97	C	22.9	C
	WBT	SE-NW	12.2	713	719	B				
	WBR	SE-N	12.4	123	127	B				
	SBL	N-SE	51.6	139	140	D				
	SBT	N-S	99.5	184	180	F				
	SBR	N-NW	52.1	92	95	D				
	NBL	S-NW	40.7	112	111	D				
	NBT	S-N	55.3	169	171	E				
	NBR	S-SE	62.8	79	86	E				
	EBL	NW-NE	23.8	90	88	C				
	EBT	NW-SE	26.5	1979	1691	C				
	EBR	NW-N	31.0	214	196	C				

2015 Existing PM Peak

Intersection with US 550	Movement	Direction	Simulation Delay (s)	Simulation Volume	Demand	Simulation LOS	Simulation Delay	Simulation LOS	Synchro Delay	Synchro LOS
NM 528	SBL	NE-SE	68.2	49	48	E	34.34	C	71.9	E
	SBT	NE-S	61.3	116	113	E				
	SBR	NE-NW	4.6	62	59	A				
	EBL	NW-NE	73.6	45	47	E				
	EBT	NW-SE	42.4	728	717	D				
	EBR	NW-S	2.6	108	110	A				
	WBL	SE-S	43.7	1119	998	D				
	WBT	SE-NW	21.5	1110	997	C				
	WBR	SE-NE	2.9	48	43	A				
	NBL	S-NW	61.1	159	156	E				
	NBT	S-NE	54.8	54	53	D				
	NBR	S-SE	23.6	677	661	C				
Jemez Dam Rd	SBL	NE-SE	56.8	162	163	E	12.61	B	13.9	B
	SBR	NE-NW	61.6	74	75	E				
	WBT	SE-NW	12.0	2220	2033	B				
	WBR	SE-NE	11.8	160	151	B				
	EBT	NW-SE	5.0	1365	1324	A				
	EBL	NW-NE	26.9	79	82	C				
Edmund Homestead	SBL	NE-SE	6.5	7	7	A	4.09	A	9.7	A
	SBR	NE-NW	22.8	72	69	C				
	WBL	SE-SW	19.6	13	11	B				
	WBT	SE-NW	2.9	2303	1956	A				
	WBR	SE-NE	3.2	7	6	A				
	EBL	NW-NE	40.9	30	28	D				
	EBT	NW-SE	4.1	1478	1452	A				
	EBR	NW-SW	2.6	6	5	A				
	NBL	SW-NW	43.4	1	1	D				
	NBR	SW-SE	11.6	11	10	B				
Kuaua/Sherrifs Posse	SBL	NE-SE	33.0	2	2	C	6.76	A	27.7	D
	WBL	SE-SW	15.3	2	2	B				
	WBT	SE-NW	10.2	2353	2199	B				
	WBR	SE-NE	3.8	2	1	A				
	EBL	NW-NE	41.9	5	5	D				
	EBT	NW-SE	1.2	1490	1488	A				
	NBR	SW-SE	5.5	91	96	A				
Camino Don Tomas	WBL	E-S	31.0	36	36	C	21.91	C	45.3	D
	WBT	E-W	17.6	1902	1964	B				
	WBR	E-N	21.9	4	4	C				
	SBL	N-E	39.2	21	21	D				
	SBT	N-S	39.6	44	41	D				
	SBR	N-W	13.3	30	31	B				
	NBL	S-W	45.9	305	300	D				
	NBT	S-N	36.9	21	20	D				
	NBR	S-E	8.9	88	88	A				
	EBL	W-N	43.4	26	24	D				
	EBT	W-E	22.6	1294	1239	C				
	EBR	W-S	16.4	161	146	B				
NM 313	WBL	SE-S	18.5	81	81	B	29.12	C	28.9	C
	WBT	SE-NW	20.7	1580	1571	C				
	WBR	SE-N	15.1	57	60	B				
	SBL	N-SE	40.7	126	126	D				
	SBT	N-S	61.6	154	155	E				
	SBR	N-NW	24.4	145	142	C				
	NBL	S-NW	44.3	273	273	D				
	NBT	S-N	53.5	170	164	D				
	NBR	S-SE	62.9	141	144	E				
	EBL	NW-NE	18.2	106	117	B				
	EBT	NW-SE	23.9	1067	1066	C				
	EBR	NW-N	40.4	252	250	D				

2035 No Build AM Peak

Intersection with US 550	Movement	Direction	Simulation Delay (s)	Simulation Volume	Demand	Simulation LOS	Simulation Delay	Simulation LOS	Synchro Delay	Synchro LOS
NM 528	WBL	SE-S	75.1499246	438	450	E	142.89	F	71.9	E
	WBT	SE-NW	44.2698196	639	640	D				
	WBR	SE-NE	2.87172202	314	322	A				
	SBL	NE-SW	77.0430365	54	123	E				
	SBT	NE-SE	69.9228043	6	53	E				
	SBR	NE-NW	78.7608938	96	68	E				
	NBL	S-NW	103.51572	126	157	F				
	NBT	S-NE	99.6566011	483	623	F				
	NBR	S-SE	144.278611	1119	1398	F				
	EBL	NW-S	200.563035	32	281	F				
	EBT	NW-SE	362.014254	778	2381	F				
	EBR	NW-NE	127.564288	87	100	F				
Jemez Dam Rd	WBL	SE-SW	50.6815514	156	168	D	38.84	D	13.9	B
	WBT	SE-NW	11.0631899	1151	1190	B				
	WBR	SE-NE	9.09415619	111	124	A				
	SBL	NE-SW	77.0430365	54	36	E				
	SBT	NE-SE	69.9228043	6	41	E				
	SBR	NE-NW	78.7608938	96	76	E				
	NBL	SW-NW	151.691045	140	146	F				
	NBT	SW-NE	90.8716308	62	66	F				
	NBR	SW-SE	87.2031355	224	230	F				
	EBL	NW-SE	36.3521443	1781	343	D				
	EBT	NW-SW	33.7872235	56	3452	C				
	EBR	NW-NE	51.5103363	174	107	D				
Edmund Homestead	WBL	SE-SW	30.6124324	9	10	C	2.66	A		
	WBT	SE-NW	1.64713751	1379	1422	A				
	WBR	SE-NE	2.32560926	21	24	A				
	SBL	NE-SW	31.3331723	3	15	C				
	SBT	NE-SE	7.51150081	15	3	A				
	SBR	NE-NW	12.1603536	63	58	B				
	NBL	SW-NW	16.3589645	2	2	B				
	NBT	SW-NE	24.0552743	7	11	C				
	NBR	SW-SE	11.8125946	11	11	B				
	EBL	NW-SE	2.70912034	2124	25	A				
	EBT	NW-SW	4.65729106	4	3647	A				
	EBR	NW-NE	13.6602769	3	46	B				
Kuaua/Sherrifs Posse	WBL	SE-SW	11.8880574	20	22	B	4.66	A		
	WBT	SE-NW	7.36166696	1408	1451	A				
	WBR	SE-NE	3.96550964	2	2	A				
	SBR	NE-SE	42.4687771	1	4	D				
	NBR	SW-SE	6.17782204	89	92	A				
	EBL	NW-SE	2.70912034	2124	5	A				
	EBT	NW-SW	4.65729106	4	3662	A				
	EBR	NW-NE	13.6602769	3	6	B				
Camino Don Tomas	WBL	S-W	217.37888	231	190	F	65.66	E	45.3	D
	WBT	S-N	151.348305	163	1186	F				
	WBR	S-E	153.215731	30	228	F				
	SBL	E-W	59.6296182	1171	14	E				
	SBT	E-S	116.546868	170	112	F				
	SBR	E-N	62.6177549	220	31	E				
	NBL	W-N	67.7758598	175	257	E				
	NBT	W-E	39.1243208	1655	168	D				
	NBR	W-S	31.2010973	261	30	C				
	EBL	N-S	68.429729	112	306	E				
	EBT	N-W	42.8852092	29	2820	D				
	EBR	N-E	85.6649343	16	454	F				
NM 313	WBL	SE-S	28.1097127	63	63	C	35.46	D	28.9	C
	WBT	SE-NW	32.6011605	1081	1078	C				
	WBR	SE-N	34.4911693	297	305	C				
	SBL	N-SE	59.9813801	105	104	E				
	SBT	N-S	64.6898989	125	120	E				
	SBR	N-NW	25.1909522	35	34	C				
	NBL	S-NW	41.8059378	442	441	D				
	NBT	S-N	57.8165975	426	426	E				
	NBR	S-SE	58.1617414	75	77	E				
	EBL	NW-S	18.5307498	418	371	B				
	EBT	NW-SE	26.707348	1152	1761	C				
	EBR	NW-N	40.973509	202.6	732	D				

No Build PM Peak

Intersection with US 550	Movement	Direction	Simulation Delay (s)	Simulation Volume	Demand	Simulation LOS	Simulation Delay	Simulation LOS	Synchro Delay	Synchro LOS
NM 528	WBL	SE-S	75.1499246	438	1300	E	147.50	F	71.9	E
	WBT	SE-NW	44.2698196	639	1623	D				
	WBR	SE-NE	2.87172202	314	863	A				
	SBL	NE-SW	127.369274	48	239	F				
	SBT	NE-SE	175.894391	422	617	F				
	SBR	NE-NW	131.458678	163	260	F				
	NBL	S-NW	103.51572	126	247	F				
	NBT	S-NE	99.6566011	483	73	F				
	NBR	S-SE	144.278611	1119	304	F				
	EBL	NW-S	200.563035	32	103	F				
	EBT	NW-SE	362.014254	778	1469	F				
	EBR	NW-NE	127.564288	87	314	F				
Jemez Dam Rd	WBL	SE-SW	122.163859	50	91	F	102.50	F	13.9	B
	WBT	SE-NW	86.7035281	2044	3478	F				
	WBR	SE-NE	76.3286602	260	462	E				
	SBL	NE-SW	127.369274	48	674	F				
	SBT	NE-SE	175.894391	422	67	F				
	SBR	NE-NW	131.458678	163	260	F				
	NBL	SW-NW	0	0	48					
	NBT	SW-NE	61.114133	5	44	E				
	NBR	SW-SE	53.3226549	9	76	D				
	EBL	NW-SE	101.845806	1445	127	F				
	EBT	NW-SW	88.9557961	46	1827	F				
	EBR	NW-NE	138.172259	96	58	F				
Edmund Homestead	WBL	SE-SW	42.1836875	6	11	D	32.16	C		
	WBT	SE-NW	21.1546417	2303	3831	C				
	WBR	SE-NE	12.9562499	10	19	B				
	SBL	NE-SW	1416.18315	3	147	F				
	SBT	NE-SE	1376.07002	3	14	F				
	SBR	NE-NW	1677.77449	41	198	F				
	NBL	SW-NW	52.1801433	2	2	D				
	NBT	SW-NE	63.2922446	11	11	E				
	NBR	SW-SE	21.7029661	11	11	C				
	EBL	NW-SE	3.96440852	1799	27	A				
	EBT	NW-SW	4.21968377	12	2459	A				
	EBR	NW-NE	31.5428431	3	91	C				
Kuaua/Sherrifs Posse	WBL	SE-SW	61.4648099	73	125	E	38.93	D		
	WBT	SE-NW	66.8979801	2273	3857	E				
	WBR	SE-NE	41.1208633	2	3	D				
	SBR	NE-SE	35.757974	1	3	D				
	NBR	SW-SE	5.43793882	71	72	A				
	EBL	NW-SE	3.96440852	12	5	A				
	EBT	NW-SW	4.21968377	1799	2464	A				
	EBR	NW-NE	31.5428431	3	96	C				
Camino Don Tomas	WBL	S-W	1309.69788	81	26	F	87.99	F	45.3	D
	WBT	S-N	891.931952	7	3146	F				
	WBR	S-E	881.039147	12	24	F				
	SBL	E-W	88.1508404	1994	60	F				
	SBT	E-S	110.902576	17	77	F				
	SBR	E-N	88.2927499	15	138	F				
	NBL	W-N	74.799269	44	574	E				
	NBT	W-E	30.9978999	1567	38	C				
	NBR	W-S	24.6059795	184	62	C				
	EBL	N-S	50.2377775	77	68	D				
	EBT	N-W	26.8803476	132	2146	C				
	EBR	N-E	55.5957927	61	264	E				
NM 313	WBL	SE-S	259.287556	46	67	F	212.33	F	28.9	C
	WBT	SE-NW	262.535867	1257	1901	F				
	WBR	SE-N	162.30426	52	79	F				
	SBL	N-SE	597.814803	71	268	F				
	SBT	N-S	694.170435	79	266	F				
	SBR	N-NW	612.848104	106	371	F				
	NBL	S-NW	311.31454	648	895	F				
	NBT	S-N	240.199285	101	144	F				
	NBR	S-SE	233.185556	93	128	F				
	EBL	NW-S	50.8340898	391	157	D				
	EBT	NW-SE	74.4338255	1217	1529	E				
	EBR	NW-N	128.840928	97	582	F				

6 Lane Alternative AM Peak

Intersection	Movement	Direction	Simulation Delay (s)	Simulation Volume	Demand	Simulation LOS	Simulation Delay	Simulation LOS	Synchro Delay	Synchro LOS
NM 528 & US 550	WBL	SE-S	64.0	495	450	E	68.19	E	-	-
	WBT	SE-NW	42.4	730	656	D				
	WBR	SE-NE	6.7	357	322	A				
	SBL	NE-SE	64.3	121	119	E				
	SBT	NE-S	43.2	53	53	D				
	SBR	NE-NW	0.3	70	68	A				
	NBL	S-NW	74.5	158	157	E				
	NBT	S-NE	53.1	623	623	D				
	NBR	S-SE	2.6	1388	1398	A				
	EBL	NW-NE	95.7	267	281	F				
	EBT	NW-SE	128.9	2249	2381	F				
	EBR	NW-S	124.2	88	100	F				
Jemez Dam Rd	WBL	SE-SW	106.8	196	178	F	46.68	D	113.7	F
	WBT	SE-NW	13.8	1357	1199	B				
	WBR	SE-NE	3.3	138	124	A				
	SBL	NE-SE	79.1	113	119	E				
	SBT	NE-SW	65.0	44	41	E				
	SBR	NE-NW	11.8	80	76	B				
	NBL	SW-NW	83.9	145	153	F				
	NBT	SW-NE	95.0	68	73	F				
	NBR	SW-SE	67.3	221	230	E				
	EBL	NW-NE	112.4	279	343	F				
	EBR	NW-SW	44.8	100	107	D				
	EBT	NW-SE	48.4	3322	3448	D				
Edmund Homestead	WBL	SE-SW	65.0	11	10	E	3.76	A	2.2	A
	WBT	SE-NW	3.1	1651	1431	A				
	WBR	SE-NE	3.0	27	24	A				
	SBR	NE-NW	11.6	63	58	B				
	NBR	SW-SE	20.6	16	11	C				
	EBL	NW-NE	18.8	25	25	B				
	EBT	NW-SE	3.5	3583	3723	A				
	EBR	NW-SW	4.2	47	49	A				
Kuaua/Sherrifs Posse	WBL	SE-SW	13.6	26	22	B	8.70	A	53.9	D
	WBT	SE-NW	2.0	1633	1460	A				
	WBR	SE-NE	2.5	3	2	A				
	SBL	NE-SE	41.0	1	1	D				
	SBR	NE-NW	8.2	4	4	A				
	NBL	SW-NW	61.9	2	1	E				
	NBR	SW-SE	45.8	91	92	D				
	EBL	NW-NE	14.8	5	5	B				
	EBT	NW-SE	10.8	3567	2521	B				
	EBR	NW-SW	10.3	6	15	B				
Santa Ana	WBR	E-NE	1.7	1	29	A	34.17	A	-	-
	WBT	E-W	0.4	1633	1462	A				
	SBR	NE-W	1.5	9	17	A				
	EBT	W-E	49.6	3401	3624	D				
	EBL	W-NE	50.5	163	174	D				
	EBR	W-S	42.9	30	18	D				
Camino Don Tomas & US 550	WBL	E-S	83.6	186	190	F	38.07	D	44	D
	WBT	E-W	28.4	1336	1186	C				
	WBR	E-N	36.6	223	231	D				
	SBL	N-E	75.5	59	59	E				
	SBT	N-S	64.0	112	112	E				
	SBR	N-W	10.0	41	40	A				
	NBL	S-W	82.6	260	266	F				
	NBT	S-N	65.5	166	168	E				
	NBR	S-E	47.9	53	55	D				
	EBL	W-N	28.5	253	307	C				
	EBT	W-E	34.1	2657	2846	C				
	EBR	W-S	31.3	441	471	C				
NM 313 & US 550	WBL	SE-S	36.3	66	63	D	39.08	D	30.1	D
	WBT	SE-NW	29.4	1126	1129	C				
	WBR	SE-N	13.0	303	305	B				
	SBL	N-SE	126.0	75	71	F				
	SBT	N-S	56.4	124	120	E				
	SBR	N-NW	36.6	27	25	D				
	NBL	S-NW	60.1	451	447	E				
	NBT	S-N	59.1	415	426	E				
	NBR	S-SE	28.1	73	77	C				
	EBL	NW-S	35.1	687	371	D				
	EBT	NW-SE	35.4	1825	1818	D				
	EBR	NW-N	47.4	343	732	D				

6 Lane Alternative PM Peak

Intersection with US 550	Movement	Direction	Simulation Delay (s)	Simulation Volume	Demand	Simulation LOS	Simulation Delay	Simulation LOS	Synchro Delay	Synchro LOS
NM 528	WBL	SE-S	58.7	1091	1300	E	37.56	D	-	-
	WBT	SE-NW	32.2	1480	1754	C				
	WBR	SE-NE	7.7	724	863	A				
	SBL	NE-SE	54.8	493	499	D				
	SBT	NE-S	51.8	610	617	D				
	SBR	NE-NW	5.1	255	260	A				
	NBL	S-NW	50.3	240	247	D				
	NBT	S-NE	46.4	73	73	D				
	NBR	S-SE	0.3	304	304	A				
	EBL	NW-NE	57.3	105	103	E				
	EBT	NW-SE	38.5	1424	1469	D				
	EBR	NW-S	43.8	311	314	D				
Jemez Dam Rd	WBL	SE-SW	65.4	81	102	E	41.70	D	91	F
	WBT	SE-NW	38.3	2980	3587	D				
	WBR	SE-NE	15.6	375	462	B				
	SBL	NE-SE	90.5	452	499	F				
	SBT	NE-SW	67.4	63	67	E				
	SBR	NE-NW	32.9	259	260	C				
	NBL	SW-NW	58.1	64	70	E				
	NBT	SW-NE	62.7	52	55	E				
	NBR	SW-SE	32.4	69	76	C				
	EBL	NW-NE	84.9	125	127	F				
	EBT	NW-SE	36.8	1986	2087	D				
	EBR	NW-SW	31.4	56	58	C				
Edmund Homestead	WBL	SE-SW	60.6	9	11	E	43.61	D	7.6	A
	WBT	SE-NW	41.4	3411	3942	D				
	WBR	SE-NE	30.6	15	19	C				
	SBR	NE-NW	1773.4	35	198	F				
	NBR	SW-SE	18.5	19	11	B				
	EBL	NW-NE	1233.9	11	27	F				
	EBT	NW-SE	17.0	2344	2530	B				
	EBR	NW-SW	14.3	98	105	B				
Kuaua/Sherrifs Posse	WBL	SE-SW	55.2	102	125	E	53.61	D	13.9	B
	WBT	SE-NW	73.3	3430	3957	E				
	WBR	SE-NE	69.8	3	3	E				
	SBL	NE-SE	31.4	1	1	C				
	SBR	NE-NW	63.3	4	3	E				
	NBL	SW-NW	59.2	1	1	E				
	NBR	SW-SE	32.3	68	72	C				
	EBL	NW-NE	47.5	5	5	D				
	EBT	NW-SE	24.8	2289	2521	C				
	EBR	NW-SW	15.1	13	15	B				
Santa Ana	WBR	E-NE	20.1	9	24	C	31.69	D	-	-
	WBT	E-W	26.4	3555	3948	C				
	SBR	NE-W	180.9	40	193	F				
	EBT	W-E	36.2	2128	2483	D				
	EBL	W-NE	211.0	20	61	F				
	EBR	W-S	27.1	57	50	C				
Camino Don Tomas	WBL	E-S	79.6	21	26	E	58.16	E	64.5	E
	WBT	E-W	88.2	2781	3146	F				
	WBR	E-N	94.7	69	81	F				
	SBL	N-E	76.6	185	190	E				
	SBT	N-S	94.5	70	77	F				
	SBR	N-W	72.9	237	238	E				
	NBL	S-W	58.1	583	599	E				
	NBT	S-N	60.3	35	38	E				
	NBR	S-E	21.1	132	137	C				
	EBL	W-N	47.8	64	76	D				
	EBT	W-E	15.3	1808	2094	B				
	EBR	W-S	9.2	264	313	A				
NM 313	WBL	SE-S	43.3	69	67	D	58.40	E	67.8	E
	WBT	SE-NW	46.9	1919	1930	D				
	WBR	SE-N	16.0	77	79	B				
	SBL	N-SE	69.4	175	181	E				
	SBT	N-S	53.3	275	266	D				
	SBR	N-NW	26.0	278	271	C				
	NBL	S-NW	164.9	786	909	F				
	NBT	S-N	91.4	132	144	F				
	NBR	S-SE	64.4	115	128	E				
	EBL	NW-N	57.6	132	157	E				
	EBT	NW-SE	35.5	1472	1582	D				
	EBR	NW-S	18.6	506	582	B				

Reversible Lane Alternative AM Peak

Intersection with US 550	Movement	Direction	Simulation Delay (s)	Simulation Volume	Demand	Simulation LOS	Simulation Delay	Simulation LOS	Synchro Delay	Synchro LOS
NM 528	WBL	SE-S	58.3	697	668	E	32.57	C		
	WBT	SE-NW	14.3	837	656	B				
	WBR	SE-NE	9.8	333	322	A				
	SBL	NE-SE	53.8	122	119	D				
	SBT	NE-S	30.9	46	53	C				
	SBR	NE-NW	0.0	68	68	A				
	NBL	S-NW	54.4	161	157	D				
	NBT	S-NE	40.6	649	623	D				
	NBR	S-SE	0.9	1404	1431	A				
	EBL	NW-NE	72.6	768	762	E				
	EBT	NW-SE	37.1	1982	1995	D				
	EBR	NW-S	39.3	99	100	D				
Jemez Dan Rd	WBT	SE-NW	11.5	1571	1577	B	33.05	C		
	WBR	SE-NE	13.3	111	124	B				
	SBL	NE-SE	56.0	123	119	E				
	SBT	NE-SW	254.8	45	46	F				
	SBR	NE-NW	254.5	78	76	F				
	NBL	SW-NW	69.2	221	153	E				
	NBT	SW-NE	90.6	84	73	F				
	NBR	SW-SE	67.6	140	230	E				
	EBT	NW-SE	29.7	3399	3438	C				
	EBR	NW-S	29.3	100	107	C				
Edmund Homestead	WBT	SE-NW	0.5	1714	1431	A	0.94	A		
	EBT	NW-SE	1.2	3620	3777	A				
Kuaua/Sherrifs Posse	WBT	SE-NW	2.8	1670	1662	A	1.58	A		
	WBR	SE-NE	2.5	6	7	A				
	SBL	NE-SE	32.7	1	1	C				
	SBR	NE-NW	0.7	3	4	A				
	NBL	SW-NW	27.4	1	1	C				
	NBR	SW-SE	19.0	98	92	B				
	EBT	NW-SE	0.5	3596	3760	A				
	EBR	NW-SW	2.7	26	28	A				
Santa Ana	WBR	E-NE	2.6	342	203	A	1.36	A		
	WBT	E-W	1.0	1637	1665	A				
	SBR	NE-W	6.8	16	17	A				
	EBT	W-E	1.4	3669	3624	A				
	EBR	W-S	2.5	34	19	A				
	NBR	SE-E	0.0	0	0					
Camino Don Tomas	WBT	E-W	15.9	1670	1562	B	21.49	C		
	WBR	E-N	20.7	466	538	C				
	SBL	N-E	62.8	59	59	E				
	SBT	N-S	52.7	113	112	D				
	SBR	N-W	1.7	43	40	A				
	NBL	S-W	52.9	266	266	D				
	NBT	S-N	55.6	162	168	E				
	NBR	S-E	45.1	57	55	D				
	EBT	W-E	19.3	3213	3363	B				
	EBR	W-S	11.9	375	471	B				
NM 313	WBL	SE-NW	36.9	261	253	D	83.00	F	67.8	E
	WBT	SE-NW	36.9	1109	1129	D				
	WBR	SE-N	16.0	299	305	B				
	SBL	N-SE	59.4	71	71	E				
	SBT	N-S	41.5	123	120	D				
	SBR	N-NW	5.5	24	25	A				
	NBL	S-NW	267.6	421	447	F				
	NBT	S-N	165.9	398	426	F				
	NBR	S-SE	130.0	69	77	F				
	EBL	NW-N	114.3	320	371	F				
	EBR	NW-SE	188.8	449	732	F				
	EBT	NW-S	40.4	1868	1857	D				
	EBU	NW-NW	21.5	695	0	C				

Reversible Lane Alternative PM Peak

Intersection with US 550	Movement	Direction	Simulation Delay (s)	Simulation Volume	Demand	Simulation LOS	Simulation Delay	Simulation LOS	Synchro Delay	Synchro LOS
NM 528	WBL	SE-S	53.0	1433	1569	D	37.45	D		
	WBT	SE-NW	31.3	1702	1754	C				
	WBR	SE-NE	11.7	885	863	B				
	SBL	NE-SE	56.4	506	499	E				
	SBT	NE-S	51.7	613	617	D				
	SBR	NE-NW	1.6	256	260	A				
	NBL	S-NW	56.1	298	247	E				
	NBT	S-NE	47.5	92	73	D				
	NBR	S-SE	0.2	374	441	A				
	EBL	NW-NE	64.1	344	341	E				
	EBT	NW-SE	37.0	1269	1268	D				
	EBR	NW-S	39.5	313	314	D				
Jemez Dan Rd	WBT	SE-NW	33.4	3697	3752	C	39.66	D		
	WBR	SE-NE	50.0	442	462	D				
	SBL	NE-SE	64.9	496	499	E				
	SBT	NE-SW	69.7	64	67	E				
	SBR	NE-NW	69.0	263	260	E				
	NBL	SW-NW	216.7	62	70	F				
	NBT	SW-NE	63.6	54	55	E				
	NBR	SW-SE	32.2	74	76	C				
	EBT	NW-SE	32.5	2099	2150	C				
	EBR	NW-S	35.0	56	58	D				
Edmund Homestead	WBT	SE-NW	4.3	4061	3942	A	3.22	A		
	EBT	NW-SE	1.5	2570	2714	A				
Kuaua/Sherrifs Posse	WBT	SE-NW	23.2	132	4031	C	20.45	C		
	WBR	SE-NE	11.0	240	8	B				
	SBL	NE-SE	13.5	3161	1	B				
	SBR	NE-NW	15.9	146	3	B				
	NBL	SW-NW	50.7	36	1	D				
	NBR	SW-SE	47.8	590	72	D				
	EBT	NW-SE	48.0	188	2585	D				
	EBR	NW-SW	52.0	72	140	D				
Santa Ana	WBR	E-NE	17.7	2170	85	B	25.87	C		
	WBT	E-W	11.3	293	3859	B				
	SBR	NE-W	58.7	275	193	E				
	EBT	W-E	56.1	274	2483	E				
	EBR	W-S	53.0	175	61	D				
	NBR	SE-E	0.0	0	0					
Camino Don Tomas	WBT	E-W	11.3	293	3107	B	26.79	C		
	WBR	E-N	17.7	2170	157	B				
	SBL	N-E	58.7	275	190	E				
	SBT	N-S	56.1	274	77	E				
	SBR	N-W	53.0	175	238	D				
	NBL	S-W	26.1	1643	599	C				
	NBT	S-N	11.8	529	38	B				
	NBR	S-E	55.5	138	137	E				
	EBT	W-E	60.4	171	2284	E				
	EBR	W-S	57.5	77	313	E				
NM 313	WBL	SE-S	1.8	58	133	A	23.39	C		
	WBT	SE-NW	1.1	2471	1930	A				
	WBR	SE-N	34.8	198	79	C				
	SBL	N-SE	38.8	145	181	D				
	SBT	N-S	116.9	132	266	F				
	SBR	N-NW	92.2	1900	271	F				
	NBL	S-NW	80.5	1	909	F				
	NBT	S-N	2.0	4	144	A				
	NBR	S-SE	1.7	2445	128	A				
	EBL	NW-N	76.2	905	157	E				
	EBT	NW-SE	1.8	3852	1682	A				
	EBR	NW-S	5.0	137	582	A				
	EBU	NW-NW	15.4	124	190	B				

Super Street Alternative AM Peak

Intersection with US 550	Movement	Direction	Simulation Delay (s)	Simulation Volume	Demand	Simulation LOS	Simulation Delay	Simulation LOS	Synchro Delay	Synchro LOS
NM 528	WBL	SE-S	72.8	468	450	E	39.07	D		
	WBT	SE-NW	17.2	678	656	B				
	WBR	SE-NE	5.3	334	322	A				
	SBL	NE-SE	61.7	154	153	E				
	SBT	NE-S	50.4	52	53	D				
	SBR	NE-NW	0.2	69	68	A				
	NBL	S-NW	73.4	159	157	E				
	NBT	S-NE	67.6	627	623	E				
	NBR	S-SE	18.5	1381	1398	B				
	EBL	NW-NE	68.9	280	281	E				
	EBT	NW-SE	41.5	2337	2381	D				
	EBR	NW-S	39.2	94	100	D				
Jemez Dam Rd	WBL	SE-SW	105.8	195	210	F	38.33	D		
	WBT	SE-NW	4.5	1397	1496	A				
	WBR	SE-NE	2.9	160	190	A				
	WBU	SE-SE	77.2	41	48	E				
	SBR	NE-NW	8.1	77	87	A				
	NBR	SW-SE	92.5	264	286	F				
	EBL	NW-NE	90.6	292	343	F				
	EBT	NW-SE	41.5	3407	3478	D				
	EBR	NW-SW	38.9	106	111	D				
Twin Warrior	WBT	SE-NW	6.8	1619	1475	A	19.53	B		
	WBR	SE-NE	4.9	8	10	A				
	SBL	NE-SE	58.3	90	89	E				
	SBR	NE-NW	7.5	47	49	A				
	NBL	SW-NW	99.4	160	163	F				
	NBR	SW-SE	128.5	186	201	F				
	EBT	NW-SE	15.4	3508	3724	B				
	EBR	NW-SW	14.3	184	201	B				
Edmund Homestead	WBL	SE-SW	68.8	53	53	E	16.53	B		
	WBT	SE-NW	8.5	1542	1431	A				
	WBR	SE-NE	9.9	29	24	A				
	WBU	SE-SE	41.0	1	1	D				
	SBR	NE-NW	5.0	45	44	A				
	NBR	SW-SE	94.2	10	11	F				
	EBL	NW-NE	17.9	28	25	B				
	EBT	NW-SE	19.2	3599	3723	B				
	EBR	NW-SW	17.5	88	95	B				
	EBU	NW-NW	11.3	51	53	B				
Kuaua	WBT	SE-NW	1.3	1606	1469	A	7.96	A		
	WBR	SE-NE	-0.5	3	2					
	SBR	NE-NW	12.2	5	5	B				
	EBL	NW-NE	22.0	4	5	C				
	EBT	NW-SE	12.1	3590	3730	B				
	EBU	NW-NW	25.2	4	5	C				
Sheriff's Pose	WBL	SE-SW	248.5	12	22	F	7.14	A		
	WBT	SE-NW	2.0	1609	1469	A				
	NBR	SW-SE	263.2	41	92	F				
	EBT	NW-SE	5.7	3579	3724	A				
	EBR	NW-SW	1.1	6	7	A				
Santa Ana	WBL	E-S	68.1	101	90	E	47.82	D		
	WBT	E-W	13.9	1567	1462	B				
	WBR	E-NE	12.5	1	29	B				
	WBU	E-E	67.8	229	212	E				
	SBR	NE-W	2.5	17	17	A				
	EBL	W-NE	50.7	161	174	D				
	EBT	W-E	61.6	3365	3624	E				
	EBR	W-S	62.4	24	18	E				
Camino Don Tomas	WBT	E-W	6.0	1505	1376	A	22.74	C		
	WBR	E-N	8.1	577	706	A				
	SBL	N-E	51.2	70	59	D				
	SBR	N-W	6.6	142	152	A				
	NBL	S-W	43.6	265	266	D				
	NBR	S-E	53.4	219	223	D				
	EBT	W-E	29.9	2926	3153	C				
	EBR	W-S	23.8	626	773	C				
Don Tomas U-Turn	WBT	E-W	9.2	1728	1794	A	12.97	B		
	WBR	E-N	9.9	14	15	A				
	WBU	E-E	15.0	7	6	B				
	EBL	W-N	68.6	18	18	E				
	EBT	W-E	10.5	2837	2942	B				
	EBU	W-W	58.0	281	475	E				
NM 313	WBL	SE-S	31.7	67	63	C	34.47	C		
	WBT	SE-NW	20.7	1137	1129	C				
	WBR	SE-N	12.3	305	305	B				
	SBL	N-SE	64.3	74	71	E				
	SBT	N-S	47.6	121	120	D				
	SBR	N-NW	37.4	25	25	D				
	NBL	S-NW	94.5	448	447	F				
	NBT	S-N	97.0	410	426	F				
	NBR	S-SE	80.6	72	77	F				
	EBL	NW-N	37.9	357	371	D				
	EBT	NW-SE	18.6	1892	1857	B				
	EBR	NW-S	22.8	712	732	C				

Super Street Alternative PM Peak

Intersection with US 550	Movement	Direction	Simulation Delay (s)	Simulation Volume	Demand	Simulation LOS	Simulation Delay	Simulation LOS	Synchro Delay	Synchro LOS
NM 528	WBL	SE-S	49.8	1257	1300	D	43.32	D		
	WBT	SE-NW	27.6	1687	1754	C				
	WBR	SE-NE	11.1	828	863	B				
	SBL	NE-SE	65.1	641	630	E				
	SBT	NE-S	56.3	607	617	E				
	SBR	NE-NW	2.6	258	260	A				
	NBL	S-NW	61.7	242	247	E				
	NBT	S-NE	57.1	73	73	E				
	NBR	S-SE	0.9	304	304	A				
	EBL	NW-NE	61.8	106	103	E				
	EBT	NW-SE	61.2	1467	1469	E				
	EBR	NW-S	85.0	314	314	F				
Jemez Dam Rd	WBL	SE-SW	52.4	146	152	D	18.02	B		
	WBT	SE-NW	11.7	3519	3602	B				
	WBR	SE-NE	5.0	458	506	A				
	WBU	SE-SE	47.4	54	59	D				
	SBR	NE-NW	70.3	262	260	E				
	NBR	SW-SE	5.7	105	108	A				
	EBL	NW-NE	53.3	128	127	D				
	EBT	NW-SE	20.1	2219	2212	C				
	EBR	NW-SW	19.4	63	64	B				
Twin Warrior	WBT	SE-NW	22.2	3997	3693	C	19.61	B		
	WBR	SE-NE	12.0	7	10	B				
	SBL	NE-SE	66.6	354	374	E				
	SBR	NE-NW	56.3	80	61	E				
	NBL	SW-NW	62.1	126	124	E				
	NBR	SW-SE	10.1	114.4	115	B				
	EBT	NW-SE	5.0	2239	2320	A				
	EBR	NW-SW	8.3	138	147	A				
Edmund Homestead	WBL	SE-SW	24.2	22	11	C	16.44	B		
	WBT	SE-NW	19.8	3825	4079	B				
	WBR	SE-NE	20.1	20	30	C				
	WBU	SE-SE	12.9	1	1	B				
	SBR	NE-NW	67.0	151	198	E				
	NBR	SW-SE	16.3	10	11	B				
	EBL	NW-NE	46.0	31	27	D				
	EBT	NW-SE	8.0	2520	2530	A				
	EBR	NW-SW	8.2	138	144	A				
	EBU	NW-NW	45.1	30	32	D				
Kuaua	WBT	SE-NW	5.0	3874	3985	A	11.31	B		
	WBR	SE-NE	0.9	3	3	A				
	SBR	NE-NW	132.5	2	4	F				
	EBL	NW-NE	187.1	3	5	F				
	EBT	NW-SE	0.7	2517	2522	A				
	EBU	NW-NW	161.3	3	13	F				
Sheriff's Pose	WBL	SE-SW	45.0	118	125	D	18.87	B		
	WBT	SE-NW	30.1	3877	3985	C				
	NBR	SW-SE	12.7	72	72	B				
	EBT	NW-SE	0.4	2502	2522	A				
	EBR	NW-SW	29.0	15	16	C				
Santa Ana	WBL	E-S	42.3	28	0	D	21.47	C		
	WBT	E-W	20.9	3849	3948	C				
	WBR	E-NE	21.0	10	11	C				
	WBU	E-E	56.3	66	103	E				
	SBR	NE-W	48.2	197	193	D				
	EBL	W-NE	40.1	61	61	D				
	EBT	W-E	18.8	2447	2483	B				
	EBR	W-S	16.8	65	50	B				
Camino Don Tomas	WBT	E-W	12.8	3073	3146	B	16.13	B		
	WBR	E-N	8.4	282	195	A				
	SBL	N-E	73.6	198	190	E				
	SBR	N-W	57.2	296	315	E				
	NBL	S-W	43.2	592	599	D				
	NBR	S-E	18.9	168	175	B				
	EBT	W-E	4.8	2140	2176	A				
	EBR	W-S	6.3	358	416	A				
Don Tomas U-Turn	WBT	E-W	18.8	3150	3172	B	16.04	B		
	WBR	E-N	18.7	47	54	B				
	WBU	E-E	41.0	38	40	D				
	EBL	W-N	54.7	30	35	D				
	EBT	W-E	7.4	2267	2386	A				
	EBU	W-W	58.9	207	114	E				
NM 313	WBL	SE-S	32.5	68	67	C	39.33	D		
	WBT	SE-NW	33.7	1926	1930	C				
	WBR	SE-N	9.2	77	79	A				
	SBL	N-SE	54.5	176	181	D				
	SBT	N-S	59.1	275	266	E				
	SBR	N-NW	9.9	277	271	A				
	NBL	S-NW	55.7	911	909	E				
	NBT	S-N	38.3	147	144	D				
	NBR	S-SE	31.3	126	128	C				
	EBL	NW-N	52.5	141	157	D				
	EBT	NW-SE	41.5	1570	1582	D				
	EBR	NW-S	29.1	534	582	C				

Appendix L-VISSIM Queuing Output

Queue Analysis Summary Tables

6 Lane Alternative

Intersection	Movement	Direction	AM Peak		PM Peak	
			50th Percentile Queue	95th Percentile Queue	50th Percentile Queue	95th Percentile Queue
NM 528 & US 550	WBL	SE-S	49	107	35	42
	WBR	SE-NE	5	9	4	7
	SBL	NE-SE	5	30	34	145
	SBR	NE-NW	7	45	0	0
	NBL	S-NW	47	233	6	21
	NBR	S-SE	16	99	0	0
	EBL	NW-NE	22	42	20	40
Jemez Dam Rd	WBL	SE-SW	179	325	49	61
	WBR	SE-NE	0	0	1	1
	SBL	NE-SE	41	65	210	341
	SBR	NE-NW	49	79	229	362
	NBL	SW-NW	155	275	34	42
	EBL	NW-NE	375	631	214	391
Camino Don Tomas & US 550	WBL	E-S	137	212	1066	1304
	SBL	N-E	80	121	171	267
	SBR	N-W	1	1	153	282
	NBL	S-W	130	168	142	177
	EBL	W-N	849	1643	69	85
	EBR	W-S	31	164	2	3
NM 313 & US 550	WBL	SE-S	13	22	86	109
	WBR	SE-N	19	69	1	1
	SBL	N-SE	83	146	135	169
	SBR	N-NW	81	146	135	169
	NBL	S-NW	107	153	666	917
	NBR	S-SE	0	1	667	918
	EBL	NW-S	114	200	141	208
	EBR	NW-N	44	88	45	80

Reverisble Lanes Alternative

Intersection with US 550	Movement	AM Peak		PM Peak	
		50th Percentile Queue	95th Percentile Queue	50th Percentile Queue	95th Percentile Queue
NM 528	WBL	31	32	17	54
	WBR	29	36	1	2
	SBL	0	0	0	0
	SBR	0	0	2	10
	NBL	0	0	0	0
	NBR	1	1	0	0
	EBL	16	18	56	57
	EBR	0	0	0	0
Jamez Dam	SBL	38	43	192	293
	NBL	115	132	131	217
	NBR	88	161	109	208
Kuaua/Sherrifs Posse	SBL	1	4	1	3
	NBL	1	2	4	9
Camino Don Tomas	SBL	77	86	111	124
	SBR	0	0	96	111
	NBL	111	156	124	131
	EBR	2	3	1	2
NM 313	WBL	93	106	83	212
	WBR	8	12	1	1
	SBL	46	52	163	230
	SBR	40	46	163	230
	NBL	834	1244	345	552
	NBR	2	4	12	21
	EBL and EBUT	511	621	153	162
	EBR	52	69	8	13

Super Street Alternative

Intersection with US 550	Movement	AM Peak		PM Peak	
		50th Percentile Queue	95 th Percentile Queue	50th Percentile Queue	95 th Percentile Queue
NM 528	WBL	32	39	26	33
	WBR	11	14	3	4
	SBL	49	54	206	248
	SBR	0	0	0	0
	NBL	197	375	59	66
	NBR	273	570	29	36
	EBL	11	12	6	7
	EBR	1	1	30	60
Jemez Dam Rd	WBL and UT	126	169	41	48
	WBR	1	1	1	2
	SBR	5	7	126	173
	NBR	171	396	2	3
	EBL	269	404	63	72
Twin Worrior	WBR	1	2	1	1
	SBL	46	54	115	152
	SBR	19	27	107	146
	NBL	231	344	73	94
	NBR	233	346	72	94
	EBR	5	6	1	1
Edmond /Homestead	WBL and WBUT	205	409	26	21
	NBR	8	21	1	2
	EBL and EBUT	10	21	1	1
Kuaua	SBR	1	2	31	78
	EBL	90	156	58	110
	EBU	89	153	32	87
Sheriff's Pose	WBL	131	253	25	31
	NBR	304	465	6	9
Santa Ana	WBL and WBUT	135	178	24	29
	SBR	1	1	77	153
	EBL	4	7	6	8
Camino Don Tomas	WBR	0	0	3	5
	SBL	23	30	178	378
	SBR	13	19	184	386
	NBL	84	114	91	98
	NBR	88	121	90	98
	EBR	0	0	1	2
Don Tomas U-Turn	WBU	1	1	8	10
	EBL and EBUT	278	333	121	133
NM 313	WBL	12	16	11	13
	WBR	16	20	1	2
	SBL	53	64	128	161
	SBR	48	59	127	161
	NBL	392	588	195	229
	NBR	19	29	29	34
	EBL	114	164	174	219
	EBR	41	60	39	60

Appendix M-Construction Cost Estimates

NEW MEXICO DEPARTMENT OF TRANSPORTATION

PHASE B ESTIMATE OF PROBABLE CONSTRUCTION COST
ALTERNATIVE 1 - US 550 MINUS NM 528 INTERSECTION - 3 LANES IN EACH DIRECTION

Name of Road: US 550

County of: SANDOVAL

Type: ROADWAY CONSTRUCTION

Prepared by: BOHANNAN HUSTON INC

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
207000	SUBGRADE PREPARATION	SQ YD	81,000	$1.25	$101,250.00
303000	BASE COURSE	T	60,000	$17.25	$1,035,000.00
407000	ASPHALT MATERIAL FOR TACK COAT	T	30	$482.00	$14,460.00
408100	PRIME COAT MATERIAL	T	160	$497.00	$79,520.00
423250	HMA SP III COMPLETE	SQ YD	81000.00	$50.00	$4,050,000.00
601110	REMOVAL OF SURFACING	SQ YD	101,900	$3.25	$331,175.00
608004	CONCRETE SIDEWALK 4"	SQ YD	8,000	$40.00	$320,000.00
609424	CONCRETE VERTICAL CURB AND GUTTER TYPE B 6"X24"	LF	16,500	$13.00	$214,500.00
609478	CONCRETE VERTICAL CURB AND GUTTER TYPE D 6"X18"	LF	15,800	$10.00	$158,000.00
618000	TRAFFIC CONTROL MANAGEMENT	LS	1	$250,000.00	$250,000.00
621000	MOBILIZATION	LS	1	$1,300,000.00	$1,300,000.00
801000	CONSTRUCTION STAKING BY THE CONTRACTOR	LS	1	$200,000.00	$200,000.00
706XXX	LIGHTING	EA	126	$5,000.00	$630,000.00
701XXX	TRAFFIC CONTROL	LS	1	$650,000.00	$650,000.00
	DRAINAGE	LS	1	$2,185,000.00	$2,185,000.00
	SIGNALIZATION	LS	1	$750,000.00	$750,000.00
	LANDSCAPING	LS	1	$200,000.00	$200,000.00
	ROADWAY MISCELLANEOUS (30%)	LS	1	$2,500,000.00	$2,500,000.00
	SUBTOTAL				$14,968,905.00
	NEW MEXICO GROSS RECEIPTS TAX @ 7.0625%				$1,057,178.92
	ENGINEERING & CONTINGENCIES @ 3.0%				$449,067.15
	TOTAL				**$16,475,151.07**

This estimate of construction cost is only an opinion. BHI cannot & does not guarantee that proposals, bids, or actual Construction Costs will not vary from this opinion.

NEW MEXICO DEPARTMENT OF TRANSPORTATION

PHASE B ESTIMATE OF PROBABLE CONSTRUCTION COST
ALTERNATIVE 6 - US 550 MINUS NM 528 INTERSECTION -REVERSIBLE

Name of Road: US 550

County of: SANDOVAL

Type: ROADWAY CONSTRUCTION

Prepared by: BOHANNAN HUSTON INC

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
207000	SUBGRADE PREPARATION	SQ YD	88,000	$1.25	$110,000.00
303000	BASE COURSE	T	61,000	$17.25	$1,052,250.00
407000	ASPHALT MATERIAL FOR TACK COAT	T	30	$482.00	$14,460.00
408100	PRIME COAT MATERIAL	T	170	$497.00	$84,490.00
423250	HMA SP III COMPLETE	SQ YD	88000.00	$50.00	$4,400,000.00
601110	REMOVAL OF SURFACING	SQ YD	101900.00	$3.25	$331,175.00
608004	CONCRETE SIDEWALK 4"	SQ YD	8300	$40.00	$332,000.00
609424	CONCRETE VERTICAL CURB AND GUTTER TYPE B 6"X24"	LF	16000	$13.00	$208,000.00
609478	CONCRETE VERTICAL CURB AND GUTTER TYPE D 6"X18"	LF	6600	$10.00	$66,000.00
618000	TRAFFIC CONTROL MANAGEMENT	LS	1	$213,000.00	$213,000.00
621000	MOBILIZATION	LS	1	$1,070,000.00	$1,070,000.00
801000	CONSTRUCTION STAKING BY THE CONTRACTOR	LS	1	$160,000.00	$160,000.00
706XXX	LIGHTING	EA	126	$5,000.00	$630,000.00
701XXX	TRAFFIC CONTROL	LS	1	$530,000.00	$530,000.00
	DRAINAGE	LS	1	$2,185,000.00	$2,185,000.00
	SIGNALIZATION	LS	1	$400,000.00	$400,000.00
	LANDSCAPING	LS	1	$200,000.00	$200,000.00
	ROADWAY MISCELLANEOUS (30%)	LS	1	$3,000,000.00	$3,000,000.00
	SUBTOTAL				$14,986,375.00
	NEW MEXICO GROSS RECEIPTS TAX @ 7.0625%				$1,058,412.73
	ENGINEERING & CONTINGENCIES @ 3.0%				$449,591.25
	TOTAL				**$16,494,378.98**

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NEW MEXICO DEPARTMENT OF TRANSPORTATION

PHASE B ESTIMATE OF PROBABLE CONSTRUCTION COST
ALTERNATIVE 6 - US 550 MINUS NM 528 INTERSECTION - SUPER STREET

Name of Road: US 550

County of: SANDOVAL

Type: ROADWAY CONSTRUCTION

Prepared by: BOHANNAN HUSTON INC

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
207000	SUBGRADE PREPARATION	SQ YD	80,000	$1.25	$100,000.00
303000	BASE COURSE	T	60,000	$17.25	$1,035,000.00
407000	ASPHALT MATERIAL FOR TACK COAT	T	30	$482.00	$14,460.00
408100	PRIME COAT MATERIAL	T	150	$497.00	$74,550.00
423250	HMA SP III COMPLETE	SQ YD	80000.00	$50.00	$4,000,000.00
601110	REMOVAL OF SURFACING	SQ YD	101900.00	$3.25	$331,175.00
608004	CONCRETE SIDEWALK 4"	SQ YD	7400	$40.00	$296,000.00
609424	CONCRETE VERTICAL CURB AND GUTTER TYPE B 6"X24"	LF	15800	$13.00	$205,400.00
609478	CONCRETE VERTICAL CURB AND GUTTER TYPE D 6"X18"	LF	16300	$10.00	$163,000.00
618000	TRAFFIC CONTROL MANAGEMENT	LS	1	$277,000.00	$277,000.00
621000	MOBILIZATION	LS	1	$1,400,000.00	$1,400,000.00
801000	CONSTRUCTION STAKING BY THE CONTRACTOR	LS	1	$208,000.00	$208,000.00
706XXX	LIGHTING	EA	126	$5,000.00	$630,000.00
701XXX	TRAFFIC CONTROL	LS	1	$700,000.00	$700,000.00
	DRAINAGE	LS	1	$2,265,000.00	$2,265,000.00
	SIGNALIZATION	LS	1	$1,000,000.00	$1,000,000.00
	LANDSCAPING	LS	1	$200,000.00	$200,000.00
	ROADWAY MISCELLANEOUS (30%)	LS	1	$3,050,000.00	$3,050,000.00
	SUBTOTAL				$15,949,585.00
	NEW MEXICO GROSS RECEIPTS TAX @ 7.0625%				$1,126,439.44
	ENGINEERING & CONTINGENCIES @ 3.0%				$478,487.55
	TOTAL				**$17,554,511.99**

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NEW MEXICO DEPARTMENT OF TRANSPORTATION

PHASE B ESTIMATE OF PROBABLE CONSTRUCTION COST
NM528/US550 CONTINOUS LEFT INTERSECTION

Name of Road: US 550

County of: SANDOVAL

Type: ROADWAY CONSTRUCTION

Prepared by: BOHANNAN HUSTON INC

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
207000	SUBGRADE PREPARATION	SQ YD	43,000	$1.25	$53,750.00
303000	BASE COURSE	T	23,000	$17.25	$396,750.00
407000	ASPHALT MATERIAL FOR TACK COAT	T	20	$482.00	$9,640.00
408100	PRIME COAT MATERIAL	T	80	$497.00	$39,760.00
423250	HMA SP III COMPLETE	SQ YD	43000.00	$50.00	$2,150,000.00
601110	REMOVAL OF SURFACING	SQ YD	24100.00	$3.25	$78,325.00
608004	CONCRETE SIDEWALK 4"	SQ YD	3707	$40.00	$148,266.67
609424	CONCRETE VERTICAL CURB AND GUTTER TYPE B 6"X24"	LF	6708	$13.00	$87,204.00
609478	CONCRETE VERTICAL CURB AND GUTTER TYPE D 6"X18"	LF	10171	$10.00	$101,710.00
618000	TRAFFIC CONTROL MANAGEMENT	LS	1	$130,000.00	$130,000.00
621000	MOBILIZATION	LS	1	$649,000.00	$649,000.00
801000	CONSTRUCTION STAKING BY THE CONTRACTOR	LS	1	$98,000.00	$98,000.00
706XXX	LIGHTING	EA	10	$5,000.00	$50,000.00
701XXX	TRAFFIC CONTROL	LS	1	$325,000.00	$325,000.00
	DRAINAGE	LS	1	$200,000.00	$200,000.00
	SIGNALIZATION	LS	1	$400,000.00	$400,000.00
	LANDSCAPING	LS	1	$100,000.00	$100,000.00
	ROADWAY MISCELLANEOUS (30%)	LS	1	$1,426,000.00	$1,426,000.00
	SUBTOTAL				$6,443,405.67
	NEW MEXICO GROSS RECEIPTS TAX @ 7.0625%				$455,065.53
	ENGINEERING & CONTINGENCIES @ 3.0%				$193,302.17
	TOTAL				**$7,091,773.36**

This estimate of construction cost is only an opinion. BHI cannot & does not guarantee that proposals, bids, or actual Construction Costs will not vary from this opinion.

NEW MEXICO DEPARTMENT OF TRANSPORTATION

PHASE A ESTIMATE OF PROBABLE CONSTRUCTION COST
OPTION 3 - NM 550 / NM 528 INTERSECTION - SUPER STREET

Name of Road: US 550

County of: SANDOVAL

Type: ROADWAY CONSTRUCTION

Prepared by: BOHANNAN HUSTON INC

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
207000	SUBGRADE PREPARATION	SQ YD	38,000	$1.25	$47,500.00
303000	BASE COURSE	T	21,000	$17.25	$362,250.00
407000	ASPHALT MATERIAL FOR TACK COAT	T	20	$482.00	$9,640.00
408100	PRIME COAT MATERIAL	T	70	$497.00	$34,790.00
423250	HMA SP III COMPLETE	SQ YD	38000.00	$50.00	$1,900,000.00
601110	REMOVAL OF SURFACING	SQ YD	24100.00	$3.25	$78,325.00
608004	CONCRETE SIDEWALK 4"	SQ YD	3621	$40.00	$144,822.22
609424	CONCRETE VERTICAL CURB AND GUTTER TYPE B 6"X24"	LF	6010	$13.00	$78,130.00
609478	CONCRETE VERTICAL CURB AND GUTTER TYPE D 6"X18"	LF	5275	$10.00	$52,750.00
618000	TRAFFIC CONTROL MANAGEMENT	LS	1	$36,000.00	$36,000.00
621000	MOBILIZATION	LS	1	$200,000.00	$200,000.00
801000	CONSTRUCTION STAKING BY THE CONTRACTOR	LS	1	$27,000.00	$27,000.00
701XXX	TRAFFIC CONTROL	LS	1	$90,000.00	$90,000.00
	SIGNALIZATION	LS	1	$400,000.00	$400,000.00
	LANDSCAPING	LS	1	$100,000.00	$100,000.00
	DRAINAGE	LS	1	$200,000.00	$200,000.00
	ROADWAY MISCELLANEOUS (30%)	LS	1	$645,000.00	$645,000.00

SUBTOTAL	$4,406,207.22
NEW MEXICO GROSS RECEIPTS TAX @ 7.0625%	$311,188.39
ENGINEERING & CONTINGENCIES @ 3.0%	$132,186.22
TOTAL	**$4,849,581.82**

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NEW MEXICO DEPARTMENT OF TRANSPORTATION

PHASE B ESTIMATE OF PROBABLE CONSTRUCTION COST
OPTION 5 - NM 550 / NM 528 INTERSECTION - FLYOVER

Name of Road: US 550

County of: SANDOVAL

Type: ROADWAY CONSTRUCTION

Prepared by: BOHANNAN HUSTON INC

NO.	ITEM	UNIT	QTY	PRICE	AMOUNT
207000	SUBGRADE PREPARATION	SQ YD	54,000	$1.25	$67,500.00
303000	BASE COURSE	T	30,000	$17.25	$517,500.00
407000	ASPHALT MATERIAL FOR TACK COAT	T	20	$482.00	$9,640.00
408100	PRIME COAT MATERIAL	T	110	$497.00	$54,670.00
423250	HMA SP III COMPLETE	SQ YD	54000.00	$50.00	$2,700,000.00
601110	REMOVAL OF SURFACING	SQ YD	24100.00	$3.25	$78,325.00
608004	CONCRETE SIDEWALK 4"	SQ YD	4994	$40.00	$199,777.78
609424	CONCRETE VERTICAL CURB AND GUTTER TYPE B 6"X24"	LF	9730	$13.00	$126,490.00
609478	CONCRETE VERTICAL CURB AND GUTTER TYPE D 6"X18"	LF	9020	$10.00	$90,200.00
618000	TRAFFIC CONTROL MANAGEMENT	LS	1	$247,000.00	$247,000.00
621000	MOBILIZATION	LS	1	$1,235,000.00	$1,235,000.00
801000	CONSTRUCTION STAKING BY THE CONTRACTOR	LS	1	$186,000.00	$186,000.00
706XXX	LIGHTING	EA	10	$5,000.00	$50,000.00
701XXX	TRAFFIC CONTROL	LS	1	$618,000.00	$618,000.00
	FLYOVER BRIDGE AND MSE WALLS	LS	1	$4,550,000.00	$4,550,000.00
	DRAINAGE	LS	1	$200,000.00	$200,000.00
	SIGNALIZATION	LS	1	$400,000.00	$400,000.00
	LANDSCAPING	LS	1	$100,000.00	$100,000.00
	ROADWAY MISCELLANEOUS (30%)	LS	1	$2,713,000.00	$2,713,000.00

SUBTOTAL	$14,143,102.78
NEW MEXICO GROSS RECEIPTS TAX @ 7.0625%	$998,856.63
ENGINEERING & CONTINGENCIES @ 3.0%	$424,293.08
TOTAL	**$15,566,252.49**

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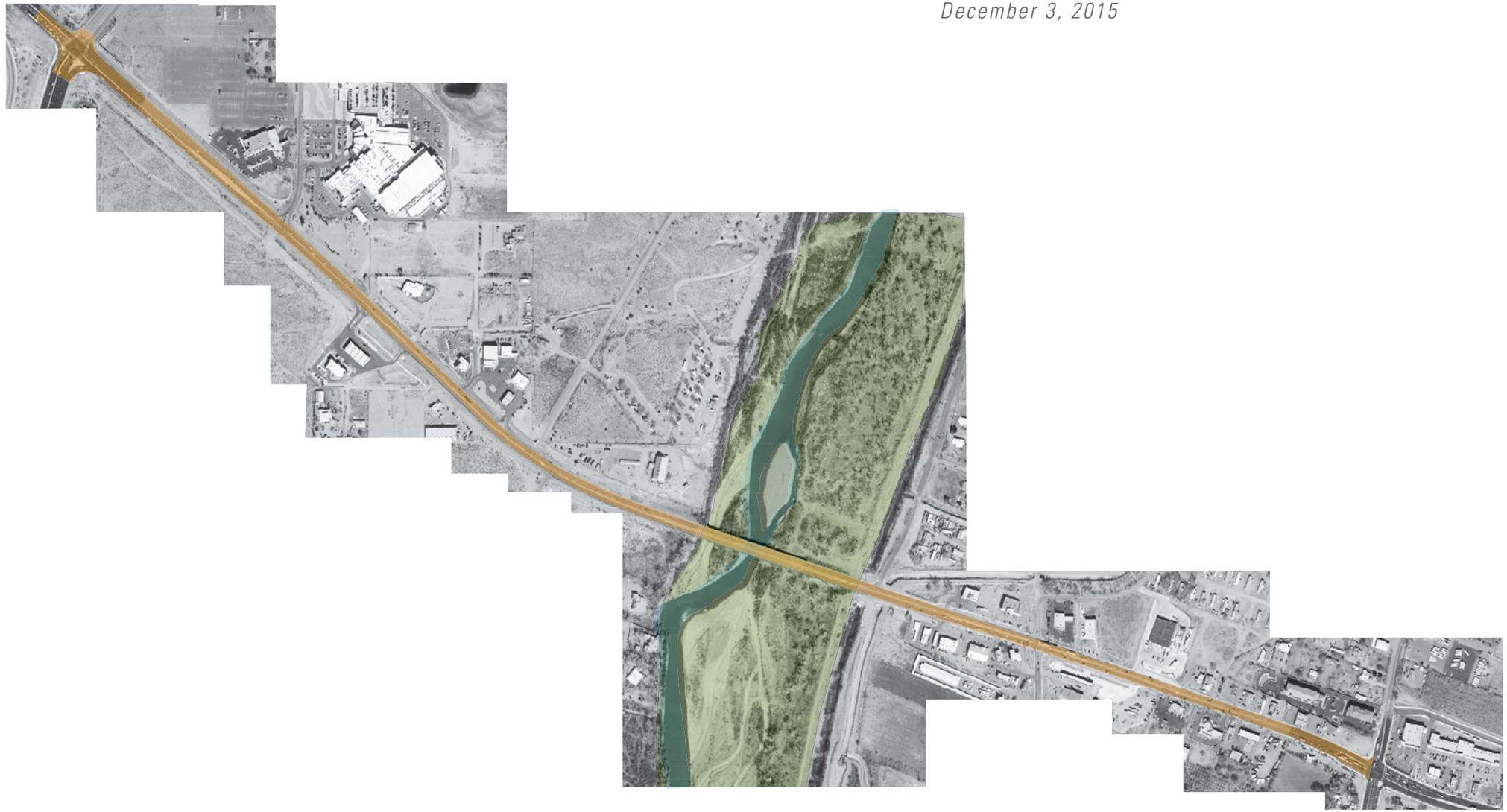
Appendix N-Landscape Master Plan

U.S. Department of Transportation
Federal Highway Administration

US 550 LANDSCAPE IMPROVEMENTS

December 3, 2015



U.S. Department of Transportation
Federal Highway Administration

LEE ENGINEERING
Terracon
MARRON and ASSOCIATES
DEKKER PERICH SABATINI ARCHITECTURE DESIGN INSPIRATION
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INTRODUCTION

In September 2014, the NM Department of Transportation published the Corridor Study Report - US 550 from Paseo Del Volcan to NM 313: Phase 1A- Initial Evaluation of Alternatives (Report). The intent of the report was to evaluate alternative road designs that would "reduce congestion..., increase safety, minimize access conflicts, create economic development opportunities, and recommend facilities for alternative modes of travel." The report included as assessment of the corridor and recommendations for further study of viable options. Further study included Phase 1-B, which is now coming to a close. Phase 1-B assesses roadway design alternatives for the 2-mile stretch of US 550 between NM 528 and NM 313 (North Camino Del Pueblo), and includes a landscape master plan for this section of the corridor.

The landscape master plan illustrates opportunities for site and planting improvements within the context of the anticipated Phase 1-B recommended roadway design. The intent of the landscape master plan is to create a framework of improvements that can be implemented over time to support traffic engineering goals related to safety, economic development and promoting alternative modes of travel.

VALUES/CHARACTERISTICS

The landscape master plan is created from a foundation of planning and site design values created specifically for this project. This stretch of US 550 is heavily used by Bernalillo locals, commuters traveling between Albuquerque, Rio Rancho and/or Santa Fe, and regional travelers driving between the Four Corners and the Middle Rio Grande region. Site and planting improvements within the corridor will be experienced by many people and have the potential for establishing strong positive impressions about the area. The following design values and characteristics were established at the beginning of this effort in order to guide the development of solutions for the project.

Context Sensitive Design

The corridor passes through Bernalillo, Rio Rancho, and Santa Ana Pueblo. It crosses the Rio Grande and directs traveler's views toward the Sandia Mountains and the West Mesa. Site and planting design solutions need to concurrently address both human and natural conditions as one social/ecological system, since one does not exist without the other. Design solutions need to be developed with community input in order to truly reflect local knowledge of place and culture.

Authenticity

Improvements need to be true and faithful to the established theme or design concept so they can have meaning. Implementing design solutions that consistently reinforce themes and concepts at a hierarchy of scales along the corridor, will create a visually powerful and genuine aesthetic and a memorable experience for visitors.

Regionalism

Aesthetic improvements need to reflect the locale in some way. Site and planning design solutions that reflect regional characteristics will create an intuitive understanding of place for people passing through, and convey a shared understanding of the region or community's character and vision.

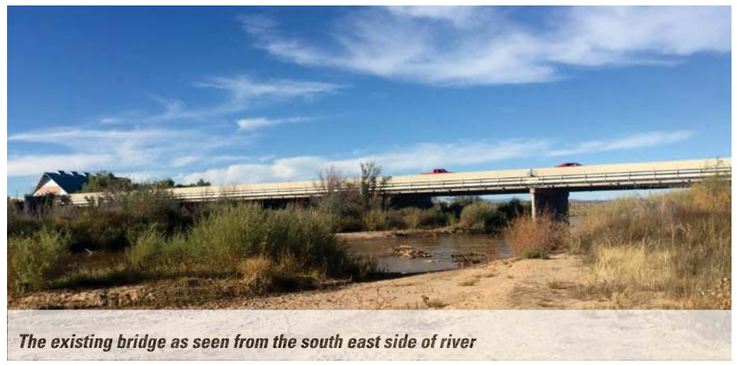
Simplicity

Simple strong design solutions in this visually chaotic and varied corridor will help create safer conditions. Design solutions should address wayfinding and attentiveness by clearly defining and designing zones for people, bicycles and vehicles, in a way that establishes a rhythm and identity along the corridor, but is not distracting.

Welcome sign: eastbound view on west side of the river

Mountain view from west side of the river

Entrance sign: west side of the river



The existing bridge as seen from the south east side of river

Rio Grande looking north from the bridge

Commercial corridor: east side of the river

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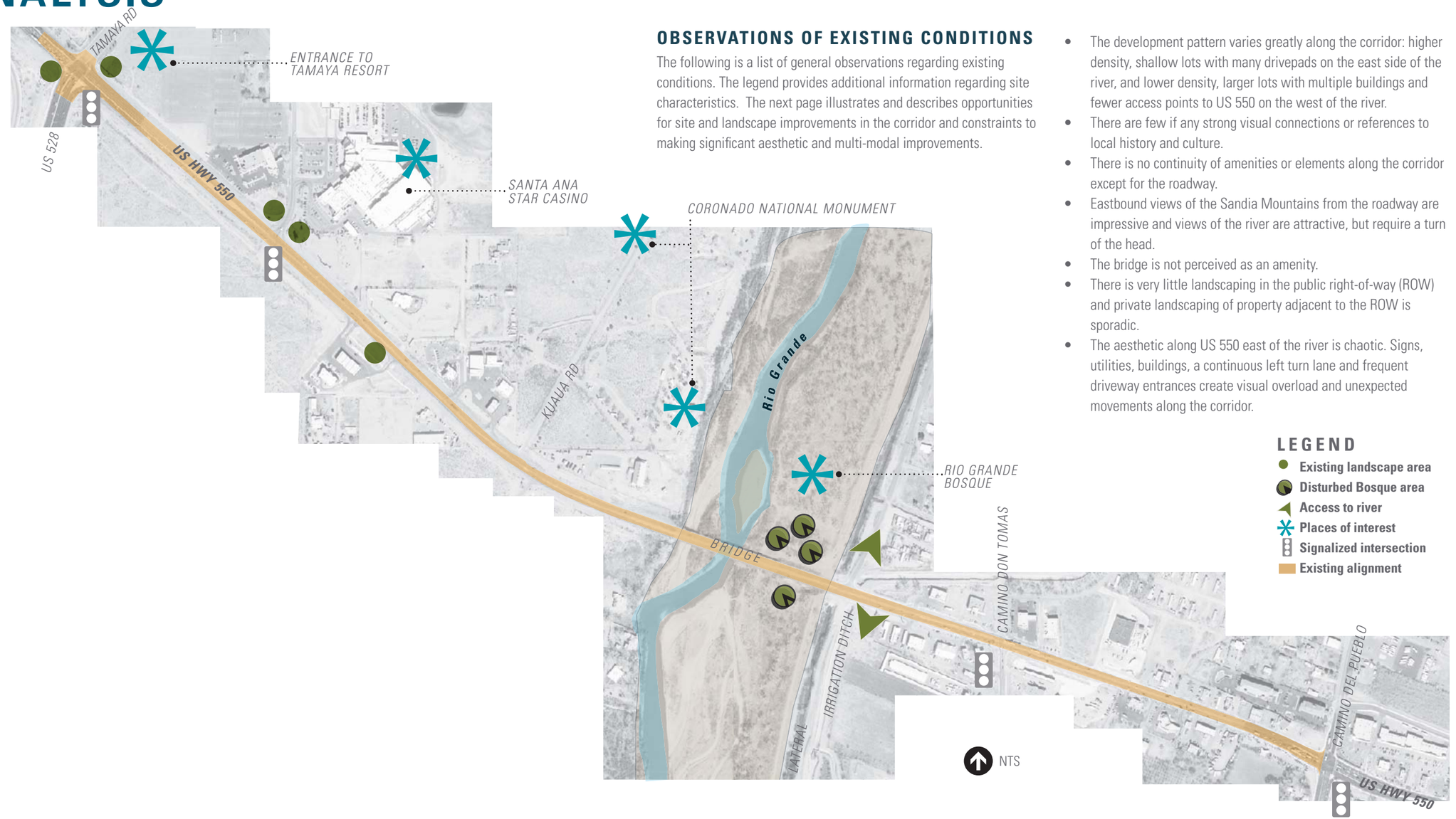
SITE ANALYSIS



OBSERVATIONS OF EXISTING CONDITIONS

The following is a list of general observations regarding existing conditions. The legend provides additional information regarding site characteristics. The next page illustrates and describes opportunities for site and landscape improvements in the corridor and constraints to making significant aesthetic and multi-modal improvements.

- The development pattern varies greatly along the corridor: higher density, shallow lots with many drivepads on the east side of the river, and lower density, larger lots with multiple buildings and fewer access points to US 550 on the west of the river.
- There are few if any strong visual connections or references to local history and culture.
- There is no continuity of amenities or elements along the corridor except for the roadway.
- Eastbound views of the Sandia Mountains from the roadway are impressive and views of the river are attractive, but require a turn of the head.
- The bridge is not perceived as an amenity.
- There is very little landscaping in the public right-of-way (ROW) and private landscaping of property adjacent to the ROW is sporadic.
- The aesthetic along US 550 east of the river is chaotic. Signs, utilities, buildings, a continuous left turn lane and frequent driveway entrances create visual overload and unexpected movements along the corridor.

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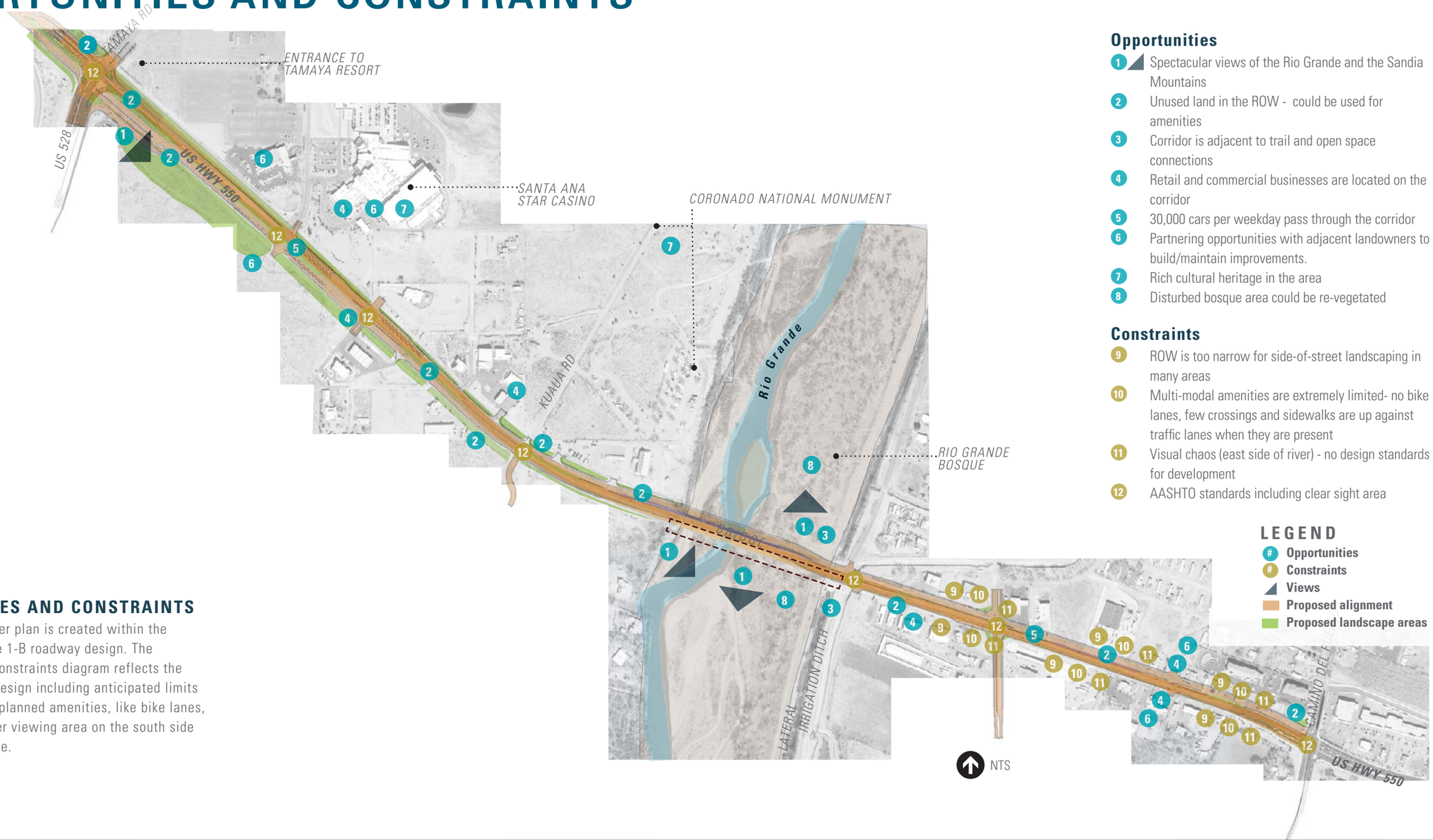
OPPORTUNITIES AND CONSTRAINTS



Opportunities

1. Spectacular views of the Rio Grande and the Sandia Mountains
2. Unused land in the ROW - could be used for amenities
3. Corridor is adjacent to trail and open space connections
4. Retail and commercial businesses are located on the corridor
5. 30,000 cars per weekday pass through the corridor
6. Partnering opportunities with adjacent landowners to build/maintain improvements.
7. Rich cultural heritage in the area
8. Disturbed bosque area could be re-vegetated

Constraints

9. ROW is too narrow for side-of-street landscaping in many areas
10. Multi-modal amenities are extremely limited- no bike lanes, few crossings and sidewalks are up against traffic lanes when they are present
11. Visual chaos (east side of river) - no design standards for development
12. AASHTO standards including clear sight area

LEGEND

- # Opportunities
- # Constraints
- Views
- Proposed alignment
- Proposed landscape areas

OPPORTUNITIES AND CONSTRAINTS

The landscape master plan is created within the context of the Phase 1-B roadway design. The Opportunities and Constraints diagram reflects the proposed roadway design including anticipated limits of right-of way and planned amenities, like bike lanes, sidewalks and a river viewing area on the south side of the existing bridge.

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RECOMMENDATIONS

WAYFINDING AND SIGNAGE

Establish wayfinding landmarks along the corridor to establish a sense of arrival and place, create continuity, and help orient people to the area. Integrate interpretive signage into special pedestrian areas like the bridge in order to celebrate local history, culture and/or environmental resources.

BRIDGE IMPROVEMENTS

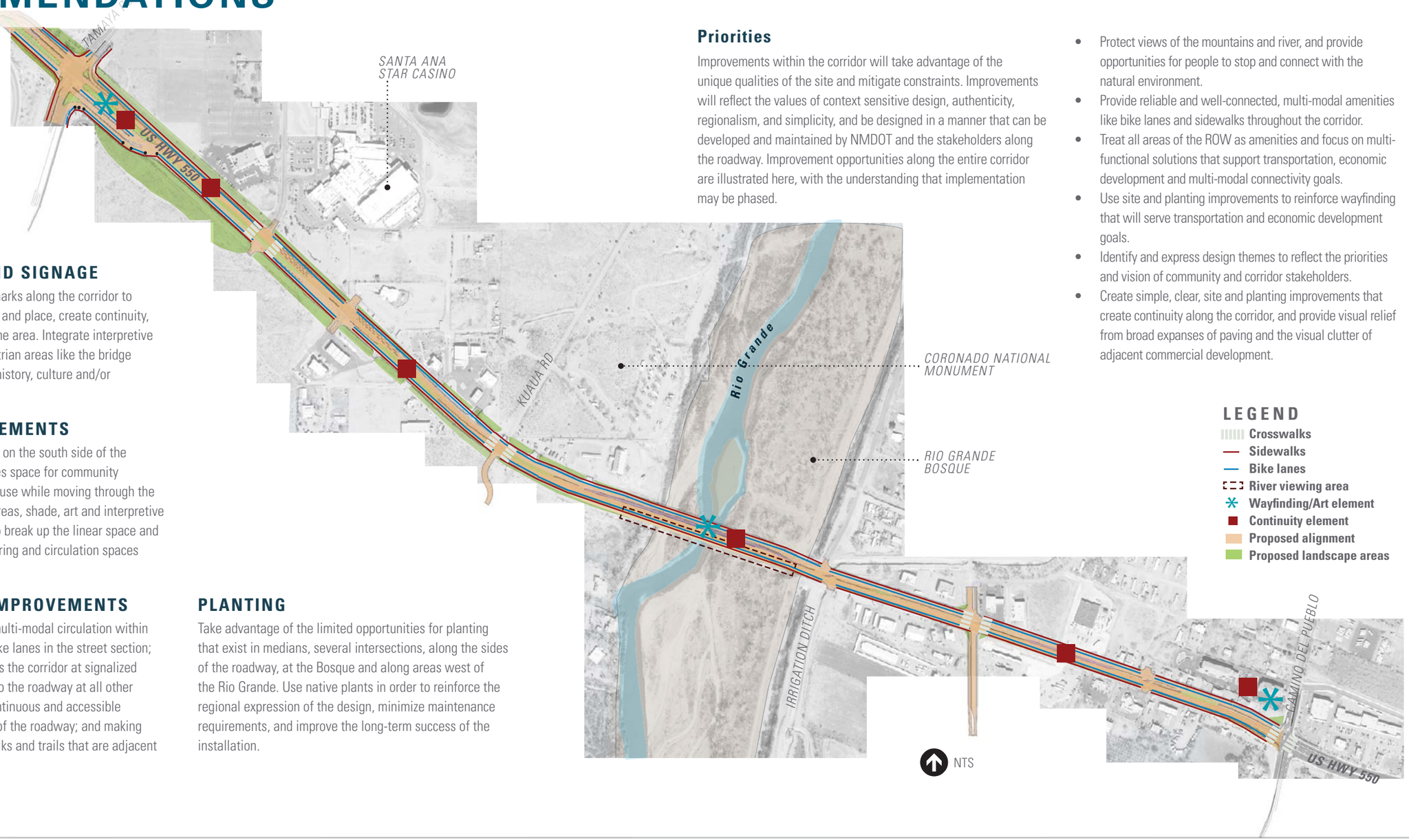
Create a river viewing area on the south side of the existing bridge that provides space for community members and visitors to pause while moving through the corridor. Integrate sitting areas, shade, art and interpretive elements into the design to break up the linear space and create a hierarchy of gathering and circulation spaces along the bridge.

MULTI-MODAL IMPROVEMENTS

Improve connectivity and multi-modal circulation within the corridor by including bike lanes in the street section; providing crosswalks across the corridor at signalized intersections and parallel to the roadway at all other intersections; providing continuous and accessible sidewalks along the sides of the roadway; and making connections to existing walks and trails that are adjacent to the roadway.

PLANTING

Take advantage of the limited opportunities for planting that exist in medians, several intersections, along the sides of the roadway, at the Bosque and along areas west of the Rio Grande. Use native plants in order to reinforce the regional expression of the design, minimize maintenance requirements, and improve the long-term success of the installation.



Priorities

Improvements within the corridor will take advantage of the unique qualities of the site and mitigate constraints. Improvements will reflect the values of context sensitive design, authenticity, regionalism, and simplicity, and be designed in a manner that can be developed and maintained by NMDOT and the stakeholders along the roadway. Improvement opportunities along the entire corridor are illustrated here, with the understanding that implementation may be phased.

- Protect views of the mountains and river, and provide opportunities for people to stop and connect with the natural environment.
- Provide reliable and well-connected, multi-modal amenities like bike lanes and sidewalks throughout the corridor.
- Treat all areas of the ROW as amenities and focus on multi-functional solutions that support transportation, economic development and multi-modal connectivity goals.
- Use site and planting improvements to reinforce wayfinding that will serve transportation and economic development goals.
- Identify and express design themes to reflect the priorities and vision of community and corridor stakeholders.
- Create simple, clear, site and planting improvements that create continuity along the corridor, and provide visual relief from broad expanses of paving and the visual clutter of adjacent commercial development.

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WAYFINDING & SIGNAGE

Develop complementary wayfinding landmarks along the corridor to establish a sense of arrival and place, create continuity, and help orient people to the area. Integrate interpretive signage into special pedestrian areas like the bridge in order to celebrate local history, culture and/or environmental resources.

PLAZAS AND PARKS

Create multi-functional park/plaza spaces at Camino del Pueblo and along the south side of the existing bridge that can be used by local residents, cyclists and pedestrians. Strategic integration of art, materials, signage, water harvesting and landscaping will result in functional, attractive civic amenities that also serve as wayfinding features in the corridor.

Access to parks and open space is an important part of community health and wellness. Just adding two of these civic amenities along this stretch of US 550 will provide high visibility relief from traffic and vehicle-oriented commercial development patterns, and help establish a unique local identity and presence.

1 - PAT D'ARCO HIGHWAY

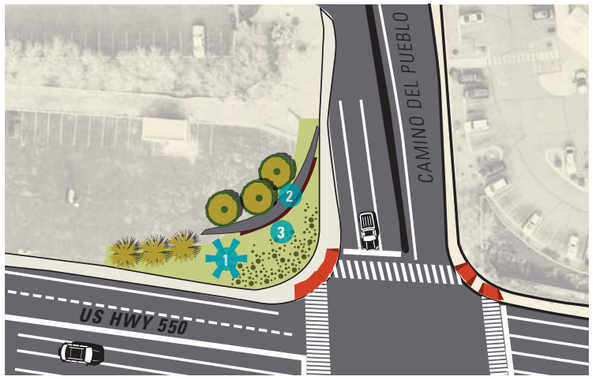
Place one or more wayfinding elements at this large intersection in order to highlight a major crossroad for Bernalillo, Santa Ana Pueblo and Rio Rancho. Select art, landscaping and materials to create an aesthetic that represents the area and establishes a deliberate level of quality for the corridor.

2 - RIO GRANDE BRIDGE

Create wayfinding landmarks on both bridges to celebrate the river, establish a sense of arrival and place, and reinforce the sequence of passage through the corridor. The wayfinding elements should reinforce the importance of the river and not compete with it. Additionally, create an educational interpretive sign system for use along the river viewing area located on the south side of the existing bridge.

3 - CAMINO DEL PUEBLO

Develop a corner park plaza and identification sign to serve as a wayfinding landmark at this important intersection. Select art, landscaping and materials to create an aesthetic that represents Bernalillo and establishes a deliberate level of quality for the corridor. Design ideas for site planning and aesthetics are included on this page.



CONCEPT A: with vertical art piece

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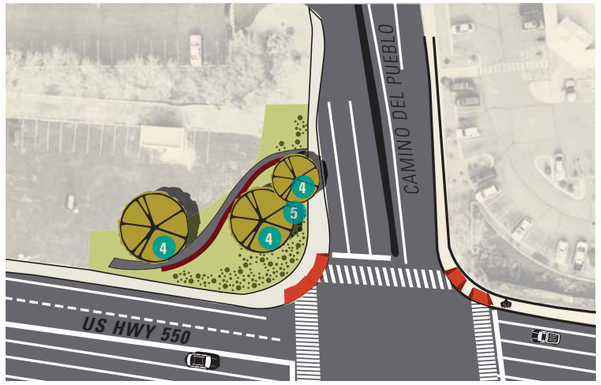


CONCEPT B: with cottonwood trees

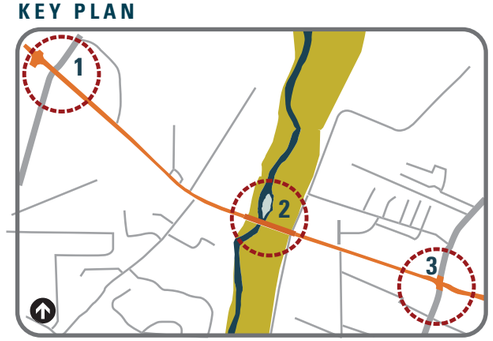
NTS

CAMINO DEL PUEBLO PARK/PLAZA

LEGEND

1. Vertical art piece
2. Screen wall
3. Sign on wall
4. Cottonwood tree
5. Water harvesting area

KEY PLAN



An urban plaza aesthetic could be an option for a park/plaza at Camino Del Pueblo

Clear identification signage with regional materials and landscaping can create a memorable landmark

A park-like design with pedestrian amenities would soften this end of US 550 and activate the streetscape

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WAYFINDING & SIGNAGE

WAYFINDING LANDMARKS

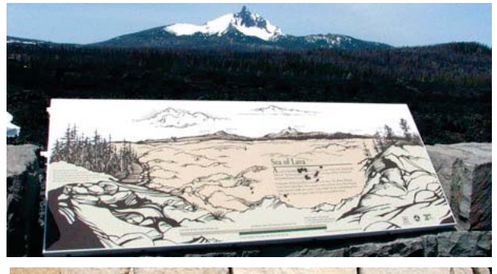
Use art in the landscape for wayfinding and to help establish a visual identity for the corridor. Art needs to be carefully selected in order to optimize opportunities for branding and promotion, create a consistent and appropriate aesthetic for the corridor, engage people without being distracting, and establish a sense of sequence and continuity in the corridor. The examples below all share a naure theme.

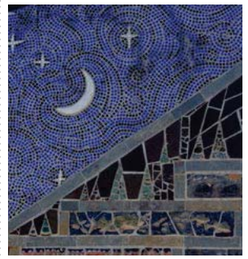
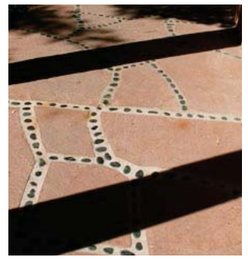
IDENTIFICATION SIGNS

Consider using large identification signs in strategic locations in order convey information about the locale to travelers. Sign design can be used to establish a corridor aesthetic and convey design themes. The three dimensional qualities of the sign are as important as the words on the sign.

INTERPRETATIVE SIGNAGE

Create a coordinated system of interpretive signs for use in ROW areas used by pedestrians and cyclists. Coordinated sign systems assist with wayfinding and orientation, and contribute to a feeling of continuity within the corridor. Use interpretive signs to educate visitors about the culture and history of the area as well as about recreation opportunities and local natural resource amenities.



MATERIALS

Deliberate and consistent material selection will go a long way in establishing the aesthetic for the corridor. Authentic materials that have a history of use in the area, will reinforce the sense of place.

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MULTI-MODAL IMPROVEMENTS

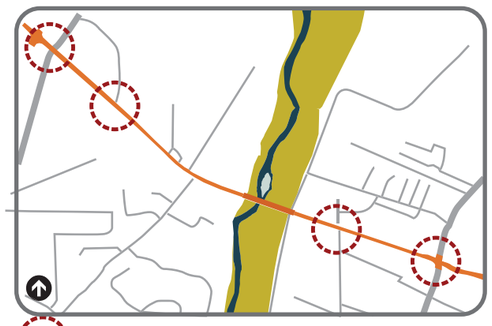
Improve connectivity and multi-modal circulation within the corridor by including bike lanes in the street section; providing crosswalks across the corridor at signalized intersections and parallel to the roadway at all other intersections; providing continuous and accessible sidewalks along the side of the roadway; and connections to existing walks and trails that are adjacent to the roadway.

Trailhead

Bike lane

Crosswalk and accessible ramp

KEY PLAN



Locations of crosswalks

Crosswalk texture

Trailheads

Highlight connections to the Rio Grande and Bosque with a trailhead feature.

Bike Lanes

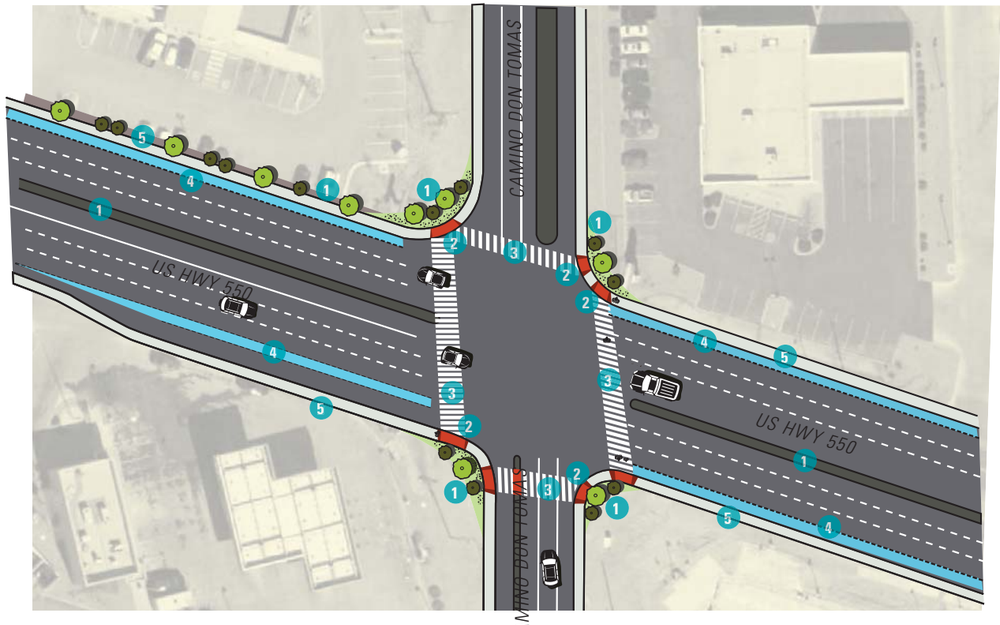
Accentuate the presence of bike lanes with pavement markings, signage and graphics.

Accessible Ramps

Provide accessible ramps at crosswalks and driveways.

Crosswalks

Accentuate the importance of pedestrians in the corridor with highly visible and graphic crosswalks. Decorative crosswalks could help reinforce site and landscape themes in the corridor.



PLAN VIEW - INTERSECTION DESIGN AT US HWY 550 AND CAMINO DON TOMAS

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LEGEND

1. Landscape where feasible
2. Accessible ramps
3. Crosswalk
4. Bike lane
5. Sidewalk

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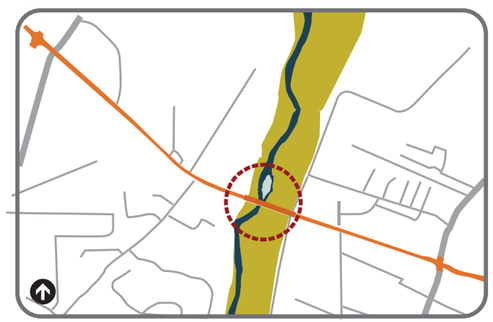
BRIDGE IMPROVEMENTS

The Phase 1-B roadway design includes a 20'-wide river viewing area on the south side of the existing bridge. The viewing area is conceived as a civic space that accommodates multi-modal circulation, provides an outdoor gathering spot for people where they can admire the river, provide a scenic resting spot for people, provides educational information about local history, culture and the natural environment. Two concepts are included here to illustrate how amenities might be grouped and distributed along the bridge.

KEY NOTES (CONCEPTS A + B)

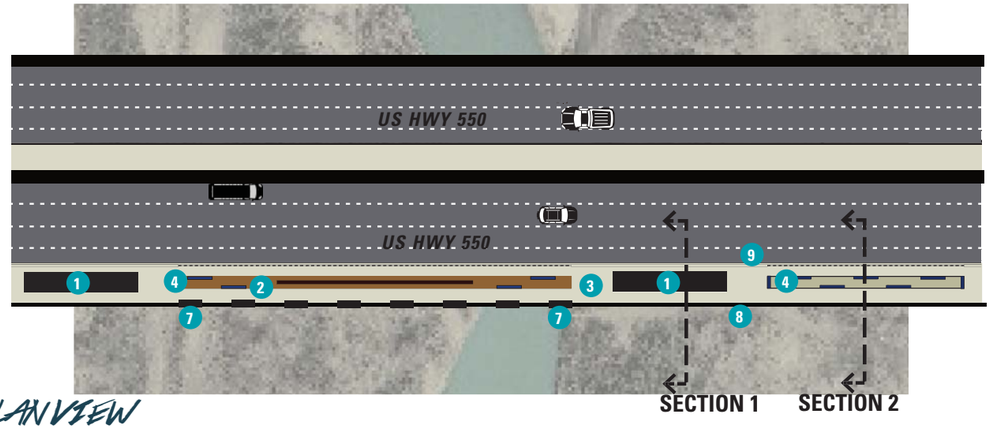
1. Bench structure with canopy
2. Sculpture area (possible themes: Town of Bernalillo, New Mexico or natural landmarks and scenery)
3. New paving
4. Rock mulch area with benches
5. Multi-use path
6. Bike path
7. Interpretative sign
8. Bridge barrier rail
9. Concrete wall barrier - 42" high
10. Rock mulch with vertical element
11. Bench combination with planter

KEY PLAN



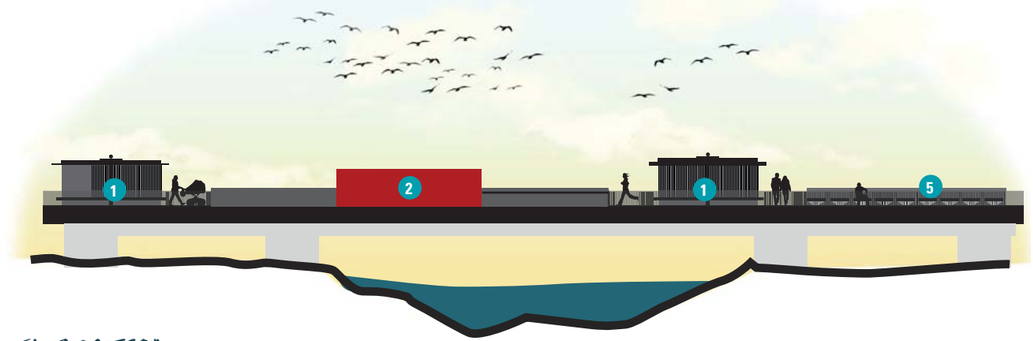
CONCEPT A

- Subdivide the space into a four-element module with shade structures, raised seating areas, art and interpretive areas.
- Introduce continuity elements like stone blocks or screen walls that will occur in medians and elsewhere along the corridor.
- Use raised mulch areas to break up the linear expanse of paving and help define circulation areas.



PLAN VIEW

NTS



ELEVATION

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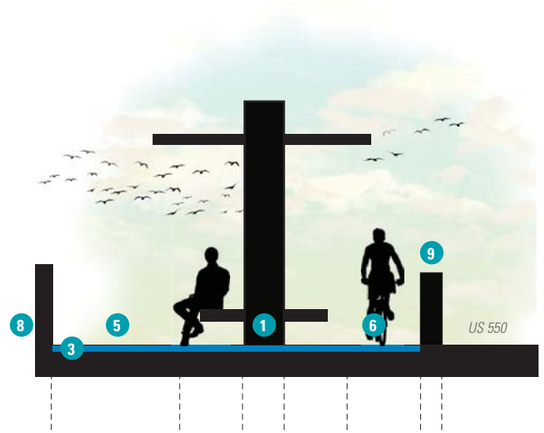

SECTION 1

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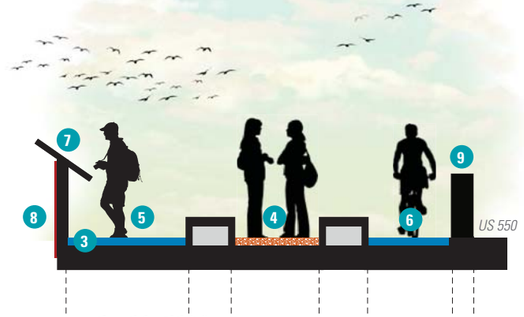

SECTION 2

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BRIDGE IMPROVEMENTS

CONCEPT B

- Subdivide the space into a fine grain of elements - with decking, seating and xeric planter combinations, art and interpretive areas.
- Introduce continuity elements like stone blocks, screen walls, art or stone blocks, that will occur in medians and elsewhere along the corridor.
- Use raised mulch areas and decking to break up the linear expanse of paving and help define circulation area.

KEY NOTES (CONCEPTS A + B)

1. Bench structure with canopy
2. Sculpture area (possible themes: Town of Bernalillo, New Mexico or natural landmarks and scenery)
3. New paving
4. Rock mulch area with benches
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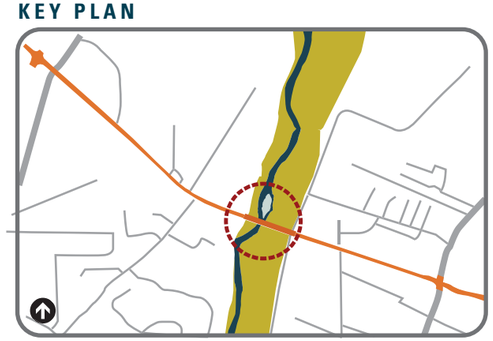
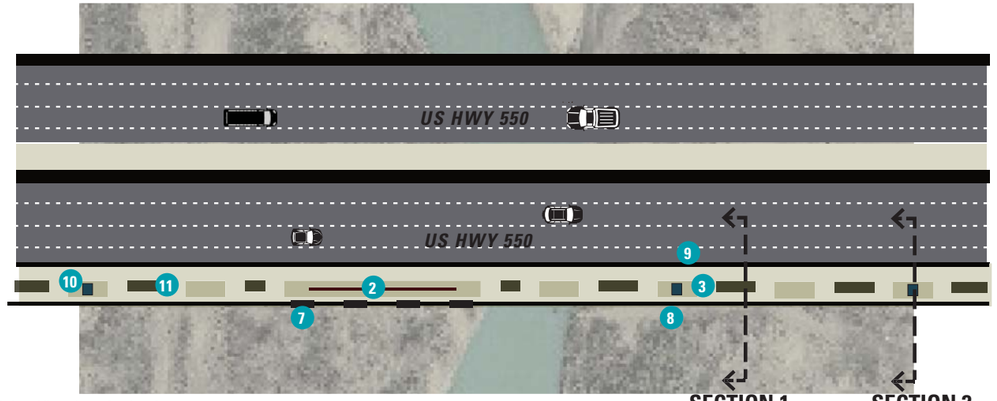
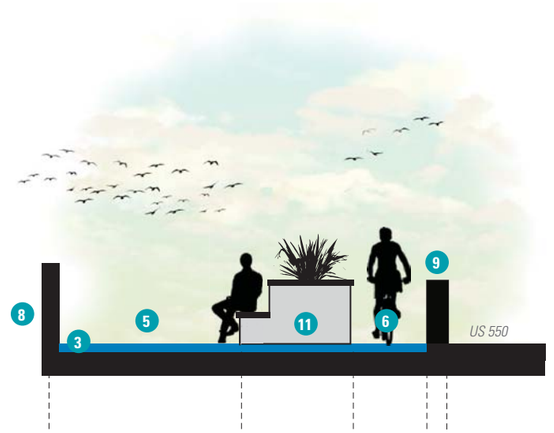




PLAN VIEW

NTS



SECTION 1

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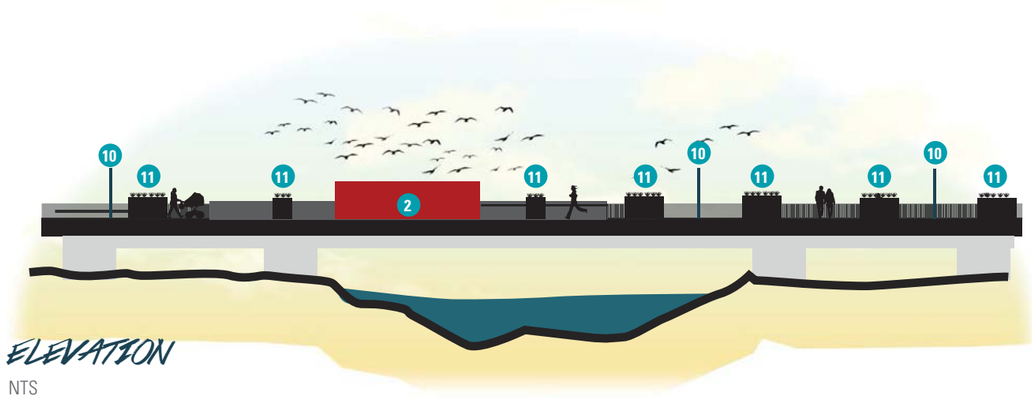
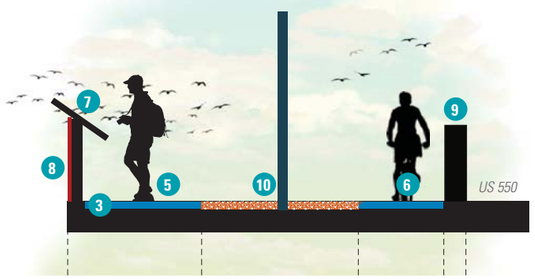


ELEVATION

NTS



SECTION 1

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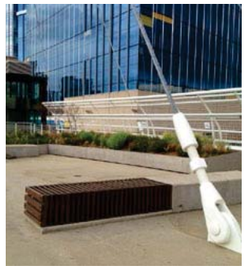
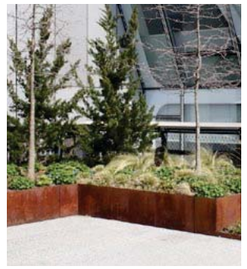
BRIDGE IMPROVEMENTS

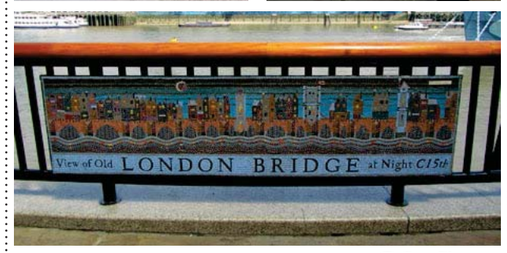
BENCHES



PLANTERS



MURALS



VERTICAL ELEMENTS

MATERIALS

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BENEFITS AND LOCATIONS FOR PLANTING

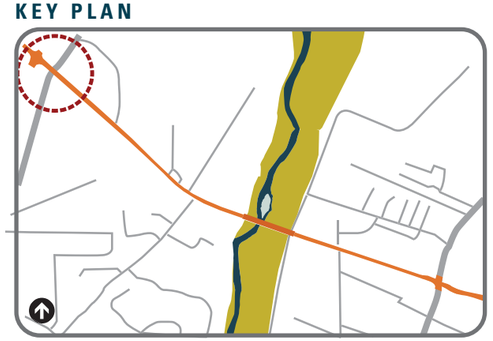
BENEFITS

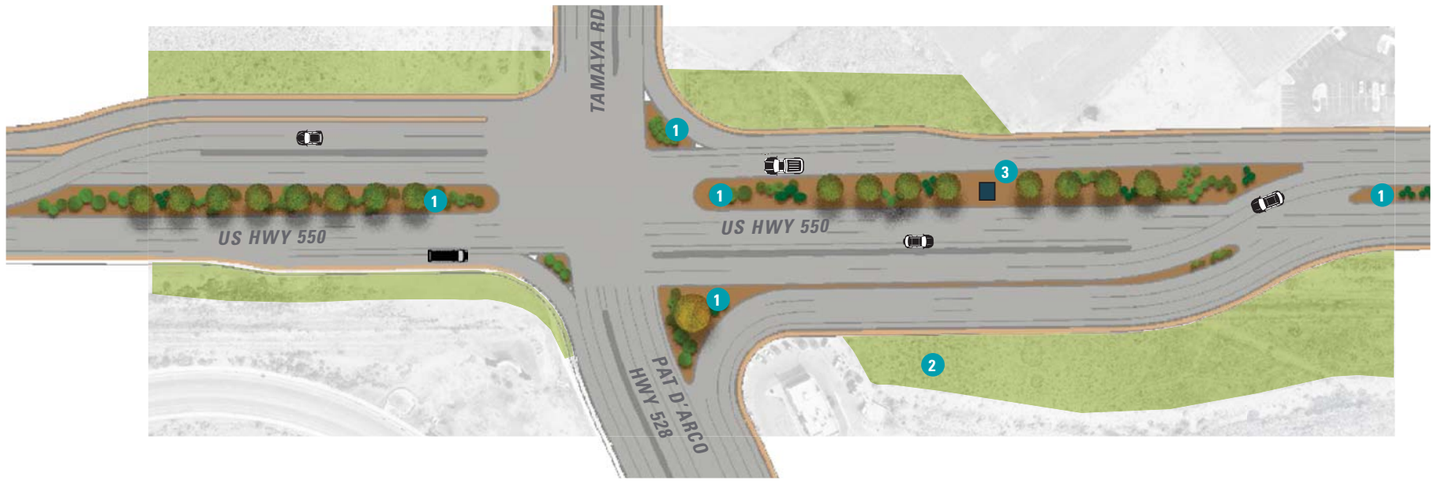
Landscaping in the ROW can have many benefits including traffic calming, providing visual relief from expanses of pavement, reducing the heat island effect, improving air and water quality, connecting people to nature, screening utilities and parking, creating urban habitat, reinforcing project aesthetics and qualities of regionalism, and contributing to higher property values and economic development

CHALLENGES

NM DOT's ability to maintain landscaping around the state is limited. Where partnerships can be established with local governments and stakeholders (where these entities take on landscape installation, maintenance and/or operations responsibilities), the landscape installation can have a positive impact on the function and identity of the corridor. The suggestions for planting design ideas noted here assume that partnerships can be developed. Even when there is a partnership, ROW landscaping needs to be low maintenance and designed in a forgiving manner, since the scale of the installations are often large, plant replacements infrequent, and maintenance in high traffic locations can be dangerous. Where NM DOT will be responsible for installation and maintenance of the landscape, landscape improvements will need to be much more modest, since automated irrigation will not be part of the design solution and maintenance will be minimal to nonexistent. In this case, landscape designs will be comprised primarily of unirrigated native seeding and corridor site amenities will need to be used more extensively to establish visual continuity and create a recognizable corridor aesthetic.

KEY PLAN





ENLARGEMENT OF INTERSECTION AT PAT D'ARCO HWY 528 AND US HWY 550

NTS

KEY NOTES

1. Opportunities for landscaping in the proposed medians
2. Opportunities for landscaping on theedges of the ROW
3. Vertical element: continuitity element or wayfinding landmark

LOCATIONS

Opportunities for planting exist in parks/plazas, medians, intersections along the sides of the roadway, in drainage areas, on the bridge and in disturbed areas of the Bosque where bridge construction will occur. All planting designs will need to comply with AASHTO standards, including clear sight triangles.

- **Camino del Pueblo Park/Plaza:** landscape with native Bernalillo cottonwoods to quickly establish a sense of place at this end of the corridor. The large native cottonwoods are one of the only native trees that can compete in scale with the scale of the roadway.
- **Medians:** landscape the medians to establish aesthetic continuity and harmony in the corridor. Landscaping at any level of density will require irrigation. Median design should include water harvesting in order to contribute to green infrastructure along the corridor and make the most of limited water for landscaping. Other design considerations include using temporary spray irrigation in wide medians in order to establish low water use native meadows; and using art and repetitive site and landscape elements to reinforce aesthetic continuity.
- **Roadway Intersections:** landscape opportunities are limited, but where there is room, new landscaping can have a strong visual impact and support multi-modal improvements.
- **Drainage Areas:** landscape existing ditches and water harvesting areas to beautify and vegetate neglected areas without irrigation, create habitat, and improve stormwater quality.
- **Bridge:** if planters are included in the design solution, plant materials must be extremely low water use and drought tolerant. Utilize gel packs to help establish plant materials in planters.
- **Bosque:** focus revegetation efforts (in areas disturbed by construction) on creating native meadows that will thrive without inundation.

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PLANT PALETTE

Extensively use native plants in order to reinforce the regional expression of the design, minimize operations and maintenance requirements, and improve the long-term success of the installation. The plant palette west of the river should be dominated by West Mesa plants such as juniper, chamisa, four-wing saltbush, sand sage, rice grass, yucca and other complementary plants. The plant palette east of the river, an area that is more densely developed, should be dominated by native valley and foothill plants like cottonwoods, beargrass, yucca, Apache plume, sumac and chamisa. Use of trees in the median will be limited by available width and vertical clearances required for visibility. Tree selections for the medians do not need to be native species, and should provide aesthetic continuity, even as the understory plantings reflect their geographic location and localized soil types. The following lists of plants are recommended for use in the corridor. (N= native plant)

Signature Plants- West
Chamisa (N)
Four-wing Salt Bush (N)
One-seed Juniper (N)
Rice Grass (N)
Sand Sage (N)
Threadgrass (N)
Yucca sp. (N)

Signature Plants- East
Apache Plume (N)
Beargrass (N)
Gambel Oak (N)
Pinion (N)
Prairie Sage (N)
Rio Grande Cottonwood (N)
Sumac (N)

General Palette (N=native)

Trees
Allee Elm
Arizona Sycamore (N)
Chinese Pistache
Desert Willow (N)
London Plane Tree
New Mexico Olive (N)
Raywood Ash
Rio Grande Cottonwood (N)
Skyline Honeylocust
Texas Red Oak
Urbanite Ash

Shrubs
Apache Plume (N)
Big Sage (N)
Broom Snakeweed (N)
Chamisa (N)
Cherry Sage
Coyote Willow (N)
Damianita
False Indigo Bush (N)
Four-wing Salt Bush (N)
Gambel Oak (N)
Little Leaf Mahogany
Mormon Tea (N)
Prairie Sage (N)
Sand Cherry (N)
Sand Dropseed (N)
Sand Sage (N)
Shadscale (N)
Shrubby Cinquefoil (N)
Sumac (N)
Thompson Broom
Threadgrass (N)
Turpentine Bush

Grasses/Succulents
Alkalai Sacaton (N)
Beargrass (N)
Big Bluestem (N)
Blue Grama (N)
Deergrass (N)
Fescue (N)
Indiangrass (N)
Karl Foerster Feather Reed Grass
Muhly Grass (N)
Red Yucca
Rice Grass (N)
Sotol (N)
Switchgrass (N)
Wheatgrass (N)
Yucca (N)

WEST

Chamisa

Yucca

Threadgrass

Rice Grass

One-seed Juniper

EAST

Apache Plume

Beargrass

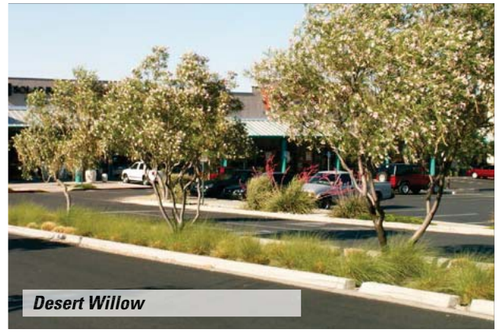
Gambel Oak

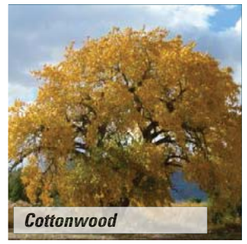
Pinion

Prairie Sage

Sumac

GENERAL


Desert Willow


Cottonwood

New Mexico Olive

Cherry Sage

Thmpson Broom

Muhly Grass

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