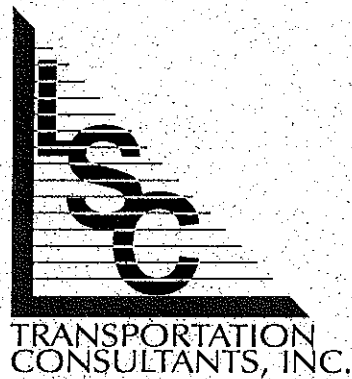


LANL Distribution Center
Traffic Impact and Access Analysis

November 15, 2005



LSC TRANSPORTATION CONSULTANTS, INC.



516 North Tejon Street
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November 15, 2005

Mr. Kirt Anderson, ASLA, AICP
Urban Planner
Los Alamos National Laboratory
MS K773; TA 63, Building 111, Room 145
Los Alamos, NM 87545

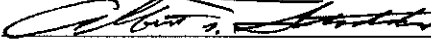
RE: LANL Distribution Center
Los Alamos, New Mexico
LSC #056010

Dear Mr. Anderson:

We are pleased to present our traffic impact and access analysis regarding the LANL Distribution Center. We trust that this report will assist you in planning the LANL Distribution Center. Please contact me if you have any questions or need further assistance.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

By 
Albert T. Stoddard III, Ph.D., P.E.
Vice President

ATS:CSM:bjwb:rf

LANL Distribution Center
Traffic Impact and Access Analysis

November 15, 2005

Prepared for:

Mr. Kirt Anderson, ASLA, AICP
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LSC #056010

November 15, 2005

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SECTION A

Introduction

In response to your request, LSC Transportation Consultants, Inc. (LSC) has prepared this traffic impact and access analysis report for the proposed distribution center to be relocated from the north side of East Jemez Road near State Highway 4 to the south side of East Jemez Road approximately 3/4th mile west of State Highway 4. The site location and area roadways are shown in Figure 1. Access to the site is proposed from East Jemez Road as shown in Figure 2.

REPORT CONTENTS

The analysis covered by the report includes the following:

- A review of the existing and planned roadway system including the roadway alignments, existing and proposed access points, traffic controls, lane configurations, intersection spacing, intersection alignments, intersection sight distances, and any improvement plans for the roadways in the vicinity of the site.
- A determination of the existing average weekday and peak-hour traffic volumes on the surrounding roadway system based on counts performed in 2004.
- A projection of the vehicle-trips to be generated by the distribution center and the existing shooting range on the north side of East Jemez Road. The shooting range access is being considered for relocation to align with the proposed distribution center access. These projections are based on information provided by LANL.
- The resultant site-generated traffic volumes on East Jemez Road were then projected. The vehicle-trips generated by the distribution center and shooting range were distributed geographically and assigned to East Jemez Road in order to complete a level of service analysis at the site access intersection with East Jemez Road.
- A determination of the projected short-term and long-term traffic impacts of the proposed distribution center and shooting range on East Jemez Road, along with recommendations for any roadway improvements to mitigate these traffic impacts.

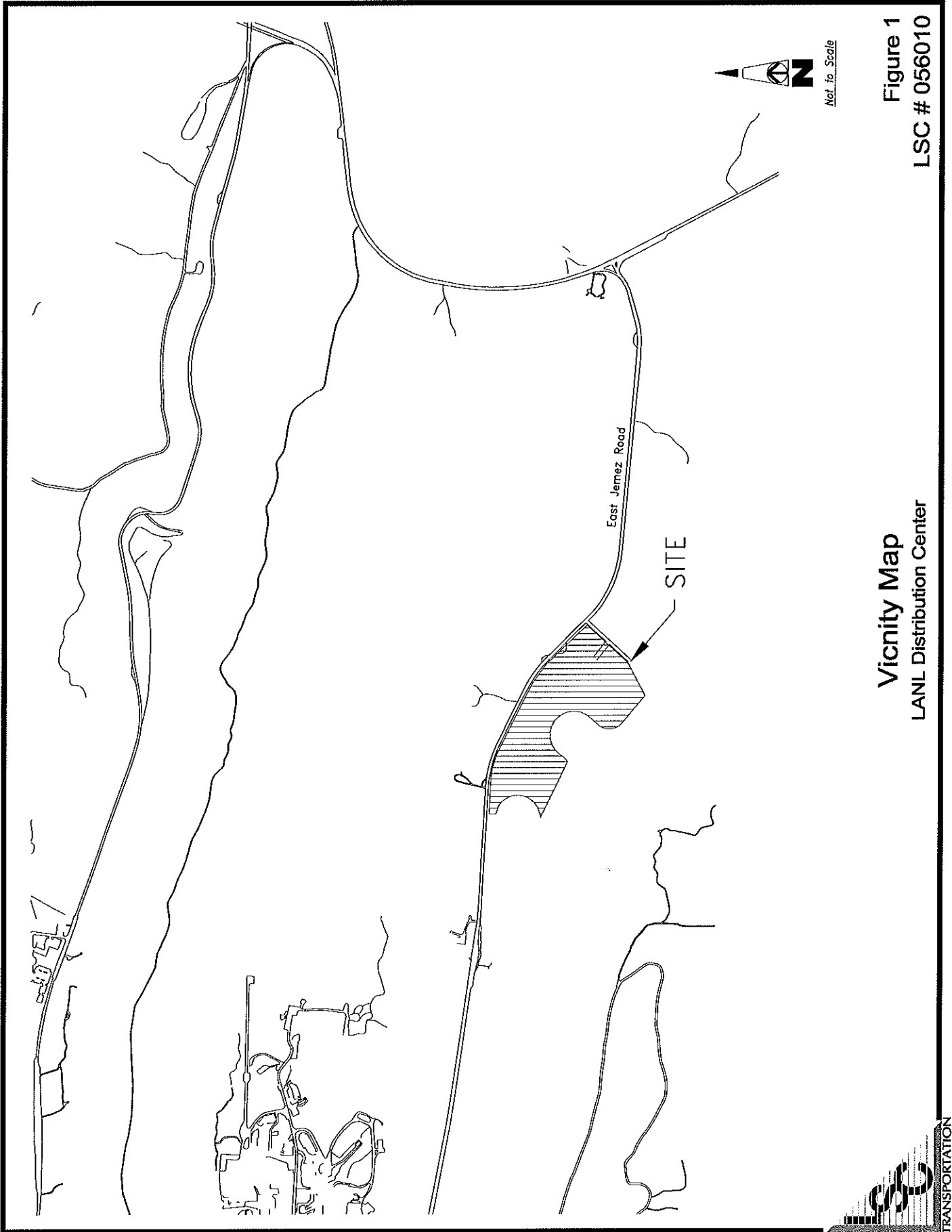
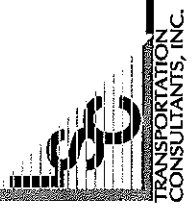


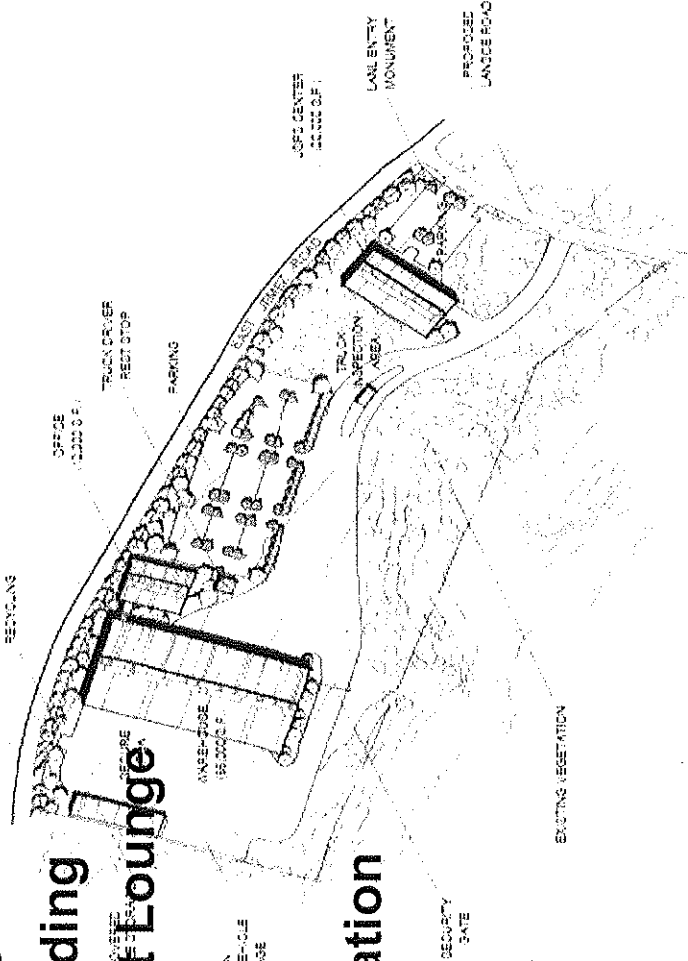
Figure 1
LSC # 056010

Vicinity Map
LANL Distribution Center



Requirements

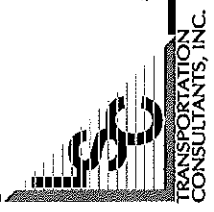
- 85,000 sf Warehouse
- 12,000 sf Office Building
- 400 sf Truckers Rest Lounge
- 600 sf Guard House
- Dog Kennel
- Truck Inspection Station
- USPS Carrier Annex



Privileged and pre-decisional business and financial information of the University of California submitted in confidence and not subject to disclosure under FOIA or CPRA.



Not to Scale



Site Plan
LANL Distribution Center

Figure 2
LSC # 056010

SECTION B

Site Development and Land Use

The site is currently vacant. The site is planned to be developed as a distribution center for the National Laboratory. The site plan is shown in Figure 2.

Access to the site is proposed from East Jemez Road as shown in Figure 2.

Roadway and Traffic Conditions

AREA ROADWAYS

The roadways in the vicinity of the site are identified below, followed by a brief description. The roadway system is shown in Figure 1.

- East Jemez Road is an existing two-lane east/west roadway in the vicinity of the site which connects the National Laboratory to State Highway 4 via a traffic signal controlled intersection. There are currently plans to widen East Jemez Road to a four-lane section and convert the traffic signal at the East Jemez Road/State Highway 4 intersection to a grade-separated interchange.

The existing traffic volumes counted in the fall of 2004 are shown in Figure 3.

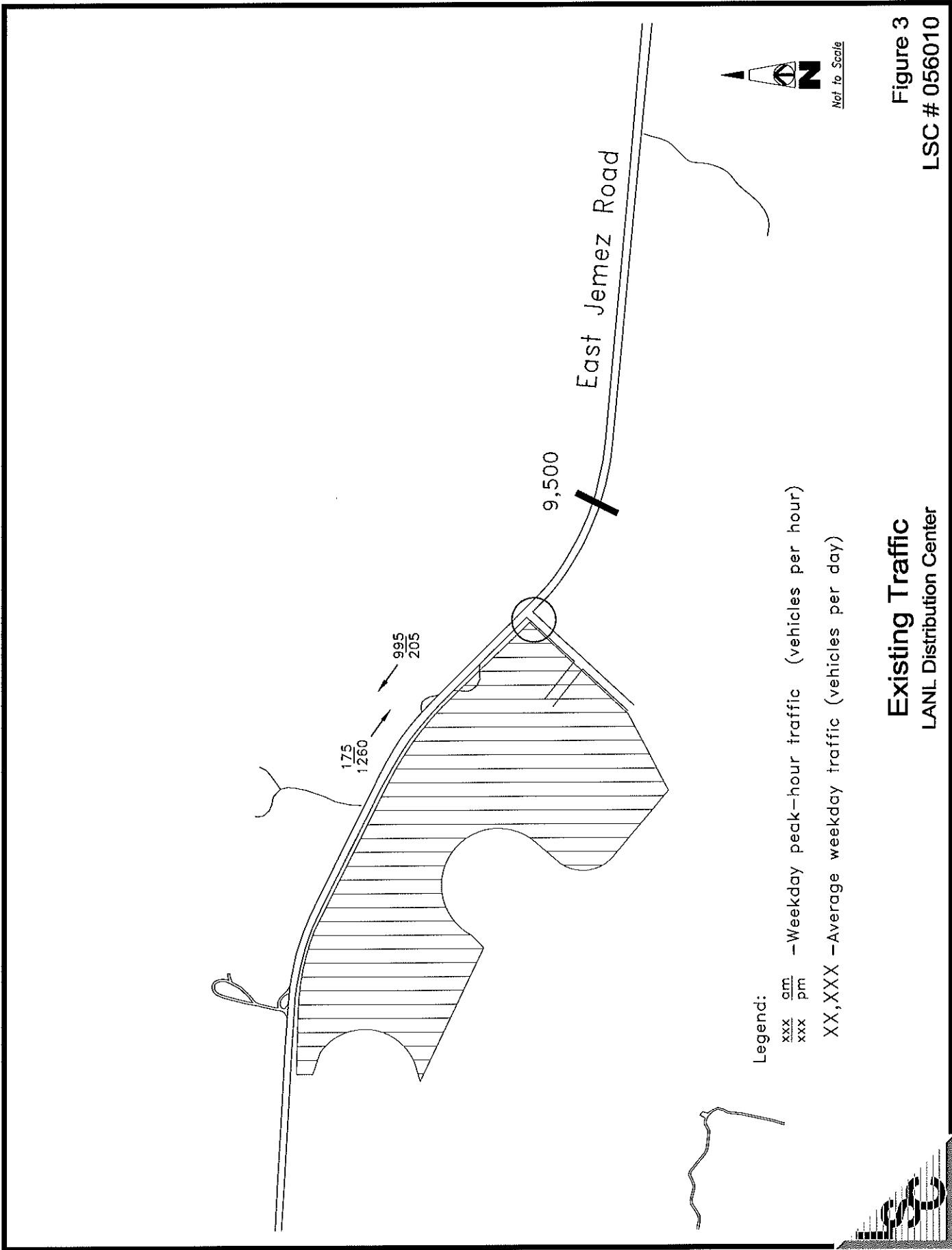


Figure 3
LSC # 056010

Existing Traffic
LANL Distribution Center

SECTION D

Trip Generation

Estimates of the amount of vehicular traffic expected to be generated by the site have been made based on information provided by LANL. Table 1 shows the results of the trip generation estimates.

As shown in Table 1, the distribution center site is expected to generate nearly 540 vehicle-trips on the average weekday, with about 270 vehicles entering and 270 vehicles exiting in a 24-hour period. These vehicle-trips would be moved from the existing access (to the east) to the proposed distribution center access. During the morning peak hour about 140 vehicles would enter and 25 vehicles would exit the site. During the afternoon peak hour about 25 vehicles would enter and 140 vehicles would exit the site.

As shown in Table 1, the shooting range site is expected to generate about 100 vehicle-trips on the average weekday, with about 50 vehicles entering and 50 vehicles exiting in a 24-hour period. These vehicle-trips would be moved from the existing access (to the west) to the proposed distribution center access. During the morning peak hour, about 4 vehicles would enter and 4 vehicles would exit the site. During the afternoon peak hour, about 20 vehicles would enter and 10 vehicles would exit the site.

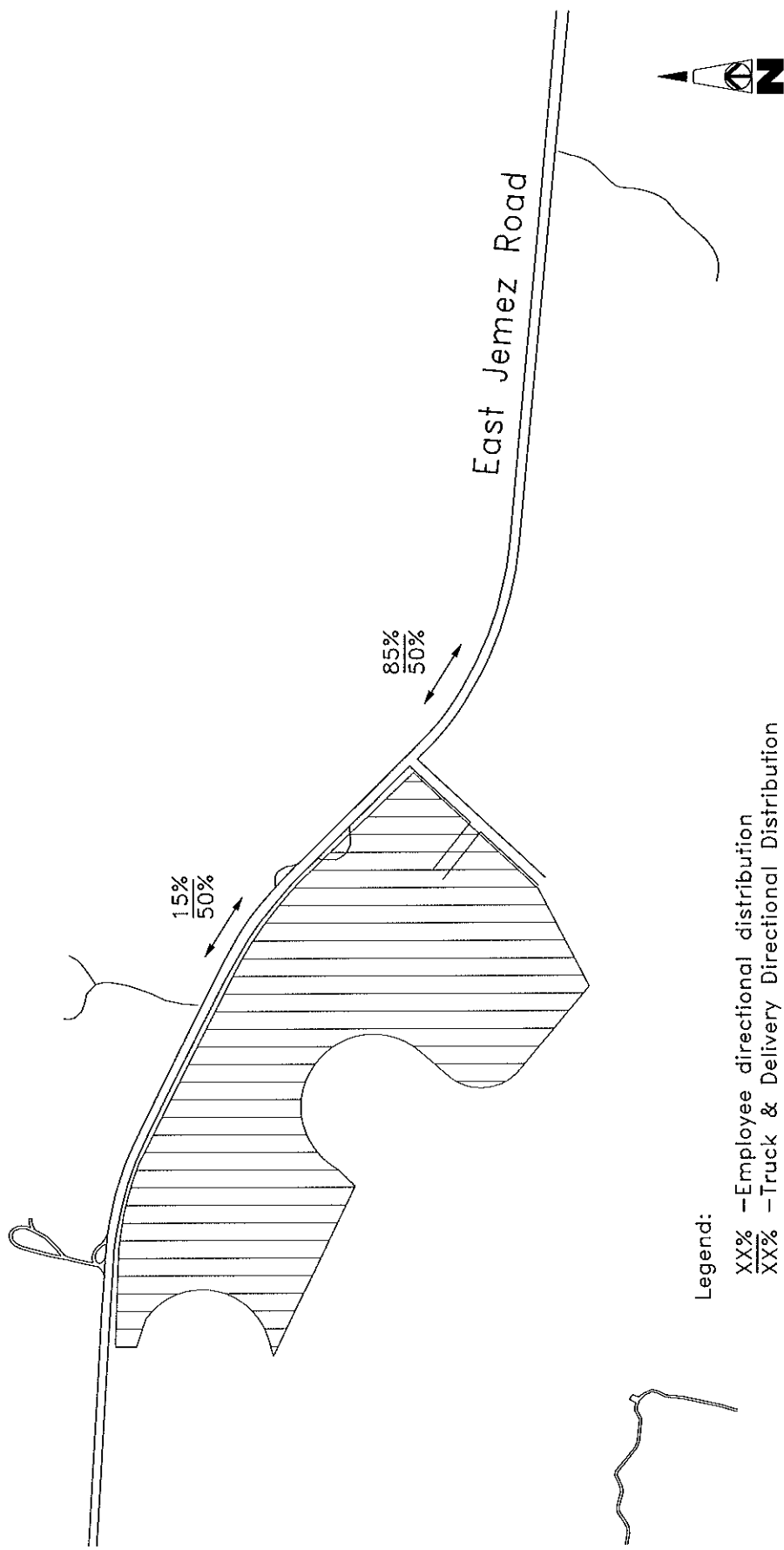
<p align="center">Table 1 Trip Generation Estimate Los Alamos National Laboratory - Distribution Center</p>														
Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates						Total Trips Generated ⁽¹⁾					
			Average Weekday Traffic	Morning Peak Hour	Afternoon Peak Hour	Average Weekday Traffic	Morning Peak Hour	Afternoon Peak Hour	Average Weekday Traffic	Morning Peak Hour	Afternoon Peak Hour			
Proposed Distribution Center														
SUP-03		85 Employees	-	-	-	-	285	85	10	10	85			
SUP-05		40 Employees	-	-	-	-	130	40	4	4	40			
	Mail Delivery (twice per day)	14 Trucks	-	-	-	-	28	4	2	2	4			
	Box Trucks (twice per day)	10 Trucks	-	-	-	-	20	3	2	2	3			
	Flatbed and Tractor Trailer Trucks	3 Trucks	-	-	-	-	30	3	2	2	3			
	Trucks arriving at inspection station	-	-	-	-	-	45	5	5	5	5			
								Distribution Center total =						
							538	140	25	25	140			
Proposed Shooting Range														
	Shooting Range						100	4	4	4	20			10
<p>Notes: (1) Source: Information provided by LANL</p>														
<p>Source: LSC Transportation Consultants, Inc. Date: 11/15/05</p>														

Trip Distribution and Assignment

The directional distribution of the site-generated traffic volumes on the adjacent roadways is an important factor in determining the traffic impacts of the site. The specific distribution estimates for the site-generated traffic volumes are shown in Figure 4.

The distribution estimates are based on the following factors: the location of the site with respect to the nearby residential, commercial, and activity centers and the balance of the Los Alamos area; the land use proposed for the site; the proposed access points for the site; and the roadway system serving the site.

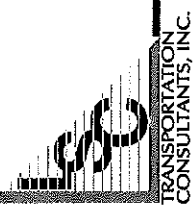
The site-generated traffic volumes on East Jemez Road were determined by applying the distribution percentages (from Figure 4) to the trip generation estimates (from Table 1). Figure 5 shows the morning and afternoon peak-hour and average daily site-generated traffic volumes.



Legend:
 XX% - Employee directional distribution
 XX% - Truck & Delivery Directional Distribution

Figure 4
 LSC # 056010

Directional Distribution
 LANL Distribution Center



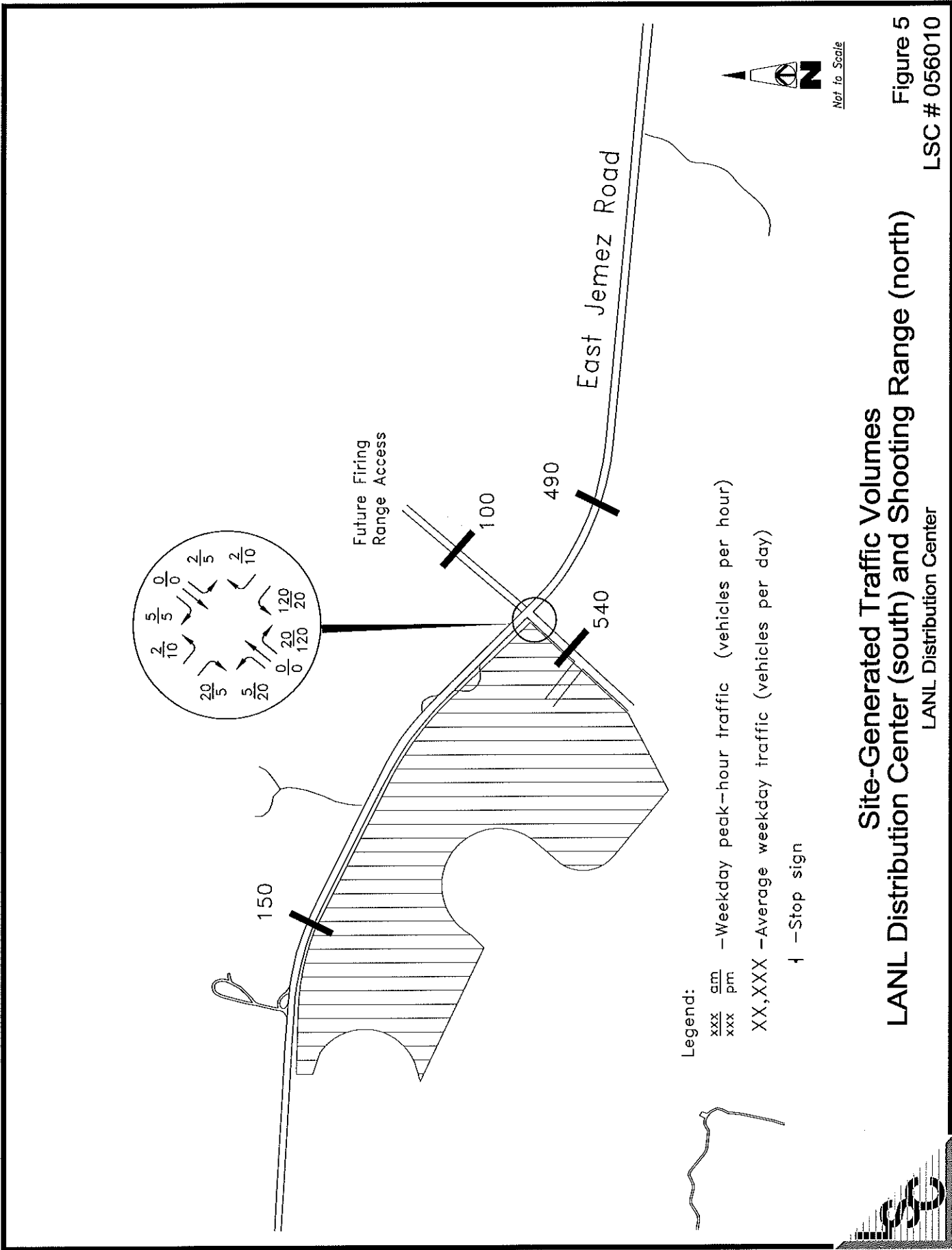
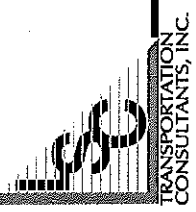


Figure 5
LSC # 056010

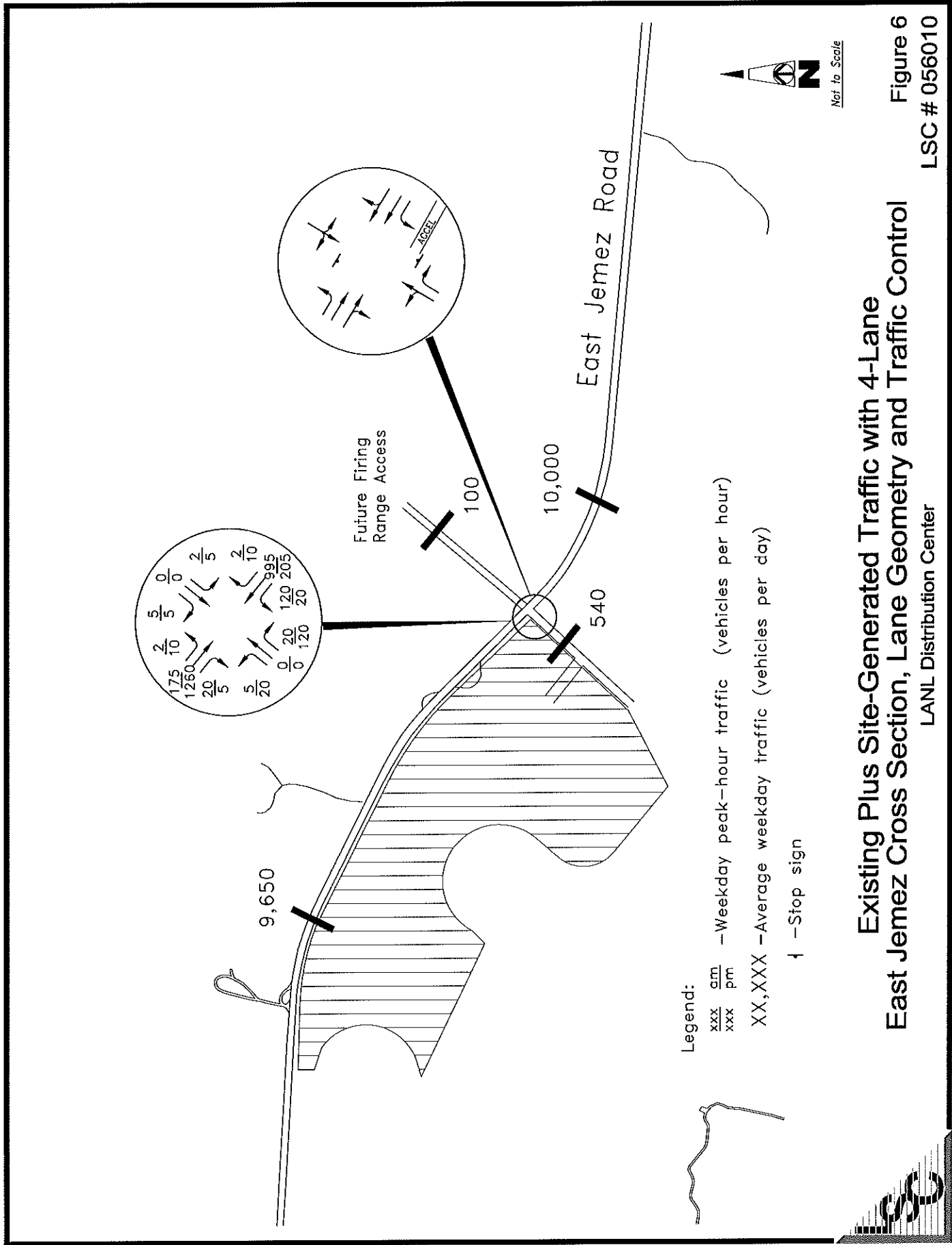
Site-Generated Traffic Volumes
LANL Distribution Center (south) and Shooting Range (north)
LANL Distribution Center



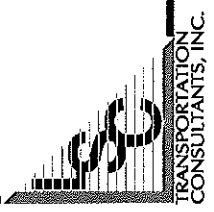
Existing Plus Site-Generated Traffic, Recommended Lane Geometry, and Traffic Control

Figure 6 shows the existing plus site-generated traffic volumes and the recommended lane geometry and traffic controls. The existing plus site-generated traffic volumes are the sum of the site-generated traffic volumes (from Figure 5) plus the existing traffic volumes (from Figure 3).

Figure 6 recommends a four-lane section for East Jemez Road. A temporary traffic signal may be needed if the distribution center is constructed and open to traffic prior to East Jemez Road being widened or the East Jemez Road/State Highway 4 interchange being built. The major purpose for this signal would be based on a system warrant. It is expected that a two-lane East Jemez Road would frequently block the site access due to capacity problems at the East Jemez Road/State Highway 4 intersection. The signal would meter the eastbound traffic, allowing the site traffic to enter and exit, and would potentially improve operations at State Highway 4. This temporary signal would be removed once East Jemez Road is widened to four lanes or the interchange is built.



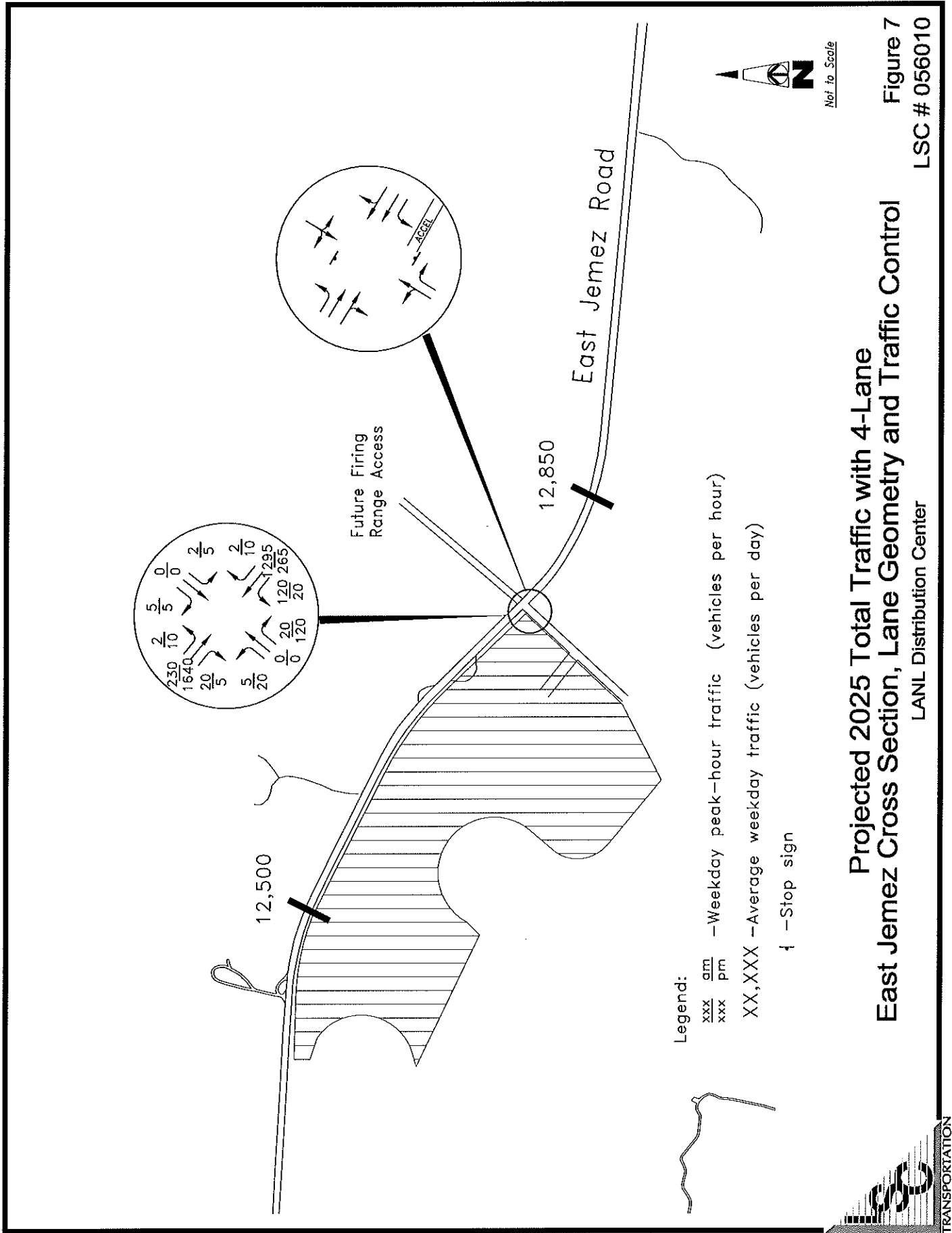
Existing Plus Site-Generated Traffic with 4-Lane
East Jemez Cross Section, Lane Geometry and Traffic Control
LANL Distribution Center
Figure 6
LSC # 056010



SECTION G

2025 Total Traffic, Recommended Lane Geometry, and Traffic Control

Figure 7 shows the projected total traffic volumes and the recommended lane geometry and traffic controls. The 2025 total traffic volumes are the sum of the site-generated traffic volumes (from Figure 5) plus the projected 2025 background traffic volumes.



Projected Levels of Service

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection. Level of service is indicated on a scale from "A" to "F." LOS A is indicative of very little congestion or delay. LOS F is indicative of a high level of congestion or delay.

The East Jemez Road/site access intersection has been analyzed to determine the projected levels of service based on the unsignalized method of analysis procedures outlined in the *Highway Capacity Manual, 2000 Edition* by the Transportation Research Board. Table 2 shows the level of service analysis results. The level of service reports are attached.

TWO-LANE EAST JEMEZ ROAD

The unsignalized East Jemez Road/site access intersection is projected to operate at Level of Service F for the north and south approaches during the afternoon peak hour with the addition of the distribution center and shooting range site-generated traffic and the recommended lane geometry and traffic controls shown. See Section F regarding the potential for a temporary traffic signal based on a system warrant.

FOUR-LANE EAST JEMEZ ROAD

The unsignalized East Jemez Road/site access intersection is projected to operate at an acceptable level of service during the short-term peak hours with the addition of the distribution center and shooting range site-generated traffic and the recommended lane geometry and traffic controls shown. The northbound and southbound left-turn movements can be expected to experience significant delays as the through traffic on East Jemez Road increases over time.

**Table 2
Level of Service
LANL - Distribution Center**

Intersection	Traffic Control	Existing + Site-Generated Traffic			2025 Total Traffic		
		AM	PM	PM	AM	PM	PM
East Jemez Road & Distribution Center / Shooting Range 2-lane East Jemez Road	TWSC ⁽¹⁾	D SB	F ⁽³⁾ NB/SB		-		-
East Jemez Road & Distribution Center / Shooting Range 4-lane East Jemez Road	TWSC ⁽¹⁾	D SB	D ⁽⁴⁾ SB NB LT		F ⁽⁵⁾ SB		F ^{(4) (5)} SB NB LT

⁽¹⁾ TWSC = two-way Stop-sign control
⁽²⁾ Worst case turning movement level of service; SB = southbound, NB = northbound
⁽³⁾ A temporary traffic signal system warrant may be met. If installed, the temporary traffic signal should be removed once East Jemez Road is widened to four lanes or an interchange is built at State Highway 4.
⁽⁴⁾ Synchro analysis shows the NB RT movement operating at these levels of service as well. An acceleration lane will improve the level of service to LOS A or B.
⁽⁵⁾ Deliveries/pickups and employee left turns could be discouraged during the peak hours to decrease the volume from it's projected 20-30 vehicles per hour.

Conclusions and Recommendations

TRIP GENERATION

1. As shown in Table 1, the distribution center site is expected to generate nearly 540 vehicle-trips on the average weekday, with about 270 vehicles entering and 270 vehicles exiting in a 24-hour period. These vehicle-trips would be moved from the existing access (to the east) to the proposed distribution center access. During the morning peak hour about 140 vehicles would enter and 25 vehicles would exit the site. During the afternoon peak hour about 25 vehicles would enter and 140 vehicles would exit the site.
2. As shown in Table 1, the shooting range site is expected to generate about 100 vehicle-trips on the average weekday, with about 50 vehicles entering and 50 vehicles exiting in a 24-hour period. These vehicle-trips would be moved from the existing access (to the west) to the proposed distribution center access. During the morning peak hour about 4 vehicles would enter and 4 vehicles would exit the site. During the afternoon peak hour about 20 vehicles would enter and 10 vehicles would exit the site.

PROJECTED LEVELS OF SERVICE

3. Two-lane East Jemez Road - The unsignalized East Jemez Road/site access intersection is projected to operate at level of service F for the north and south approaches during the afternoon peak hour with the addition of the distribution center and shooting range site-generated traffic and the recommended lane geometry and traffic controls shown.
4. Four-lane East Jemez Road - The unsignalized East Jemez Road/site access intersection is projected to operate at an acceptable level of service during the short-term peak hours with the addition of the distribution center and shooting range site-generated traffic and the recommended lane geometry

and traffic controls shown. The northbound and southbound left-turn movements can be expected to experience significant delays as the through traffic on East Jemez Road increases over time.

RECOMMENDED TURN LANES ON EAST JEMEZ ROAD

5. Eastbound and westbound deceleration left-turn lanes should be provided on East Jemez Road at the proposed site access intersection. The northbound approach to East Jemez Road should have a shared left-through lane and a dedicated right-turn lane. The northbound right-turn lane should have an eastbound acceleration lane on East Jemez Road. The southbound approach to East Jemez Road should operate at an acceptable level of service with a left-through-right shared lane.

RECOMMENDED TRAFFIC CONTROL

6. It is unlikely that a traffic signal will be warranted in the future at the site access intersection on East Jemez Road based on the traffic volumes without additional development as most of the trips entering East Jemez Road are right-turns. With one exception, the existing plus site-generated traffic should operate at acceptable levels of service with the recommended auxiliary lanes and two-way stop control on the north and south approaches to East Jemez Road. The northbound and southbound left-turn movements are expected to experience significant delays during some of the peak hours in the short term with the through lanes on East Jemez Road, and in the long term with the four through lanes on East Jemez Road. These traffic volumes are projected to be relatively low.
7. If east-west through traffic increases over time it is likely that the northbound left-turn movement will eventually operate at level of service E or F. This movement is projected to be only about 20 vehicles per hour during the afternoon peak hour with fewer projected for the morning peak hour. Converting this intersection to a three-quarter movement access is not acceptable as it would eliminate the ability for vehicles exiting the distribution center from heading west on East Jemez Road into a large portion of the Laboratory.

8. If this intersection is to remain as a full-movement intersection, it is recommended that truck deliveries and pick-ups not be scheduled during the afternoon peak hour. Employees should be encouraged to turn right onto East Jemez Road and avoid attempting to turn left onto East Jemez Road.
9. Signalizing the site access intersection on East Jemez Road is not recommended based on traffic volume warrants for two reasons. First, the projected volumes are well below what would be necessary to warrant a traffic signal. Second, intermittently stopping an eastbound through volume of over 1,000 vehicles during the afternoon peak hour on East Jemez Road to facilitate approximately 20 northbound left-turn movements could lead to a higher incidence of rear-end collisions due to the downhill grade and higher speed of East Jemez Road.
10. The one condition that may meet the requirements for a temporary traffic signal for the short-term is if the distribution center is generating significant traffic volumes before East Jemez Road is widened to four lanes and the East Jemez Road/State Highway 4 interchange is not built. This scenario would likely result in the site access being frequently blocked due to capacity problems at State Highway 4. A temporary signal would meter the eastbound traffic, allowing the site traffic to enter and exit, and would potentially improve the operations at State Highway 4. This temporary signal would be removed once East Jemez Road is widened to four lanes or the interchange is built.




















RELOCATED FIRING RANGE ACCESS

11. The relocation of the existing firing range access, currently located to the west of the proposed distribution center, to align with the proposed distribution center access was assumed in the level of service analysis in this study. Consolidating the access points will improve the access control along East Jemez Road and improve the flow of through traffic. With this realignment, the short-term traffic signal installed at the distribution center access would also aid the firing range traffic prior to the widening of East





















Jemez Road to four lanes or the construction of an interchange east of the site.



2-lane Jemez Ex+Site AM
 3: East Jemez Road & Site Access

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%						0%	
Volume (veh/h)	2	175	20	120	995	2	5	0	20	2	0	2
Peak Hour Factor	0.60	0.90	0.75	0.90	0.95	0.60	0.60	0.92	0.70	0.60	0.92	0.60
Hourly flow rate (vph)	3	194	27	133	1047	3	8	0	29	3	0	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									6			
Median type							None			None		
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1051			221			1532	1532	208	1531	1543	1049
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1051			221			1532	1532	208	1531	1543	1049
tC, single (s)	4.1			4.1			7.3	6.5	6.4	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.5	3.5	4.0	3.3
p0 queue free %	99			90			89	100	96	96	100	99
cM capacity (veh/h)	651			1330			79	104	789	83	103	273
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	3	221	133	1051	37	7						
Volume Left	3	0	133	0	8	3						
Volume Right	0	27	0	3	29	3						
cSH	651	1700	1330	1700	349	128						
Volume to Capacity	0.01	0.13	0.10	0.62	0.11	0.05						
Queue Length 95th (ft)	0	0	8	0	9	4						
Control Delay (s)	10.6	0.0	8.0	0.0	20.2	34.8						
Lane LOS	B		A		C	D						
Approach Delay (s)	0.2		0.9		20.2	34.8						
Approach LOS					C	D						
Intersection Summary												
Average Delay			1.4									
Intersection Capacity Utilization			69.2%		ICU Level of Service				C			
Analysis Period (min)			15									

2-lane Jemez Ex+Site PM
 3: East Jemez Road & Site Access

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	1260	5	20	205	10	20	0	120	5	0	5
Peak Hour Factor	0.65	0.95	0.60	0.70	0.95	0.65	0.70	0.92	0.75	0.60	0.92	0.60
Hourly flow rate (vph)	15	1326	8	29	216	15	29	0	160	8	0	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									6			
Median type							None			None		
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	231			1335			1643	1650	1330	1718	1646	223
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	231			1335			1643	1650	1330	1718	1646	223
tC, single (s)	4.1			4.2			7.2	6.5	6.2	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			94			59	100	14	10	100	99
cM capacity (veh/h)	1319			477			69	92	186	9	92	809
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	15	1335	29	231	189	17						
Volume Left	15	0	29	0	29	8						
Volume Right	0	8	0	15	160	8						
cSH	1319	1700	477	1700	219	18						
Volume to Capacity	0.01	0.79	0.06	0.14	0.86	0.91						
Queue Length 95th (ft)	1	0	5	0	168	60						
Control Delay (s)	7.8	0.0	13.0	0.0	85.4	468.0						
Lane LOS	A		B		F	F						
Approach Delay (s)	0.1		1.4		85.4	468.0						
Approach LOS					F	F						
Intersection Summary												
Average Delay			13.4									
Intersection Capacity Utilization			87.4%		ICU Level of Service				E			
Analysis Period (min)			15									




















4-lane Jemez Ex+Site AM
 3: East Jemez Road & Site Access

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↕		↙	↕			↕	↗		↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	175	20	120	995	2	5	0	20	2	0	2
Peak Hour Factor	0.60	0.90	0.75	0.90	0.95	0.60	0.60	0.92	0.70	0.60	0.92	0.60
Hourly flow rate (vph)	3	194	27	133	1047	3	8	0	29	3	0	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									6			
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1051			221			1008	1532	111	1434	1543	525
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1051			221			1008	1532	111	1434	1543	525
tC, single (s)	4.2			4.2			7.9	6.5	7.3	7.6	6.5	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.5	3.6	4.0	3.4
p0 queue free %	99			90			95	100	97	96	100	99
cM capacity (veh/h)	641			1324			156	103	867	82	102	489

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	3	130	91	133	698	352	37	7
Volume Left	3	0	0	133	0	0	8	3
Volume Right	0	0	27	0	0	3	29	3
cSH	641	1700	1700	1324	1700	1700	692	140
Volume to Capacity	0.01	0.08	0.05	0.10	0.41	0.21	0.05	0.05
Queue Length 95th (ft)	0	0	0	8	0	0	4	4
Control Delay (s)	10.6	0.0	0.0	8.0	0.0	0.0	13.8	32.0
Lane LOS	B			A			B	D
Approach Delay (s)	0.2			0.9			13.8	32.0
Approach LOS							B	D

Intersection Summary		
Average Delay		1.3
Intersection Capacity Utilization	44.2%	ICU Level of Service
Analysis Period (min)		15
		A





















4-lane Jemez Ex+Site PM
 3: East Jemez Road & Site Access

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Sign Control		Free			Free			Stop			Stop		
Grade		0%			0%			0%			0%		
Volume (veh/h)	10	1260	5	20	205	10	20	0	120	5	0	5	
Peak Hour Factor	0.65	0.95	0.60	0.70	0.95	0.65	0.70	0.92	0.75	0.60	0.92	0.60	
Hourly flow rate (vph)	15	1326	8	29	216	15	29	0	160	8	0	8	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)									6				
Median type							None			None			
Median storage (veh)													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	231			1335			1535	1650	667	1055	1646	116	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	231			1335			1535	1650	667	1055	1646	116	
tC, single (s)	4.2			4.4			7.8	6.5	7.0	7.6	6.5	7.0	
tC, 2 stage (s)													
tF (s)	2.2			2.4			3.6	4.0	3.4	3.6	4.0	3.4	
p0 queue free %	99			94			56	100	59	92	100	99	
cM capacity (veh/h)	1312			449			65	91	394	99	91	905	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1					
Volume Total	15	884	450	29	144	87	189	17					
Volume Left	15	0	0	29	0	0	29	8					
Volume Right	0	0	8	0	0	15	160	8					
cSH	1312	1700	1700	449	1700	1700	431	178					
Volume to Capacity	0.01	0.52	0.26	0.06	0.08	0.05	0.44	0.09					
Queue Length 95th (ft)	1	0	0	5	0	0	54	8					
Control Delay (s)	7.8	0.0	0.0	13.6	0.0	0.0	31.9	27.3					
Lane LOS	A			B			D	D					
Approach Delay (s)	0.1			1.5			31.9	27.3					
Approach LOS							D	D					
Intersection Summary													
Average Delay			3.8										
Intersection Capacity Utilization			55.8%	ICU Level of Service				B					
Analysis Period (min)			15										

4-lane Jemez 2025 AM
 3: East Jemez Road & Site Access

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↕		↙	↕			↕	↗		↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	230	20	120	1295	2	5	0	20	2	0	2
Peak Hour Factor	0.60	0.90	0.75	0.90	0.95	0.60	0.60	0.92	0.70	0.60	0.92	0.60
Hourly flow rate (vph)	3	256	27	133	1363	3	8	0	29	3	0	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									6			
Median type							None			None		
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1366			282			1227	1909	141	1780	1920	683
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1366			282			1227	1909	141	1780	1920	683
tC, single (s)	4.2			4.2			7.9	6.5	7.3	7.6	6.5	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.5	3.6	4.0	3.4
p0 queue free %	99			89			92	100	97	92	100	99
cM capacity (veh/h)	483			1256			105	60	827	44	59	385
Direction Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	3	170	112	133	909	458	37	7				
Volume Left	3	0	0	133	0	0	8	3				
Volume Right	0	0	27	0	0	3	29	3				
cSH	483	1700	1700	1256	1700	1700	465	79				
Volume to Capacity	0.01	0.10	0.07	0.11	0.53	0.27	0.08	0.08				
Queue Length 95th (ft)	1	0	0	9	0	0	6	7				
Control Delay (s)	12.5	0.0	0.0	8.2	0.0	0.0	16.9	54.4				
Lane LOS	B			A			C	F				
Approach Delay (s)	0.1			0.7			16.9	54.4				
Approach LOS							C	F				
Intersection Summary												
Average Delay			1.2									
Intersection Capacity Utilization			52.5%	ICU Level of Service							A	
Analysis Period (min)			15									

4-lane Jemez 2025 PM
 3: East Jemez Road & Site Access

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	1640	5	20	265	10	20	0	120	5	0	5
Peak Hour Factor	0.65	0.95	0.60	0.70	0.95	0.65	0.70	0.92	0.75	0.60	0.92	0.60
Hourly flow rate (vph)	15	1726	8	29	279	15	29	0	160	8	0	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									6			
Median type							None				None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	294			1735			1966	2113	867	1318	2109	147
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	294			1735			1966	2113	867	1318	2109	147
tC, single (s)	4.2			4.4			7.8	6.5	7.0	7.6	6.5	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.4			3.6	4.0	3.4	3.6	4.0	3.4
p0 queue free %	99			91			2	100	45	82	100	99
cM capacity (veh/h)	1243			307			29	45	290	46	45	864
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	15	1151	584	29	186	108	189	17				
Volume Left	15	0	0	29	0	0	29	8				
Volume Right	0	0	8	0	0	15	160	8				
cSH	1243	1700	1700	307	1700	1700	193	88				
Volume to Capacity	0.01	0.68	0.34	0.09	0.11	0.06	0.98	0.19				
Queue Length 95th (ft)	1	0	0	8	0	0	203	16				
Control Delay (s)	7.9	0.0	0.0	17.9	0.0	0.0	80.6	55.3				
Lane LOS	A			C			F	F				
Approach Delay (s)	0.1			1.6			80.6	55.3				
Approach LOS							F	F				
Intersection Summary												
Average Delay			7.4									
Intersection Capacity Utilization			66.3%		ICU Level of Service				C			
Analysis Period (min)			15									

3: East Jemez Road & Site Access Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Delay / Veh (s)	9.6	0.4	0.2	2.1	0.7	0.3	20.0	7.0	39.7	9.2	0.9

Total Network Performance

Delay / Veh (s)	3.0										
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3: East Jemez Road & Site Access Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Delay / Veh (s)	6.3	1.9	1.1	13.9	0.2	0.0	96.2	8.2	64.6	8.4	3.2

Total Network Performance

Delay / Veh (s)	5.9										
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