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## Methodology



# Network Screening Process Details

# Network Screening

## Network Screening Cliff Notes

The purpose of network screening is to organize information about the subregion such that informed decisions can be made regarding areas to be studied. Network screening defines focus areas (intersections and corridors) for further evaluation based on a limited evaluation of key indicators.

Network screening was used to identify the following:

- Corridor Mobility – Identify 25 high-congestion corridors
- Intersection Mobility – Identify 100 high-congestion intersections
- Segment Safety – Identify 25 miles of high-crash segments
- Intersection Safety – Identify 50 high-crash intersections

### Corridor Mobility:

Criteria:

- Corridors classified as arterial (major or minor) per TxDOT's roadway inventory
- Off-system roadways (exclude I-45, SH 3, SH 225, Beltway 8, and SH 146)

Process:

- Dissolve TxDOT roadway inventory to create continuous segments
- Select roadways with arterial functional class

Key Indicators:

- Functional classification

### Intersection Mobility:

Criteria:

- Traffic signal control at intersection
  - Intersecting volume > 5 million entering vehicles (MEV)
  - Vehicles per hour per lane (vphpl) > 300 vph
  - Intersection includes at least one arterial\*
- \*Strawberry Road included as arterial-like volumes are reported

Process:

- Identify signalized intersections within subregion
- Report ADT and number of lanes for both intersecting roadways
- Select intersections with high intersecting volume (MEV) and rough v/c (vphpl)

Key Indicators:

- Intersection volume MEV
- Intersection volume to capacity (vphpl)
- Roadway 1 ADT
- Roadway 2 ADT

## **Segment Safety:**

Criteria:

- Corridors classified as arterial
- Off-system (non-TxDOT) roadways
- Included in Harris County Vision Zero High-Injury Network

Process:

- Associate crashes with each arterial
- Calculate crash count and rate\* (by severity and mode) for each corridor
  - \*Assumes one average ADT for entire corridor
- Compare results to Harris County Vision Zero High-Injury Network
- Select continuous, high-crash segments

Key Indicators:

- Number and rate of non-vehicular crashes
- Number and rate of fatal crashes
- Number and rate of severe injury crashes
- Number and rate of total crashes

## **Intersection Safety:**

Criteria:

- Traffic signal control at intersection
- Off-system (non-TxDOT) roadways
- KA crash (fatal or serious injury crash) count > 1
- Crash Rate > 1 crash per 1 MEV

Process:

- Identify signalized intersections within subregion
- Associate crashes within 250' to each intersection
- Calculate crash count and rate (by severity and mode)
- Select high-crash intersections

Key Indicators:

- Number and rate of non-vehicular crashes
- Number and rate of fatal crashes
- Number and rate of severe injury crashes
- Number and rate of total crashes

## **Network Screening – Public Meeting 1**

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Slide 16 – Priority Network – Screening Process

In terms of vehicular mobility, we will be examining both corridors (stretches of roadway) and key intersections. Payton Arens, a Project Engineer with Kimley-Horn, has been leading several tasks on this study and will now discuss some details as to exactly what locations we are studying and why we chose them.

Payton.....

The purpose of network screening is to organize information about the subregion such that informed decisions can be made regarding areas to be studied. Network screening defines focus areas (such as intersections and corridors) for further analysis based on a limited evaluation of key indicators. Network screening was used to identify the following priority network.

- 25 high-congestion corridors (Corridor Mobility)
- 100 high-congestion intersections (Intersection Mobility)
- 25 miles of high-crash segments (Segment Safety)
- 50 high-crash intersections (Intersection Safety)

The screening process is a necessary first step to refining the study area. The following slides will present the preliminary results, but we ask that you provide feedback on specific corridors/intersections you'd like us to study.

#### Slide 17 – Corridor Mobility (1)

1. 25 high-congestion corridors were identified for further study.
2. Priority corridors are shown here with a grey highlight.
3. These corridors were selected primarily based on functional classification, as indicated by TxDOT's most recent Roadway Inventory.
4. Functional classification is symbolized on this map to distinguish roadways as either interstate/freeway, principal arterial, minor arterial, and major collector.

#### Slide 18 – Corridor Mobility (2)

5. Only priority corridors are shown on this slide
6. Principal and minor arterials were selected for further study as these are
  - a. off-system (non-TxDOT) roadways and
  - b. high-volume roadways
7. Freeways and collectors (shown in grey and green on the previous slide) will not be analyzed in detail unless we hear from you all specific locations to be studied
8. For example, 3 of the 25 priority corridors include:
  - a. Spencer Highway
  - b. Fairmont Parkway and
  - c. Red Bluff Road

#### Slide 19 – Intersection Mobility (1)

1. 100 high-congestion intersections were identified for further study.
2. Priority intersections are shown here with a grey highlight.
3. Circles without a grey highlight are signalized intersections which were considered but "screened-out" after this initial evaluation.
4. Priority intersections were selected primarily based on the intersections
  - a. total entering volume and
  - b. volume to capacity ratio
5. Total entering volume is symbolized on this map by circle size (larger circle indicates larger volume)
6. Volume to capacity, expressed as vehicles per hour per lane (VPHPL), is symbolized by color for varying thresholds (red indicates intersections which are near capacity)

#### Slide 20 – Intersection Mobility (2)

7. Only priority intersections are shown on this slide

8. Priority intersections include intersections with large total entering volume and high volume to capacity ratio.
9. Low-volume and under-capacity intersections (shown as small, green circles on the previous slide) will not be analyzed in detail unless we hear from you all specific locations to be studied
10. For example, priority intersections to be studied include:
  - a. Spencer Highway at Strawberry Road
  - b. Spencer Highway at Center Street and
  - c. Fairmont Parkway at Red Bluff Road

#### Slide 21 – Segment Safety

1. 25+ miles of high-crash segments were identified for further study
2. Priority segments are shown here in red
3. A heat map of crash density is symbolized here such that “cold” colors indicate higher crash density.
4. Priority segments were selected primarily based on the number and rate of:
  - a. Fatal crashes
  - b. Severe injury crashes
  - c. Total crashes and
  - d. Non-vehicular crashes
5. Considerable weight was also given to Harris County’s High-Injury Network, per the recent Vision Zero action plan.
6. For efficiency during analysis, the priority segments are long continuous segments
7. For example, priority segments include:
  - a. Along Spencer Hwy from SH 3 to Center St which is a 6.8-mile segment with 45 fatal or severe injury crashes
  - b. Along Fairmont Pkwy from SH 3 to Red Bluff Rd which is a 6-mile segment with 34 fatal or severe injury crashes

#### Slide 22 – Intersection Safety (1)

1. 50 high-crash intersections were identified for further study.
2. Priority intersections are shown here with a grey highlight.
3. Circles without a grey highlight are signalized intersections which were considered but “screened-out” after this initial evaluation.
4. Priority intersections were selected primarily based on the intersections number and rate of:
  - c. Fatal crashes
  - d. Severe injury crashes
  - e. Total crashes and
  - f. Non-vehicular crashes
5. Crash rate, expressed as crashes per MEV, is symbolized on this map by circle size (larger circle indicates larger crash rate)
6. Fatal and severe injury crashes is symbolized by color for varying thresholds (brown indicates intersections with 4 or more fatal or severe injury crashes)

#### Slide 23 – Intersection Safety (2)

7. Only priority intersections are shown on this slide
8. Priority intersections include intersections with high crash severity, frequency, and rate
9. Low crash severity, frequency, and rate intersections (shown as small, yellow circles on the previous slide) will not be analyzed in detail initially unless we hear from you all specific locations to be studied

10. In the event that currently unidentified safety concerns are discovered early in the study, those locations will be included in the priority network and analyzed in detail
11. As examples, high-crash priority intersections to be studied include:
  - a. Spencer Highway at Red Bluff Road
  - b. Spencer Highway at Preston Road and
  - c. Spencer Highway at East Boulevard

#### Slide 24 – Priority Network

1. In summary, the priority network was identified as a result of network screening which evaluated key indicators
2. These priorities are shown on this slide and categorized as either Corridor Mobility, Intersection Mobility, Segment Safety, and Intersection Safety.
3. As symbolized by multi-colored locations, some intersections and corridors will be studied from a mobility and safety standpoint.

## Network Screening Map Production:

### *Mobility*

1. Roadway Network: Functional classification (F\_System) of all roadways
  - a. Symbolize ADT as line thickness
  - b. Also display traffic signals (use .kmz)
2. Priority Corridors: 25 high-congestion corridors
  - a. Roadway network map with yellow halo for selected corridors
3. Intersection Volume: Total entering volume (TEV) at each traffic signal
  - a. Symbolize TEV as circle size
  - b. Symbolize VPHPL by circle color
    - i. At capacity, Red: > 600
    - ii. Near capacity, Yellow: 400 – 600
    - iii. Below capacity, Green: <400
4. Priority Intersections: 100 high-congestion intersections
  - a. Intersection volume map with yellow halo for selected corridors

### *Safety*

5. Crash Density: Kernel density of crashes along off-system roadways (2016-2019)
6. Crash intensity: (Top 50 independent of severity, not normalized for volume)
  - a. Symbolize Join\_Count as line thickness
7. VZ HIN: Harris County Vision Zero High-Injury Network
  - a. Symbolize total crash rate as line thickness
8. Priority Segments: 25 miles of high-crash segments
9. Intersection Crashes: Crashes within 250' of an intersection
  - a. Symbolize Rate\_Total as line thickness
  - b. Symbolize KA\_Crashes as color
10. Priority Intersections: 50 high-crash intersections
  - a. Intersection crash map with yellow halo for selected corridors

## Initial Map Concepts

1. Intersection Congestion – Heat map of VPHPL for each intersection point
2. Study Intersections (Mobility) – Same as above. Add highlight around study intersections.
3. Segment Crash Rate – Heat map of crash rate (crashes/MVM) for each segment
4. Segment Crash Intensity – Heat map of crash intensity for each segment
5. Study Segments (Safety) – Same as above. Add highlight around study segments.
6. Intersection Crash Rate – Heat map of crash rate (crashes/MEM) for each intersection
7. Intersection Crash Intensity – Heat map of crash intensity for each intersection
8. Intersection Segments (Safety) – Same as above. Add highlight around study intersection

## Network Screening Refinement

1. Remove intersections along Fairmont Parkway between Red Bluff and SH 146 (this section of road is planned to be widened)
2. Remove intersections along SH 3 from Richey to Galveston CL ([improvements planned in this section](#))

# Raw Traffic Volume Data

ID	Node	Street 1	Street 2	Date	Latitude	Longitude	CountConf1	TEV - AM	PHF - AM	Start Time - AM	TEV - PM	PHF - PM	Start Time - PM
1	11	Southmore Ave	Richey St	5/13/2021	29.690634	-95.21975	4	1,703	0.965	7:00	2,671	0.975	4:45
2	12	Strawberry Rd	Southmore Ave	5/13/2021	29.691594	-95.1933	4	1,774	0.887	7:15	2,190	0.978	5:00
3	13	Southmore Ave	Shaver St	5/13/2021	29.690789	-95.21127	3-ALT	1,587	0.863	7:00	2,843	0.927	4:30
4	14	Southmore Ave	N Pasadena Blvd	5/13/2021	29.690869	-95.20044	4	1,947	0.900	7:15	2,688	0.907	4:00
5	15	Allen Genoa Rd	Southmore Ave	5/13/2021	29.690467	-95.23458	5	1,558	0.919	7:00	2,136	0.955	4:45
6	16	Southmore Ave	Main St	5/13/2021	29.690812	-95.2093	4-ALT	1,731	0.867	7:00	2,636	0.956	5:00
7	17	Southmore Ave	Preston Rd	5/13/2021	29.691752	-95.17276	4	1,529	0.883	7:15	2,166	0.985	4:45
8	18	Southmore Ave	South St	5/13/2021	29.691783	-95.17121	4	1,292	0.915	7:00	1,645	0.961	4:45
9	19	Burke Rd	Southmore Ave	5/13/2021	29.691681	-95.1828	4	1,492	0.838	7:15	2,098	0.940	5:00
10	21	Thirteen St	Battleground Rd	5/13/2021	29.700454	-95.09353	4	1,387	0.942	7:00	1,619	0.933	4:30
11	22	Center St	13th St	5/13/2021	29.699865	-95.12377	4	2,316	0.928	7:15	2,200	0.790	4:00
12	23	Thirteenth St	East Blvd	5/25/2021	29.700333	-95.10042	4	1,317	0.905	7:00	1,516	0.969	4:30
13	24	Thirteenth St	Luella Ave	5/20/2021	29.700041	-95.11359	4	1,077	0.787	7:15	713	0.814	4:00
14	41	Red Bluff Rd	Pasadena Blvd	5/25/2021	29.681637	-95.15095	4	2,157	0.897	7:00	3,182	0.935	5:00
15	42	Pasadena Blvd	Center St	5/13/2021	29.679206	-95.1233	4	2,989	0.926	7:15	3,474	0.961	5:00
16	43	Pasadena Blvd	Underwood Rd	5/13/2021	29.679785	-95.08784	4	1,849	0.854	7:15	2,181	0.891	4:45
17	44	Pasadena Blvd	Luella Ave	5/13/2021	29.679396	-95.11313	4	1,431	0.873	7:00	1,951	0.890	5:00
18	45	Pasadena Blvd	East Blvd	5/13/2021	29.679682	-95.09847	4	2,045	0.865	7:00	3,100	0.937	4:45
19	46	Sens Rd	N L St	5/13/2021	29.68055	-95.04672	4	950	0.900	7:00	1,276	0.853	4:30
20	50	Spencer Hwy	Shaver St	5/13/2021	29.664799	-95.20785	4	2,737	0.847	7:15	4,327	0.949	5:00
21	51	Lafferty Rd	Spencer Hwy	5/13/2021	29.664951	-95.19786	3	2,030	0.878	7:15	3,072	0.966	5:00
22	52	Spencer Hwy	Westside Dr	5/25/2021	29.664878	-95.20267	4	1,996	0.914	7:15	3,051	0.974	4:30
23	53	Spencer Hwy	Watters Rd	5/13/2021	29.665249	-95.17949	4	2,603	0.915	7:30	3,135	0.963	4:45
24	54	Spencer Hwy	Perez Rd	5/13/2021	29.664723	-95.21227	4	1,698	0.836	7:15	2,498	0.964	5:00
25	55	Galveston Rd-Hwy 3	College Ave	5/13/2021	29.663122	-95.23566	4	2,715	0.929	7:15	3,644	0.965	5:00
26	56	Spencer Hwy	Pansy St	5/13/2021	29.665484	-95.16292	4	2,042	0.926	7:15	2,845	0.964	4:45
27	57	Spencer Hwy	8Th St	5/13/2021	29.664572	-95.2219	4	1,747	0.925	7:00	2,375	0.973	5:00
28	58	College Ave	Main St	5/13/2021	29.659816	-95.24018	4	1,836	0.929	7:15	2,303	0.978	5:00
29	59	Spencer Hwy	Texas St	5/13/2021	29.664383	-95.23368	5	1,667	0.908	7:15	2,208	0.970	5:00
30	61	Center St	Spencer Hwy	5/20/2021	29.663672	-95.1229	4	3,023	0.916	7:15	4,299	0.949	4:45
31	62	Space Center Blvd	Spencer Hwy	5/13/2021	29.665806	-95.14524	4	2,419	0.915	7:00	3,707	0.971	4:45
32	63	Red Bluff Rd	Spencer Hwy	5/13/2021	29.663537	-95.13269	4	2,558	0.943	7:00	4,091	0.911	4:45
33	64	Spencer Hwy	Underwood Rd	5/20/2021	29.664281	-95.08693	4	2,407	0.906	7:15	3,507	0.920	4:45
34	65	Spencer Hwy	Canada	5/13/2021	29.66412	-95.09818	4-ALT	2,574	0.925	7:00	4,196	0.916	4:45
35	66	Luella Ave	Spencer Hwy	5/13/2021	29.663885	-95.11287	4	1,736	0.899	7:00	2,889	0.910	5:00
36	67	Spencer Hwy	Bay Area Blvd	5/25/2021	29.665015	-95.04636	4	1,954	0.949	7:00	2,765	0.955	4:30
37	68	Spencer Hwy	Luella Blvd	5/13/2021	29.663906	-95.1109	4	1,663	0.898	7:00	2,824	0.905	4:45
38	71	Edgebrook Dr	Shaver St	5/13/2021	29.65111	-95.20799	4	2,509	0.904	7:15	3,233	0.967	5:00
39	72	Fairmont Pkwy	Burke Rd	5/13/2021	29.650902	-95.18327	4	2,202	0.941	7:00	3,152	0.994	5:00
40	73	Fairmont Pkwy	Preston Rd	5/13/2021	29.649657	-95.17152	4	2,733	0.954	7:00	3,791	0.973	5:00
41	74	Fairmont Pkwy	Pansy St	5/13/2021	29.649777	-95.16289	4	2,459	0.876	7:15	3,785	0.971	4:45
42	75	Fairmont Pkwy	Walters Rd	5/13/2021	29.650348	-95.17912	4	1,620	0.920	7:15	2,342	0.982	5:00
43	76	HWY 3	Edgebrook Dr	5/13/2021	29.647871	-95.22124	4	2,634	0.981	7:00	2,999	0.964	5:00
44	77	Fairmont Pkwy	Strawberry Rd	5/13/2021	29.651592	-95.1909	4	2,346	0.931	7:00	3,004	0.972	5:00
45	78	Edgebrook Dr	Theta St	5/13/2021	29.645334	-95.23301	4	1,858	0.878	7:00	2,172	0.880	5:00
46	80a	Fairmont Pkwy	NB Red Bluff Rd	5/13/2021	29.65049	-95.12129	4	1,910	0.949	7:00	3,758	0.931	4:45
47	80b	Fairmont Pkwy	SB Red Bluff Rd	5/13/2021	29.650409	-95.12173	4	2,147	0.889	7:00	2,749	0.909	5:00
48	81a	Space Center Blvd	Fairmont Pkwy	5/13/2021	29.650034	-95.14363	4	2,556	0.880	7:00	3,671	0.961	4:45
49	81b	Space Center Blvd	Fairmont Pkwy	5/13/2021	29.650034	-95.14363	4	2,332	0.949	7:15	3,858	0.956	4:30
50	82	Center St	Fairmont Blvd	5/13/2021	29.650387	-95.12661	4	2,834	0.930	7:15	4,017	0.958	5:00
51	83	Fairmont Pkwy	Genoa Red Bluff Rd	5/13/2021	29.650718	-95.09792	4	2,935	0.914	7:00	4,029	0.967	4:45
52	84	Fairmont Pkwy	Underwood Rd	5/13/2021	29.65129	-95.08643	4	2,376	0.924	7:00	2,901	0.918	4:45
53	85	Fairmont Pkwy	Bay Area Blvd	5/13/2021	29.651767	-95.04673	4	2,492	0.989				

## AM Peak Hour

Node	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
11	26	241	102	139	295	212	106	294	32	36	192	28
12	64	303	34	34	336	141	131	292	132	4	248	55
13	148	352	108	0	438	85	0	0	0	87	369	0
14	2	274	69	104	330	34	27	451	175	142	282	57
15	5	332	167	226	0	62	15	751	0	0	0	0
16	0	0	0	88	404	0	109	558	115	0	400	57
17	143	532	34	0	313	88	0	0	0	111	308	0
18	0	0	0	27	297	0	73	477	93	0	228	97
19	121	170	119	103	316	30	27	156	38	35	278	99
21	28	485	120	25	4	3	13	551	58	38	11	51
22	97	549	75	96	133	178	99	705	138	80	84	82
23	78	257	38	10	52	6	56	394	140	116	70	100
24	7	69	54	60	243	63	59	76	181	92	169	4
41	9	478	73	167	332	10	21	627	108	82	250	0
42	38	594	99	186	266	159	103	837	158	183	216	150
43	51	339	32	84	123	129	90	492	117	121	122	149
44	71	81	53	69	400	88	110	91	86	44	295	43
45	84	477	76	71	207	42	90	414	76	150	218	140
46	30	318	0	2	0	6	7	367	94	65	2	59
50	154	332	112	73	632	109	131	343	77	52	591	131
51	77	0	106	98	833	0	0	0	0	0	851	65
52	9	36	65	68	836	24	41	40	25	29	815	8
53	134	29	43	50	929	54	60	27	148	168	920	41
54	35	3	95	85	796	1	7	6	0	0	647	23
55	149	311	161	111	668	93	93	455	86	73	399	116
56	45	41	28	33	998	22	16	50	10	20	725	54
57	80	13	23	25	854	10	32	24	14	14	610	48
58	65	34	20	19	759	38	51	33	70	113	596	38
59	19	0	2	150	793	4	0	3	60	27	605	4
61	221	425	114	145	569	103	63	556	35	84	497	211
62	39	148	19	21	778	122	134	218	196	120	608	16
63	43	253	211	240	668	51	31	227	111	91	568	64
64	126	254	145	238	428	59	68	330	96	72	390	201
65	145	370	165	156	484	89	101	352	69	60	432	151
66	124	3	162	194	642	2	1	0	3	13	551	41
67	82	229	105	102	351	31	51	242	66	74	462	159
68	2	2	2	3	745	40	39	2	115	84	624	5
71	202	391	54	29	425	153	124	364	48	29	515	175
72	51	226	109	88	447	80	129	266	152	79	525	50
73	53	418	177	125	525	48	105	384	119	99	570	110
74	73	144	60	66	692	37	60	137	146	139	760	145
75	58	7	44	55	592	13	6	5	11	11	767	51
76	88	298	169	240	571	59	55	365	41	59	575	114
77	138	270	142	172	422	25	70	427	79	33	462	106
78	101	29	64	68	718	25	56	29	43	27	624	74
80a	0	0	0	94	655	0	53	336	111	0	653	8
80b	7	330	109	0	803	73	0	1	0	160	664	0
81a	0	447	110	0	0	0	277	563	0	108	985	66

## AM Peak Hour

Node	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
81b	97	377	1	118	920	217	0	395	207	0	0	0
82	418	27	21	6	569	14	16	90	151	160	847	515
83	121	302	115	124	561	305	406	249	23	25	566	138
84	140	62	202	153	721	61	21	16	21	60	803	116
85	120	148	91	69	735	119	82	136	79	118	733	62
86	3	0	3	3	719	3	0	0	0	0	803	55
87	131	0	91	45	841	17	0	0	0	0	829	69
88	21	13	14	68	842	42	22	13	51	91	723	66
89	82	0	36	62	645	4	1	0	1	3	683	93
91	132	391	60	32	540	172	239	529	211	244	688	58
92a	2	0	0	7	508	0	154	358	189	0	626	111
92b	74	413	68	0	627	180	0	0	0	337	658	0
93	183	0	303	253	373	2	0	0	0	0	466	300
94	190	414	80	123	81	15	23	502	113	111	85	157
95	190	0	128	119	413	0	0	0	0	0	578	283
96	0	402	134	172	243	2	4	507	92	83	295	32
97	219	0	100	79	560	0	0	0	0	0	741	199
110	70	466	43	62	100	54	25	500	33	23	77	100
111	11	471	18	45	18	45	54	733	5	15	20	31
112	80	594	0	0	0	0	0	691	14	21	0	82
113	0	578	70	106	0	11	12	518	0	0	0	0
114	0	527	71	140	0	156	118	660	0	0	0	0
115	1	497	41	68	44	33	22	530	67	98	26	0
116	71	495	60	0	199	44	0	0	0	108	186	0
117	0	0	0	60	140	0	65	604	99	0	197	41
118	44	391	87	0	293	39	0	0	0	106	128	0
119	0	0	0	74	210	1	36	563	118	0	165	56
131	38	275	182	159	619	49	16	372	157	123	512	58
132	3	434	89	127	265	10	5	416	125	158	241	7
133	44	201	172	189	535	30	36	187	61	65	659	25
134	107	337	17	4	367	72	50	547	32	25	299	122
135	62	329	38	96	204	0	14	450	140	110	189	21
136	33	330	22	57	101	87	82	574	27	51	113	130
137	44	394	7	2	91	42	45	345	0	40	84	59
138	2	370	91	164	26	5	25	431	3	6	26	3
151	162	406	240	194	707	116	138	501	96	67	881	106
152	15	410	79	93	370	113	67	475	308	309	286	33
153	73	759	9	1	1	0	16	794	85	132	8	83
154	76	440	0	0	0	0	0	514	184	79	0	50
155	35	312	103	178	160	56	61	506	43	46	159	66
156	1	790	105	82	3	61	79	812	21	19	5	0
171	71	176	139	80	875	128	108	132	107	98	921	94
172	106	284	89	100	565	159	128	260	58	77	560	111
173	36	36	10	219	316	31	25	171	52	96	336	29
174	68	264	70	105	282	36	32	404	138	129	207	81
175	15	421	65	88	174	111	112	440	6	6	118	14
176	65	252	26	28	336	89	95	186	139	111	285	33
177	45	234	83	60	234	47	102	275	75	46	295	80

## AM Peak Hour

Node	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
178	21	291	3	3	0	0	1	487	96	124	1	28
179	36	128	75	35	356	90	45	110	132	101	322	17
191	172	459	119	117	862	52	40	391	136	116	668	167
192	129	636	66	74	261	71	71	533	75	116	219	108
193	44	409	133	0	558	29	0	0	0	220	452	0
194	23	690	5	0	0	0	0	667	35	86	0	48
195	124	677	0	0	0	0	0	580	119	140	0	103
196	0	682	73	71	0	21	27	683	0	0	0	0
197	0	0	0	93	356	0	3	417	187	0	486	73
198	63	480	69	90	193	27	22	411	133	97	171	53
199	51	162	30	16	397	161	155	93	1	8	436	27

## PM Peak Hour

Node	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
11	37	509	167	196	333	306	289	372	30	39	348	45
12	60	291	77	25	434	148	162	284	103	12	475	119
13	202	729	207	0	701	182	0	0	0	152	670	0
14	4	437	149	95	486	51	55	333	232	255	525	66
15	23	911	256	242	0	110	35	558	1	0	0	0
16	0	0	0	157	710	0	182	572	177	1	739	98
17	207	789	19	0	442	86	0	0	0	108	515	0
18	0	0	0	30	392	0	48	504	132	0	362	177
19	169	218	107	128	424	64	52	184	52	53	481	166
21	59	729	26	90	46	12	4	410	46	72	15	110
22	144	584	115	132	95	145	80	542	65	108	91	99
23	98	770	14	47	87	57	12	151	82	101	70	27
24	9	135	37	37	118	37	31	60	47	91	94	17
41	2	860	212	165	440	6	26	681	168	225	396	1
42	53	748	165	106	371	220	170	697	166	296	339	143
43	174	627	72	34	208	82	48	347	160	159	174	96
44	101	158	37	66	596	110	58	116	59	96	474	80
45	219	857	122	84	367	116	91	549	192	174	235	94
46	84	430	5	8	1	7	8	477	125	85	4	42
50	149	555	186	145	1007	250	214	491	136	126	881	187
51	86	0	101	132	1382	0	0	0	0	0	1282	89
52	21	39	91	124	1367	46	32	59	27	31	1197	17
53	54	25	31	41	1303	38	69	24	104	111	1311	24
54	63	6	164	102	1112	6	8	19	3	9	923	83
55	186	521	227	117	706	148	142	481	91	123	727	175
56	56	103	24	37	1235	43	54	80	26	43	1102	42
57	91	48	29	30	1057	8	32	22	19	34	947	58
58	57	21	16	32	910	19	23	21	42	58	1053	51
59	20	3	5	146	927	8	3	2	32	54	990	18
61	245	597	233	186	968	198	160	486	82	57	844	243
62	27	293	35	29	1168	267	364	223	127	230	910	34
63	110	343	336	278	1106	88	63	349	206	148	950	114
64	259	333	237	115	820	90	72	257	149	163	803	209
65	312	539	259	180	1027	208	104	446	129	89	673	230
66	192	0	175	130	1236	2	2	4	5	2	1002	139
67	228	253	120	129	757	54	41	388	187	114	419	75
68	8	6	0	5	1320	88	71	1	158	107	1058	2
71	303	650	80	43	480	144	101	594	66	50	476	246
72	94	344	153	149	756	116	145	328	121	132	710	104
73	72	462	293	213	924	135	111	378	126	87	881	109
74	101	222	139	149	1033	117	87	259	236	122	1194	126
75	78	15	47	41	1036	56	25	18	23	20	907	76
76	175	428	189	161	596	68	80	422	70	38	659	113
77	124	368	173	157	754	54	67	414	45	59	662	127
78	120	38	53	43	724	33	46	18	48	75	870	104
80a	0	0	0	202	1394	0	104	437	133	0	1481	7
80b	27	432	144	0	1038	120	0	0	0	133	855	0
81a	0	906	132	0	0	0	286	585	0	304	1270	188

## PM Peak Hour

Node	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
81b	175	705	1	151	1712	357	0	516	241	0	0	0
82	655	39	62	15	1407	11	5	44	75	99	1023	582
83	227	465	80	117	1107	384	367	387	36	13	628	218
84	232	23	123	139	1164	29	35	52	70	13	817	204
85	141	184	100	143	915	94	371	489	221	138	819	110
86	45	0	2	5	1584	13	0	0	17	25	1049	34
87	85	0	89	100	1127	11	0	0	0	0	960	124
88	56	13	51	41	974	46	48	20	110	58	1236	30
89	165	14	26	62	1348	29	5	1	2	4	900	126
91	84	744	82	42	948	276	219	578	175	290	664	90
92a	0	2	0	30	870	0	195	604	534	0	616	104
92b	112	522	44	0	1153	278	0	0	0	252	681	1
93	222	0	280	284	370	1	0	0	0	0	418	249
94	334	626	104	81	133	8	18	567	167	172	127	334
95	255	0	114	87	440	1	0	0	0	0	626	278
96	0	573	207	179	453	15	6	531	84	142	386	28
97	182	0	62	63	667	0	0	0	0	0	870	238
110	142	891	77	62	110	50	118	744	44	10	137	124
111	20	1062	38	54	14	93	54	818	15	12	16	30
112	71	1050	0	0	0	0	1	917	36	34	0	76
113	0	863	89	158	0	20	23	756	0	0	0	0
114	0	1006	147	111	0	111	126	862	0	0	0	0
115	2	858	78	74	48	34	49	798	70	68	60	2
116	36	1002	86	0	145	88	0	0	0	86	119	0
117	0	0	0	71	166	0	96	680	80	0	176	37
118	17	880	41	0	174	50	0	0	0	107	95	0
119	0	0	0	18	139	0	66	498	89	0	117	14
131	52	510	251	216	818	47	56	467	187	156	752	78
132	2	800	118	146	368	14	20	694	181	227	300	11
133	38	217	230	275	595	26	31	220	40	67	589	31
134	147	705	40	23	572	160	91	538	43	78	520	160
135	34	752	113	94	113	2	3	494	110	95	157	22
136	87	815	69	34	155	43	70	555	101	76	174	60
137	105	649	14	9	73	52	60	575	8	48	96	104
138	4	538	171	208	36	12	36	520	7	14	23	10
151	190	498	211	150	1062	106	145	461	85	84	1110	187
152	36	502	77	60	409	151	95	445	237	320	466	45
153	84	898	1	0	1	1	2	749	99	125	2	73
154	35	564	3	3	1	1	3	506	33	61	0	35
155	22	616	151	118	157	31	51	324	53	57	175	20
156	2	905	106	81	7	82	56	763	20	12	7	0
171	94	275	157	108	1230	127	115	307	146	127	1110	111
172	146	379	87	96	619	252	160	360	66	69	687	122
173	47	39	10	110	366	59	74	203	97	178	455	50
174	209	639	105	72	270	32	56	487	173	168	232	88
175	22	841	88	107	237	133	85	757	12	12	205	17
176	64	218	37	55	526	54	86	231	88	108	478	49
177	95	466	76	116	384	107	56	397	91	112	329	56

## PM Peak Hour

Node	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
178	62	805	2	4	1	2	2	527	128	145	3	44
179	30	141	72	79	536	80	60	175	145	188	505	19
191	242	621	153	113	1011	114	90	525	114	199	994	218
192	134	756	94	95	406	124	96	654	118	110	343	97
193	72	740	202	0	820	42	0	0	0	239	541	0
194	51	957	18	0	0	0	0	731	103	68	0	29
195	115	923	0	4	0	0	2	825	138	127	1	69
196	0	1094	95	98	0	34	43	793	0	0	0	0
197	0	0	0	163	569	0	11	429	283	0	612	62
198	86	656	108	136	321	39	57	526	73	143	373	82
199	59	155	40	39	667	255	252	113	8	22	515	58

## 24-Hour Bi-Directional Traffic Volume

Index	Name	Name	Date	Total	Time - AM	Volume - AM	Time - PM	Volume - PM
4	2B - NB SH 3 N of Timbercreek Dr.xls	Northbound SH 3 north of Timbercreek Dr	5/11/2021	5,436	7:30	474	17:00	578
5	2B - SB SH 3 N of Timbercreek Dr.xls	Southbound SH 3 north of Timbercreek Dr	5/11/2021	4,474	7:30	361	15:45	509
6	3A - NB Allen Genoa Rd N of Gober St.xls	Northbound Allen Genoa Rd north of Gober St	5/11/2021	11,467	6:45	1286	16:45	761
7	3A - SB Allen Genoa Rd N of Gober St.xls	Southbound Allen Genoa Rd north of Gober St	5/11/2021	12,207	7:00	627	16:45	1500
9	3C - NB Allen Genoa Rd N of Pinnacle Way.xls	Northbound Allen Genoa Rd north of Pinnacle Way	5/12/2021	3,760	6:00	311	15:00	319
10	3C - SB Allen Genoa Rd N of Pinnacle Way.xls	Southbound Allen Genoa Rd north of Pinnacle Way	5/12/2021	3,557	6:00	284	14:45	360
12	4B - NB S Richey St S of SH 225.xls	Northbound S Richey St south of SH 225	5/11/2021	6,942	5:30	546	17:00	482
13	4B - SB S Richey St S of SH 225.xls	Southbound S Richey St south of SH 225	5/11/2021	6,857	7:00	381	16:45	730
14	5A - NB Shaver St N of Tabor St.xls	Northbound Shaver St north of Tabor St	5/11/2021	1,578	7:15	108	17:45	147
15	5A - SB Shaver St N of Tabor St.xls	Southbound Shaver St north of Tabor St	5/11/2021	2,282	7:30	137	16:30	283
16	5B - SB Shaver St N of Maverick Dr.xls	Southbound Shaver St north of Maverick Dr	5/11/2021	10,742	7:00	625	16:30	1141
17	5C - NB Main St N of Willow St.xls	Northbound Main St north of Willow St	5/11/2021	9,496	6:30	657	17:00	694
20	5E - NB Shaver St E of Broadway.xls	Northbound Shaver St east of Broadway	5/11/2021	11,737	7:00	902	17:15	966
21	5E - SB Shaver St E of Broadway.xls	Southbound Shaver St east of Broadway	5/11/2021	10,579	7:00	807	15:30	867
26	7B - NB Burke Rd S of Crenshaw Rd.xlsx	Northbound Burke Rd south of Crenshaw Rd	5/20/2021	7,100	6:45	792	14:15	693
27	7B - SB Burke Rd S of Crenshaw Rd.xlsx	Southbound Burke Rd south of Crenshaw Rd	5/20/2021	6,770	7:00	703	17:00	589
28	8A - NB Preston Rd S of SH 225.xlsx	Northbound Preston Rd south of SH 225	5/20/2021	7,287	4:30	733	15:00	464
29	8A - SB Preston Rd S of SH 225.xlsx	Southbound Preston Rd south of SH 225	5/20/2021	6,770	6:15	403	15:30	948
30	8B - NB South St N of Southmore Ave.xls	Northbound South St N of Southmore Ave	5/11/2021	8,987	7:00	596	15:45	742
31	8C - SB Preston Rd N of San Augustine Ave.xls	Southbound Preston Rd north of San Augustine Ave	5/11/2021	9,947	7:15	695	17:00	995
37	12B - NB Luella Blvd N of Venture Ln.xls	Northbound Luella Blvd north of Venture Ln	5/11/2021	2,118	7:15	169	15:15	192
38	12B - SB Luella Blvd N of Venture Ln.xls	Southbound Luella Blvd north of Venture Ln	5/11/2021	1,935	7:15	157	17:00	196
42	14B - NB Independence Pkwy N of Pasadena Freew	Northbound Independence Pkwy north of Pasadena F	5/12/2021	11,989	5:15	1160	14:15	688
43	14B - SB Independence Pkwy N of Pasadena Freew	Southbound Independence Pkwy north of Pasadena F	5/12/2021	7,913	9:15	518	15:15	1102
55	19B - NB Genoa Red Bluff Rd S of Fairmont Pkwy.xls	Northbound Genoa Red Bluff Rd south of Fairmont Pk	5/12/2021	7,469	6:15	674	14:30	613
56	19B - SB Genoa Red Bluff Rd S of Fairmont Pkwy.xls	Southbound Genoa Red Bluff Rd south of Fairmont Pk	5/12/2021	7,970	6:00	677	15:30	864
57	20A - NB Red Bluff Rd S of Jackson Ave.xls	Northbound Red Bluff Rd south of Jackson Ave	5/11/2021	7,033	6:30	563	17:00	578
58	20A - SB Red Bluff Rd S of Jackson Ave.xls	Southbound Red Bluff Rd south of Jackson Ave	5/11/2021	7,216	7:00	457	17:00	708
61	20C - NB Red Bluff Rd S of Creekside Ln.xls	Northbound Red Bluff Rd south of Creekside Ln	5/11/2021	7,017	7:15	503	16:30	889
62	20C - SB Red Bluff Rd S of Creekside Ln.xls	Southbound Red Bluff Rd south of Creekside Ln	5/11/2021	7,125	7:15	604	16:15	674
67	23A - EB Southmore Ave E of Scarborough Ln.xls	Eastbound Southmore Ave east of Scarborough Ln	5/11/2021	6,511	7:15	377	17:00	637
68	23A - WB Southmore Ave E of Scarborough Ln.xls	Westbound Southmore Ave east of Scarborough Ln	5/11/2021	5,661	7:00	517	17:00	414
75	24C - EB L St W of Lomax School Rd.xls	Eastbound L St west of Lomax School Rd	5/12/2021	2,497	5:45	207	15:15	234
76	24C - WB L St W of Lomax School Rd.xls	Westbound L St west of Lomax School Rd	5/12/2021	2,459	6:15	263	15:30	298
86	27B - EB Fairmont Pkwy W of Red Bluff Rd.xlsx	Eastbound Fairmont Pkwy west of Red Bluff Rd	5/20/2021	11,678	7:15	831	16:30	920
87	27B - WB Fairmont Pkwy W of Red Bluff Rd.xlsx	Westbound Fairmont Pkwy west of Red Bluff Rd	5/20/2021	11,905	11:30	799	16:30	1432