

3.10 TRAFFIC AND CIRCULATION

This section describes the existing traffic, circulation and transit conditions in the vicinity of the project site, and provides an analysis of the potential impacts of the project. Information for this section is based on a traffic impact analysis prepared for the Reynolds Ranch Annexation project by Willdan in April 2006. This analysis was based on information provided by the project applicant, field studies conducted by Willdan and standard reference materials. The level of service worksheets are available at Lodi City Hall for review or otherwise furnished upon request. For further information, please contact City of Lodi Public Works Department at (209) 333-6706.

Traffic impacts during the weekday morning and evening peak hours were assessed at 27 intersections for the following scenarios.

- Existing Conditions – 2006
- Existing Conditions plus Other Approved/Proposed Projects – 2008
- Existing Conditions plus Other Approved/Proposed Projects plus Phase 1 of Reynolds Ranch – 2008
- Existing Conditions plus Other Approved/Proposed Projects plus Annual Growth Rate – 2030
- Existing Conditions plus Other Approved/Proposed Projects plus Annual Growth Rate plus Reynolds Ranch Phases 1 and 2 - 2030

The project's potential effects on pedestrian and bicycle facilities were also evaluated. Measures that would mitigate project impacts to less-than-significant levels are recommended.

3.10.1 EXISTING CONDITIONS

The transportation-related context in which the Reynolds Ranch Project would be constructed and would operate is described below, beginning with a description of the study area and the street network that serves the project site. Next, existing transit service, bicycle, and pedestrian facilities in the vicinity of the project site are described. Intersection and roadway levels of service are then defined and current conditions are summarized.

a. Study Area. The project site is shown in Figure 3.10.1 and is located on the south side of Harney Lane between the UPRR tracks and the SR 99 Freeway, in an unincorporated part of San Joaquin County. Figure 3.10.2 shows the Conceptual Land Use Plan.

FIGURE 3.10.1: LOCATION OF STUDY AREA INTERSECTION

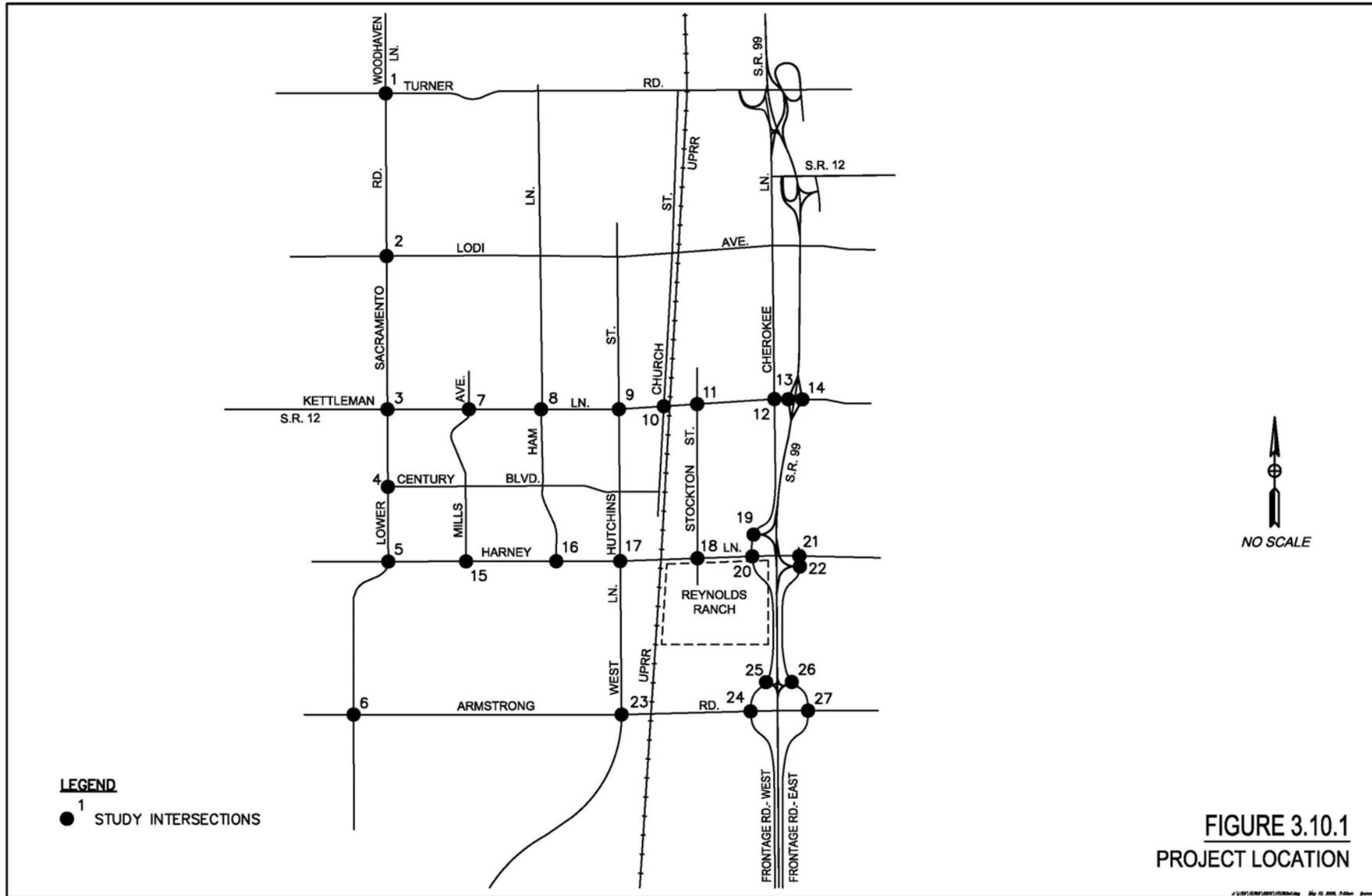


FIGURE 3.10.1
PROJECT LOCATION

The 27 study area intersections listed in Table 3.10.1 were identified, in consultation with City of Lodi staff and Caltrans, as intersections that could be significantly impacted by the proposed project. The locations of these intersections are also shown in Figure 3.10.1. Seventeen of the study intersections are signalized, two intersections are all-way stop-controlled, and eight are minor-street stop-controlled.

TABLE 3.10.1: STUDY AREA INTERSECTIONS

Location	Intersection Control
1. Turner Road/Lower Sacramento Road-Woodhaven Lane	Signal
2. Lodi Avenue/Lower Sacramento Road	Signal
3. Kettleman Lane/Lower Sacramento Road	Signal
4. Century Boulevard/Lower Sacramento Road	Signal
5. Harney Lane/Lower Sacramento Road	Signal
6. Armstrong Road/Lower Sacramento Road	Signal
7. Kettleman Lane/Mills Avenue	Signal
8. Kettleman Lane/Ham Lane	Signal
9. Kettleman Lane/Hutchins Street	Signal
10. Kettleman Lane/Church Street	Signal
11. Kettleman Lane/Stockton Street	Signal
12. Kettleman Lane/Cherokee Lane	Signal
13. Kettleman Lane/SR 99 SB Ramps	Signal
14. Kettleman Lane/SR 99 NB Ramps	Signal
15. Harney Lane/Mills Street	Minor Street Stop
16. Harney Lane/Ham Lane	Minor Street Stop
17. Harney Lane/Hutchins Street	Signal
18. Cherokee Lane/SR 99 SB Ramps	Minor Street Stop
19. Harney Lane/Stockton Street	Signal
20. Harney Lane/Cherokee Lane	All-Way Stop
21. Harney Lane/Frontage Road-East	Minor Street Stop
22. Frontage Road-East/SR 99 NB Ramps	Minor Street Stop
23. Armstrong Road/West Lane	Signal
24. Armstrong Road/Frontage Road-West	All-Way Stop
25. Frontage Road-West/SR 99 SB Ramps	Minor Street Stop
26. Frontage Road-East/SR 99 NB Ramps	Minor Street Stop
27. Armstrong Road/Frontage Road-East	Minor Street Stop

Source: Willdan 2006

b. **Street Network.** The key roadways in the study area are discussed below.

- **State Route 99 (SR 99)** is north-south limited-access highway that extends from south of Bakersfield to Red Bluff. SR 99 has six lanes adjacent to the project site. Primary access to the project site is provided by interchanges at Harney Lane and Armstrong Road. Secondary access is provided by the interchange at Kettleman Lane (SR 12).
- **Harney Lane** is an east-west roadway that extends from west of Lower Sacramento Road past SR 99 to the east. It is primarily a two-lane facility on the northern boundary of the project site.
- **Armstrong Road** is an east-west roadway that also extends from west of Lower Sacramento Road past SR 99 to the east. It is a two-lane facility that is located along the southern boundary of the study area.
- **Cherokee Lane** extends northerly from Harney Lane and provides access to Kettleman Lane and the commercial land uses between downtown Lodi and SR 99.
- **Frontage Road-West** is a two lane road paralleling SR 99 on the west side. It provides access to the existing residential and service organization land uses between Harney Lane and Armstrong Road. This road will be realigned as part of the project and intersect Harney Lane approximately 1,000 feet west of its current intersection opposite Cherokee Lane.
- **Frontage Road-East** is a two lane road paralleling SR 99 on the east side. It extends southerly from Harney Lane and provides access to the residential land uses between Harney Lane and Armstrong Road.
- **Stockton Street** is a north-south arterial street extending northward from Harney Lane. It provides access to Kettleman Lane and central Lodi. Stockton Street will be extended south of Harney lane into the project as part of Phase 2 improvements and will provide a primary access to the Reynolds Ranch residential, school and mini storage land uses.
- **Hutchins Street/West Lane** is a north-south arterial street providing access to central Lodi to the north and to the City of Stockton to the south.
- **Kettleman Lane/State Route 12 (SR 12)** is a state highway that extends past Interstate 5 in the west to Rio Vista and Fairfield, and east past SR 99. Kettleman Lane is a two-lane facility west of Lower Sacramento Road. Between Lower Sacramento Road and SR 99, Kettleman Lane widens to provide two lanes in each direction.
- **Lower Sacramento Road** is north-south arterial street located in the western part of the City of Lodi. North of Harney Lane, the road is a four-lane facility. South of Harney Lane, Lower Sacramento Road narrows to a two-lane roadway. San Joaquin County is currently in the process of widening and realigning Lower Sacramento Road.

c. Existing Transit Service. Local transit service is provided by the Lodi Grapeline in the City of Lodi. The San Joaquin Regional Transit District also provides transit service in the City of Lodi and in unincorporated San Joaquin County. Both providers offer fixed-route and Dial-A-Ride services. In addition, regional transit service between Lodi, Galt and Sacramento is provided by South Sacramento Transit (SCT Link).

The Lodi Grapeline operates five local and three express bus routes. Grapeline Route 5 provides the closest service to the project at Cherokee Lane/Almond Drive (approximately 0.7 miles north of the project site). San Joaquin Bus Route 24 provides service from Stockton to the downtown Lodi Transportation Station and is the nearest transit service to the project at Harney Lane/Stockton Street.

d. Bicycle and Pedestrian Facilities. Bicycle facilities include bicycle paths (Class I facilities), bicycle lanes (Class II facilities), and bicycle routes (Class III facilities). Bicycle paths are paved trails that are separated from the roadways. Bicycle lanes are lanes on roadways designated for use by bicycles by striping, pavement legends, and signs. Bicycle routes are on roadways that are designated for bicycle use with signs but have no designated lanes.

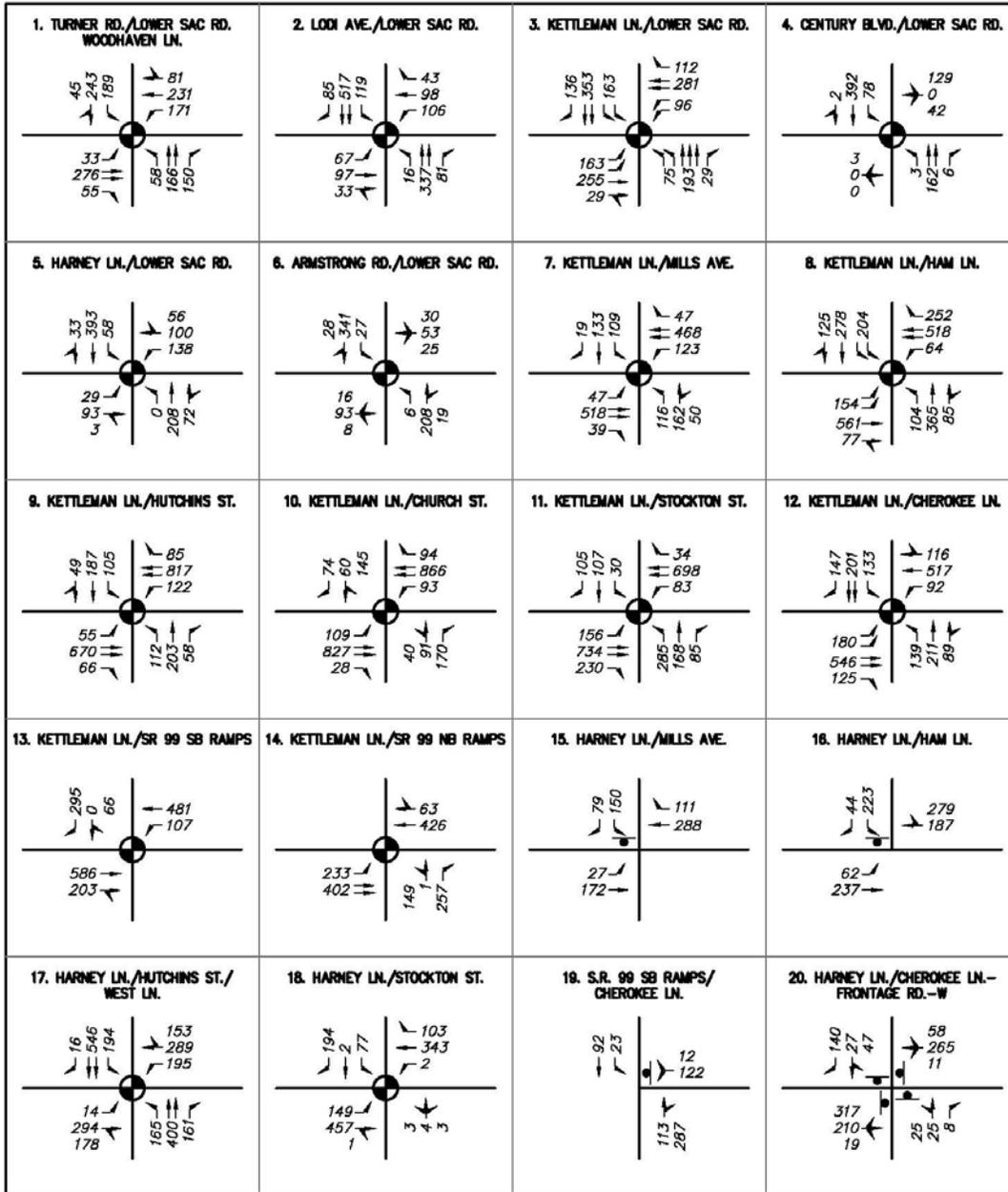
Bicycle lanes on streets closest to the project site are provided on Hutchins Street and Lower Sacramento Road north of Harney Lane and on Kettleman Lane. There are no bike paths or bike routes in the immediate vicinity of the project.

Pedestrian facilities include sidewalks, pedestrian paths, crosswalks, pedestrian signals, and other amenities. There are discontinuous sidewalks along the north side of Harney Lane and the west side of Cherokee Lane in the vicinity of the project. Crosswalks and pedestrian signals with push buttons are provided at most signalized study intersections.

e. Existing Intersection Operations. Existing peak hour traffic volumes were developed from recent traffic counts conducted for the City of Lodi and by Willdan. The AM and PM peak hour traffic volumes, the number of lanes on each approach and the existing traffic control at each study intersection are shown on Figures 3.10.3 and 3.10.4.

The operating efficiency of an intersection is typically described in terms of “Level of Service”. Level of Service (LOS) is a quantitative measurement of the effect of various factors, including travel speed, travel time, delay, freedom to maneuver, safety, driving comfort, and convenience. Level of service is measured on a qualitative scale ranging from LOS A (the best) to LOS F (the worst).

FIGURE 3.10.3: EXISTING AM PEAK HOUR TRAFFIC VOLUMES

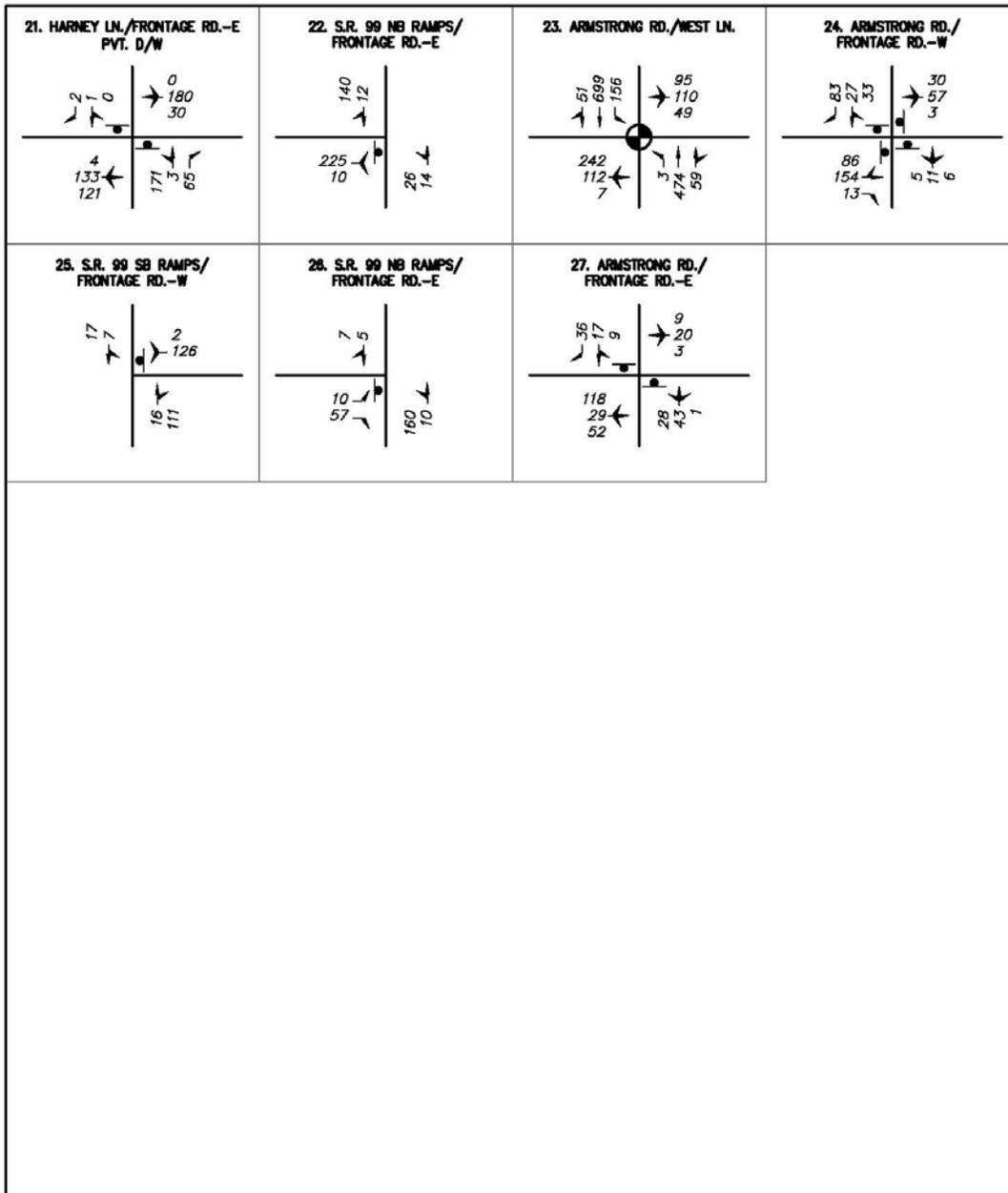


LEGEND
 - TRAFFIC SIGNAL
 - STOP SIGN

FIGURE 3.10.3
EXISTING AM PEAK TRAFFIC VOLUMES

4 | 1201 | 12382 | 8320 | 123388 | 8320 | May 15, 2006 | 8:00am | 00000

FIGURE 3.10.3 (continued)



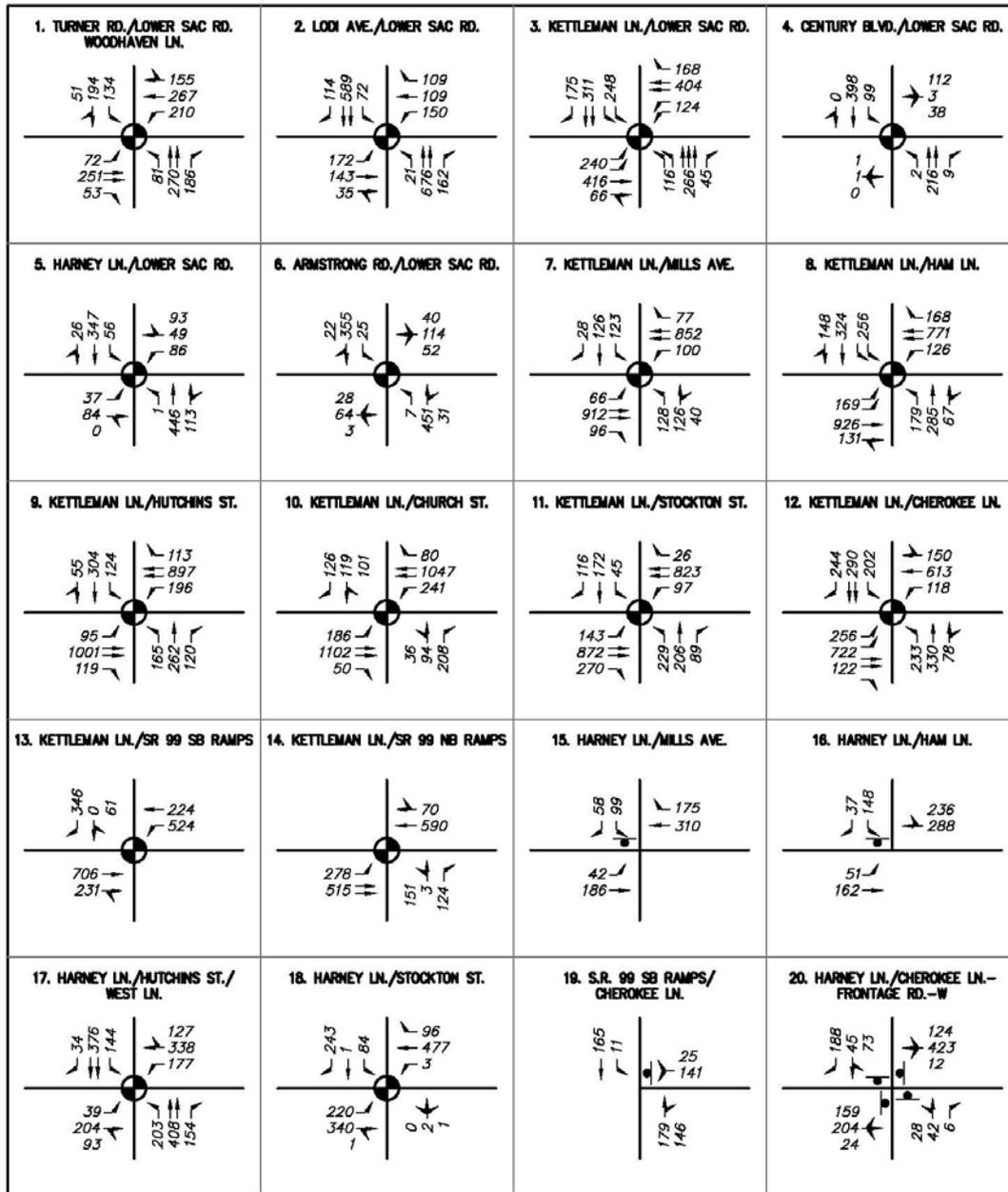
LEGEND

-  - TRAFFIC SIGNAL
-  - STOP SIGN

FIGURE 3.10.3
EXISTING AM PEAK TRAFFIC VOLUMES

4/20/2007/10:07/103004.dwg May 10, 2006, 2:01pm

FIGURE 3.10.4: EXISTING PM PEAK HOUR TRAFFIC VOLUMES

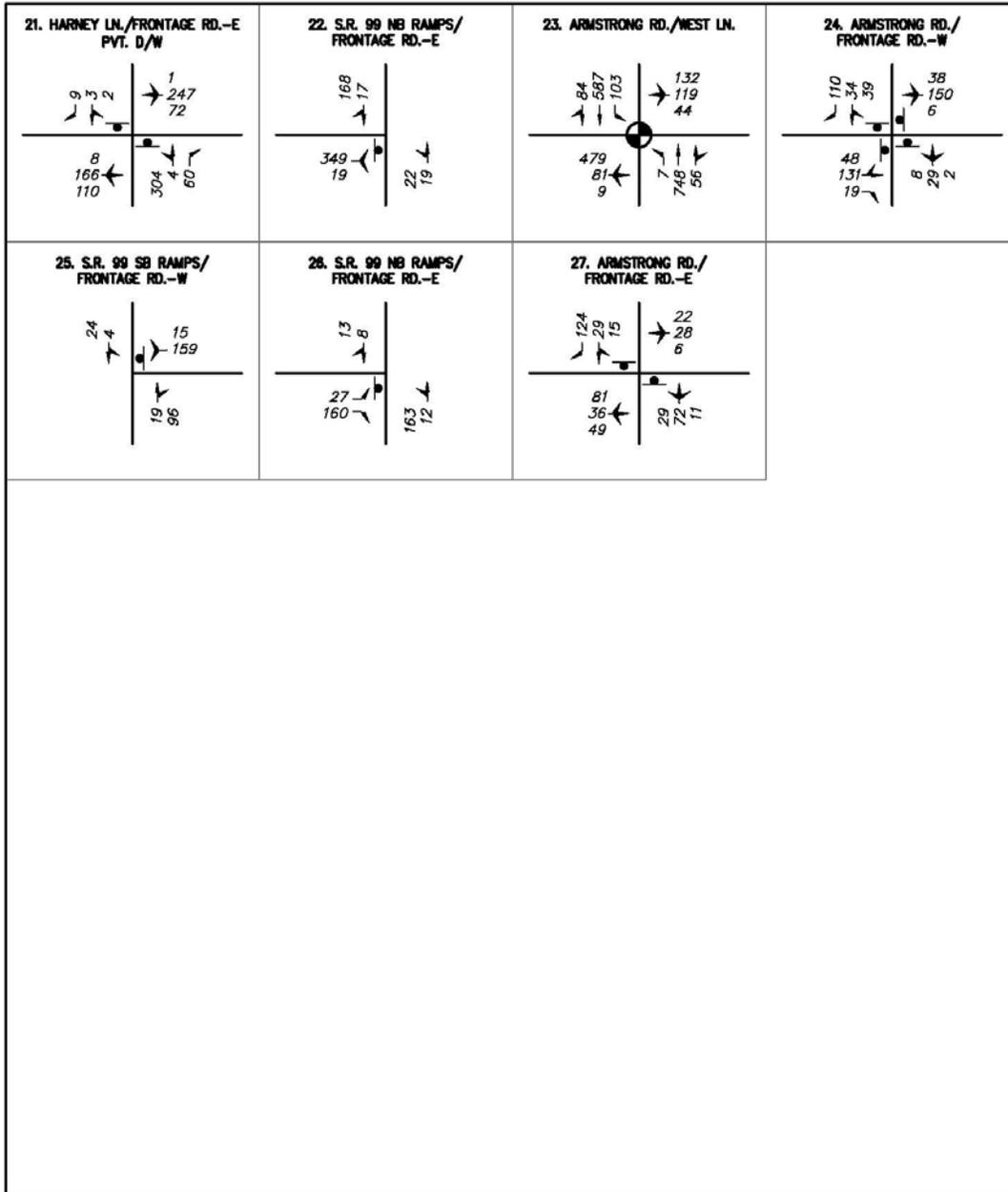


LEGEND
 - TRAFFIC SIGNAL
 - STOP SIGN

FIGURE 3.10.4
 EXISTING PM PEAK TRAFFIC VOLUMES

4 | 1201 | 1208 | 1209 | 1210 | 1211 | 1212 | 1213 | 1214 | 1215 | 1216 | 1217 | 1218 | 1219 | 1220 | 1221 | 1222 | 1223 | 1224 | 1225 | 1226 | 1227 | 1228 | 1229 | 1230 | 1231 | 1232 | 1233 | 1234 | 1235 | 1236 | 1237 | 1238 | 1239 | 1240 | 1241 | 1242 | 1243 | 1244 | 1245 | 1246 | 1247 | 1248 | 1249 | 1250 | 1251 | 1252 | 1253 | 1254 | 1255 | 1256 | 1257 | 1258 | 1259 | 1260 | 1261 | 1262 | 1263 | 1264 | 1265 | 1266 | 1267 | 1268 | 1269 | 1270 | 1271 | 1272 | 1273 | 1274 | 1275 | 1276 | 1277 | 1278 | 1279 | 1280 | 1281 | 1282 | 1283 | 1284 | 1285 | 1286 | 1287 | 1288 | 1289 | 1290 | 1291 | 1292 | 1293 | 1294 | 1295 | 1296 | 1297 | 1298 | 1299 | 1300 | 1301 | 1302 | 1303 | 1304 | 1305 | 1306 | 1307 | 1308 | 1309 | 1310 | 1311 | 1312 | 1313 | 1314 | 1315 | 1316 | 1317 | 1318 | 1319 | 1320 | 1321 | 1322 | 1323 | 1324 | 1325 | 1326 | 1327 | 1328 | 1329 | 1330 | 1331 | 1332 | 1333 | 1334 | 1335 | 1336 | 1337 | 1338 | 1339 | 1340 | 1341 | 1342 | 1343 | 1344 | 1345 | 1346 | 1347 | 1348 | 1349 | 1350 | 1351 | 1352 | 1353 | 1354 | 1355 | 1356 | 1357 | 1358 | 1359 | 1360 | 1361 | 1362 | 1363 | 1364 | 1365 | 1366 | 1367 | 1368 | 1369 | 1370 | 1371 | 1372 | 1373 | 1374 | 1375 | 1376 | 1377 | 1378 | 1379 | 1380 | 1381 | 1382 | 1383 | 1384 | 1385 | 1386 | 1387 | 1388 | 1389 | 1390 | 1391 | 1392 | 1393 | 1394 | 1395 | 1396 | 1397 | 1398 | 1399 | 1400 | 1401 | 1402 | 1403 | 1404 | 1405 | 1406 | 1407 | 1408 | 1409 | 1410 | 1411 | 1412 | 1413 | 1414 | 1415 | 1416 | 1417 | 1418 | 1419 | 1420 | 1421 | 1422 | 1423 | 1424 | 1425 | 1426 | 1427 | 1428 | 1429 | 1430 | 1431 | 1432 | 1433 | 1434 | 1435 | 1436 | 1437 | 1438 | 1439 | 1440 | 1441 | 1442 | 1443 | 1444 | 1445 | 1446 | 1447 | 1448 | 1449 | 1450 | 1451 | 1452 | 1453 | 1454 | 1455 | 1456 | 1457 | 1458 | 1459 | 1460 | 1461 | 1462 | 1463 | 1464 | 1465 | 1466 | 1467 | 1468 | 1469 | 1470 | 1471 | 1472 | 1473 | 1474 | 1475 | 1476 | 1477 | 1478 | 1479 | 1480 | 1481 | 1482 | 1483 | 1484 | 1485 | 1486 | 1487 | 1488 | 1489 | 1490 | 1491 | 1492 | 1493 | 1494 | 1495 | 1496 | 1497 | 1498 | 1499 | 1500

FIGURE 3.10.4 (continued)



LEGEND

-  - TRAFFIC SIGNAL
-  - STOP SIGN

FIGURE 3.10.4
EXISTING PM PEAK TRAFFIC VOLUMES

4 | 1221 | 12382 | 8320 | 1233884.cgp May 12, 2020, 2:02pm 6/20/20

Empirical level of service criteria and methods of calculation have been developed by the Transportation Research Board (TRB) and are documented in the *2000 Highway Capacity Manual (HCM)*. These level of service definitions and calculation methods are the prevailing measurement standard used throughout the United States. In addition, the use of the 2000 HCM methodology is consistent with Caltrans guidelines.

The level of service at signalized and all-way stop-controlled intersections is based on the average delay for all vehicles passing through the intersection. The 2000 HCM specifies that the level of service for minor-street stop-controlled intersections be based on the delay for vehicles on the minor street approach only. Table 3.10.2 shows the average delay range for each level of service category for signalized and unsignalized intersections.

The City of Lodi's acceptable level of service is LOS C or better.

Table 3.10.3 presents the intersection delays and corresponding levels of service for existing conditions at the study intersections. This table shows that several intersections currently operate at an unacceptable level (i.e. LOS D or worse) during the peak hours:

- Kettleman Lane/Ham Lane (#8) operates at LOS D during the AM and PM peak hour. By retiming the signal so that the maximum cycle length is 100 seconds, the levels of service improve to C during both peak hours.
- Kettleman Lane/Church Lane (#10) operates at LOS D during the PM peak hour. By retiming the signal so that the maximum cycle length is 100 seconds, the level of service improves to C during the PM peak hour.
- Harney Lane/Ham Lane (#16) operates at LOS D during the AM peak hour. With the installation of a signal, the level of service improves to B during the AM peak hour.
- Harney Lane/Hutchins Street (#17) operates at LOS D during the AM and PM peak hours. By retiming the signal so that the maximum cycle length is 100 seconds, the levels of service improve to C during both peak hours.
- Harney Lane/Cherokee Lane (#20) operates at LOS D during the PM peak hour. With the installation of a signal, the level of service improves to B during the PM peak hour.
- Harney Lane/Frontage Road-East (#21) operates at LOS F during the PM peak hour. With the installation of an all way stop the levels of service improves to A during the AM peak hour and to B during the PM peak hour.

3.10.2 PRE-PROJECT CONDITIONS - 2008

Phase 1 of the proposed project is anticipated to be completed in 2008. Future conditions were established for the 2008 Background scenario (i.e. without the project) based on existing traffic volumes, plus the traffic generated by other developments that are under construction or expected to occur in the study area.

a. Other Projects

Several other projects are either under construction or expected to be completed by 2008. Table 3.10.4 lists the land uses and expected peak hour trip generation from these developments. (Note: By 2008, it was assumed that 200 low density and 100 high density dwellings in the Westside projects would be constructed.) The locations of the other developments are shown on Figure 3.10.5.

The trip distribution for the Vintner Square, Super WalMart and Westside Projects developments was taken from the respective project traffic impact studies. The trip distribution for the projects in Residential Areas 1 and 2 is generally the same as for the Westside Projects.

TABLE 3.10.2: INTERSECTION LEVEL OF SERVICE CRITERIA

Level of Service	Average Stopped Delay/Vehicle	Description
Signalized Intersections		
A	< 10 secs	Very low delay. Most vehicles do not stop
B	10 to 20 secs	Generally good progression of vehicles. Slight delays.
C	20 to 35 secs	Fair progression. Increased number of stopped vehicles.
D	35 to 55 secs	Noticeable congestion. Large portion of vehicles stopped.
E	55 to 80 secs	Poor progression. High delays and frequent cycle failure.
F	> 80 secs	Oversaturation. Forced flow. Extensive queuing.
Unsignalized Intersections		
A	< 10 secs	Little or no conflicting traffic for minor street approach.
B	10 to 15 secs	Minor street approach begins to notice absence of available gaps.
C	15 to 25 secs	Minor street approach begins experiencing delay for available gaps.
D	25 to 35 secs	Minor street approach experiences queuing due to a reduction in available gaps.
E	35 to 50 secs	Extensive minor street queuing due to insufficient gaps.
F	> 50 secs	Insufficient gaps of suitable size to allow minor street traffic demand to cross safely through a major traffic stream.

Source: Highway Capacity Manual (Transportation Research Board, 2000)

TABLE 3.10.3: EXISTING INTERSECTION LEVELS OF SERVICE

Intersection	Intersection Control	Existing Conditions			
		AM Peak Hour		PM Peak Hour	
		Delay ^a	LOS	Delay ^a	LOS
1. Turner Road/Lower Sacramento Road	Signal	29.2	C	30.3	C
2. Lodi Avenue/Lower Sacramento Road	Signal	24.4	C	24.6	C
3. Kettleman Lane/Lower Sacramento Road	Signal	29.4	C	30.5	C
4. Century Boulevard/Lower Sacramento Road	Signal	19.3	B	17.8	B
5. Harney Lane/Lower Sacramento Road	Signal	19.4	B	16.4	B
6. Armstrong Road/Lower Sacramento Road	Signal	14.6	B	15.4	B
7. Kettleman Lane/Mills Avenue	Signal	29.0	C	24.1	C
8. Kettleman Lane/Ham Lane	Signal	38.4	D	39.7	D
	Signal^b	28.6^b	C^b	31.1^b	C^b
9. Kettleman Lane/Hutchins Street	Signal	26.9	C	31.0	C
10. Kettleman Lane/Church Street	Signal	32.8	C	37.2	D
	Signal	25.3^b	C^b	29.4^b	C^b
11. Kettleman Lane/Stockton Street	Signal	27.7	C	27.9	C
12. Kettleman Lane/Cherokee Street	Signal	28.7	C	32.1	C
13. Kettleman Lane/SR 99 SB Ramps	Signal	11.4	B	24.7	C
14. Kettleman Lane/SR 99 NB Ramps	Signal	20.7	C	19.8	B
15. Harney Lane/Mills Street	Minor Street Stop	4.1 (13.8)	A (B)	2.9 (13.6)	A (B)
	Minor Street Stop	7.2 (25.9)	A (D)	4.2 (18.4)	A (C)
16. Harney Lane/Ham Lane	Signal	13.8^c	B^c	14.9^c	B^c
	Signal	38.6	D	36.8	D
17. Harney Lane/Hutchins Street	Signal	34.5^b	C^b	31.4^b	C^b
	Signal	7.4	A	10.7	B
18. Harney Lane/Stockton Street	Signal	7.4	A	10.7	B
19. Cherokee Lane/SR 99 SB Ramps	Minor Street Stop	2.9 (12.8)	A (B)	3.6 (13.8)	A (B)
	All-Way Stop	22.2	C	29.7	D
20. Harney Lane/Cherokee Lane	Signal	13.3^c	B^c	14.6^c	B^a
	Minor Street Stop	5.3 (14.6)	A (B)	22.4 (57.9)	(D) (F)
21. Harney Lane/Frontage Road-East	All Way Stop	10.2^d	A^d	15.0^d	B^d
	Minor Street Stop	6.6 (11.1)	A (B)	8.5 (13.3)	(A) (B)
22. Frontage Road-East/SR 99 NB Ramps	Minor Street Stop	6.6 (11.1)	A (B)	8.5 (13.3)	(A) (B)
23. Armstrong Road/West Lane	Signal	23.1	C	31.2	C
24. Armstrong Road/Frontage Road-West	All-Way Stop	9.6	A	9.8	A
25. Frontage Road-West/SR 99 SB Ramps	Minor Street Stop	4.7 (9.8)	A (A)	5.6 (10.0)	A (A)
	Minor Street Stop	6.8 (11.2)	A (B)	6.9 (11.6)	A (B)
26. Frontage Road-East/SR 99 NB Ramps	Minor Street Stop	6.8 (11.2)	A (B)	6.9 (11.6)	A (B)
27. Armstrong Road/Frontage Road-East	Minor Street Stop	6.7 (12.9)	A (B)	7.5 (13.0)	A (B)

^a For intersections with Minor Street Stop Control, the overall intersection delay and level of service are shown first. The worst approach delay and level of service are shown in parentheses.

^b With signal retiming

^c With signalization

^d With all-way stop control

Source: Willdan 2006

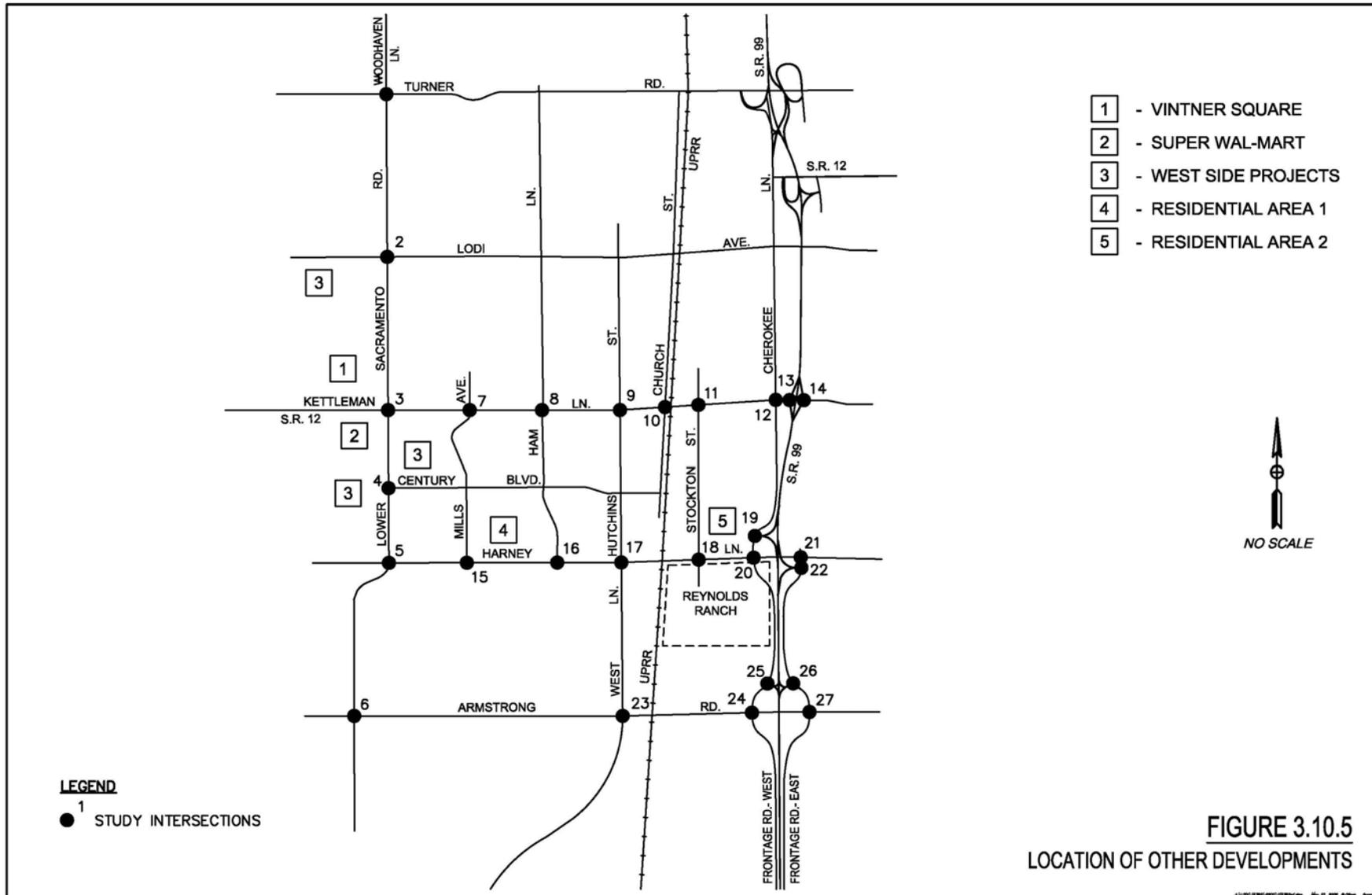
TABLE 3.10.4: LAND USE AND TRIP GENERATION – OTHER DEVELOPMENTS

Development	Land Use	Trip Generation			
		AM		PM	
		In	Out	In	Out
Vintner Square ¹	131.3 TSF	60	40	210	220
Super WalMart	226.9 TSF	395	290	755	740
Westside Projects – 2008	200 LDR	35	185	210	120
	100 HDR	10	40	40	20
Westside Projects – 2030	1,811 LDR/MDR	340	1,020	1,155	673
	543 HDR	55	220	220	115
Residential Area 1	281 SFD	55	155	180	100
Residential Area 2	84 SFD	15	45	55	30

Peak hour trips rounded to nearest 5

- ¹ Remaining to be completed
- TSF – Thousand square feet of floor area
- LDR – Low Density Residential
- MDR – Medium Density Residential
- HDR – High Density Residential
- SFD – Single Family Dwelling

FIGURE 3.10.5: LOCATION OF OTHER DEVELOPMENTS



b. Planned Circulation Improvements

In conjunction with the development of the other projects listed on Table 3.10.4, the following geometric improvements are expected to be constructed by 2008.

- *Kettleman Lane/Lower Sacramento Road (#3)* – On the eastbound approach a third through lane and a right turn lane will be added resulting in two left turn lanes, three through lanes and a right turn lane. A third through lane will be added to the westbound approach resulting in two left turn lanes, three through lanes and a right turn lane. A third through lane will be added to the southbound approach resulting in two left turn lanes, three through lanes and a right turn lane.
- *Kettleman Lane/Mills Avenue (#7)* – An additional lane will be added to the eastbound approach resulting in one left turn lane, two through lanes and a shared through-right lane. On the westbound approach an additional through lane will be added resulting in one left turn lane, two through lanes and a shared through-right lane.

c. Analysis – 2008 Background Conditions

The pre-project AM and PM peak hour volumes in 2008 are shown on Figures 3.10.6 and 3.10.7. Table 3.10.5 lists the Year 2008 Background intersection Levels of Service. The levels reflect existing traffic plus traffic from the other projects listed in Table 3.10.4 and the circulation improvements listed above.

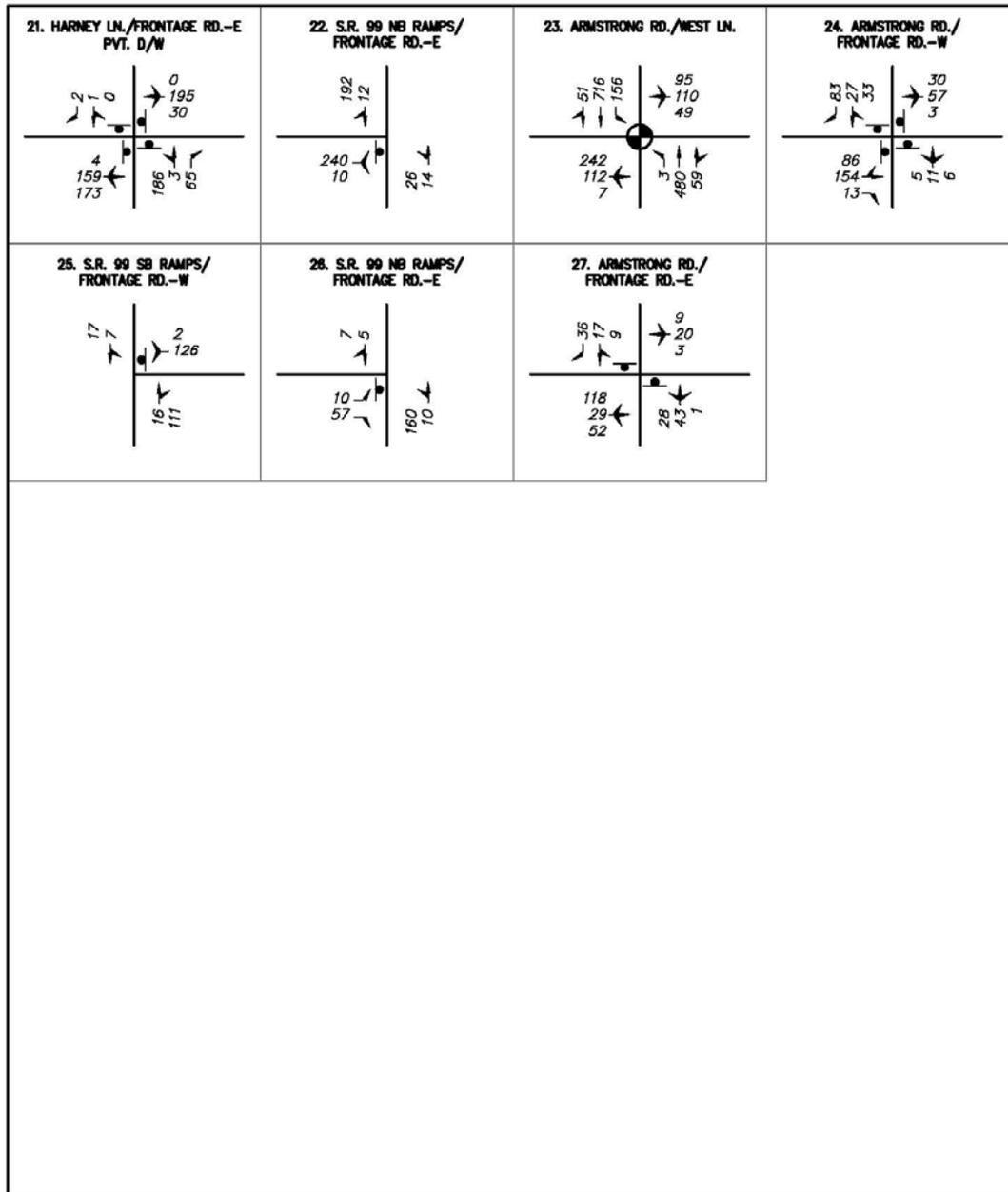
This table shows that all of the study intersections will be operating at acceptable levels.

TABLE 3.10.5: YEAR 2008 PRE-PROJECT INTERSECTION LEVELS OF SERVICE

Intersection	Intersection Control	2008 Background Conditions			
		AM Peak Hour		PM Peak Hour	
		Delay ^a	LOS	Delay ^a	LOS
1. Turner Road/Lower Sacramento Road	Signal	29.8	C	30.4	C
2. Lodi Avenue/Lower Sacramento Road	Signal	26.5	C	27.7	C
3. Kettleman Lane/Lower Sacramento Road	Signal	30.8	C	32.1	C
4. Century Boulevard/Lower Sacramento Road	Signal	17.4	B	15.5	B
5. Harney Lane/Lower Sacramento Road	Signal	20.2	B	18.1	B
6. Armstrong Road/Lower Sacramento Road	Signal	13.2	B	13.9	B
7. Kettleman Lane/Mills Avenue	Signal	29.4	C	24.4	B
8. Kettleman Lane/Ham Lane	Signal	28.9	C	33.2	C
9. Kettleman Lane/Hutchins Street	Signal	27.1	C	33.6	C
10. Kettleman Lane/Church Street	Signal	24.6	C	29.8	C
11. Kettleman Lane/Stockton Street	Signal	27.9	C	28.6	C
12. Kettleman Lane/Cherokee Street	Signal	28.0	C	31.7	C
13. Kettleman Lane/SR 99 SB Ramps	Signal	11.2	B	28.0	C
14. Kettleman Lane/SR 99 NB Ramps	Signal	20.3	C	20.3	B
15. Harney Lane/Mills Street	Minor Street Stop	8.2 (22.9)	A (C)	5.2 (22.9)	A (C)
16. Harney Lane/Ham Lane	Signal	17.2	B	13.7	B
17. Harney Lane/Hutchins Street	Signal	31.3	C	30.7	C
18. Harney Lane/Stockton Street	Signal	10.5	B	11.8	B
19. Cherokee Lane/SR 99 SB Ramps	Minor Street Stop	3.1 (13.3)	A (B)	4.2 (15.1)	A (C)
20. Harney Lane/Cherokee Lane	Signal	11.9	B	13.1	B
21. Harney Lane/Frontage Road-East	All-Way Stop	11.3	B	19.5	C
22. Frontage Road-East/SR 99 NB Ramps	Minor Street Stop	6.3 (11.7)	A (B)	9.2 (14.8)	A (B)
23. Armstrong Road/West Lane	Signal	22.6	C	32.6	C
24. Armstrong Road/Frontage Road-West	All-Way Stop	9.6	A	9.8	A
25. Frontage Road-West/SR 99 SB Ramps	Minor Street Stop	4.7 (9.8)	A (A)	5.6 (10.0)	A (A)
26. Frontage Road-East/SR 99 NB Ramps	Minor Street Stop	6.8 (11.2)	A (B)	6.9 (11.6)	A (B)
27. Armstrong Road/Frontage Road-East	Minor Street Stop	6.7 (12.9)	A (B)	7.5 (13.0)	A (B)

^a For intersections with Minor Street Stop Control, the overall intersection delay and level of service are shown first. The worst approach delay and level of service are shown in parentheses.

FIGURE 3.10.6 (continued)



LEGEND

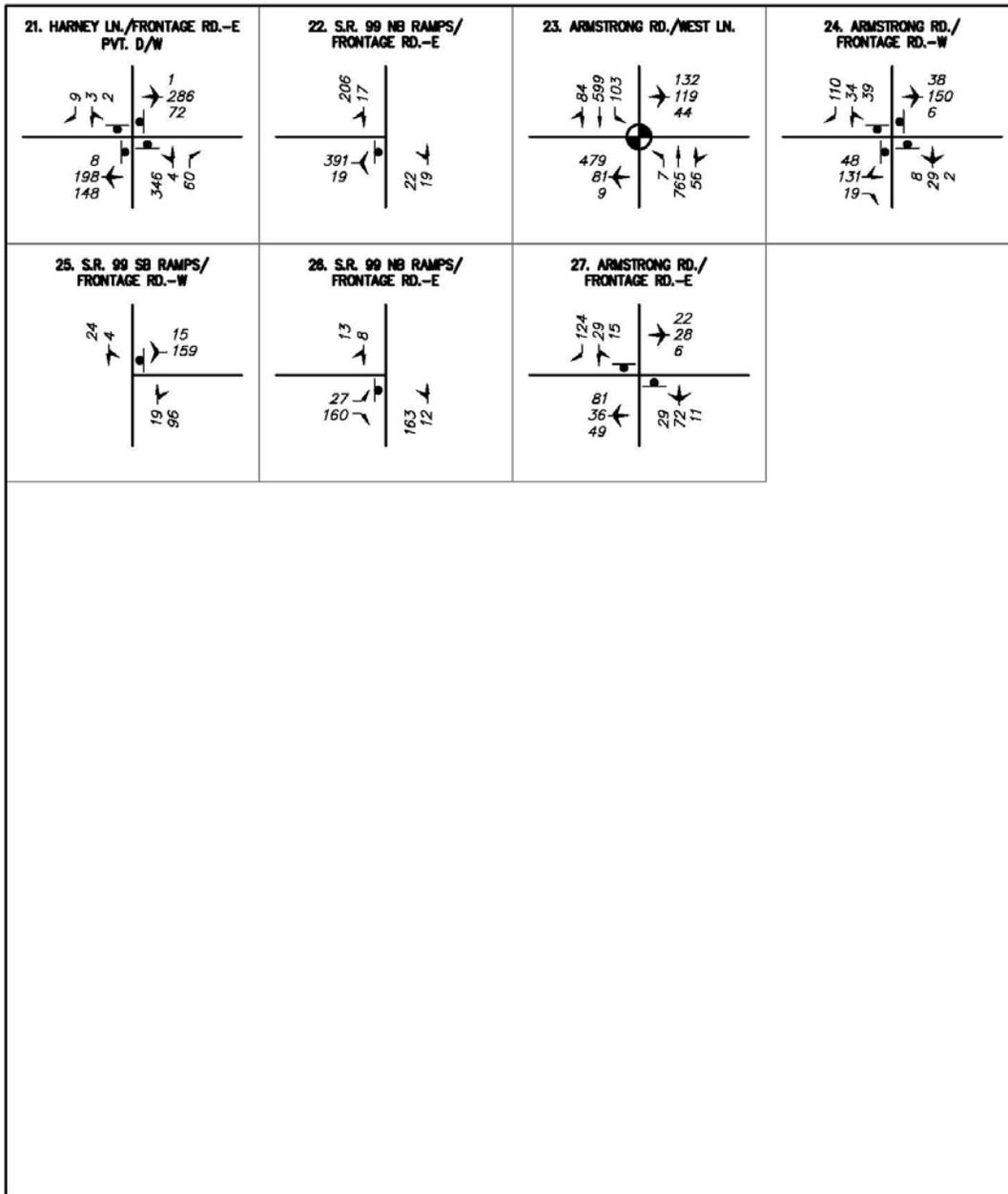
- TRAFFIC SIGNAL
- STOP SIGN

FIGURE 3.10.6

2008 PRE PROJECT AM PEAK TRAFFIC VOLUMES

4 | 1201/1208/1209/1210/1211/1212/1213/1214/1215/1216/1217/1218/1219/1220/1221/1222/1223/1224/1225/1226/1227/1228/1229/1230/1231/1232/1233/1234/1235/1236/1237/1238/1239/1240/1241/1242/1243/1244/1245/1246/1247/1248/1249/1250/1251/1252/1253/1254/1255/1256/1257/1258/1259/1260/1261/1262/1263/1264/1265/1266/1267/1268/1269/1270/1271/1272/1273/1274/1275/1276/1277/1278/1279/1280/1281/1282/1283/1284/1285/1286/1287/1288/1289/1290/1291/1292/1293/1294/1295/1296/1297/1298/1299/1300/1301/1302/1303/1304/1305/1306/1307/1308/1309/1310/1311/1312/1313/1314/1315/1316/1317/1318/1319/1320/1321/1322/1323/1324/1325/1326/1327/1328/1329/1330/1331/1332/1333/1334/1335/1336/1337/1338/1339/1340/1341/1342/1343/1344/1345/1346/1347/1348/1349/1350/1351/1352/1353/1354/1355/1356/1357/1358/1359/1360/1361/1362/1363/1364/1365/1366/1367/1368/1369/1370/1371/1372/1373/1374/1375/1376/1377/1378/1379/1380/1381/1382/1383/1384/1385/1386/1387/1388/1389/1390/1391/1392/1393/1394/1395/1396/1397/1398/1399/1400/1401/1402/1403/1404/1405/1406/1407/1408/1409/1410/1411/1412/1413/1414/1415/1416/1417/1418/1419/1420/1421/1422/1423/1424/1425/1426/1427/1428/1429/1430/1431/1432/1433/1434/1435/1436/1437/1438/1439/1440/1441/1442/1443/1444/1445/1446/1447/1448/1449/1450/1451/1452/1453/1454/1455/1456/1457/1458/1459/1460/1461/1462/1463/1464/1465/1466/1467/1468/1469/1470/1471/1472/1473/1474/1475/1476/1477/1478/1479/1480/1481/1482/1483/1484/1485/1486/1487/1488/1489/1490/1491/1492/1493/1494/1495/1496/1497/1498/1499/1500/1501/1502/1503/1504/1505/1506/1507/1508/1509/1510/1511/1512/1513/1514/1515/1516/1517/1518/1519/1520/1521/1522/1523/1524/1525/1526/1527/1528/1529/1530/1531/1532/1533/1534/1535/1536/1537/1538/1539/1540/1541/1542/1543/1544/1545/1546/1547/1548/1549/1550/1551/1552/1553/1554/1555/1556/1557/1558/1559/1560/1561/1562/1563/1564/1565/1566/1567/1568/1569/1570/1571/1572/1573/1574/1575/1576/1577/1578/1579/1580/1581/1582/1583/1584/1585/1586/1587/1588/1589/1590/1591/1592/1593/1594/1595/1596/1597/1598/1599/1600/1601/1602/1603/1604/1605/1606/1607/1608/1609/1610/1611/1612/1613/1614/1615/1616/1617/1618/1619/1620/1621/1622/1623/1624/1625/1626/1627/1628/1629/1630/1631/1632/1633/1634/1635/1636/1637/1638/1639/1640/1641/1642/1643/1644/1645/1646/1647/1648/1649/1650/1651/1652/1653/1654/1655/1656/1657/1658/1659/1660/1661/1662/1663/1664/1665/1666/1667/1668/1669/1670/1671/1672/1673/1674/1675/1676/1677/1678/1679/1680/1681/1682/1683/1684/1685/1686/1687/1688/1689/1690/1691/1692/1693/1694/1695/1696/1697/1698/1699/1700/1701/1702/1703/1704/1705/1706/1707/1708/1709/1710/1711/1712/1713/1714/1715/1716/1717/1718/1719/1720/1721/1722/1723/1724/1725/1726/1727/1728/1729/1730/1731/1732/1733/1734/1735/1736/1737/1738/1739/1740/1741/1742/1743/1744/1745/1746/1747/1748/1749/1750/1751/1752/1753/1754/1755/1756/1757/1758/1759/1760/1761/1762/1763/1764/1765/1766/1767/1768/1769/1770/1771/1772/1773/1774/1775/1776/1777/1778/1779/1780/1781/1782/1783/1784/1785/1786/1787/1788/1789/1790/1791/1792/1793/1794/1795/1796/1797/1798/1799/1800/1801/1802/1803/1804/1805/1806/1807/1808/1809/1810/1811/1812/1813/1814/1815/1816/1817/1818/1819/1820/1821/1822/1823/1824/1825/1826/1827/1828/1829/1830/1831/1832/1833/1834/1835/1836/1837/1838/1839/1840/1841/1842/1843/1844/1845/1846/1847/1848/1849/1850/1851/1852/1853/1854/1855/1856/1857/1858/1859/1860/1861/1862/1863/1864/1865/1866/1867/1868/1869/1870/1871/1872/1873/1874/1875/1876/1877/1878/1879/1880/1881/1882/1883/1884/1885/1886/1887/1888/1889/1890/1891/1892/1893/1894/1895/1896/1897/1898/1899/1900/1901/1902/1903/1904/1905/1906/1907/1908/1909/1910/1911/1912/1913/1914/1915/1916/1917/1918/1919/1920/1921/1922/1923/1924/1925/1926/1927/1928/1929/1930/1931/1932/1933/1934/1935/1936/1937/1938/1939/1940/1941/1942/1943/1944/1945/1946/1947/1948/1949/1950/1951/1952/1953/1954/1955/1956/1957/1958/1959/1960/1961/1962/1963/1964/1965/1966/1967/1968/1969/1970/1971/1972/1973/1974/1975/1976/1977/1978/1979/1980/1981/1982/1983/1984/1985/1986/1987/1988/1989/1990/1991/1992/1993/1994/1995/1996/1997/1998/1999/2000

FIGURE 3.10.7 (continued)



LEGEND

-  - TRAFFIC SIGNAL
-  - STOP SIGN

FIGURE 3.10.7

2008 PRE PROJECT PM PEAK TRAFFIC VOLUMES

4 | 1001/1038/1039/1038a/cap May 10, 2006 8:28am 0/0/0

3.10.3 REGULATORY FRAMEWORK

Section 3. City of Lodi Circulation Element

Goal A: To provide for a circulation system that accommodates existing and proposed land uses and provides for the efficient movement of people, goods, and services within an through Lodi.

- Policy 1: The City shall strive to maintain Level of Service C on local streets and at intersections. The acceptable level of service goal will be consistent with the financial resources available and the limits of technology feasible.
- Policy 2: The City shall time the construction of new development such that the time frame for completion of the needed circulation improvements will not cause the level of service goals to be exceeded.
- Policy 4: The City shall require dedication, widening, extension, and construction of public streets in accordance with the City's street standards. Major street improvements shall be completed as abutting land develop or redevelop. In currently developed areas, the City may determine that improvements necessary to met City standards are either infeasible or undesirable.
- Policy 5: The City shall review new developments for consistency with the General Plan Circulation Element and the capital improvements program. Those developments found to be consistent with the Circulation Element shall be required to pay their fair share of traffic impact fees and/or charges. Those developments found to be generating more traffic than assumed in the Circulation Element shall be required to prepare a site-specific traffic study and fund needed improvements not identified in the capital improvements program, in addition to paying their fair share of the traffic impact fee and/or charges.
- Policy 7: The City shall require that public and private street design and new development access meet applicable City street standards and minimize accident hazards.

Goal B: To ensure the adequate provision of both on-street and off-street parking.

- Policy 1: The City shall require new developments to provide an adequate number of off-street parking spaces in accordance with City parking standards. These parking standards should be periodically reviewed and updated.

Goal C: To encourage the use of transit where feasible.

- Policy 1: The City shall continue to provide Dial-A-Ride services to local, transit-dependent residents.

- Policy 2: The City shall provide information to local residents on transit services available for regional trips (such as Greyhound).
- Policy 3: The City shall consider expanding its transit service to include limited fixed-route services if sufficient demand exists and if the cost is economically feasible.

Goal D: To provide for a safe and convenient pedestrian circulation system.

- Policy 1: The City shall require sidewalks for all developments in accordance with City design standards and encourage pedestrian access where applicable.

Goal E: To encourage the use of bicycles as an alternative mode of transportation.

- Policy 1: The City shall encourage new commercial developments to provide bicycle racks.

The project would be considered to result in a significant traffic and circulation impact if it would:

3.10.4 SIGNIFICANCE CRITERIA

- **Roadways**
 - Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).

As noted above, Goal A, Policy 1 of the City's General Plan Circulation Elements states: "The City shall strive to maintain Level of Service C on local streets and at intersections. The acceptable level of service goal will be consistent with the financial resources available and the limits of technical feasibility." Based on a determination by City staff in conjunction with the Vintner's Square Shopping Center EIR (certified May 2003), West Kettleman Lane and Lower Sacramento Road are not considered to be "local streets". Rather, they are considered to be major arterial highways providing regional east-west and north-south access between the City of Lodi and San Joaquin County. (Vintner's Square Draft EIR, p. 3.2-11.)

As per Tom Dumas's comments in his March 3, 2006 letter from Caltrans regarding the Traffic Impact Study for Reynolds's Ranch, "Methodologies for computing intersection...Levels of Service (LOS) will be as provided in the Transportation Research Board's (TRB) publication, Highway Capacity Manual 2000 (HCM 2000)." The letter further states that "The LOS threshold is LOS D."

- **Transit Facilities**
 - Create the demand for public transit service above that which is provided, or planned to be provided.
 - Disrupt or interfere with existing or planned public transit services or facilities.
 - Create an inconsistency with polices concerning transit systems set forth in the General Plan for the City of Lodi.
- **Bicycle and Pedestrian Facilities**
 - Disrupt or interfere with existing or planned bicycle or pedestrian facilities.
 - Create an unmet need for bicycle or pedestrian facilities.
 - Create an inconsistency with policies related to bicycle or pedestrian systems in the General Plan of the City of Lodi.
- **Parking**
 - Result in inadequate parking capacity.

3.10.5 PHASE 1 PROJECT CONDITIONS

The proposed project is a mix of office, commercial, residential, school and mini storage land uses that will generate trips that would be added to the surrounding roadway network. Phase 1 will include the office land use and 150 medium density residential units. The conceptual land use plan is shown on Figure 3.10.2.

a. Trip Generation

The amount of traffic generated by the Reynolds Ranch Project was estimated using a combination of the applicable trip generation rates from *Trip Generation* (Institute of Transportation Engineers, 7th Edition, 2003) for the various land uses in the project and from information supplied by the project applicant.

- Since the 200,000 square feet of office space is proposed to accommodate a Blue Shield call center, the number of employees and the expected start/end times of the two shifts were used to estimate AM and PM peak hour trip generation.

The call center is expected to accommodate 1,600 employees working two shifts – 6 am to 3 pm and 3 pm to 11 pm. To be conservative, it was assumed that 60 percent of the employees arrive during the AM peak hour and that 40 percent arrive/depart during the PM peak hour.

- The following ITE trip generation rates were used for the project's residential land uses:

- LDR – Single Family Dwelling (210)
 - MDR – Townhouse (230)
 - HDR – Low Rise Apartment (221)
- The K-8 School was assumed to accommodate 500 grade K-6 students and 500 grade 7-8 students.
 - The mini storage facility was assumed to have a floor area ratio of 0.40.

Table 3.10.6 presents the peak hour and daily trip generation estimates for the proposed project. Phase 1 of the Reynolds Ranch Project is estimated to generate 530 AM peak hour trips (415 inbound and 115 outbound) and 375 PM peak hour trips (105 inbound and 270 outbound).

Phase 2 is estimated to generate 1,255 AM peak hour trips (580 inbound and 675 outbound) and 1,895 PM peak hour trips (995 inbound and 900 outbound).

b. Trip Distribution and Assignment

The trip distribution for the office land use is Phase 1 is in the same general directions of the residences of the employees at the existing Blue Shield call center in Lodi. This information was provided by the applicant.

The trip distribution for the commercial land use is primarily based on the existing and future residential developments in and around Lodi. It was assumed that 10 percent of the project commercial trips would be to/from the project residential land uses. It was also assumed that 15 percent of the commercial traffic would be pass by traffic on Harney Lane.

The trip distribution for the residential land uses is based on existing and future trip attractions (i.e. employment, shopping, school, etc.). The trip distribution for the K-8 school and mini storage land uses was assumed to be the same as for the residential land uses.

Figures 3.10.8 thru 3.10.10 show the distribution for the office, commercial and residential/other land uses, respectively.

TABLE 3.10.6: REYNOLDS RANCH TRIP GENERATION ESTIMATES

Revised March 28, 2006

Land Use	Quantity	A.M. Pk Hr		P.M. Pk Hr		Daily
		In	Out	In	Out	
Phase 1						
Office	1,600 Emp.	405	60	50	245	5,300
MDR Residential	150 DU	10	55	55	25	900
Phase 1 Totals		415	115	105	270	6,200
Phase 2						
LDR Residential	103 DU	20	60	65	40	1,000
MDR Residential	481 DU	35	180	170	80	2,800
HDR Residential	200 DU	20	70	70	40	1,200
HDR Senior Residential	150 DU	10	10	10	10	500
Commercial	350 TSF	220	140	630	685	15,000
K-8 School	1000 Stu.	265	210	40	35	1,400
Mini Storage	5.3 AC	10	5	10	10	200
Fire Station	1	¹	¹	¹	¹	¹
Phase 2 Totals		580	675	995	900	22,100
Grand Totals		995	790	1,100	1,170	28,300

Note: Peak hour trips rounded to 5 and daily trips to nearest 100.

DU – Dwelling Unit

TSF – Thousand Square Feet of Floor Area

LDR – Low Density Residential

MDR – Medium Density Residential

HDR – High Density Residential

AC - Acres

¹ Nominal

FIGURE 3.10.8: OFFICE TRIP DISTRIBUTION

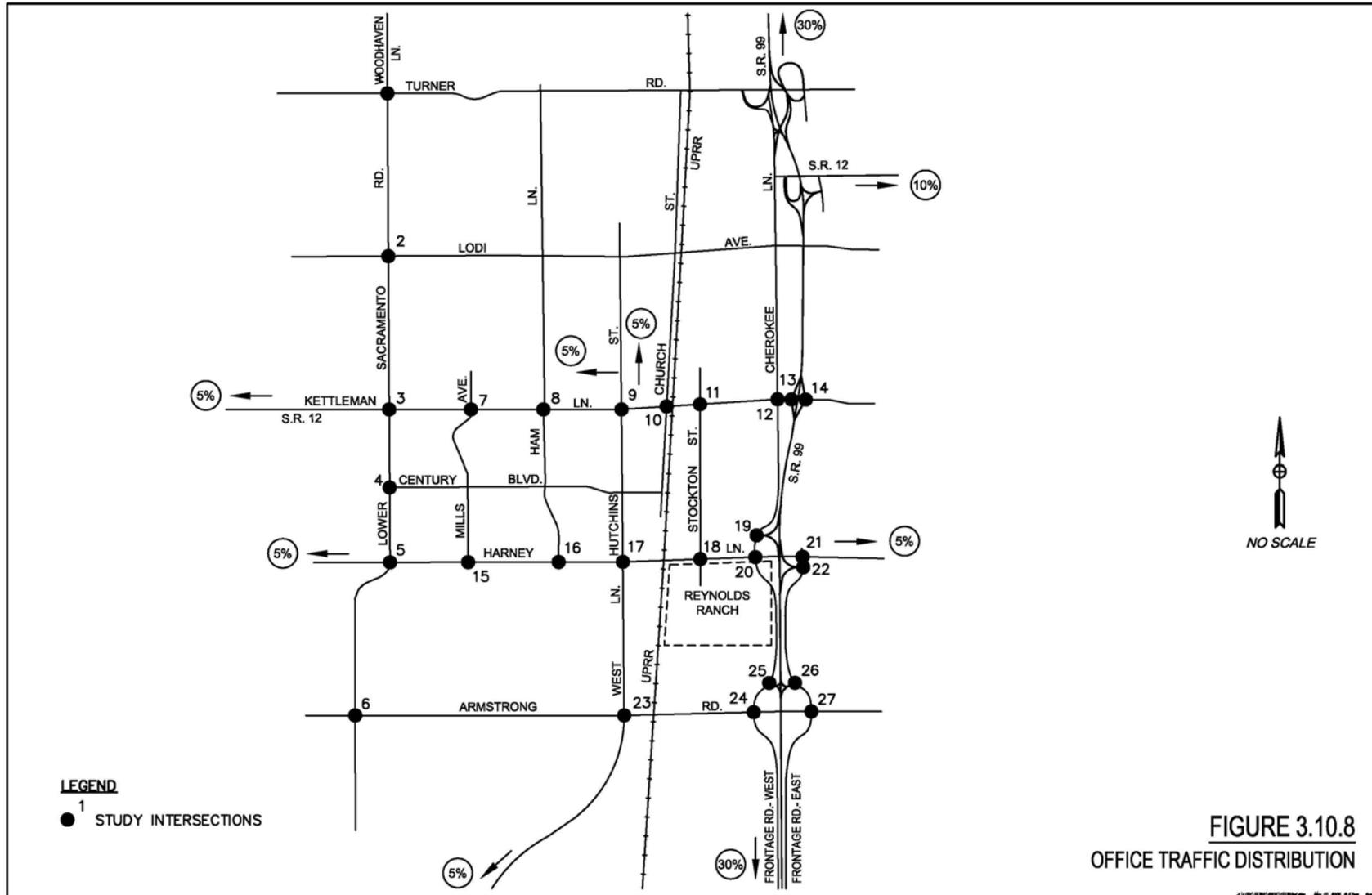


FIGURE 3.10.9: COMMERCIAL TRIP DISTRIBUTION

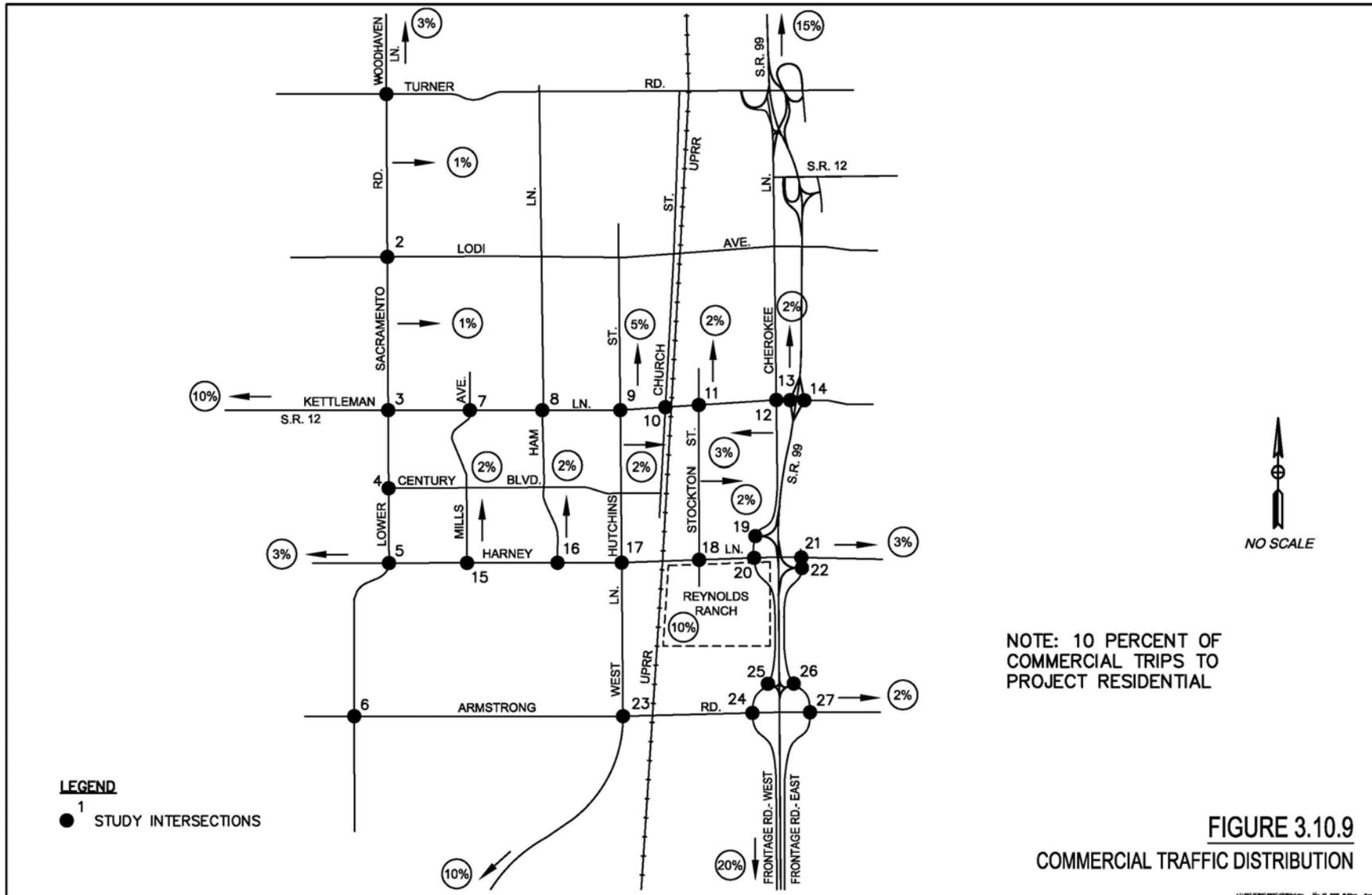
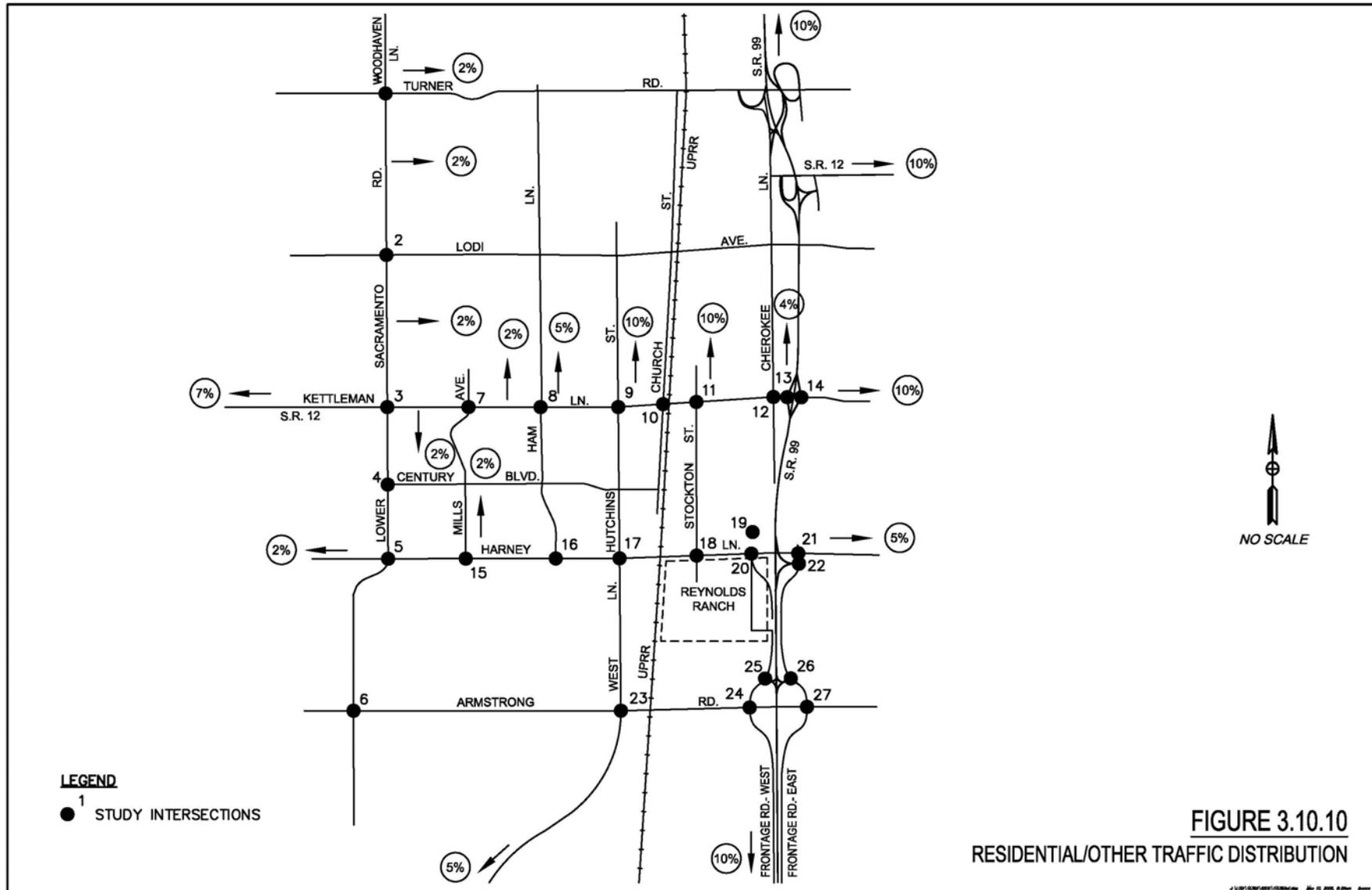


FIGURE 3.10.10: RESIDENTIAL/OTHER TRIP DISTRIBUTION



c. Analysis – 2008 Background Plus Project Phase 1 Conditions

Reynolds Ranch Phase 1 includes development of the office parcel in the southeast corner of the site plan shown on Figure 3.10.2 and 150 MDR dwelling units (assumed to be constructed on the west side of Street A). The existing frontage road on the west side of SR 99 will be realigned so that it becomes Street A and intersects Harney Lane at a point approximately 1,000 feet west of its current intersection opposite Cherokee Lane.

Other improvements that were assumed to be constructed with Phase 1:

- Harney Lane/Cherokee Lane would be modified to a T intersection and an eastbound left turn lane on Harney Lane would be added. The signal (which was a mitigation for 2008 Pre-Project Conditions) would be modified to be compatible with the changes to intersection geometrics.
- A raised curb median would be installed on Harney Lane from Stockton Street to Cherokee Lane. This will necessitate U-turns for some Melby Drive traffic at Stockton Street and at Street A.
- The new Harney Lane/Street A intersection would be signalized and constructed with the following minimum geometrics: one eastbound through lane and one eastbound through/right lane on Harney Lane; one westbound through and one westbound left turn lane on Harney Lane; and one northbound left and one northbound right turn lane on Street A.

The 2008 Post Project AM and PM peak hour traffic volumes are shown on Figures 3.10.11 and 3.10.12 respectively.

Table 3.10.7 lists the Year 2008 Background Plus Project Phase 1 intersection Levels of Service. This table shows that the addition of Phase 1 project traffic (with the improvements listed above) results in unacceptable Levels of Service at several study intersections.

- Intersection #15 - Harney Lane/Mills Street will be operating at LOS D during the AM peak hour. The installation of a traffic signal improves operations to LOS B.
- Intersection #17 – Harney Lane/Hutchins Street will be operating at LOS D during the AM peak hour. Widening Harney Lane to provide a through and through/right lane in each direction improves operations to LOS C.
- Intersection #21 – Harney Lane/Frontage Road-East will be operating at LOS D during the PM peak hour. The installation of a traffic signal improves operations to LOS B.

With the above listed intersection geometrics, the new intersection of Harney Lane/Street A (#28) is expected to operate at LOS B during the AM and PM peak hours.

Exhibit 3.10.13 shows the configuration of intersections and segments on Harney Lane between Stockton Street and SR 99 for Year 2008 Background Plus Project Phase 1 conditions.

**TABLE 3.10.7: YEAR 2008 BACKGROUND PLUS PROJECT PHASE 1
INTERSECTION LEVELS OF SERVICE**

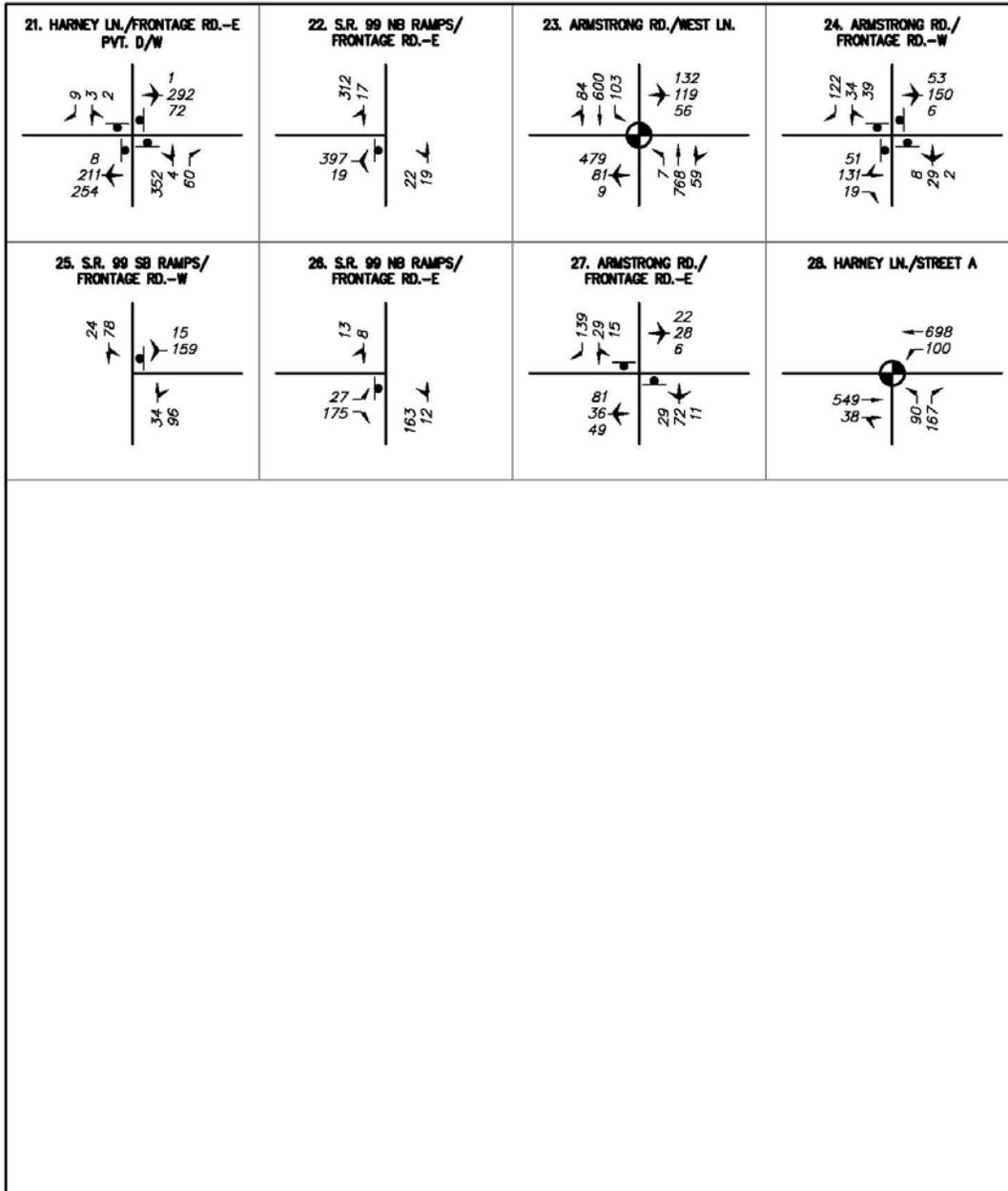
Intersection	Intersection Control	2008 Background & Phase 1 Conditions			
		AM Peak Hour		PM Peak Hour	
		Delay ^a	LOS	Delay ^a	LOS
1. Turner Road/Lower Sacramento Road	Signal	29.8	C	30.4	C
2. Lodi Avenue/Lower Sacramento Road	Signal	26.4	C	27.7	C
3. Kettleman Lane/Lower Sacramento Road	Signal	30.8	C	32.2	C
4. Century Boulevard/Lower Sacramento Road	Signal	17.0	B	15.3	B
5. Harney Lane/Lower Sacramento Road	Signal	20.2	B	17.7	B
6. Armstrong Road/Lower Sacramento Road	Signal	13.2	B	13.9	B
7. Kettleman Lane/Mills Avenue	Signal	28.3	C	22.6	B
8. Kettleman Lane/Ham Lane	Signal	28.9	C	33.3	C
9. Kettleman Lane/Hutchins Street	Signal	27.4	C	34.5	C
10. Kettleman Lane/Church Street	Signal	24.6	C	29.8	C
11. Kettleman Lane/Stockton Street	Signal	27.9	C	28.8	C
12. Kettleman Lane/Cherokee Street	Signal	28.0	C	31.7	C
13. Kettleman Lane/SR 99 SB Ramps	Signal	11.2	B	28.2	C
14. Kettleman Lane/SR 99 NB Ramps	Signal	20.4	C	21.4	B
15. Harney Lane/Mills Street	Minor Street Stop	8.4 (25.2)	A (D)	3.4 (24.7)	A (C)
	Signal	16.1 ^b	B ^b	14.6 ^b	B ^b
16. Harney Lane/Ham Lane	Signal	16.9	B	13.6	B
17. Harney Lane/Hutchins Street	Signal	36.9	D	33.0	C
	Signal	31.8 ^c	C ^c	30.7 ^c	C ^c
18. Harney Lane/Stockton Street	Signal	10.4	B	11.9	B
19. Cherokee Lane/SR 99 SB Ramps	Minor Street Stop	7.3 (19.3)	A (C)	5.2 (16.5)	A (C)
20. Harney Lane/Cherokee Lane	Signal	25.1	C	18.1	B
21. Harney Lane/Frontage Road-East	All-Way Stop	12.1	B	25.7	D
	Signal	13.0 ^b	B ^b	17.4 ^b	B ^b
22. Frontage Road-East/SR 99 NB Ramps	Minor Street Stop	6.0 (12.0)	A (B)	9.1 (16.7)	A (C)
23. Armstrong Road/West Lane	Signal	22.6	C	33.3	C
24. Armstrong Road/Frontage Road-West	All-Way Stop	10.4	B	10.0	A
25. Frontage Road-West/SR 99 SB Ramps	Minor Street Stop	3.9 (11.3)	A (B)	6.6 (11.9)	A (B)
26. Frontage Road-East/SR 99 NB Ramps	Minor Street Stop	6.8 (11.2)	A (B)	6.9 (11.6)	A (B)
27. Armstrong Road/Frontage Road-East	Minor Street Stop	7.5 (13.9)	A (B)	7.5 (13.1)	A (B)
28. Harney Lane/Street A	Signal	14.6	B	13.0	B

^a For intersections with Minor Street Stop Control, the overall intersection delay and level of service are shown first. The worst approach delay and level of service are shown in parentheses.

^b With signalization.

^c With improvements – see discussion.

FIGURE 3.10.12 (continued)



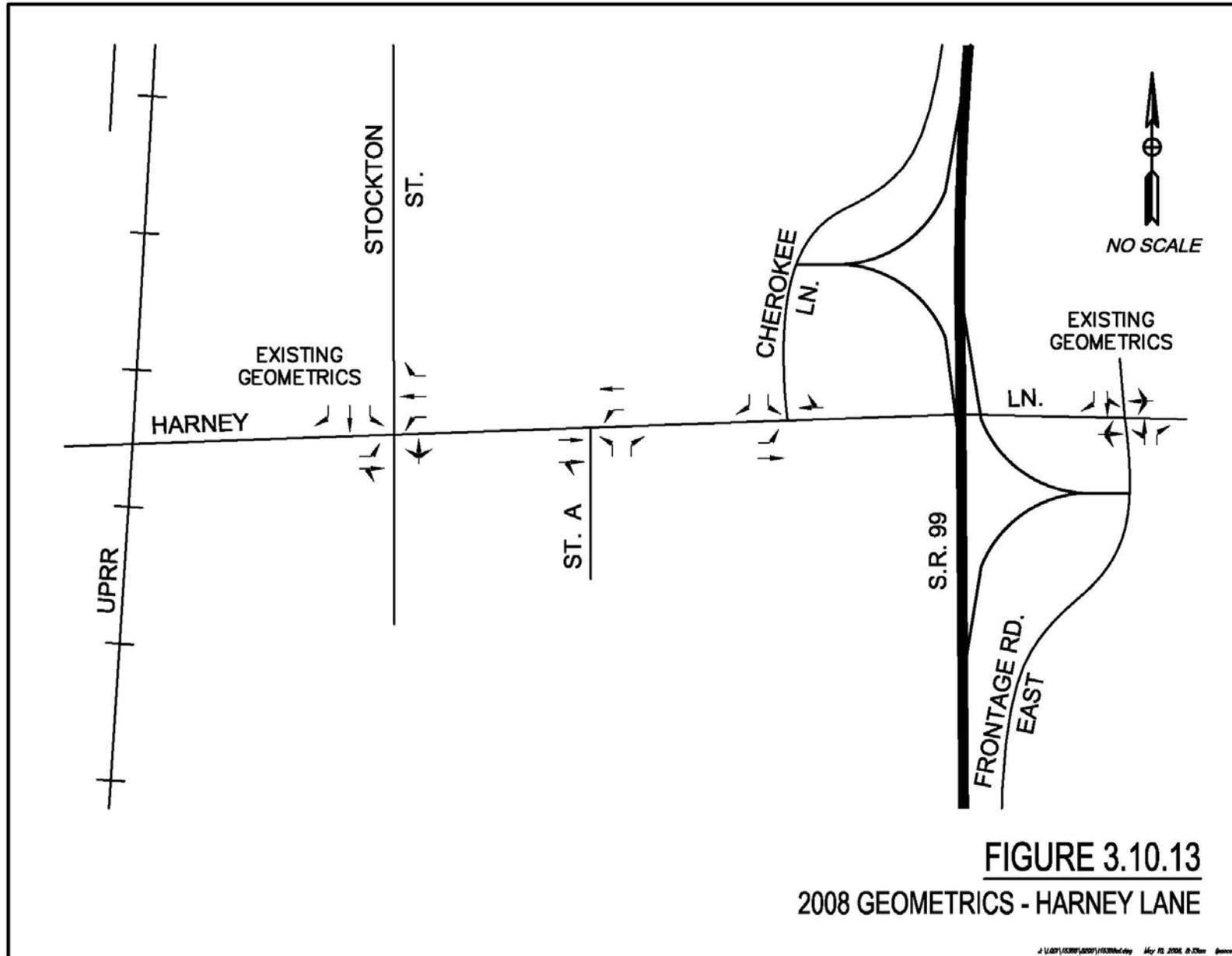
LEGEND

-  - TRAFFIC SIGNAL
-  - STOP SIGN

FIGURE 3.10.12
2008 POST PROJECT PM PEAK TRAFFIC VOLUMES

4 | 201 | 2238 | 2237 | 153364 | City May 15, 2008, 2:23pm

FIGURE 3.10.13: 2008 GEOMETRICS – HARNEY LANE



3.10.6 FUTURE CONDITIONS - 2030

Future conditions were established for the 2030 Background scenario (i.e. without the project) based on existing traffic volumes, plus the traffic generated by other developments that are under construction or expected to occur in the study area plus an annual growth rate of existing traffic volumes for the period 2008-2030.

Background Conditions

a. Other Projects

By 2030, it was assumed that all of the dwellings in the Westside projects listed on Table 3.10.4 would be constructed.

b. Growth Rates

There are typically two methodologies used to develop future traffic volumes on a roadway network: through a travel demand model or by applying annual growth rates to existing traffic. Since a reliable travel demand model was not available at the time of the preparation of this analysis of the traffic impacts from Reynolds Ranch, the annual growth methodology was used. A review of the changes in traffic volumes over the past 10 years, the amount of development in and around Lodi during that period and the ability of the various segments of the circulation system to accommodate additional traffic were used to develop the following growth rates between 2008 and 2030:

- Intersections along Harney Lane were assigned a 1.0 percent/year growth factor.
- Intersections along Armstrong Road were assigned a 2.5 percent/year growth factor.
- A 1.5 percent/year growth factor was assigned to intersections along Lower Sacramento Road from Turner Road to Harney Lane.

After these factors were assigned to the intersection as a whole, growth rates for individual turning movements were adjusted down if the movement wasn't anticipated to grow at the same rate as other intersection movements. At a number of locations along Kettleman Lane east of Lower Sacramento Road, through lanes are approaching capacity under existing conditions. It is therefore unlikely that this roadway will sustain large annual growth increase, especially as you travel east toward SR 99. With this in mind, it was decided that through volumes along Kettleman Lane would grow at 0.25 percent annually. This rate was also applied to all turning movements at the intersections of Church Street, Stockton Street, Cherokee Lane and SR 99. A 0.5 percent growth factor was applied to the turning movements at the remaining intersections along Kettleman Lane.

c. Planned Circulation Improvements

In conjunction with the development of the other projects listed on Table 3.10.4, the following geometric improvements are expected to be constructed by 2030.

- *Harney Lane/Lower Sacramento Road (#5)* – On the eastbound approach an exclusive left turn lane will be added resulting in a left turn lane and a shared through-right lane. A left turn lane and two right turn lanes will be added to the westbound approach resulting in a left turn lane, a through lane and two right turn lanes. The southbound approach will gain two left turn lanes and a shared through-right lane resulting in two left turn lanes, a through lane and a shared through-right lane.

d. Analysis – 2030 Background Conditions

Figures 3.10.14 and 3.10.15 show the Year 2030 AM and PM background peak hour traffic volumes at the study intersections.

Table 3.10.8 lists the Year 2030 Background intersection Levels of Service. The levels reflect existing traffic plus traffic from the other projects listed in Table 3.10.4, the circulation improvements listed on page 16 and annual growth in existing traffic due to future developments in and around Lodi.

This table shows that several study intersections will be operating at unacceptable levels.

- *Kettlemen Lane/SR 99 SB Ramps (#13)* – operating at LOS D during the PM peak hour. Since the physical constraints limit the provision of additional lanes, the interchange would have to be reconstructed to provide LOS C or better operation.
- *Harney Lane/Cherokee Lane (#20)* – operating at LOS D during the AM peak hour and at LOS E during the PM peak hour. The interchange will have to be reconstructed. See discussion on page 46.
- *Armstrong Road/West Lane (23)* – operating at LOS E during the AM peak hour and at LOS F during the PM peak hour. In order to achieve LOS C or better operation, the intersection will have to be improved to provide an additional through lane on both West Lane approaches, an additional through and left turn lane on westbound Armstrong Road and two additional left turn lanes on eastbound Armstrong Road.

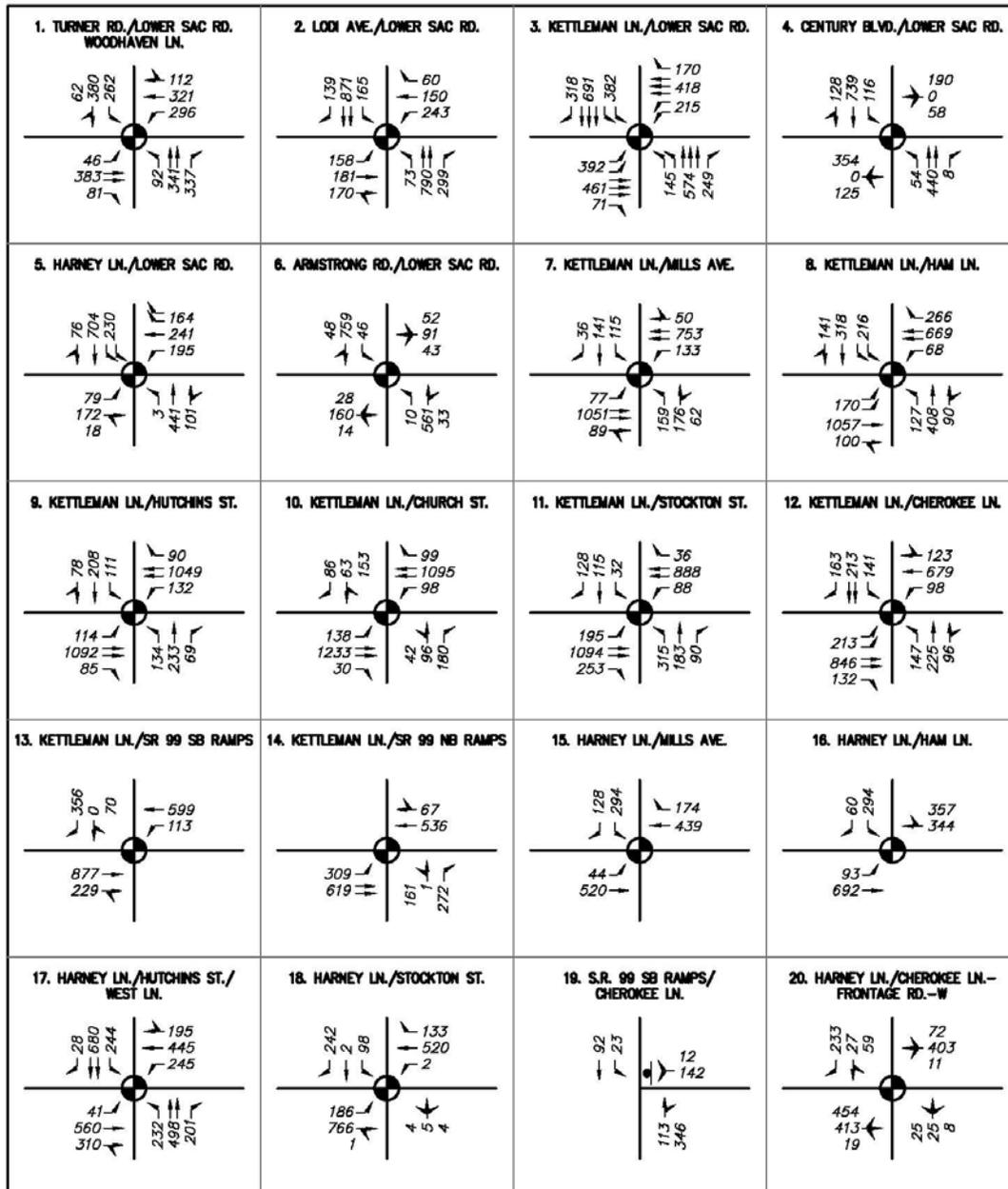
TABLE 3.10.8: YEAR 2030 BACKGROUND INTERSECTION LEVELS OF SERVICE

Intersection	Intersection Control	2030 Background Conditions			
		AM Peak Hour		PM Peak Hour	
		Delay ^a	LOS	Delay ^a	LOS
1. Turner Road/Lower Sacramento Road	Signal	30.1	C	31.7	C
2. Lodi Avenue/Lower Sacramento Road	Signal	26.5	C	33.6	C
3. Kettleman Lane/Lower Sacramento Road	Signal	28.3	C	32.4	C
4. Century Boulevard/Lower Sacramento Road	Signal	26.5	C	22.2	C
5. Harney Lane/Lower Sacramento Road	Signal	19.4	B	18.0	B
6. Armstrong Road/Lower Sacramento Road	Signal	13.4	B	19.5	B
7. Kettleman Lane/Mills Avenue	Signal	22.4	C	18.7	B
8. Kettleman Lane/Ham Lane	Signal	24.3	C	28.5	C
9. Kettleman Lane/Hutchins Street	Signal	22.6	C	28.3	C
10. Kettleman Lane/Church Street	Signal	23.4	C	31.2	C
11. Kettleman Lane/Stockton Street	Signal	25.6	C	25.4	C
12. Kettleman Lane/Cherokee Street	Signal	25.3	C	30.4	C
13. Kettleman Lane/SR 99 SB Ramps	Signal	18.4	C	45.3	D
14. Kettleman Lane/SR 99 NB Ramps	Signal	20.6	C	18.7	B
15. Harney Lane/Mills Street	Signal	15.2	B	12.9	B
16. Harney Lane/Ham Lane	Signal	15.5	C	14.0	B
17. Harney Lane/Hutchins Street	Signal	32.2	C	30.9	C
18. Harney Lane/Stockton Street	Signal	17.0	B	23.4	C
19. Cherokee Lane/SR 99 SB Ramps	Minor Street Stop	3.1 (13.2)	A (B)	4.1 (14.8)	A (B)
20. Harney Lane/Cherokee Lane	Signal	41.1	D	75.3	E
21. Harney Lane/Frontage Road-East	Signal	13.0	B	17.8	B
22. Frontage Road-East/SR 99 NB Ramps	Minor Street Stop	7.0 (12.9)	A (B)	12.5 (19.7)	B (C)
23. Armstrong Road/West Lane	Signal	59.1	E	235.6	F
	Signal	24.4^b	C^b	29.1^b	C^b
24. Armstrong Road/Frontage Road-West	All-Way Stop	13.9	B	14.0	B
25. Frontage Road-West/SR 99 SB Ramps	Minor Street Stop	5.3	A	6.6	A
		(11.1)	(B)	(11.8)	(B)
26. Frontage Road-East/SR 99 NB Ramps	Minor Street Stop	7.1	A	7.5	A
		(14.3)	(B)	(15.5)	(C)
27. Armstrong Road/Frontage Road-East	Minor Street Stop	8.6	A	10.2	B
		(20.3)	(C)	(22.6)	(C)

^a For intersections with Minor Street Stop Control, the overall intersection delay and level of service are shown first. The worst approach delay and level of service are shown in parentheses.

^b With improvements – see discussion

FIGURE 3.10.14: 2030 BACKGROUND AM PEAK TRAFFIC VOLUMES

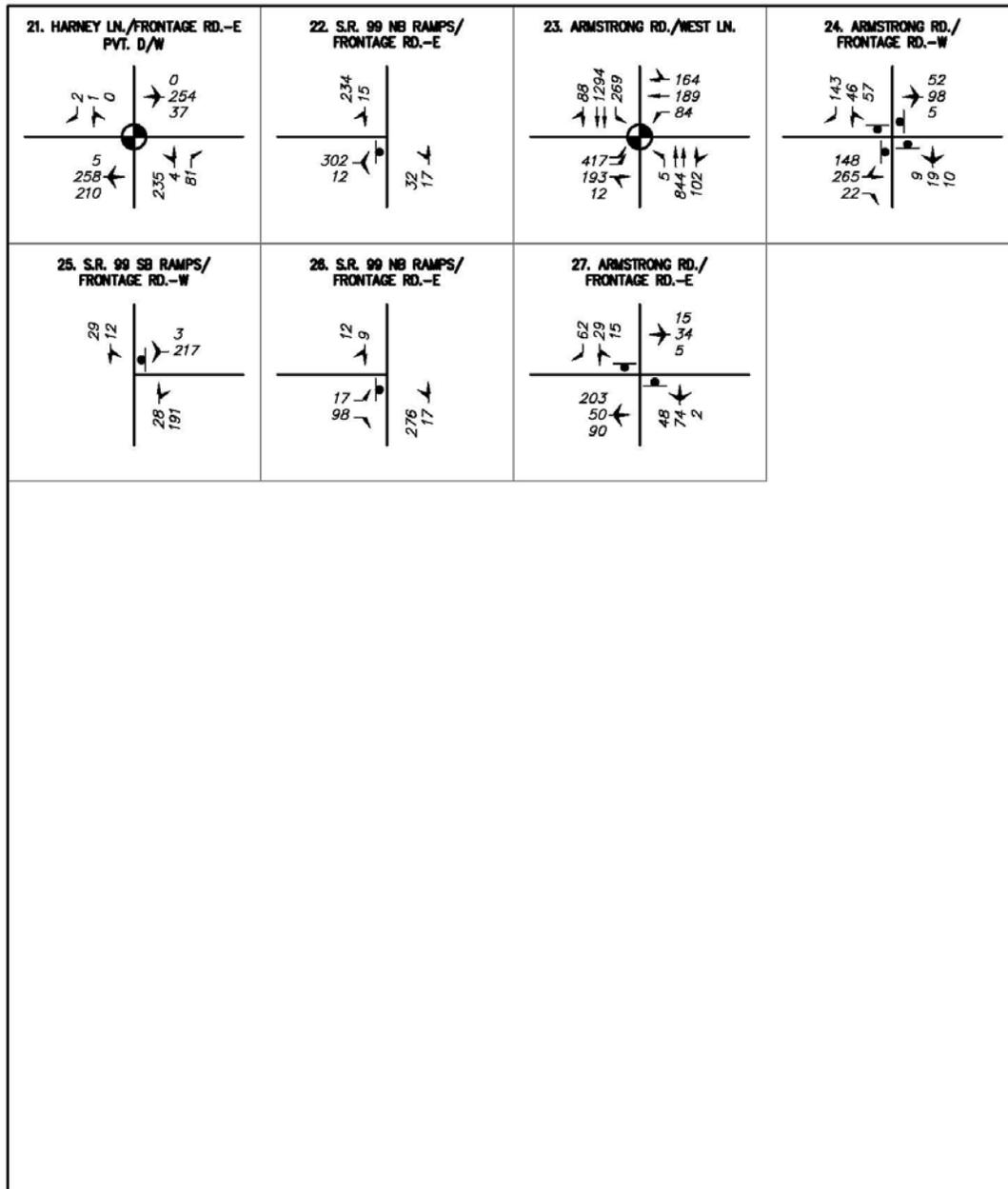


LEGEND
 - TRAFFIC SIGNAL
 - STOP SIGN

FIGURE 3.10.14
 2030 BACKGROUND AM PEAK TRAFFIC VOLUMES

4/20/2023 10:00 AM/10:00 AM/10:00 AM May 10, 2023, 10:00 AM

FIGURE 3.10.14 (continued)



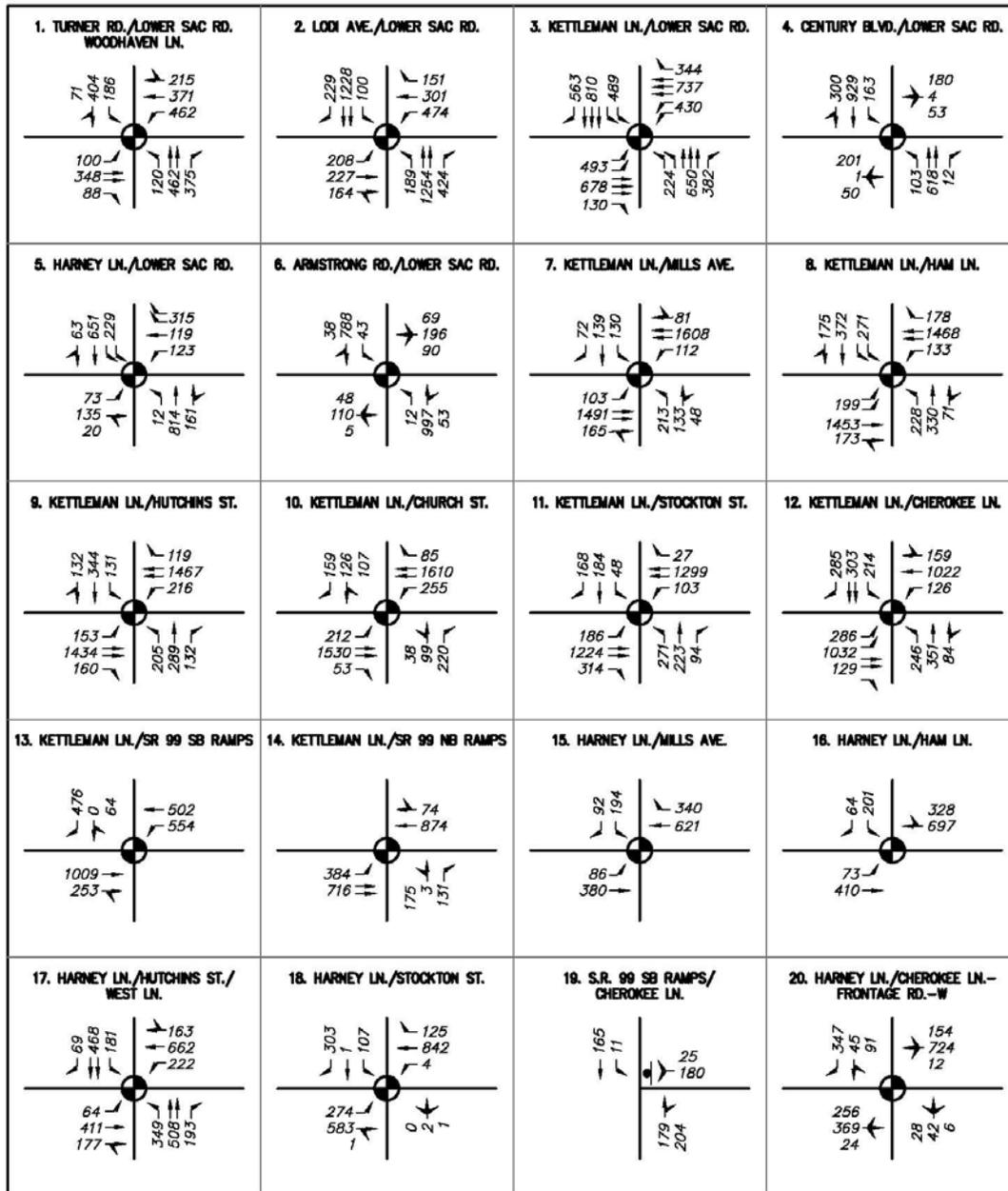
LEGEND

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FIGURE 3.10.14
2030 BACKGROUND AM PEAK TRAFFIC VOLUMES

4 | \CD\12381\2030\12381.dwg May 15, 2024, 11:45am

FIGURE 3.10.15: 2030 BACKGROUND PM PEAK TRAFFIC VOLUMES

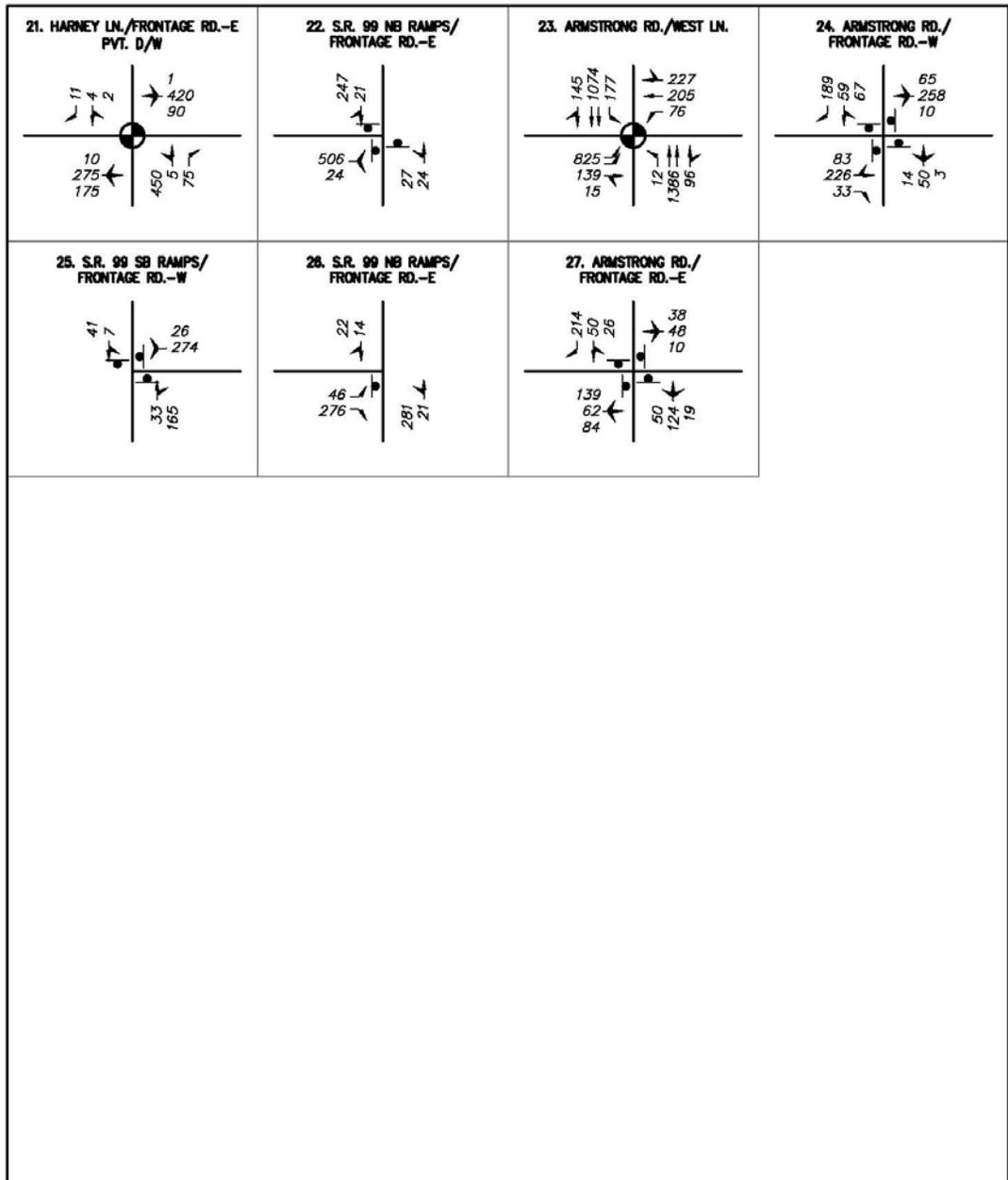


LEGEND
 - TRAFFIC SIGNAL
 - STOP SIGN

FIGURE 3.10.15
 2030 BACKGROUND PM PEAK TRAFFIC VOLUMES

4/20/2020 10:00 AM

FIGURE 3.10.15 (continued)



LEGEND

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-  - STOP SIGN

FIGURE 3.10.15
2030 BACKGROUND PM PEAK TRAFFIC VOLUMES

4/20/2007 10:50:15 AM

Project Impacts

Reynolds Ranch Phase 2 includes development of the commercial parcel in the northeast corner of the site plan shown on Figure 3.10.2, 934 residential dwelling units, the K-8 school and mini storage land uses.

a. Trip Generation

Reynolds Ranch Phase 2 is estimated to generate 1,255 AM peak hour trips (580 inbound and 675 outbound) and 1,895 PM peak hour trips (995 inbound and 900 outbound).

b. Trip Distribution and Assignment

The trip distribution land uses in Phase 2 was in accordance with the distributions shown on Figures 3.10.9 and 3.10.10.

c. Analysis – 2030 Cumulative (Background Plus Project Phases 1 and 2) Conditions

The AM and PM peak hour volumes for Cumulative (Background Plus Project Phases 1 and 2) are shown on Figures 3.10.16 and 3.10.17.

Improvements that were assumed to be constructed with Phase 2:

- Harney Lane would be widened to four lanes from the UPRR tracks to SR 99.
- Stockton Street would be improved and extended southerly from Harney Lane to provide access to the land uses in the westerly part of the site. The new northbound Stockton Street approach was assumed to have one left, one through and one right turn lane.
- The Harney Lane/Street A (#28) intersection would be improved to provide the following minimum geometrics: two eastbound through lanes and one eastbound right lane on Harney Lane; two westbound through lanes and one westbound left turn lane on Harney Lane; and two northbound left and one northbound right turn lane on Street A.
- The southbound SR 99 hook ramps at Harney Lane would be reconstructed to a partial wide diamond interchange. The existing Harney Lane bridge over SR 99 would be replaced with a five lane bridge.

Table 3.10.9 lists the Year 2030 Cumulative Intersection Levels of Service. This table shows that the addition of Phases 1 and 2 project traffic results in unacceptable Levels of Service at several of the study intersections.

- Frontage Road – East/SR 99 NB Ramps (#22) – LOS F during the PM peak hour. The installation of all-way stop and modification of the channelization to allow free right turns from the frontage road to the SR 99 NB on-ramp results in LOS C during the PM peak hour.
- Frontage Road – West/SR 99 SB Ramps (#25) – LOS D during the PM peak hour. The installation of an all-way stop results in LOS B operation.
- Armstrong Road/Frontage Road – East (#21) – LOS D during the PM peak hour. The installation of an all-way stop results in LOS B operation.

Figure 3.10.18 shows the configuration of intersections and segments on Harney Lane from Stockton Street to SR 99 for Year 2030 cumulative conditions.

3.10.7 PROPOSED IMPROVEMENTS

Existing Conditions

- Retime the existing signals at Intersection #8 – Kettleman Lane/Ham Lane, Intersection #10 – Kettleman Lane/Church Street and at Intersection #17 – Harney Lane/Hutchins Street so that the maximum cycle length is 100 seconds.
- Install a traffic signal at Intersection #16 – Harney Lane/Ham Lane.
- Install a traffic signal at Intersection #20 – Harney Lane/Cherokee Lane.
- Install an all-way stop at Intersection #21 – Harney Lane/Frontage Road – East.

Year 2008 Pre-Project Conditions

- No additional improvements are needed.

Year 2008 Pre-Project Plus Phase 1 Project Conditions

- Modify Intersection #20 – Harney Lane/Cherokee Lane to a T-intersection. Widen eastbound Harney Lane to provide for a separate left turn lane.
- Construct new Intersection #28 – Harney Lane/Street A with one through lane, one through/right turn lane on eastbound Harney Lane; one left turn and one through lane on westbound Harney Lane; and one left turn and one right turn lane on northbound A Street.

TABLE 3.10.9: YEAR 2030 CUMULATIVE INTERSECTION LEVELS OF SERVICE

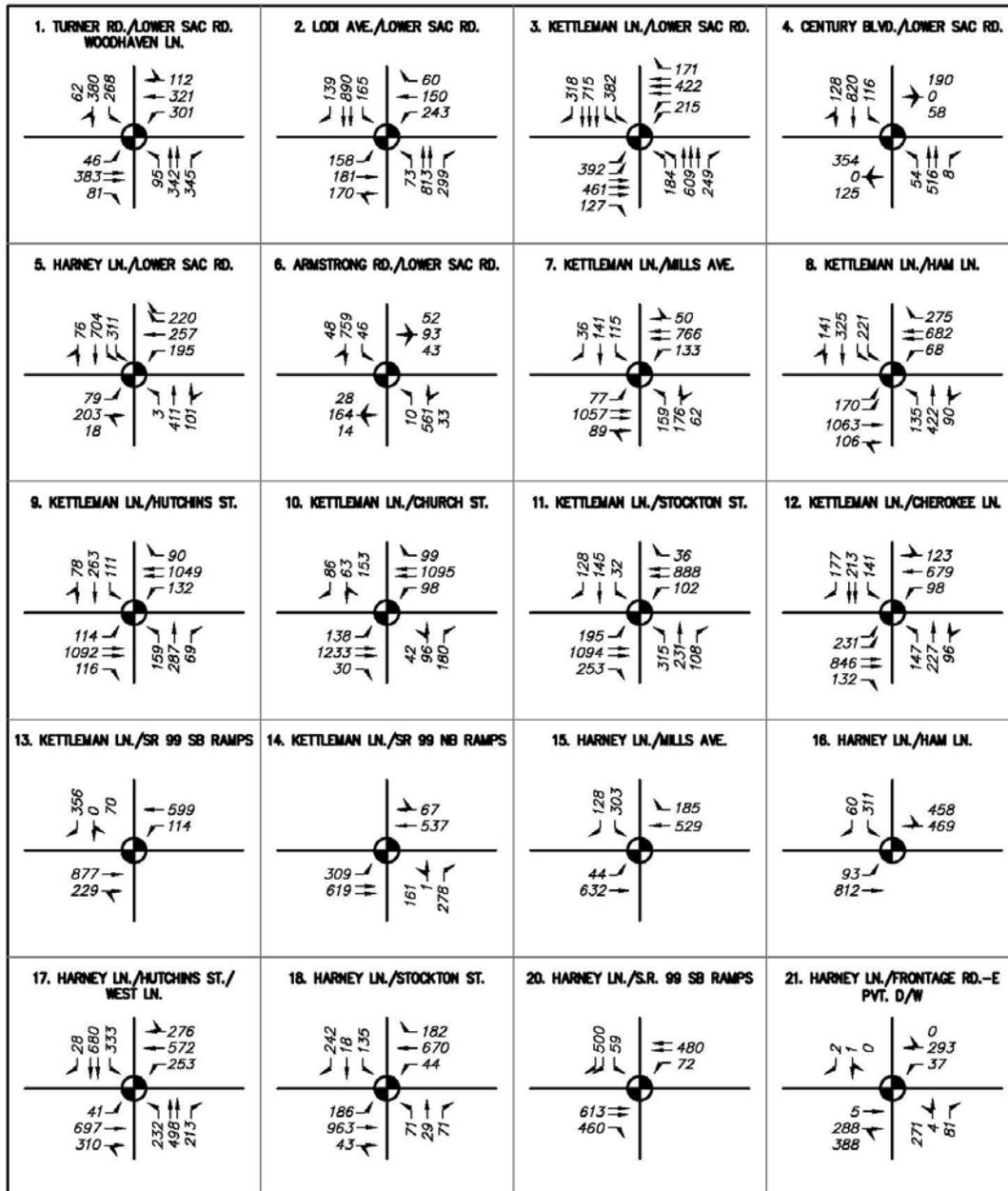
Intersection	Intersection Control	Cumulative Conditions			
		AM Peak Hour		PM Peak Hour	
		Delay ^a	LOS	Delay ^a	LOS
1. Turner Road/Lower Sacramento Road	Signal	30.3	C	32.4	C
2. Lodi Avenue/Lower Sacramento Road	Signal	26.3	C	33.8	C
3. Kettleman Lane/Lower Sacramento Road	Signal	28.7	C	33.2	C
4. Century Boulevard/Lower Sacramento Road	Signal	26.9	C	22.0	B
5. Harney Lane/Lower Sacramento Road	Signal	19.9	B	20.5	C
6. Armstrong Road/Lower Sacramento Road	Signal	13.5	B	20.2	C
7. Kettleman Lane/Mills Avenue	Signal	22.4	C	18.7	B
8. Kettleman Lane/Ham Lane	Signal	24.5	C	28.9	C
9. Kettleman Lane/Hutchins Street	Signal	24.1	C	30.4	C
10. Kettleman Lane/Church Street	Signal	23.4	C	31.2	C
11. Kettleman Lane/Stockton Street	Signal	26.2	C	26.8	C
12. Kettleman Lane/Cherokee Street	Signal	25.7	C	31.0	C
13. Kettleman Lane/SR 99 SB Ramps	Signal	18.5	C	45.9	D
14. Kettleman Lane/SR 99 NB Ramps	Signal	20.8	C	18.7	B
15. Harney Lane/Mills Street	Signal	14.5	B	12.2	B
16. Harney Lane/Ham Lane	Signal	16.7	B	17.	B
17. Harney Lane/Hutchins Street	Signal	33.8	C	32.6	C
18. Harney Lane/Stockton Street	Signal	17.6	B	30.7	C
20. Harney Lane/SR 99 SB Ramps	Signal	15.6	B	19.4	C
21. Harney Lane/Frontage Road-East	Signal	14.1	B	26.2	C
22. Frontage Road-East/SR 99 NB Ramps	Minor Street Stop	7.0 (15.7)	A (C)	27.4 (51.7)	C (F)
	All-Way Stop	9.8^b	A^b	17.3^b	C^b
23. Armstrong Road/West Lane ^c	Signal	24.8	C	34.8	C
24. Armstrong Road/Frontage Road-West	All-Way Stop	17.9	C	18.7	C
25. Frontage Road-West/SR 99 SB Ramps	Minor Street Stop	5.7 (16.7)	A (C)	10.5 (25.8)	B (D)
	All-Way Stop	10.7^b	B^b	11.3^b	B^b
26. Frontage Road-East/SR 99 NB Ramps	Minor Street Stop	7.2 (14.3)	A (B)	7.5 (15.5)	A (C)
	All-Way Stop	9.3 (24.0)	A (C)	10.8 (25.8)	B (D)
27. Armstrong Road/Frontage Road-East	Minor Street Stop	9.3 (24.0)	A (C)	10.8 (25.8)	B (D)
	All-Way Stop	10.6^b	B^b	11.2^b	B^b
28. Harney Lane/Street A	Signal	16.4	B	20.8	C

^a For intersections with Minor Street Stop Control, the overall intersection delay and level of service are shown first. The worst approach delay and level of service are shown in parentheses.

^b With all-way stop control

^c With improvements needed to mitigate 2030 Background Conditions

FIGURE 3.10.16: 2030 CUMULATIVE PEAK AM TRAFFIC VOLUMES

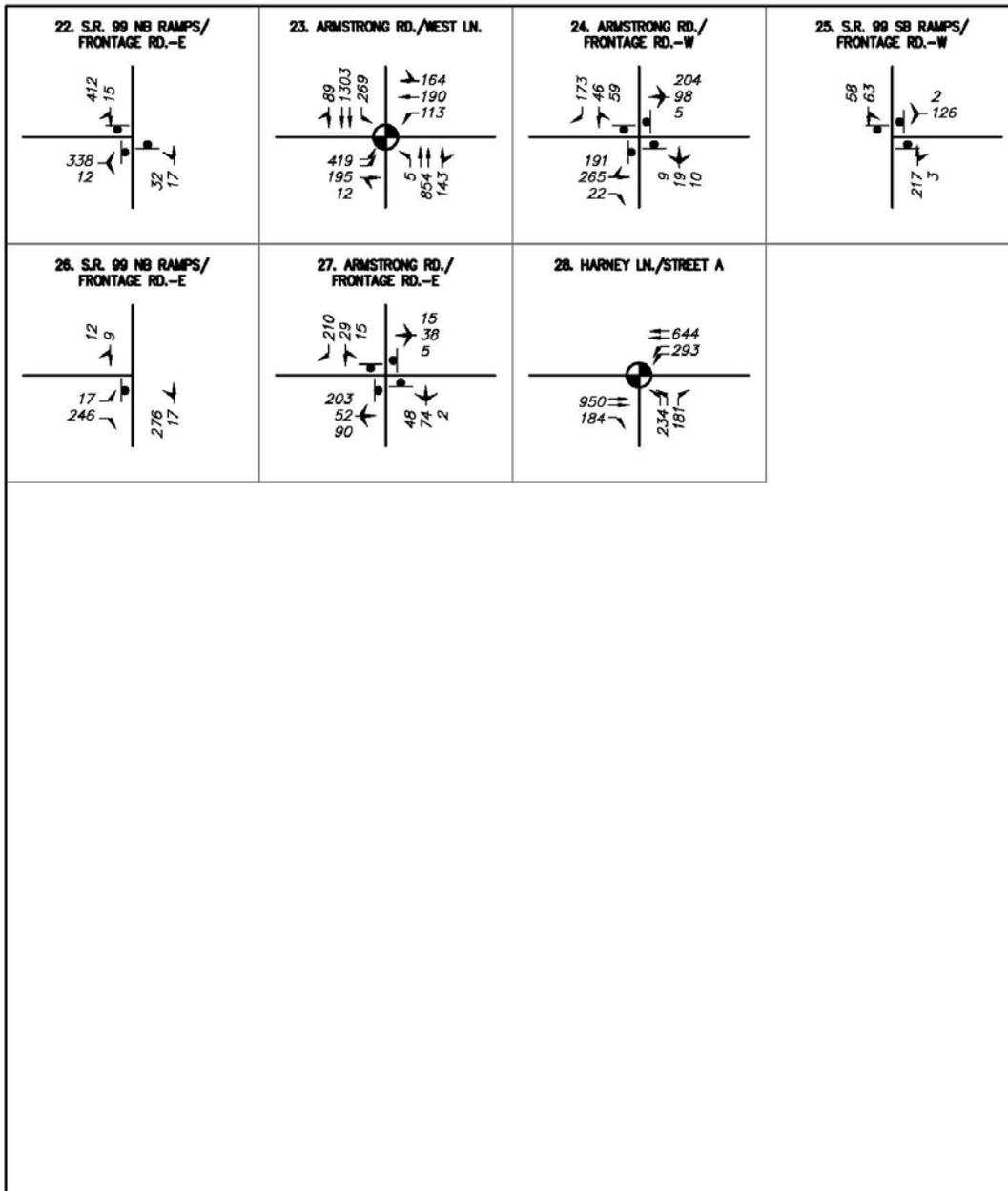


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FIGURE 3.10.16
 2030 CUMULATIVE AM PEAK TRAFFIC VOLUMES

4/20/2020 10:00 AM 1/15/2020 10:00 AM

FIGURE 3.10.16 (continued)



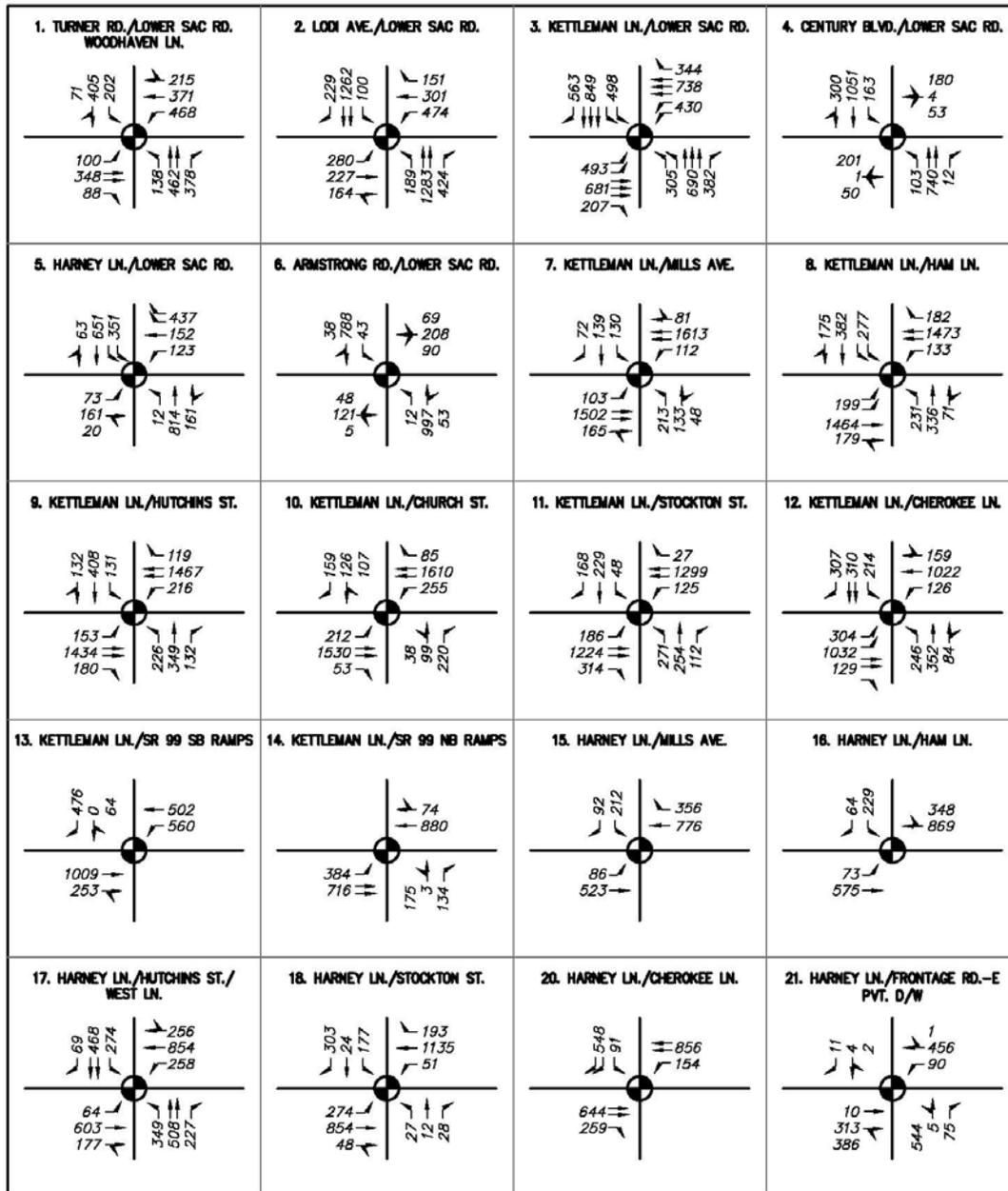
LEGEND

- TRAFFIC SIGNAL
- STOP SIGN

FIGURE 3.10.16
2030 CUMULATIVE AM PEAK TRAFFIC VOLUMES

4 | 201 | 2238 | 2237 | 153384 | Copy May 15, 2024, 2:27pm

FIGURE 3.10.17: 2030 CUMULATIVE PEAK PM TRAFFIC VOLUMES

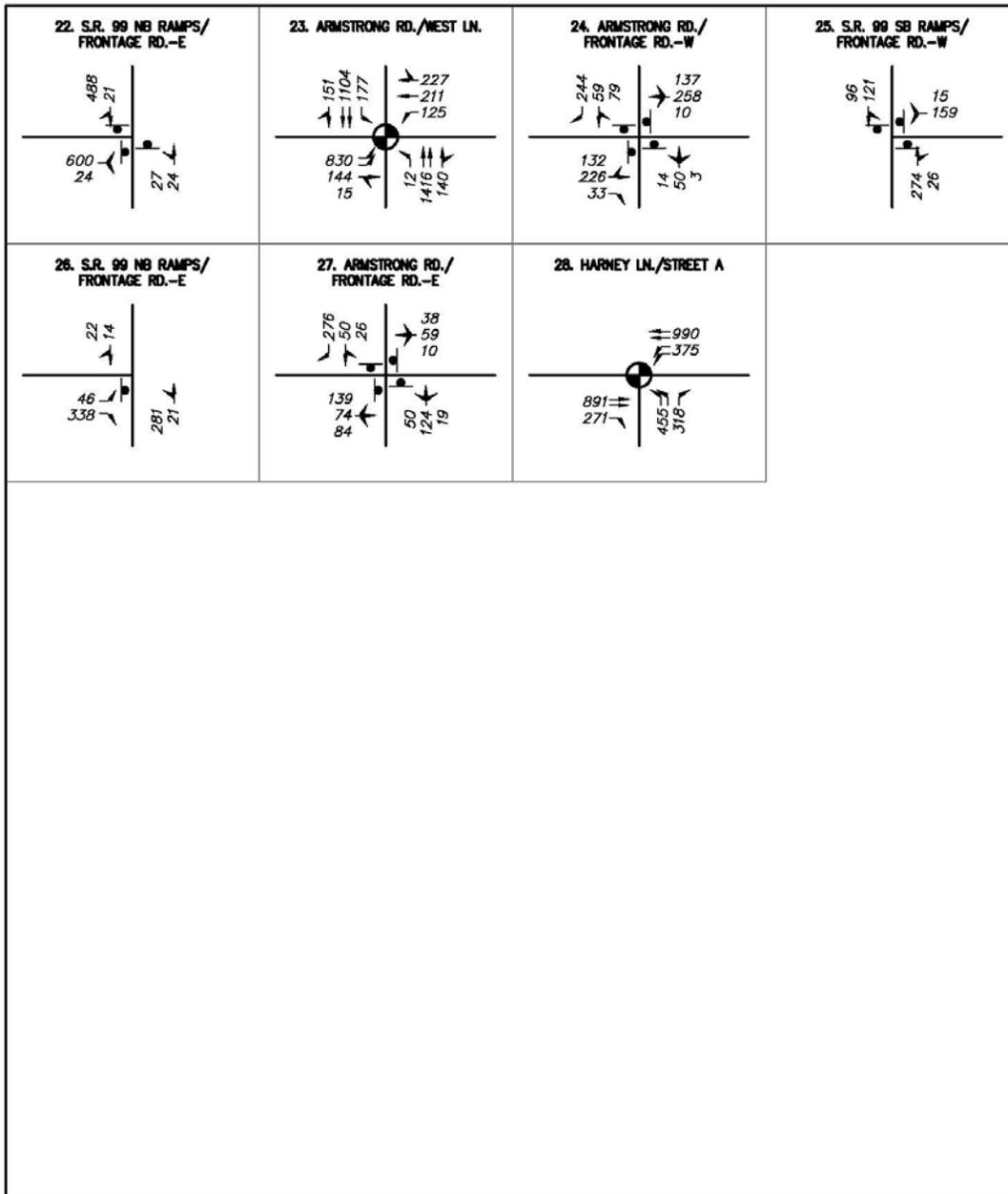


LEGEND
 - TRAFFIC SIGNAL
 - STOP SIGN

FIGURE 3.10.17
 2030 CUMULATIVE PM PEAK TRAFFIC VOLUMES

4/20/2023 10:00 AM/10:00 AM/10:00 AM May 15, 2023, 2:45 PM

FIGURE 3.10.17 (continued)



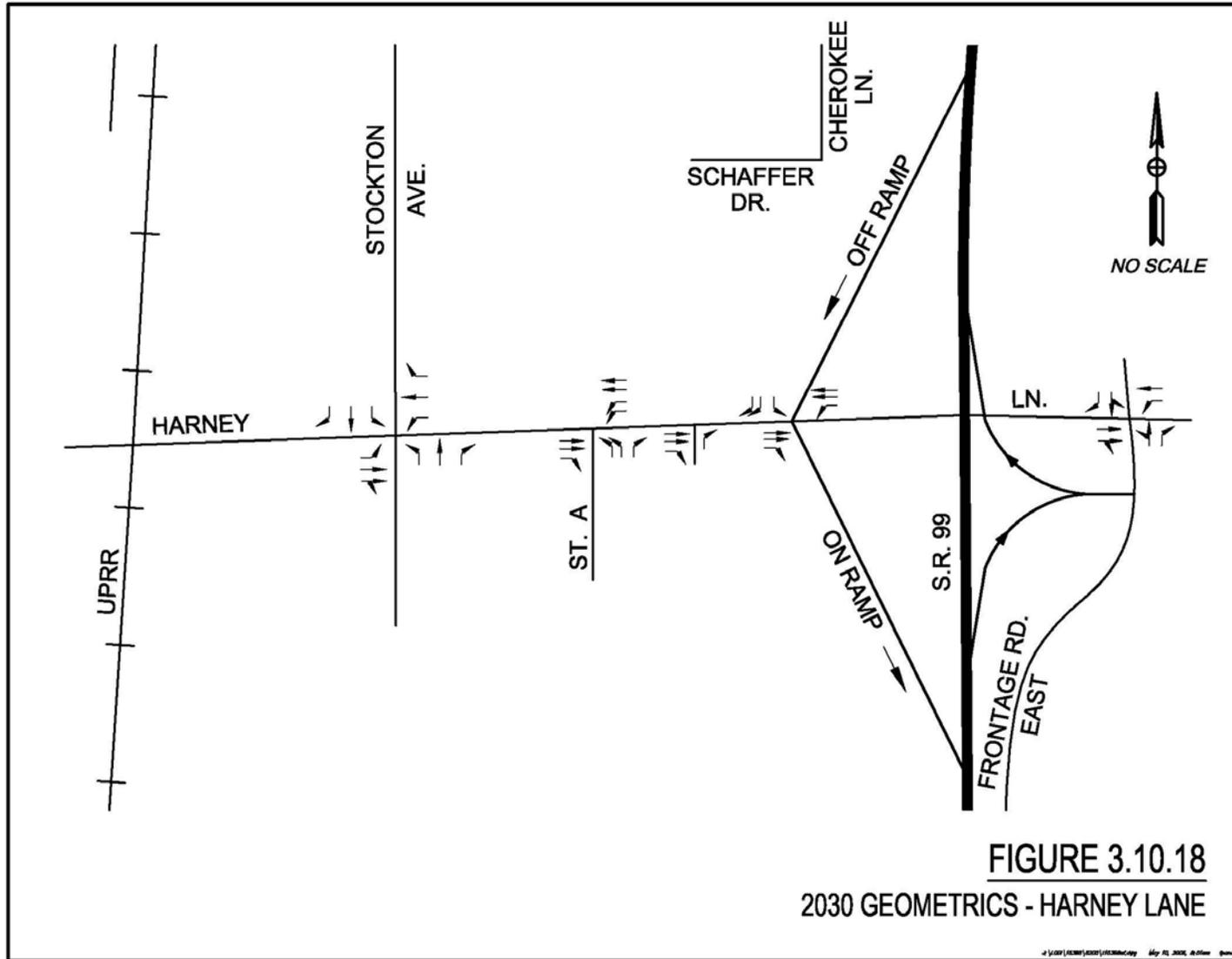
LEGEND

-  - TRAFFIC SIGNAL
-  - STOP SIGN

FIGURE 3.10.17
2030 CUMULATIVE PM PEAK TRAFFIC VOLUMES

4/1/2017 10:58:13 AM / 10338467.dwg May 10, 2006 2:40pm

FIGURE 3.10.18: 2030 GEOMETRICS – HARNEY LANE



The following are considered to be effective in reducing vehicle trip generation and resulting emissions from the project and shall be implemented to the extent feasible and desired by the City:

- Provide pedestrian enhancing infrastructure that includes: sidewalks and pedestrian paths, direct pedestrian connections, street trees to shade sidewalks, pedestrian safety designs/infrastructure, street furniture and artwork, street lighting and/or pedestrian signalization and signage.
- Provide bicycle-enhancing infrastructure that includes: bikeways/paths connecting to a bikeway system, secure bicycle parking.
- Provide transit enhancing infrastructure that includes: transit shelters, benches, etc., street lighting, route signs and displays, and/or bus turnouts/bulbs. Existing transit operators cannot provide fixed route bus service to the project area without significantly impacting the existing level of service (headways). A transit study needs to be conducted to look at new routes or modified routes to serve the project area. The study would be conducted as part of the development plan. A minimum of five transit stops would be incorporated into the proposed project. The final placement of these stops may change, but the general vicinity is marked on Figure 3.10.19.
- Provide park and ride lots.

The implementation of an aggressive trip reduction program with the appropriate incentives for non-auto travel can reduce project impacts by 10 to 15 percent. Such a reduction would help minimize the project's impact.

Year 2030 Background Conditions

- Widen Intersection #23 – Armstrong Road/West Lane to provide for an additional through lane on West Lane in each direction, two additional left turn lanes on eastbound Armstrong Road and an additional through and left turn lane on westbound Armstrong Road.
- Reconstruct the Kettleman Lane/SR 99 interchange to provide additional capacity.
- Reconstruct the Harney Lane/SR 99 interchange to provide additional capacity.

Year 2030 Cumulative Conditions (includes Phases 1 and 2 of Reynolds Ranch)

- Intersection #22 – Frontage Road-East/SR 99 NB Ramps-install an all-way stop and modify the channelization to allow for southbound free right turns from the frontage road to the SR 99 NB on ramp.
- Intersection #25 – Frontage Road-West/SR 99 SB Ramp-install an all-way stop.

- Intersection #27 – Armstrong/Frontage Road-East-install an all-way stop.

3.10.8 MITIGATION MEASURES

Mitigation Measure 3.10.1: Prior to approval of the first tract or parcel map with the Reynolds Ranch Project, a roadway improvement plan for “A,” “B,” and “Loop” Streets including a detail plan for an off-street multi-use trail to be utilized within the internal network of trails and pedestrian access within the project shall be required for review and approval by the City’s Traffic Engineer. Additionally, the roadway improvement plan shall identify all recommended intersection controls and geometrics as noted under “Proposed Improvements” in Section 3.10.7 of this document.

Mitigation Measure 3.10.2: Prior to approval of the first tract or parcel map for Reynolds Ranch Project, the Traffic Engineer shall review and approve a roadway phasing and improvement plan to ensure that timing of new roadway construction and improvements will be provided as necessary to serve and support new development for “Year 2008 Pre-Project Plus Phase I Project Conditions.” The phasing plan shall also note completion and timing of roadway improvements by other adjacent development to coincide with proposed improvements on the same facilities by the proposed project.

Mitigation Measure 3.10.3: As part of the subdivision review process, a roadway improvement plan shall include, but not be limited to providing, the following items: 1) identify all entry/access points for all future development within the project area to ensure proper intersection control and signage, 2) show adequate sight distance in consideration of grading and landscaping at all intersections and drive entries, and 3) identify all bikeways, off-street multi-use trails and sidewalks within the project area. Submittal of the above information is intended to address any potential for vehicle and pedestrian conflicts in the development of the project roadway plan and ensure safe and adequate access for all residents and businesses within the project site.

Mitigation Measure 3.10.4: Proponents of development onsite shall submit a construction Traffic Control Plan to the City Traffic Engineer for review and approval prior to commencing construction on the project and any related off-site improvements.

Mitigation Measure 3.10.5: The design of the internal circulation system and vehicular access will be subject to review and approval by the City of Lodi’s Police and Fire Departments prior to issuance any building permits for the project.

Mitigation Measure 3.10.6: Prior to map approval and issuance of building permits, ensure that adequate parking demand is satisfied for all proposed uses (i.e. parks, commercial, office and residential development, etc.) in accordance to the City of Lodi Zoning Ordinance.

3.10.9. LEVEL OF SIGNIFICANCE AFTER MITIGATION

With the incorporation of Mitigation Measures 3.10.1 to 3.10.5, the proposed project's traffic and circulation impacts would be less than significant. The following table is a summary of the thresholds of significance, potential impacts, and associated mitigation measures.

**Table 3.10.10
Summary of Thresholds of Significance, Impacts, and Mitigation Measures**

Threshold of Significance	Impact	Mitigation Measure
<p>1. Will the project cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?</p>	<p>Less than Significant Impact After Mitigation</p>	<p>Mitigation Measure 3.10.1: Prior to approval of the first tract or parcel map with the Reynolds Ranch Project, a roadway improvement plan for "A," "B," and "Loop" Streets including a detail plan for an off-street multi-use trail to be utilized within the internal network of trails and pedestrian access within the project shall be required for review and approval by the City's Traffic Engineer. Additionally, the roadway improvement plan shall identify all recommended intersection controls and geometrics as noted under "Proposed Improvements" in Section 3.10.7 of this document.</p> <p>Mitigation Measure 3.10.2: Prior to approval of the first tract or parcel map for Reynolds Ranch Project, the Traffic Engineer shall review and approve a roadway phasing and improvement plan to ensure that timing of new roadway construction and improvements will be provided as necessary to serve and support new development for "Year 2008 Pre-Project Plus Phase I Project Conditions." The phasing plan shall also note completion and timing of roadway improvements by other adjacent development to coincide with proposed improvements on the same facilities by the proposed project.</p>
<p>2. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways</p>	<p>No Impact</p>	<p>None</p>
<p>3. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)</p>	<p>Less than Significant Impact After Mitigation</p>	<p>Mitigation Measure 3.10.3: As part of the subdivision review process, a roadway improvement plan shall include, but not be limited to providing, the following items: 1) identify all entry/access points for all future development within the project area to ensure proper intersection control and signage, 2) show adequate sight distance in consideration of grading and landscaping at all intersections and drive entries, and 3) identify all bikeways, off-street multi-use trails and sidewalks within the project area. Submittal of the above information is intended to address any potential for vehicle and pedestrian conflicts in the development of the project roadway plan and ensure safe and adequate access for all residents and businesses within the project site.</p>

**Table 3.10.10
Summary of Thresholds of Significance, Impacts, and Mitigation Measures**

Threshold of Significance	Impact	Mitigation Measure
		Mitigation Measure 3.10.4: Proponents of development onsite shall submit a construction Traffic Control Plan to the City Traffic Engineer for review and approval prior to commencing construction on the project and any related off-site improvements.
4. Result in inadequate emergency access	Less than Significant Impact After Mitigation	Mitigation Measure 3.10.5: The design of the internal circulation system and vehicular access will be subject to review and approval by the City of Lodi's Police and Fire Departments prior to issuance any building permits for the project.
5. Result in inadequate parking capacity	Less than Significant Impact After Mitigation	Mitigation Measure 3.10.6: Prior to map approval and issuance of building permits, ensure that adequate parking demand is satisfied for all proposed uses (i.e. parks, commercial, office and residential development, etc.) in accordance to the City of Lodi Zoning Ordinance.
6. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)	No Impact	None

FIGURE 3.10.19: PROPOSED BUS STOP LOCATIONS

