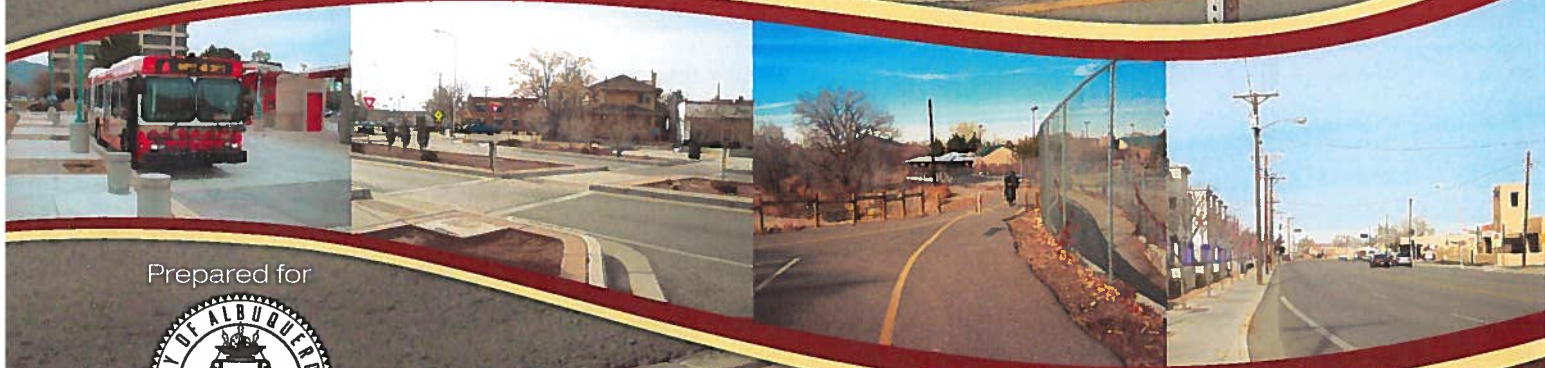


West Central Avenue Corridor Concept Plan



Prepared for



April 2010

Prepared by



Kimley-Horn
and Associates, Inc.

J-13-Z



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A



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A. Central Avenue Road Diet



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I. Central Avenue Road Diet Project Background

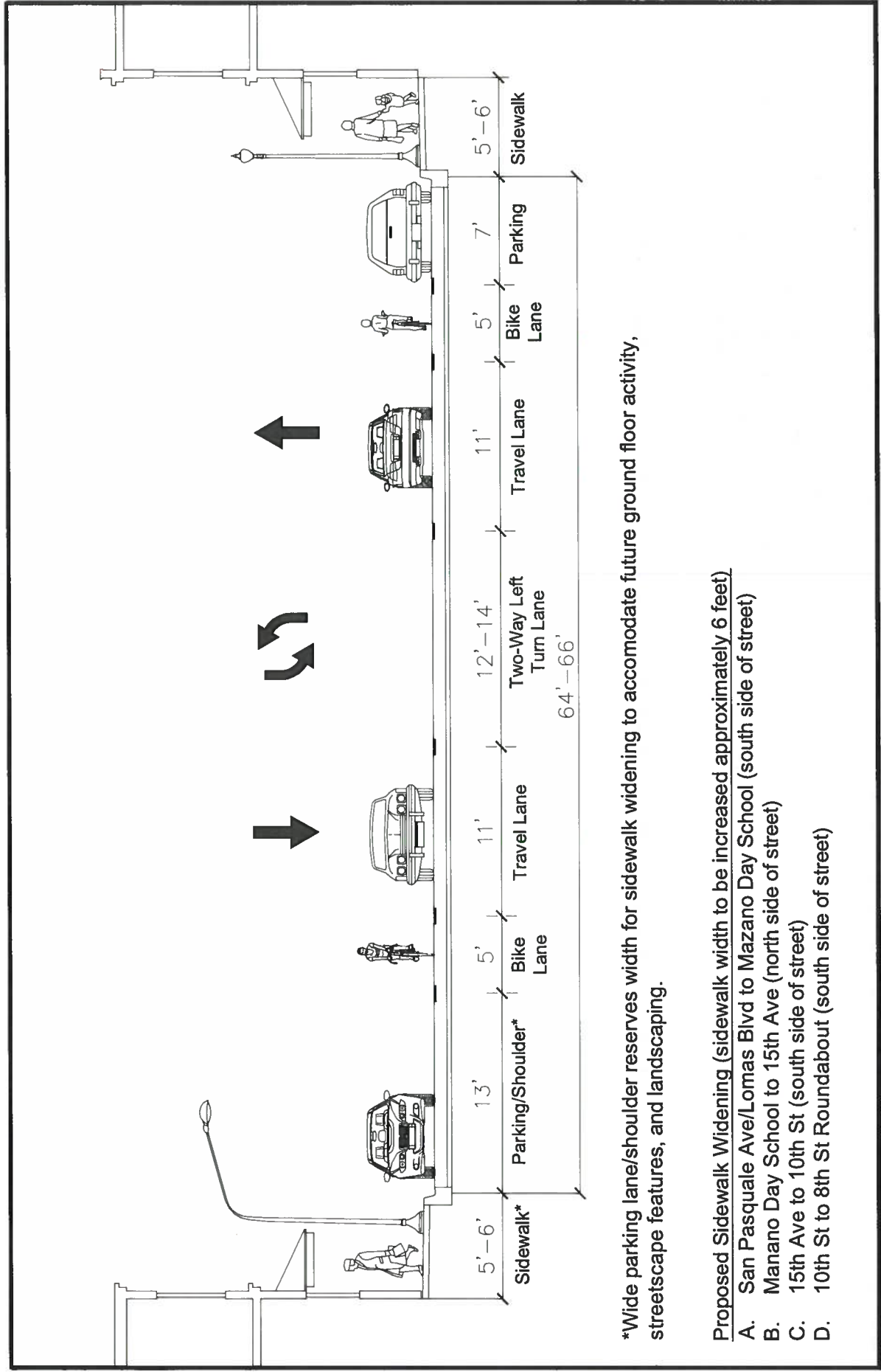


FIGURE 1

CENTRAL AVENUE ROAD DIET - LOMAS BOULEVARD TO 8TH STREET

PROJECT VICINITY AND STUDY INTERSECTION LOCATIONS

WEST CENTRAL AVENUE CORRIDOR CONCEPT PLAN - 47TH STREET TO 8TH STREET



*Wide parking lane/shoulder reserves width for sidewalk widening to accommodate future ground floor activity, streetscape features, and landscaping.

Proposed Sidewalk Widening (sidewalk width to be increased approximately 6 feet)

- A. San Pasquale Ave/Lomas Blvd to Mazano Day School (south side of street)
- B. Manano Day School to 15th Ave (north side of street)
- C. 15th Ave to 10th St (south side of street)
- D. 10th St to 8th St Roundabout (south side of street)

FIGURE 3
CENTRAL AVENUE ROAD DIET - LOMAS BOULEVARD TO 8TH STREET
NEAR-TERM TYPICAL STREET CROSS SECTION

WEST CENTRAL AVENUE CORRIDOR CONCEPT PLAN - 47TH STREET TO 8TH STREET

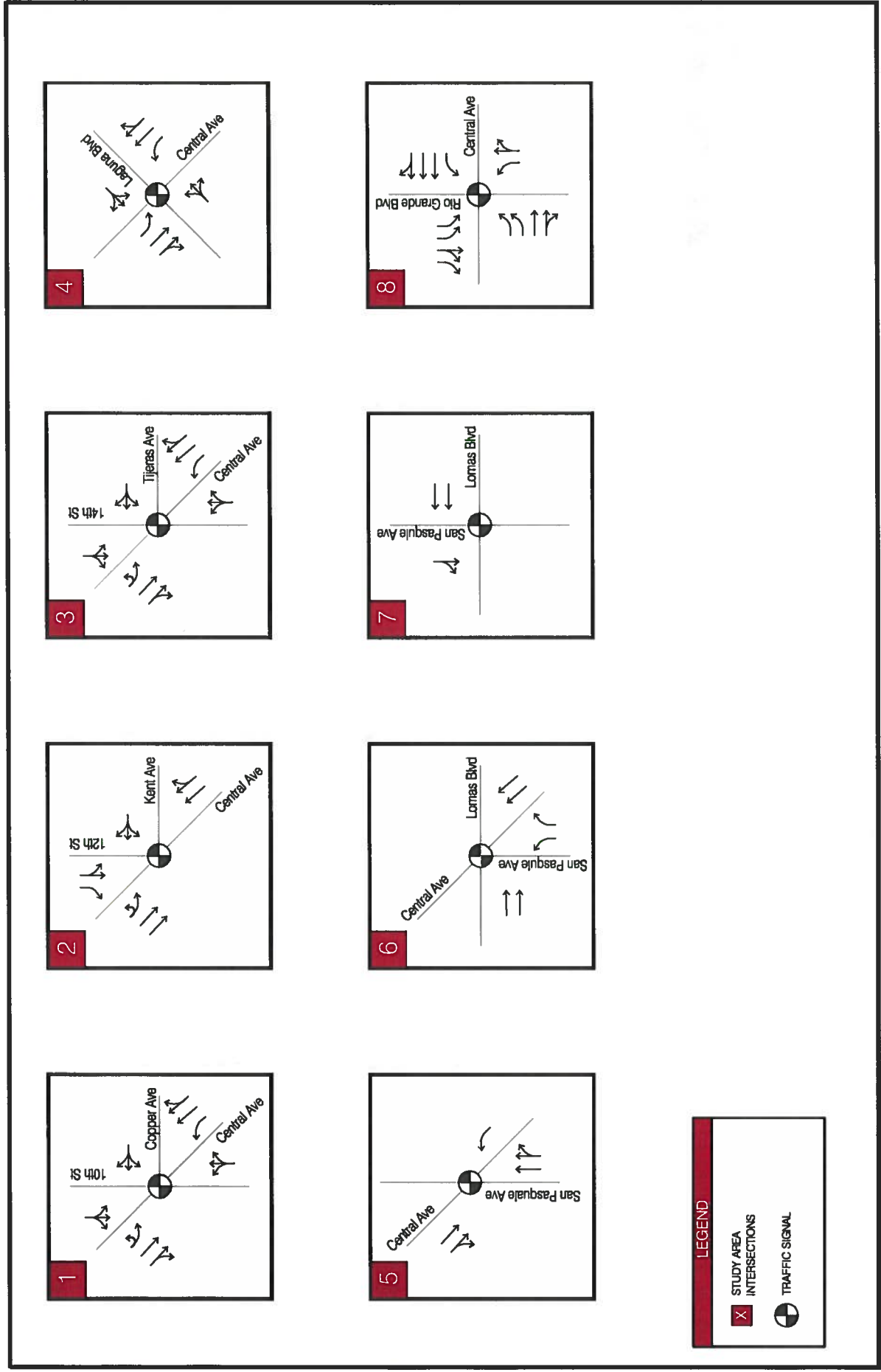


FIGURE 5
EXISTING CONDITIONS
STUDY INTERSECTION LANE GEOMETRY AND TRAFFIC CONTROL
WEST CENTRAL AVENUE CORRIDOR CONCEPT PLAN - 47TH STREET TO 8TH STREET



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II. Near-Term Street Layout (Lomas Blvd to 8th Street)

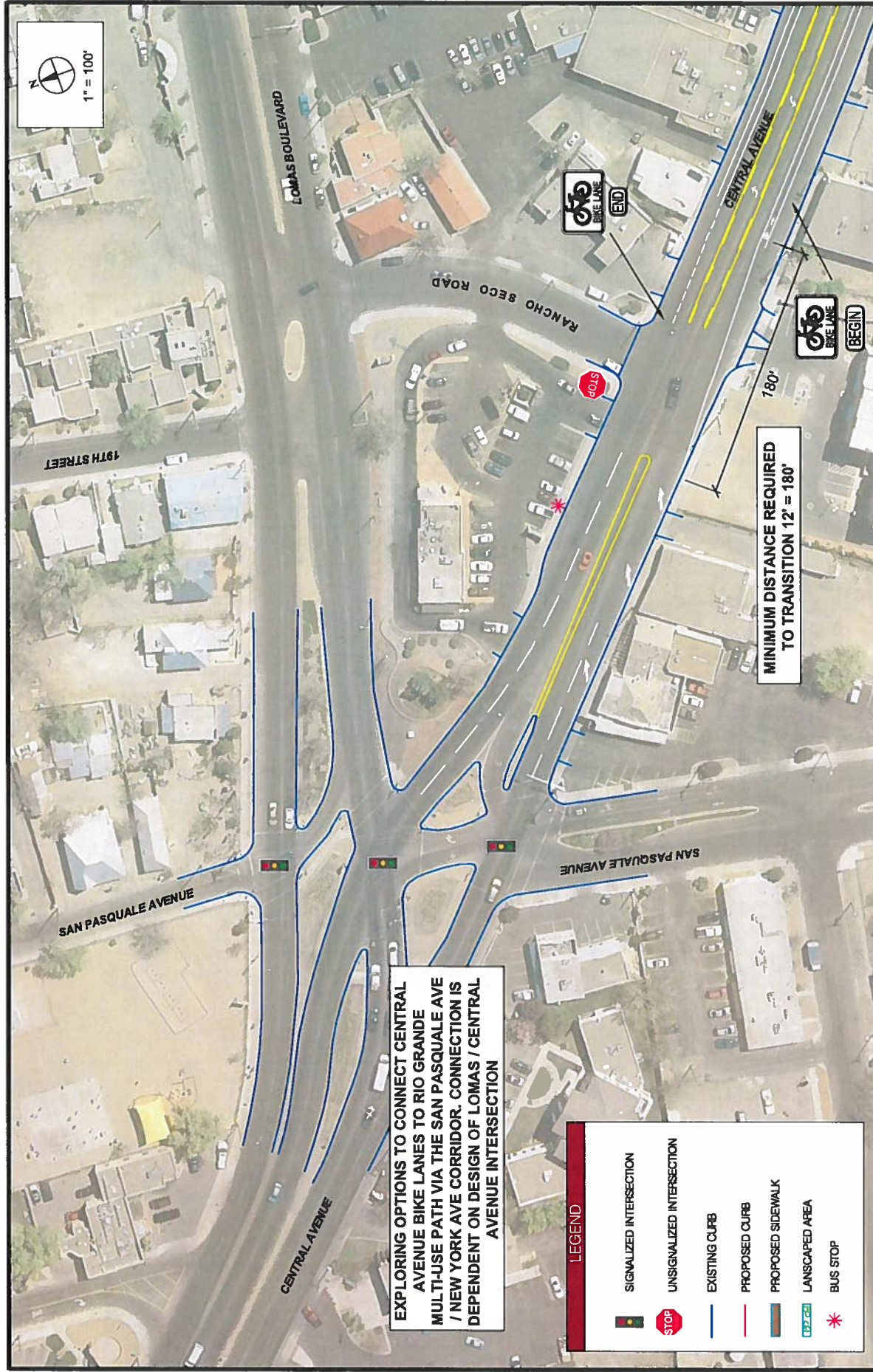


FIGURE 9
CENTRAL AVENUE ROAD DIET CONCEPTS
NEAR-TERM STREET LAYOUT (SAN PASQUALE AVENUE TO RANCHO SECO ROAD)

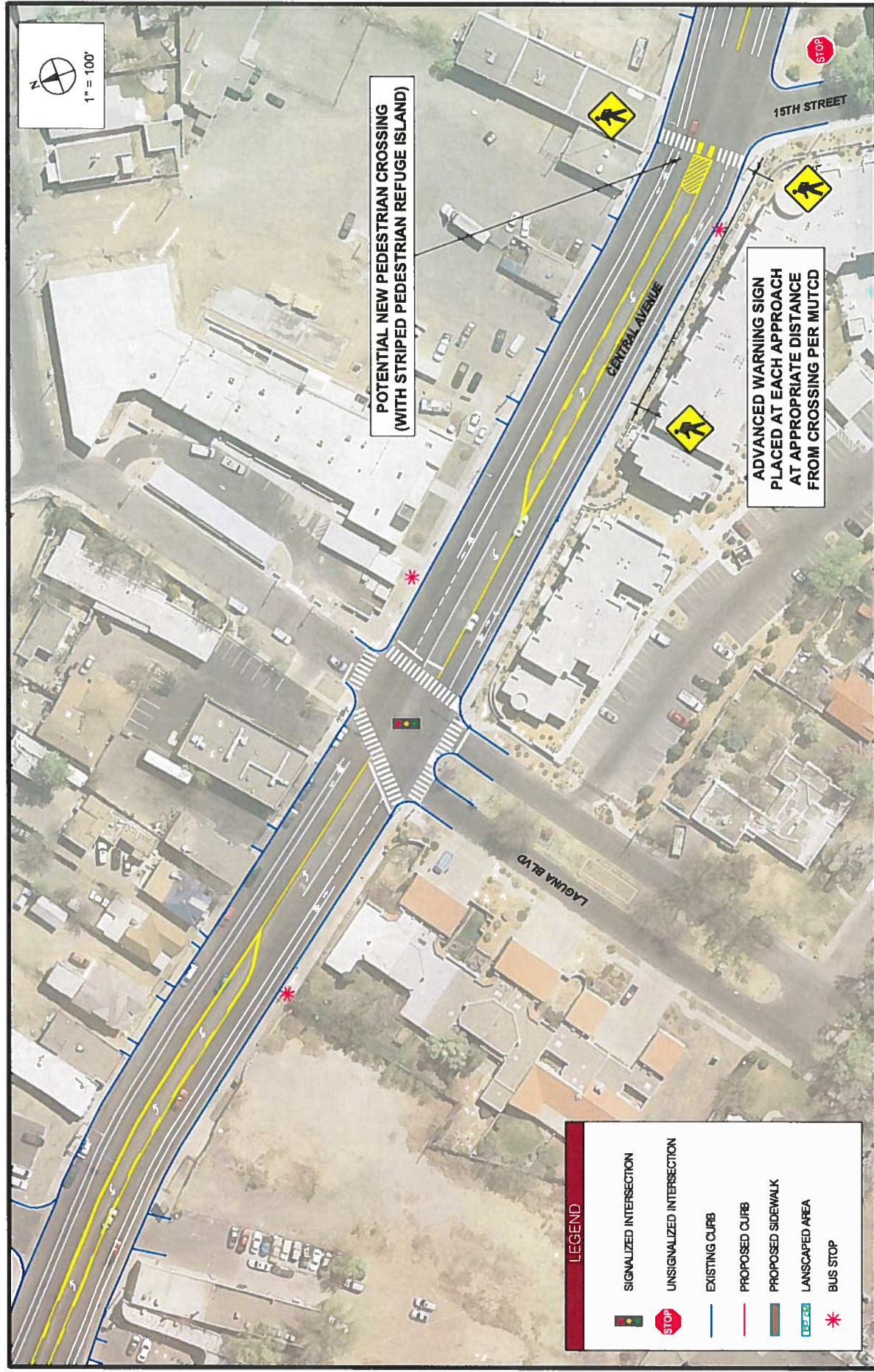


FIGURE 11
CENTRAL AVENUE ROAD DIET CONCEPTS
NEAR-TERM STREET LAYOUT (MANZANO DAY SCHOOL ENTRANCE TO 15TH STREET)

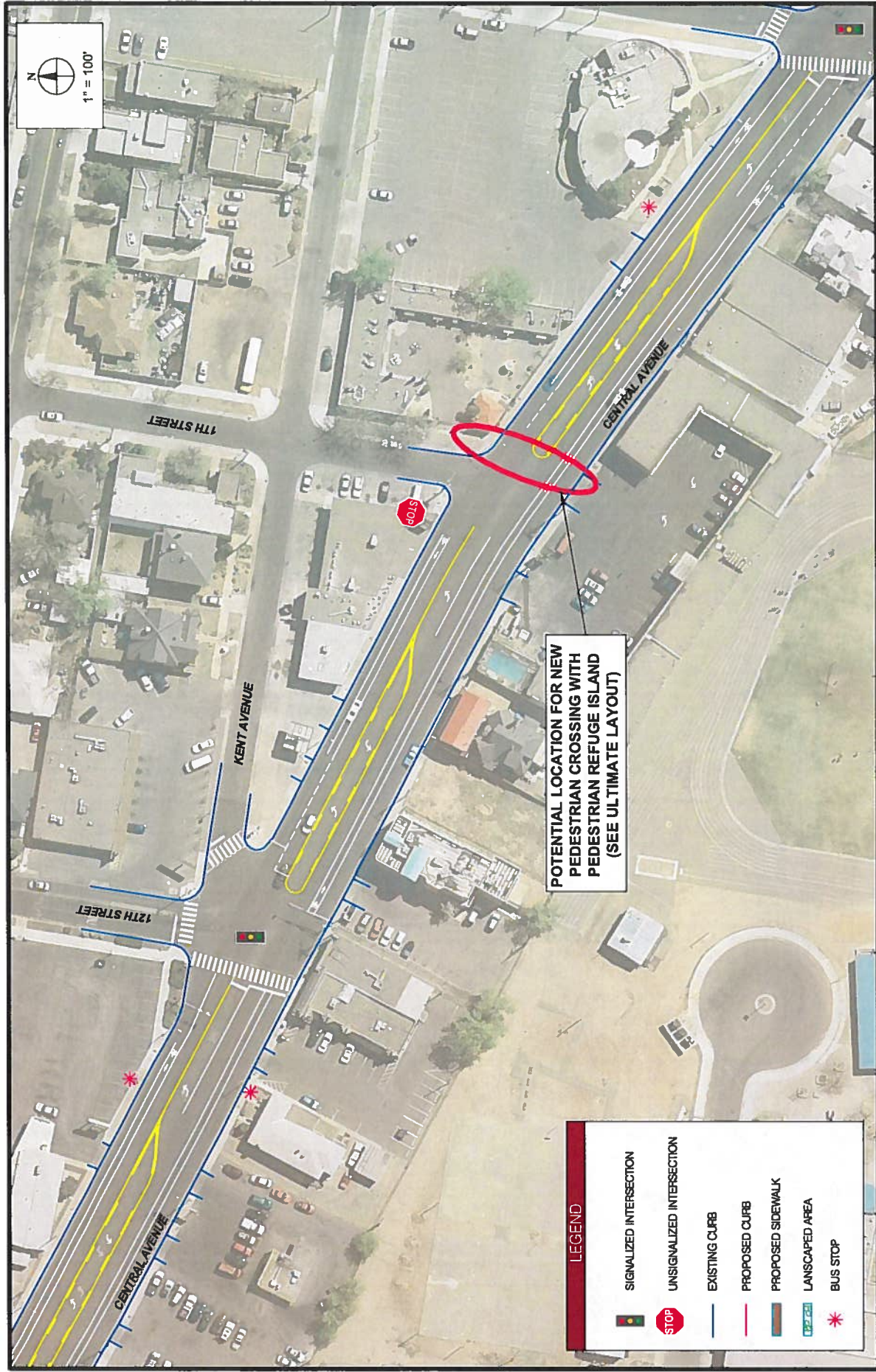


FIGURE 13

CENTRAL AVENUE ROAD DIET CONCEPTS
NEAR-TERM STREET LAYOUT (12TH STREET TO 10TH STREET)

WEST CENTRAL AVENUE CORRIDOR CONCEPT PLAN - 47TH STREET TO 8TH STREET



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III. Ultimate Street Layout (Lomas Blvd to 8th Street)

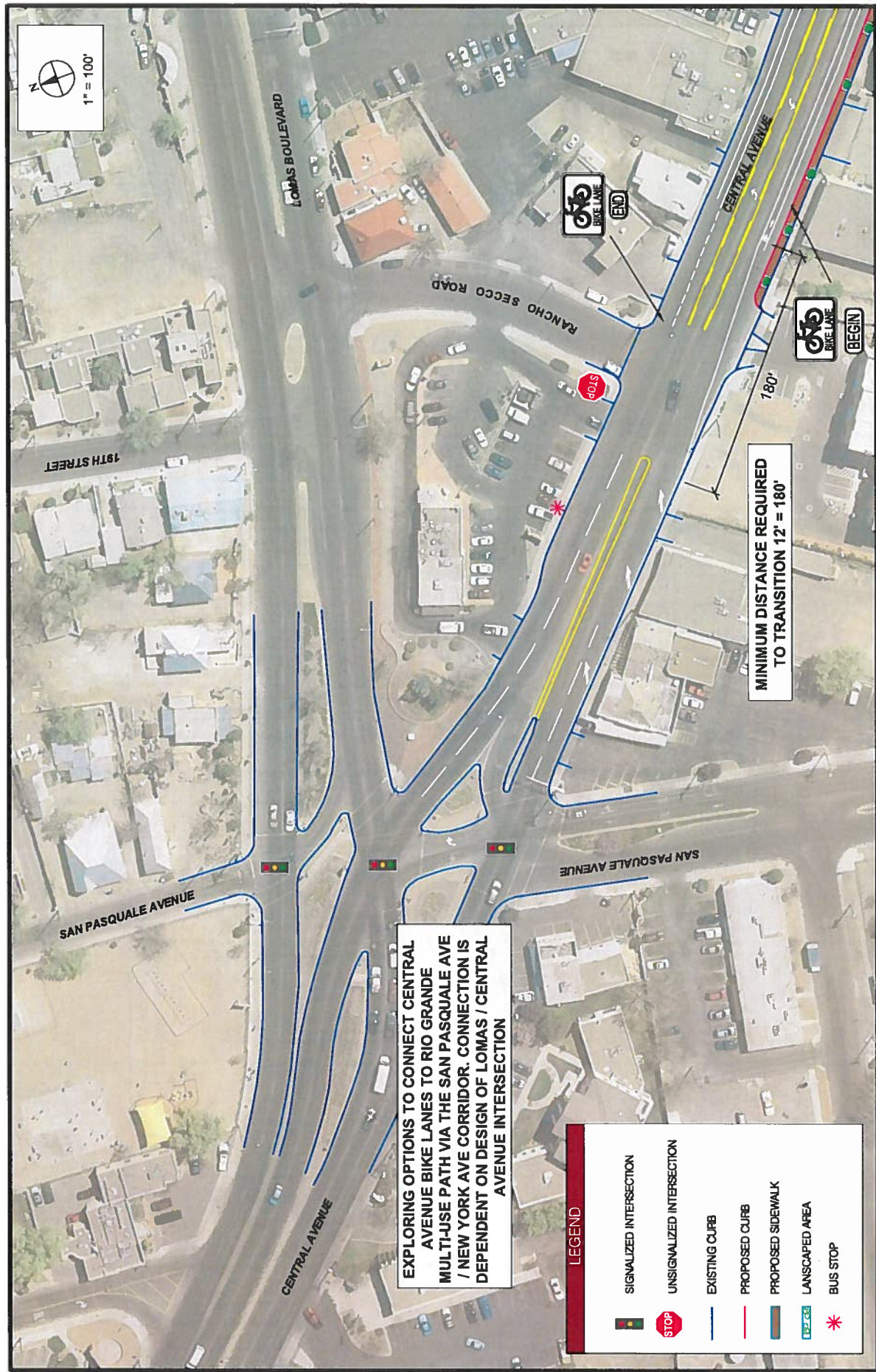


FIGURE 15
CENTRAL AVENUE ROAD DIET CONCEPTS
ULTIMATE STREET LAYOUT (SAN PASQUALE AVENUE TO RANCHO SECO ROAD)

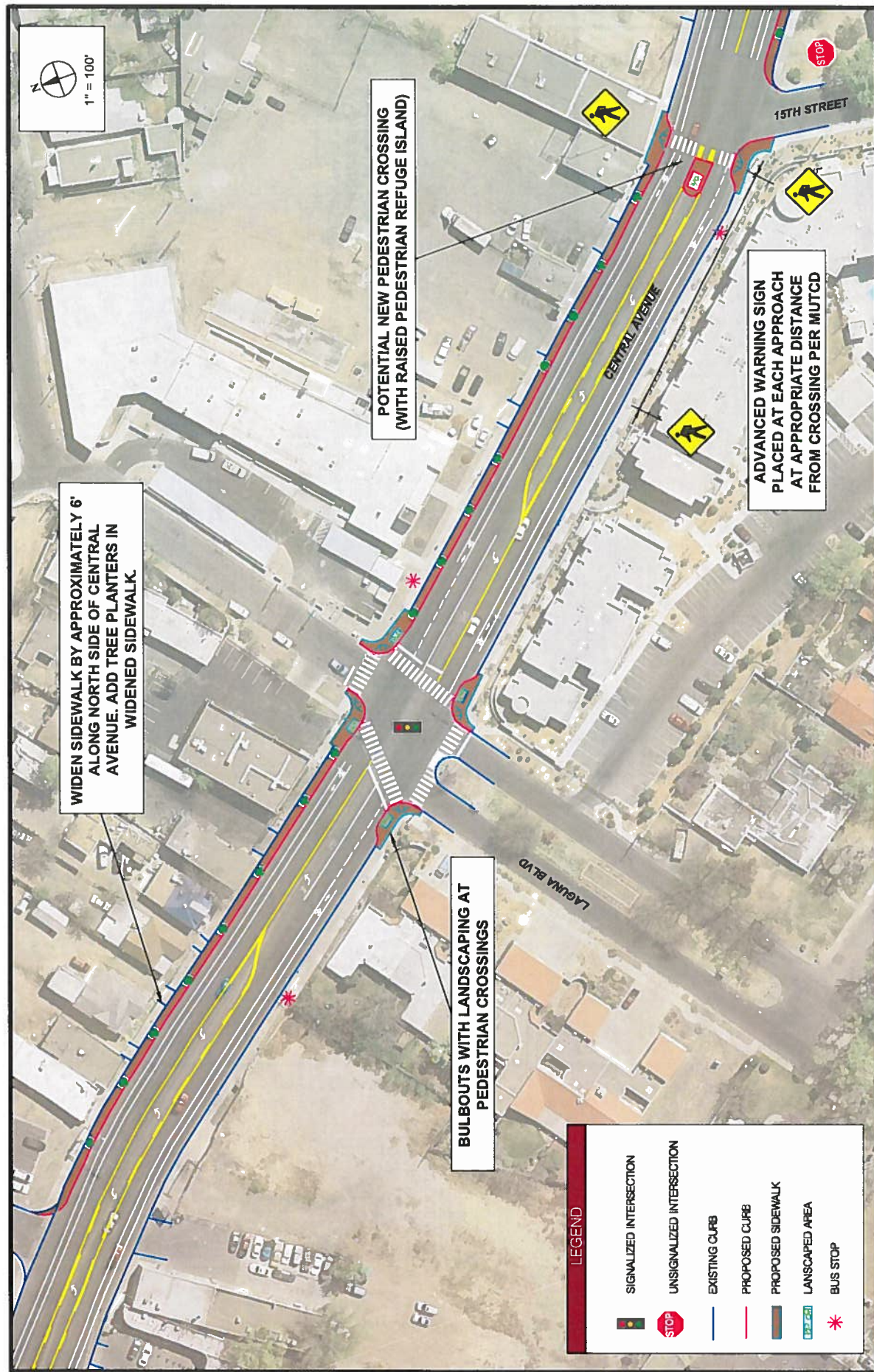


FIGURE 17

CENTRAL AVENUE ROAD DIET CONCEPTS
ULTIMATE STREET LAYOUT (MANZANO DAY SCHOOL ENTRANCE TO 15TH STREET)

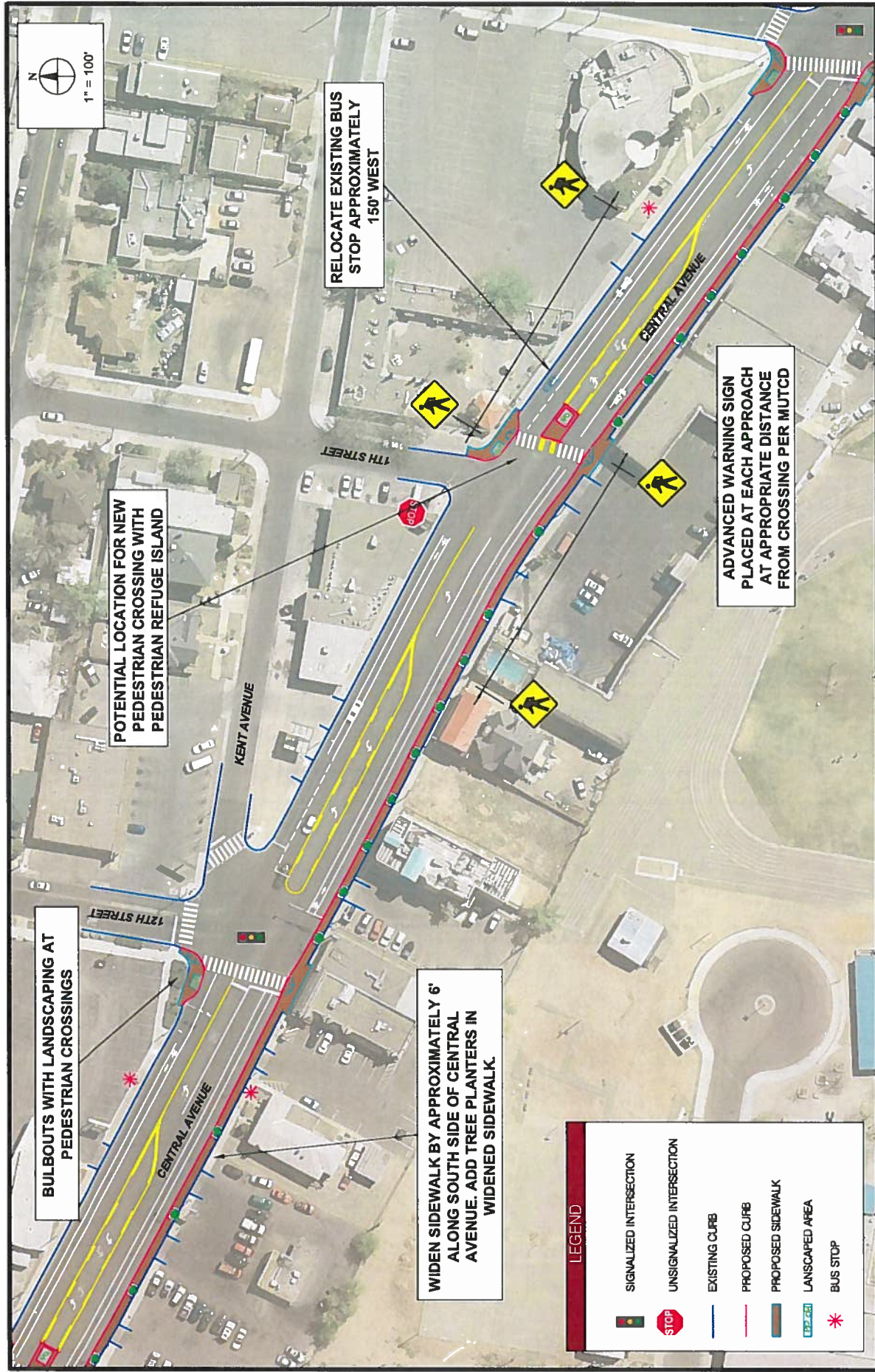


FIGURE 19
CENTRAL AVENUE ROAD DIET CONCEPTS
ULTIMATE STREET LAYOUT (12TH STREET TO 10TH STREET)

WEST CENTRAL AVENUE CORRIDOR CONCEPT PLAN - 47TH STREET TO 8TH STREET



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IV. Operations Analysis



Table 1: Existing Conditions – Intersection LOS

No.	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Control Delay (sec/veh)	LOS	Control Delay (sec/veh)	LOS
1	Central Ave / 10 th St / Copper Ave	Signal	12.3	B	20.9	C
2	Central Ave / 12 th St / Kent Ave	Signal	1.9	A	17.7	B
3	Central Ave / 14 th St / Tijeras Ave	Signal	6.6	A	8.8	A
4	Central Ave / Laguna Blvd	Signal	4.7	A	4.2	A
5	Central Ave / San Pasquale Ave	Signal	4.1	A	5.6	A
6	Central Ave / Lomas Blvd	Signal	50.2	D	16.9	B
7	Lomas Blvd / San Pasquale Ave	Signal	7.7	A	5.7	A
8	Central Ave / Rio Grande Blvd	Signal	29.3	C	40.7	D

Table 2: Existing Conditions with Road Diet – Intersection LOS

No.	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Control Delay (sec/veh)	LOS	Control Delay (sec/veh)	LOS
1	Central Ave / 10 th St / Copper Ave	Signal	14.0	B	23.4	C
2	Central Ave / 12 th St / Kent Ave	Signal	5.0	A	25.6	C
3	Central Ave / 14 th St / Tijeras Ave	Signal	8.1	A	12.5	B
4	Central Ave / Laguna Blvd	Signal	6.9	A	5.9	A
5	Central Ave / San Pasquale Ave	Signal	4.0	A	5.5	A
6	Central Ave / Lomas Blvd	Signal	50.0	D	17.4	B
7	Lomas Blvd / San Pasquale Ave	Signal	7.7	A	5.9	A
8	Central Ave / Rio Grande Blvd	Signal	29.3	C	40.7	D



Table 5: Central Avenue Corridor – Queuing Summary

Scenarios Analyzed	Turning Movement	Central Avenue																				
		10th Street / Copper Avenue			12th Street / Kent Avenue			14th Street / Tijeras Avenue			Laguna Avenue			San Pasquale Avenue			Lomas Boulevard			Rio Grande Boulevard		
		Link	AM	PM	Link	AM	PM	Link	AM	PM	Link	AM	PM	Link	AM	PM	Link	AM	PM	Link	AM	PM
Existing Conditions No Project	EBL	100	26	<25	110	<25	<25	120	82	<25	100	<25	<25							185	363	196
	WBL	100	<25	<25				100	<25	<25	110	<25	<25	70	<25	<25				75	<25	26
	NBL																45	<25	<25	75	<25	86
	SBL				100	<25	75													150	178	95
	SBR																			275	91	337
Existing Conditions With Road Diet Project	EBL	100	<25	<25	110	<25	26	120	29	30	100	<25	<25							185	363	196
	WBL	100	<25	<25				100	31	<25	110	<25	<25	70	<25	<25				75	<25	26
	NBL																45	<25	<25	75	<25	86
	SBL				100	<25	75													150	178	95
	SBR																			275	91	337
Long-Term Year 2030 No Project	EBL	100	49	<25	110	<25	<25	120	28	<25	100	<25	<25							185	485	315
	WBL	100	<25	<25				100	<25	<25	110	<25	<25	70	<25	27				75	<25	<25
	NBL																45	<25	<25	75	<25	163
	SBL				100	<25	109													150	251	175
	SBR																			275	125	782
Long-Term Year 2030 With Road Diet Project	EBL	100	26	<25	110	<25	<25	120	39	30	100	<25	<25							185	465	315
	WBL	100	<25	<25				100	<25	<25	110	<25	<25	70	<25	<25				75	<25	<25
	NBL																45	<25	<25	75	<25	163
	SBL				100	<25	109													150	251	175
	SBR																			275	125	782

95th Percentile Queues are reported above in terms of feet.
Queues determined using SYNCHRO 6 software, which utilizes 2000 Highway Capacity (HCM) methodology.
Highlighted cells represent locations where 95th percentile queues extend at least one vehicle length beyond existing turn pocket lengths.

Table 6: Central Avenue Arterial Analysis (Rio Grande Boulevard to 10th Street)

Scenario	Dir.	AM Peak Hour No Project		AM Peak Hour With Road Diet		Net Travel Time Change (min)	PM Peak Hour No Project		PM Peak Hour With Road Diet		Net Travel Time Change (min)
		Travel Time (min)	Arterial LOS	Travel Time (min)	Arterial LOS		Travel Time (min)	Arterial LOS	Travel Time (min)	Arterial LOS	
Existing Conditions	WB	3:08	C	3:18	C	0:10	3:43	D	3:58	D	0:15
	EB	2:27	C	2:36	C	0:09	2:34	C	3:14	D	0:40
Future (2030) Conditions	WB	3:04	C	3:10	C	0:06	4:26	E	4:40	E	0:14
	EB	2:31	C	2:41	C	0:10	2:23	C	2:29	C	0:06



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V. Planning Level Construction Costs Estimates



**PRELIMINARY COST ESTIMATE
TO BE UPDATED WITH FINAL VERSION OF DESIGN CONCEPTS**

Estimated Opinion of Probable Costs for Near-Term Central Avenue Road Diet Improvements

Expense	Amount
Direct Construction Costs	
Striping	\$57,250
Seal Coat (279,800 square feet @ \$0.15 per square foot)	\$41,970
Pavement Legends and Signing	\$4,080
Subtotal	\$103,300
Soft Costs for Engineering, Surveying, Administrative, etc. (35%)	\$36,160
Mobilization (5%)	\$5,170
Contingency (35%)	\$36,160
Total	\$180,790
Bulbouts: Curb and Gutter, Sidewalks, Curb Ramps, Drainage Improvements and Landscaping, Signal Modifications	\$82,300
Soft Costs for Engineering, Surveying, Administrative, etc. (35%)	\$28,810
Mobilization (5%)	\$4,120
Contingency (35%)	\$28,810
Total	\$324,830

Estimated Opinion of Probable Costs for Ultimate Central Avenue Corridor Improvements

Expense	Amount
Direct Construction Costs	
Striping	\$54,990
Seal Coat (279,800 square feet @ \$0.15 per square foot)	\$41,970
Pavement Legends and Signing	\$4,080
Subtotal	\$101,040
Soft Costs for Engineering, Surveying, Administrative, etc. (35%)	\$35,370
Mobilization (5%)	\$5,060
Contingency (35%)	\$35,370
Total	\$176,840
Bulbouts: Curb and Gutter, Sidewalks, Drainage Improvements and Landscaping	\$448,380
Soft Costs for Engineering, Surveying, Administrative, etc. (35%)	\$156,940
Mobilization (5%)	\$22,420
Contingency (35%)	\$156,940
Total	\$961,520



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VI. Road Diet Demonstration Project – One Year Monitoring Plan Summary

Central Avenue Road Diet Demonstration Project – One Year Monitoring Plan Summary

Monitoring Element	Purpose	Frequency	Cost
Traffic / Pedestrian / Bicycle Counts	- Identify shift in traffic patterns - Identify shift to alternative travel modes - Monitor traffic operations	5 Times (once before; quarterly after construction)	\$36,000
Parking Occupancy Counts	Monitor change in parking utilization	5 Times (once before; quarterly after construction)	\$3,500
Travel Time Runs	- Monitor operational performance of three-lane configuration - Identify impacts to vehicular circulation/delay	5 Times (once before; quarterly after construction)	\$3,500
Accident Data Review	Study vehicular, pedestrian and bicycle safety before and after implementation of the project	1 Time After one year, collect and review accident data for before and after conditions.	\$1,000
Queuing Observations	- Monitor operational performance of three-lane configuration - Identify impacts to vehicular circulation - Identify change in traffic congestion	5 Times (once before; quarterly after construction)	\$3,500
Spot Speed Surveys	Study change in vehicle speeds with implementation of the three-lane configuration	5 Times (once before; quarterly after construction)	\$1,500
Transit Travel Time Surveys	- Monitor performance of transit service with three-lane configuration - Identify impacts to transit service frequency and reliability	5 Times (once before; quarterly after construction)	\$3,500
Stakeholder Interviews	Record stakeholder perceptions of functionality and safety of three-lane configuration	1 Time After one year, interview area stakeholders, such as neighborhood residents, business associations, schools, emergency services, transit providers/users and bicycle advocates.	\$500
Total Monitoring Plan Cost:			\$53,000
Note: It is assumed that City of Albuquerque Staff will be utilized for Monitoring Plan tasks, with the exception of traffic count and speed survey data collection.			

B



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B. Central Ave / Lomas Blvd / San Pasquale Ave Intersection Concepts



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VII. Preliminary Intersection Design Concepts

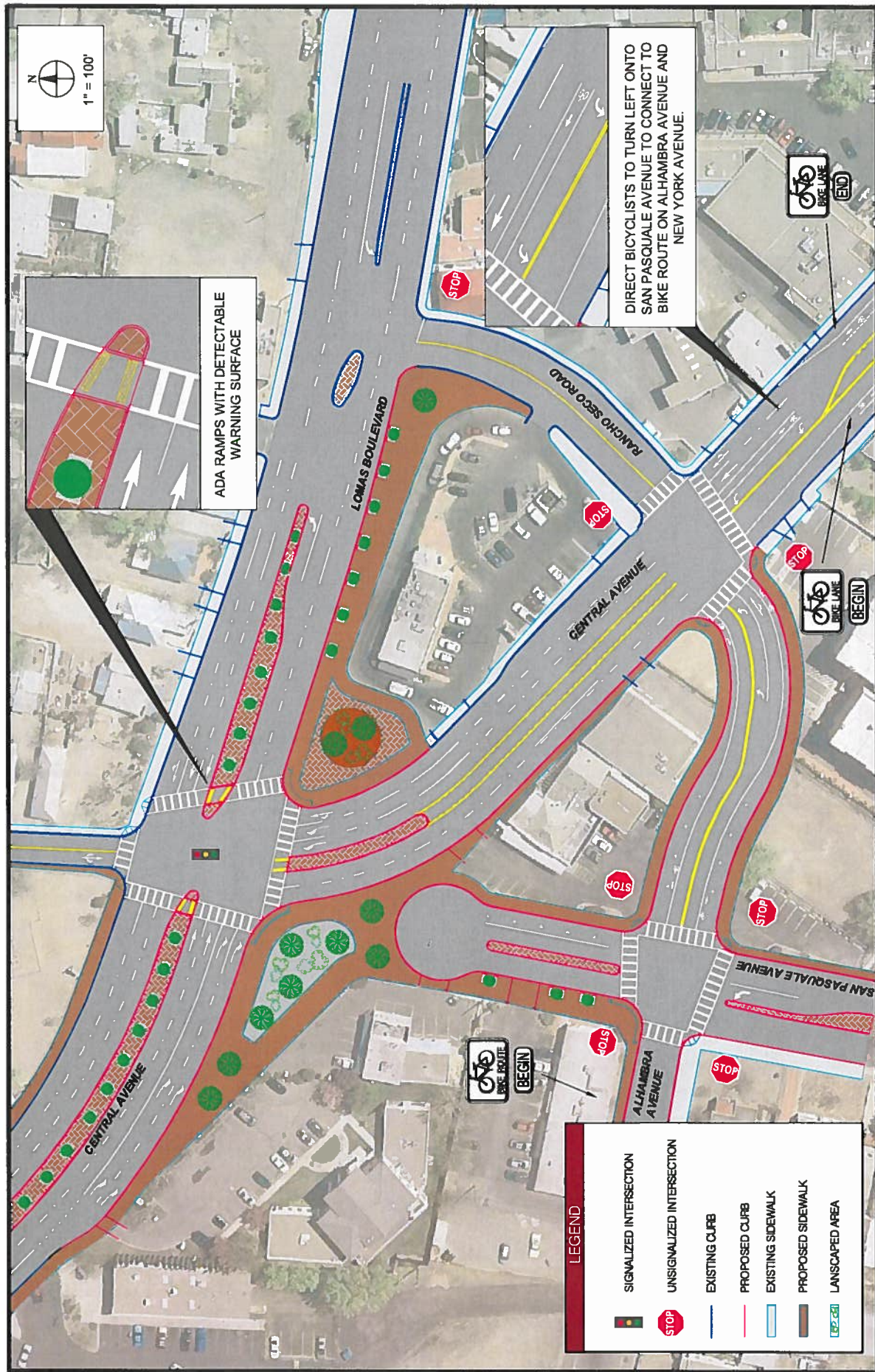


FIGURE 21

CENTRAL AVE / SAN PASQUALE AVE / LOMAS BLVD INTERSECTION CONCEPTS
ALTERNATIVE 1: FOUR-LEG INTERSECTION WITH REROUTED SAN PASQUALE AVE

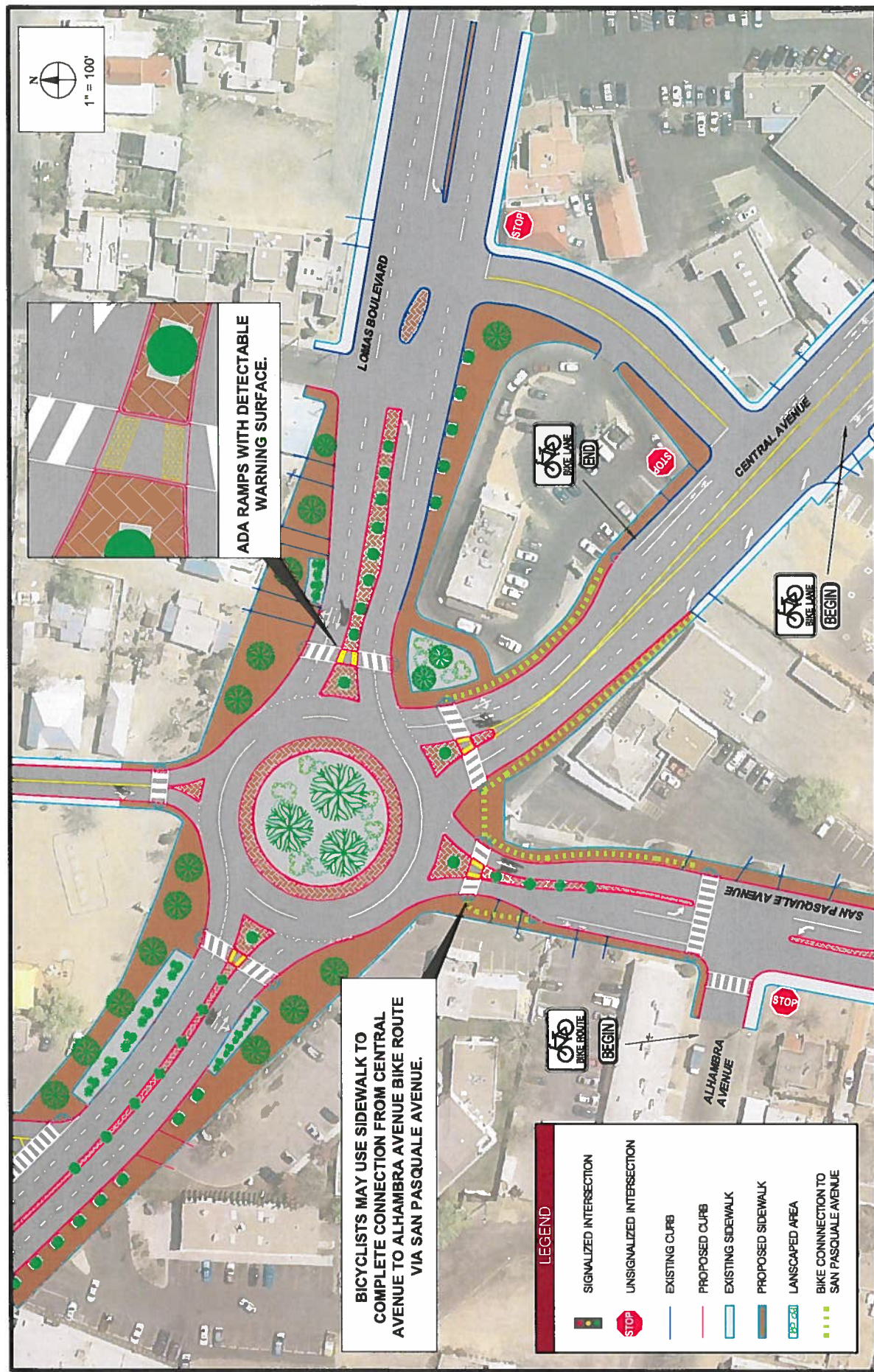


FIGURE 23
CENTRAL AVE / SAN PASQUALE / LOMAS BLVD INTERSECTION CONCEPTS
ALTERNATIVE 3: TWO-LANE URBAN ROUNDABOUT

WEST CENTRAL AVENUE CORRIDOR CONCEPT PLAN - 47TH STREET TO 8TH STREET

VIII. Operational Analysis

Table 8: Central Ave / Lomas Blvd / San Pasquale Ave Intersection LOS Comparison

Scenario	Existing AM Peak Hour		Existing PM Peak Hour		2030 AM Peak Hour		2030 AM PM Peak Hour	
	Control Delay (sec/veh)	LOS	Control Delay (sec/veh)	LOS	Control Delay (sec/veh)	LOS	Control Delay (sec/veh)	LOS
Existing Configuration								
a. Central Ave / San Pasquale	a. 4.1	A	a. 5.6	A	a. 2.6	A	a. 5.6	A
b. Central Ave / Lomas Blvd	b. 50.2	D	b. 16.9	B	b. 24.2	C	b. 19.6	B
c. Lomas Blvd / San Pasquale	c. 7.7	A	c. 5.7	A	c. 6.5	A	c. 7.1	A
Alternative 1: Four-Leg Intersection with Rerouted San Pasquale Avenue	14.4	B	21.8	C	14.5	B	26.5	C
Alternative 2: Four-Leg Intersection with Limited Access at San Pasquale Avenue	14.2	B	25.0	C	14.1	B	25.2	C
Alternative 3: Two-Lane Roundabout								
a. Average (All Vehicles)	a. 4.5	A	a. 8.3	A	a. 11.0	B	a. 89.7	F
b. Worst Approach	b. 15.9	B	b. 14.9	B	b. 62.6	E	b. **	F
** Volume exceeds capacity, resulting in high delay (>200 sec.) Note: Signal timings optimized.								

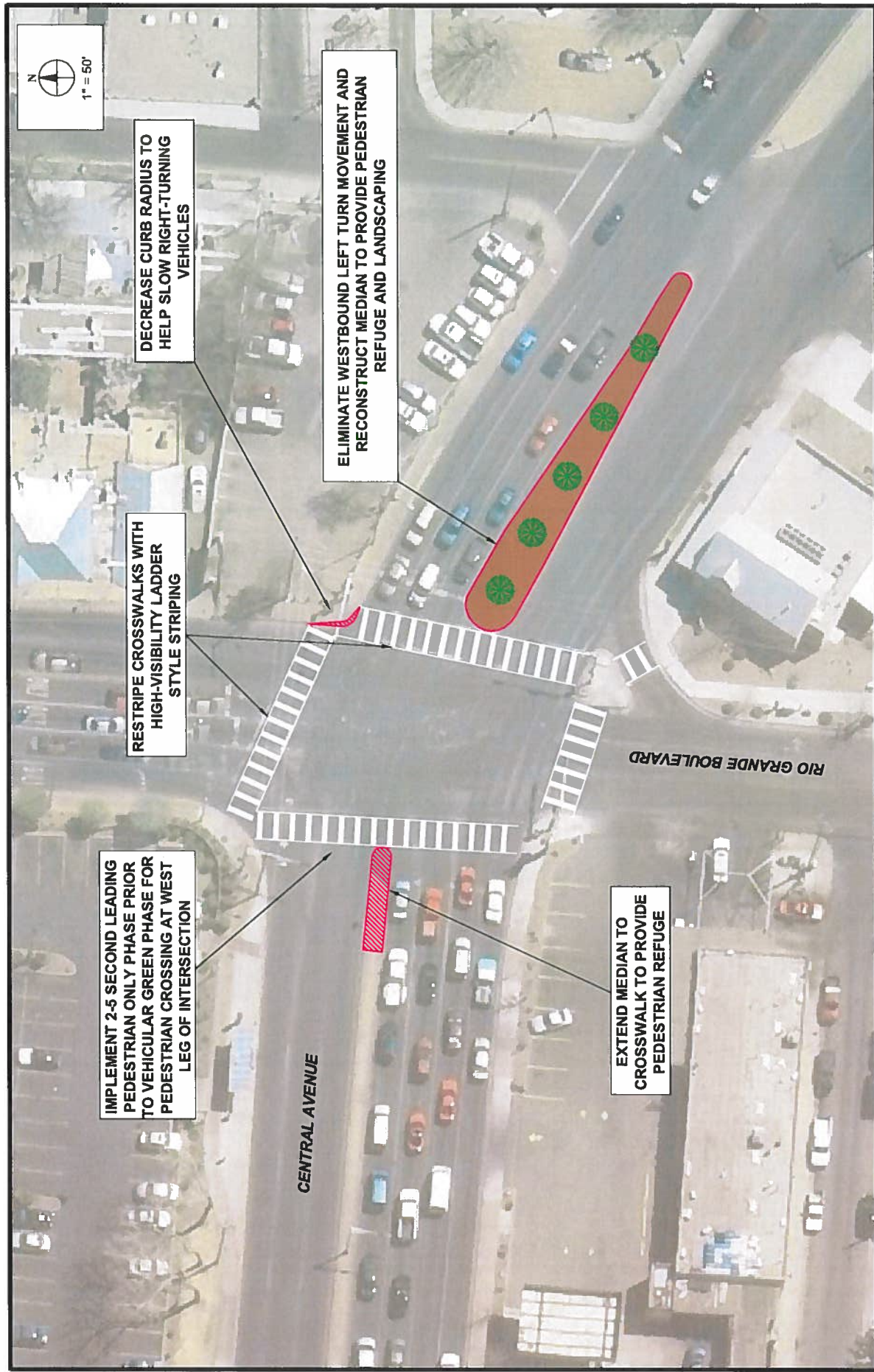
C



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C. Central Ave Recommendations – West of Lomas Blvd/San Pasquale Ave

IX. Central Avenue / Rio Grande Boulevard Recommended Improvements





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X. Central Ave / Rio Grande Blvd Intersection Level of Service (LOS) with Recommended Pedestrian Improvements

Table 9: Central Ave / Rio Grande Blvd Pedestrian Improvements – Intersection LOS

Scenario	Traffic Control	AM Peak Hour Existing Timing		AM Peak Hour w/ Ped. Lead Phase		PM Peak Hour Existing Timing		PM Peak Hour w/ Ped. Lead Phase	
		Control Delay (sec/veh)	LOS	Control Delay (sec/veh)	LOS	Control Delay (sec/veh)	LOS	Control Delay (sec/veh)	LOS
Existing Conditions	Signal	29.3	C	30.5	C	40.7	D	54.0	D
Future (2030) Conditions	Signal	34.9	C	36.8	D	87.7 36.3	F D	100.4	F

Table 10: Central Ave / Rio Grande Blvd Pedestrian Improvements – Intersection LOS

Scenarios Analyzed	Turning Movement	Central Ave / Rio Grande Blvd		
		Link	AM	PM
<u>Existing Conditions</u>	EBL	185	363	196
	WBL	75	<25	26
	NBL	75	<25	86
	SBL	150	176	95
	SBR	275	91	337
<u>Existing Conditions</u> With Pedestrian Advance / WB Left Turn Removed	EBL	185	353	234
	WBL			
	NBL	75	<25	127
	SBL	150	200	110
	SBR	275	72	409
<u>2030 Conditions</u>	EBL	185	465	315
	WBL	75	<25	<25
	NBL	75	<25	163
	SBL	150	251	175
	SBR	275	125	762
<u>2030 Conditions</u> With Pedestrian Advance / WB Left Turn Removed	EBL	185	447	351
	WBL			
	NBL	75	<25	163
	SBL	150	302	175
	SBR	275	92	730

-95th Percentile Queues are reported above in terms of feet.

-Queues determined using SYNCHRO 6 software, which utilizes 2000 Highway Capacity (HCM) methodology.

-Highlighted cells represent locations where 95th percentile queues extend at least one vehicle length beyond existing turn pocket lengths.



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XI. Recommended Improvements – Rio Grande Boulevard to 47th Street

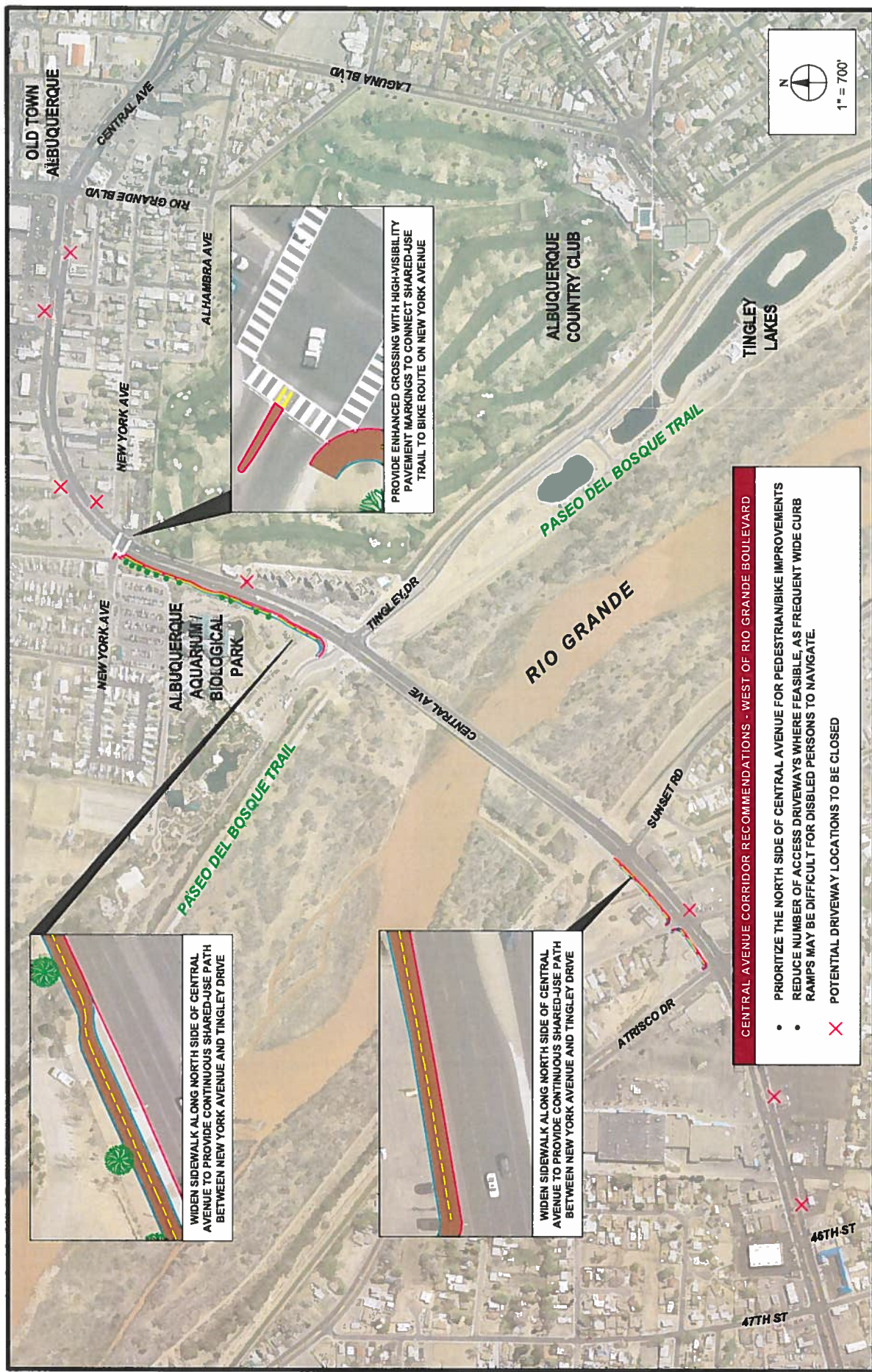


FIGURE 25
CENTRAL AVENUE CORRIDOR IMPROVEMENTS: RIO GRANDE BLVD WEST TO 47TH ST



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XII. Bicycle Connectivity with Proposed Improvements

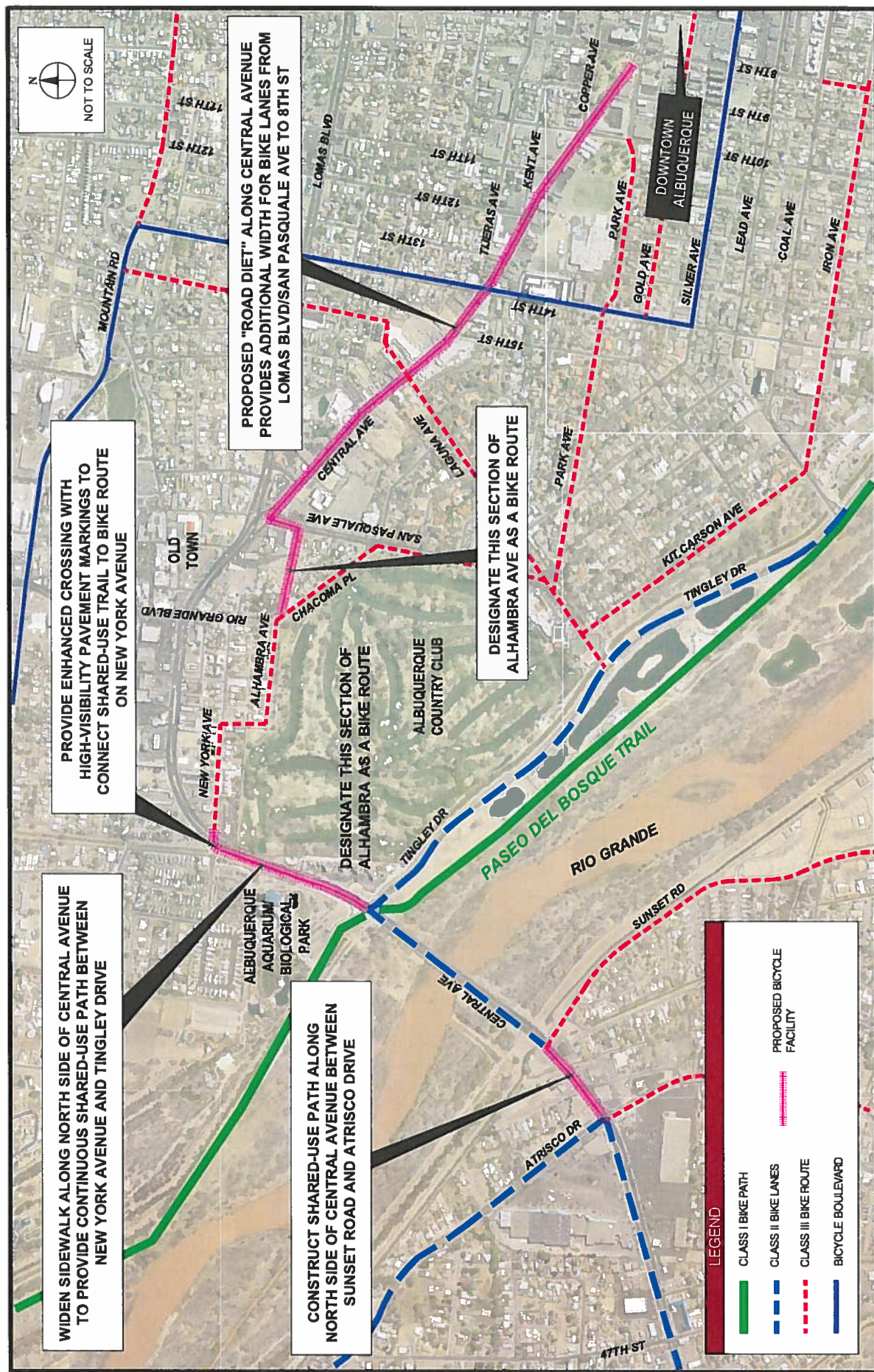


FIGURE 26
BICYCLE CONNECTIVITY WITH PROPOSED IMPROVEMENTS
 WEST CENTRAL AVENUE CORRIDOR CONCEPT PLAN - 47TH STREET TO 8TH STREET

D



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D. Appendix



Detailed Central Avenue Road Diet Monitoring Plan (Lomas Blvd/San Pasquale Ave to 8th Street)

Monitoring Elements	Description	Frequency	Monitoring Locations	Cost (approximate)
Traffic / Pedestrian / Bicycle Counts	Conduct intersection turning movement counts at key intersections and 3-Day 24-Hour tube counts at critical roadway segments to determine changes in travel pattern and increase/decrease in vehicular/pedestrian/bicycle traffic volumes.	<u>Before Road Diet:</u> Once <u>After Road Diet:</u> Quarterly	<u>Intersection Count Locations</u> Conduct 2-hour (7 AM to 9 AM and 4 PM to 6 PM) intersection turning movement counts at the following locations: - West Central Avenue / San Pasquale Avenue - West Central Avenue / Laguna Avenue - West Central Avenue / 14th Street - West Central Avenue / 12th Street - West Central Avenue / 10th Street - West Central Avenue / 8th Street <u>24-Hour Tube Count Locations</u> - Lomas Boulevard – east of Rancho Seco Road - Lomas Boulevard – between 12th Street and 10th Street - West Central Avenue – between San Pasquale Avenue and Laguna Avenue - West Central Avenue – between 14th Street and 10th Street 14th Street – between West Central Avenue and Park Avenue - Park Avenue – between 14th Street and 10th Street - Roma Avenue – between 14th Street and 12th Street - Tijeras Avenue – between 14th Street and 12th Street - Kent Avenue – between 12th Street and 10th Street	Intersection Turning Movement Count Cost: = \$18,000 3-Day 24-Hour Tube Count Cost : = \$18,000 Total Traffic Count Cost: = \$36,000



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WEST CENTRAL AVENUE CORRIDOR CONCEPT PLAN

Monitoring Elements	Description	Frequency	Monitoring Locations	Cost (approximate)
Stakeholder Interviews	Conduct stakeholder interviews to determine the affect of proposed road diet on neighborhoods, businesses and emergency response services.	<u>Before Road Diet:</u> Once <u>After Road Diet:</u> Twice	<u>List of potential stakeholders:</u> • Emergency Service Providers (Fire Department, Medical Service, and Police Department) • Neighborhood Associations (North and South of West Central Avenue) • Washington Middle School and Manzano Day School • Selected businesses along West Central Avenue. • Bicycle Coalition • Transit Service Providers.	Approximate cost for one to two interviewers: = \$500
Total Cost for Road Diet Monitoring Plan:				\$53,000
Note: It is assumed that City of Albuquerque Staff will be utilized for Monitoring Plan tasks, with the exception of traffic count and speed survey data collection.				

West Central Avenue Corridor Concept Plan - Future Volume Forecasts

AM PEAK HOUR

No.	Intersection	Source	Approach Direction				
			NB	SB	SE	NW	WB
1	Central Ave / 10th St / Copper Ave	Existing Vol (2009)	81	28	679	195	80
		Base Model (2006)	236	-	848	171	173
		Future Model (2030)	323	-	996	252	169
		Weighted % Growth	32%	10%	15%	41%	10%
		Calculated 2030 Vol	107	31	783	276	88
2	Central Ave / 12th St / Kent Ave	Existing Vol (2009)	-	8	618	269	9
		Base Model (2006)	-	147	823	287	-
		Future Model (2030)	-	159	1155	374	-
		Weighted % Growth	-	7%	35%	27%	10%
		Calculated 2030 Vol	-	9	836	340	10
3	Central Ave / 14th St / Tijeras Ave	Existing Vol (2009)	88	23	835	280	-
		Base Model (2006)	93	-	745	823	-
		Future Model (2030)	102	-	1,080	352	-
		Weighted % Growth	8%	10%	39%	-50%	-
		Calculated 2030 Vol	95	25	1164	140	-
4	Central Ave / Laguna Blvd	Existing Vol (2009)	43	17	751	319	-
		Base Model (2006)	-	-	752	291	-
		Future Model (2030)	-	-	1,087	336	-
		Weighted % Growth	10%	10%	39%	14%	-
		Calculated 2030 Vol	47	19	1044	362	-
5,6,7	Central Ave / San Pasquale Ave / Lomas Blvd	Existing Vol (2009)	42	33	1,764	277	256
		Base Model (2006)	-	-	1,573	309	345
		Future Model (2030)	-	-	2,254	348	424
		Weighted % Growth	10%	10%	38%	11%	20%
		Calculated 2030 Vol	46	36	2432	308	307
8	Central Ave / Rio Grande Blvd	Existing Vol (2006)	137	838	2,127	744	-
		Base Model (2006)	-	727	2,187	643	-
		Future Model (2030)	-	763	3,291	769	-
		Weighted % Growth	10%	5%	50%	20%	-
		Calculated 2030 Vol	151	879	3201	890	-

Notes:

1. Source of Model Volumes: MRCOG MTP Travel Model
2. Future (2030) intersection turning movements were derived by applying the growth rates calculated from the MRCOG Travel Demand Model, shown in the table above, to the existing approach volumes for each intersection. The future turning movement volumes were then derived by distributing the approach volumes based on the existing turning movement volumes.
3. For minor side streets that are not adequately detailed in the MRCOG Model, and connect to generally established/built out areas and are not expected to experience significant increases in traffic levels, a nominal growth rate of approx. 0.5% per year (10% total) was applied to existing intersection volumes to derive 2030 traffic volumes.
4. The MRCOG MTP Travel Model shows approximately 50% growth from 2006-2030 for the eastbound approach volume at Central Ave / Rio Grande Blvd for AM peak hour conditions. However, the northbound departure volume shows a much lower growth rate (approximately 25%). For this reason, a total growth rate of 25% was applied to the existing eastbound left turn volume and a 50% growth rate was applied to the eastbound through volume to derive the 2030 volumes at this location.