



**APPENDIX E —
RIDERSHIP AND
TRAFFIC OPERATIONS MEMO**

**Blue Line/Bus Rapid
Transit to Elk Grove**
Implementation Plan

**Ridership and Traffic
Operations Analysis**

January 2026





To: Kaley Lyons, City of Elk Grove

From: Mehul Champaneri, PTP, RSP1, Adam Dankberg, PE, Pedro Cortes, Kimley-Horn

Re: Elk Grove BRT-LRT Ridership and Traffic Operations Analysis

Date: January 26, 2026

The purpose of this memorandum is to document the ridership demand and traffic operations analysis completed as part of the current Blue Line/Bus Rapid Transit to Elk Grove Implementation Plan (Plan). This analysis aims to evaluate the effect of the build alternatives on overall traffic circulation and forecast ridership projections. By examining these factors, we aim to provide detailed insights into how different alternative scenarios might impact transportation efficiency and public transit usage within the project area.

Project Description

The Plan is advancing previous planning to bring high quality rapid transit from the Sacramento Regional Transit (SacRT) Blue Line's existing southern terminus at Cosumnes River College (CRC) to the City of Elk Grove. The project corridor consists of Bruceville Road from the current Blue Line terminus at Cosumnes River College to Big Horn Boulevard and then Big Horn Boulevard to Bilby Road. It then extends to the Livable Employment Area (LEA) and the Lotz Parkway/Kammerer Road area. This Plan will identify feasible LRT and BRT options within the defined alignment, identify station locations, advance station area visioning, evaluate alternatives, and identify an implementation plan for advancing high-capacity transit in this corridor. The Plan will inform the City and SacRT about the feasibility of LRT and BRT in this corridor, potential competitiveness for funding, and steps to consider to advance a high-capacity transit project towards design and construction.

Project Alternatives

As part of its previous planning efforts, the City of Elk Grove has identified a preferred transit corridor for the Blue Line extension to Elk Grove through the *2003 General Plan (and 2019 General Plan Update)*, the *2009 Fixed Transit Alignment Study*, and the *2016 Conceptual Layout for Potential Alignment*. Building on this foundation, five new detailed modal alternatives were developed, informed by geometric standards, current population and employment patterns, the current mobility landscape, available right-of-way, and evolving travel demand characteristics. Each alignment offers a distinct approach to meeting the City's transit needs and improving regional connectivity. Four alternatives include LRT and one includes BRT, with variations in total corridor length, number of stations, and configuration as either side-running or center-running. The project alternatives are described below.



Alternative 1:

- Extends light rail service 3.6 miles from Cosumnes River College (CRC) to District 56.
- Light rail operates every 15 minutes throughout the day.
- Adds **three new light rail stations** in the City of Elk Grove.
- Light rail alignment:
 - Continues on the **west side of Bruceville Road** south of CRC to Calvine Road.
 - Transitions to **center-running** on Bruceville Road
 - Turns onto Big Horn Boulevard and continues center-running.
 - Shifts to the **east side of Big Horn Boulevard** from Red Elk Drive to District 56.
- South of District 56:
 - A **new Rapid Bus** operates in **mixed traffic** from District 56 to Kammerer Road, with stops along the way.
 - Rapid Bus is **timed to meet each light rail train** at District 56, every 15 minutes during the day.



Figure 1. Proposed Alternative 1



Alternative 2:

- Extends light rail service 6.4 miles from Cosumnes River College (CRC) to Kammerer Road.
- Light rail operates every 15 minutes throughout the day.
- Adds seven new light rail stations in the City of Elk Grove.
- Light rail alignment:
 - Continues on the west side of Bruceville Road south of CRC to near Elk Grove Creek.
 - Shifts to the east side of Bruceville Road to connect with Big Horn Boulevard.
 - Operates on the north/east side of Big Horn Boulevard from Bruceville Road to Bilby Road.
 - Continues along future, not yet constructed streets between Bilby Road and Kammerer Road.



Figure 2. Proposed Alternative 2



Alternative 3:

- Implements 7.4 miles of Bus Rapid Transit (BRT) service from Cosumnes River College (CRC) to near Sky River Casino.
- Buses operate every 15 minutes throughout the day.
- Adds 12 new BRT stations, with 11 stations located within the City of Elk Grove.
- BRT alignment:
 - Center-running in the median of Bruceville Road and Big Horn Boulevard from CRC to Red Elk Drive.
 - Dedicated guideway on the east side of Big Horn Boulevard from Red Elk Drive to Bilby Road.
 - Operates along future, not yet constructed streets between Bilby Road and Lotz Parkway.
 - Turnaround near Sky River Casino

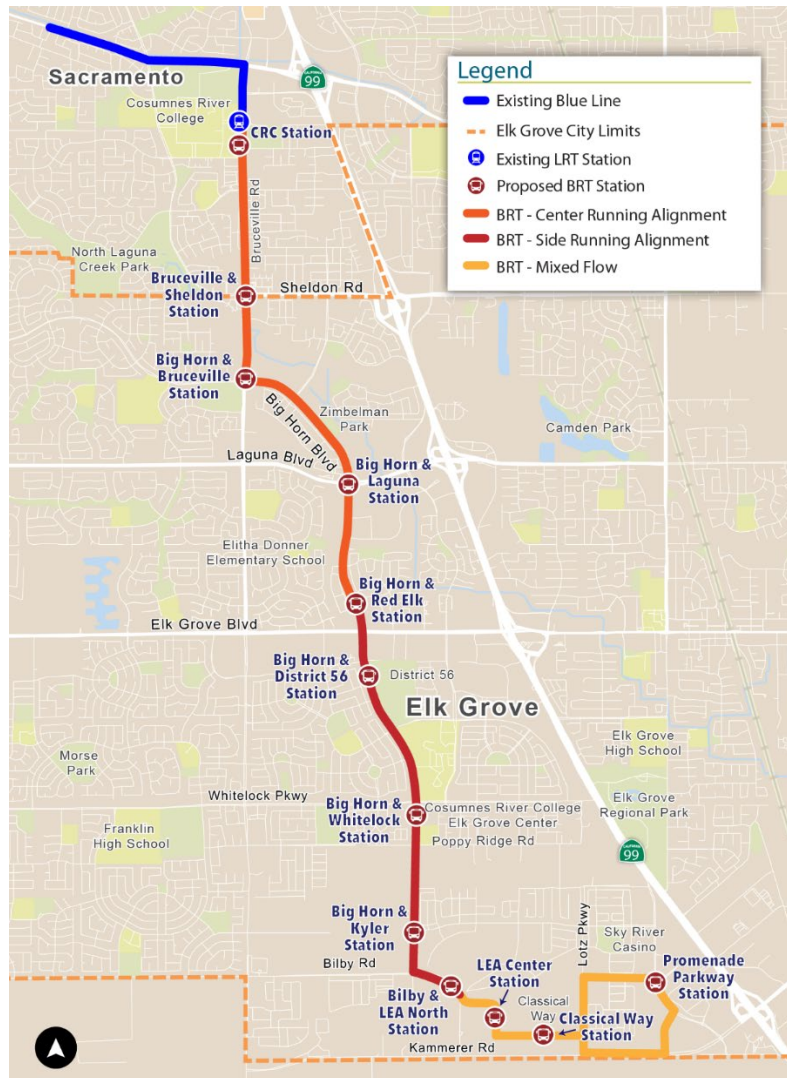


Figure 3. Proposed Alternative 3



Alternative 4:

- Extends light rail by 6.4 miles from Cosumnes River College (CRC) to Kammerer Road, similar to Alternative 2.
- Light rail operates every 15 minutes throughout the day.
- Adds seven new light rail stations in the City of Elk Grove.
- Light rail alignment:
 - Operates on the west side of Bruceville Road from CRC to Big Horn Boulevard.
 - For 1.8 mile, runs in mixed traffic lanes shared with autos on Big Horn Boulevard between Bruceville Road and Elk Grove Boulevard.
 - Shifts to the east side of Big Horn Boulevard at Civic Center Drive
 - Continues past District 56 with the same alignment to Kammerer Road as Alternative 2.



Figure 4. Proposed Alternative 4



Alternative 5:

- Extends light rail from service 1.6 miles from Cosumnes River College (CRC) to Big Horn & Bruceville intersection
- Light rail operates every 15 minutes throughout the day
- Adds one new light rail station in the City of Elk Grove
- Light rail alignment:
 - Continues on the west side of Bruceville Road south of CRC to Calvine Road
 - Transitions to center-running on Bruceville Road to Big Horn & Bruceville Station



Figure 5. Proposed Alternative 5



Ridership Demand Analysis

Travel demand modeling was conducted to estimate the ridership and traffic forecasts for project alternatives. Four of the five alternatives developed for the feasibility study were modeled to forecast ridership demand. One alternative (Alternative 4) was deemed very similar to Alternative 2 for purposes of ridership forecasting and thus a separate ridership forecast was not performed.

Travel Demand Model Overview

Average weekday ridership for the four alternatives were evaluated using a travel demand modeling process and the latest City of Elk Grove travel demand model (EGSIM). The EGSIM model is an activity-based traffic simulation model that uses assumptions regarding regional socioeconomic and transportation network characteristics to develop estimates of the amount of travel (i.e., trips) occurring between different locations in the area, the market share of each transportation mode, and the routing of these trips over the highway and transit networks. The results of this process include trips by mode and by facility, including usage of individual transit routes or stations (ridership). This model is the City's version of the SACSIM19 model developed and maintained by Sacramento Area Council of Governments (SACOG). EGSIM has a base year representing 2020 conditions. The horizon year of the model reflects the City's buildout scenario combined with SACOG 2020 MTP land use estimates outside the City limits, which has a 2040 horizon year. The model uses SACOG 2020 MTP data but refines it with more granularity within the City to better capture local planning assumptions. Although the City's horizon condition is technically unconstrained, the nomenclature of a 2040 horizon year is used for the purpose of this study, consistent with the SACOG forecast horizon.

Model Review and Refinements

A model validation process was conducted on the base year (2020) highway and transit networks to identify and rectify any coding discrepancies. This included a high-level review of the highway network link attributes such as number of lanes, facility types, and other key characteristics. Transit networks—covering regional transit services (e.g., light rail) and SacRT bus services—were also reviewed to ensure accuracy. Several SacRT local bus service routes within the City required updates to reflect current alignment, stop locations and schedule. As part of the model validation process, base year (2020) model ridership estimates were compared to the actual Blue Line and local bus services ridership data obtained for 2024 and 2025. The comparison revealed that the 2020 base year model ridership estimates were significantly higher for both bus and rail ridership than the 2024/2025 actual data observed. To address the discrepancy, the overall ridership estimates were adjusted down to align with Fall-Winter 2025 conditions, using Blue Line daily ridership estimates as a benchmark for the overall model adjustment factor. These modifications were carried forward to the horizon year (2040) model to estimate consistent ridership and traffic forecasts between the base year and horizon year models. Note that transit ridership has been increasing post-pandemic and this may be a conservative assumption as employees continue to trend back to greater time in-office.



The horizon year (2040) baseline transit network is assumed to be the same as the base year (2020) network, with one modification to add a new local bus route on Bilby Road. Significant development activity is planned along Bilby Road and included in the travel demand model, and thus it is reasonable to expect that additional service would be provided in that area, with or without the proposed project.

The proposed project alignment alternatives were incorporated into the horizon year (2040) model. Since the EGSIM does not include a dedicated BRT or Rapid Bus model function, the Rapid Bus portion of Alternative 1 and the entirety of Alternative 3 were modeled as local bus service. However, BRT, as defined in Alternative 3, would include limited stops, priority treatments, and enhanced stations that would result in a faster, more reliable, and more comfortable transit service. To reflect the ridership potential for BRT, modeled ridership was increased by 25% for the BRT in Alternative 3. This adjustment is based on recommendations from the *Bus Rapid Transit Practitioner's Guide (TCRP Report 118)*.

The model also reflects changes to the background bus network associated with the project. Local bus segments duplicative with the LRT/BRT alignment would be removed and routes modified to best connect with planned LRT/BRT Station. **Figure 6** illustrates the proposed Elk Grove bus network upon completion of the project for Alternative 1 through 4; only routes connecting to the project corridor are shown. The proposed supporting bus service network is the same for those four alternatives. These local service adjustments are reflected in the ridership results presented later in the analysis. Alternative 5 represents a one-station LRT extension from CRC to the Big Horn & Bruceville intersection. The supporting bus network developed for this alternative is in **Figure 7**.

Model runs were performed for five study scenarios:

- 2020 Base Year
- 2040 Cumulative Year No Project
- 2040 Cumulative Year Alternative 1 (LRT and Rapid Bus)
- 2040 Cumulative Year Alternative 2 (LRT)
- 2040 Cumulative Year Alternative 3 (BRT)
- 2040 Cumulative Year Alternative 5 (LRT)

As described earlier, each alternative scenario reflects different station configurations and alignments to evaluate their respective impacts on travel behavior and system performance.

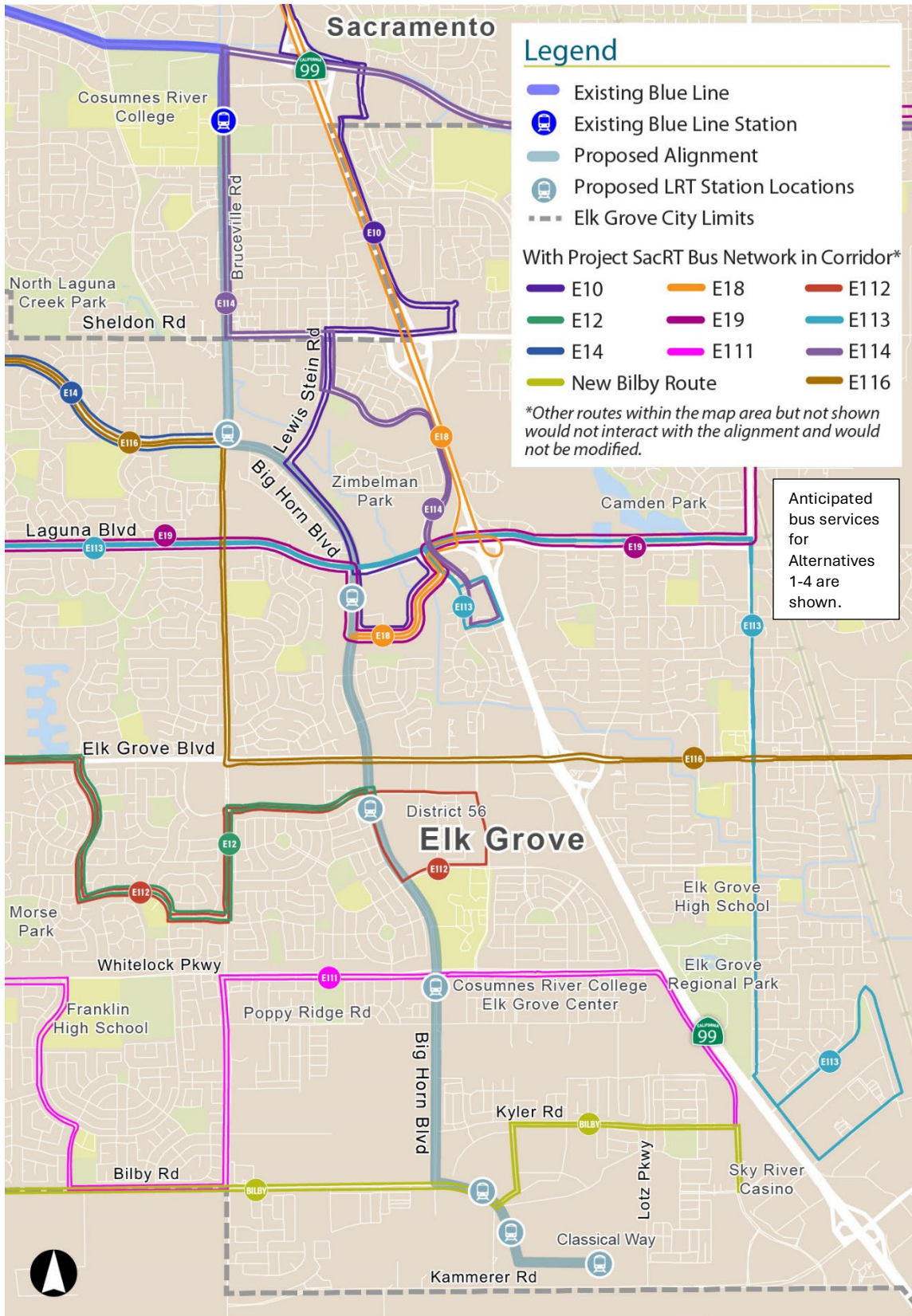


Figure 6. Anticipated Bus Services in Project Corridor for Alternatives 1 through 4

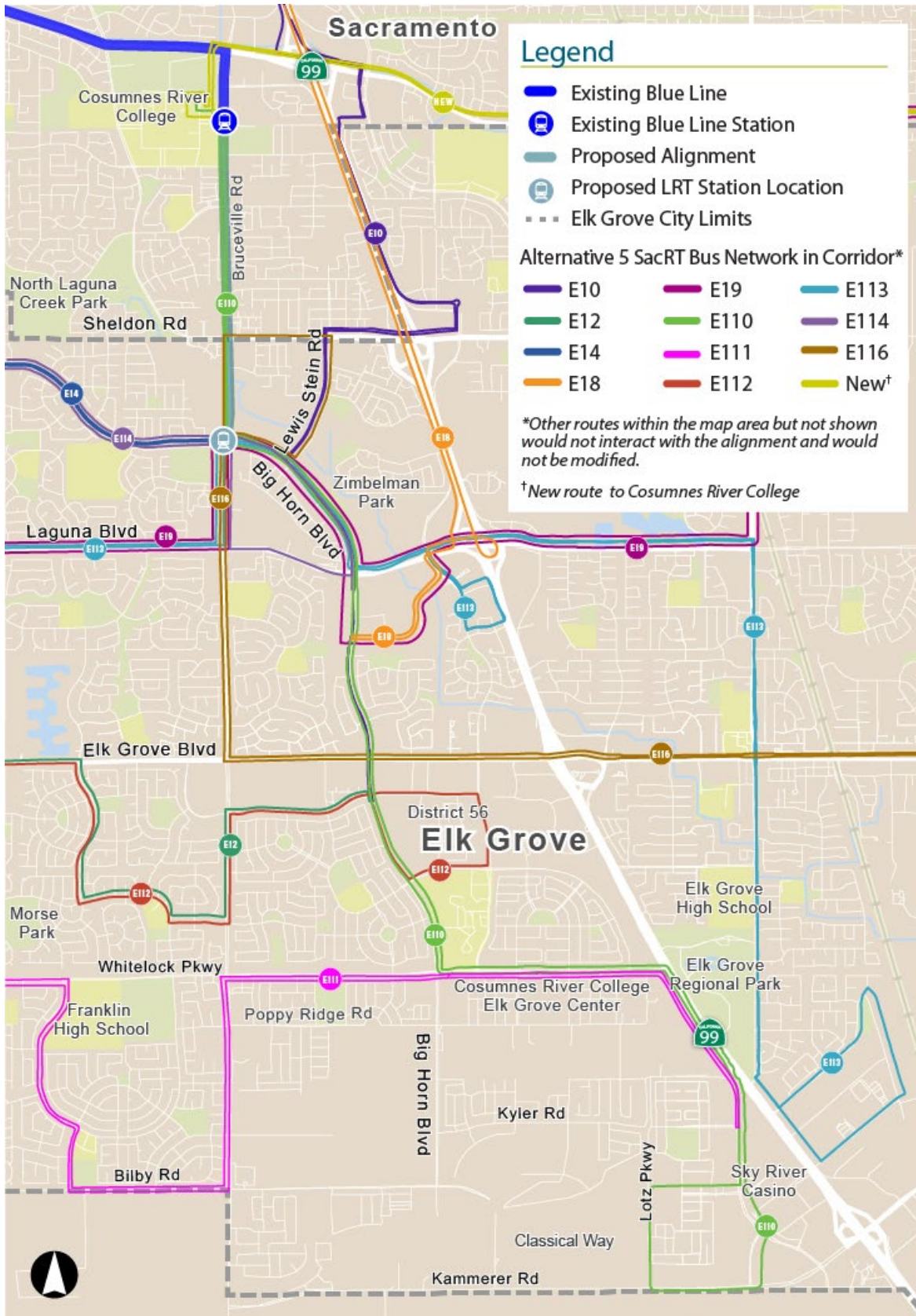


Figure 7. Anticipated Bus Services in Project Corridor for Alternative 5



Ridership Modeling Results

Average weekday travel demand forecasts were developed for each project scenario, and model results were compiled to include key ridership metrics for the project alternatives analyzed in this feasibility study. **Table 1** presents a summary of key ridership metrics.

Table 1: Ridership Projections

Metric	Cumulative No Project (2040)	Cumulative Alternative 1 (2040)	Cumulative Alternative 2 (2040)	Cumulative Alternative 3 (2040)	Cumulative Alternative 5 (2040)
Trips on Project	-	3,370	4,011	1,463	1,102
Total Daily Blue Line Boardings	14,935	17,194	17,813	15,108	15,897
Change in Total Daily Blue Line Boardings	-	+2,259	+2,878	+173	+962
Total Linked Transit Trips	87,163	88,471	89,040	87,937	87,591
Change in Total Linked Transit Trips	-	+1,309	+1,877	+774	+428
Elk Grove Linked Transit Trips	2,500	3,348	3,668	2,794	2,777
Change in Elk Grove Linked Transit Trips	-	+849	+1,168	+294	+277
Daily Corridor VMT	112,105	111,657	111,320	111,774	111,884
Change in Daily Corridor VMT	-	-448	-785	-331	-221
Daily Model-wide VMT	77,356,550	77,354,508	77,350,614	77,352,998	77,352,998
Change in Daily Model-wide VMT	-	-2,042	-5,935	-1,509	-1,010

Note: Alternative 4 ridership projections are assumed to be generally similar to Alternative 2 projections.



As shown in **Table 1**, Alternative 2 (LRT) results in the greatest increase in total Blue Line boardings and total increase in linked transit trips. The total increase in linked transit trips is less than the number of trips on the project as some trips would shift from taking bus or bus and rail to rail only, and thus would benefit from a faster or more convenient trip with the project but would not be a new transit trip. All four modeled project alternatives would reduce corridor and regional VMT relative to the No Project scenario. Daily boardings by station were also compiled for each alternative and are presented in **Table 2**.

Table 2: Daily Boardings by Station

Station	Cumulative No Project (2040)	Cumulative Alternative 1 (2040)	Cumulative Alternative 2 (2040)	Cumulative Alternative 3 (2040)	Cumulative Alternative 5 (2040)
CRC/Bruceville	1,028	910	929	1,617	627
Bruceville/Sheldon	-	-	-	27	-
Big Horn/Bruceville	-	617	610	125	526
Big Horn/Generations	-	-	-	74	-
Big Horn/Laguna	-	390	391	133	-
Big Horn/Red Elk	-	-	-	82	-
Big Horn/District 56	-	837	561	128	-
Big Horn/Whitelock	-	-	286	79	-
Big Horn/Kyler	-	-	-	37	-
Bilby/LEA North	-	-	137	62	-
LEA Center	-	-	66	46	-
Classical	-	-	312	26	-
Sky River Casino	-	-	-	74	-

Notes: A “-” indicates that station not provided in indicated alternative. Alternative 4 ridership projections are assumed to be generally similar to Alternative 2 projections.

With the addition of the project, riders would shift from local bus to the new LRT or BRT service. This will result in a decrease in local bus boardings. Total boarding results for the local bus routes are presented in **Appendix A**.



Traffic Operations Analysis

Traffic operations analysis was conducted for three of the four LRT alternatives —Alternatives 1, 2, and 4. The operations analysis incorporates the geometric changes associated with each alternative as well as the change to signal operations, including the provision of transit signal priority. Operational performance for Alternative 3 would be substantially the same as Alternative 1 north of District 56 and Alternative 2 south of District 56. Operational performance for Alternative 5 would be generally similar to Alternative 1 along Bruceville Road, although may have somewhat higher traffic volumes due to lower ridership on the Project and thus less mode shift.

Study Intersections

This analysis was completed for the following study intersections:

1. Bruceville Road at Calvine Road
2. Bruceville Road at Sheldon Road
- 2a. New Signal between Sheldon Road and Bruceville Road (Alt 2 only)
3. Big Horn Boulevard at Bruceville Road
4. Big Horn Boulevard at Generations Drive
5. Big Horn Boulevard at Laguna Boulevard
6. Big Horn Boulevard at Red Elk Drive
7. Big Horn Boulevard at Elk Grove Boulevard
8. Big Horn Boulevard at Civic Center Drive
9. Big Horn Boulevard at Whitelock Boulevard
10. Big Horn Boulevard at Bilby Road

While this does not include all intersections, including signalized intersections, within the study area, it does include both the largest intersections along the corridor and those with the greatest geometric change with the project.

Traffic Operations Analysis Methodology

Intersection Analysis

While level of service (LOS) has traditionally been used in evaluating intersection performance, the City of Elk Grove employs a Performance Target system instead. Under this approach, intersections are designed to meet a capacity and delay threshold rather than a fixed LOS rating. Actual performance at individual intersections may vary above or below the target based upon a number of factors (e.g., location, land use context, available right-of-way, improvements construction cost, and maintenance cost). The City's Intersection Performance Targets are summarized in **Table 3**.



Table 3: Intersection Performance Targets

Intersection Control	Delay (seconds)
Stop (Side-Street & All-Way)	< 35.1
Signal	< 55.1
Roundabout	< 35.1

The intersection of Bruceville Road at Calvine Road is within the City of Sacramento jurisdiction. The City of Sacramento does not have delay or LOS thresholds.

Data Collection

To establish Existing (2024) conditions, the following data was collected for each study intersection:

- Weekday intersection turning movement counts were collected in 2024, including passenger vehicles, heavy vehicles, pedestrian and bicycles.
- Signal timing and coordination plans.

Traffic Operations Analysis

Traffic operations at the study intersections were evaluated using the VISSIM traffic simulation software, which models interactions between intersections, including queue spillback, vehicle platooning, and other characteristics. The software accounts for activity of vehicles, bicycles, pedestrians and transit vehicles. The analysis was performed for a typical weekday during the AM and PM peak commute hours. An Existing Conditions VISSIM model was developed to validate and calibrate simulation performance for the study area. This validation model is served as the foundation for analyzing horizon year (2040) conditions.

The traffic volumes anticipated in the Cumulative (2040) conditions were developed using the EGSIM Travel Demand Model, as described in the previous section. Proposed alignments for the project alternatives, along with modification to the existing bus routes, were incorporated into the model. The model volumes were post-processed by applying a 20-year model growth factor to the existing counts, and future intersection turning movement volumes were derived for each Cumulative alternative. Peak-hour traffic volumes, lane geometry and traffic control for both Existing (2024) and Cumulative (2040) conditions are presented in **Appendix B**.

The Alternative 1, Alternative 2 and Alternative 4 VISSIM models were developed with LRT alignment coded into the study intersections with appropriate changes to signal operations and lane configurations where applicable.

The intersection results for the AM and PM peak-hour analysis across all study scenarios are summarized in **Table 4**. Under Existing (2024) conditions, all study intersections operate within the



City's Intersection Performance Targets. Under Cumulative No Project conditions, all intersections continue to meet the City's performance targets except for Intersection #2 (Bruceville Road at Sheldon Road, both peak hours) and Intersection #3 (Big Horn Boulevard at Bruceville Road, PM Peak Hour only). Operations are similar between Cumulative No Project and the three modeled Build alternatives. No additional intersections would fail to meet the City's performance targets under any Build alternative. Intersection #3 is anticipated to experience slightly higher delays under the Build alternatives compared to no project alternative, particularly in the AM peak hour where it would not meet the performance target in the AM peak hour with Alternatives 2 and 4. Alternative 4 notably has higher delay than both Cumulative No Project and the other Build alternatives at several intersections within the in-lane running segment, including Intersection #5 (Big Horn Boulevard at Laguna Boulevard) and Intersection #8 (Big Horn Boulevard at Civic Center Drive). However, no additional intersections would fall below the City's performance target.



Table 4: Intersection Traffic Analysis Results

ID	Intersection	Peak Hour	Performance Target (Delay, in seconds)	Control	Existing (2024)	Cumulative No Project (2040)	Cumulative Alternative 1 (2040)	Cumulative Alternative 2 (2040)	Cumulative Alternative 4 (2040)
					Delay (sec)	Delay (sec)	Delay (sec)	Delay (sec)	Delay (sec)
1	Bruceville Rd at Calvin Rd	AM	-	Signal	13.2	13.5	15.9	13.4	13.2
		PM			12.6	12.5	16.1	12.0	12.2
2	Bruceville Rd at Sheldon Rd	AM	55.1	Signal	36.9	67.5	71.9	65.8	65.7
		PM			45.2	106.1	89.2	88.1	89.6
2a	Crossover between Sheldon Rd and Bruceville Rd	AM	55.1	Signal	-	-	-	21.2	-
		PM			-	-	-	52.4	-
3	Big Horn Blvd at Bruceville Rd	AM	55.1	Signal	34.7	48.8	56.9	48.9	56.3
		PM			41.1	60.3	66.8	61.1	65.0
4	Big Horn at Generations Dr	AM	35.1/55.1	SSSC/Signal *	0.5(10.7 EBL)	0.5(11.0 EBR)	6.7	7.1	8.9
		PM			0.5(12.2 EBL)	0.5(16.5 EBL)	11.7	12.9	13.1
5	Big Horn Blvd at Laguna Blvd	AM	55.1	Signal	29.7	33.8	34.4	38.3	37.9
		PM			30.7	33.8	34.8	39.4	44.6
6	Big Horn Blvd at Red Elk Dr	AM	35.1/55.1	SSSC/Signal **	1.6(21.1 WBL)	8.8	8.7	7.3	6.7
		PM			1.2(20.4 WBL)	8.9	8.9	7.9	7.0
7	Big Horn Blvd at Elk Grove Blvd	AM	55.1	Signal	36.2	42.6	49.6	48.9	52.2
		PM			37.0	43.9	49.2	49.6	50.2
8	Big Horn Blvd at Civic Center Dr	AM	55.1	Signal	20.9	29.0	31.5	31.1	34.9
		PM			22.2	32.0	36.6	37.2	41.6
9	Big Horn Blvd at Whitelock Blvd	AM	55.1	Signal	33.9	50.2	50.8	53.3	53.6
		PM			25.9	34.2	35.5	38.6	38.2
10	Big Horn Blvd at Bilby Rd	AM	55.1	Signal	15.3	37.1	36.5	36.2	36.2
		PM			12.5	42.3	43.5	42.8	42.3

Notes: **Bold** represents deficient operations. Side Street Stop Controlled (SSSC) reported as intersection delay followed by worst approach delay.

* Signalized intersection under Cumulative With Project conditions. ** Signalized intersection under all Cumulative conditions.

Intersection 1 is within City of Sacramento which does not have Delay or LOS standards.

Vehicle queuing for the study intersections was evaluated for both Existing (2024) and Cumulative (2040) conditions. The results are summarized in **Appendix C**. Average and maximum queue lengths were compared to the proposed vehicle storage lengths to determine whether queues would exceed available storage. Based on the traffic model results, none of the average queues under Existing (2024) conditions exceed the available vehicle storage.

Under the Cumulative (2040) No Project scenario, northbound right-turn and westbound right-turn queues at Intersection #2 (Bruceville Road at Sheldon Road) are anticipated to exceed the available storage capacity. Under all the project alternatives, northbound queues at Intersection #2 are projected to increase significantly due to the reduction of a northbound through lane to



accommodate the LRT alignment. Removing a northbound through lane will increase congestion for the northbound through movement, which in turn will cause the northbound right turn queue to grow due to the increased congestion. Also, some of the vehicles in the northbound direction waiting to turn right will not get to the turn pocket until through traffic is cleared. Signal optimization was tested with different cycle lengths, however, as the signal is already projected to operate beyond City's delay threshold under the no project scenario with significant queues, the northbound queues would be unavoidable with the lane reduction under the project alternatives. Future project design phases may further evaluate traffic mitigation opportunities at this intersection, including the trade-offs of additional roadway widening to maintain the third northbound lane. None of the project alternatives substantially affect queuing for the westbound approach at this intersection.

Additionally, queues at Intersection #3 (Bruceville Road at Big Horn Boulevard) are anticipated to exceed the available storage under Cumulative No Project and all three LRT Alternatives in the northbound, southbound, and westbound approaches. A southbound right-turn lane was added as part of each of the Project alternatives to alleviate some of these queues. Alternative 2 has the least effect on queuing at this intersection as the LRT crosses Bruceville Road north of the intersection and does not affect intersection operations at this location; however, there is still some affect for the westbound approach due to queue spillback from the new signalized intersection for the LRT crossover north of the intersection. Alternatives 1 and 4 have a larger effect on queuing at this intersection, with queue increases in the westbound and northbound directions due to the LRT passing through the middle of the intersection and limiting vehicle phases during that crossing.

Average travel times for the LRT segments were derived from VISSIM model outputs, based on the peak direction and peak period. LRT travel times for the CRC to District 56 and District 56 to LEA North stations were derived from the model outputs. The LRT segment south of the LEA North Station is in an exclusive guideway and was based on anticipated operating speeds in that segment. Travel times shown in **Table 5** represent an average of AM and PM peak periods and both directions of travel

Table 5: Forecast Blue Line Average Travel Times

Segment	Alternative 1 (minutes)	Alternative 2 (minutes)	Alternative 4 (minutes, SB/NB)
From CRC to District 56	10.7	9.6	12.2
From District 56 to LEA North	-	5.1	5.1
From LEA North to Classical	-	2.6	2.6



Conclusions

This memorandum presents the travel demand ridership and traffic analysis results for the proposed Elk Grove Blue Line/Bus Rapid Transit to Elk Grove Implementation Plan. The following are key findings from the results:

- **Daily Ridership on Project Corridor:** The number of daily trips on the project would range from 1,102 (Alternative 5) to 4,011 (Alternative 2).
- **Total Linked Transit Trips:** All project alternatives would increase total daily linked transit trips by between 428 (Alternative 5) and 1,877 (Alternative 2).
- **Vehicle Miles Traveled:** All proposed alternatives would decrease daily VMT by between 1,010 miles (Alternative 5) and 5,935 miles (Alternative 2).
- **Intersection Performance:** All intersections except two, the intersection of Bruceville Road and Sheldon Road and Big Horn Boulevard and Bruceville Road, would remain operating at an acceptable level of auto delay or would not experience an increase in auto delay with all Build alternatives. Delay at the Sheldon Road intersection would generally improve with all Build alternatives, although Alternative 1 would result in a delay increase with the project of up to five seconds during the AM peak hour only. Average vehicle delay at the Big Horn Boulevard and Bruceville Road intersection would increase with all Build alternatives, although the increase would not exceed nine seconds for any alternative in either peak hour.
- **Intersection Queues:** The northbound auto queues at the intersection of Bruceville Road and Sheldon Road are anticipated to be significantly higher compared to the no project scenario and exceed the available vehicle storage due to the reduction of a northbound through lane at this intersection under each of the Build alternatives. Future project design phases may further evaluate traffic mitigation opportunities at this intersection, including the trade-offs of additional roadway widening to maintain the third northbound lane. Westbound and northbound auto queues are anticipated to be higher with each of the Build alternatives at the intersection of Bruceville Road and Big Horn Boulevard, particularly with Alternatives 1 and 4. Further study to assess opportunities to optimize signal timing is recommended for future project phases.



Appendices



Appendix A

Elk Grove Local Bus Route Boardings

Bus Route	Cumulative No Project (2040)	Cumulative Alternative 1 (2040)	Cumulative Alternative 2 (2040)	Cumulative Alternative 3 (2040)	Cumulative Alternative 5 (2040)
ROUTE 10*	36	22	21	33	89
ROUTE 110**	517	-	-	-	1,532
ROUTE 111*	121	80	84	96	346
ROUTE 112	176	178	102	158	440
ROUTE 113	255	251	196	343	916
ROUTE 114*	421	159	161	209	768
ROUTE 115	266	227	228	265	707
ROUTE 116*	394	287	280	331	682
ROUTE 11	601	484	387	602	1,625
ROUTE 12	292	216	188	287	769
ROUTE 13	24	7	7	25	61
ROUTE 14	77	73	74	90	205
ROUTE 15	171	157	159	164	442
ROUTE 16	214	194	182	235	539
ROUTE 17	14	18	17	17	36
ROUTE 18	7	5	4	9	16
ROUTE 19	134	113	111	132	369
New Bilby Route	64	34	39	53	159
Alt1 Rapid Bus	-	129	-	-	-
Total Local Bus	3,783	2,633	2,237	3,048	9,699

Notes: * Local bus route modified as part of the project to divert ridership to the proposed LRT/BRT extension. ** Route 110 removed as part of the project.



Appendix B

Intersection LOS and Queuing Results

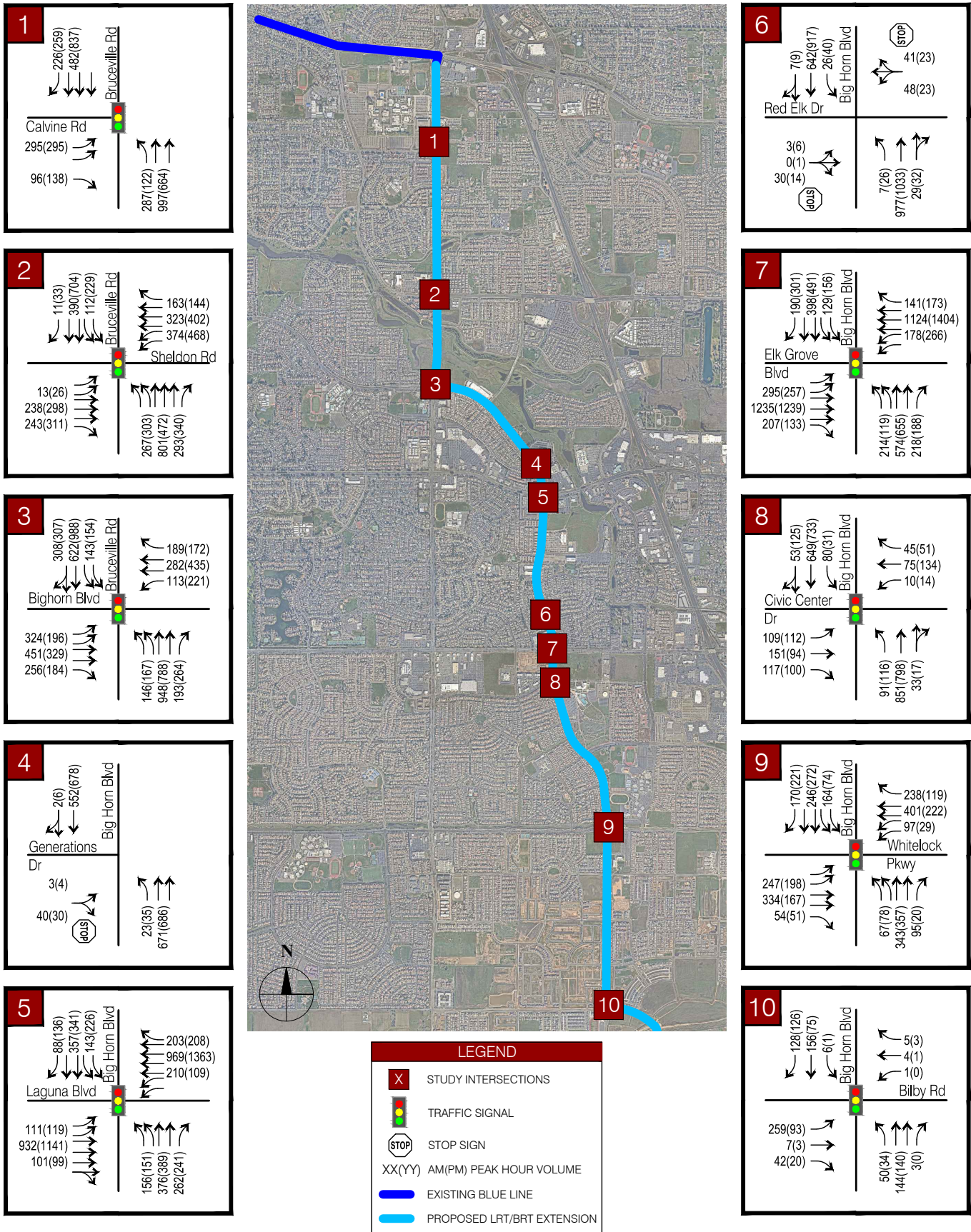
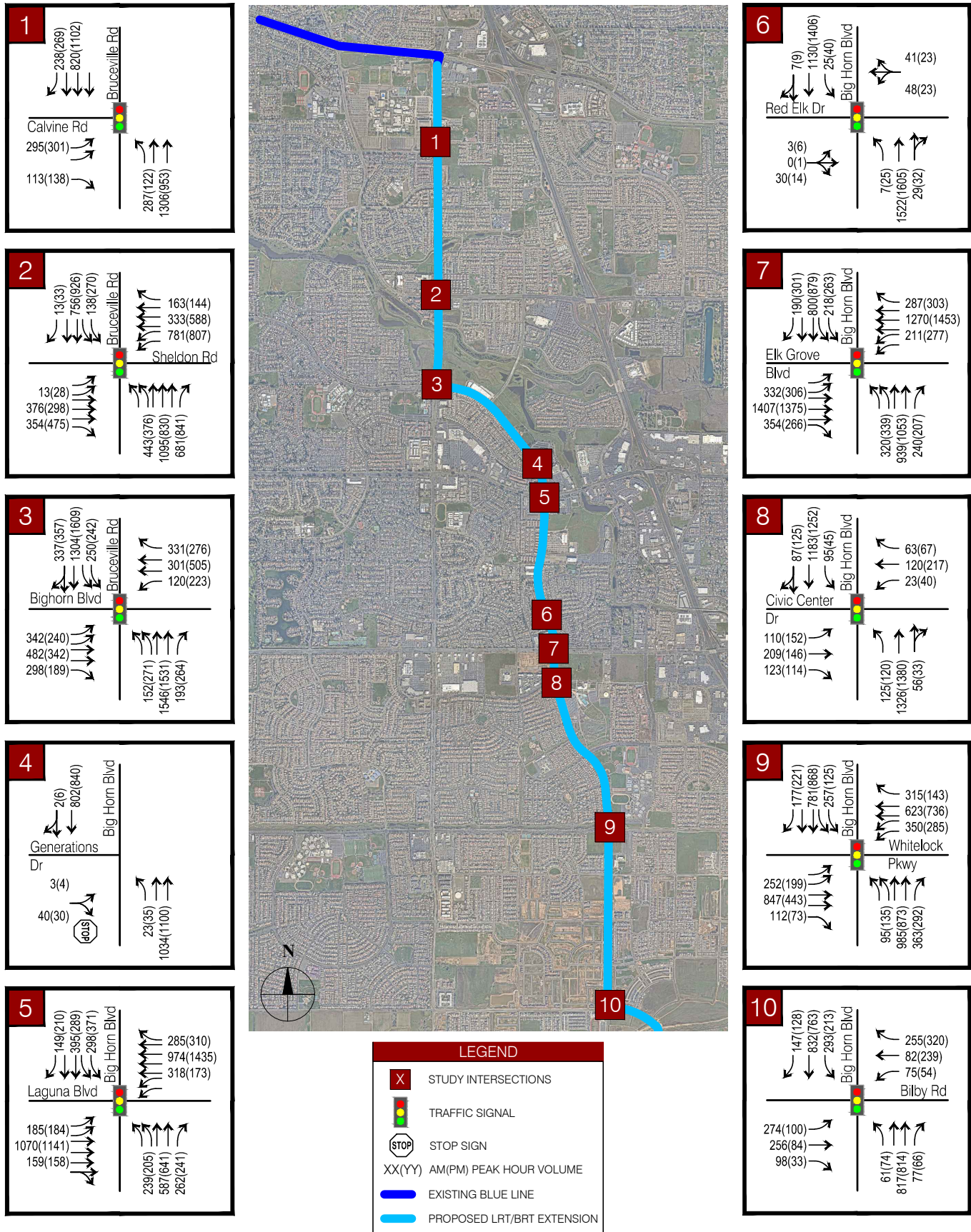
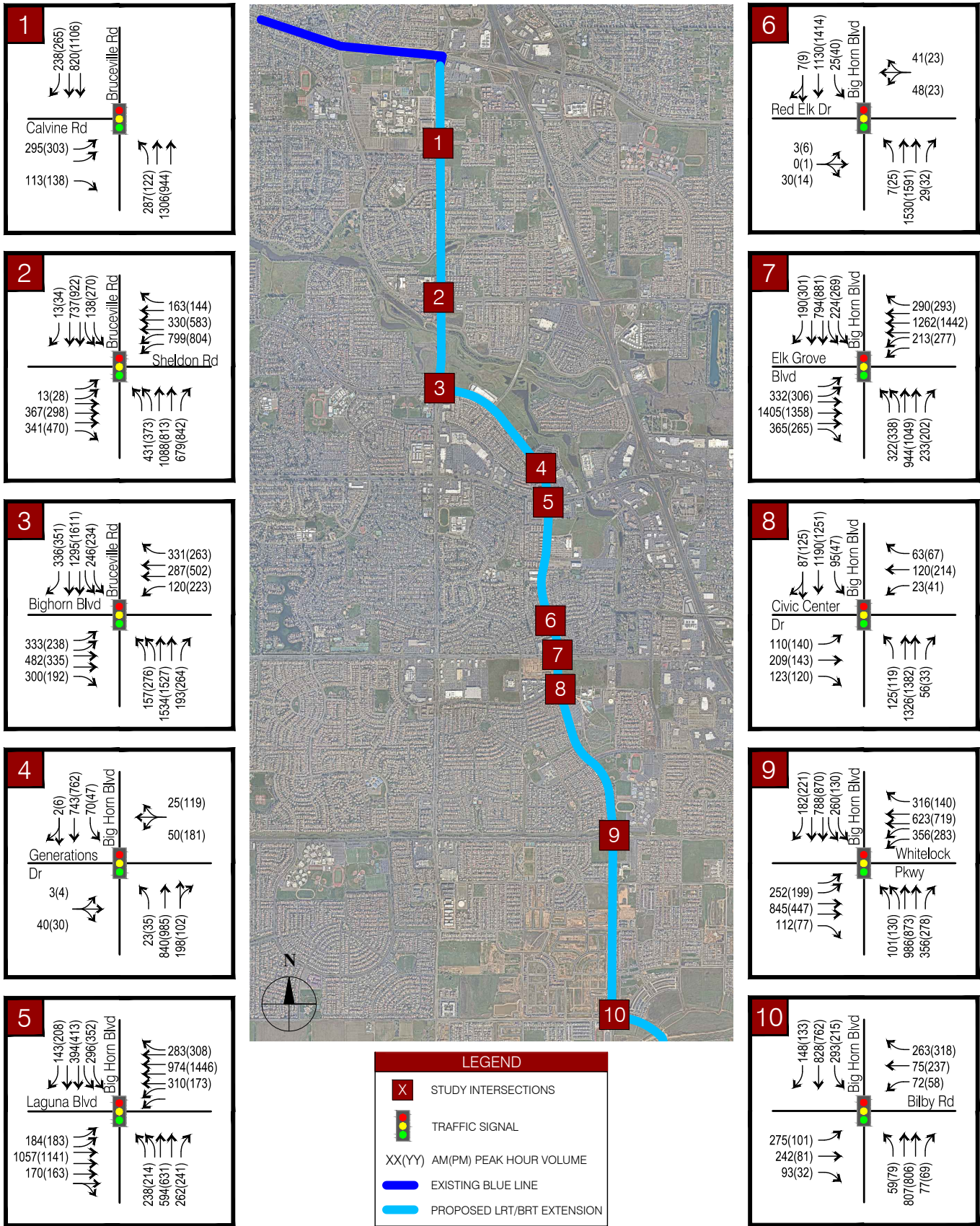
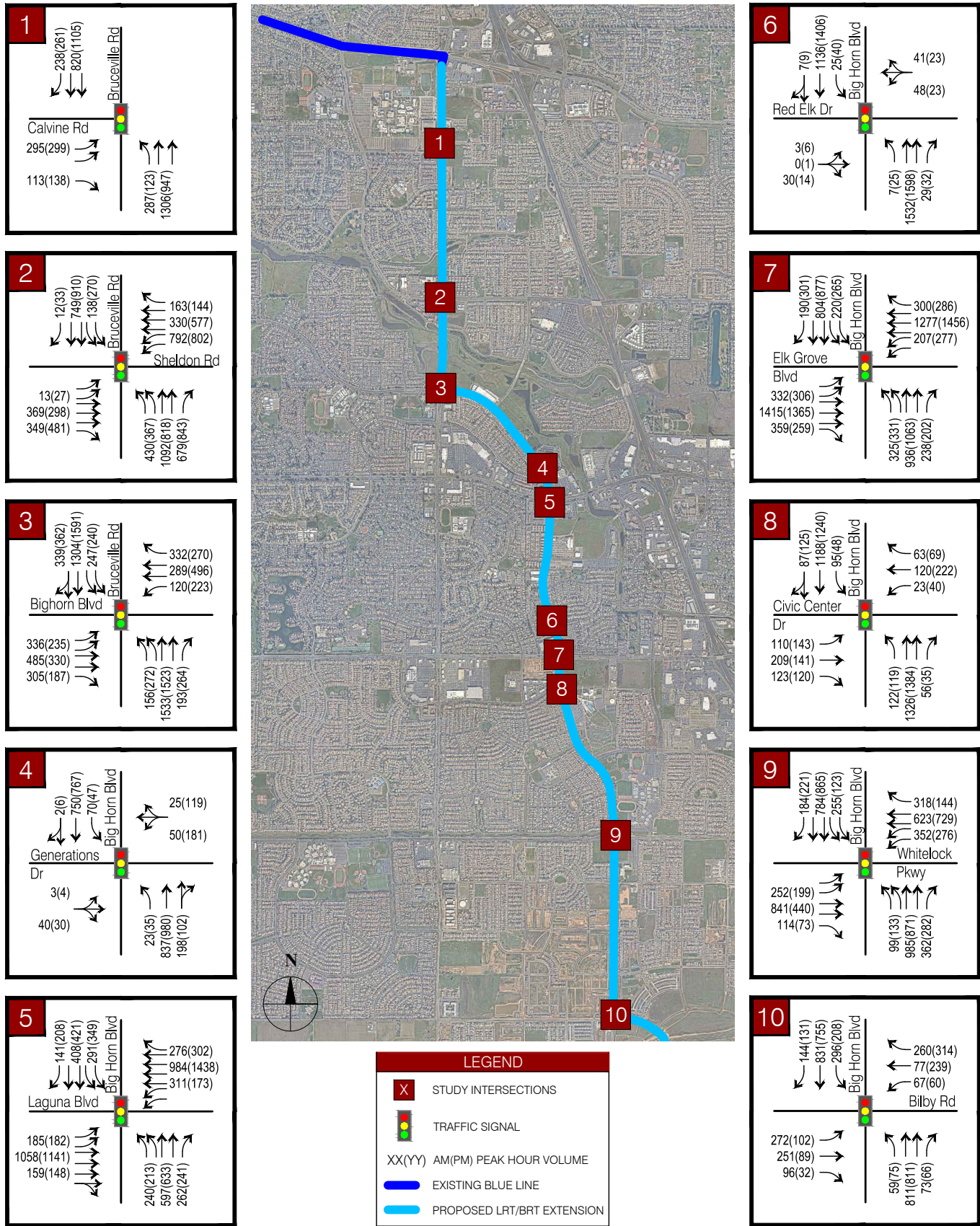


FIGURE 1
 EXISTING STUDY VOLUMES
 ELK GROVE BRT-LRT









Appendix C

Intersection LOS and Queuing Results

Existing

AM Peak Hour Results

Intersection	Approach	Turning Movement	QLEN	QLENMAX	Storage Length	Volume (Vehicles)	Delay (veh/sec)	Approach Volume	Approach Delay (sec/veh)	Approach LOS	Average Queue Length	Maximum Queue Length
Bruceville Rd & Calvine Rd	NB	NBL	37.6	231.5	180.0	291.0	24.9	1,278	11.3	B	38	232
		NBT	16.2	181.8		987.0	7.3					
		NBR										
	SB	SBL						713	14.2	B	18	136
		SBT	18.2	109.9		492.0	17.5					
		SBR	6.6	136.4	150.0	221.0	6.8					
	EB	EBL	22.7	168.3	95.0	299.0	21.4	399	17.4	B	23	168
		EBT										
		EBR	4.9	104.6	95.0	100.0	5.5					
Overall Intersection								2,390	13.2	B		
Bruceville Rd & Sheldon Rd	NB	NBL	49.9	181.4	360.0	271.0	53.8	1,360	39.2	D	66	297
		NBT	66.5	248.0		802.0	36.8					
		NBR	45.3	296.7	175.0	287.0	31.9					
	SB	SBL	26.4	116.9	255.0	111.0	52.1	522	41.1	D	46	209
		SBT	45.9	208.9		402.0	38.2					
		SBR	1.2	35.4	255.0	9.0	29.7					
	EB	EBL	3.3	39.5	280.0	11.0	61.7	500	30.5	C	34	244
		EBT	23.8	128.1		244.0	31.8					
		EBR	34.4	243.9	450.0	245.0	27.9					
	WB	WBL	70.4	247.8	740.0	371.0	55.8	867	34.5	C	70	248
		WBT	20.1	136.1		327.0	21.0					
		WBR	10.8	153.7	325.0	169.0	13.7					
Overall Intersection								3,249	36.9	D		
Big Horn Blvd & Bruceville Rd	NB	NBL	27.1	115.1	375.0	148.0	48.2	1,298	32.9	C	107	446
		NBT	107.3	445.9		950.0	35.9					
		NBR	10.4	140.1	200.0	200.0	7.3					
	SB	SBL	28.0	118.2	370.0	147.0	49.9	1,084	41.1	D	120	508
		SBT	119.8	507.9		633.0	40.4					
		SBR	119.8	507.9		304.0	38.1					
	EB	EBL	52.5	167.6	145.0	327.0	50.7	1,042	33.1	C	77	309
		EBT	48.7	267.4		455.0	34.4					
		EBR	77.1	309.2		260.0	8.4					
	WB	WBL	30.8	179.4	195.0	111.0	49.0	588	30.1	C	31	179
		WBT	31.3	156.8		288.0	35.1					
		WBR	15.6	143.0	150.0	189.0	11.5					
Overall Intersection								4,012	34.7	C		
Big Horn Blvd & Laguna Blvd	NB	NBL	29.3	119.3	175.0	152.0	50.5	798	29.5	C	42	224
		NBT	41.7	223.6		377.0	37.2					
		NBR	12.3	131.8	175.0	269.0	6.9					
	SB	SBL	26.8	111.1	175.0	139.0	50.8	586	35.6	D	40	195
		SBT	40.2	195.5		356.0	37.3					
		SBR	3.3	71.9	175.0	91.0	5.5					
	EB	EBL	25.4	106.8	265.0	117.0	47.5	1,157	29.7	C	67	261
		EBT	50.3	233.8		940.0	29.1					
		EBR	66.7	261.5		100.0	14.7					
	WB	WBL	41.8	164.8	250.0	208.0	51.1	1,387	27.4	C	43	193
		WBT	42.8	193.2		976.0	26.8					
		WBR	7.7	120.4	175.0	203.0	6.2					
Overall Intersection								3,928	29.7	C		
Big Horn Blvd & Elk Grove Blvd	NB	NBL	42.5	170.5	275.0	211.0	59.7	1,015	40.6	D	77	389
		NBT	77.0	388.5		574.0	44.0					
		NBR	20.0	236.5	190.0	230.0	14.5					
	SB	SBL	27.3	115.1	220.0	127.0	57.0	704	37.0	D	52	287
		SBT	51.7	287.1		393.0	43.5					
		SBR	10.2	129.7	140.0	184.0	9.5					
	EB	EBL	60.2	231.7	335.0	277.0	58.5	1,716	34.9	C	91	459
		EBT	91.2	458.8		1,238.0	33.7					
		EBR	8.8	115.0	165.0	201.0	9.6					
	WB	WBL	36.6	147.9	425.0	176.0	55.8	1,432	34.2	C	79	365
		WBT	79.3	364.6		1,113.0	34.0					
		WBR	6.8	103.1	190.0	143.0	9.5					
Overall Intersection								4,867	36.2	D		

AM Peak Hour Results

Intersection	Approach	Turning Movement	QLEN	QLENMAX	Storage Length	Volume (Vehicles)	Delay (veh/sec)	Approach Volume	Approach Delay (sec/veh)	Approach LOS	Average Queue Length	Maximum Queue Length
Big Horn Blvd & Whitelock Blvd	NB	NBL	16.6	79.5	175.0	63.0	60.4	495	36.0	D	41	216
		NBT	40.8	215.8		340.0	39.6					
		NBR	4.1	91.4	300.0	92.0	6.3					
	SB	SBL	44.1	181.2	345.0	155.0	58.7	569	32.4	C	44	181
		SBT	25.1	150.0		241.0	34.1					
		SBR	7.8	106.4	300.0	173.0	6.4					
	EB	EBL	49.3	200.8	295.0	249.0	57.7	622	38.8	D	49	201
		EBT	28.5	180.0		320.0	29.7					
		EBR	1.9	84.1	230.0	53.0	4.5					
	WB	WBL	28.2	122.1	175.0	98.0	57.8	717	29.2	C	39	216
WBT		39.2	216.5		388.0	34.2						
WBR		13.5	147.4	315.0	231.0	8.8						
Overall Intersection								2,403	33.9	C		
Big Horn Blvd & Bilby Rd	NB	NBL	6.0	68.8	90.0	50.0	27.3	196	15.1	B	6	69
		NBT	5.0	65.1		143.0	11.1					
		NBR	0.1	52.6	90.0	3.0	4.4					
	SB	SBL	1.0	29.1	300.0	7.0	33.3	284	12.0	B	11	146
		SBT	10.6	145.6		154.0	17.0					
		SBR	5.6	119.1	300.0	123.0	4.5					
	EB	EBL	26.3	219.7	275.0	249.0	21.0	299	18.4	B	26	220
		EBT	0.4	29.8		7.0	16.7					
		EBR	2.0	98.4		43.0	4.0					
	WB	WBL	0.1	16.3	290.0	1.0	19.9	11	22.3	C	1	66
WBT		0.8	30.1		5.0	39.7						
WBR		0.3	65.8	165.0	5.0	5.3						
Overall Intersection								790	15.3	B		
Big Horn Blvd & Generations Dr	NB	NBL	0.1	23.6		22.0	3.5	701	0.3	A	0	24
		NBT	-	-		679.0	0.2					
		NBR										
	SB	SBL						546	0.0	A	0	0
		SBT	-	-		544.0	0.0					
		SBR	-	-		2.0	0.7					
	EB	EBL	1.6	46.6		3.0	10.7	47	9.5	A	2	47
		EBT										
		EBR	1.6	46.6		44.0	9.4					
	WB	WBL						0	0.0	A	0	0
WBT												
WBR												
Overall Intersection								1,294	0.5	A		
Big Horn Blvd & Red Elk Dr	NB	NBL	0.0	13.0		8.0	5.9	995	0.8	A	0	75
		NBT	0.2	39.8		957.0	0.8					
		NBR	0.3	75.1		30.0	1.6					
	SB	SBL	-	-		24.0	3.6	657	0.2	A	0	0
		SBT	-	-		627.0	0.1					
		SBR	-	-		6.0	0.8					
	EB	EBL	0.2	42.1		4.0	11.3	34	10.3	B	0	42
		EBT	0.2	42.1		-	-					
		EBR	0.2	42.1		30.0	10.2					
	WB	WBL	7.7	93.2		48.0	21.1	89	18.0	C	8	93
WBT		7.7	93.2		-	-						
WBR		7.7	93.2		41.0	14.4						
Overall Intersection								1,775	1.6	A		
Big Horn Blvd & Civic Center Dr	NB	NBL	15.0	148.3	185.0	92.0	32.8	977	20.8	C	67	350
		NBT	46.6	313.9		851.0	19.7					
		NBR	67.3	350.4		34.0	16.0					
	SB	SBL	15.8	132.2	165.0	83.0	37.1	770	20.7	C	35	309
		SBT	35.1	308.6		634.0	19.1					
		SBR	35.1	308.6		53.0	15.0					
	EB	EBL	18.4	142.4	180.0	115.0	31.5	395	20.8	C	18	174
		EBT	18.4	174.2		160.0	24.1					
		EBR	5.0	91.4	305.0	120.0	6.0					
	WB	WBL	1.4	34.1	145.0	9.0	36.0	128	23.0	C	11	115
WBT		10.7	115.5		72.0	31.7						
WBR		2.5	75.4	300.0	47.0	7.2						
Overall Intersection								2,270	20.9	C		

PM Peak Hour Results

Intersection	Approach	Turning Movement	QLEN	QLENMAX	Storage Length	Volume (Vehicles)	Delay (veh/sec)	Approach Volume	Approach Delay (sec/veh)	Approach LOS	Average Queue Length	Maximum Queue Length
Bruceville Rd & Calvin Rd	NB	NBL	16.7	120.7	180.0	128.0	26.2	788	9.9	A	17	138
		NBT	9.8	138.5		660.0	6.8					
		NBR										
	SB	SBL						1,105	12.9	B	25	152
		SBT	25.0	151.9		852.0	15.2					
		SBR	5.1	118.6	150.0	253.0	5.3					
	EB	EBL	22.4	183.4	95.0	301.0	21.1	442	16.3	B	22	183
EBT												
EBR		7.4	109.9	95.0	141.0	6.1						
Overall Intersection								2,335	12.6	B		
Bruceville Rd & Sheldon Rd	NB	NBL	62.8	214.3	360.0	315.0	60.5	1,120	43.8	D	63	346
		NBT	42.6	168.5		473.0	37.5					
		NBR	61.8	345.8	175.0	332.0	37.0					
	SB	SBL	54.5	186.9	255.0	229.0	61.5	965	46.9	D	95	372
		SBT	95.1	372.5		708.0	42.9					
		SBR	3.9	57.8	255.0	28.0	28.4					
	EB	EBL	7.3	48.1	280.0	24.0	64.7	650	48.3	D	99	419
		EBT	36.3	178.4		309.0	38.9					
		EBR	98.7	418.6	450.0	317.0	56.1					
	WB	WBL	99.6	323.3	740.0	470.0	63.9	1,030	43.1	D	100	323
		WBT	34.4	186.3		412.0	28.4					
WBR		12.5	146.9	325.0	148.0	18.0						
Overall Intersection								3,765	45.2	D		
Big Horn Blvd & Bruceville Rd	NB	NBL	42.8	150.3	375.0	170.0	53.9	1,232	27.8	C	69	360
		NBT	68.9	359.7		786.0	29.1					
		NBR	15.0	173.2	200.0	276.0	8.2					
	SB	SBL	27.9	123.7	370.0	155.0	52.0	1,452	54.1	D	349	931
		SBT	349.2	930.9		989.0	53.9					
		SBR	349.2	930.9		308.0	56.1					
	EB	EBL	38.6	142.0	145.0	205.0	54.4	719	38.4	D	78	240
		EBT	47.2	198.8		329.0	45.1					
		EBR	77.9	240.5		185.0	8.5					
	WB	WBL	77.1	297.0	195.0	221.0	60.6	839	40.5	D	77	297
		WBT	58.7	274.6		447.0	42.7					
WBR		11.9	122.4	150.0	171.0	9.0						
Overall Intersection								4,242	41.1	D		
Big Horn Blvd & Laguna Blvd	NB	NBL	30.8	124.8	175.0	145.0	53.5	775	32.1	C	46	236
		NBT	46.3	235.6		385.0	39.9					
		NBR	11.7	142.7	175.0	245.0	7.1					
	SB	SBL	40.9	154.6	175.0	215.0	53.2	695	36.4	D	41	195
		SBT	39.7	194.5		340.0	38.2					
		SBR	5.8	88.2	175.0	140.0	6.5					
	EB	EBL	27.1	122.9	265.0	124.0	52.5	1,372	30.5	C	77	318
		EBT	60.5	290.0		1,151.0	29.3					
		EBR	76.7	317.7		97.0	15.9					
	WB	WBL	30.5	128.7	250.0	108.0	53.9	1,681	27.7	C	63	271
		WBT	63.2	271.2		1,361.0	28.9					
WBR		8.5	120.1	175.0	212.0	6.9						
Overall Intersection								4,523	30.7	C		
Big Horn Blvd & Elk Grove Blvd	NB	NBL	26.7	116.8	275.0	116.0	61.5	950	47.4	D	116	522
		NBT	115.7	521.8		639.0	54.4					
		NBR	15.9	209.3	190.0	195.0	16.3					
	SB	SBL	34.6	140.5	220.0	155.0	58.0	933	37.6	D	68	338
		SBT	67.9	338.1		482.0	45.6					
		SBR	23.5	195.8	140.0	296.0	13.8					
	EB	EBL	56.2	201.6	335.0	242.0	59.4	1,610	33.7	C	82	386
		EBT	82.4	385.7		1,239.0	31.3					
		EBR	5.3	98.1	165.0	129.0	8.8					
	WB	WBL	53.7	192.0	425.0	261.0	59.3	1,815	34.0	C	96	443
		WBT	96.1	442.7		1,381.0	32.0					
WBR		8.6	114.4	190.0	173.0	11.6						
Overall Intersection								5,308	37.0	D		

Existing PM Peak Hour Results

Intersection	Approach	Turning Movement	QLEN	QLENMAX	Storage Length	Volume (Vehicles)	Delay (veh/sec)	Approach Volume	Approach Delay (sec/veh)	Approach LOS	Average Queue Length	Maximum Queue Length
Big Horn Blvd & Whitelock Blvd	NB	NBL	14.2	79.8	175.0	74.0	45.6	444	31.2	C	31	184
		NBT	31.0	183.7		351.0	29.6					
		NBR	0.7	69.1	300.0	19.0	4.6					
	SB	SBL	13.5	84.8	345.0	72.0	41.2	549	21.8	C	22	135
		SBT	22.3	135.3		260.0	29.5					
		SBR	10.5	126.3	300.0	217.0	6.3					
	EB	EBL	29.7	124.7	295.0	200.0	41.1	412	28.9	C	30	125
		EBT	10.7	93.8		162.0	21.4					
		EBR	1.7	75.4	230.0	50.0	4.1					
	WB	WBL	6.7	53.1	175.0	29.0	43.2	364	22.4	C	18	115
		WBT	18.2	115.2		219.0	28.1					
		WBR	5.2	98.9	315.0	116.0	6.4					
Overall Intersection								1,769	25.9	C		
Big Horn Blvd & Bilby Rd	NB	NBL	4.8	62.8	90.0	34.0	30.8	174	15.1	B	5	66
		NBT	5.1	66.1		140.0	11.2					
		NBR	-	-	90.0	-	-					
	SB	SBL	0.1	12.2	300.0	1.0	14.4	199	8.8	A	5	126
		SBT	4.9	103.1		74.0	16.3					
		SBR	5.3	125.5	300.0	124.0	4.3					
	EB	EBL	7.5	115.9	275.0	93.0	17.5	118	15.0	B	8	116
		EBT	0.2	21.4		4.0	15.1					
		EBR	1.0	87.7		21.0	4.0					
	WB	WBL	-	-	290.0	-	-	5	11.9	B	0	66
		WBT	0.2	14.4		1.0	39.0					
		WBR	0.2	66.4	165.0	4.0	5.1					
Overall Intersection								496	12.5	B		
Big Horn Blvd & Generations Dr	NB	NBL	0.2	40.3		33.0	4.5	725	0.4	A	0	40
		NBT	-	-		692.0	0.2					
		NBR										
	SB	SBL						679	0.1	A	0	2
		SBT	-	-		672.0	0.1					
		SBR	0.0	2.0		7.0	0.7					
	EB	EBL	1.4	45.1		4.0	12.2	35	10.1	B	1	45
		EBT										
		EBR	1.4	45.1		31.0	9.8					
	WB	WBL						0	0.0	A	0	0
		WBT										
		WBR										
Overall Intersection								1,439	0.5	A		
Big Horn Blvd & Red Elk Dr	NB	NBL	0.6	83.7		27.0	9.3	1,058	1.2	A	1	84
		NBT	0.1	31.2		999.0	0.9					
		NBR	0.2	48.1		32.0	1.5					
	SB	SBL	-	-		37.0	4.5	957	0.2	A	0	2
		SBT	-	-		912.0	0.1					
		SBR	0.0	2.0		8.0	0.8					
	EB	EBL	0.1	37.9		7.0	13.4	23	12.4	B	0	38
		EBT	0.1	37.9		1.0	14.3					
		EBR	0.1	37.9		15.0	11.8					
	WB	WBL	3.5	60.8		23.0	20.4	46	17.3	C	3	61
		WBT	3.5	60.8		-	-					
		WBR	3.5	60.8		23.0	14.2					
Overall Intersection								2,084	1.2	A		
Big Horn Blvd & Civic Center Dr	NB	NBL	22.0	157.4	185.0	117.0	36.3	930	19.6	B	54	281
		NBT	36.1	244.9		796.0	17.3					
		NBR	54.0	281.4		17.0	12.7					
	SB	SBL	6.3	70.9	165.0	32.0	40.5	869	23.7	C	55	383
		SBT	54.7	383.4		716.0	23.5					
		SBR	54.7	383.4		121.0	20.6					
	EB	EBL	20.6	139.4	180.0	115.0	34.6	316	22.2	C	21	139
		EBT	11.5	135.2		98.0	24.9					
		EBR	4.3	82.1	305.0	103.0	5.8					
	WB	WBL	2.8	47.8	145.0	13.0	43.4	202	27.5	C	23	151
		WBT	23.4	150.6		136.0	34.1					
		WBR	2.7	76.1	300.0	53.0	6.9					
Overall Intersection								2,317	22.2	C		

Cumulative No Project AM Peak Hour Results

Intersection	Approach	Turning Movement	QLEN	QLENMAX	Storage Length	Volume (Vehicles)	Delay (veh/sec)	Approach Volume	Approach Delay (sec/veh)	Approach LOS	Average Queue Length	Maximum Queue Length
Bruceville Rd & Calvin Rd	NB	NBL	49.0	277.9	180.0	285.0	31.3	1,583	12.2	B	49	278
		NBT	25.1	268.0		1,298.0	8.0					
		NBR										
	SB	SBL						1,043	14.0	B	26	151
		SBT	26.3	151.3		816.0	16.3					
		SBR	5.0	115.6	150.0	227.0	5.5					
	EB	EBL	22.7	137.7	95.0	300.0	21.2	417	16.9	B	23	138
EBT												
EBR		6.0	109.7	95.0	117.0	6.0						
Overall Intersection								3,043	13.5	B		
Bruceville Rd & Sheldon Rd	NB	NBL	296.1	997.2	360.0	420.0	133.1	2,143	64.3	E	296	1,220
		NBT	191.7	1,043.8		1,069.0	48.8					
		NBR	289.9	1,220.4	175.0	654.0	45.4					
	SB	SBL	32.9	120.5	255.0	131.0	67.9	851	50.1	D	103	397
		SBT	102.5	396.9		710.0	47.1					
		SBR	1.3	38.3	255.0	10.0	28.3					
	EB	EBL	4.1	39.4	280.0	12.0	69.9	727	53.7	D	135	511
		EBT	52.1	219.0		374.0	45.4					
		EBR	134.9	510.6	450.0	341.0	62.2					
	WB	WBL	546.9	1,160.7	740.0	722.0	139.3	1,212	93.8	F	547	1,161
WBT		27.9	162.3		327.0	29.4						
WBR		17.2	171.0	325.0	163.0	21.1						
Overall Intersection								4,933	67.5	E		
Big Horn Blvd & Bruceville Rd	NB	NBL	32.4	132.3	375.0	144.0	65.2	1,832	43.9	D	440	860
		NBT	439.9	859.9		1,501.0	45.2					
		NBR	10.6	146.6	200.0	187.0	17.3					
	SB	SBL	52.5	191.1	370.0	227.0	74.0	1,704	56.9	E	794	1,638
		SBT	794.0	1,637.5		1,181.0	54.3					
		SBR	794.0	1,637.5		296.0	54.3					
	EB	EBL	94.4	343.5	145.0	346.0	82.5	1,128	48.2	D	101	344
		EBT	70.5	299.8		485.0	46.1					
		EBR	101.3	341.4		297.0	11.6					
	WB	WBL	46.8	225.3	195.0	118.0	71.7	761	43.1	D	67	329
WBT		44.5	191.8		314.0	45.2						
WBR		66.8	329.5	150.0	329.0	30.7						
Overall Intersection								5,425	48.8	D		
Big Horn Blvd & Laguna Blvd	NB	NBL	41.7	162.8	175.0	240.0	51.0	1,100	32.0	C	64	361
		NBT	63.7	361.5		592.0	35.2					
		NBR	12.0	136.4	175.0	268.0	7.8					
	SB	SBL	52.3	184.4	175.0	290.0	53.9	846	35.2	D	52	203
		SBT	39.2	203.3		399.0	33.0					
		SBR	6.3	104.4	175.0	157.0	6.3					
	EB	EBL	35.9	135.4	265.0	192.0	52.2	1,430	36.2	D	90	318
		EBT	71.2	290.2		1,078.0	35.4					
		EBR	90.1	317.8		160.0	22.3					
	WB	WBL	57.0	215.3	250.0	314.0	54.9	1,577	32.1	C	57	221
WBT		50.2	221.2		975.0	31.4						
WBR		17.1	150.3	175.0	288.0	9.6						
Overall Intersection								4,953	33.8	C		
Big Horn Blvd & Elk Grove Blvd	NB	NBL	68.3	241.9	275.0	320.0	70.3	1,521	49.4	D	190	874
		NBT	190.1	874.4		954.0	48.6					
		NBR	22.1	200.9	190.0	247.0	25.3					
	SB	SBL	43.1	179.2	220.0	224.0	58.9	1,211	39.6	D	105	511
		SBT	105.3	511.1		799.0	39.9					
		SBR	10.2	123.2	140.0	188.0	15.5					
	EB	EBL	61.9	225.3	335.0	318.0	58.9	2,065	42.3	D	161	714
		EBT	161.0	714.0		1,395.0	42.9					
		EBR	45.3	538.1	165.0	352.0	24.7					
	WB	WBL	44.6	167.9	425.0	212.0	61.5	1,752	39.2	D	111	485
WBT		111.5	485.3		1,254.0	39.7						
WBR		30.5	267.4	190.0	286.0	20.5						
Overall Intersection								6,549	42.6	D		

Cumulative No Project AM Peak Hour Results

Intersection	Approach	Turning Movement	QLEN	QLENMAX	Storage Length	Volume (Vehicles)	Delay (veh/sec)	Approach Volume	Approach Delay (sec/veh)	Approach LOS	Average Queue Length	Maximum Queue Length
Big Horn Blvd & Whitelock Blvd	NB	NBL	25.5	103.6	175.0	90.0	94.7	1,435	58.4	E	295	679
		NBT	295.0	679.3		977.0	63.4					
		NBR	83.2	627.0	300.0	368.0	36.3					
	SB	SBL	84.3	261.6	345.0	254.0	101.2	1,210	50.4	D	109	564
		SBT	108.6	563.5		784.0	43.0					
		SBR	10.3	130.8	300.0	172.0	9.4					
	EB	EBL	50.7	190.7	295.0	249.0	60.8	1,193	39.5	D	98	494
		EBT	97.8	494.4		834.0	37.1					
		EBR	6.9	110.4	230.0	110.0	10.1					
	WB	WBL	135.5	532.7	175.0	343.0	104.9	1,265	50.8	D	135	536
WBT		73.8	536.2		612.0	36.8						
WBR		35.1	269.5	315.0	310.0	18.3						
Overall Intersection								5,103	50.2	D		
Big Horn Blvd & Bilby Rd	NB	NBL	19.3	130.5	90.0	65.0	59.2	923	35.5	D	92	436
		NBT	92.2	436.5		785.0	35.7					
		NBR	3.3	102.1	90.0	73.0	12.5					
	SB	SBL	122.0	984.0	300.0	249.0	54.4	1,045	39.8	D	796	1,444
		SBT	796.0	1,444.0		676.0	40.0					
		SBR	6.3	112.8	300.0	120.0	8.5					
	EB	EBL	81.2	385.8	275.0	243.0	56.8	560	41.8	D	81	386
		EBT	48.2	279.4		224.0	40.9					
		EBR	5.3	115.5		93.0	4.7					
	WB	WBL	20.5	135.8	290.0	68.0	57.4	392	27.0	C	24	181
WBT		18.3	130.8		77.0	48.1						
WBR		24.0	181.1	165.0	247.0	12.1						
Overall Intersection								2,920	37.1	D		
Big Horn Blvd & Generations Dr	NB	NBL	0.2	32.6		22.0	6.0	1,070	0.3	A	0	33
		NBT	-	-		1,048.0	0.2					
		NBR										
	SB	SBL						804	0.1	A	0	0
		SBT	-	-		802.0	0.1					
		SBR	-	-		2.0	0.7					
	EB	EBL	1.9	49.8		3.0	9.9	47	11.0	B	2	50
		EBT										
		EBR	1.9	49.8		44.0	11.0					
	WB	WBL						0	0.0	A	0	0
WBT												
WBR												
Overall Intersection								1,921	0.5	A		
Big Horn Blvd & Red Elk Dr	NB	NBL	0.9	40.8		8.0	28.7	1,553	10.3	B	48	555
		NBT	48.0	554.5		1,512.0	10.2					
		NBR	48.0	554.5		33.0	9.9					
	SB	SBL	2.7	47.7		25.0	23.7	1,166	6.0	A	11	158
		SBT	11.2	158.3		1,133.0	5.6					
		SBR	11.2	158.3		8.0	5.8					
	EB	EBL	0.5	39.7		4.0	30.2	34	11.1	B	2	65
		EBT	0.5	39.7		-	-					
		EBR	1.9	65.0		30.0	8.6					
	WB	WBL	8.5	102.8		48.0	20.4	89	19.8	B	9	103
WBT		8.5	102.8		-	-						
WBR		8.5	102.8		41.0	19.2						
Overall Intersection								2,842	8.8	A		
Big Horn Blvd & Civic Center Dr	NB	NBL	43.9	374.0	185.0	120.0	57.8	1,516	28.9	C	163	693
		NBT	138.5	656.3		1,338.0	26.6					
		NBR	162.7	692.8		58.0	24.3					
	SB	SBL	27.5	166.9	165.0	97.0	57.2	1,365	27.2	C	107	619
		SBT	106.8	618.5		1,178.0	25.1					
		SBR	106.8	618.5		90.0	22.4					
	EB	EBL	35.5	214.0	180.0	116.0	56.4	461	33.7	C	42	319
		EBT	42.4	319.1		216.0	36.3					
		EBR	7.5	109.5	305.0	129.0	8.8					
	WB	WBL	5.1	63.3	145.0	23.0	45.0	199	30.8	C	22	180
WBT		22.0	179.6		112.0	38.9						
WBR		4.6	78.3	300.0	64.0	11.4						
Overall Intersection								3,541	29.0	C		

Cumulative No Project PM Peak Hour Results

Intersection	Approach	Turning Movement	QLEN	QLENMAX	Storage Length	Volume (Vehicles)	Delay (veh/sec)	Approach Volume	Approach Delay (sec/veh)	Approach LOS	Average Queue Length	Maximum Queue Length
Bruceville Rd & Calvin Rd	NB	NBL	16.8	135.1	180.0	127.0	26.9	1,089	10.0	B	17	203
		NBT	17.2	202.6		962.0	7.8					
		NBR										
	SB	SBL				1,114.0	15.4	1,377	13.3	B	33	191
		SBT	32.7	190.7		263.0	4.6					
		SBR	4.1	106.9	150.0	304.0	20.5					
	EB	EBL	22.3	145.0	95.0			444	16.2	B	22	145
		EBT										
		EBR	7.8	114.7	95.0	140.0	6.7					
Overall Intersection								2,910	12.5	B		
Bruceville Rd & Sheldon Rd	NB	NBL	277.0	707.9	360.0	342.0	85.1	1,803	69.9	E	1,207	1,668
		NBT	719.8	1,659.6		739.0	56.1					
		NBR	1,207.3	1,668.1	175.0	722.0	76.9					
	SB	SBL	68.8	230.8	255.0	251.0	101.5	1,136	105.5	F	490	887
		SBT	489.9	887.1		859.0	108.4					
		SBR	6.2	75.0	255.0	26.0	48.5					
	EB	EBL	4.8	47.4	280.0	18.0	62.7	460	160.4	F	731	873
		EBT	30.7	192.1		198.0	49.0					
		EBR	731.1	873.1	450.0	244.0	258.1					
	WB	WBL	917.7	1,220.4	740.0	576.0	245.9	1,143	141.8	F	918	1,220
		WBT	45.0	230.0		450.0	38.7					
		WBR	15.4	203.3	325.0	117.0	26.1					
Overall Intersection								4,542	106.1	F		
Big Horn Blvd & Bruceville Rd	NB	NBL	57.1	196.2	375.0	243.0	73.3	1,875	55.6	E	562	881
		NBT	562.4	881.0		1,392.0	58.7					
		NBR	19.0	261.7	200.0	240.0	20.3					
	SB	SBL	40.8	167.8	370.0	185.0	71.5	1,663	61.5	E	1,388	1,671
		SBT	1,387.8	1,671.2		1,216.0	60.4					
		SBR	1,387.8	1,671.2		262.0	59.7					
	EB	EBL	62.9	198.3	145.0	243.0	86.2	770	49.2	D	77	234
		EBT	48.1	192.4		339.0	45.2					
		EBR	77.2	234.1		188.0	8.8					
	WB	WBL	249.6	637.8	195.0	212.0	144.5	982	75.8	E	250	638
		WBT	97.4	515.4		509.0	51.0					
		WBR	135.7	526.2	150.0	261.0	68.3					
Overall Intersection								5,290	60.3	E		
Big Horn Blvd & Laguna Blvd	NB	NBL	37.8	153.9	175.0	202.0	53.8	1,103	33.2	C	73	421
		NBT	73.5	421.2		655.0	36.1					
		NBR	11.0	138.8	175.0	246.0	8.5					
	SB	SBL	63.0	237.0	175.0	351.0	54.4	854	34.5	C	63	237
		SBT	26.7	151.6		288.0	30.3					
		SBR	10.9	133.4	175.0	215.0	7.7					
	EB	EBL	37.1	140.5	265.0	191.0	54.1	1,486	35.5	D	92	326
		EBT	73.2	298.7		1,138.0	34.4					
		EBR	91.6	326.3		157.0	20.6					
	WB	WBL	34.1	132.2	250.0	171.0	55.5	1,906	32.6	C	80	327
		WBT	80.3	327.3		1,422.0	34.7					
		WBR	20.6	184.7	175.0	313.0	10.7					
Overall Intersection								5,349	33.8	C		
Big Horn Blvd & Elk Grove Blvd	NB	NBL	68.0	235.1	275.0	330.0	68.8	1,592	51.9	D	249	894
		NBT	249.0	894.1		1,052.0	51.7					
		NBR	16.8	183.0	190.0	210.0	26.9					
	SB	SBL	54.8	203.6	220.0	267.0	63.8	1,421	42.9	D	141	656
		SBT	141.5	655.8		865.0	43.1					
		SBR	28.2	398.5	140.0	289.0	22.8					
	EB	EBL	66.9	219.6	335.0	289.0	68.4	1,908	40.1	D	118	456
		EBT	118.1	456.1		1,363.0	38.4					
		EBR	20.4	168.5	165.0	256.0	17.3					
	WB	WBL	65.6	204.9	425.0	270.0	72.7	1,968	41.9	D	132	535
		WBT	131.9	535.2		1,403.0	39.8					
		WBR	34.0	289.9	190.0	295.0	23.8					
Overall Intersection								6,889	43.9	D		

Cumulative No Project PM Peak Hour Results

Intersection	Approach	Turning Movement	QLEN	QLENMAX	Storage Length	Volume (Vehicles)	Delay (veh/sec)	Approach Volume	Approach Delay (sec/veh)	Approach LOS	Average Queue Length	Maximum Queue Length
Big Horn Blvd & Whitelock Blvd	NB	NBL	26.4	112.9	175.0	130.0	55.6	1,281	31.4	C	96	492
		NBT	96.0	491.7		856.0	35.4					
		NBR	17.8	172.3	300.0	295.0	9.0					
	SB	SBL	25.6	110.1	345.0	125.0	52.0	1,205	32.4	C	93	435
		SBT	93.0	435.1		861.0	35.3					
		SBR	14.0	173.0	300.0	219.0	9.5					
	EB	EBL	37.4	148.3	295.0	195.0	53.6	696	36.6	D	42	206
		EBT	42.3	205.6		432.0	33.5					
		EBR	3.8	82.2	230.0	69.0	7.8					
	WB	WBL	53.2	192.1	175.0	275.0	58.0	1,138	37.8	D	78	362
WBT		77.9	362.3		723.0	35.7						
WBR		8.5	120.6	315.0	140.0	9.2						
Overall Intersection								4,320	34.2	C		
Big Horn Blvd & Bilby Rd	NB	NBL	36.9	218.3	90.0	81.0	82.3	945	45.2	D	130	467
		NBT	130.3	467.1		801.0	43.7					
		NBR	2.6	99.7	90.0	63.0	17.4					
	SB	SBL	110.6	858.9	300.0	206.0	58.3	1,047	43.8	D	1,061	1,447
		SBT	1,061.2	1,447.0		722.0	45.0					
		SBR	7.8	121.6	300.0	119.0	11.8					
	EB	EBL	51.3	277.2	275.0	95.0	90.3	216	54.3	D	51	277
		EBT	14.4	154.8		86.0	34.9					
		EBR	2.0	92.4		35.0	4.5					
	WB	WBL	14.2	107.6	290.0	49.0	56.8	593	30.3	C	49	402
WBT		48.5	370.6		229.0	38.3						
WBR		45.8	401.8	165.0	315.0	20.4						
Overall Intersection								2,801	42.3	D		
Big Horn Blvd & Generations Dr	NB	NBL	0.4	42.2		34.0	6.9	1,155	0.5	A	0	42
		NBT	-	-		1,121.0	0.3					
		NBR										
	SB	SBL						834	0.1	A	0	0
		SBT	-	-		827.0	0.1					
		SBR	-	-		7.0	0.8					
	EB	EBL	1.7	48.6		4.0	16.5	35	11.7	B	2	49
		EBT										
		EBR	1.7	48.6		31.0	11.0					
	WB	WBL						0	0.0	A	0	0
WBT												
WBR												
Overall Intersection								2,024	0.5	A		
Big Horn Blvd & Red Elk Dr	NB	NBL	2.9	62.2		26.0	29.1	1,632	10.2	B	50	523
		NBT	50.2	523.3		1,572.0	9.9					
		NBR	50.2	523.3		34.0	9.7					
	SB	SBL	4.6	65.9		39.0	25.1	1,443	6.9	A	17	238
		SBT	16.7	237.7		1,394.0	6.4					
		SBR	16.7	237.7		10.0	6.8					
	EB	EBL	0.7	39.4		7.0	26.6	23	15.2	C	2	67
		EBT	0.7	39.4		1.0	21.4					
		EBR	1.9	66.9		15.0	9.5					
	WB	WBL	4.5	64.0		23.0	21.9	46	20.9	C	5	64
WBT		4.5	64.0		-	-						
WBR		4.5	64.0		23.0	19.9						
Overall Intersection								3,144	8.9	A		
Big Horn Blvd & Civic Center Dr	NB	NBL	35.8	258.3	185.0	114.0	59.7	1,530	29.7	C	162	705
		NBT	137.5	668.1		1,382.0	27.3					
		NBR	161.8	704.6		34.0	23.6					
	SB	SBL	11.6	86.4	165.0	47.0	53.1	1,379	31.5	C	144	645
		SBT	143.8	644.5		1,208.0	30.9					
		SBR	143.8	644.5		124.0	28.6					
	EB	EBL	57.3	272.7	180.0	153.0	66.6	411	39.2	D	57	273
		EBT	25.1	220.9		145.0	34.4					
		EBR	6.4	99.6	305.0	113.0	8.3					
	WB	WBL	11.1	109.0	145.0	44.0	49.4	338	35.6	D	49	327
WBT		48.7	327.0		221.0	40.1						
WBR		5.8	83.2	300.0	73.0	13.6						
Overall Intersection								3,658	32.0	C		

Cumulative Alternative 1

AM Peak Hour Results

Intersection	Approach	Turning Movement	QLEN	QLENMAX	Storage Length	Volume (Vehicles)	Delay (veh/sec)	Approach Volume	Approach Delay (sec/veh)	Approach LOS	Average Queue Length	Maximum Queue Length
Bruceville Rd & Calvine Rd	NB	NBL	53.6	275.6	180.0	288.0	33.8	1,589	12.2	B	54	289
		NBT	23.3	289.4		1,301.0	7.4					
		NBR										
	SB	SBL						1,041	20.2	C	42	252
		SBT	41.6	251.9		815.0	20.2					
		SBR	41.6	251.9	150.0	226.0	20.3					
	EB	EBL	25.6	163.4	95.0	301.0	24.0	418	19.3	B	26	163
		EBT										
		EBR	0.0	16.4	95.0	117.0	7.4					
Overall Intersection								3,048	15.9	B		
Bruceville Rd & Sheldon Rd	NB	NBL	756.5	1,664.8	360.0	362.0	158.7	1,852	73.4	E	1,098	1,671
		NBT	1,098.3	1,669.6		921.0	61.4					
		NBR	954.4	1,670.6	175.0	569.0	38.4					
	SB	SBL	40.6	160.9	255.0	132.0	86.8	837	49.7	D	93	401
		SBT	92.5	401.4		695.0	43.0					
		SBR	1.5	37.3	255.0	10.0	32.5					
	EB	EBL	4.0	39.1	280.0	13.0	67.4	744	42.0	D	74	392
		EBT	51.1	228.3		379.0	43.8					
		EBR	74.4	391.7	450.0	352.0	39.2					
	WB	WBL	668.4	1,190.3	740.0	719.0	152.6	1,189	103.8	F	668	1,190
		WBT	27.7	168.1		314.0	31.3					
		WBR	20.1	197.5	325.0	156.0	24.7					
Overall Intersection								4,622	71.9	E		
Big Horn Blvd & Bruceville Rd	NB	NBL	31.1	132.7	375.0	136.0	67.3	1,628	60.7	E	577	879
		NBT	577.4	879.3		1,325.0	64.6					
		NBR	27.7	239.5	200.0	167.0	24.2					
	SB	SBL	51.3	194.2	370.0	234.0	67.9	1,763	39.1	D	204	919
		SBT	204.4	919.1		1,222.0	34.5					
		SBR	59.6	635.0		307.0	35.5					
	EB	EBL	166.6	517.0	145.0	326.0	140.8	1,109	67.7	E	167	517
		EBT	83.7	427.9		483.0	48.3					
		EBR	107.2	459.5		300.0	19.6					
	WB	WBL	68.1	388.1	195.0	112.0	89.5	701	75.6	E	215	658
		WBT	94.9	552.1		287.0	55.6					
		WBR	214.6	657.8	150.0	302.0	89.6					
Overall Intersection								5,201	56.9	E		
Big Horn Blvd & Laguna Blvd	NB	NBL	48.9	225.2	175.0	238.0	60.8	1,105	32.7	C	59	336
		NBT	59.4	335.7		599.0	32.8					
		NBR	11.7	137.3	175.0	268.0	7.5					
	SB	SBL	61.9	221.8	175.0	273.0	68.9	792	39.7	D	62	222
		SBT	34.8	189.3		378.0	31.2					
		SBR	4.3	90.2	175.0	141.0	6.0					
	EB	EBL	35.3	147.1	265.0	188.0	53.4	1,391	35.9	D	100	335
		EBT	69.1	288.2		1,040.0	35.1					
		EBR	99.6	335.1		163.0	20.4					
	WB	WBL	53.9	191.6	250.0	307.0	52.9	1,567	31.5	C	54	212
		WBT	50.2	212.5		973.0	31.3					
		WBR	16.7	165.1	175.0	287.0	9.3					
Overall Intersection								4,855	34.4	C		
Big Horn Blvd & Elk Grove Blvd	NB	NBL	70.7	251.8	275.0	320.0	72.3	1,517	51.0	D	186	859
		NBT	185.8	858.9		958.0	47.5					
		NBR	33.9	437.5	190.0	239.0	36.2					
	SB	SBL	45.7	175.3	220.0	227.0	60.7	1,201	37.6	D	93	472
		SBT	92.7	472.3		787.0	36.4					
		SBR	11.0	160.7	140.0	187.0	14.6					
	EB	EBL	71.8	265.0	335.0	320.0	70.7	2,072	54.4	D	276	933
		EBT	275.8	933.1		1,391.0	55.8					
		EBR	90.1	830.1	165.0	361.0	34.7					
	WB	WBL	46.7	185.3	425.0	216.0	65.2	1,747	50.9	D	168	712
		WBT	168.4	712.1		1,243.0	51.4					
		WBR	51.8	541.6	190.0	288.0	38.0					
Overall Intersection								6,537	49.6	D		

Cumulative Alternative 1 AM Peak Hour Results

Intersection	Approach	Turning Movement	QLEN	QLENMAX	Storage Length	Volume (Vehicles)	Delay (veh/sec)	Approach Volume	Approach Delay (sec/veh)	Approach LOS	Average Queue Length	Maximum Queue Length
Big Horn Blvd & Whitelock Blvd	NB	NBL	26.3	107.6	175.0	96.0	94.2	1,435	59.0	E	301	678
		NBT	300.7	678.2		979.0	63.9					
		NBR	71.9	545.9	300.0	360.0	36.4					
	SB	SBL	91.9	295.9	345.0	257.0	108.6	1,224	52.5	D	114	560
		SBT	114.4	560.4		790.0	43.6					
		SBR	11.2	136.8	300.0	177.0	10.4					
	EB	EBL	50.9	196.5	295.0	249.0	61.0	1,186	39.3	D	97	528
		EBT	96.8	528.3		827.0	36.8					
		EBR	6.1	102.1	230.0	110.0	9.3					
	WB	WBL	137.5	574.1	175.0	349.0	104.5	1,269	50.7	D	138	574
WBT		76.4	562.2		610.0	36.2						
WBR		35.7	260.3	315.0	310.0	18.9						
Overall Intersection								5,114	50.8	D		
Big Horn Blvd & Bilby Rd	NB	NBL	19.2	124.1	90.0	64.0	59.9	929	36.2	D	96	438
		NBT	96.1	438.5		790.0	36.4					
		NBR	3.6	99.9	90.0	75.0	13.9					
	SB	SBL	174.7	676.2	300.0	294.0	66.9	1,249	37.8	D	175	676
		SBT	123.3	620.0		809.0	32.6					
		SBR	5.9	113.8	300.0	146.0	8.3					
	EB	EBL	83.4	395.4	275.0	253.0	55.2	566	41.5	D	83	395
		EBT	47.8	266.0		219.0	41.4					
		EBR	5.4	129.2		94.0	4.8					
	WB	WBL	19.2	135.6	290.0	68.0	54.7	405	26.0	C	26	212
WBT		17.5	126.0		75.0	47.5						
WBR		26.1	211.6	165.0	262.0	12.3						
Overall Intersection								3,149	36.5	D		
Big Horn Blvd & Generations Dr	NB	NBL	1.5	50.2		21.0	18.6	1,075	7.4	A	18	279
		NBT	17.5	279.3		840.0	7.3					
		NBR	7.1	219.5		214.0	6.6					
	SB	SBL	5.1	73.1		70.0	16.8	821	4.9	A	5	127
		SBT	4.8	126.9		749.0	3.7					
		SBR	1.0	97.0		2.0	3.6					
	EB	EBL	0.2	36.3		-	-	44	6.9	A	2	66
		EBT	0.2	36.3		-	-					
		EBR	2.1	65.6		44.0	6.9					
	WB	WBL	4.7	76.7		53.0	20.6	79	16.9	B	5	77
WBT		4.7	76.7		-	-						
WBR		0.2	38.6		26.0	9.4						
Overall Intersection								2,019	6.7	A		
Big Horn Blvd & Red Elk Dr	NB	NBL	1.1	29.5		8.0	36.6	1,564	10.1	B	49	530
		NBT	49.4	529.8		1,523.0	10.0					
		NBR	0.7	73.0		33.0	9.1					
	SB	SBL	3.0	50.3		25.0	27.1	1,157	5.6	A	20	224
		SBT	10.1	177.8		1,124.0	5.1					
		SBR	20.5	223.8		8.0	3.6					
	EB	EBL	0.3	34.2		4.0	18.3	34	9.4	A	2	64
		EBT	0.3	34.2		-	-					
		EBR	1.8	63.7		30.0	8.3					
	WB	WBL	9.6	107.8		48.0	22.6	89	22.7	C	10	108
WBT		9.6	107.8		-	-						
WBR		9.6	107.8		41.0	22.7						
Overall Intersection								2,844	8.7	A		
Big Horn Blvd & Civic Center Dr	NB	NBL	44.6	317.3	185.0	121.0	67.6	1,518	31.0	C	159	768
		NBT	159.1	768.0		1,339.0	27.8					
		NBR	22.5	214.4		58.0	28.4					
	SB	SBL	28.1	155.3	165.0	97.0	58.6	1,359	29.6	C	118	615
		SBT	117.8	615.4		1,173.0	27.7					
		SBR	117.8	615.4		89.0	24.1					
	EB	EBL	44.5	251.2	180.0	116.0	67.3	461	35.7	D	45	295
		EBT	40.2	295.2		216.0	34.7					
		EBR	7.8	105.5	305.0	129.0	9.0					
	WB	WBL	6.5	66.5	145.0	23.0	56.4	199	38.8	D	21	161
WBT		21.0	160.6		112.0	36.6						
WBR		11.4	97.7	300.0	64.0	36.4						
Overall Intersection								3,537	31.5	C		

Cumulative Alternative 1

PM Peak Hour Results

Intersection	Approach	Turning Movement	QLEN	QLENMAX	Storage Length	Volume (Vehicles)	Delay (veh/sec)	Approach Volume	Approach Delay (sec/veh)	Approach LOS	Average Queue Length	Maximum Queue Length
Bruceville Rd & Calvine Rd	NB	NBL	17.6	137.5	180.0	124.0	28.1	1,061	9.1	A	18	170
		NBT	13.9	169.9		937.0	6.6					
		NBR										
	SB	SBL						1,362	20.7	C	60	374
		SBT	60.5	373.9		1,105.0	21.1					
		SBR	60.5	373.9	150.0	257.0	19.2					
	EB	EBL	26.1	183.3	95.0	306.0	23.9	447	18.9	B	26	183
EBT												
	EBR	0.1	25.8	95.0	141.0	8.0						
Overall Intersection								2,870	16.1	B		
Bruceville Rd & Sheldon Rd	NB	NBL	888.4	1,670.6	360.0	318.0	142.6	1,705	81.8	F	1,336	1,675
		NBT	1,331.3	1,675.4		692.0	74.4					
		NBR	1,335.6	1,674.8	175.0	695.0	61.4					
	SB	SBL	136.7	450.1	255.0	270.0	146.5	1,220	75.5	E	199	669
		SBT	199.4	668.5		921.0	55.9					
		SBR	4.0	49.4	255.0	29.0	38.5					
	EB	EBL	5.3	46.3	280.0	21.0	59.9	613	120.8	F	745	858
		EBT	37.9	227.7		244.0	49.7					
		EBR	745.0	857.9	450.0	348.0	174.3					
	WB	WBL	688.0	1,173.0	740.0	707.0	157.2	1,377	96.2	F	688	1,173
		WBT	48.6	238.8		531.0	34.2					
WBR		16.5	185.1	325.0	139.0	23.0						
Overall Intersection								4,915	89.2	F		
Big Horn Blvd & Bruceville Rd	NB	NBL	72.9	246.5	375.0	230.0	99.4	1,741	69.2	E	675	884
		NBT	675.1	883.8		1,287.0	71.1					
		NBR	64.6	417.5	200.0	224.0	27.4					
	SB	SBL	41.9	178.3	370.0	207.0	65.1	1,919	48.4	D	1,213	1,672
		SBT	1,212.6	1,672.2		1,416.0	46.3					
		SBR	354.8	1,282.4		296.0	46.8					
	EB	EBL	58.9	195.0	145.0	241.0	83.0	764	51.2	D	73	224
		EBT	51.1	191.9		331.0	48.3					
		EBR	73.3	223.5		192.0	16.6					
	WB	WBL	525.9	779.6	195.0	191.0	242.4	906	114.1	F	526	780
		WBT	443.3	778.3		474.0	76.9					
WBR		302.4	724.5	150.0	241.0	85.7						
Overall Intersection								5,330	66.8	E		
Big Horn Blvd & Laguna Blvd	NB	NBL	45.6	192.7	175.0	209.0	63.5	1,089	34.0	C	67	351
		NBT	67.2	351.0		636.0	34.3					
		NBR	9.5	129.5	175.0	244.0	7.7					
	SB	SBL	68.1	254.1	175.0	276.0	74.9	797	41.4	D	68	254
		SBT	32.4	192.2		344.0	31.5					
		SBR	8.0	121.6	175.0	177.0	8.4					
	EB	EBL	35.4	143.4	265.0	191.0	53.4	1,499	35.5	D	104	349
		EBT	73.2	302.2		1,146.0	34.7					
		EBR	103.6	349.0		162.0	20.2					
	WB	WBL	30.9	124.4	250.0	172.0	50.1	1,917	32.1	C	80	339
		WBT	79.6	339.0		1,435.0	34.4					
WBR		21.9	195.5	175.0	310.0	11.6						
Overall Intersection								5,302	34.8	C		
Big Horn Blvd & Elk Grove Blvd	NB	NBL	72.4	246.6	275.0	329.0	73.2	1,580	53.6	D	234	901
		NBT	234.2	901.3		1,047.0	50.5					
		NBR	24.6	293.2	190.0	204.0	37.8					
	SB	SBL	59.4	227.1	220.0	274.0	68.1	1,435	41.4	D	134	691
		SBT	134.2	690.5		871.0	39.7					
		SBR	23.8	293.3	140.0	290.0	21.2					
	EB	EBL	67.3	237.2	335.0	293.0	67.9	1,897	45.7	D	152	699
		EBT	152.5	698.7		1,347.0	45.6					
		EBR	23.6	231.1	165.0	257.0	21.1					
	WB	WBL	63.9	222.5	425.0	274.0	71.3	1,955	54.9	D	242	872
		WBT	241.5	872.2		1,393.0	54.6					
WBR		39.4	402.3	190.0	288.0	40.3						
Overall Intersection								6,867	49.2	D		

Cumulative Alternative 1 PM Peak Hour Results

Intersection	Approach	Turning Movement	QLEN	QLENMAX	Storage Length	Volume (Vehicles)	Delay (veh/sec)	Approach Volume	Approach Delay (sec/veh)	Approach LOS	Average Queue Length	Maximum Queue Length
Big Horn Blvd & Whitelock Blvd	NB	NBL	27.7	112.2	175.0	128.0	59.7	1,279	33.1	C	103	522
		NBT	103.1	522.2		867.0	37.0					
		NBR	16.0	177.9	300.0	284.0	9.5					
	SB	SBL	27.0	108.9	345.0	130.0	54.4	1,209	34.1	C	100	430
		SBT	99.6	429.6		861.0	37.4					
		SBR	12.8	133.2	300.0	218.0	8.9					
	EB	EBL	36.8	150.3	295.0	190.0	53.6	687	37.2	D	44	206
		EBT	43.7	206.3		426.0	34.8					
		EBR	3.7	85.0	230.0	71.0	7.5					
	WB	WBL	53.4	187.9	175.0	278.0	57.6	1,132	38.6	D	81	401
WBT		80.6	401.1		715.0	36.9						
WBR		7.8	104.8	315.0	139.0	9.3						
Overall Intersection								4,307	35.5	D		
Big Horn Blvd & Bilby Rd	NB	NBL	47.6	242.5	90.0	86.0	97.4	940	53.2	D	152	470
		NBT	152.1	469.7		789.0	50.9					
		NBR	2.8	103.9	90.0	65.0	22.8					
	SB	SBL	348.7	1,313.9	300.0	215.0	67.3	1,093	41.8	D	388	1,320
		SBT	387.9	1,320.3		750.0	39.3					
		SBR	8.2	143.6	300.0	128.0	13.4					
	EB	EBL	30.6	225.9	275.0	99.0	57.4	220	39.9	D	31	226
		EBT	14.0	147.6		86.0	34.3					
		EBR	1.7	94.6		35.0	4.0					
	WB	WBL	15.2	132.8	290.0	53.0	56.6	597	32.6	C	55	427
WBT		55.0	407.9		230.0	42.3						
WBR		49.0	426.6	165.0	314.0	21.5						
Overall Intersection								2,850	43.5	D		
Big Horn Blvd & Generations Dr	NB	NBL	4.2	74.2		33.0	31.2	1,139	11.6	B	32	343
		NBT	32.2	343.1		997.0	11.2					
		NBR	15.3	283.3		109.0	9.3					
	SB	SBL	5.4	63.4		50.0	23.6	836	9.2	A	14	166
		SBT	14.0	166.2		779.0	8.3					
		SBR	5.1	136.2		7.0	5.7					
	EB	EBL	0.4	33.5		-	-	31	6.2	A	2	65
		EBT	0.4	33.5		-	-					
		EBR	1.8	64.7		31.0	6.2					
	WB	WBL	24.4	210.8		180.0	21.9	299	19.3	B	24	211
WBT		24.4	210.8		-	-						
WBR		9.5	172.4		119.0	15.3						
Overall Intersection								2,305	11.7	B		
Big Horn Blvd & Red Elk Dr	NB	NBL	4.4	156.2		26.0	34.4	1,616	10.5	B	52	511
		NBT	52.3	511.2		1,556.0	10.1					
		NBR	0.6	33.9		34.0	8.9					
	SB	SBL	5.1	59.0		39.0	28.0	1,456	6.6	A	28	266
		SBT	15.6	220.2		1,407.0	6.0					
		SBR	28.1	266.2		10.0	3.9					
	EB	EBL	0.7	39.5		7.0	21.2	23	14.8	B	2	65
		EBT	0.7	39.5		1.0	34.0					
		EBR	2.3	65.4		15.0	10.5					
	WB	WBL	4.7	65.1		23.0	21.3	46	22.3	C	5	65
WBT		4.7	65.1		-	-						
WBR		4.7	65.1		23.0	23.2						
Overall Intersection								3,141	8.9	A		
Big Horn Blvd & Civic Center Dr	NB	NBL	42.3	328.9	185.0	113.0	68.9	1,526	32.1	C	156	749
		NBT	156.1	748.5		1,379.0	29.2					
		NBR	3.2	50.4		34.0	29.7					
	SB	SBL	14.0	101.2	165.0	50.0	60.1	1,397	33.2	C	163	706
		SBT	162.7	706.1		1,222.0	32.3					
		SBR	162.7	706.1		125.0	30.9					
	EB	EBL	120.9	516.5	180.0	146.0	121.7	412	59.4	E	121	517
		EBT	23.9	223.2		144.0	38.8					
		EBR	6.9	111.3	305.0	122.0	9.2					
	WB	WBL	15.6	167.6	145.0	45.0	66.0	336	43.3	D	51	331
WBT		51.5	331.1		218.0	41.0						
WBR		13.1	110.8	300.0	73.0	36.3						
Overall Intersection								3,671	36.6	D		

Cumulative Alternative 2

AM Peak Hour Results

Intersection	Approach	Turning Movement	QLEN	QLENMAX	Storage Length	Volume (Vehicles)	Delay (veh/sec)	Approach Volume	Approach Delay (sec/veh)	Approach LOS	Average Queue Length	Maximum Queue Length
Bruceville Rd & Calvin Rd	NB	NBL	61.7	311.4	180.0	285.0	38.0	1,584	13.2	B	62	311
		NBT	23.8	271.8		1,299.0	7.7					
		NBR										
	SB	SBL						1,041	9.8	A	29	193
		SBT	28.7	193.5		815.0	7.5					
		SBR	28.7	193.5	150.0	226.0	18.0					
	EB	EBL	24.6	154.8	95.0	300.0	23.3	417	23.0	C	25	155
		EBT										
	EBR	11.3	110.0	95.0	117.0	22.4						
Overall Intersection								3,042	13.4	B		
Bruceville Rd & Sheldon Rd	NB	NBL	156.0	722.1	360.0	383.0	95.8	1,949	59.7	E	788	1,418
		NBT	788.4	1,413.9		966.0	58.8					
		NBR	435.9	1,417.5	175.0	600.0	38.2					
	SB	SBL	45.9	173.9	255.0	128.0	99.0	832	51.6	D	93	373
		SBT	93.5	373.4		695.0	43.1					
		SBR	1.5	37.7	255.0	9.0	33.6					
	EB	EBL	4.0	40.5	280.0	13.0	69.9	745	41.3	D	67	405
		EBT	52.7	222.0		377.0	45.7					
		EBR	67.3	405.5	450.0	355.0	35.5					
	WB	WBL	618.1	1,210.1	740.0	727.0	148.1	1,205	100.5	F	618	1,210
		WBT	27.4	167.1		319.0	30.5					
		WBR	18.9	178.7	325.0	159.0	23.7					
Overall Intersection								4,731	65.8	E		
Big Horn Blvd & Bruceville Rd	NB	NBL	31.2	127.4	375.0	142.0	63.8	1,727	51.7	D	502	880
		NBT	501.6	880.1		1,407.0	54.4					
		NBR	11.1	150.1	200.0	178.0	20.8					
	SB	SBL	55.3	187.3	370.0	235.0	71.8	1,765	37.0	D	210	966
		SBT	210.3	965.7		1,222.0	36.3					
		SBR	17.7	196.7		308.0	13.3					
	EB	EBL	113.5	361.7	145.0	333.0	103.2	1,120	54.9	D	113	362
		EBT	69.5	316.2		485.0	44.9					
		EBR	99.8	357.9		302.0	17.8					
	WB	WBL	50.8	259.6	195.0	115.0	75.1	724	62.3	E	167	572
		WBT	42.4	199.0		295.0	48.3					
		WBR	166.9	572.0	150.0	314.0	70.8					
Overall Intersection								5,336	48.9	D		
Big Horn Blvd & Laguna Blvd	NB	NBL	54.1	211.4	175.0	238.0	67.5	1,106	38.4	D	60	339
		NBT	60.2	338.8		601.0	33.0					
		NBR	32.4	254.8	175.0	267.0	24.5					
	SB	SBL	53.9	194.6	175.0	281.0	58.3	842	35.8	D	54	221
		SBT	38.5	221.2		413.0	31.0					
		SBR	5.1	93.4	175.0	148.0	6.8					
	EB	EBL	35.6	143.6	265.0	191.0	53.7	1,394	38.3	D	95	390
		EBT	75.2	343.1		1,048.0	38.0					
		EBR	95.2	390.0		155.0	21.5					
	WB	WBL	57.2	219.4	250.0	310.0	56.2	1,571	39.5	D	59	320
		WBT	55.2	222.3		981.0	34.0					
		WBR	59.3	319.5	175.0	280.0	40.2					
Overall Intersection								4,913	38.3	D		
Big Horn Blvd & Elk Grove Blvd	NB	NBL	71.9	270.7	275.0	323.0	72.2	1,524	48.5	D	163	833
		NBT	162.7	832.9		956.0	44.1					
		NBR	31.7	308.1	190.0	245.0	34.4					
	SB	SBL	45.6	175.4	220.0	223.0	61.9	1,202	37.5	D	93	500
		SBT	93.1	499.6		793.0	36.2					
		SBR	9.4	132.5	140.0	186.0	13.9					
	EB	EBL	65.3	240.2	335.0	317.0	63.9	2,063	54.4	D	292	967
		EBT	291.6	967.4		1,391.0	57.2					
		EBR	91.5	841.8	165.0	355.0	35.1					
	WB	WBL	41.6	160.0	425.0	205.0	59.8	1,743	50.8	D	173	771
		WBT	172.7	770.6		1,244.0	52.3					
		WBR	59.9	642.4	190.0	294.0	38.2					
Overall Intersection								6,532	48.9	D		

Cumulative Alternative 2 AM Peak Hour Results

Intersection	Approach	Turning Movement	QLEN	QLENMAX	Storage Length	Volume (Vehicles)	Delay (veh/sec)	Approach Volume	Approach Delay (sec/veh)	Approach LOS	Average Queue Length	Maximum Queue Length
Big Horn Blvd & Whitelock Blvd	NB	NBL	32.3	133.8	175.0	95.0	110.7	1,434	57.6	E	258	679
		NBT	258.4	678.7		973.0	57.1					
		NBR	93.5	620.0	300.0	366.0	45.3					
	SB	SBL	87.6	263.3	345.0	253.0	105.3	1,222	50.0	D	108	586
		SBT	108.3	586.2		789.0	41.4					
		SBR	10.2	137.2	300.0	180.0	9.5					
	EB	EBL	54.4	227.5	295.0	249.0	68.4	1,192	53.0	D	208	1,273
		EBT	207.6	1,273.2		830.0	53.6					
		EBR	8.0	121.1	230.0	113.0	14.6					
	WB	WBL	130.9	599.6	175.0	347.0	93.1	1,271	51.8	D	131	600
WBT		87.6	598.6		613.0	38.8						
WBR		47.9	396.0	315.0	311.0	31.1						
Overall Intersection								5,119	53.3	D		
Big Horn Blvd & Bilby Rd	NB	NBL	19.0	125.5	90.0	64.0	59.2	927	36.9	D	99	455
		NBT	98.8	454.7		793.0	37.2					
		NBR	3.3	96.4	90.0	70.0	13.6					
	SB	SBL	178.2	707.2	300.0	296.0	66.0	1,247	36.9	D	178	707
		SBT	110.4	606.7		810.0	31.4					
		SBR	6.0	120.6	300.0	141.0	8.0					
	EB	EBL	83.6	374.0	275.0	248.0	56.5	567	41.1	D	84	374
		EBT	46.2	270.2		224.0	39.5					
		EBR	5.3	117.7		95.0	4.7					
	WB	WBL	18.1	128.5	290.0	63.0	54.1	405	25.3	C	26	219
WBT		17.0	119.4		79.0	44.8						
WBR		26.4	218.8	165.0	263.0	12.6						
Overall Intersection								3,146	36.2	D		
Big Horn Blvd & Generations Dr	NB	NBL	1.7	45.6		22.0	19.6	1,074	7.1	A	12	261
		NBT	12.2	261.3		839.0	6.6					
		NBR	7.0	221.6		213.0	7.9					
	SB	SBL	5.3	75.8		70.0	17.2	821	5.5	A	6	125
		SBT	5.9	124.6		749.0	4.4					
		SBR	1.3	94.6		2.0	4.4					
	EB	EBL	0.3	32.7		-	-	44	7.4	A	2	63
		EBT	0.3	32.7		-	-					
		EBR	1.9	62.8		44.0	7.4					
	WB	WBL	7.3	89.3		54.0	23.0	80	22.5	C	7	89
WBT		7.3	89.3		-	-						
WBR		7.3	89.3		26.0	21.5						
Overall Intersection								2,019	7.1	A		
Big Horn Blvd & Red Elk Dr	NB	NBL	1.2	43.0		8.0	35.8	1,564	7.8	A	33	450
		NBT	32.7	449.9		1,523.0	7.6					
		NBR	0.5	37.8		33.0	6.8					
	SB	SBL	2.5	49.9		25.0	23.1	1,156	5.6	A	21	231
		SBT	10.3	180.5		1,123.0	5.3					
		SBR	21.1	230.7		8.0	4.2					
	EB	EBL	0.3	29.6		4.0	16.7	34	9.3	A	2	56
		EBT	0.3	29.6		-	-					
		EBR	1.6	55.9		30.0	8.3					
	WB	WBL	9.0	104.1		48.0	21.6	89	21.4	C	9	104
WBT		9.0	104.1		-	-						
WBR		9.0	104.1		41.0	21.0						
Overall Intersection								2,843	7.3	A		
Big Horn Blvd & Civic Center Dr	NB	NBL	44.0	410.9	185.0	118.0	64.9	1,521	30.1	C	151	752
		NBT	150.9	751.6		1,344.0	27.2					
		NBR	9.0	221.5		59.0	28.6					
	SB	SBL	29.6	160.3	165.0	96.0	60.3	1,349	30.1	C	120	629
		SBT	120.4	628.6		1,165.0	27.9					
		SBR	120.4	628.6		88.0	25.5					
	EB	EBL	39.4	201.8	180.0	116.0	62.4	462	33.8	C	40	315
		EBT	39.8	314.6		217.0	33.7					
		EBR	7.0	106.0	305.0	129.0	8.1					
	WB	WBL	5.9	73.9	145.0	23.0	53.3	199	40.0	D	23	186
WBT		23.2	186.4		112.0	39.8						
WBR		11.1	102.0	300.0	64.0	35.4						
Overall Intersection								3,531	31.1	C		
Bruceville Xing	NB	NBL						1,993	38.6	D	427	1,349
		NBT	427.0	1,349.0		1,993.0	38.6					
		NBR										
	SB	SBL						1,778	1.8	A	8	337
SBT		7.7	337.5		1,778.0	1.8						
Overall Intersection								3,771	21.2	C		

Cumulative Alternative 2

PM Peak Hour Results

Intersection	Approach	Turning Movement	QLEN	QLENMAX	Storage Length	Volume (Vehicles)	Delay (veh/sec)	Approach Volume	Approach Delay (sec/veh)	Approach LOS	Average Queue Length	Maximum Queue Length
Bruceville Rd & Calvine Rd	NB	NBL	18.9	140.2	180.0	126.0	29.7	1,064	9.9	A	19	175
		NBT	15.3	174.7		938.0	7.3					
		NBR										
	SB	SBL						1,365	10.1	B	35	234
		SBT	35.3	233.6		1,112.0	8.8					
		SBR	35.3	233.6	150.0	253.0	16.0					
	EB	EBL	24.1	166.3	95.0	305.0	22.4	447	22.7	C	24	166
EBT												
	EBR	14.7	135.7	95.0	142.0	23.4						
Overall Intersection								2,876	12.0	B		
Bruceville Rd & Sheldon Rd	NB	NBL	77.2	270.6	360.0	333.0	77.4	1,801	65.0	E	963	1,424
		NBT	927.5	1,418.1		725.0	67.1					
		NBR	963.1	1,424.4	175.0	743.0	57.4					
	SB	SBL	257.8	757.5	255.0	252.0	229.9	1,179	89.9	F	258	757
		SBT	189.7	706.5		899.0	52.3					
		SBR	5.1	63.8	255.0	28.0	35.6					
	EB	EBL	5.6	45.5	280.0	21.0	60.6	659	115.0	F	660	855
		EBT	49.3	251.4		256.0	62.5					
		EBR	659.9	854.5	450.0	382.0	153.2					
	WB	WBL	741.9	1,213.8	740.0	704.0	166.8	1,371	103.9	F	742	1,214
		WBT	53.4	245.3		527.0	39.6					
WBR		21.1	180.5	325.0	140.0	29.2						
Overall Intersection								5,010	88.1	F		
Big Horn Blvd & Bruceville Rd	NB	NBL	74.1	235.1	375.0	242.0	94.3	1,862	60.3	E	617	878
		NBT	617.0	878.2		1,383.0	60.6					
		NBR	37.6	337.4	200.0	237.0	23.9					
	SB	SBL	45.6	181.0	370.0	215.0	69.1	1,933	46.9	D	980	1,470
		SBT	979.6	1,470.5		1,410.0	49.0					
		SBR	25.3	209.6		308.0	22.1					
	EB	EBL	57.7	184.7	145.0	241.0	77.4	761	48.1	D	76	232
		EBT	47.3	190.0		331.0	44.4					
		EBR	76.3	231.7		189.0	17.1					
	WB	WBL	474.4	779.0	195.0	196.0	257.3	953	102.1	F	474	779
		WBT	318.2	762.2		494.0	64.0					
WBR		218.9	762.9	150.0	263.0	58.0						
Overall Intersection								5,509	61.1	E		
Big Horn Blvd & Laguna Blvd	NB	NBL	48.8	209.1	175.0	211.0	67.9	1,097	38.0	D	64	364
		NBT	64.1	363.8		642.0	32.6					
		NBR	31.8	252.8	175.0	244.0	26.1					
	SB	SBL	77.1	271.5	175.0	344.0	67.7	989	39.0	D	77	272
		SBT	39.3	253.5		430.0	30.6					
		SBR	10.6	136.6	175.0	215.0	9.8					
	EB	EBL	37.1	151.3	265.0	189.0	55.8	1,487	38.9	D	102	412
		EBT	82.5	365.0		1,148.0	38.2					
		EBR	102.4	411.8		150.0	22.6					
	WB	WBL	31.7	137.0	250.0	171.0	51.5	1,903	40.9	D	90	383
		WBT	89.8	382.6		1,427.0	38.8					
WBR		74.2	383.3	175.0	305.0	45.2						
Overall Intersection								5,476	39.4	D		
Big Horn Blvd & Elk Grove Blvd	NB	NBL	79.4	312.5	275.0	319.0	77.3	1,577	52.4	D	216	893
		NBT	216.0	893.2		1,055.0	48.2					
		NBR	22.6	225.4	190.0	203.0	35.3					
	SB	SBL	60.3	244.4	220.0	270.0	70.0	1,430	41.3	D	134	683
		SBT	134.0	683.0		869.0	39.3					
		SBR	24.7	308.3	140.0	291.0	20.8					
	EB	EBL	60.6	215.6	335.0	294.0	62.0	1,912	45.6	D	157	676
		EBT	157.0	675.5		1,368.0	46.6					
		EBR	22.1	221.8	165.0	250.0	21.3					
	WB	WBL	62.3	204.5	425.0	272.0	69.6	1,968	57.1	E	273	984
		WBT	272.7	983.7		1,415.0	57.6					
WBR		98.2	730.4	190.0	281.0	42.3						
Overall Intersection								6,887	49.6	D		

Cumulative Alternative 2

PM Peak Hour Results

Intersection	Approach	Turning Movement	QLEN	QLENMAX	Storage Length	Volume (Vehicles)	Delay (veh/sec)	Approach Volume	Approach Delay (sec/veh)	Approach LOS	Average Queue Length	Maximum Queue Length
Big Horn Blvd & Whitelock Blvd	NB	NBL	33.3	126.6	175.0	130.0	73.1	1,274	37.7	D	101	522
		NBT	101.1	522.1		858.0	36.1					
		NBR	37.8	282.8	300.0	286.0	26.4					
	SB	SBL	25.9	110.1	345.0	124.0	54.8	1,207	32.6	C	95	500
		SBT	95.3	500.0		862.0	35.4					
		SBR	13.2	142.5	300.0	221.0	9.4					
	EB	EBL	39.1	160.6	295.0	194.0	57.6	688	43.5	D	55	313
		EBT	55.0	313.3		425.0	42.9					
		EBR	3.6	86.6	230.0	69.0	7.6					
	WB	WBL	52.9	223.3	175.0	269.0	61.4	1,135	42.9	D	94	535
WBT		94.2	535.1		723.0	39.9						
WBR		15.7	143.9	315.0	143.0	23.4						
Overall Intersection								4,304	38.6	D		
Big Horn Blvd & Bilby Rd	NB	NBL	40.6	231.0	90.0	81.0	91.0	940	52.1	D	151	466
		NBT	150.8	465.5		797.0	50.4					
		NBR	2.6	102.2	90.0	62.0	22.6					
	SB	SBL	331.5	1,274.7	300.0	210.0	66.8	1,092	40.8	D	383	1,393
		SBT	382.8	1,393.2		754.0	38.4					
		SBR	7.7	134.9	300.0	128.0	12.3					
	EB	EBL	31.0	220.3	275.0	97.0	59.4	221	40.4	D	31	220
		EBT	14.6	144.0		90.0	33.7					
		EBR	1.7	95.2		34.0	4.2					
	WB	WBL	15.5	139.6	290.0	55.0	55.8	598	32.8	C	56	434
WBT		56.0	427.7		232.0	42.6						
WBR		48.8	433.7	165.0	311.0	21.5						
Overall Intersection								2,851	42.8	D		
Big Horn Blvd & Generations Dr	NB	NBL	4.5	63.3		33.0	30.9	1,133	11.9	B	31	335
		NBT	30.6	334.7		991.0	11.4					
		NBR	5.1	163.2		109.0	11.5					
	SB	SBL	5.4	67.0		50.0	23.5	835	10.2	B	16	169
		SBT	16.3	169.0		778.0	9.4					
		SBR	6.2	139.0		7.0	6.7					
	EB	EBL	0.4	30.9		-	-	31	6.3	A	1	57
		EBT	0.4	30.9		-	-					
		EBR	1.1	57.5		31.0	6.3					
	WB	WBL	33.7	263.3		181.0	24.7	300	24.5	C	34	263
WBT		33.7	263.3		-	-						
WBR		33.7	263.3		119.0	24.1						
Overall Intersection								2,299	12.9	B		
Big Horn Blvd & Red Elk Dr	NB	NBL	3.9	140.5		26.0	32.1	1,628	8.3	A	38	481
		NBT	37.5	480.5		1,568.0	7.9					
		NBR	0.9	90.1		34.0	8.2					
	SB	SBL	4.7	62.7		40.0	26.5	1,456	6.8	A	30	300
		SBT	16.8	249.8		1,406.0	6.3					
		SBR	29.8	299.9		10.0	4.7					
	EB	EBL	0.7	35.5		7.0	20.4	23	14.0	B	2	62
		EBT	0.7	35.5		1.0	15.0					
		EBR	2.1	62.0		15.0	11.0					
	WB	WBL	4.6	58.9		23.0	22.8	46	22.2	C	5	59
WBT		4.6	58.9		-	-						
WBR		4.6	58.9		23.0	21.7						
Overall Intersection								3,153	7.9	A		
Big Horn Blvd & Civic Center Dr	NB	NBL	46.4	418.0	185.0	113.0	68.0	1,521	32.7	C	169	779
		NBT	168.5	778.6		1,372.0	29.9					
		NBR	3.1	56.6		36.0	30.5					
	SB	SBL	14.4	99.8	165.0	52.0	60.2	1,383	32.7	C	152	672
		SBT	151.9	672.1		1,207.0	31.7					
		SBR	151.9	672.1		124.0	30.1					
	EB	EBL	146.4	533.4	180.0	146.0	130.4	411	64.2	E	146	533
		EBT	21.5	177.5		143.0	42.1					
		EBR	7.7	119.1	305.0	122.0	11.0					
	WB	WBL	15.1	191.5	145.0	43.0	65.5	336	43.2	D	51	333
WBT		51.2	333.3		220.0	41.0						
WBR		13.1	110.3	300.0	73.0	36.5						
Overall Intersection								3,651	37.2	D		
Bruceville Xing	NB	NBL						1,840	56.2	E	543	1,343
		NBT	542.9	1,342.7		1,840.0	56.2					
		NBR										
	SB	SBL						1,942	48.9	D	441	1,307
		SBT	440.8	1,306.7		1,942.0	48.9					
Overall Intersection								3,782	52.4	D		

Cumulative Alternative 4

AM Peak Hour Results

Intersection	Approach	Turning Movement	QLEN	QLENMAX	Storage Length	Volume (Vehicles)	Delay (veh/sec)	Approach Volume	Approach Delay (sec/veh)	Approach LOS	Average Queue Length	Maximum Queue Length
Bruceville Rd & Calvine Rd	NB	NBL	60.3	311.9	180.0	286.0	37.2	1,584	13.1	B	60	312
		NBT	23.8	277.3		1,298.0	7.8					
		NBR										
	SB	SBL						1,041	9.3	A	27	189
		SBT	27.1	188.8		815.0	7.2					
		SBR	27.1	188.8	150.0	226.0	17.0					
	EB	EBL	25.3	175.7	95.0	300.0	23.8	417	23.5	C	25	176
		EBT										
	EBR	11.7	110.9	95.0	117.0	22.7						
Overall Intersection								3,042	13.2	B		
Bruceville Rd & Sheldon Rd	NB	NBL	166.8	643.8	360.0	378.0	86.5	1,921	60.4	E	902	1,499
		NBT	902.5	1,492.5		956.0	62.2					
		NBR	620.4	1,498.7	175.0	587.0	40.8					
	SB	SBL	47.6	168.5	255.0	128.0	104.1	839	52.6	D	94	374
		SBT	93.8	373.5		702.0	43.4					
		SBR	1.7	42.3	255.0	9.0	37.9					
	EB	EBL	4.0	38.6	280.0	12.0	66.1	742	40.7	D	67	360
		EBT	51.7	222.0		375.0	44.8					
		EBR	66.6	360.4	450.0	355.0	35.5					
	WB	WBL	608.3	1,171.4	740.0	728.0	144.4	1,208	98.4	F	608	1,171
		WBT	28.4	173.3		320.0	30.9					
WBR		20.3	189.7	325.0	160.0	24.6						
Overall Intersection								4,710	65.7	E		
Big Horn Blvd & Bruceville Rd	NB	NBL	31.3	120.2	375.0	138.0	66.6	1,679	58.6	E	557	882
		NBT	556.6	881.7		1,370.0	58.5					
		NBR	44.8	406.0	200.0	171.0	53.5					
	SB	SBL	57.5	196.1	370.0	232.0	75.2	1,762	44.8	D	257	1,163
		SBT	257.5	1,162.8		1,222.0	40.0					
		SBR	86.2	682.7	355.0	308.0	40.9					
	EB	EBL	126.9	445.5	145.0	332.0	114.1	1,117	60.1	E	127	459
		EBT	77.8	403.4		483.0	47.6					
		EBR	119.0	459.4		302.0	20.7					
	WB	WBL	50.1	275.1	195.0	114.0	78.8	711	73.5	E	226	723
		WBT	85.2	431.3		290.0	56.3					
WBR		225.9	722.8	150.0	307.0	87.8						
Overall Intersection								5,269	56.3	E		
Big Horn Blvd & Laguna Blvd	NB	NBL	51.2	247.7	175.0	238.0	63.6	1,112	37.0	D	63	368
		NBT	63.3	368.0		607.0	33.4					
		NBR	28.4	286.3	175.0	267.0	21.6					
	SB	SBL	67.2	275.4	175.0	283.0	72.7	851	41.8	D	67	275
		SBT	41.8	235.5		420.0	33.0					
		SBR	5.3	90.5	175.0	148.0	7.9					
	EB	EBL	34.5	131.0	265.0	189.0	52.0	1,397	36.6	D	71	327
		EBT	71.2	326.9		1,052.0	35.9					
		EBR	13.1	270.5		156.0	22.3					
	WB	WBL	55.7	220.4	250.0	306.0	54.4	1,570	37.7	D	56	318
		WBT	52.4	216.3		984.0	32.8					
WBR		54.7	317.7	175.0	280.0	36.8						
Overall Intersection								4,930	37.9	D		
Big Horn Blvd & Elk Grove Blvd	NB	NBL	91.4	347.7	275.0	321.0	89.5	1,522	50.1	D	155	828
		NBT	154.5	828.5		955.0	40.7					
		NBR	33.1	382.0	190.0	246.0	35.5					
	SB	SBL	46.0	183.1	220.0	221.0	63.0	1,199	34.6	C	78	433
		SBT	77.9	432.8		792.0	32.6					
		SBR	13.5	224.7	140.0	186.0	9.5					
	EB	EBL	83.9	366.6	335.0	320.0	80.3	2,066	62.0	E	323	951
		EBT	322.9	951.0		1,393.0	61.6					
		EBR	104.3	882.3	165.0	353.0	46.9					
	WB	WBL	46.6	186.3	425.0	207.0	68.1	1,743	54.5	D	184	671
		WBT	183.7	670.6		1,244.0	55.2					
WBR		49.3	492.9	190.0	292.0	41.9						
Overall Intersection								6,530	52.2	D		

Cumulative Alternative 4

AM Peak Hour Results

Intersection	Approach	Turning Movement	QLEN	QLENMAX	Storage Length	Volume (Vehicles)	Delay (veh/sec)	Approach Volume	Approach Delay (sec/veh)	Approach LOS	Average Queue Length	Maximum Queue Length
Big Horn Blvd & Whitelock Blvd	NB	NBL	33.8	127.3	175.0	95.0	116.2	1,435	59.4	E	265	679
		NBT	265.0	678.6		974.0	58.1					
		NBR	99.8	657.4	300.0	366.0	48.0					
	SB	SBL	93.9	293.7	345.0	255.0	112.3	1,224	50.9	D	104	541
		SBT	104.4	540.5		789.0	40.5					
		SBR	10.5	128.0	300.0	180.0	9.5					
	EB	EBL	52.4	217.0	295.0	250.0	64.2	1,189	47.2	D	154	966
		EBT	154.0	966.3		827.0	46.7					
		EBR	7.5	114.3	230.0	112.0	12.9					
	WB	WBL	161.9	756.4	175.0	346.0	104.1	1,270	55.6	E	162	756
		WBT	109.2	726.6		612.0	40.1					
		WBR	52.2	492.1	315.0	312.0	32.4					
Overall Intersection								5,118	53.6	D		
Big Horn Blvd & Bilby Rd	NB	NBL	19.0	125.5	90.0	64.0	59.2	927	36.9	D	99	455
		NBT	98.8	454.7		793.0	37.2					
		NBR	3.3	96.4	90.0	70.0	13.6					
	SB	SBL	178.2	707.2	300.0	296.0	66.0	1,247	36.9	D	178	707
		SBT	110.4	606.7		810.0	31.4					
		SBR	6.0	120.6	300.0	141.0	8.0					
	EB	EBL	83.6	374.0	275.0	248.0	56.5	567	41.1	D	84	374
		EBT	46.2	270.2		224.0	39.5					
		EBR	5.3	117.7		95.0	4.7					
	WB	WBL	18.1	128.5	290.0	63.0	54.1	405	25.3	C	26	219
		WBT	17.0	119.4		79.0	44.8					
		WBR	26.4	218.8	165.0	263.0	12.6					
Overall Intersection								3,146	36.2	D		
Big Horn Blvd & Generations Dr	NB	NBL	3.1	52.7	90.0	22.0	32.5	1,077	9.3	A	24	290
		NBT	24.2	290.4		842.0	8.7					
		NBR	24.2	290.4		213.0	9.2					
	SB	SBL	6.0	74.2	90.0	70.0	19.4	826	5.9	A	6	128
		SBT	6.5	128.3		754.0	4.6					
		SBR	6.5	128.3		2.0	4.8					
	EB	EBL	5.1	72.2		-	-	44	23.6	C	5	72
		EBT	5.1	72.2		-	-					
		EBR	5.1	72.2		44.0	23.6					
	WB	WBL	9.2	97.0		53.0	26.4	79	26.7	C	9	97
		WBT	9.2	97.0		-	-					
		WBR	9.2	97.0		26.0	27.4					
Overall Intersection								2,026	8.9	A		
Big Horn Blvd & Red Elk Dr	NB	NBL	1.2	37.5		8.0	36.9	1,567	6.5	A	27	498
		NBT	26.9	497.9		1,526.0	6.3					
		NBR	0.4	32.1	100.0	33.0	5.3					
	SB	SBL	2.8	49.8		25.0	24.9	1,161	5.3	A	10	191
		SBT	10.1	190.6		1,128.0	4.9					
		SBR	0.1	47.8	100.0	8.0	1.6					
	EB	EBL	2.5	51.5		4.0	21.1	34	17.8	B	2	52
		EBT	2.5	51.5		-	-					
		EBR	2.5	51.5		30.0	17.4					
	WB	WBL	11.5	107.0		48.0	27.0	89	26.1	C	12	107
		WBT	11.5	107.0		-	-					
		WBR	11.5	107.0		41.0	25.1					
Overall Intersection								2,851	6.7	A		
Big Horn Blvd & Civic Center Dr	NB	NBL	53.7	584.7	185.0	118.0	73.3	1,513	36.6	D	230	918
		NBT	229.7	918.1		1,337.0	33.5					
		NBR	6.4	145.1		58.0	32.3					
	SB	SBL	34.5	246.4	165.0	96.0	70.4	1,350	31.8	C	128	669
		SBT	127.9	669.3		1,165.0	28.7					
		SBR	127.9	669.3		89.0	29.9					
	EB	EBL	39.4	210.0	180.0	116.0	62.6	461	36.0	D	46	330
		EBT	46.2	330.2		216.0	38.5					
		EBR	6.9	98.7	305.0	129.0	7.9					
	WB	WBL	5.9	73.2	145.0	23.0	52.7	199	40.8	D	23	187
		WBT	22.8	187.3		112.0	39.3					
		WBR	12.4	104.9	300.0	64.0	39.2					
Overall Intersection								3,523	34.9	C		

Cumulative Alternative 4 PM Peak Hour Results

Intersection	Approach	Turning Movement	QLEN	QLENMAX	Storage Length	Volume (Vehicles)	Delay (veh/sec)	Approach Volume	Approach Delay (sec/veh)	Approach LOS	Average Queue Length	Maximum Queue Length
Bruceville Rd & Calvine Rd	NB	NBL	20.5	165.9	180.0	125.0	31.8	1,076	10.3	B	21	220
		NBT	16.3	219.8		951.0	7.5					
		NBR										
	SB	SBL						1,368	10.4	B	36	258
		SBT	36.4	258.2		1,111.0	9.0					
		SBR	36.4	258.2	150.0	257.0	16.6					
	EB	EBL	23.9	159.4	95.0	303.0	22.3	446	22.6	C	24	159
		EBT										
	EBR	14.8	139.5	95.0	143.0	23.1						
Overall Intersection								2,890	12.2	B		
Bruceville Rd & Sheldon Rd	NB	NBL	81.2	381.1	360.0	325.0	75.8	1,809	64.1	E	1,067	1,502
		NBT	1,064.0	1,495.7		736.0	65.8					
		NBR	1,067.1	1,501.9	175.0	748.0	57.4					
	SB	SBL	225.1	620.4	255.0	247.0	194.8	1,168	93.4	F	288	740
		SBT	287.7	740.2		893.0	67.1					
		SBR	5.1	66.2	255.0	28.0	36.7					
	EB	EBL	5.5	54.4	280.0	21.0	60.3	636	120.5	F	704	857
		EBT	51.1	247.0		246.0	65.3					
		EBR	704.0	856.8	450.0	369.0	160.7					
	WB	WBL	763.5	1,214.0	740.0	691.0	171.8	1,346	106.1	F	764	1,214
		WBT	52.8	239.2		520.0	38.5					
		WBR	21.4	209.0	325.0	135.0	30.1					
Overall Intersection								4,959	89.6	F		
Big Horn Blvd & Bruceville Rd	NB	NBL	70.0	229.1	375.0	245.0	89.3	1,875	63.1	E	638	877
		NBT	638.2	877.2		1,392.0	59.9					
		NBR	109.0	663.9	200.0	238.0	55.2					
	SB	SBL	43.2	172.4	370.0	207.0	67.3	1,891	52.6	D	1,124	1,543
		SBT	1,123.6	1,542.6		1,377.0	50.9					
		SBR	415.7	1,284.0	355.0	307.0	50.4					
	EB	EBL	56.1	184.8	145.0	241.0	74.9	756	48.2	D	87	274
		EBT	48.2	217.1		330.0	46.6					
		EBR	87.4	274.3		185.0	16.3					
	WB	WBL	510.5	850.8	195.0	192.0	265.7	902	109.1	F	510	851
		WBT	398.0	849.3		467.0	71.5					
		WBR	162.7	719.3	150.0	243.0	57.7					
Overall Intersection								5,424	65.0	E		
Big Horn Blvd & Laguna Blvd	NB	NBL	49.4	195.9	175.0	209.0	68.5	1,093	36.4	D	63	368
		NBT	62.6	367.6		637.0	31.6					
		NBR	25.7	245.3	175.0	247.0	21.8					
	SB	SBL	64.1	217.9	175.0	209.0	76.8	943	32.9	C	64	259
		SBT	25.0	256.0		282.0	24.9					
		SBR	48.1	258.6	175.0	452.0	17.7					
	EB	EBL	36.8	148.6	265.0	186.0	60.3	1,477	50.4	D	138	658
		EBT	138.2	657.8		1,140.0	48.3					
		EBR	138.2	657.8		151.0	53.6					
	WB	WBL	33.5	151.8	250.0	170.0	60.0	1,879	50.6	D	134	614
		WBT	134.2	613.8		1,413.0	48.5					
		WBR	103.0	535.2	175.0	296.0	55.2					
Overall Intersection								5,392	44.6	D		
Big Horn Blvd & Elk Grove Blvd	NB	NBL	86.8	303.1	275.0	322.0	85.2	1,574	49.9	D	184	865
		NBT	184.2	865.0		1,051.0	41.6					
		NBR	23.7	221.1	190.0	201.0	36.2					
	SB	SBL	63.6	226.3	220.0	274.0	71.7	1,446	37.4	D	96	523
		SBT	95.7	522.7		872.0	34.8					
		SBR	28.4	315.9	140.0	300.0	13.5					
	EB	EBL	71.2	240.0	335.0	296.0	72.7	1,913	48.6	D	153	591
		EBT	152.6	590.9		1,366.0	46.0					
		EBR	35.3	354.9	165.0	251.0	34.2					
	WB	WBL	72.0	237.9	425.0	264.0	83.6	1,967	61.6	E	281	906
		WBT	280.6	906.5		1,421.0	60.8					
		WBR	39.4	444.9	190.0	282.0	45.3					
Overall Intersection								6,900	50.2	D		

Cumulative Alternative 4 PM Peak Hour Results

Intersection	Approach	Turning Movement	QLEN	QLENMAX	Storage Length	Volume (Vehicles)	Delay (veh/sec)	Approach Volume	Approach Delay (sec/veh)	Approach LOS	Average Queue Length	Maximum Queue Length
Big Horn Blvd & Whitelock Blvd	NB	NBL	34.8	136.7	175.0	135.0	74.2	1,273	37.4	D	96	514
		NBT	96.0	513.6		854.0	35.3					
		NBR	38.2	294.2	300.0	284.0	26.4					
	SB	SBL	26.7	107.4	345.0	125.0	55.4	1,196	32.6	C	93	480
		SBT	93.0	479.6		848.0	35.2					
		SBR	13.6	154.8	300.0	223.0	9.5					
	EB	EBL	36.5	140.0	295.0	192.0	54.1	690	41.3	D	54	300
		EBT	53.5	300.1		428.0	41.0					
		EBR	3.7	87.3	230.0	70.0	7.6					
	WB	WBL	52.0	197.1	175.0	270.0	60.8	1,133	43.3	D	94	505
		WBT	94.0	504.6		717.0	40.7					
		WBR	16.0	144.4	315.0	146.0	23.6					
Overall Intersection								4,292	38.2	D		
Big Horn Blvd & Bilby Rd	NB	NBL	32.2	197.5	90.0	79.0	80.2	941	51.1	D	150	466
		NBT	150.1	465.6		798.0	50.6					
		NBR	3.0	106.7	90.0	64.0	22.5					
	SB	SBL	300.9	1,189.9	300.0	212.0	65.8	1,102	40.6	D	390	1,402
		SBT	389.8	1,402.3		761.0	38.5					
		SBR	7.9	139.4	300.0	129.0	12.1					
	EB	EBL	31.0	225.0	275.0	96.0	59.5	222	40.8	D	31	225
		EBT	15.3	151.9		92.0	34.7					
		EBR	1.7	95.3		34.0	4.2					
	WB	WBL	15.9	141.7	290.0	55.0	57.8	603	32.2	C	56	410
		WBT	56.3	401.1		235.0	42.5					
		WBR	45.9	410.5	165.0	313.0	20.0					
Overall Intersection								2,868	42.3	D		
Big Horn Blvd & Generations Dr	NB	NBL	5.1	80.1	90.0	36.0	32.1	1,163	12.6	B	37	342
		NBT	36.9	341.7		1,017.0	12.0					
		NBR	36.9	341.7		110.0	11.8					
	SB	SBL	5.6	67.2	90.0	48.0	25.7	840	10.3	B	17	171
		SBT	16.5	171.4		785.0	9.4					
		SBR	6.7	143.9		7.0	8.2					
	EB	EBL	2.2	46.4		-	-	29	14.6	B	2	46
		EBT	2.2	46.4		-	-					
		EBR	2.2	46.4		29.0	14.6					
	WB	WBL	30.7	237.0		183.0	22.6	303	22.6	C	31	237
		WBT	30.7	237.0		-	-					
		WBR	30.7	237.0		120.0	22.5					
Overall Intersection								2,335	13.1	B		
Big Horn Blvd & Red Elk Dr	NB	NBL	5.4	123.6		24.0	45.5	1,626	7.2	A	31	482
		NBT	31.0	481.9		1,567.0	6.7					
		NBR	0.4	37.7	100.0	35.0	6.6					
	SB	SBL	5.2	65.6		42.0	27.2	1,475	5.8	A	14	211
		SBT	14.3	210.6		1,423.0	5.2					
		SBR	0.1	47.3	100.0	10.0	1.7					
	EB	EBL	2.1	44.1		7.0	21.4	21	22.5	C	2	44
		EBT	2.1	44.1		1.0	25.9					
		EBR	2.1	44.1		13.0	22.9					
	WB	WBL	5.9	65.7		23.0	26.2	46	27.0	C	6	66
		WBT	5.9	65.7		-	-					
		WBR	5.9	65.7		23.0	27.7					
Overall Intersection								3,168	7.0	A		
Big Horn Blvd & Civic Center Dr	NB	NBL	38.5	265.9	185.0	111.0	69.2	1,516	33.8	C	173	728
		NBT	173.3	728.3		1,369.0	31.0					
		NBR	2.9	46.5		36.0	30.6					
	SB	SBL	14.8	94.4	165.0	51.0	65.2	1,383	35.8	D	176	703
		SBT	175.5	702.6		1,207.0	34.6					
		SBR	175.5	702.6		125.0	34.6					
	EB	EBL	194.4	693.5	180.0	147.0	164.5	407	80.9	F	194	694
		EBT	25.4	196.9		140.0	52.2					
		EBR	7.2	120.3	305.0	120.0	11.9					
	WB	WBL	27.9	349.8	145.0	44.0	83.3	342	53.3	D	71	456
		WBT	71.2	455.7		224.0	50.9					
		WBR	15.7	123.7	300.0	74.0	42.9					
Overall Intersection								3,648	41.6	D		