

***Appendix A - Summary of Capacity Analyses***



# Movement Summary

## 87TH/BLEUE RIDGE AM PEAK EXISTING TRAFFIC FULL TWO LANE RBT

Roundabout

### Vehicle Movements

Mov No	Turn	Dem Flow (veh/h)	Cap (veh/h)	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Eff. Stop Rate	Aver Speed (mi/h)	Oper Cost (\$/h)
<b>South Approach</b>										
32	L	192	2544	0.195	7.9	LOS A	27	0.51	32.3	87
32	T	254	2544	0.195	7.9	LOS A	27	0.51	32.3	87
32	R	48	2544	0.195	7.9	LOS A	27	0.51	32.3	87
<b>Approach</b>		<b>495</b>	<b>2544</b>	<b>0.195</b>	<b>7.9</b>	<b>LOS A</b>	<b>27</b>	<b>0.51</b>	<b>32.3</b>	<b>87</b>
<b>East Approach</b>										
22	L	61	243	0.251	14.4	LOS B	36	0.75	29.2	12
21	T	445	1775	0.251	5.0	LOS A	36	0.46	33.9	73
23	R	28	116	0.250	7.4	LOS A	35	0.61	32.6	5
<b>Approach</b>		<b>535</b>	<b>2134</b>	<b>0.251</b>	<b>6.2</b>	<b>LOS A</b>	<b>36</b>	<b>0.50</b>	<b>33.2</b>	<b>91</b>
<b>North Approach</b>										
42	L	33	1923	0.219	7.3	LOS A	31	0.59	32.6	72
42	T	203	1923	0.219	7.3	LOS A	31	0.59	32.6	72
42	R	185	1923	0.219	7.3	LOS A	31	0.59	32.6	72
<b>Approach</b>		<b>421</b>	<b>1923</b>	<b>0.219</b>	<b>7.3</b>	<b>LOS A</b>	<b>31</b>	<b>0.59</b>	<b>32.6</b>	<b>72</b>
<b>West Approach</b>										
12	L	105	793	0.132	13.6	LOS B	18	0.68	29.6	21
11	T	130	989	0.132	4.1	LOS A	18	0.37	34.7	21
13	R	84	634	0.132	6.4	LOS A	18	0.52	33.2	14
<b>Approach</b>		<b>320</b>	<b>2415</b>	<b>0.132</b>	<b>7.8</b>	<b>LOS A</b>	<b>18</b>	<b>0.51</b>	<b>32.4</b>	<b>56</b>
<b>All Vehicles</b>		<b>1771</b>	<b>9016</b>	<b>0.251</b>	<b>7.2</b>	<b>LOS A</b>	<b>36</b>	<b>0.53</b>	<b>32.7</b>	<b>307</b>

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# Movement Summary

## 87TH/BLEUE RIDGE PM PEAK EXISTING TRAFFIC FULL TWO LANE RBT

Roundabout

### Vehicle Movements

Mov No	Turn	Dem Flow (veh/h)	Cap (veh/h)	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Eff. Stop Rate	Aver Speed (mi/h)	Oper Cost (\$/h)
<b>South Approach</b>										
32	L	189	1568	0.429	10.7	LOS B	68	0.79	31.2	123
32	T	372	1568	0.429	10.7	LOS B	68	0.79	31.2	123
32	R	112	1568	0.429	10.7	LOS B	68	0.79	31.2	123
<b>Approach</b>		<b>672</b>	<b>1568</b>	<b>0.429</b>	<b>10.7</b>	<b>LOS B</b>	<b>68</b>	<b>0.79</b>	<b>31.2</b>	<b>123</b>
<b>East Approach</b>										
22	L	108	409	0.262	16.1	LOS B	39	0.82	28.7	22
21	T	289	1106	0.261	6.9	LOS A	39	0.63	33.1	49
23	R	32	122	0.262	9.4	LOS A	37	0.75	31.9	6
<b>Approach</b>		<b>428</b>	<b>1638</b>	<b>0.261</b>	<b>9.4</b>	<b>LOS A</b>	<b>39</b>	<b>0.69</b>	<b>31.7</b>	<b>77</b>
<b>North Approach</b>										
42	L	95	2052	0.355	7.2	LOS A	55	0.57	32.6	126
42	T	470	2052	0.355	7.2	LOS A	55	0.57	32.6	126
42	R	165	2052	0.355	7.2	LOS A	55	0.57	32.6	126
<b>Approach</b>		<b>729</b>	<b>2052</b>	<b>0.355</b>	<b>7.2</b>	<b>LOS A</b>	<b>55</b>	<b>0.57</b>	<b>32.6</b>	<b>126</b>
<b>West Approach</b>										
12	L	315	552	0.571	16.3	LOS B	114	0.88	28.6	66
11	T	518	907	0.571	7.1	LOS A	114	0.71	33.1	88
13	R	286	501	0.571	9.8	LOS A	111	0.83	31.8	50
<b>Approach</b>		<b>1119</b>	<b>1960</b>	<b>0.571</b>	<b>10.4</b>	<b>LOS B</b>	<b>114</b>	<b>0.79</b>	<b>31.3</b>	<b>204</b>
<b>All Vehicles</b>		<b>2948</b>	<b>7217</b>	<b>0.571</b>	<b>9.5</b>	<b>LOS A</b>	<b>114</b>	<b>0.72</b>	<b>31.7</b>	<b>530</b>

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# Movement Summary

## 87TH/FREEMONT AM PEAK EXISTING TRAFFIC ONE/TWO LANE RBT

Roundabout

### Vehicle Movements

Mov No	Turn	Dem Flow (veh/h)	Cap (veh/h)	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Eff. Stop Rate	Aver Speed (mi/h)	Oper Cost (\$/h)
<b>South Approach</b>										
32	L	118	2199	0.099	10.5	LOS B	13	0.62	30.9	41
32	T	2	2199	0.099	10.5	LOS B	13	0.62	30.9	41
32	R	97	2199	0.099	10.5	LOS B	13	0.62	30.9	41
<b>Approach</b>		<b>218</b>	<b>2288</b>	<b>0.099</b>	<b>10.5</b>	<b>LOS B</b>	<b>13</b>	<b>0.62</b>	<b>30.9</b>	<b>41</b>
<b>East Approach</b>										
22	L	130	402	0.326	13.2	LOS B	61	0.65	29.7	26
21	T	913	2800	0.326	3.6	LOS A	61	0.33	35.1	144
23	R	4	15	0.333	6.2	LOS A	61	0.48	33.3	1
<b>Approach</b>		<b>1049</b>	<b>3218</b>	<b>0.326</b>	<b>4.8</b>	<b>LOS A</b>	<b>61</b>	<b>0.37</b>	<b>34.3</b>	<b>171</b>
<b>North Approach</b>										
42	L	5	573	0.021	12.6	LOS B	3	0.68	30.2	2
42	T	3	573	0.021	12.6	LOS B	3	0.68	30.2	2
42	R	1	573	0.021	12.6	LOS B	3	0.68	30.2	2
<b>Approach</b>		<b>12</b>	<b>573</b>	<b>0.021</b>	<b>12.6</b>	<b>LOS B</b>	<b>3</b>	<b>0.68</b>	<b>30.2</b>	<b>2</b>
<b>West Approach</b>										
12	L	1	12	0.167	13.4	LOS B	28	0.65	29.6	0
11	T	378	2239	0.169	3.7	LOS A	29	0.33	35.1	60
13	R	135	798	0.169	6.1	LOS A	29	0.47	33.4	22
<b>Approach</b>		<b>516</b>	<b>3049</b>	<b>0.169</b>	<b>4.3</b>	<b>LOS A</b>	<b>29</b>	<b>0.37</b>	<b>34.7</b>	<b>82</b>
<b>All Vehicles</b>		<b>1795</b>	<b>9128</b>	<b>0.333</b>	<b>5.4</b>	<b>LOS A</b>	<b>61</b>	<b>0.40</b>	<b>33.9</b>	<b>296</b>

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# Movement Summary

## 87TH/FREEMONT PM PEAK EXISTING TRAFFIC ONE/TWO LANE RBT

Roundabout

### Vehicle Movements

Mov No	Turn	Dem Flow (veh/h)	Cap (veh/h)	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Eff. Stop Rate	Aver Speed (mi/h)	Oper Cost (\$/h)
<b>South Approach</b>										
32	L	373	1317	0.554	15.7	LOS B	92	0.95	28.6	146
32	T	12	1317	0.554	15.7	LOS B	92	0.95	28.6	146
32	R	343	1317	0.554	15.7	LOS B	92	0.95	28.6	146
<b>Approach</b>		<b>729</b>	<b>1406</b>	<b>0.554</b>	<b>15.7</b>	<b>LOS B</b>	<b>92</b>	<b>0.95</b>	<b>28.6</b>	<b>146</b>
<b>East Approach</b>										
22	L	241	655	0.368	14.6	LOS B	72	0.71	29.0	49
21	T	620	1681	0.368	5.3	LOS A	72	0.48	33.6	103
23	R	5	16	0.375	8.0	LOS A	69	0.63	32.1	1
<b>Approach</b>		<b>866</b>	<b>2352</b>	<b>0.368</b>	<b>7.9</b>	<b>LOS A</b>	<b>72</b>	<b>0.55</b>	<b>32.1</b>	<b>154</b>
<b>North Approach</b>										
42	L	3	472	0.023	12.5	LOS B	3	0.69	30.2	2
42	T	2	472	0.023	12.5	LOS B	3	0.69	30.2	2
42	R	3	472	0.023	12.5	LOS B	3	0.69	30.2	2
<b>Approach</b>		<b>11</b>	<b>472</b>	<b>0.023</b>	<b>12.5</b>	<b>LOS B</b>	<b>3</b>	<b>0.69</b>	<b>30.2</b>	<b>2</b>
<b>West Approach</b>										
12	L	8	14	0.571	14.6	LOS B	137	0.70	28.9	2
11	T	1204	2042	0.590	4.7	LOS A	142	0.43	33.7	200
13	R	478	812	0.590	7.0	LOS A	142	0.55	32.4	83
<b>Approach</b>		<b>1691</b>	<b>2867</b>	<b>0.590</b>	<b>5.4</b>	<b>LOS A</b>	<b>142</b>	<b>0.47</b>	<b>33.3</b>	<b>284</b>
<b>All Vehicles</b>		<b>3297</b>	<b>7098</b>	<b>0.590</b>	<b>8.4</b>	<b>LOS A</b>	<b>142</b>	<b>0.60</b>	<b>31.8</b>	<b>586</b>

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# Movement Summary

## 87TH/HILLCREST WEST AM PEAK EXISTING TRAFFIC ONE LANE RBT

Roundabout

### Vehicle Movements

Mov No	Turn	Dem Flow (veh/h)	Cap (veh/h)	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Eff. Stop Rate	Aver Speed (mi/h)	Oper Cost (\$/h)
<b>South Approach</b>										
32	L	1	712	0.010	9.6	LOS A	2	0.55	31.3	1
32	T	1	712	0.010	9.6	LOS A	2	0.55	31.3	1
32	R	2	712	0.010	9.6	LOS A	2	0.55	31.3	1
<b>Approach</b>		<b>7</b>	<b>712</b>	<b>0.010</b>	<b>9.6</b>	<b>LOS A</b>	<b>2</b>	<b>0.55</b>	<b>31.3</b>	<b>1</b>
<b>East Approach</b>										
22	L	2	1930	0.301	5.5	LOS A	54	0.42	34.5	93
22	T	426	1930	0.301	5.5	LOS A	54	0.42	34.5	93
22	R	150	1930	0.301	5.5	LOS A	54	0.42	34.5	93
<b>Approach</b>		<b>580</b>	<b>1930</b>	<b>0.301</b>	<b>5.5</b>	<b>LOS A</b>	<b>54</b>	<b>0.42</b>	<b>34.5</b>	<b>93</b>
<b>North Approach</b>										
42	L	114	974	0.156	14.0	LOS B	27	0.71	29.4	30
42	T	1	974	0.156	14.0	LOS B	27	0.71	29.4	30
42	R	36	974	0.156	14.0	LOS B	27	0.71	29.4	30
<b>Approach</b>		<b>152</b>	<b>974</b>	<b>0.156</b>	<b>14.0</b>	<b>LOS B</b>	<b>27</b>	<b>0.71</b>	<b>29.4</b>	<b>30</b>
<b>West Approach</b>										
12	L	21	1537	0.173	5.9	LOS A	29	0.44	33.6	44
12	T	242	1537	0.173	5.9	LOS A	29	0.44	33.6	44
12	R	1	1537	0.173	5.9	LOS A	29	0.44	33.6	44
<b>Approach</b>		<b>266</b>	<b>1537</b>	<b>0.173</b>	<b>5.9</b>	<b>LOS A</b>	<b>29</b>	<b>0.44</b>	<b>33.6</b>	<b>44</b>
<b>All Vehicles</b>		<b>1005</b>	<b>5153</b>	<b>0.301</b>	<b>6.9</b>	<b>LOS A</b>	<b>54</b>	<b>0.47</b>	<b>33.3</b>	<b>168</b>

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# Movement Summary

## 87TH/HILLCREST WEST PM PEAK EXISTING TRAFFIC ONE LANE RBT

Roundabout

### Vehicle Movements

Mov No	Turn	Dem Flow (veh/h)	Cap (veh/h)	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (ft)	Eff. Stop Rate	Aver Speed (mi/h)	Oper Cost (\$/h)
<b>South Approach</b>										
32	L	2	379	0.029	17.2	LOS B	5	0.72	27.5	2
32	T	1	379	0.029	17.2	LOS B	5	0.72	27.5	2
32	R	5	379	0.029	17.2	LOS B	5	0.72	27.5	2
<b>Approach</b>		<b>11</b>	<b>379</b>	<b>0.029</b>	<b>17.2</b>	<b>LOS B</b>	<b>5</b>	<b>0.72</b>	<b>27.5</b>	<b>2</b>
<b>East Approach</b>										
22	L	7	1897	0.330	5.7	LOS A	61	0.43	34.2	102
22	T	416	1897	0.330	5.7	LOS A	61	0.43	34.2	102
22	R	203	1897	0.330	5.7	LOS A	61	0.43	34.2	102
<b>Approach</b>		<b>626</b>	<b>1897</b>	<b>0.330</b>	<b>5.7</b>	<b>LOS A</b>	<b>61</b>	<b>0.43</b>	<b>34.2</b>	<b>102</b>
<b>North Approach</b>										
42	L	212	995	0.244	14.9	LOS B	45	0.74	29.0	48
42	T	1	995	0.244	14.9	LOS B	45	0.74	29.0	48
42	R	28	995	0.244	14.9	LOS B	45	0.74	29.0	48
<b>Approach</b>		<b>243</b>	<b>995</b>	<b>0.244</b>	<b>14.9</b>	<b>LOS B</b>	<b>45</b>	<b>0.74</b>	<b>29.0</b>	<b>48</b>
<b>West Approach</b>										
12	L	27	1514	0.580	6.4	LOS A	137	0.52	32.8	150
12	T	848	1514	0.580	6.4	LOS A	137	0.52	32.8	150
12	R	1	1514	0.580	6.4	LOS A	137	0.52	32.8	150
<b>Approach</b>		<b>878</b>	<b>1514</b>	<b>0.580</b>	<b>6.4</b>	<b>LOS A</b>	<b>137</b>	<b>0.52</b>	<b>32.8</b>	<b>150</b>
<b>All Vehicles</b>		<b>1758</b>	<b>4785</b>	<b>0.580</b>	<b>7.4</b>	<b>LOS A</b>	<b>137</b>	<b>0.52</b>	<b>32.6</b>	<b>302</b>

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