

5.0 HORIZON YEAR (2030) WITH ALTERNATIVE 1

This section summarizes the results of the Horizon Year (2030) conditions analysis within the Barrio Logan community taking into account the land use changes proposed under the Alternative 1 of the Community Plan Update.

Roadway Network

No roadway network changes are assumed to take place under this scenario, with the exception of the addition of a High Occupancy Vehicle (HOV) lane along the I-5 Corridor for both directions of traffic. The additional HOV lane is listed in Sandag's 2030 Regional Transportation Plan (RTP).

Traffic Volumes

The Horizon Year Average Daily Traffic (ADT) volumes on the roadway segments in the study area were derived from a City of San Diego traffic forecast model that incorporated the land use changes proposed under the Alternative 1 scenario. A copy of the forecast model is included in **Appendix G**.

Table 5-1 presents a more detailed trip generation summary for the community with the land uses included in the Alternative 1 of the Community Plan Update. As shown in the table, the land use designation of Alternative 1 would generate a total of approximately 137,267 average daily trips, including 8,540 (5,216 in and 3,324 out) morning peak-hour trips and 13,692 (76,213 in and 7,479 out) afternoon peak-hour trips.

Modeled forecast volumes experienced some minor refinements. In the process of calibrating the existing model, it was concluded that three post model adjustments should be made to the 2030 traffic models. Traffic volumes along Cesar Chavez Parkway between Newton Avenue and Main Street were reduced by 4,300 ADT to account for Newton Avenue not being in the model. Traffic volumes on 28th Street and 32nd between Main Street and Harbor Drive were increased by 4,000 ADT and 600 ADT, respectively, per calibration between base year model and actual traffic volume counts. Minor smoothing of traffic volumes were made to reflect the gross nature of model loadings from TAZs. Volumes for streets that were not in the traffic model were estimated applying a growth rate generally consistent with other facilities in the community. Resulting daily traffic volumes for the Adopted Community Plan are depicted in **Figure 5-1**.

To estimate the turning movement volumes at the study intersections, the existing turning movements at each respective study intersection were factored up based on the projected Average Daily Traffic (ADT) volumes along each segment shown in the model plot. Each respective movement was derived using an iterative approach that balances the inflows and outflows for each approach. The input values include the existing turning movement volumes and future year peak-hour approach and departure volumes along each leg of the intersection. The future peak-hour approach volumes would be estimated by applying the existing peak-hour factor (K-factor) and directional distributional percentage (D-factor) to the future ADT volumes along each approach. A more detailed description of the methodology used to forecast turning movement volumes is contained in National Cooperative Highway Research Program (NCHRP) 255 Highway Traffic Data for Urbanized Area Project Planning and Design, Chapter 8. An Excel model computes the forecast turning volumes from existing turning movement volumes and forecasted approach and departure volumes by the techniques described in NCHRP 255. A copy of the NCHRP 255 Report and excel calculation worksheets are included in **Appendix H**. **Figure 5-2** displays the Horizon Year peak-hour turning movements used in the analysis of Alternative 1.

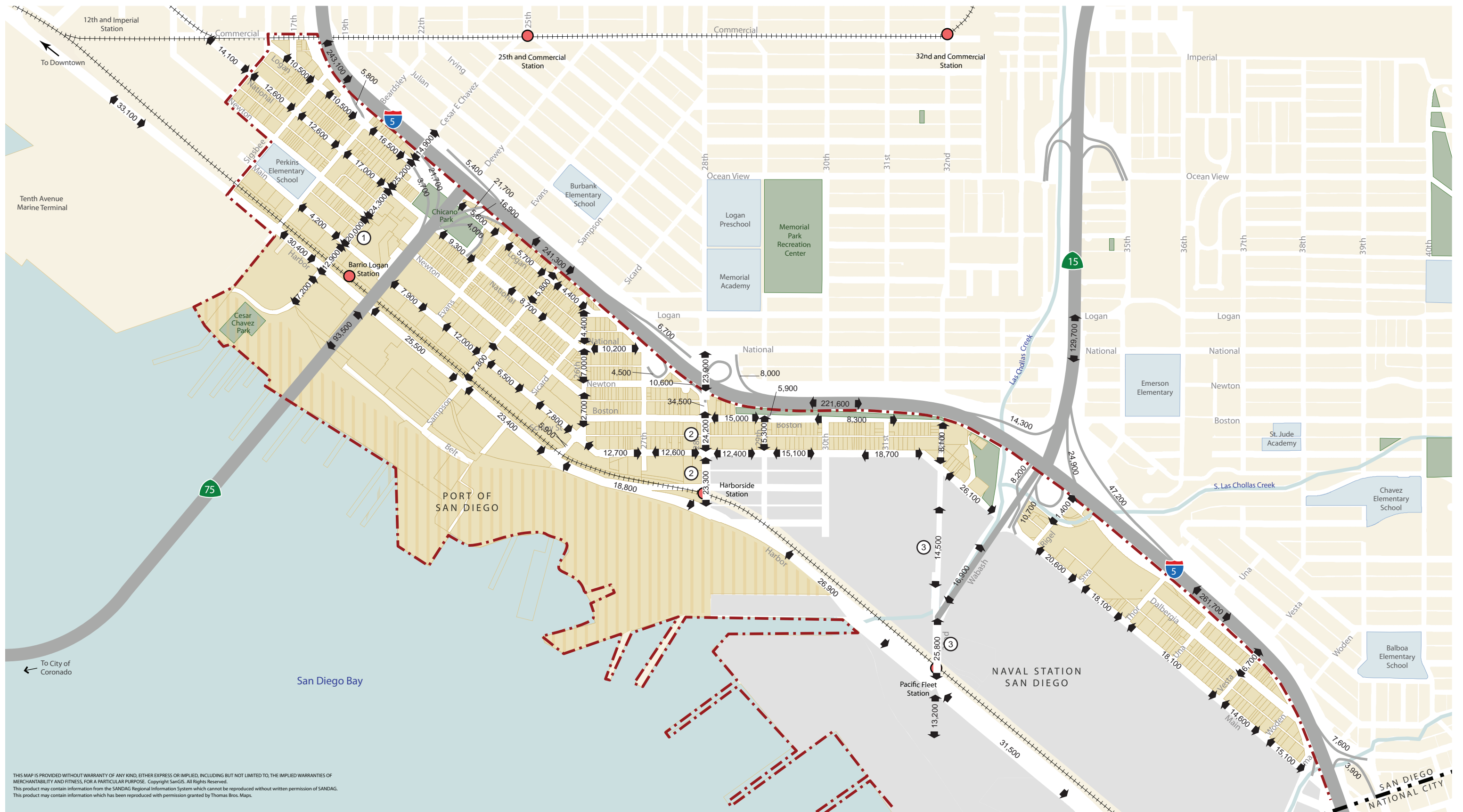
**TABLE 5-1
TRIP GENERATION SUMMARY (ALTERNATIVE 1 - TOTAL)**

Land Use	Units ¹		Daily Trips	AM Peak-Hour			PM Peak-Hour		
				In	Out	Total	In	Out	Total
ACTIVE PARK	9.10	acre	398	0	16	16	0	32	32
ELEMENTARY SCHOOL (stu)	529.00	stu	1,539	286	191	477	117	175	292
FAST FOOD REST. (ksf)	19.50	ksf	13,675	328	219	547	547	548	1,095
FIRE OR POLICE STATION	1.00	site	229	31	3	34	3	31	34
HEAVY INDUSTRY (ksf)	3,130.40	ksf	12,682	1,256	139	1,395	304	1,218	1,522
JUNIOR COLLEGE (ksf)	70.00	ksf	1,295	0	0	0	0	0	0
LIGHT INDUSTRY (ksf)	79.50	ksf	1,272	126	14	140	31	122	153
LOW RISE OFFICE(FT3917)(ksf)	258.50	ksf	3,467	406	45	451	97	388	485
LOW RISE OFFICE(FT3921)(ksf)	162.90	ksf	2,435	285	32	317	68	273	341
LOW RISE OFFICE(FT3957)(ksf)	81.90	ksf	1,450	170	19	189	41	162	203
LOW RISE OFFICE(FT3988)(ksf)	121.30	ksf	1,943	227	26	253	54	218	272
LOW RISE OFFICE(FT3985)(ksf)	15.70	ksf	414	48	6	54	12	46	58
LUMBER STORE (mtro)(ksf)	0.00	ksf	0	0	0	0	0	0	0
MARINA (CCDC)	0.00	acre	0	0	0	0	0	0	0
MARINE TERMINAL	0.00	acre	0	0	0	0	0	0	0
MILITARY USE (Gate 9 - site)	0.00	site	0	0	0	0	0	0	0
MULTI-FAMILY(BL)(over 20DU)	4,203	du	25,377	407	1,622	2,029	1,599	686	2,285
NEIGHBORHOOD SHOP CNT (ksf)	175.10	ksf	20,813	500	333	833	1,146	1,143	2,289
OTHER HEALTH CARE (ksf)	112.70	ksf	5,610	269	67	336	168	393	561
OTHER PUBLIC SERVICE	0.20	acre	58	5	0	5	2	5	7
OTHER TRANSPORTATION	5.10	acre	433	42	19	61	19	46	65
PARKING	0.50	cre	0	0	0	0	0	0	0
RAIL STATION (BL)	0.60	acre	181	0	0	0	0	0	0
REGIONAL COMM.(Mtro)(ksf)	0.00	ksf	0	0	0	0	0	0	0
SINGLE FAMILY (BL)	69	du	607	9	38	47	43	19	62
SPECIALTY COMM.(mtro)(ksf)	0.00	ksf	0	0	0	0	0	0	0
STREETFRONT COMMERCIAL (ksf)	1,071.30	ksf	42,930	773	514	1,287	1,933	1,930	3,863
WAREHOUSING (ksf)	90.60	ksf	459	48	21	69	29	44	73
WHOLESALE TRADE	0.00	acre	0	0	0	0	0	0	0
Total			137,267	5,216	3,324	8,540	6,213	7,479	13,692

Note:

1. du = Dwelling Unit; stu = Students; ksf = Thousand square feet

K:\SND_TPTO\095707000.Excel\707000TG.xlsm\Alt 1 Totals (LU)



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- LEGEND**
- Barrio Logan Community Plan Area
 - Freeway/Ramp
 - Park/Open Space
 - City Boundary
 - SDMTS Trolley and Station
 - School
 - Port District
 - Naval Station San Diego

- ① ADT volumes along Cesar Chavez Parkway between Newton Avenue and Main Street were reduced by 4,300 ADT to account for Newton Avenue not being in the model. This adjustment was based on existing traffic patterns.
- ② ADT volumes along 28th Street between Boston Avenue and Harbor Drive were increased by 4,000 ADT as recommended during the traffic model calibration process.
- ③ ADT volumes along 32nd Street between Main Street and Harbor Drive were increased by 600 ADT as recommended during the traffic model calibration process.



Figure 5-1: Horizon Year (2030) ADT Volumes (Alternative 1)

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<p>1</p> <p>136 / 77 250 / 490 47 / 40</p> <p>16th St</p> <p>114 / 122 295 / 488 24 / 0</p> <p>Commercial St</p> <p>16 / 64 225 / 348 26 / 15</p> <p>13 / 21 340 / 670 16 / 26</p>	<p>2</p> <p>91 / 70 36 / 25 56 / 127</p> <p>16th St</p> <p>34 / 25 495 / 458 3 / 3</p> <p>National Ave</p> <p>40 / 91 194 / 347 40 / 31</p> <p>40 / 61 34 / 41 12 / 7</p>	<p>3</p> <p>58 / 39 40 / 23 15 / 6</p> <p>Sigsbee St</p> <p>36 / 27 367 / 246 16 / 9</p> <p>National Ave</p> <p>10 / 34 140 / 315 51 / 62</p> <p>63 / 75 26 / 61 58 / 13</p>	<p>4</p> <p>17 / 8 79 / 38 33 / 16</p> <p>Sigsbee St</p> <p>51 / 23 80 / 50 15 / 9</p> <p>Newton Ave</p> <p>6 / 9 48 / 50 19 / 29</p> <p>24 / 20 111 / 91 34 / 12</p>
<p>5</p> <p>3 / 2 96 / 60 31 / 20</p> <p>Sigsbee St</p> <p>61 / 31 8 / 0 31 / 38</p> <p>Main St</p> <p>3 / 4 8 / 2 6 / 13</p> <p>5 / 0 97 / 98 24 / 12</p>	<p>6</p> <p>110 / 80 110 / 100</p> <p>Sigsbee St</p> <p>20 / 100 1670 / 780</p> <p>Harbor Dr</p> <p>60 / 160 480 / 1945</p>	<p>7</p> <p>47 / 38 236 / 110 259 / 272</p> <p>I-5 SB Off-Ramp</p> <p>202 / 154 87 / 41</p> <p>Logan Ave</p> <p>170 / 515 24 / 69</p> <p>Beardsley St</p> <p>31 / 56 68 / 122</p>	<p>8</p> <p>23 / 11 138 / 83 216 / 189</p> <p>Beardsley St</p> <p>67 / 77 421 / 347 241 / 113</p> <p>National Ave</p> <p>8 / 19 238 / 625 8 / 2</p> <p>4 / 9 30 / 43 50 / 134</p>
<p>9</p> <p>41 / 12 156 / 94 56 / 46</p> <p>Beardsley St</p> <p>15 / 19 82 / 93 29 / 13</p> <p>Newton Ave</p> <p>18 / 7 74 / 60 9 / 4</p> <p>13 / 5 23 / 71 19 / 37</p>	<p>10</p> <p>52 / 17 57 / 39 275 / 144</p> <p>Beardsley St</p> <p>76 / 79 109 / 33 163 / 78</p> <p>Main St</p> <p>15 / 22 74 / 64 4 / 4</p> <p>2 / 0 8 / 25 52 / 109</p>	<p>11</p> <p>95 / 35 48 / 40</p> <p>Beardsley St</p> <p>30 / 20 1610 / 860</p> <p>Harbor Dr</p> <p>22 / 95 580 / 1950</p>	<p>12</p> <p>31 / 40 350 / 330</p> <p>Cesar Chavez Pkwy</p> <p>192 / 154 259 / 157 613 / 517</p> <p>Kearney Ave</p> <p>257 / 382 262 / 345</p>



Legend
X / Y = AM / PM PEAK HOUR
TURNING VOLUMES



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<p>13</p> <p>82 / 52 909 / 694 70 / 114 Cesar Chavez Pkwy-SR-75 On-Ramp</p> <p>76 / 90 325 / 280 100 / 120</p> <p>Logan Ave</p> <p>140 / 130 280 / 420 120 / 230</p> <p>see note below</p> <p>100 / 140 300 / 506 280 / 670</p>	<p>14</p> <p>310 / 410 745 / 550 70 / 120 Cesar Chavez Pkwy</p> <p>120 / 275 350 / 270 120 / 110</p> <p>National Ave</p> <p>190 / 300 250 / 400 180 / 290</p> <p>90 / 120 580 / 1000 50 / 100</p>	<p>15</p> <p>140 / 55 810 / 890 95 / 165 Cesar Chavez Pkwy</p> <p>65 / 120 50 / 70 40 / 90</p> <p>Newton Ave</p> <p>75 / 135 40 / 130 60 / 70</p> <p>40 / 40 410 / 795 30 / 60</p>	<p>16</p> <p>180 / 260 580 / 540 150 / 250 Cesar Chavez Pkwy</p> <p>190 / 270 330 / 230 70 / 70</p> <p>Main St</p> <p>150 / 120 190 / 290 15 / 25</p> <p>70 / 70 340 / 640 90 / 180</p>
<p>17</p> <p>403 / 324 83 / 30 72 / 33 Cesar Chavez Pkwy</p> <p>95 / 43 1047 / 465 80 / 50</p> <p>Harbor Dr</p> <p>118 / 468 398 / 1500 40 / 40</p> <p>10 / 50 14 / 63 27 / 35</p>	<p>18</p> <p>I-5 SB On-Ramp</p> <p>84 / 73 127 / 158</p> <p>Logan Ave</p> <p>497 / 933 182 / 527 2 / 8</p> <p>Park Dwy</p> <p>0 / 11 2 / 2 2 / 3</p>	<p>19</p> <p>280 / 238 27 / 126 SR-75 Off-Ramp</p> <p>276 / 260</p> <p>National Ave</p> <p>128 / 308</p>	<p>20</p> <p>30 / 72 18 / 22 9 / 45 Evans St</p> <p>26 / 23 226 / 192 37 / 32</p> <p>National Ave</p> <p>17 / 37 115 / 390 22 / 36</p> <p>28 / 13 49 / 18 24 / 62</p>
<p>21</p> <p>37 / 21 30 / 28 7 / 30 Evans St</p> <p>30 / 27 63 / 70 16 / 27</p> <p>Newton Ave</p> <p>23 / 24 87 / 124 22 / 41</p> <p>27 / 7 58 / 47 31 / 28</p>	<p>22</p> <p>45 / 16 56 / 75 Evans St</p> <p>65 / 62 350 / 239</p> <p>Main St</p> <p>33 / 12 153 / 270</p>	<p>23</p> <p>14 / 13 218 / 256 62 / 66 Sampson St</p> <p>56 / 54 79 / 87 91 / 143</p> <p>Logan Ave</p> <p>110 / 108 224 / 255 163 / 203</p> <p>219 / 235 332 / 400 147 / 101</p>	<p>24</p> <p>118 / 107 109 / 86 59 / 123 Sampson St</p> <p>100 / 100 104 / 70 48 / 21</p> <p>National Ave</p> <p>75 / 162 50 / 111 15 / 12</p> <p>7 / 13 95 / 185 16 / 30</p>



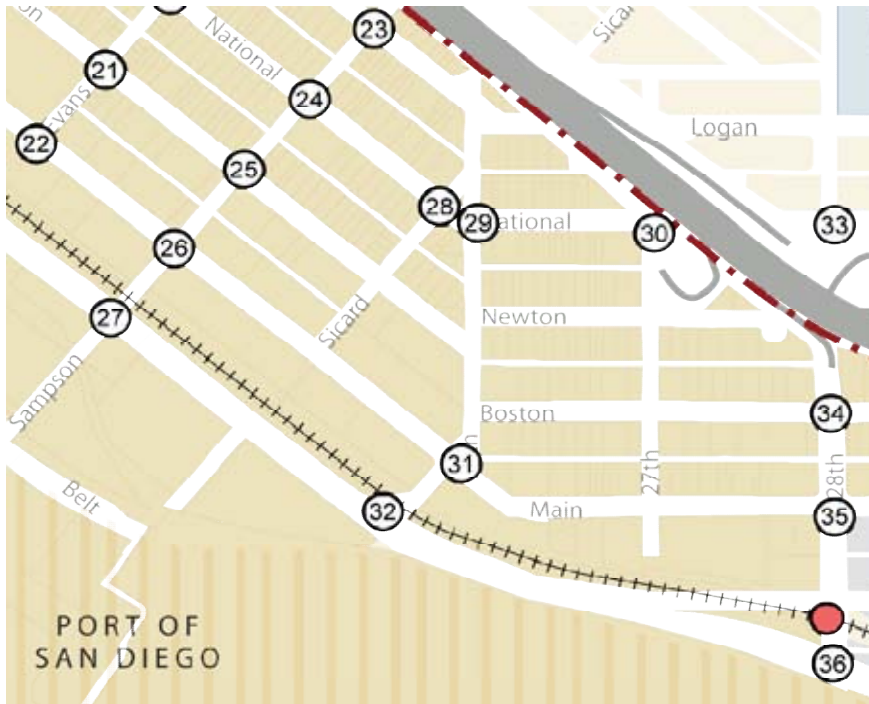
The northbound right-turn volumes for Logan Avenue/SR-75 and Cesar Chavez Parkway intersection include the vehicles turning north from Cesar Chavez Parkway using the free northbound right-turn lane. The intersection analysis did not include a reduction for these volumes.

Legend
X / Y = AM / PM PEAK HOUR
TURNING VOLUMES



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<p>25</p> <p>↻ 37 / 19 ↻ 99 / 66 ↻ 18 / 19</p> <p>Sampson St</p> <p>↻ ↻ ↻ 35 / 31 ↻ ↻ ↻ 81 / 76 ↻ ↻ ↻ 15 / 0</p> <p>Newton Ave</p> <hr/> <p>21 / 34 95 / 119 16 / 24</p> <p>↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻</p> <p>7 / 13 40 / 90 31 / 20</p>	<p>26</p> <p>↻ 172 / 85 ↻ 59 / 27 ↻ 10 / 8</p> <p>Sampson St</p> <p>↻ ↻ ↻ 16 / 8 ↻ ↻ ↻ 218 / 83 ↻ ↻ ↻ 53 / 27</p> <p>Main St</p> <hr/> <p>70 / 118 62 / 142 51 / 33</p> <p>↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻</p> <p>50 / 60 31 / 46 35 / 49</p>	<p>27</p> <p>↻ 32 / 26 ↻ 75 / 66 ↻ 64 / 58</p> <p>Sampson St</p> <p>↻ ↻ ↻ 44 / 62 ↻ ↻ ↻ 1284 / 488 ↻ ↻ ↻ 75 / 19</p> <p>Harbor Dr</p> <hr/> <p>10 / 56 716 / 1500 28 / 5</p> <p>↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻</p> <p>14 / 23 61 / 111 38 / 41</p>	<p>28</p> <p>↻ 36 / 42 ↻ 41 / 18 ↻ 4 / 4</p> <p>Sicard St</p> <p>↻ ↻ ↻ 3 / 1 ↻ ↻ ↻ 163 / 125 ↻ ↻ ↻ 27 / 8</p> <p>National Ave</p> <hr/> <p>21 / 40 79 / 169 36 / 38</p> <p>↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻</p> <p>48 / 33 48 / 46 12 / 17</p>
<p>29</p> <p>↻ 15 / 23 ↻ 38 / 68 ↻ 51 / 90</p> <p>28th St</p> <p>↻ ↻ ↻ 48 / 55 ↻ ↻ ↻ 223 / 124 ↻ ↻ ↻ 36 / 35</p> <p>National Ave</p> <hr/> <p>28 / 33 66 / 156 36 / 65</p> <p>↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻</p> <p>27 / 46 47 / 60 15 / 34</p>	<p>30</p> <p>↻ ↻ ↻ 269 / 234 ↻ ↻ ↻ 42 / 31</p> <p>National Ave</p> <hr/> <p>146 / 368 18 / 23</p> <p>↻ ↻ ↻ ↻ ↻ ↻</p> <p>I-5 SB Off-ramp</p> <p>↻ ↻ ↻ 72 / 94 ↻ ↻ ↻ 149 / 296</p>	<p>31</p> <p>↻ 13 / 8 ↻ 22 / 12 ↻ 16 / 28</p> <p>28th St</p> <p>↻ ↻ ↻ 26 / 29 ↻ ↻ ↻ 161 / 50 ↻ ↻ ↻ 143 / 49</p> <p>Main St</p> <hr/> <p>10 / 14 50 / 180 17 / 16</p> <p>↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻</p> <p>28 / 7 33 / 61 91 / 200</p>	<p>32</p> <p>↻ 164 / 75 ↻ 25 / 10 ↻ 12 / 16</p> <p>Schley St</p> <p>↻ ↻ ↻ 17 / 39 ↻ ↻ ↻ 1422 / 538</p> <p>Harbor Dr</p> <hr/> <p>124 / 203 454 / 1400</p> <p>↻ ↻ ↻ ↻ ↻ ↻</p>
<p>33</p> <p>↻ 307 / 102 ↻ 205 / 210 ↻ 115 / 199</p> <p>28th St</p> <p>↻ ↻ ↻ 123 / 240 ↻ ↻ ↻ 628 / 427 ↻ ↻ ↻ 192 / 463</p> <p>National Ave</p> <hr/> <p>106 / 94 258 / 612 18 / 85</p> <p>↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻</p> <p>33 / 18 98 / 98 86 / 168</p>	<p>34</p> <p>↻ 310 / 270 ↻ 860 / 980 ↻ 160 / 330</p> <p>28th St</p> <p>↻ ↻ ↻ 120 / 70 ↻ ↻ ↻ 70 / 70 ↻ ↻ ↻ 45 / 60</p> <p>Boston Ave</p> <hr/> <p>230 / 320 280 / 180 140 / 160</p> <p>↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻</p> <p>↻ ↻ ↻ 90 / 50 ↻ ↻ ↻ 700 / 1050 ↻ ↻ ↻ 90 / 200</p>	<p>35</p> <p>↻ 250 / 550 ↻ 750 / 500 ↻ 180 / 280</p> <p>28th St</p> <p>↻ ↻ ↻ 180 / 280 ↻ ↻ ↻ 490 / 290 ↻ ↻ ↻ 90 / 150</p> <p>Main St</p> <hr/> <p>190 / 270 300 / 600 50 / 40</p> <p>↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻</p> <p>45 / 65 220 / 500 70 / 180</p>	<p>36</p> <p>↻ 25 / 13 ↻ 15 / 12 ↻ 375 / 505</p> <p>28th St</p> <p>↻ ↻ ↻ 116 / 278 ↻ ↻ ↻ 822 / 474 ↻ ↻ ↻ 17 / 14</p> <p>Harbor Dr</p> <hr/> <p>110 / 290 560 / 1120 4 / 2</p> <p>↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻</p> <p>0 / 10 6 / 134 2 / 0</p>



Legend
X / Y = AM / PM PEAK HOUR
TURNING VOLUMES



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<p>37</p> <p>29th St</p> <p>88 / 118 102 / 83 18 / 20</p> <p>Boston Ave</p> <p>234 / 559 104 / 153 15 / 27</p> <p>5 / 9 30 / 72 19 / 45</p>	<p>38</p> <p>42 / 73 83 / 61 39 / 123</p> <p>32nd St</p> <p>79 / 102 494 / 353 314 / 207</p> <p>Main St</p> <p>38 / 70 130 / 653 218 / 166</p> <p>110 / 226 50 / 112 26 / 307</p>	<p>39</p> <p>63 / 29 444 / 479 179 / 413</p> <p>32nd St</p> <p>Norman Scott Rd</p> <p>65 / 115 25 / 115 170 / 80 80 / 130</p> <p>10 / 110 65 / 155 775 / 240</p> <p>Wabash Blvd</p> <p>50 / 205 120 / 210 45 / 50 250 / 140</p>	<p>40</p> <p>190 / 260 1040 / 280 130 / 310</p> <p>32nd St</p> <p>390 / 460 735 / 436 300 / 40</p> <p>Harbor Dr</p> <p>140 / 340 657 / 1185 140 / 100</p> <p>30 / 70 160 / 690 30 / 140</p>
<p>41</p> <p>309 / 153 108 / 120</p> <p>I-15 Ramps</p> <p>107 / 154 497 / 361</p> <p>Main St</p> <p>47 / 303 181 / 727</p>			



Legend
X / Y = AM / PM PEAK HOUR
TURNING VOLUMES



K:\SND_TPTO\095707000\Excel\707000TA01.xlsx Turn 32 Adj-Model1 Figure 37-48

Intersection Analysis

Table 5-2 displays the LOS analysis results for the study intersections under Horizon Year with the Barrio Logan Community Plan Update conditions for Alternative 1 scenario. As shown in the table, all intersections would operate at LOS D or better during both peak-hour periods, with the exception of the following fourteen intersections:

- National Avenue and 16th Street (LOS F during both peak-hour periods);
- Harbor Drive and Sigsbee Street (LOS F during both peak-hour periods);
- Logan Avenue and Beardsley Street/I-5 SB off-ramp (LOS F during the afternoon peak-hour period);
- National Avenue and Beardsley Street (LOS E and LOS F in the morning and afternoon peak-hour periods, respectively);
- Harbor Drive and Beardsley Street (LOS F during both peak-hour periods);
- Logan Avenue and Cesar Chavez Parkway (LOS E in the afternoon peak-hour period);
- Harbor Drive and Cesar Chavez Parkway (LOS E and LOS F in the morning and afternoon peak-hour periods, respectively);
- Logan Avenue and Sampson Street (LOS F during both peak-hour periods);
- Harbor Drive and Schley Street (LOS E in the morning peak-hour period);
- National Avenue and 28th Street (LOS F and LOS E in the morning and afternoon peak-hour periods, respectively);
- Harbor Drive and 28th Street (LOS F in the afternoon peak-hour period);
- Boston Avenue and I-5 Southbound On-ramp (LOS F in the afternoon peak-hour period);
- 32nd Street and Wabash Street (LOS F during both peak-hour periods); and
- Harbor Drive and 32nd Street (LOS F during both peak-hour periods).

The Barrio Logan Community Plan Update Alternative 1 is considered to have a cumulative traffic related impact at all fourteen intersections listed above.

Appendix D contains the LOS calculation worksheets.

**TABLE 5-2
HORIZON YEAR (2030) CONDITIONS ALTERNATIVE 1
PEAK-HOUR INTERSECTION LOS SUMMARY**

INTERSECTION	TRAFFIC CONTROL	PEAK HOUR	EXISTING		ALTERNATIVE 1		Δ (c)	SIGNIFICANT?
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)		
1 Commercial St & 16th St	Signal	AM	19.4	B	12.8	B	-6.6	NO
		PM	24.6	C	27.7	C	3.1	NO
2 National Ave & 16th St	Two-Way Stop	AM	11.7	B	51.7 (NB)	F	40.0	YES
		PM	12.5	B	232.1 (SB)	F	219.6	YES
3 National Ave & Sigsbee St	Signal	AM	9.6	A	8.1	A	-1.5	NO
		PM	9.6	A	7.3	A	-2.3	NO
4 Newton Ave & Sigsbee St	All-Way Stop	AM	7.9	A	8.8	A	0.9	NO
		PM	7.6	A	8.0	A	0.4	NO
5 Main St & Sigsbee St	All-Way Stop	AM	7.4	A	8.1	A	0.7	NO
		PM	7.4	A	7.8	A	0.4	NO
6 Harbor Dr & Sigsbee St	One-Way Stop	AM	17.0	C	ECL (SB)	F	--	YES
		PM	18.1	C	ECL (SB)	F	--	YES
7 Logan Ave & Beardsley St- 1-5 SB ramp	All-Way Stop	AM	11.1	B	33.1	D	22.0	NO
		PM	11.9	B	81.9 (EB)	F	70.0	YES
8 National Ave & Beardsley St	All-Way Stop	AM	8.5	A	39.9	E	31.4	YES
		PM	8.7	A	129.0 (EBL)	F	120.3	YES
9 Newton Ave & Beardsley St	All-Way Stop	AM	8.5	A	9.4	A	0.9	NO
		PM	8.2	A	8.6	A	0.4	NO
10 Main St & Beardsley St	All-Way Stop	AM	8.5	A	15.5	C	7.0	NO
		PM	7.8	A	9.5	A	1.7	NO
11 Harbor Dr & Beardsley St	One-Way Stop	AM	20.3	C	173.7 (SB)	F	153.4	YES
		PM	18.3	C	51.6 (SB)	F	33.3	YES
12 Kearney St & Cesar E. Chavez Pkwy	Signal	AM	21.7	C	46.6	D	24.9	NO
		PM	21.2	C	34.0	C	12.8	NO
13 Logan Ave & Cesar E. Chavez Pkwy	Signal	AM	14.0	B	31.1	C	17.1	NO
		PM	13.0	B	62.1	E	49.1	YES
14 National Ave & Cesar E. Chavez Pkwy	Signal	AM	11.0	B	30.4	C	19.4	NO
		PM	14.0	B	52.4	D	38.4	NO
15 Newton Ave & Cesar E. Chavez Pkwy	Signal	AM	8.1	A	9.1	A	1.0	NO
		PM	9.1	A	15.3	B	6.2	NO
16 Main St & Cesar E. Chavez Pkwy	Signal	AM	9.6	A	39.3	D	29.7	NO
		PM	8.7	A	42.5	D	33.8	NO
17 Harbor Dr & Cesar E. Chavez Pkwy	Signal	AM	33.2	C	77.5	E	44.3	YES
		PM	43.6	D	85.2	F	41.6	YES
18 Logan Ave & 1-5 SB On-ramp	One-Way Stop	AM	8.8	A	9.5	A	0.7	NO
		PM	9.9	A	16.3	C	6.4	NO
19 National Ave & SR-75 Off-ramp	One-Way Stop	AM	10.1	B	13.2	B	3.1	NO
		PM	11.0	B	13.8	B	2.8	NO
20 National Ave & Evans St	Two-Way Stop	AM	11.2	B	14.6	B	3.4	NO
		PM	11.9	B	21.0	C	9.1	NO

Notes:

Bold values indicate intersections operating at LOS E or F.

SB= Southbound; NB= Northbound; EB=Eastbound; WB=Westbound

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the 2000 Highway Capacity Manual and performed using Synchro 6.0

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**TABLE 5-2
HORIZON YEAR (2030) CONDITIONS ALTERNATIVE 1
PEAK-HOUR INTERSECTION LOS SUMMARY (cont.)**

INTERSECTION	TRAFFIC CONTROL	PEAK HOUR	EXISTING		ALTERNATIVE 1		Δ	SIGNIFICANT?
			DELAY (a)	LOS (b)	DELAY (a)	LOS (b)		
21 Newton Ave & Evans St	Two-Way Stop	AM	9.8	A	11.8	B	2.0	NO
		PM	9.8	A	12.4	B	2.6	NO
22 Main St & Evans St	One-Way Stop	AM	9.3	A	14.4	B	5.1	NO
		PM	9.6	A	14.3	B	4.7	NO
23 Logan Ave & Sampson St	All-Way Stop	AM	10.0	B	143.5 (WBT)	F	133.5	YES
		PM	10.7	B	197.1 (NB)	F	186.4	YES
24 National Ave & Sampson St	Signal	AM	10.3	B	8.1	A	-2.2	NO
		PM	9.4	A	9.1	A	-0.3	NO
25 Newton Ave & Sampson St	All-Way Stop	AM	7.5	A	8.7	A	1.2	NO
		PM	7.6	A	8.8	A	1.2	NO
26 Main St & Sampson St	All-Way Stop	AM	8.6	A	11.5	B	2.9	NO
		PM	8.2	A	10.4	B	2.2	NO
27 Harbor Dr & Sampson St	Signal	AM	23.1	C	29.2	C	6.1	NO
		PM	27.1	C	41.7	D	14.6	NO
28 National Ave & Sicard St	Two-Way Stop	AM	12.0	B	14.3	B	2.3	NO
		PM	11.4	B	14.0	B	2.6	NO
29 National Ave & 26th St	All-Way Stop	AM	8.7	A	9.5	A	0.8	NO
		PM	8.8	A	10.4	B	1.6	NO
30 National Ave & I-5 SB Off-ramp	One-Way Stop	AM	11.5	B	12.7	B	1.2	NO
		PM	17.8	C	20.9	C	3.1	NO
31 Main St & 26th St-Schley St	All-Way Stop	AM	7.7	A	8.2	A	0.5	NO
		PM	8.0	A	8.0	A	0.0	NO
32 Harbor Dr & Schley St	Signal	AM	19.6	B	76.2	E	56.6	YES
		PM	14.1	B	28.8	C	14.7	NO
33 National Ave & 28th St	Signal	AM	35.3	D	81.2	F	45.9	YES
		PM	29.8	C	70.8	E	41.0	YES
34 Boston Ave & 28th St (c)	Signal	AM	10.6	B	36.9	D	26.3	NO
		PM	17.7	B	45.1	D	27.4	NO
35 Main St & 28th St (c)	Signal	AM	23.4	C	31.6	C	8.2	NO
		PM	29.2	C	40.8	D	11.6	NO
36 Harbor Dr & 28th St	Signal	AM	34.3	C	43.3	D	9.0	NO
		PM	45.6	D	92.2	F	46.6	YES
37 Boston Ave & I-5 SB On-ramp-29th St	One-Way Stop	AM	17.3	C	21.0	C	3.7	NO
		PM	260.7	F	523.6 NB	F	262.9	YES
38 Main St & 32nd St	Signal	AM	21.9	C	22.7	C	0.8	NO
		PM	29.2	C	33.2	C	4.0	NO
39 32nd St & Wabash St	Signal	AM	38.5	D	112.7	F	74.2	YES
		PM	32.0	C	85.1	F	53.1	YES
40 Harbor Dr & 32nd St	Signal	AM	31.7	C	146.8	F	115.1	YES
		PM	51.1	D	92.3	F	41.2	YES
41 Main St & I-15 Ramps	Signal	AM	10.8	B	11.2	B	0.4	NO
		PM	11.5	B	12.5	B	1.0	NO

Notes:
Bold values indicate intersections operating at LOS E or F.
 SB= Southbound; NB= Northbound; EB=Eastbound; WB=Westbound
 (a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
 (b) LOS calculations are based on the methodology outlined in the 2000 Highway Capacity Manual and performed using Synchro 6.0
 (c) The intersection may not operate as well as indicated due to potential queuing. See text of the report for additional explanation.

Roadway Segment Analysis

Table 5-3 displays the roadway segment analysis under the Horizon Year (2030) conditions for the Alternative 1 scenario. As shown in the table, based on planning level analysis and on ADT volumes, the Alternative 1 scenario would be considered having a cumulative roadway segment impact along the following roadway segments:

- Cesar Chavez Parkway between Logan Avenue and National Avenue (LOS E);
- Cesar Chavez Parkway between National Avenue and Newton Avenue (LOS F);
- Cesar Chavez Parkway between Newton Avenue and Main Street (LOS E);
- Sampson Street between National Avenue and Harbor Drive (LOS E);
- 26th Street between National Avenue and Main Street (LOS E);
- 28th Street between I-5 and Boston Avenue (LOS F);
- 32nd Street between Main Street and Wabash Boulevard (LOS E);
- Vesta Street between Main Street and I-5 Ramps (LOS E);
- Logan Avenue between Sigsbee Street and Cesar Chavez Parkway (LOS F);
- National Avenue between Beardsley Street and Cesar Chavez Parkway (LOS F);
- National Avenue between Cesar Chavez Parkway and Evans Street (LOS F);
- National Avenue between Sicard Street and 27th Street (LOS F);
- Boston Avenue between 28th Street and 29th Street (LOS F);
- Boston Avenue between 29th Street and 32nd Street (LOS F);
- Main Street between Cesar Chavez Parkway and Evans Street (LOS E);
- Main Street between Evans Street and 26th Street (LOS E);
- Main Street between 26th Street and 28th Street (LOS F);
- Main Street between 28th Street and 29th Street (LOS F);
- Main Street between 29th Street and 32nd Street (LOS F);
- Main Street between 32nd Street and Rigel Street (LOS F);
- Main Street between Rigel Street and Una Street (LOS F); and
- Main Street between Una Street and I-5 SB Off-ramp (LOS F)

Freeway Segment Analysis

Table 5-4 displays the freeway segments analysis under the Horizon Year (2030) conditions for the Alternative 1 scenario. As shown in the table, the Alternative 1 scenario would have a cumulative traffic related impact along the following freeway segments:

- I-5 from J Street to SR-75 Junction (LOS F and LOS E for the morning and afternoon peak-hour periods, respectively);
- I-5 from SR-75 Junction to 28th Street (LOS F and LOS E for the morning and afternoon peak-hour periods, respectively);
- I-5 from 28th Street to I-15 Interchange (LOS E during the morning peak-hour periods);
- I-5 from I-15 Interchange to Division Street (LOS F both peak-hour periods); and
- I-15 from I-5 Interchange to Ocean View Boulevard (LOS F during the afternoon peak-hour period)

**TABLE 5-3
HORIZON YEAR (2030) CONDITIONS ALTERNATIVE 1
ROADWAY SEGMENT LOS SUMMARY**

ROADWAY SEGMENT	ROADWAY CLASSIFICATION (a)	HIGHEST ACCEPTABLE LOS D VOLUME	LOS E CAPACITY	EXISTING CONDITIONS			YEAR 2030 (ALTERNATIVE 1)		Δ in V/C	SIGNIFICANT?	
				ADT	V/C RATIO (b)	LOS	ADT	V/C RATIO (b)			LOS
Cesar Chavez Pkwy											
north of Logan Ave	3 Lane Collector (with TWLT)	18,750	22,500	14,170	0.630	C	14,900	0.662	C	0.032	NO
between Logan Ave and National Ave	4 Lane Collector (with TWLT)	25,000	30,000	15,300	0.510	C	25,200	0.840	E	0.330	YES
between National Ave and Newton Ave	3 Lane Collector (with TWLT)	18,750	22,500	12,494	0.555	C	24,300	1.080	F	0.525	YES
between Newton Ave and Main St	3 Lane Collector (with TWLT)	18,750	22,500	11,812	0.525	C	20,000	0.889	E	0.364	YES
between Main St and Harbor Dr	4 Lane Collector (with TWLT)	25,000	30,000	10,381	0.346	B	12,900	0.430	B	0.084	NO
Sampson St											
between I-5 and National Ave	2 Lane Collector (No TWLT)	6,500	8,000	3,086	0.386	B	5,800	0.725	D	0.339	NO
between National Ave and Harbor Dr	2 Lane Collector (No TWLT)	6,500	8,000	2,561	0.320	B	7,800	0.975	E	0.655	YES
26th St											
between National Ave and Main St	2 Lane Collector (No TWLT)	6,500	8,000	2,380	0.298	A	7,000	0.875	E	0.577	YES
28th St											
between I-5 and Boston Ave	3 Lane Collector (with TWLT)	18,750	22,500	22,000	0.978	E	34,500	1.533	F	0.555	YES
between Boston Ave and Main St	4 Lane Collector (with TWLT)	25,000	30,000	18,856	0.629	C	24,200	0.807	D	0.178	NO
between Main St and Harbor Dr	4 Lane Major Arterial	35,000	40,000	16,658	0.416	B	23,300	0.583	C	0.167	NO
29th St											
between Boston Ave and Main St	2 Lane Collector (No TWLT)	6,500	8,000	1,500	0.188	A	5,300	0.663	D	0.476	NO
32nd St											
between Main St and Wabash Blvd	2 Lane Collector (with TWLT)	13,000	15,000	13,172	0.878	E	14,500	0.967	E	0.089	YES
between Wabash Blvd and Harbor Drive	4 Lane Major Arterial	35,000	40,000	19,785	0.495	B	25,800	0.645	C	0.150	NO
Rigel St											
between Main St and I-5	2 Lane Collector (No TWLT)	6,500	8,000	1,723	0.215	A	1,400	0.175	A	-0.040	NO
Vesta St											
between Main St and I-5	2 Lane Collector (No TWLT)	6,500	8,000	4,900	0.613	C	6,700	0.838	E	0.225	YES
Logan Ave											
between 17th St and Sigsbee St	2 Lane Collector (with TWLT)	13,000	15,000	3,659	0.244	A	10,500	0.700	D	0.456	NO
between Sigsbee St and Cesar Chavez Pkwy	2 Lane Collector (with TWLT)	13,000	15,000	7,478	0.499	C	16,500	1.100	F	0.601	YES
between Cesar Chavez Pkwy and 26th St	2 Lane Collector (with TWLT)	13,000	15,000	2,954	0.197	A	5,700	0.380	B	0.183	NO
National Ave											
between 16th St and Sigsbee St	2 Lane Collector (with TWLT)	13,000	15,000	2,603	0.174	A	12,600	0.840	D	0.666	NO
between Sigsbee St and Beardsley St	2 Lane Collector (with TWLT)	13,000	15,000	4,500	0.300	A	12,600	0.840	D	0.540	NO
between Beardsley St and Cesar Chavez Pkwy	2 Lane Collector (No TWLT)	6,500	8,000	3,511	0.439	C	17,000	2.125	F	1.686	YES
between Cesar Chavez Pkwy and Evans St	2 Lane Collector (No TWLT)	6,500	8,000	4,643	0.580	C	9,300	1.163	F	0.583	YES
between Evans St and Sicard St	2 Lane Collector (with TWLT)	13,000	15,000	3,677	0.245	A	8,700	0.580	C	0.335	NO
between Sicard St and 27th St	2 Lane Collector (No TWLT)	6,500	8,000	8,445	1.056	F	10,200	1.275	F	0.219	YES
Boston Ave											
between 28th and 29th St	2 Lane Collector (No TWLT)	6,500	8,000	2,420	0.303	A	15,000	1.875	F	1.572	YES
between 29th St and 32nd St	2 Lane Collector (No TWLT)	6,500	8,000	2,420	0.303	A	8,300	1.038	F	0.735	YES
Main St											
between Beardsley St and Cesar Chavez Pkwy	2 Lane Collector (No TWLT)	6,500	8,000	3,566	0.446	C	4,200	0.525	C	0.079	NO
between Cesar Chavez Pkwy and Evans St	2 Lane Collector (No TWLT)	6,500	8,000	2,598	0.325	B	7,900	0.988	E	0.663	YES
between Evans St and 26th St	2 Lane Collector (No TWLT)	6,500	8,000	2,598	0.325	C	12,000	1.500	E	1.175	YES
between 26th St and 28th St	3 Lane Collector (No TWLT)	9,750	11,250	7,435	0.661	C	12,700	1.129	F	0.468	YES
between 28th and 29th St	4 Lane Collector (No TWLT)	13,000	15,000	11,266	0.751	F	12,400	0.827	F	0.076	YES
between 29th St and 32nd St	3 Lane Collector (No TWLT)	9,750	11,250	11,266	1.001	F	18,700	1.662	F	0.661	YES
between 32nd St and Rigel St	4 Lane Collector (No TWLT)	13,000	15,000	21,100	1.407	F	26,100	1.740	F	0.333	YES
between Rigel St and Una St	2 Lane Collector (with TWLT)	13,000	15,000	15,944	1.063	F	20,600	1.373	F	0.310	YES
between Una St and I-5 SB Off Ramp	2 Lane Collector (with TWLT)	13,000	15,000	15,177	1.012	F	18,100	1.207	F	0.195	YES
Harbor Dr											
between Beardsley St and Cesar Chavez Pkwy	4 Lane Major Arterial	35,000	40,000	12,094	0.302	A	30,400	0.760	D	0.458	NO
between Cesar Chavez Pkwy and Sampson St	4 Lane Major Arterial	35,000	40,000	13,778	0.344	A	25,500	0.638	C	0.294	NO
between Sampson St and Schley St	4 Lane Major Arterial	35,000	40,000	9,080	0.227	A	23,400	0.585	C	0.358	NO
between Schley St and 28th St	4 Lane Major Arterial	35,000	40,000	8,816	0.220	A	18,800	0.470	B	0.250	NO
between 28th St and 32nd St	4 Lane Major Arterial	35,000	40,000	18,900	0.473	B	26,900	0.673	C	0.200	NO
between 32nd St and Vesta St	4 Lane Major Arterial	35,000	40,000	16,320	0.408	B	31,500	0.788	D	0.380	NO

Notes:

Bold values indicate roadway segments operating at LOS E or F.

(a) Roadway Functional Classifications are based on field observations.

(b) The v/c Ratio is calculated by dividing the ADT volume by each respective roadway segment's capacity.

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TABLE 5-4
HORIZON YEAR (2030) CONDITIONS ALTERNATIVE 1
FREEWAY SEGMENT LOS SUMMARY

FREEWAY SEGMENT	DIRECTION	EXISTING						ALTERNATIVE 1									
		NUMBER OF LANES		CAPACITY (a)	ADT (b)	PEAK-HOUR VOLUME (c)	V/C RATIO	LOS	NUMBER OF LANES		CAPACITY (a)	ADT (b)	PEAK-HOUR VOLUME (c)	V/C RATIO	LOS	V/C RATIO	SIGNIFICANT?
		AM PEAK	PM PEAK														
I-5																	
J Street to SR-75 Junction	NB	4 M	9,400	164,000	7,793	0.829	D	4 M + 1 H	11,000	243,100	11,551	1.050	F0	0.22	YES		
	SB	4 M	9,400					4 M + 1 H	11,000								
SR-75 Junction to 28th Street	NB	4 M	9,400	160,000	7,603	0.809	D	4 M + 1 H	11,000	241,300	11,466	1.042	F0	0.23	YES		
	SB	4 M	9,400					4 M + 1 H	11,000								
28th Street to I-15 Interchange	NB	4 M	9,400	154,000	7,317	0.778	C	4 M + 1 H	11,000	221,600	10,530	0.957	E	0.18	YES		
	SB	4 M	9,400					4 M + 1 H	11,000								
I-15 Interchange to Division St	NB	4 M	9,400	188,000	8,933	0.950	E	4 M + 1 H	11,000	261,700	12,435	1.130	F0	0.18	YES		
	SB	4 M	9,400					4 M + 1 H	11,000								
I-15																	
I-5 Interchange to Ocean View Blvd	NB	3 M	7,050	95,000	4,722	0.670	C	3 M	7,050	129,700	6,447	0.914	D	0.24	--		
	SB	3 M	7,050					3 M	7,050								
SR-75 (d)																	
I-5 Interchange to Glorietta Blvd	WB	2 M	4,700	73,000	4,629	0.657	C	2 M	4,700	93,500	5,929	0.841	D	0.18	--		
	EB	3 M	7,050					3 M	7,050								
I-5																	
J Street to SR-75 Junction	NB	4 M	9,400	164,000	7,036	0.749	C	4 M + 1 H	11,000	243,100	10,430	0.948	E	0.20	YES		
	SB	4 M	9,400					4 M + 1 H	11,000								
SR-75 Junction to 28th Street	NB	4 M	9,400	160,000	6,865	0.730	C	4 M + 1 H	11,000	241,300	10,353	0.941	E	0.21	YES		
	SB	4 M	9,400					4 M + 1 H	11,000								
28th Street to I-15 Interchange	NB	4 M	9,400	154,000	6,607	0.703	C	4 M + 1 H	11,000	221,600	9,508	0.864	D	0.16	--		
	SB	4 M	9,400					4 M + 1 H	11,000								
I-15 Interchange to Division St	NB	4 M	9,400	188,000	8,066	0.858	D	4 M + 1 H	11,000	261,700	11,228	1.021	F0	0.16	YES		
	SB	4 M	9,400					4 M + 1 H	11,000								
I-15																	
I-5 Interchange to Ocean View Blvd	NB	3 M	7,050	95,000	5,216	0.740	C	3 M	7,050	129,700	7,121	1.010	F0	0.27	YES		
	SB	3 M	7,050					3 M	7,050								
SR-75 (d)																	
I-5 Interchange to Glorietta Blvd	WB	3 M	7,050	73,000	4,585	0.650	C	3 M	7,050	93,500	5,873	0.833	D	0.18	--		
	EB	2 M	4,700					2 M	4,700								

Notes:
Bold values indicate freeway segments operating at LOS E or F.
M=Main Lane; A= Auxiliary Lane; H= HOV Lane.
This analysis evaluates the higher peak-hour direction of traffic.
(a) The capacity is calculated as 2,350 ADT per main lane and 1,200 ADT per auxiliary lane
(b) Traffic volumes provided by Caltrans
(c) Peak-hour volume calculated by: (ADT*K*D)/Truck Factor
(d) SR-75 has reversible lanes.

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Mitigation

The following intersection improvements are needed to mitigate the peak-hour intersection impacts of the proposed Barrio Logan Community Plan Update Land Use Alternative 1:

- National Avenue and 16th Street: A new traffic signal is recommended to be installed at this intersection. A signal warrant worksheet for this intersection is included in **Appendix I**. This intersection would meet the peak-hour warrant evaluation based on the Horizon Year 2030 volumes.
- Harbor Drive and Sigsbee Street: A traffic signal is recommended to be installed at the intersection of Sigsbee Street and Harbor Drive. The signal is needed to serve the increased traffic from land uses proposed, as well as accommodating the traffic that would be diverted from Beardsley Street due to the median closure along Harbor Drive. A signal warrant worksheet for this intersection is included in Appendix I. This intersection would meet the peak-hour warrant evaluation based on the Horizon Year 2030 volumes.
- Logan Avenue and Beardsley Street/I-5 SB off-ramp: A traffic signal is recommended to be installed at the intersection. A signal warrant worksheet for this intersection is included in Appendix I. This intersection would meet the peak-hour warrant evaluation based on the Horizon Year 2030 volumes.
- National Avenue and Beardsley Street: A traffic signal is recommended to be installed at the intersection. A signal warrant worksheet for this intersection is included in Appendix I. This intersection would meet the peak-hour warrant evaluation based on the Horizon Year 2030 volumes.
- Harbor Drive and Beardsley Street: This improvement would extend the raised median along Harbor Drive in front of Beardsley Street converting the intersection to right-in/right-out only movements.
- Logan Avenue and Cesar Chavez Parkway: The addition of an exclusive eastbound right-turn lane and a northbound right-turn overlap phase are recommended to be installed at this intersection. The addition of the exclusive eastbound right-turn lane could be implemented by restriping changes only. An existing MTS bus stop is located where the exclusive right-turn lane is recommended. To reduce the impact to on-street parking, the relocation of the existing MTS bus stop is not recommended at this point. Further coordination with MTS is required before the implementation of this improvement. This improvement will not affect the existing on-street parking. The entrance to the State Route 75 ramps would be reconfigured to improve pedestrian circulation. This improvement could include the removal of the free northbound right-turn access from Cesar Chavez Parkway to the State Route 75 ramps.
- National Avenue and Cesar Chavez Parkway: Exclusive eastbound and westbound right-turn lanes are recommended to be installed at this intersection in order to reduce queuing along National Avenue. These improvements could be implemented by restriping changes only. These improvements will not affect the existing on-street parking. An existing MTS bus stop is located where the exclusive westbound right-turn lane is recommended. To reduce the impact to on-street parking, the relocation of the existing MTS bus stop is not recommended at this point. Further coordination with MTS is required before the implementation of this improvement.
- Main Street and Cesar Chavez Parkway: An exclusive westbound right-turn lane is recommended to be installed at this intersection in order to reduce queuing along Main Street. This improvement could be implemented by restriping changes only. This improvement will not affect the existing on-street parking. An existing MTS bus stop is located where the exclusive westbound right-turn lane is recommended. To reduce the impact to on-street parking, the relocation of the existing MTS bus stop is not recommended at this point. Further coordination with MTS is required before the implementation of this improvement.

- Harbor Drive and Cesar Chavez Parkway: A southbound right-turn overlap phase, dual eastbound left-turn lanes and an exclusive northbound right-turn lane are recommended to be installed. It is anticipated that the exclusive northbound right-turn lane will be completed by Caltrans in conjunction with the extension of the westbound left-turn lane.
- Logan Avenue and Sampson Street: A traffic signal is recommended to be installed. Also, southbound and northbound left-turn lanes are recommended. These lanes could be added with restriping changes only at the time of signalization, and would not require roadway widening. The configuration changes would require the removal of on-street parking along Sampson Street. A total of 16 parking spaces are anticipated to be removed as part of this improvement. The removed parking spaces are likely serving commercial uses along Logan Avenue and multi-family residential units along Sampson Street. The removal of on-street parking spaces will create a shortage of on-street parking within the vicinity of this intersection. A signal warrant worksheet for this intersection is included in Appendix I. This intersection would meet the peak-hour warrant evaluation based on the Horizon Year 2030 volumes.
- Main Street and 26th Street: A partial street closure is recommended at the intersection for truck traffic restrictions. The northbound through and eastbound left movements would be eliminated. This improvement is not required to mitigate intersection level of services, but it is recommended for a reduction of truck traffic along residential streets within the community.
- Harbor Drive and Schley Street: The southbound through and southbound left-turn movements are recommended to be prohibited. Right-turn overlap signal phasing is recommended for the southbound movement.
- National Avenue and 28th Street: An exclusive southbound right-turn lane is recommended to be added. This improvement could be accomplished by restriping the roadway without the need for widening. A removal of one on-street parking space would be required along the west side of National Avenue to accommodate a 100-foot southbound exclusive right-turn lane.
- Harbor Drive and 28th Street: A second southbound left-turn lane and a second eastbound left-turn lane are recommended to be added.
- Boston Avenue and Interstate 5 Southbound Ramp-29th Street: This recommendation includes a truck right-turn prohibition for the northbound movement at the intersection of 28th Street and Boston Avenue and truck turning signage to encourage vehicles to use Main Street and 29th Street to enter the Interstate 5 southbound freeway. The Interstate 5 Southbound Ramp and Boston Avenue intersection is recommended to be signalized. A signal warrant worksheet for this intersection is included in Appendix I. This intersection would meet the peak-hour warrant evaluation based on the Horizon Year 2030 volumes.
- 32nd Street and Wabash Boulevard: Potential improvements at this intersection will be further defined once Caltrans completes its truck access improvement study.
- Harbor Drive and 32nd Street: Same as the improvements for Wabash Boulevard and 32nd Street.

Figure 5-3 illustrates the intersection geometrics within Barrio Logan with the recommended intersection improvements listed above.

The following roadway segment improvements are recommended to mitigate the roadway segment cumulative impacts of the proposed Barrio Logan Community Plan Update. The improvements listed would be the same for both land use alternatives.

- Cesar Chavez Parkway between Logan Avenue and Harbor Drive: This roadway segment will be reclassified as a three-lane urban major facility between Logan Avenue and Main Street. Between Main Street and Harbor Drive, the roadway segment will be reclassified as a three-lane major arterial. A raised median will be installed between Harbor Drive and Logan Avenue. The

roadway segment will have two lanes in the northbound direction and one lane in the southbound direction. On-street parking will be allowed between Logan Avenue and Main Street. A southbound right-turn auxiliary lane will be present between Main Street and Harbor Drive. The entire roadway segment should be considered for “sharrow” bicycle marking treatment and will be considered a class III bicycle facility.

- 28th Street between I-5 and National Avenue: This roadway segment will be reconfigured as a four-lane major arterial with a five-foot raised median. The new configuration would allow for two-lanes in each direction and an auxiliary lane in the southbound direction.
- National Avenue between Cesar Chavez and Evans Street: This roadway segment will be reclassified as a two-lane collector with a two-way left-turn lane.
- National Avenue between Sicard and 27th Street: This roadway segment will be reclassified as a two-lane collector with a two-way left-turn lane.
- Main Street between Evans Street and 26th Street: This roadway segment will be reclassified as a two-lane collector with a two-way left-turn lane.

It is anticipated that traffic patterns within the community will change based on some of the improvements listed above. Fewer vehicles are anticipated to use the roadway segment of Boston Avenue between 28th Street and 29th Street. This is due to the proposed improvements along 28th Street and Main Street and the signalization of Boston Avenue and 29th Street intersection, which serves as an entrance ramp to the I-5 Southbound freeway. It is anticipated that more vehicles would use Main Street and 29th Street. **Figure 5-4** illustrates the peak-hour turning volumes within the community with the anticipated change in traffic patterns.

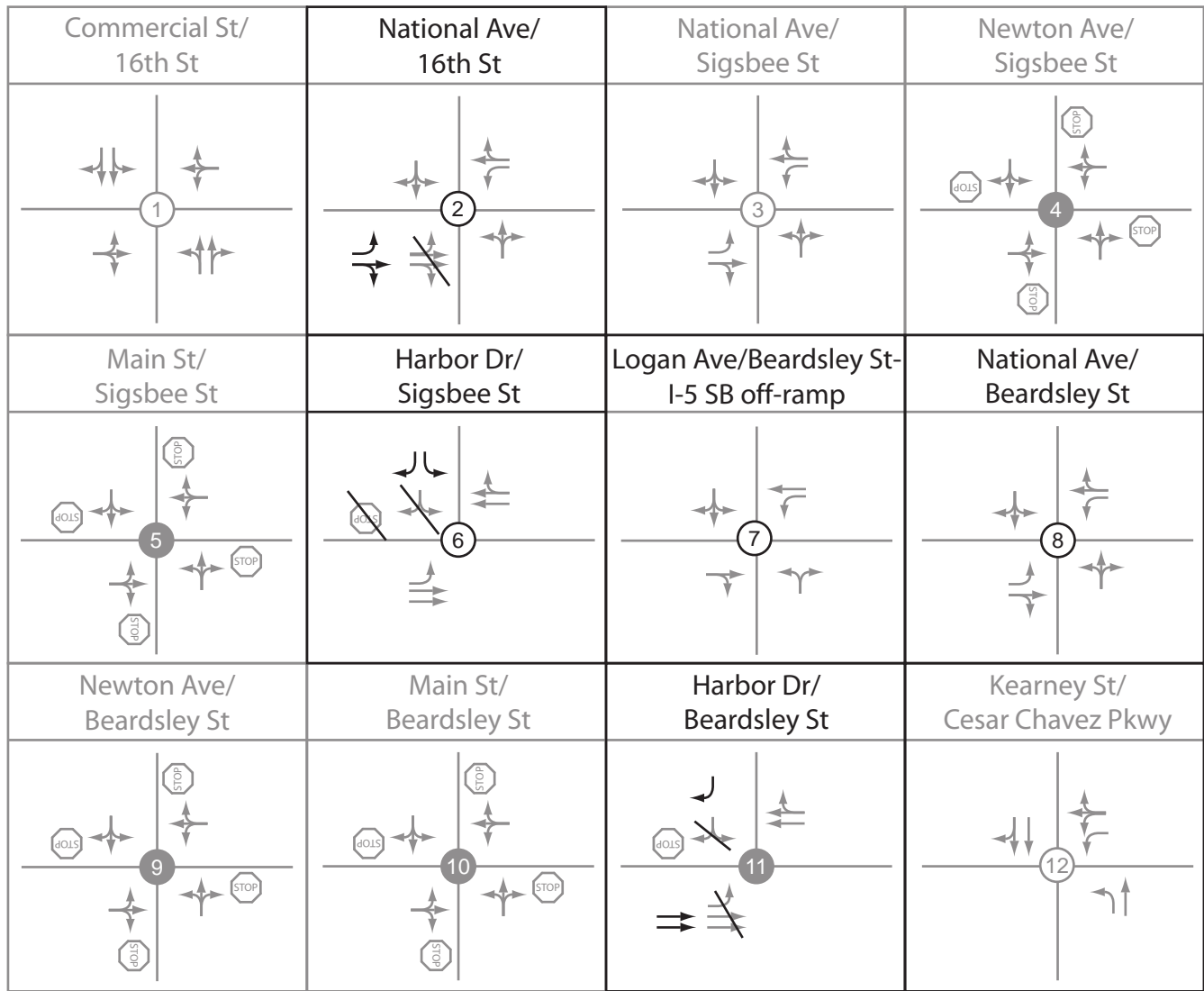
Table 5-5 displays the summary of the intersection peak-hour analysis with the proposed intersections and roadway segments improvements described above. As shown in Table, with the implementation of the recommended improvements, all intersections within the study area would operate at LOS D or better with the following exceptions:

- Harbor Drive and 28th Street (will continue to operate at LOS E during the afternoon peak-hour period);
- 32nd Street and Wabash Street (will continue to operate at LOS F and LOS E during the morning and afternoon peak-hour periods, respectively); and
- Harbor Drive and 32nd Street (will continue to operate at LOS F during both peak-hour periods).

The Harbor Drive/32nd Street and 32nd Street/Wabash Street intersections are being studied further in an on-going Caltrans study. The latest report includes the installation of a unidirectional connector ramp from eastbound Harbor Drive to northbound State Route 15. Another improvement under study is the Vesta Street Overcrossing at Harbor Drive which would connect the wet and dry sides of the Naval Base San Diego. On November 1, 2010 the Navy temporarily closed the eastern leg (Norman Scott Road) of the 32nd Street/Norman Street-Wabash Street intersection to improve safety. The Navy is monitoring traffic to determine if this closure should remain. A preliminary analysis indicates that the mentioned projects would improve the intersection to acceptable levels and decrease the potential queuing problems.

Harbor Drive/28th Street is projected to operate at LOS E, even with improvements. There is the potential that improvements to be made between Harbor Drive and State Route 15 (Caltrans study) could divert some traffic off of 28th Street, further improving this intersection

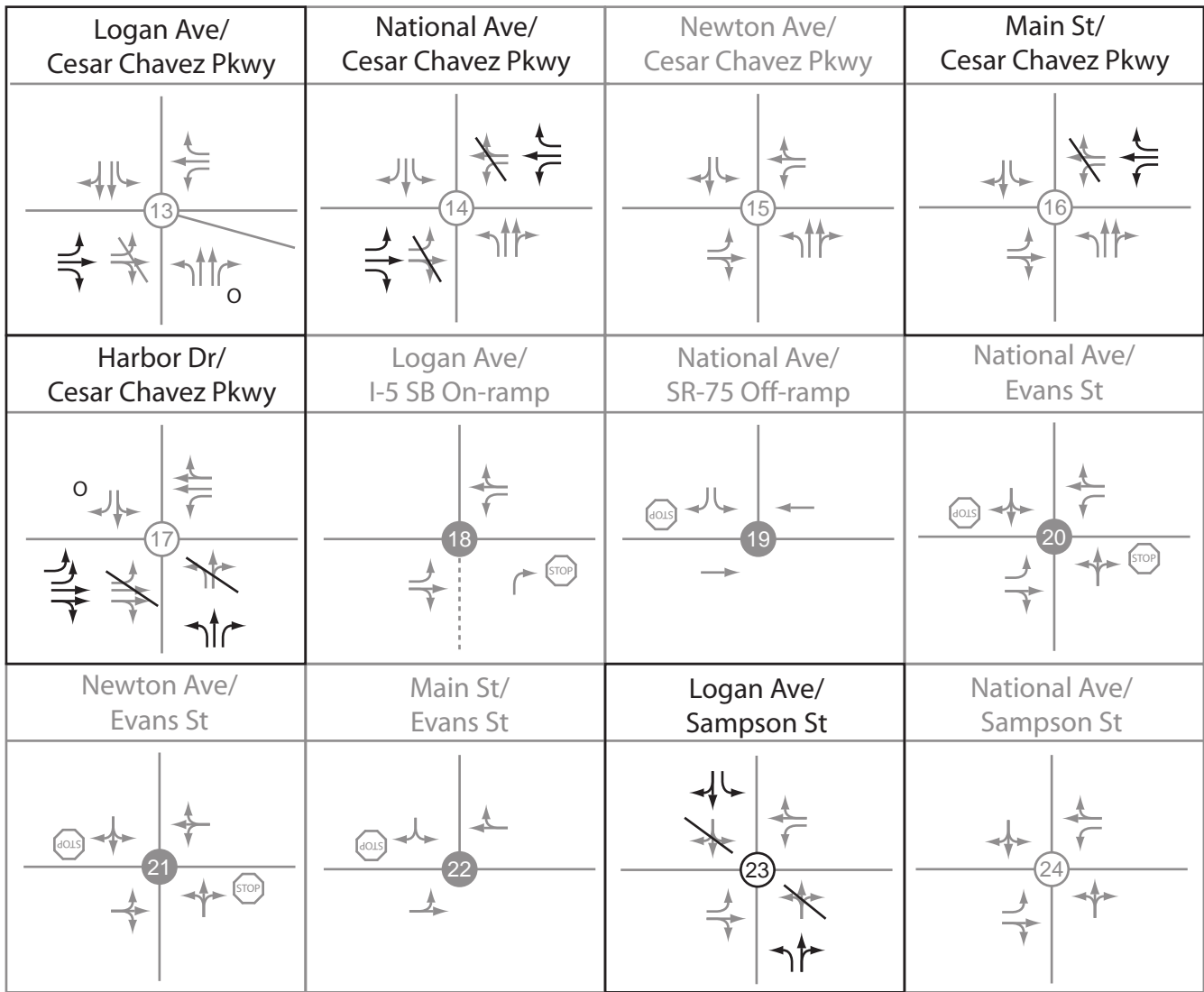
SANDAGs 2050 Regional Transportation Plan (RTP) unconstrained network recommends the grade separation of the trolley lines at 28th Street and at 32nd Street. A peak-hour intersection analysis was conducted for the intersections of 28th Street and 32nd Street with Harbor Drive assuming these proposed



Legend:

- Signalized
- Unsignalized
- Mobility Element Recommended Lane Configuration
- Existing Lane Configuration to be modified



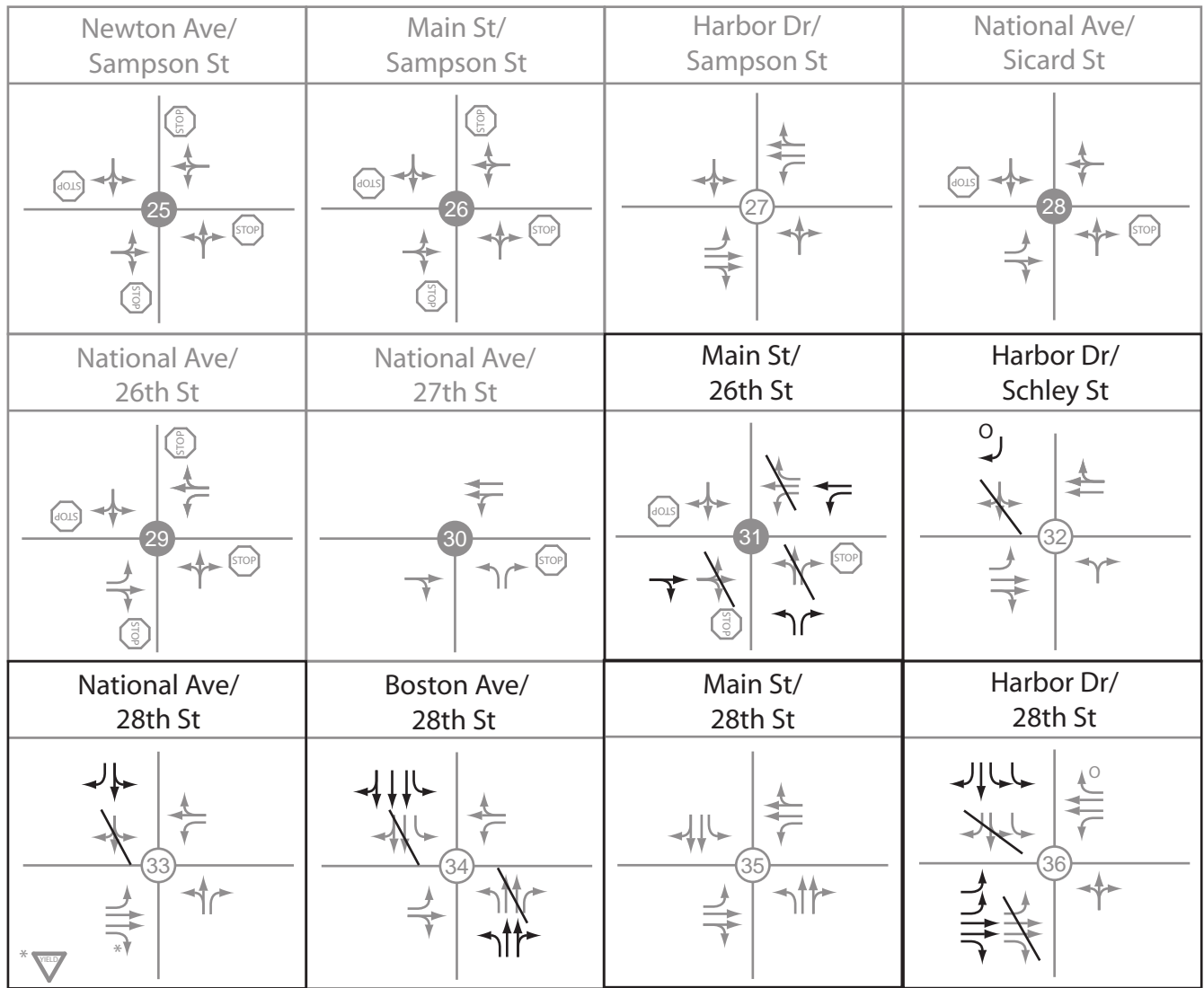


Legend:






- Signalized
- Unsignalized
- Mobility Element Recommended Lane Configuration
- Existing Lane Configuration to be modified



Barrio Logan Community Plan Update



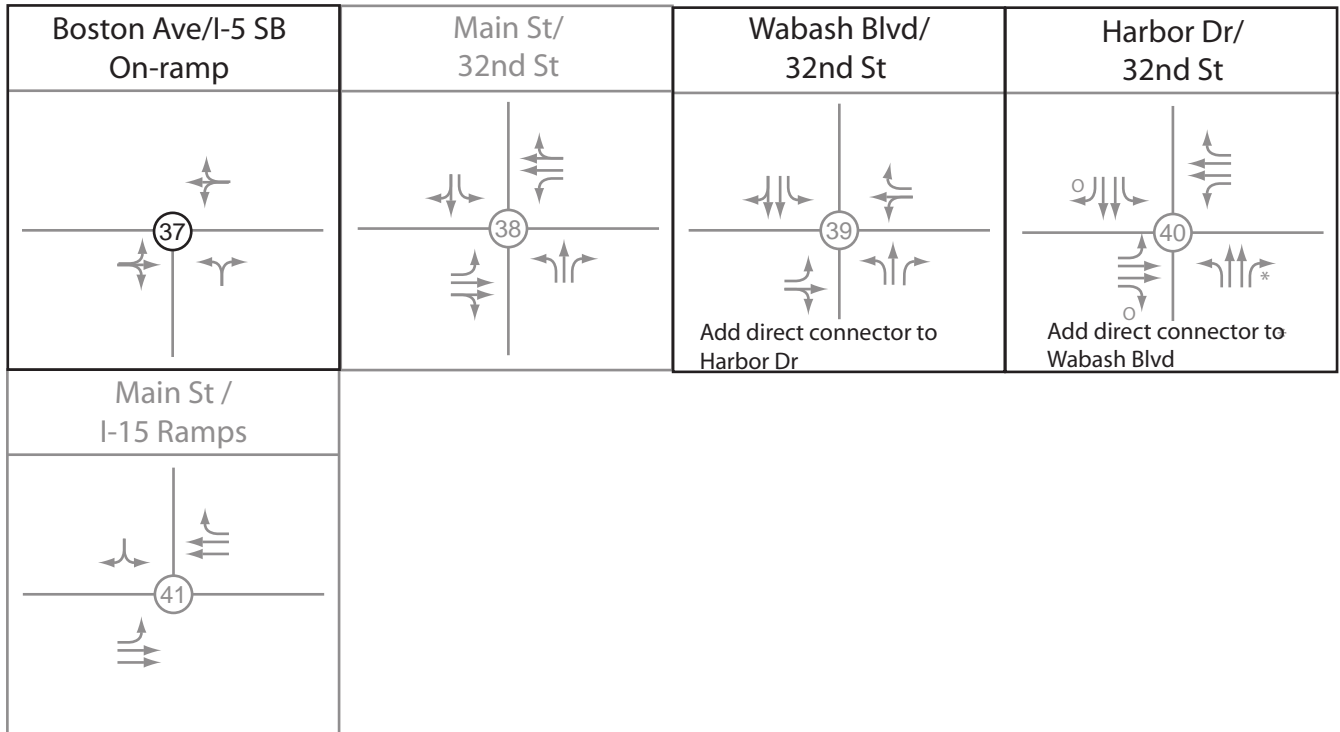
Legend:

-  Signalized
-  Unsignalized
-  Right-turn overlap
-  Mobility Element Recommended Lane Configuration
-  Existing Lane Configuration to be modified



K:\PTO\095707000\Illustrator\BO int geometry 25-36.ai

Barrio Logan Community Plan Update



Legend:

- X Signalized
- o Right-turn overlap
- x Unsignalized



Barrio Logan Community Plan Update

<p>1</p> <p>↖ 136 / 77 ↗ 250 / 490 ↘ 47 / 40</p> <p>16th St</p> <p>↖ ↗ ↘ 114 / 122 ↖ ↗ ↘ 295 / 488 ↖ ↗ ↘ 24 / 0</p> <p>Commercial St</p> <p>↖ ↗ ↘ 16 / 64 ↖ ↗ ↘ 225 / 348 ↖ ↗ ↘ 26 / 15</p> <p>↖ ↗ ↘ 13 / 21 ↖ ↗ ↘ 340 / 670 ↖ ↗ ↘ 16 / 26</p>	<p>2</p> <p>↖ 91 / 70 ↗ 36 / 25 ↘ 56 / 127</p> <p>16th St</p> <p>↖ ↗ ↘ 34 / 25 ↖ ↗ ↘ 495 / 458 ↖ ↗ ↘ 3 / 3</p> <p>National Ave</p> <p>↖ ↗ ↘ 40 / 91 ↖ ↗ ↘ 194 / 347 ↖ ↗ ↘ 40 / 31</p> <p>↖ ↗ ↘ 40 / 61 ↖ ↗ ↘ 34 / 41 ↖ ↗ ↘ 12 / 7</p>	<p>3</p> <p>↖ 58 / 39 ↗ 40 / 23 ↘ 15 / 6</p> <p>Sigsbee St</p> <p>↖ ↗ ↘ 36 / 27 ↖ ↗ ↘ 367 / 246 ↖ ↗ ↘ 16 / 9</p> <p>National Ave</p> <p>↖ ↗ ↘ 10 / 34 ↖ ↗ ↘ 140 / 315 ↖ ↗ ↘ 51 / 62</p> <p>↖ ↗ ↘ 63 / 75 ↖ ↗ ↘ 26 / 61 ↖ ↗ ↘ 58 / 13</p>	<p>4</p> <p>↖ 17 / 8 ↗ 79 / 38 ↘ 33 / 16</p> <p>Sigsbee St</p> <p>↖ ↗ ↘ 51 / 23 ↖ ↗ ↘ 80 / 50 ↖ ↗ ↘ 15 / 9</p> <p>Newton Ave</p> <p>↖ ↗ ↘ 6 / 9 ↖ ↗ ↘ 48 / 50 ↖ ↗ ↘ 19 / 29</p> <p>↖ ↗ ↘ 24 / 20 ↖ ↗ ↘ 111 / 91 ↖ ↗ ↘ 34 / 12</p>
<p>5</p> <p>↖ 3 / 2 ↗ 96 / 60 ↘ 31 / 20</p> <p>Sigsbee St</p> <p>↖ ↗ ↘ 61 / 31 ↖ ↗ ↘ 8 / 0 ↖ ↗ ↘ 31 / 38</p> <p>Main St</p> <p>↖ ↗ ↘ 3 / 4 ↖ ↗ ↘ 8 / 2 ↖ ↗ ↘ 6 / 13</p> <p>↖ ↗ ↘ 5 / 0 ↖ ↗ ↘ 97 / 98 ↖ ↗ ↘ 24 / 12</p>	<p>6</p> <p>↖ 110 / 80 ↗ 110 / 100</p> <p>Sigsbee St</p> <p>↖ ↗ ↘ 20 / 100 ↖ ↗ ↘ 1670 / 780</p> <p>Harbor Dr</p> <p>↖ ↗ ↘ 38 / 65 ↖ ↗ ↘ 480 / 1945</p>	<p>7</p> <p>↖ 47 / 38 ↗ 236 / 110 ↘ 259 / 272</p> <p>I-5 SB Off-Ramp</p> <p>↖ ↗ ↘ 202 / 154 ↖ ↗ ↘ 87 / 41</p> <p>Logan Ave</p> <p>↖ ↗ ↘ 170 / 515 ↖ ↗ ↘ 24 / 69</p> <p>↖ ↗ ↘ 31 / 56 ↖ ↗ ↘ 68 / 122</p>	<p>8</p> <p>↖ 23 / 11 ↗ 138 / 83 ↘ 216 / 189</p> <p>Beardsley St</p> <p>↖ ↗ ↘ 67 / 77 ↖ ↗ ↘ 421 / 347 ↖ ↗ ↘ 241 / 113</p> <p>National Ave</p> <p>↖ ↗ ↘ 8 / 19 ↖ ↗ ↘ 238 / 625 ↖ ↗ ↘ 8 / 2</p> <p>↖ ↗ ↘ 4 / 9 ↖ ↗ ↘ 30 / 43 ↖ ↗ ↘ 50 / 134</p>
<p>9</p> <p>↖ 41 / 12 ↗ 156 / 94 ↘ 56 / 46</p> <p>Beardsley St</p> <p>↖ ↗ ↘ 15 / 19 ↖ ↗ ↘ 82 / 93 ↖ ↗ ↘ 29 / 13</p> <p>Newton Ave</p> <p>↖ ↗ ↘ 18 / 7 ↖ ↗ ↘ 74 / 60 ↖ ↗ ↘ 9 / 4</p> <p>↖ ↗ ↘ 13 / 5 ↖ ↗ ↘ 23 / 71 ↖ ↗ ↘ 19 / 37</p>	<p>10</p> <p>↖ 52 / 17 ↗ 57 / 39 ↘ 275 / 144</p> <p>Beardsley St</p> <p>↖ ↗ ↘ 76 / 79 ↖ ↗ ↘ 109 / 33 ↖ ↗ ↘ 163 / 78</p> <p>Main St</p> <p>↖ ↗ ↘ 15 / 22 ↖ ↗ ↘ 74 / 64 ↖ ↗ ↘ 4 / 4</p> <p>↖ ↗ ↘ 2 / 0 ↖ ↗ ↘ 8 / 25 ↖ ↗ ↘ 52 / 109</p>	<p>11</p> <p>↖ 143 / 75</p> <p>Beardsley St</p> <p>↖ ↗ ↘ 30 / 20 ↖ ↗ ↘ 1610 / 860</p> <p>Harbor Dr</p> <p>↖ ↗ ↘ 580 / 1950</p>	<p>12</p> <p>↖ 31 / 40 ↗ 350 / 330</p> <p>Cesar Chavez Pkwy</p> <p>↖ ↗ ↘ 192 / 154 ↖ ↗ ↘ 259 / 157 ↖ ↗ ↘ 613 / 517</p> <p>Kearney Ave</p> <p>↖ ↗ ↘ 257 / 382 ↖ ↗ ↘ 262 / 345</p>



Legend
X / Y = AM / PM PEAK HOUR
TURNING VOLUMES



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<p>13</p> <p>82 / 52 909 / 694 70 / 114 Cesar Chavez Pkwy-SR-75 On-Ramp</p> <p>76 / 90 325 / 280 100 / 120</p> <p>Logan Ave</p> <p>140 / 130 280 / 420 120 / 230</p> <p>100 / 140 300 / 506 280 / 670</p>	<p>14</p> <p>310 / 410 745 / 550 70 / 120 Cesar Chavez Pkwy</p> <p>120 / 275 350 / 270 120 / 110</p> <p>National Ave</p> <p>190 / 300 250 / 400 180 / 290</p> <p>90 / 120 580 / 1000 50 / 100</p>	<p>15</p> <p>140 / 55 810 / 890 95 / 165 Cesar Chavez Pkwy</p> <p>65 / 120 50 / 70 40 / 90</p> <p>Newton Ave</p> <p>75 / 135 40 / 130 60 / 70</p> <p>40 / 40 410 / 795 30 / 60</p>	<p>16</p> <p>180 / 260 580 / 540 150 / 250 Cesar Chavez Pkwy</p> <p>190 / 270 330 / 230 70 / 70</p> <p>Main St</p> <p>150 / 120 190 / 290 15 / 25</p> <p>70 / 70 340 / 640 90 / 180</p>
<p>17</p> <p>403 / 324 83 / 30 72 / 33 Cesar Chavez Pkwy</p> <p>95 / 43 1047 / 465 80 / 50</p> <p>Harbor Dr</p> <p>118 / 468 398 / 1500 40 / 40</p> <p>10 / 50 14 / 63 27 / 35</p>	<p>18</p> <p>I-5 SB On-Ramp</p> <p>84 / 73 127 / 158</p> <p>Logan Ave</p> <p>497 / 933 182 / 527 2 / 8</p> <p>Park Dwy</p> <p>4 / 16</p>	<p>19</p> <p>280 / 238 27 / 126 SR-75 Off-Ramp</p> <p>276 / 260</p> <p>National Ave</p> <p>128 / 308</p>	<p>20</p> <p>30 / 72 18 / 22 9 / 45 Evans St</p> <p>26 / 23 226 / 192 37 / 32</p> <p>National Ave</p> <p>17 / 37 115 / 390 22 / 36</p> <p>28 / 13 49 / 18 24 / 62</p>
<p>21</p> <p>37 / 21 30 / 28 7 / 30 Evans St</p> <p>30 / 27 63 / 70 16 / 27</p> <p>Newton Ave</p> <p>23 / 24 87 / 124 22 / 41</p> <p>27 / 17 58 / 47 31 / 28</p>	<p>22</p> <p>45 / 16 56 / 75 Evans St</p> <p>65 / 62 350 / 239</p> <p>Main St</p> <p>33 / 12 153 / 270</p>	<p>23</p> <p>14 / 13 218 / 256 62 / 66 Sampson St</p> <p>56 / 54 79 / 87 91 / 143</p> <p>Logan Ave</p> <p>110 / 108 224 / 255 163 / 203</p> <p>219 / 235 332 / 400 147 / 101</p>	<p>24</p> <p>118 / 107 109 / 86 59 / 123 Sampson St</p> <p>100 / 100 104 / 70 48 / 21</p> <p>National Ave</p> <p>75 / 162 50 / 111 15 / 12</p> <p>7 / 13 95 / 185 16 / 30</p>

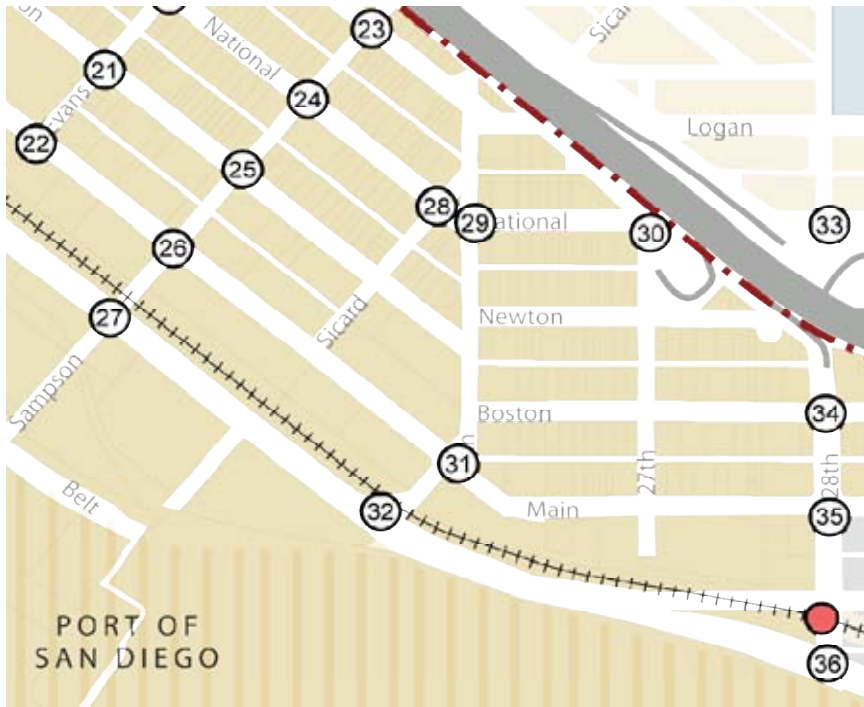


Legend
X / Y = AM / PM PEAK HOUR
TURNING VOLUMES



Barrio Logan Community Plan Update

<p>25</p> <p>↻ 37 / 19 ↻ 99 / 66 ↻ 18 / 19</p> <p>Sampson St</p> <p>↻ ↻ ↻ 35 / 31 ↻ ↻ ↻ 81 / 76 ↻ ↻ ↻ 15 / 0</p> <p>Newton Ave</p> <hr/> <p>21 / 34 95 / 119 16 / 24</p> <p>↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻</p> <p>7 / 13 40 / 90 31 / 20</p>	<p>26</p> <p>↻ 172 / 85 ↻ 59 / 27 ↻ 10 / 8</p> <p>Sampson St</p> <p>↻ ↻ ↻ 16 / 8 ↻ ↻ ↻ 218 / 83 ↻ ↻ ↻ 53 / 27</p> <p>Main St</p> <hr/> <p>70 / 118 62 / 142 51 / 33</p> <p>↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻</p> <p>50 / 60 31 / 46 35 / 49</p>	<p>27</p> <p>↻ 32 / 26 ↻ 75 / 66 ↻ 64 / 58</p> <p>Sampson St</p> <p>↻ ↻ ↻ 44 / 62 ↻ ↻ ↻ 1284 / 488 ↻ ↻ ↻ 75 / 19</p> <p>Harbor Dr</p> <hr/> <p>10 / 56 716 / 1500 28 / 5</p> <p>↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻</p> <p>14 / 23 61 / 111 38 / 41</p>	<p>28</p> <p>↻ 36 / 42 ↻ 41 / 18 ↻ 4 / 4</p> <p>Sicard St</p> <p>↻ ↻ ↻ 3 / 1 ↻ ↻ ↻ 163 / 125 ↻ ↻ ↻ 27 / 8</p> <p>National Ave</p> <hr/> <p>21 / 40 79 / 169 36 / 38</p> <p>↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻</p> <p>48 / 33 48 / 46 12 / 17</p>
<p>29</p> <p>↻ 15 / 23 ↻ 38 / 68 ↻ 51 / 90</p> <p>26th St</p> <p>↻ ↻ ↻ 48 / 55 ↻ ↻ ↻ 223 / 124 ↻ ↻ ↻ 36 / 35</p> <p>National Ave</p> <hr/> <p>28 / 33 66 / 156 36 / 65</p> <p>↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻</p> <p>27 / 46 47 / 60 15 / 34</p>	<p>30</p> <p>↻ ↻ ↻ 269 / 234 ↻ ↻ ↻ 42 / 31</p> <p>National Ave</p> <hr/> <p>146 / 368 18 / 23</p> <p>↻ ↻ ↻ ↻ ↻ ↻</p> <p>I-5 SB Off-ramp</p> <p>↻ ↻ ↻ 72 / 94 ↻ ↻ ↻ 149 / 296</p>	<p>31</p> <p>↻ 13 / 8 ↻ 22 / 12 ↻ 16 / 28</p> <p>26th St</p> <p>↻ ↻ ↻ 187 / 79 ↻ ↻ ↻ 143 / 49</p> <p>Main St</p> <hr/> <p>60 / 194 17 / 16</p> <p>↻ ↻ ↻ ↻ ↻ ↻</p> <p>28 / 7 124 / 261</p>	<p>32</p> <p>↻ 81 / 51</p> <p>Schley St</p> <p>↻ ↻ ↻ 17 / 39 ↻ ↻ ↻ 1542 / 588</p> <p>Harbor Dr</p> <hr/> <p>74 / 83 504 / 1520</p> <p>↻ ↻ ↻ ↻ ↻ ↻</p>
<p>33</p> <p>↻ 307 / 102 ↻ 205 / 210 ↻ 115 / 199</p> <p>28th St</p> <p>↻ ↻ ↻ 123 / 240 ↻ ↻ ↻ 628 / 427 ↻ ↻ ↻ 192 / 463</p> <p>National Ave</p> <hr/> <p>106 / 94 258 / 612 18 / 85</p> <p>↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻</p> <p>33 / 18 98 / 98 86 / 168</p>	<p>34</p> <p>↻ 310 / 270 ↻ 860 / 1060 ↻ 160 / 250</p> <p>28th St</p> <p>↻ ↻ ↻ 120 / 70 ↻ ↻ ↻ 70 / 70 ↻ ↻ ↻ 45 / 60</p> <p>Boston Ave</p> <hr/> <p>230 / 320 180 / 100 140 / 160</p> <p>↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻</p> <p>90 / 50 700 / 1050 40 / 100</p>	<p>35</p> <p>↻ 250 / 550 ↻ 750 / 500 ↻ 180 / 360</p> <p>28th St</p> <p>↻ ↻ ↻ 180 / 280 ↻ ↻ ↻ 490 / 290 ↻ ↻ ↻ 90 / 150</p> <p>Main St</p> <hr/> <p>190 / 220 400 / 730 50 / 40</p> <p>↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻</p> <p>45 / 65 170 / 450 120 / 230</p>	<p>36</p> <p>↻ 25 / 13 ↻ 15 / 12 ↻ 375 / 505</p> <p>28th St</p> <p>↻ ↻ ↻ 116 / 278 ↻ ↻ ↻ 942 / 524 ↻ ↻ ↻ 17 / 14</p> <p>Harbor Dr</p> <hr/> <p>50 / 140 670 / 1390 4 / 2</p> <p>↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻ ↻</p> <p>0 / 10 6 / 134 2 / 0</p>



Legend
X / Y = AM / PM PEAK HOUR
TURNING VOLUMES



K:\SND_TPTO\095707000\Excel\707000TA01.xlsx\Alt 1 with Imp Figure 25-36

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<p>37</p> <p>29th St</p> <p>88 / 118 102 / 83 18 / 20</p> <p>Boston Ave</p> <p>84 / 299 104 / 153 15 / 27</p> <p>5 / 9 180 / 332 19 / 45</p>	<p>38</p> <p>42 / 73 83 / 61 39 / 123</p> <p>32nd St</p> <p>79 / 102 494 / 353 314 / 207</p> <p>Main St</p> <p>38 / 70 130 / 653 218 / 166</p> <p>110 / 226 50 / 112 26 / 307</p>	<p>39</p> <p>63 / 29 444 / 479 179 / 413</p> <p>32nd St</p> <p>Norman Scott Rd</p> <p>65 / 115 25 / 115 170 / 80 80 / 130</p> <p>10 / 110 65 / 155 735 / 140</p> <p>Wabash Blvd</p> <p>50 / 205 120 / 210 45 / 50 250 / 140</p>	<p>40</p> <p>40 / 200 1040 / 280 130 / 310</p> <p>32nd St</p> <p>390 / 460 735 / 436 300 / 40</p> <p>Harbor Dr</p> <p>70 / 140 657 / 1185 140 / 100</p> <p>30 / 70 160 / 690 30 / 140</p>
<p>41</p> <p>309 / 153 108 / 120</p> <p>I-15 Ramps</p> <p>107 / 154 497 / 361</p> <p>Main St</p> <p>47 / 303 181 / 727</p>			



Legend

X / Y = AM / PM PEAK HOUR
TURNING VOLUMES



grade separations. The results of the analysis indicated that the proposed grade separation would improve both intersections to LOS D or better during both peak-hour periods under the Horizon Year scenario with either alternative. The proposed grade separations are included in the “revenue constrained scenario”. Due to the benefits to adjacent intersections, these grade separation projects are recommended.

Table 5-6 displays the summary of the roadway segment analysis with the roadway segment improvements described above. As shown in the table, the following roadway segments would continue to operate at LOS E or F even with the implementation of the recommended improvements:

- Sampson Street between National Avenue and Harbor Drive (LOS E);
- 26th Street between National Avenue and Main Street (LOS E);
- 32nd St between Main St. and Wabash Blvd (LOS E);
- Vesta Street between Main Street and I-5 Ramps (LOS E);
- Logan Avenue between Sigsbee Street and Cesar Chavez Parkway (LOS F);
- National Avenue between Beardsley Street and Cesar Chavez Parkway (LOS F);
- Boston Avenue between 28th Street and 29th Street (LOS F);
- Boston Avenue between 29th Street and 32nd Street (LOS F);
- Main Street between Cesar Chavez Parkway and Evans Street (LOS E);
- Main Street between 26th Street and 28th Street (LOS F);
- Main Street between 28th Street and 29th Street (LOS F);
- Main Street between 29th Street and 32nd Street (LOS F);
- Main Street between 32nd Street and Rigel Street (LOS F);
- Main Street between Rigel Street and Una Street (LOS F); and
- Main Street between Una Street and I-5 SB Off-ramp (LOS F)

Boston Avenue, National Avenue and 26th Street are desired by the community of Barrio Logan to be more pedestrian and bicycle friendly corridors. The widening of these roadways to improve vehicular circulation was not desired by the community. The vehicular operations along these three facilities could be congested during peak periods and vehicular speeds would be low. Additional widening is not recommended. Traffic calming measures should be evaluated along National Avenue to further enhance the pedestrian and bicycle circulation.

Additional improvements to the failing roadway segments of Sampson Street, 32nd Street, Vesta Street, Logan Avenue and Main Street are not recommended since the roadway segment analysis used in this study is based on theoretical capacities based on the number of travel lanes. The analysis does not take into account other physical features that can affect the capacity of a roadway segment like grades, number of traffic signals, number of driveways, parking availability, etc. In addition, the analysis does not take into account the different traffic peak periods experienced on these roadways due to the surrounding land uses. As an example, the Barrio Logan traffic patterns are unique in that they are heavily influenced by the Port of San Diego and the Navy Base traffic generators whose peak-hour of use do not correspond to typical peak-hour commuter traffic. To better represent the conditions of a roadway segment within the Barrio Logan community, the operations of the upstream and downstream intersections of each respective segment during the peak periods would indicate whether the roadway segment would have adequate capacity. As shown in the intersection analysis tables, all intersections along the failing roadway segments would operate at acceptable LOS.

In addition to the roadway segment improvements listed above, it is recommended that 28th Street between Harbor Drive and the I-5 Ramps be classified as a four-lane major arterial. For the segment between Harbor Drive and Main Street, a raised median should be installed with an entrance to the Navy

Commissary. The proposed configuration would allow two lanes in each direction with an auxiliary lane for the heavy southbound right-turn movements at Harbor Drive. Parking would need to be removed along both sides of the roadway, with a total loss of approximately 20 parking spaces. The removed parking spaces are likely utilized by NASCO employees or Naval Base San Diego employees or visitors. Additional diagonal parking is recommended to be evaluated for installation along Boston Avenue between 28th Street and 29th Street to replace the loss of parking along 28th Street. The west side of the roadway could be widened by 4 feet to accommodate the proposed interim cross-sections. The east sidewalk will widen to 10 feet to enhance pedestrian circulation. This improvement is not part of mitigation for a roadway segment impact. The improvement is recommended to encourage heavy truck traffic to use 28th Street instead of Main Street and to provide for pedestrians. The ultimate recommended cross-section of 28th Street will include a designated bike lane along both sides of the roadway and a fourteen foot parkway. The ultimate configuration along 28th Street will require additional roadway widening and right-of-way acquisition. An alignment study is required to further define the extent of additional right-way needed and future widening

Conceptual roadway segments improvement figures, including the proposed cross-sections are included in **Appendix K**.

Based on the freeway segment capacity analysis included in this study, Alternative 1 land use scenario is considered to have a cumulative traffic related impact along the following freeway segments:

- I-5 from J Street to SR-75 Junction;
- I-5 from SR-75 Junction to 28th Street;
- I-5 from 28th Street to I-15 Interchange;
- I-5 from I-15 Interchange to Division Street; and
- I-15 from I-5 Interchange to Ocean View Boulevard

SANDAG's Draft 2050 Regional Transportation Plan (RTP) hybrid network includes the following freeway improvements:

- Operational freeway improvements along Interstate 5 between Interstate 15 and Interstate 8; and
- Addition of one (1) main lane and one (1) managed lane in each direction between Interstate 15 and State Route 54;

Both improvements listed above were included in the hybrid network's revenue constrained scenario, approved by SANDAG's board for further study on December 17th, 2010. The improvements included in the RTP are recommended to enhance the regional connectivity and accommodate the forecasted growth of the San Diego region. It should be noted that both land use alternatives presented on this plan would generate less traffic than the current adopted Community Plan land use alternative. Either proposed alternative would lessen, but not eliminate cumulative freeway traffic impacts.

In addition to the proposed freeway improvements listed in the SANDAG's Draft 2050 RTP, the following freeway access improvements are recommended within the Barrio Logan Community:

- Signalization of the intersection of Logan Avenue and Beardsley Street/ Interstate 5 SB off-ramp;
- Traffic signal modification at the intersection of Logan Avenue and Cesar Chavez Parkway (State Route 75 on-ramp);
- Signalization of the intersection of Boston Avenue and Interstate 5 SB on-ramp- 29th Street;

- Roadway improvements along 28th Street to accommodate an additional southbound lane, including the potential for widening the Interstate 5 overcrossing;
- Signalization of the intersection of 28th Street and Interstate 5 southbound off-ramp;
- Changes to the roadway striping along Main Street between 28th Street and 29th Street to facilitate freeway access to the Interstate 5 southbound on-ramp at Boston Avenue;
- Installation of a unidirectional connector ramp from eastbound Harbor Drive to northbound State Route 15 (under study by the Port of San Diego, and Caltrans);
- Construction of the Vesta Street Overcrossing at Harbor Drive (under study by the Navy);
- Coordination of City of San Diego and Navy related to the closure of the east leg of the 32nd Street and Norman Street-Wabash Street intersection (recently completed on a trial basis by the Navy); and
- Grade separation of the trolley tracks at the 28th Street and Harbor Drive and 32nd Street and Harbor Drive intersections (to be completed by SANDAG and part of the 2050 draft RTP).

The improvements listed above would decrease congestion along the major freeway access locations within the community.

**TABLE 5-5
HORIZON YEAR (2030) ALTERNATIVE 1 WITH IMPROVEMENTS
PEAK-HOUR INTERSECTION LOS SUMMARY**

INTERSECTION	PEAK HOUR	ALTERNATIVE 1		ALTERNATIVE 1 WITH IMPROVEMENTS		DESCRIPTION OF IMPROVEMENT
		DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	
2 National Ave & 16th St	AM	51.7	F	14.1	B	Install Traffic Signal.
	PM	232.1	F	8.5	A	
6 Harbor Dr & Sigsbee St	AM	ECL	F	12.7	B	Install Traffic Signal.
	PM	ECL	F	7.6	A	
7 Logan Ave & Beardsley St- I-5 SB ramp	AM	33.1	D	26.7	C	Install Traffic Signal. (This improvement requires Caltrans approval)
	PM	81.9	F	46.8	D	
8 National Ave & Beardsley St	AM	39.9	E	12.9	B	Install Traffic Signal.
	PM	129.0	F	13.3	B	
11 Harbor Dr & Beardsley St	AM	173.7	F	17.5	C	Modify raised median along Harbor Drive and restrict the eastbound left-turn movements and southbound left-turn movements.
	PM	51.6	F	11.6	B	
13 Logan Ave & Cesar E. Chavez Pkwy	AM	31.1	C	26.9	C	Add exclusive eastbound right-turn lane. Add northbound overlap phase. (This improvement requires Caltrans approval)
	PM	62.1	E	52.6	D	
14 National Ave & Cesar E. Chavez Pkwy	AM	30.4	C	19.9	B	Add exclusive eastbound and westbound right-turn lanes. This improvement is recommended to mitigate a potential queuing impact.
	PM	52.4	D	21.5	C	
16 Main St & Cesar E. Chavez Pkwy	AM	39.3	D	21.6	C	Add exclusive westbound right-turn lane. This improvement is recommended to mitigate a potential queuing impact.
	PM	42.5	D	18.7	B	
17 Harbor Dr & Cesar E. Chavez Pkwy	AM	77.5	E	48.2	D	Add second eastbound left-turn lane, a southbound right-turn overlap phase and a northbound exclusive right-turn lane. In addition, extend the westbound left-turn pocket (to be done by Caltrans).
	PM	85.2	F	49.2	D	
23 Logan Ave & Sampson St	AM	143.5	F	10.0	B	Install Traffic Signal. Add northbound and southbound left-turn lanes.
	PM	197.1	F	29.7	C	
31 Main St & 26th St-Schley St	AM	8.2	A	8.2	A	Eliminate northbound through movement. This improvement is not needed based on a delay impact. It is part of a truck route improvement.
	PM	8.0	A	8.0	A	
32 Harbor Dr & Schley St	AM	76.2	E	32.9	C	Eliminate southbound left/through movement. Add southbound right-turn overlap phase.
	PM	28.8	C	16.0	B	
33 National Ave & 28th St	AM	81.2	F	39.7	D	Add exclusive southbound right-turn lane.
	PM	70.8	E	49.3	D	
34 Boston Ave & 28th St	AM	36.9	D	22.3	C	Add southbound through lane and remove exclusive northbound right-turn lane.
	PM	45.1	D	36.1	D	
36 Harbor Dr & 28th St (c)	AM	43.3	D	46.2	D	Add second eastbound and southbound left-turn lanes.
	PM	92.2	F	76.4	E	
37 Boston Ave & I-5 SB On-ramp-29th St	AM	21.0	C	20.0	C	Install Traffic Signal. (This improvement requires Caltrans approval)
	PM	523.6	F	31.9	C	
39 32nd St & Wabash St	AM	112.7	F	103.4	F	Construct a direct connector from Harbor Dr. to Wabash St. (under study by Caltrans)
	PM	85.1	F	75.4	E	
40 Harbor Dr & 32nd St (c)	AM	146.8	F	127.7	F	
	PM	92.3	F	90.2	F	
42 I-5 SB off-ramp & 28th St	AM	The intersection was not analyzed under this scenario		14.7	B	Install Traffic Signal. (This improvement requires Caltrans approval)
	PM			11.7	B	

Notes:
Bold values indicate intersections operating at LOS E or F.
(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.
(b) LOS calculations are based on the methodology outlined in the 2000 *Highway Capacity Manual* and performed using Synchro 6.0
(c) As part of Sandag's Draft 2050 RTP, a grade separation for the trolley lines at this intersection is being proposed under the hybrid network which is the preferred revenue constrained network. With the grade separation, the intersection would operate at LOS D or better. See appendix L for synchro results.

**TABLE 5-6
HORIZON YEAR (2030) ALTERNATIVE 1 WITH IMPROVEMENTS
ROADWAY SEGMENT LOS SUMMARY**

ROADWAY SEGMENT	ROADWAY CLASSIFICATION (a)	HIGHEST ACCEPTABLE LOS D VOLUME	LOS E CAPACITY	YEAR 2030 (ALTERNATIVE 1) WITH IMPROVEMENTS		
				ADT	V/C RATIO (b)	LOS
Cesar Chavez Pkwy						
north of Logan Ave	3 Lane Collector (with TWLT)	18,750	22,500	14,900	0.662	C
between Logan Ave and National Ave	3 Lane Urban Major	26,250	30,000	25,200	0.840	D
between National Ave and Newton Ave	3 Lane Urban Major	26,250	30,000	24,300	0.810	D
between Newton Ave and Main St	3 Lane Urban Major	26,250	30,000	20,000	0.667	C
between Main St and Harbor Dr	3 Lane Major	26,250	30,000	12,900	0.430	B
Sampson St						
between I-5 and National Ave	2 Lane Collector (No TWLT)	6,500	8,000	5,800	0.725	D
between National Ave and Harbor Dr	2 Lane Collector (No TWLT)	6,500	8,000	7,800	0.975	E
26th St						
between National Ave and Main St	2 Lane Collector (No TWLT)	6,500	8,000	7,000	0.875	E
28th St						
between I-5 and Boston Ave	4 Lane Major Arterial	35,000	40,000	34,500	0.863	D
between Boston Ave and Main St	4 Lane Major Arterial	35,000	40,000	24,200	0.605	C
between Main St and Harbor Dr	4 Lane Major Arterial	35,000	40,000	23,300	0.583	C
29th St						
between Boston Ave and Main St (c)	2 Lane Collector (No TWLT)	6,500	8,000	6,300	0.788	D
32nd St						
between Main St and Wabash Blvd	2 Lane Collector (with TWLT)	13,000	15,000	14,500	0.967	E
between Wabash Blvd and Harbor Drive	4 Lane Major Arterial	35,000	40,000	25,800	0.645	C
Rigel St						
between Main St and I-5	2 Lane Collector (No TWLT)	6,500	8,000	1,400	0.175	A
Vesta St						
between Main St and I-5	2 Lane Collector (No TWLT)	6,500	8,000	6,700	0.838	E
Logan Ave						
between 17th St and Sigsbee St	2 Lane Collector (with TWLT)	13,000	15,000	10,500	0.700	D
between Sigsbee St and Cesar Chavez Pkwy	2 Lane Collector (with TWLT)	13,000	15,000	16,500	1.100	F
between Cesar Chavez Pkwy and 26th St	2 Lane Collector (with TWLT)	13,000	15,000	5,700	0.380	B
National Ave						
between 16th St and Sigsbee St	2 Lane Collector (with TWLT)	13,000	15,000	12,600	0.840	D
between Sigsbee St and Beardsley St	2 Lane Collector (with TWLT)	13,000	15,000	12,600	0.840	D
between Beardsley St and Cesar Chavez Pkwy	2 Lane Collector (with TWLT)	13,000	15,000	17,000	1.133	F
between Cesar Chavez Pkwy and Evans St	2 Lane Collector (with TWLT)	13,000	15,000	9,300	0.620	C
between Evans St and Sicard St	2 Lane Collector (with TWLT)	13,000	15,000	8,700	0.580	C
between Sicard St and 27th St	2 Lane Collector (with TWLT)	13,000	15,000	10,200	0.680	D
Boston Ave						
between 28th and 29th St (c)	2 Lane Collector (No TWLT)	6,500	8,000	14,000	1.750	F
between 29th St and 32nd St	2 Lane Collector (No TWLT)	6,500	8,000	8,300	1.038	F
Main St						
between Beardsley St and Cesar Chavez Pkwy	2 Lane Collector (No TWLT)	6,500	8,000	4,200	0.525	C
between Cesar Chavez Pkwy and Evans St	2 Lane Collector (No TWLT)	6,500	8,000	7,900	0.988	E
between Evans St and 26th St	2 Lane Collector (with TWLT)	13,000	15,000	12,700	0.847	D
between 26th St and 28th St	3 Lane Collector (No TWLT)	9,750	11,250	12,700	1.129	F
between 28th and 29th St	4 Lane Collector (No TWLT)	13,000	15,000	13,400	0.893	E
between 29th St and 32nd St	3 Lane Collector (No TWLT)	9,750	11,250	18,700	1.662	F
between 32nd St and Rigel St	4 Lane Collector (No TWLT)	13,000	15,000	26,100	1.740	F
between Rigel St and Una St	2 Lane Collector (with TWLT)	13,000	15,000	20,600	1.373	F
between Una St and I-5 SB Off Ramp	2 Lane Collector (with TWLT)	13,000	15,000	18,100	1.207	F
Harbor Dr						
between Beardsley St and Cesar Chavez Pkwy	4 Lane Major Arterial	35,000	40,000	30,400	0.760	D
between Cesar Chavez Pkwy and Sampson St	4 Lane Major Arterial	35,000	40,000	25,500	0.638	C
between Sampson St and Schley St	4 Lane Major Arterial	35,000	40,000	23,400	0.585	C
between Schley St and 28th St	4 Lane Major Arterial	35,000	40,000	18,800	0.470	B
between 28th St and 32nd St	4 Lane Major Arterial	35,000	40,000	26,900	0.673	C
between 32nd St and Vesta St	4 Lane Major Arterial	35,000	40,000	31,500	0.788	D

Notes:

Bold values indicate roadway segments operating at LOS E or F.

(a) Roadway Classification are proposed under the Mobility Element.

(b) The v/c Ratio is calculated by dividing the ADT volume by each respective roadway segment's capacity.

(c) This segment was analyzed assuming a rerouting of traffic produced by the improvements along 28th Street and Main Street. A total of 1000 ADT were moved from Boston Avenue between 28th St and 29th St to Main St and 29th St.